HIGHER TECHNICAL INSTUTUTE

PROJECT REPORT

Project submitted by

GEORGHAKIS CHARRIS

E/922

LARGE RANGE INFRA-RED RAYS TRANCEIVER

in part satisfaction of the award of Diploma of Technician Engineer in Electrical Engineering of the HIGHER TECHNICAL INSTITUTE

CYPRUS

Project Supervisor: Dr. M Kassinopoullos

June 1994



SUMMARY

TITLE: LARGE RANGE INFRA-RED RAYS TRANCEIVER.

AUTHOR: GEORGHAKIS CHARRIS

Infra-red transmition is widly used in every day life.

The purpose of this project is to design, construct and test such a transmition, which will probably be used in controlling gates, garages or used as coordless haedphones in radio stations and in many other sections in electrical engineering.

CONTENTS

| | Pages |
|---|----------------|
| Chapter 1. | 1 |
| A Introduction | 2-10 |
| 1. Light | |
| 2. The optoelectronic system | |
| 3. The electromagnetic spectrum | |
| 4. The nature of light | |
| 5. Infra-red waves | |
| 6.Components used. | |
| Chapter 2. | 11 |
| A Principles of telecomunication | 12 |
| B <u>Atmosphere attenuation</u> | 14 |
| C Optic amplification | 15 |
| Chapter 3. | 16 |
| A Transmitter circuit description | 17 |
| B Receiver circuit description | 20 |
| Chapter 4. | 23 |
| A Figures used | 24 |
| B Basic components data | 37-57 |
| 1.LD271 2.BP104 3.NE5534 4.LM386 5.LM565 6.TBA120 | |
| Chapter 5. | 58 |
| A Transmitter printed circuit B Receiver printed circuit C Methods of Trouble shouting D Uses of infrared transmition | 59 61 63 |