

UNIVERSITI TEKNOLOGI MARA  
KAMPUS BUKIT MERTAJAM  
2002

FINAL REPORT OF DIPLOMA PROJECT

FACULTY OF ELECTRICAL ENGINEERING



CHRISTMAS LIGHT FLASHER

AMIRUDDIN SOLLEHUDDIN

## ABSTRACT

KEU 380 is one of the courses, which is totally different with other course. Here I need to produce a project. The project must be original and came from my own creativity. Like my university, I also have produce my project known as 'CHRISTMAS LIGHT FLASHER'.

This project is a straight-forward fixed pattern flasher for three sets of lights. However this is not usual 1-2-3 chasing pattern, this unit has six steps, 1, -1+2, -2, -2+3, -3, -3+1, and then repeated. If the three sets of lights are mixed on the tree, it is not that easy to see the pattern. On the prototype, the speed was fixed to about three steps per second, but it would be a simple matter to put a control pot on the front panel to set the mood if required.

The triac outputs are driven from zero-crossing opto isolators, which virtually eliminate radio interference. The triacs are hard driven, making the outputs suitable for driving inductive loads such as the modern low voltage transformer driven Christmas light. The output can drive loads of up to 3 Amps (or possible even more if the PCB tracks are reinforced), making the unit suitable for driving higher powered outdoor lights. THIS PROJECT OPERATES FROM THE MAIN. MAINS VOLTAGE IS POTENTIALLY LETHAL. DO NOT CONSTRUCT IT UNLESS YOU ARE CERTAIN OF YOUR ABILITY TO DO SO SAFELY.

For the further explanation, I had explain on the next pages.

## ACKNOWLEDGEMENT

In the name of Allah, the Beneficent, the Merciful

The most excellent names belong to Allah: So call on Him by them; and shun the company (and the blasphemies) of those who use profanity in His names. They will be requited what they do.

I would like to take this opportunity to express my appreciation and sincere gratitude to all those who have devoted their time in making this project a success. My heartiest thanks and appreciation go to Miss Jamilah, my supervisor, for her valuable guidance, constructive comments, suggestions and ideas towards the success of this project. I am very grateful to my advisors and I will never forget everything, especially her cooperation for me and I appreciate it a lot.

I would also like to extend my most sincere gratitude to Miss Tuan Syahirah who gave me valuable help and motivation for this project. My special thanks also go to all staff in electrical laboratory who gave me valuable assistance for the completion of this project.

Last but not least, I would like to express my deepest gratitude to my beloved family and friends for their unlimited encouragement and patience during the course of doing my project. They have all been a constant source of strength and inspiration to me.

MAY GOD BLESS ALL OF US, AMIN.....

THANK YOU

## CONTENTS

<u>Content</u>	<u>Page</u>
ABSTRACT	i.
ACKNOWLEDGEMENT	ii.
CONTENTS	iii.
OBJECTIVES AND APPLICATION	1.
LIST OF COMPONENT	2.
COST OF COMPONENT	3.
THEORITICAL	
• SPECIFICATION OF COMPONENT	4.
• CIRCUIT OPERATION	14.
• BLOCK DIAGRAM	16.
• SCHEMATIC DIAGRAM	18.
PRACTICAL	20.
METHOD USE	21.
DISCUSSION AND TROUBLE SHOOTING	24.
CONCLUSION	25.
GANNT CHART	26.
REFERENCE	28.
APPENDIX	29.

## **OBJECTIVES**

The purpose of doing this project is, to complete the syllabus of the Electrical Electronic Engineering Diploma of University Technology Mara .

The main purpose of doing this project is:

1. Ability to analyze the project and the sequences of the project.
2. Ability to suggesting a suitable problem and finding the alternate solutions.
3. Ability to discuss the problem with the group.
4. Ability to write a good final report including the simulation of the project.
5. Ability to present the project.
6. Complete the requirement of KEU 380 subject.

## **APPLICATION**

This Christmas Light Flasher project design, I have consider about it application in our life, especially when we celebrate any occasion or festival. It will make it more fun, interesting, and cheerful. Although there is no festival, we can still use this project to decorate the house, put it at restaurant or shop for attraction, make the customers come to our shop or restaurant.