

“TELEPHONE OPERATED REMOTE CONTROL”

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This report is submitted in partial fulfillment of requirements for the award of
Bachelor of Electronic Engineering (Industrial Electronics) with Honours.

Faculty of Electronic and Computer Engineering

University Teknikal Malaysia Melaka

MEI 2011



UNIVERSITI TEKNIKAL MALAYSIA MELAKA

FAKULTI KEJURUTERAAN ELEKTRONIK DAN KEJURUTERAAN KOMPUTER

BORANG PENGESAHAN STATUS LAPORAN

PROJEK SARJANA MUDA II

Tajuk Projek : "TELEPHONE OPERATED REMOTE CONTROL"

Sesi Pengajian :

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Date:

*Dedicated to my parents, Abdullah Bin Mat Akib and Hasnah Binti Hasan , my
siblings and all my beloved persons.*

ACKNOWLEDGEMENT

First of all, I would like to thank God for his blessing, and I also want to express my deepest gratitude to my supervisor Engr.Muzafar Bin Ismail for support and guidance throughout this project running and completion of this report.

My deepest appreciation also goes out to Pn. Rohaidah Binti Mahidin who gave me many needed support, encouragement and help throughout my project's improvement, not to forget, thanks to my family and fellow friends who encouraged me.

Finally, thank you to all those involved directly and indirectly helping me out during my PSM 1 & PSM II which I can't state out every one of them. A special expression of gratitude is extended to everyone for their tolerance and patience in doing all the things. I must admit that they had enriched me in many ways and words alone are not enough to express my gratitude.

ABSTRACT

Here is a circuit which enables switching teleremote “ON” and “OFF” from the lights of home appliances through the phone line. It can be used to switch devices remotely without the address range. Dial a phone number that connects to the system and the transformer will convert the 240V to 12V. It's fitting that this system is only using 5V and 12V. After dialing, the system will be connected to the ring detector and connected to a Dual Tone Multiple Frequency that will convert the signals into Binary Code Decoder converter. DTMF signals on telephone instrument are used as a control signal IC CM8880 (DTMF to BCD converter) is received. This output will be connected to the PIC 16F873 (converting 4 to 16 line demultiplexer), and dialing or pressing any key will not activate any system until you enter a code to activate the starter entering the keyword password set by the user. Then, when we started pressing a DTMF tone to produce high frequency 1209Hz and 697Hz low frequency output converted to BCD '0001 'demultiplexed into digit “1”, output and activating the relay switching on the equipment and the process will continues as we desire. To start this system, pressing the *(password number) #. And to begin the process of ON or OFF can be done after a successful password is detected by the system. This system aims to facilitate the user when no user at home and diversify the home phone line. If there are people who make calls to home phone number is connected to telephone operated remote control, the device will establish a call, no tone will be heard of what will happen unless someone pressing the *(password number)# button that will launch the system.

ABSTRAK

Berikut ini adalah litar teleremote yang membolehkan switching “ON” dan “OFF” dari peralatan rumah iaitu lampu melalui saluran telefon. Hal ini boleh digunakan untuk bertukar-tukar peralatan dari jarak jauh tanpa mengatasi liputan. Mendail nombor telefon yang disambungkan ke sistem dan transformer akan menukarkan 240V kepada 12V. Ia sesuai dengan sistem ini yang hanya menggunakan 5V dan 12V. Selepas mendail, sistem akan disambung kepada ring detector dan disambung kepada Dual Tone Multiple Frequency yang akan menukarkan isyarat kepada Binary Code Decoder converter. Isyarat DTMF pada instrumen telefon digunakan sebagai isyarat kawalan IC CM8880 (konverter DTMF untuk BCD). Output ini akan dihubungkan ke IC PIC16F873 (menukarkan 4 to 16 line demultiplexer) dan menekan sebarang kekunci tidak akan mengaktifkan apa-apa sampai pengguna memasukkan kod sistem mengaktifkan starter iaitu memasukkan kata kunci password yang telah ditetapkan. Setelah itu, bila kita mula menekan 1 menghasilkan nada DTMF frequency high 1209Hz dan frequency low 697Hz ditukar untuk keluaran Binary Code Decimal '0001' demultiplexed menjadi digit '1', output dan mengaktifkan relay switching pada peralatan dan proses akan berterusan seperti yang kita kehendaki. Untuk memulakan sistem ini, tekan butang password *(nombor password) #. Dan untuk memulakan proses ON atau OFF boleh dilakukan selepas password berjaya dikesan oleh sistem. Sistem ini bertujuan untuk memudahkan pengguna ketika tidak ada pengguna di rumah dan memperbagaikan penggunaan saluran telefon rumah.

