

FINAL YEAR PROJECT REPORT
DIPLOMA IN ELECTRONIC ENGINEERING
SCHOOL OF ENGINEERING
MARA INSTITUTE OF TECHNOLOGY
SHAH ALAM, SELANGOR

TELEGUARD

BY

AYOB BIN AZMI

AND

ABDUL RAZAK BIN SAFFIAN

NOVEMBER 1989

ABSTRACT

The concept of Teleguard system in this project is mainly concerned with the design and the theory of operation of the unit itself.

The important principle involved in this project is the coverage of the use of transistor, unijunction transistor, the timer IC, logic gate and pushbutton dialer IC.

ACKNOWLEDGMENT

All praise be to Allah, the Beneficent, the Merciful, Thee do we worship, and Thee do we beseech help. Our everlasting thanks to Allah for granting us patience and hope in completing this project.

There are so many people who have made this project possible, who unselfishly helped above and beyond their ability to assist us direct or indirectly. Sincerely, we would like to express our most appreciation and gratitude to Mr. Ali R Ebadi, our project advisor, for his encouragement and countless help from the beginning until the end of our project. We would also like to express our appreciation to all the lecturers and friends for their suggestions, ideas and co-operation in the completion of our project.

Finally, to the people who mean everything to us, our families, we would like to say a very special thank you. Without their support we would never be able to accomplish anything.

Ayob bin Azmi

Abdul Razak bin Saffian

TABLE OF CONTENTS

	PAGE
ABSTRACT	i
ACKNOWLEDGMENT	ii
TABLE OF CONTENTS	iii

CHAPTER

1 .	INTRODUCTION	
1.1	What is Teleguard	1
1.2	How to use Teleguard	2
2 .	CIRCUIT DESCRIPTION	3
2.1	Block digram	3
2.2	Sensor	3
2.3	Timing circuit	5
2.3-1	Introduction	5
2.3.2	Theory of 555 IC	5
2.3.3	Terminal of 555	6
2.3.4	Astable mode operation	12
2.3.5	Calculation the frequency of oscillation	14
2.3 6	Duty cycle	15
2.4	Dialer circuit	16
2.4.1	RAM structur and operation	17
2.4.2	Dialer circuit operation	20
2.5	Switching circuit	21

2.5.1	Switching circuit operation	27
2.6	NAND gate SET-CLEAR Flip flop	28
2.7	The Unijunction Transistor	35
2.7.1	Operation of UJT as an oscillator	39
3	SET UP AND USE OF EQUIPMENT	41
4	COMPONENT HANDLING AND FAULT FINDING	43
4.1	Precaution when handling and testing component	41
4.2	Fault finding on digital logic circuit	43
5	CONCLUSION	49
6	DISCUSSION	50
	REFERENCES	52
	APPENDICES	53