APPLICATION OF RADIO FREQUENCY IDENTIFICATION IN A CAR SECURITY IGNITION SWITCH SYSTEM

Thesis is presented in the partial fulfillment for the award of the
Bachelor of Engineering (Hons) Electrical
UNIVERSITI TEKNOLOGI MARA (UiTM)

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MAY 2010

ACKNOWLEDGEMENT

In the name of ALLAH the Most Gracious and the Most Merciful, it is with the deepest gratitude that ALLAH gives me strength and ability to finish my project and I hope with the sincere from ALLAH, all the experienced obtained during this project will be the best guide for me to be more committed for my future carrier.

Firstly, with the deepest of honor, I would like to express to my advisor, Pn. Suzi Seroja Sarnin for her constant encouragement, guidance and research support in order to make this project successfully achieve its goal. Besides, her technical advice and suggestion help me to be more understood and has a wonderful learning experience.

Furthermore, I also would like to thank my beloved parent who has always stood behind me regardless of my decision. Besides, they always give me constant support and encouragement throughout my degrees study. Lastly, I want to thank all my lecturers, fellow staffs and friends who are directly or indirectly helping me upon completing this project. Once again, I really hope that all the effort in order to complete this project will be the starting point for my professional career.

ABSTRACT

This project is focusing on the implementation of the RFID system in the automation industries or more specifically, on a car security ignition switch system. The system takes inputs from the user unique identification card and transfer the data embedded in it to the RF transmitter. It communicates through an IDR-232 RFID reader which sends signals to PIC16F877A microcontroller to remotely control each data that has been read and send it into PIC16F876A microcontroller which is responsible for the radio frequency transmitter for further data transmission. There are some add up component that can help the system to be applicable with the real life application such as liquid crystal display screen and ignition switch indicator. For this project, C programming language is used to write commands which are uploaded to the PIC chip through a boot loader. The software that has been choose for developing the command language for the system is MPLAB IDE v8.43 originate from Microchip software product. There is an experiment that has been constructed to determine the detection range of the RFID reader which can help for the future design when the system is being installed in car. The benefits from this project completion are it can increase the security level of cars, reducing the index of car stolen case and make the use of high level car security system is affordable for many people.

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CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

Research on statistics shows that in Malaysia, a car is stolen every 11 seconds. Popular brands among thieves include Proton, Honda, Toyota and Perodua. Statistics on the year 2005 have shown that in the first six months that year alone, 35888 vehicles were stolen, leading to MYR 357 million in losses. The number is broken down to motorcycles (26096 cases), cars (4756 cases), and vans/lorries (3036 cases). Vehicle theft contributes 45% which is almost half of the country's overall crime index for the first half of that year. This was an increase from 41% for year before. On average, it takes a carjacker 3 minutes to steal a car, and within the next half an hour it could be already stripped and sold for spare parts or shipped out of the country as far as South Africa. A stolen car is driven to a warehouse where it is sprayed a new layer of paint, and chassis and registration numbers are altered if it is decided to be shipped out of the country to be sold. Vehicles stolen near the borders like Johor are usually driven out of the country immediately after the preparation and efforts by the police to recover the vehicles are unsuccessful due to lack of cooperation by the neighboring countries. [15]