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CHAPTER I

INTRODUCTION

1.0 PROJECT INTRODUCTION

In the world of the sophisticated and modern, there is a variety of equipment that has been created and modified for use as a day. Most products are designed to solve the various problems faced by each user. Normally, users often forget to switch off electrical appliances at home or anywhere else. So with this, our ideas emerge to create "Telephone Operated Remote Control". I also believe that this project has the potential to spread in the near future to contribute to the use of home and office.

The project is operated to control the equipment available at home and in offices such as controlling lights, air conditioners and so forth. This project can also be manipulated to control the equipment. Our group uses DTMF (Dual Tone Multi Frequency) to convert the frequency of home phone lines to activate or turn off appliances at home was something. Many of the tools we use to activate or turn off appliances at home or the office of an example IC CM8880 used to convert the frequency of phone lines to the binary code.

From the research I have conducted on the use of this tool, the concept of frequency conversion signal or a telephone line using DTMF in the toggle switch off electrical appliances at home and am an impact and effective results and quality. Accordingly, I deem that the project is to inspire and increase knowledge in the field of electronics.

1.1 PROJECT OBJECTIVES

The objectives in solving the problems are:-

1. To design system control component electric at home or office using line telephone and can control at long distance and can save the money, time and energy.
2. To produce a home control system is more advanced.
3. To design a tool that facilitates the control of home electrical equipment no matter where we are.
4. To study more about DTMF in the telephone coverage.
5. To learn the C language programming for PIC16F873 microcontroller.

1.2 PROBLEM STATEMENT

Based on the observations and the results, I find that many people forgot to cover equipment such as lights when they are outside their home areas. Most of these individuals provide a negative response against negligence if they do find the electric bill would increase from. This problem may occur because they forgot to turn off the electrical equipment while it is possible not to know the status on or off electrical appliances when they are outside the area their home. It also, when they remember that their electrical equipment is switched off, they might

complain because they had to come home again to turn off the equipment. This situation has led to wastage of the cost, time and energy is due.

1.3 SCOPE

Work scope for this project including:-

1. This project consists of the designation of hardware architecture.
2. The two key elements in the development of this project are subjected to the usage of DTMF and another IC.
3. This project converge have procedure in convert bite DTMF to binary coded.
4. A successive invention of a project will follow some important point such as communication, planning, modeling, construction and deployment.

1.4 MOTIVATION OF THE WORK

In modern times, many sophisticated tools have been created. Equipment that is created is more likely to provide the facilities and meet the needs of users who exceed the limit. Production equipment is in line with technological developments. This generated a lot of equipment that provides more convenience to consumers who are busy chasing the dream to them on or off the lights when the user is outside the house and makes it easier to on or off the lights when they are forced to return home late. This situation provides many benefits to consumers because the lights will be automatically installed inside and outside the home will provide some satisfaction to the user to leave the house for a while and some will frighten thieves to invade the house because the

landlord considers that there is in the house. It also will create tools that can also be applied to the area office.



Figure 1.1: Currently issues in article

1.5 METHODOLOGY

Implementation and works of the project are summarized into the flow chart as shown in Figure 1.1. Gantt charts as shown in Figure 1.2 show the detail of the works of the project that had been implemented in the first and second semester.

