AUTOMATIC ADAPTER CUT OFF

SHAHRUL NAIM BIN ROSLAN UBAIDULLAH BIN MASNOOR MUHAMMAD AFIQ NAUFAL BIN MOHD NOR

A project report submitted in partial fulfilment of the requirement for the award of the degree of Diploma of Electrical Engineering (Electronics / Telecommunication / Instrumentation / Computer)

Faculty of Electrical Engineering UniversitiTeknologi MARA

MARCH 2013

"I declare that this report entitled "AUTOMATIC ADAPTER CUT OFF" is the result of my own group research except as cited in the references. The report has not been accepted for any degree and is not concurrently submitted in candidature of any other degree."

:

:

:

•

:

•

Signature Name Date

any".

SHAHRUL NAIM ROSLAN 7 /4/2a3

Signature	
Name	
Date	

UBAIDULLAH MASNOOR 7/4/2013

Signature : <u>MUHAMMAD AFIQ NAUFAL MOHD NOR</u> Date : <u>7/4/2013</u>

ACKNOWLEDGEMENT

In the name of ALLAH S.W.T Most gracious and Most merciful.

First of all, we would felt very grateful because we successfully completed this project until this stage. We like to express a huge thanks to those people who involved in helping us to complete this project. Special thanks to EEE368 coordinator Madam SitiAisyahbtCheKar for giving us a lot of chances to complete this project at this stage successfully even there were many obstacles we have to face during the making of this project. This proposal will not going up great without he help from our supervisor Madam MasturabtSidek, who helps us until the final stage of our project by providing us with guidance, knowledge and advice on how to do the project correctly and smoothly. Also, extra thanks to our former supervisor Miss NurIdawati Mad Enzai who helps us choosing the title of our project and getting us through the earlier stage of this project.

Besides, we also want to thanks to the lecturers and staffs from the faculty of electrical engineering for their cooperation, encouragement and giving us a lot of important tips and information during preparation for the project completing process. They also help with giving us great suggestions and overcome problems mainly seeking for some information regarding to this project.

Another special thanks to our friends who is willing to help us during the process to finish this project and their support to us. With the help from this peoples', we finally have completed our project successfully. By involving ourselves in this project, we could know how to value the cooperation between us in a group, toleration between us and patient in order to complete this project on time. Lastly we would like to say thank you to those people that involved in completing this project.

ABSTRACT

Due to the overdue charge of battery, they tend to swell and may explode if it is critically over the battery power storage limit. Typical charger did not have a current limitation supply and therefore the battery continue to charge as long as it is connected to the power supply. This will cause the battery to damage and broken. Hence, techniques to cut off the current supply to the battery were applied when it is full in order to save power consumption and battery lifespan. The usage of voltage comparator and adjustable voltage regulator that will supply the voltage that only needed by the battery and will then be disconnected automatically form the battery when it's fully charged. In this project, analysis on the consumption of power and battery condition will be reported. Cutting off power supply enhancement was achieved by using the combination of two IC's compared to a normal battery charger with only using simple power supply circuit.

TABLE OF CONTENTS

CHAPTER	CONTENTS	PAGE
	DECLARATION	i
	DEDICATION	ii
	ACKNOWLEDGEMENTS	iii
	ABSTRACT	iv
	ABSTRAK	V
	TABLE OF CONTENTS	vi
	LIST OF TABLES	viii
	LIST OF FIGURES	viii
	LIST OF SYMBOLS	ix
	LIST OF ABBREVIATIONS	ix
	LIST OF APPENDICES	х

1 INTRODUCTION

1.1	Background	2
1.2	Problem Statement	3
1.3.	Objective	4
1.4	Scopes	5

2 LITERATURE REVIEW

Hardware Development

2.1	Voltage Regulator	6
2.1.1	Fixed Voltage Regulator	6
2.1.2	Adjustable Voltage Regulator	7
2.1.3	OP Amp `	8