

FINAL YEAR PROJECT REPORT  
DIPLOMA IN ELECTRICAL ENGINEERING ( ELECTRONICS )  
SCHOOL OF ENGINEERING  
MARA INSTITUTE OF TECHNOLOGY  
40450 SHAH ALAM  
SELANGOR DARUL EHSAN

REMOTE CONTROLLED CAR BURGLAR ALARM

BY

SITI RUSLINA BINTI MOHD RUSLI

YUSZAINI BINTI JUNUS

NOVEMBER 1988

## PREFACE

A burglar alarm system is a complete facility for detecting the unauthorized entry or threspassing of an intruder in a given area as determined by the owner, lessee, or designated person in charge thereof, including the responsive action to such detection in the form of an alarm, light or other indicator.

There are several types of alarm available but in this project ultrasonic system is adopted. The term ultrasonic is used to describe frequency greater than 20KHz which cannot be detected by human's ears.

The remote controlled car burglar alarm is two unit system, burglar alarm and UHF remote swith. The burglar alarm contains of the ultrasonic transmitter and receiver. The UHF remote switch unit contains of encoder and decoder and also key switch for on/off control of the burglar alarm.

This report contains some informations, theories, circuits of burglar alarm and UHF remote switch, lab result testing and finally a conclusion and comments.

Thank You.

ACKNOWLEDGEMENT

~~In the name of Allah, the beneficent, the merciful~~  
~~we pray to Allah for gives us patient in completing~~  
~~our project.~~

We would like to take this golden oppurtunity to express our most appreciation and heartfelt gratitude to En. Hadzli Bin Hashim, as our project adviser, who has encourage and help us a lot from beginning up to the end of our work.

We also would like to forword our special thanks to all lecturers and technicians who gave us valuable informations, various suggestions in improving the project and give us full cooperation towards the success of our project without which our project would be doomed to failure.

Last but not least, our special thanks to our parents who gave us unrelenting encouragement, to our friends and many others who some how or other had helped us directly and indirectly in successful of project.

Siti Ruslina Binti Mohamad Rusli  
Yuszaini Binti Junus

TABLE OF CONTENT

	<u>PAGE</u>
Preface .....	i
Acknowledgements .....	ii
Table of contents .....	iii -vi
CHAPTERS.	
I. INTRODUCTION .....	I
2. OPERATION OF THE CIRCUIT	
2.0 Block Diagram .....	2
2.1 Description .....	3-4
2.2 Ultrasonic Burglar Alarm	
2.2.1 Transmitter Section .....	5
2.2.2 Receiver Section .....	6-8
2.3 UHF Remote Switch	
2.3.1 Transmitter Section .....	9
2.3.2 Receiver Section .....	10-12
3. TESTING, RESULT AND TROUBLESHOOTING	
3.1 Testing Of The Burglar Alarm.....	13
3.2 Results	
3.2.1 Power Supply .....	14
3.2.2 Transmitter Section .....	15-16
3.2.3 Receiver Section .....	17-19
3.3 Testing Of The UHF Remote Switch .....	20
3.4 Result .....	20
3.5 Troubleshooting .....	21-22
4. THEORY OF OPERATION	
4.1 Power Supply .....	23
4.1.1 The Full Wave Receiver .....	24
4.1.2 Transformer .....	25
4.1.3 Receiver Circuits .....	26
4.1.4 Battery Back-up System .....	27

## I.0 INTRODUCTION

Public safety has become a strong concern for modern living. Terrorism, robbery, theft and fires provide the hazards that man find it difficult to curb with. In certain places especially in urban areas, protecting against this hazard has become a must and a way of life.

Men now understand that world is in a way not a safe place to live. To overcome this problem besides spiritual up-bringing, concerned Electronic Scientists give their hand in designing protective Device as a counter measure to keep out those manaces.

There are various aspects for public safety. They are

1. Protection from fire.
2. Protection against terrorism, gangsterism, extortionist, kidnappers, etc.
3. Protection from burglarism, robbery and break-in.  
The system design to maintain this kind of protection is know as ' The Alarm System '.

Remote controlled car burglar alarm is one of <sup>the</sup> most successful device used as a protection. This is the combination alarm system presented here feature the ultrasonic alarm with the added luxury of activation by the UHF remote control switch.

Remote switch operates in the ultra high frequency ( UHF ) portion of spectrum and we can select our own ' key ' combination from about 13,000 possible codes.