



**FACULTY OF ELECTRICAL ENGINEERING
UNIVERSITY OF TECHNOLOGY MARA
SHAH ALAM
SELANGOR DARUL EHSAN**

**IMMOBILIZER ENGINE CONTROL UNIT (ECU) USING
RADIO FREQUENCY MODULE APPLICATION**

**MOHD HAZWAN BIN MD TAHIR
BACHELOR OF ELECTRICAL ENGINEERING (HONOUR)
2006685495**

MAY 2010

**IMMOBILIZER ENGINE CONTROL UNIT (ECU) USING RADIO
FREQUENCY MODULE APPLICATION**

This report is present in partial fulfilment for the award of the
Bachelor of Electrical Engineering (Honours)

Of

UNIVERSITI TEKNOLOGI MARA (UiTM)



**MOHD HAZWAN BIN MD TAHIR
FACULTY OF ELECTRICAL ENGINEERING
UNIVERSITI TEKNOLOGI MARA (UiTM)
SHAH ALAM
MAY 2010**

ACKNOWLEDGEMENT

In name of ALLAH

Most Gracious and Most Merciful

First and foremost, I wish to express my deep gratitude to my supervisor, Pn. Suzi Seroja Bt. Sarnin for all her valuable guidance, assistance and support throughout my studies at the Universiti Teknologi MARA. She helped me a lot to understand this project.

I wish to thank to all of my friends especially to final year degree student in electrical engineering for their suggestions and support on this project. Their comments on this project are greatly appreciated.

Thanks also to my colleagues and friends who have constantly provided the comfortable environment conducive to successfully complete this study.

Most importantly I extend my gratitude to my parents and for their support, patience and assurance during my pursuit for higher studies. They have encouraged me throughout my education, and I will always be grateful for their sacrifice, generosity and love.

Mohd Hazwan B. Md Tahir
Faculty of Electrical Engineering
Universiti Teknologi Mara (UiTM)
Shah Alam, Selangor Darul Ehsan

ABSTRACT

Automotive applications are increasingly influenced by the safety requirement. Yet their complexity and costs should not increase. Thus, this paper introduces the conceptual understanding and strategy of Radio Frequency Module application to be deployed in vehicle security system. Due to that, an Immobilizer Engine Control Unit (ECU) using Radio Frequency Module application innovated that utilizes the uses of microcontroller to provide the safety functions in any vehicle. This system analyzes the input receive at the Radio Frequency receiver from Radio Frequency transmitter to connecting the power supply to the engine ignition part before cranking the starter motor. The wireless characteristics of Radio Frequency Module enhance the system to be unreachable by the vehicle thieves and where cost are not more being a problem to the community upon their vehicle safety.

TABLE OF CONTENTS

CHAPTER TITLE	PAGE
DECLARATION	i
ACKNOWLEDGEMENT	ii
ABSTRACT	iii
TABLE OF CONTENTS	iv
LIST OF FIGURES	vii
LIST OF TABLES	ix
LIST OF SYMBOL AND ABBREVIATIONS	x
1. INTRODUCTION	1
1.1 Overview	1
1.2 Objective	2
1.3 Scope of Study	2
1.4 Project Background	3
1.5 Thesis Organization	5
2. LITERATURE REVIEW	6
2.1 Introduction	6