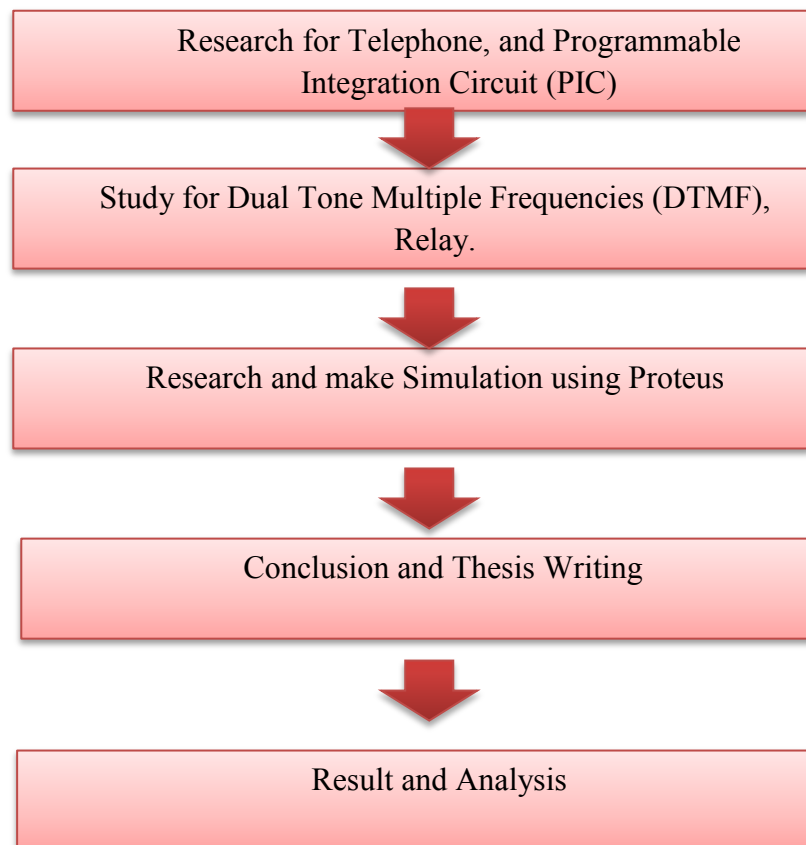


Figure 1.2: Overview Project Flow

1.6 FLOW CHART

NO	ACTIVITY	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W
		1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1
1	Discussion and getting PSM title from supervisor	Yellow	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
2	Information searching	Yellow	Yellow	Yellow	Yellow	Yellow	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
3	Preparation of proposal	Yellow	Yellow	Yellow	Yellow	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
4	Proposal conferencing	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
5	Submission of proposal	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
6	Study of PIC programming from books and internet	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
7	software develop	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
8	Hardware develop	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
9	Integration hardware and software	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue

Figure 1.3: Gantt chart for Project PSM 1

NO	ACTIVITY	W	W	W	W	W	W	W	W	W	W	W	W	W
		1	2	3	4	5	6	7	8	9	10	11	12	13
1	Discussion and getting PSM title from supervisor					S								
2	Information searching					E								
3	Preparation of proposal					M								
4	Proposal conferencing					E								
5	Submission of proposal					S								
						T								
						A								
						B								
						R								
						E								
						A								
						K								

Figure 1.4: Gantt chart for Project PSM 2

1.7 STRUCTURE OF THE THESIS

This thesis consists of five chapters including this introduction follow the university thesis standard which including objectives, scope of the works, problem statement, and motivation of the work. In second chapter present the literature review of interaction of Programmable Integration Circuit (PIC), Telephone Operate Remote Control, and method of the close or open the light or fan. The structure of telephone system also will be discussed in this chapter and its function within relay. The hardware and software analysis will be present at chapter three. Based on PIC programming and the flow how telephone operator remote control operation. In this chapter are also equipped with the methodology, process flow chart and block of movement system.

Chapter 4 represents the results of both simulation and hardware implementation. It also contains the analysis of the project that has been created. This chapter also contains picture and photo for the initial results of this project.

Chapter 5 discusses the overall conclusion and limitations of the project. This chapter includes suggestion to improve this project for future work. The overall conclusion of this project is shown.

CHAPTER II

LITERATURE REVIEW

2.0 INTRODUCTION

During this developmental process, many references and studies have been done to meet the desired objectives. In the search for reference materials is an important factor in ensuring the overall effectiveness of the completed projects and reports.

In addition, it also can show consumers that this project has an understanding of the system developed by the author. So with this, some information related to this project has been sought and collected for the project will be known better. The study was made on the components used in this project.

In addition, the discussion of the data required as reference materials and guidelines on the planned project. In addition, testing or studies may be conducted by accessing the Internet and reference books or daily newspapers. Information obtained from all lecturers who are knowledgeable about this project.

The results of the study that was done, any weaknesses and advantages of the existing product were available. Any weakness in this product will be handled carefully, and all the good will be used to produce a product that has its own advantages and meet the needs of users.

2.1 METHOD OF THE CLOSE OR OPEN THE LIGHT OR FAN

1. Turn off the switch that is on the wall.



Figure 2.1: Switch Lights.

2. Using the timer (timer) to open and close the lights.



Figure 2.2: Timer