

**DEPARTMENT OF ELECTRICAL ENGINEERING  
UNIVERSITI TEKNOLOGI MARA  
CAWANGAN PULAU PINANG**

**FINAL REPORT OF DIPLOMA PROJECT**

**SMART CARD KEY**

**18 FEBRUARY 2005**

**NOOR IZNINA BINTI AB. AZIZ  
2001362568**

**KU NORAINI BINTI KU ABDU SAMAD  
2001362623**

**CIK SHAHIDAH BINTI SADIMIN**

## ACKNOWLEDGEMENT

In the name of Allah s.w.t. the most gracious and merciful and to our prophet Muhammad s.a.w. for giving us the opportunity to complete this project to the end with successfully. Honestly, we would like to express our appreciation to our project supervisor, Miss Shahidah binti Sadimin. Thanks to her because without her help and advice we couldn't finished up this project and project report. She is the most important to us whose act as a guider to us. May Allah bless her.

In the process to complete this project on time there are other person who has helped us. We want to say thank you to the other lecturer who supports and helping us to finish our project, Miss Nurul Hazlina binti Nordin. She also helps us to understand our project.

Lastly, we also would like to express our deepest gratitude to our family and friends for being our strongest supporter. They are our strong spirit and inspiration in helping us. Thank you for all the people who have been noted above.

## **ABSTRACT**

A key is very important in our life for safety. In market today, there are diverse types of key. But Smart Card Key is a good for a smart home. It has safety characteristics and very privacy. For this project, Smart Card Key has 3 ICs will be used which are UM6, SN54/74LS240. Smart Card Key is design to be used in smart home and is also used for hotel rooms.

<b>TABLE OF CONTENTS</b>		<b>PAGE</b>
Acknowledgement		i
Abstract		ii
Table of content		iii
<b>CHAPTER</b>		
<b>1</b>	<b>INTRODUCTION</b>	
1.1	Introduction of Smart Card Key	1
1.2	Objective	2
1.3	Scope of work	3
<b>2</b>	<b>DIFFERENT TECHNIQUE OF SMART CARD KEY</b>	
2.1	Smart Card Key	4
2.2	Digital Code Lock	5
<b>3</b>	<b>CIRCUIT'S OPERATION</b>	
3.1	Circuit Design	6
3.1.1	Schematic diagram and operation	
3.1.2	Component list and data	7
3.2	Circuit Simulation	12
3.2.1	Circuit maker software	
3.2.2	Simulation procedure	
<b>4</b>	<b>HARDWARE CONSTRUCTION</b>	
4.1	Hardware construction procedure	26
4.1.1	PCB making	
4.1.2	Etching	
4.1.3	Components soldering	
4.2	Circuit testing and trouble shooting	31

5	RESULTS	32
6	DISCUSSION AND RECOMMENDATION	33
7	CONCLUSION	34
	REFERENCES	35

Appendices:

Appendix A: Data sheet of Components