

**FACULTY OF ELECTRICAL ENGINEERING
UNIVERSITI TEKNOLOGI MARA
PULAU PINANG**

**FINAL YEAR PROJECT 1
(EEE358)**

DUAL FUNCTION GRASS CUTTER

MUHAMMAD AMIRUL RASYID BIN MOHD MAHFODZ

MUHAMMAD FADLI BIN SONYRUDDIN

**SUPERVISOR
PUAN NUR FADHILAH BINTI JAMALUDIN**

SEMESTER JUNE – OCTOBER 201

**This report is submitted to the Faculty of Electrical Engineering ,
University Teknologi MARA (UiTM)
In partial fulfillment of the requirement for the award of Diploma in Electrical
Engineering.**

This report is approved by :

**Puan Nur Fadhilah Binti Jamaludin
(SUPERVISOR)**

Date :6/10/2016.....

ABSTRACT

Nowadays, the conventional grass cutter is danger if not use in the right way. It will harm the user and the animal when it is not follow the safety rules. Dual function grass cutter is simple yet powerful concepts, which use solar energy as a source. By using this system, it will saving the cost from using fossil fuel. Moreover, it use PIR sensor to move the dual function grass cutter automatically. Therefore, it can avoid collision and damage to the human or animals. For using the sensor it can improve the safety way for the user. This project were control by using PIC16F877A and need to burn a coding that were made into the PIC, the coding were made by using the software name MPLAB X IDE v1.85. The design prototype has been fabricated and the output was shown in the software name Proteus 8 Professional. Therefore, through this proposed techniques, it is expected that not only will efficiently as grass cutter but also as a cleaning purpose.

ACKNOWLEDGEMENT

First and foremost, I with my sincerest gratitude and special thanks to Puan Nur Fadhilah Binti Jamaludin, my supervisor who guide and keep me on the correct path.

We would like to express our deepest thanks to friends and parents that support in terms of cost and advice us to success our project.

We with my deepest sense of gratitude to all lecturers for their careful and precious guidance which were extremely valuable for my final year project.

Lastly, we with my regards and blessing and all of those who supported in any respect during the completion.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS.....ii

ABSTRACT.....iii

LIST OF FIGURES.....iv

LIST OF TABLESv

LIST OF ABBREVIATIONSvi

CHAPTER 1 INTRODUCTION..... 1

 1.1 Background of Study..... 1

 1.2 Problem Statement 3

 1.3 Objectives of Research 3

 1.4 Scope of Study 3

CHAPTER 2 MATERIALS AND METHOD..... 4

 2.1 Methodology 4

 2.1.1 Design flow chart 5

 2.2 Experimental setup 6

 2.3 Equipment and Component..... 8

CHAPTER 3 CIRCUIT DESIGN AND OPERATIONS 11

 3.1 Schematic Diagram 11

 3.1.1 Software Development..... 12

 3.1.2 Hardware Development 13

 3.2 Printed Circuit Board Design 14

 3.3 PCB Making..... 15

 3.3.1 PCB Process 17

 3.4 Drilling Process 21

 3.5 Soldering Process 22

CHAPTER 4 RESULT AND DISCUSSION..... 23

 4.1 Software Simulation Result..... 23