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

FINAL REPORT OF DIPLOMA PROJECT

SMART HOME MAIN CONTROLLER BOARD

#### FEBRUARY 2005

# MOHD REDZUAN B AB. KADIR@SAHIBULLAH 2002415941

SUPERVISOR'S NAME
EN MUHAMAD ZAHIM BIN SUJOD

#### ABSTRACT

Smart home is house that gives much benefit to us. There are many devices that we must use for completing one smart house such as alarm sensor, automatic cotton for window, heat sensor and etc. In this project we choose to built one device which can control and adjust the other devices either sensor devices or common devices from our controller device.

The controller main function is to mention us either a devices that use in the smart house is functioning or not functioning and active or not active. The controller has many input and switch which will be connected to other devices. From that switch we can switch on and switch off other devices that connect to the controller.

#### **ACKNOWLEDGEMENT**

First of all, I would like to thank to Allah for giving me health and ability to complete this project. The bless from Allah giving me strength to complete this report successfully.

Other than that, thank to my beloved parents for their support and prays for my success. You are always at the bottom of my heart. A special thanks to my supervisor Mr. Muhamad Zahim Bin Sujod. Without his concern and support, it is impossible for me to precede this project. Hopefully he can pour me more knowledge and spirit next time.

Not forget to my friends for giving me many ideas in completing this project.

Thanks a lot and may Allah bless us.

Thank you.

TABLE OF CONTENT	PAGE
Acknowledgement	ii
Abstract	iii
CHAPTER	
1. INTRODUCTION	
1.1 Background	1-2
1.2 Scope of Work	3-5
1.3 Objective of The Project	6
2. CIRCUIT DESIGN AND OPERATION	
2.1 Circuit Design	7
2.1.1Schematic Diagram	8-9
2.1.2Components lists and data	10
2.2 PCB Design	11
3. HARDWARE CONSTRUCTION	
3.1 Hardware construction procedure	12-17
3.1.1 PCB making	18
3.1.2 PCB Fabrication and Etching	19
3.1 3 Components Soldering	19
4. DISCUSSION AND RECOMBINATION	20
5. CONCLUSION	21

## REFERENCES

**APPENDICES** 

#### **CHAPTER 1**

#### INTRODUCTION

### 1.1 Background

The multi switch controller is one device that created like a block model that usually located at near the front door (exit way). The controller function is to monitor condition of basic devices like lamp, fan and sensor devices like a smoke detector, a burglar alarm whether these devices is functioning or not functioning and active or not active.

Furthermore, the controller have set and reset button which use for setting the devices to an initial condition. For example, if the house detected someone is preaching the house, a burglar alarm will be activated .So, the controller will be reset the alarm by push the reset button. After that the burglar alarm will be activate in an initial condition.

Beside that, the controller also has a sensitivity adjuster for the devices that connect to this controller. The function of the adjuster is to adjust the sensitivity of the devices. If a heat sensor is connecting to the controller, the adjuster will be set the range of heat for the sensor and the sensor will be activate at the range that we set.