

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

FINAL REPORT OF DIPLOMA PROJECT

AUTOMATIC CURTAIN

FEBRUARY 2005

**AHMAD KHAIRUDDIN ARIFFIN [2002444010]
AHMAD SHAHIR ZAINAL OTHMAN [2002443908]**

MR. ALI OTHMAN

ACKNOWLEDGEMENT

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

Foremost words we would like to extend our greatest gratitude and praise to ALLAH the ALMIGHTY for his blessing that enables us to complete this task of creating an Automatic Curtain for this semester's KEU 380 project.

Our thanks and also goes to the supervisor, Mr. Ali Othman for his kindness, support and concern to our group. Through his love and undivided attention, he has seen that we accomplished the task given with 100% satisfaction according to the regulations applied to this project. Our appreciation of his aid is also due to the reality that he had spent most of his time focusing in our project while issuing extremely beneficial comments and ideas that prove to be of substantial value in the initiation and completion of the task at hands.

We would also like to thank to our parents for their time and their support to us during our darkest hour in the project, then seemed never ending, struggle to complete the project. We also want to thank them for their kindness in supporting us financially from the beginning until the end of the project.

The contributions from these people have helped in making this project a success.

ABSTRACT

In this semester's KEU 280 project we are required to create an Automatic Curtain system. This project is a part of a mother program called SMART HOME where the Automatic Curtain system will be implemented in the program.

The main idea of this project is to create an automatic curtain that will pull close or open automatically according to the photo-sensor's signal as the main switch to operate the curtain.

With the implementation of this project, the user from now on addressed as the consumer will benefit from the characteristics of the curtain where it is pulled close or open independently without having to be taken care of by the consumer on daily basis.

Therefore, the consumer can spend more time on other household chores.

From the home-security point of view, the automatic curtain successfully matched the criteria of home safety and security as the curtain automatically closes at night time. When the morning rises, it will pull open allowing the sun ray to shine into the house. Thus, acting as a natural alarm clock to awaken the sleeping residents, who are irritated by the sunshine.

The automatic curtain system works on every type of curtains and windows. The fact is due to the system that only mobilizes the curtain without having the fabric of the curtain or the window type as an installation completion factors.

TABLE OF CONTENTS	PAGE
Acknowledgments	ii
Abstract	iii
CHAPTER	
1 INTRODUCTION	
1.1 Background	1
1.2 Scope of work	1
1.3 Objectives of the project	3
2 PARTS OF THE PROJECT	
2.1 Switching unit	4
2.2 Motor unit	5
3 CIRCUIT DESIGN AND OPERATIONS	
3.1 Circuit design and operations	
3.1.1 Schematic diagram	6
4 INSTALLATION	9
5 RESEARCH AND DEVELOPMENT	
5.1 Research	
5.1.1 The transistors	10
5.1.2 The diodes	10

CHAPTER 1

INTRODUCTION

1.1 Background

Have you ever been irritated when you forgot to open the curtain in the morning and your relatives who were just at the front gate gone home because they thought nobody was home? Or you forgot to close it back at dusk and let the vampire insects infest your house through the bare naked window? Well, get irritated no more as we have come up with a system that will save you the trouble and let you have the peace of mind that you have dreamed of. This remarkable system is called the 'AUTOMATIC CURTAIN' system.

1.2 Scope of work

The work scope of our project evolves mainly on three stages:

- i. In the first stage, we made surveys on the automatic curtains available in the market. Their, design and advantages that set them from each other are listed for reference to design our own automatic design. Lecturers are also referred to.
- ii. Second stage consists of designing and simulation activity.
- iii. In the third stage, the design is put into hardware existence.
- iv. Lastly, the report and product of our project is submitted for inspection by the lecturer.

The overall work scope of the project can be described as in Figure 1.2