### PORTABLE REMOTE SOCKET

# AFIF NOR BIN NORAZMAN FIRDAUS BIN HASHIM KHUZAIFI AKILI BIN DARAMI

A project report submitted in partial fulfilment of the requirements for the award of the degree of Diploma of Electrical Engineering (Instrumentations).

Faculty of Electrical Engineering

Universiti Teknologi MARA

## APRIL 2015

"I declare that this report entitled "*Portable Remote Socket*" 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	:	AFIF NOR BIN NORAZMAN
Date	:	5/4/15

Signature FIRDAUS BIN HASHIM Name : : 5/4/2015 Date

Signature

Alla

Name

KHUZAIFI AKILI BIN DARAMI

Date

: 5/4/2015

#### ACKNOLEDGEMENT

All the praise and thanks to Allah SWT for his blessing and giving us the health, strength and the opportunity to complete this final year project. Alhamdulillah with His blessing the project was able to finish within the time given and we have gained experience and knowledge in completing this project. Without opportunity given, we may not be able to do and complete this project successfully.

Particularly we would like to express thousands of gratitude and appreciation to my project supervisor Mohamad Yusof Bin Mat Zain for his guidance and advices that help us throughout the hard work of completing this project no matter in what condition and time. Without his hard work and cooperation this project may not have achieved its completion. He also gave us encouragement to solve all the problems occur by ourselves.

We would also like to express our gratitude to our panels for contribute a lot of ideas and comments to improve our project and presentation skills. Moreover, we would like to express our appreciation to all our lecturers that had taught us regarding to the theories and practical of electrical matter. Lastly we would like to thank our friends, lab technicians and UiTM staffs for suggestion and assistance in completing this project.

#### ABSTRACT

The Portable Remote Socket (PRS) is a portable socket that has capabilities to turn ON and OFF the socket by using remote. The remote can be used within eight meters without obstacles and six meters with obstacles. This project was invented with a main purpose to help the elderly and handicap peoples that have physical problem that contribute to limited movement. In addition, as an alternative, this device also allows the users to control the socket by using pushbuttons on the device.

This project consist two parts of working flow which is receiving signal and relay control. For receiving command part, the controller (Arduino) will receive signal either from pushbuttons or remote. When the remote or pushbutton is pressed, it will trigger to "HIGH" with pulse width modulation (PWM) signal. On the others part, after processing the input, controller (Arduino) will send command in order to trigger the relays through transistors which act as electronic switch. Each of the sockets is connected with indicator light that will operate simultaneously with the socket.

## **TABLE OF CONTENTS**

	PAGE
ACKNOWLEDGEMENT	iv
ABSTRACT	v
TABLE OF CONTENTS	vi
LIST OF FIGURES	ix
CHAPTER 1: INTRODUCTION	1
1.0 Background of project	1
1.1 Problem statement	2
1.2 Objectives of project	3
1.3 Limitation of project	3
CHAPTER 2: LITERATURE REVIEW	5
2.0 Chapter Overview	5
2.1 Knowledge of the Components	5
2.1.1 RF Module	5
2.1.2 Resistor	6
2.1.3 AC Lamp	8
2.1.4 Relay	9
2.1.5 Transistor	10
2.1.6 Arduino	11
2.1.7 Pushbutton	12
2.2 Knowledge of the Software	13
2.1.1 NI Multisim	13
2.1.2 Proteus 8 Professional	14
2.2.3 Arduino	15