

**FEASIBILITY OF DESIGN BROADBAND MICROSTRIP ANTENNA USING
CORPORATE FEED**

This thesis is presented in partial fulfillment for the award of the Bachelor of
Electrical Engineering (Honours)

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ABSTRACT

This final project presents a design of a broadband microstrip antenna using corporate feed. The feed was used to achieve high directivity and to concentrate radiation power within a small geographic area. The antenna works from 9.4 GHz to 9.7 GHz. The simulation shows that the best value of VSWR was 1.034 and the return loss of -35.49 dB. The measurement results yield the lowest values of VSWR and the return loss of 1.2 dB and -22.80 dB respectively. The bandwidth that obtained from the antenna was 7.1 %.

The antenna was designed and simulated using computer aided design (CAD), *GENESYS* and was measure by a Scalar Network Analyzer (SNA). The measurement results quite closely agree with the simulation results.

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CHAPTER 1

INTRDUCTION

1.1 Project Introduction

Microstrips have received lots of attention since the last decade because of their advantages such as low cost, lightweight and ease of fabrication and integration. Microstrips are also able to operate in a wide range of frequencies. Antennas play an important role in today's radar communication. Without the use of an antenna, signals are not able to be transmitted out or receive. The raise of using microstrip for antennas has been due to the several advantages of microstrips. In this project, microstrip antennas are, analyzed, simulate and designed with the help of computer aided design (CAD), *GENESYS*.

1.2 Scope of Works

In this final year project, microstrip patch array antenna will be investigate, analysis simulate and design using *GENESYS*. The design will then be sent for fabrication and testing of its performance. So therefore the main requirement for the project is as follows:

Investigation, design, fabricate and testing of a Microstrip Patch Antenna Array.

To do the above, the following must be achieved:

- i. Apply suitable equations, design methodology and techniques for microstrip
- ii. Investigate patch antenna at different frequencies for the broadband using corporate feed approach.
- iii. Familiarization of computer aided design (CAD), *GENESYS* as to do software simulation of the antennas
- iv. Design a broadband antenna array.