

**FACULTY OF ELECTRICAL ENGINEERING
UNIVERSITI TEKNOLOGI MARA TERENGGANU**

FINAL REPORT OF DIPLOMA PROJECT

REMOTE CURTAIN

MARCH 2013

STUDENTS

IKHWAN ALIF BIN AHAMAD NORDIN

2010699126

SHHRUL IKHWAN BIN SULONG

2010860192

SUPERVISOR'S NAME

MDM. SYILA IZAWANA BINTI ISMAIL

LIST OF FIGURES

Figure 2.1	Resistor	5
Figure 2.2	Capacitor	5
Figure 2.3	Transformer	6
Figure 2.4	Relay 12V	7
Figure 2.5	Crystal oscillator	8
Figure 2.6	Transistor	9
Figure 2.7	Diode	10
Figure 2.8	DC Motor	11
Figure 2.9	Triacs	12
Figure 2.10	Infrared LED	13
Figure 2.13	Solder	15
Figure 2.14	Printed circuit board	16
Figure 2.15	Printed circuit board holder	17
Figure 2.16	Connector block type	18
Figure 2.17	Breadboard	19
Figure 2.18	Strip board	20
Figure 2.19	Wire jumper	21
Figure 2.18	IR sensor	22
Figure 3.1	Methodology of project	24
Figure 3.2	ISIS proteus	25
Figure 3.3	Complete circuit design	25
Figure 3.4	PCB layout	26
Figure 3.5	Methodology implement circuit	28
Figure 3.6	ISIS protues	29
Figure 3.7	Pop up device select	29
Figure 3.8	Show of list of the component	30
Figure 3.9	Arrangement of component	31
Figure 3.10	Simulation circuit	32

Figure 3.11	Save the circuit	32
Figure 3.12	Methodology using Multisim	33
Figure 3.13	The PCB layout using Multisim	34
Figure 3.14	PCB fabrication process flow	35
Figure 3.15	PCB shear cutter	36
Figure 3.16	Brushing machine	37
Figure 3.17	Mega sheet laminator	38
Figure 3.18	UV exposure	39
Figure 3.19	Spray etching machine	40
Figure 3.20	Photoresist stripper machine	40
Figure 3.21	Flowchart of operation circuit	41
Figure 4.1	Transmitter remote circuit	44
Figure 4.2	Receiver circuit	45
Figure 4.3	Prototype of project	46
Figure 4.4	Forward button	47
Figure 4.5	Close the curtain	47
Figure 4.6	Reverse button	48
Figure 4.7	Open curtain	48

ACKNOWLEDGEMENT

All praise be Allah, most gracious, most merciful – peace and blessing of Allah be on his last messenger, Prophet Muhammad S.A.W. who has shown us the right way through the darkness of ignorance.

Special thanks to our supervisor, Mdm. Syila Izawana of her kindness, support and concern to us. Without her our project would not be finish and thank you also for her willingness to lend us some of her equipment to help with the progress of our work.

Special thanks also to all of our friends and lecturer for their suggestion and opinion that help us a lot by giving us idea and motivation allowing us to improve our project and solve our problems. Thank you also to all of the judge and panel that have graded our work allowing and giving us pleasant comment allowing us fix and improve our project. We also want to give our thanks' to the Lab Technician that give us help and guide on making our PCB and also allowing us to use the equipment. Thank you also to our coordinator of EEE358 (Final Year Project 1) En Hasrul Hafiz bin Abu Bakar and our coordinator of EEE368 (Final Year Project 2) Puan Aisyah binti Che Kar that give us guide and helps on completing our report.

So, thank you again to all of the people involved in finishing our final report and project to become successful.

ABSTRACT

As we know, human being has a limitation of ability to do some work. So, the invention of many devices will make one's life easier and more practical. Hence, we make a project that is useful and reasonable for our life today which called 'Remote Curtain'. This project is in category home technology, but it also can be used in various places for example at the hotel, hall and more. The purposed of this project is to make it easy for people to get rid of open and close the curtain manually. This project consists of two part which are transmitter part and receiver part. For the transmitter part has encoder IC HT12A and IR LED to transmit the signal to receiver. For the receiver part has decoder and IR sensor to receive the signal to be sent to output. The main output of this project is movement of 12V DC motor. This motor will move the curtain open or close depend on the signal given for forward or reverse the motor. This project has been created because it will be useful to those who not able to open or close the curtain manually like old person, handicap person and more. With this system, I believe that we can able to overcome the problem.