بسم الله الرحمن الرحيم

قال تعالى:

{وَلَقَدْ كَرَّمْنَا بَنِي آدَمَ وَحَمَلْنَاهُمْ فِي الْبَرِّ وَالْبَحْرِ وَرَزَقْنَاهُمْ مِّنَ الطَّيِّبَاتِ وَفَضَّلْنَاهُمْ عَلَى كَثِيرٍ مِّمَّنْ خَلَقْنَا تَفْضِيلاً (70)}

صدق الله العظيم

سورة الاسراء

DEDICATION

To my parents

For their unstinting support;

To my brothers & sisters,

who always shared my failures and happiness;

and To my colleagues

ACKNOWLEDGMENT

In the name of Allah, Most Gracious, and Most Merciful

Praise be to Almighty Allah (Subhanahu Wa Ta'ala) who gave me the courage and patience to carry out this work. Peace and blessing of Allah be upon his last prophet Mohammed (Sallulaho-Alaihe Wassalam) and all his companions (Sahaba), (Razi-Allaho-Anhum) who devoted their lives towards the prosperity and spread of Islam.

My deep appreciation and heartfull gratitude goes to my supervisor Dr. MARTINO OJWOK AJANG AJANGNAY for his kindness, constant endeavor, guidance and the numerous moments of attention he devoted throughout this work.

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Finally, my sincere thankfulness goes to my family for their prayers and encouragement that always helped me to take the right step in life.

Abstract

The aim of this project is to design a controller to control power to the compressor such that it stops the compressor from sapping engine power when going up hills or during overtaking by using PIC microcontroller 16F877. The Mikro C software will be used to write C code for PIC 16F877 microcontroller. The hexadecimal code generate from Mikro C compiler will be downloaded in microcontroller memory by programmer (PICH FLASH). Proteus software have been used to simulate the controller performance before implementing the controller practically on test board and Printed Circuit Board (PCB).

الملخـــــــص

الهدف الاساسي من هذا المشروع هو تصميم وحدة تحكم للسيطرة على نظام التكييف في السيارة حيث يتم إيقاف النظام في حالة صعود السيارة الي منطقة مرتفعة أو زيادة الضغط علي خانق الوقود في حالة التخطي ويتم التحكم بإستخدام PIC16F877 و تمت برمجتها بإستخدام لغة ال C بواسطة برنامج Mikro C وتحميله علي ذاكرة المتحكمة ثم محاكاتها في برنامج Protues بعد ذلك تم إختبار الدائرة علي لوحة الاختبار وتوصيلها علي لوحة الدوائر المطبوعة.

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ADC	-	analog to digital converter
ANSI	-	American National Stander Institute
CMOS	-	Complementary Metal Oxide Semiconductor
DAC	-	Digital to analog converter
DIL	-	Dual In Line package
IDE	-	Integrated Drive Electronics
I^2C	-	Inter Integrated Circuit
LED	-	Light emit diode
MCU	-	Multipoint Control Unit
PIC	-	Programmable Integrated Circuit
PCB	-	printed circuit board
PCL	-	Proteus configuration language
SOIC	-	Small Outline Integrated Circuit
SPI	-	Serial Peripheral Interface Bus
UV	-	Ultra Violet light
USART	-	Universal Synchronous A Synchronous Receiver/ Transmitter
WOT	-	Wide open throttle

LIST OF APPENDICES