HIGHER TECHNICAL INSTITUTE

ELECTRICAL ENGINEERING DEPARTMENT

DIPLOMA PROJECT

DESIGN OF A LIGHTNING DETECTOR

E1386

BY

BANJO BABATUNDE GABRIEL

JUNE 2006

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DEDICATION

This project is dedicated to the loving memory of my beloved father Mr. Samuel A. Banjo. May his gentle soul rest in perfect peace, we love you Dad but God loves you most.

INTRODUCTION

This project entitled Lightning Detector is an instrument / device which detects the approach of lightning before a storm, and it could be used everywhere and anywhere at anytime.

A general overview of Lightning will help show the importance and usefulness of the Lightning Detector in our everyday life.

Lightning is one of the most beautiful displays in nature, it is also one of the most deadly natural phenomena known to man.

The effects of Lightning are numerous as it produces mechanical, electrical and thermal consequences and it is extremely dangerous to human, life and properties when it strikes.

This project is divided into circuits the Power supply, Receiver, Metering / Indicating or monitoring and the Alert / Alarming circuits.

The power circuit is a simple 5V supply to the circuit which allows the use of commonly modeled power supplies AC and DC(batteries).

The receiver circuit is designed to receive and be of high sensitivity to detect the signals in the VLF range which is an important part of the Lightning Detector.

The metering circuit of high sensitivity shows the intensity of the received signal a probable extent of the approaching lightning.

The Alarming circuit which could be a blinking lamp a buzzer or an alarm as desired is to produce visible or audible awareness to the user this is triggered when a preset level is reached.