

PORTABLE MASSAGER WITH THE LOW COST

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Dedicated, in thankful appreciation for support, encouragement and understandings to my beloved mother, father, brothers and sisters

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Thank You

ABSTRAK

Projek ini bertujuan untuk menghasilkan satu litar Pengurut mudah Alih dengan 3 mod yang berbeza boleh digunakan untuk mengurut mana-mana bahagian badan. Sistem ini dilengkapi dengan penunjuk masa operasi bagi keselesaan pengguna. Projek ini dicipta dalam saiz kecil dan mudah alih . Binaan asas projek ini terdiri dari motor a.t yang dikawal oleh PIC 16F873. Program PIC memainkan satu peranan penting untuk menentukan pergerakan motor sama ada perlahan, sederhana, kuat menggunakan konsep pemodulatan lebar denyut(PWM). Selain itu, pengurut ini juga menggunakan pemandu motor L293D untuk mengaktifkan motor Pengurut ini mampu dimiliki oleh semua pengguna kerana kosnya yang rendah dan harga yang berpatutan.

ABSTRACT

This project aims to generate one circuit Portable massager with 3 different modes which can be used to massage any part of body. This portable massager consists of operating time indicator for user convenience. This project created in small size and portable .This project consisted of DC motor which controlled by PIC 16F873. PIC's program play an important role to determine movement motor either slow, medium, strong using the concept pulse width modulation (PWM). Apart from that, this massager also use driver motor L293D to activate the motor. This portable massager is affordable to different type of user because of reasonable prices.

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CHAPTER 1

INTRODUCTION

1.1 Overview

Massage is a treatment or practice of soft tissue manipulation with physical, functional, and in some cases psychological purposes and goals. The word comes from the French massage "friction of kneading," or from Arabic massa meaning "to touch, feel or handle" or from Latin massa meaning "mass, dough". (In distinction the ancient Greek word for massage was anatrispsis, and the Latin was frictio). An older etymology may even have been the Hebrew me-sakj "to anoint with oil". Massage involves acting on and manipulating the client's body with pressure (structured, unstructured, stationary, and/or moving), tension, motion, or vibration done manually or with mechanical aids. Target tissues may include muscles, tendons, ligaments, skin, joints, or other connective tissue, as well as lymphatic vessels, and/or organs of the gastrointestinal system. Massage can be applied with the hands, fingers, elbows, forearm, and feet. There are over eighty different massage modalities. The most cited reasons for introducing massage have been client demand and perceived clinical effectiveness. In professional settings massage involves the client being treated while lying on a massage table, sitting in a massage chair, or lying on a mat on the floor. The massage subject may be fully or partly unclothed. Parts of the body may be covered with towels or sheets.

1.1.1 History of Massage Treatment

The use of massage for healing purposes dates back 4,000 years in Chinese medical literature and continues to be an important aspect of Traditional Chinese Medicine (TCM) today. A contemporary form of massage known as Swedish massage was introduced to the United States in the 1850s. By the end of the 19th century, a significant number of American doctors were practicing this manual technique and the nation's first massage therapy clinics opened its doors to the public.

In the early 20th century, the rise of technology and prescription drugs began to overshadow massage therapy. For the next several decades, massage remained dormant and only a few therapists continued to practice the "ancient" technique. During the 1970s, however, both the general public as well as the medical profession began to take notice of alternative medicine and mind-body therapies, which thrust massage therapy back into the limelight. Today, there are more than 125,000 massage therapists practicing in the United States and their numbers are growing rapidly to keep up with the more than 80 million massage therapy appointments made every year.

1.1.2 Beneficial Effects

Peer-reviewed medical research has shown that the benefits of massage include pain relief, reduced trait anxiety and depression, and temporarily reduced blood pressure, heart rate, and state anxiety. Theories behind what massage might do include blocking no inception (gate control theory), activating the parasympathetic nervous system which may stimulate the release of endorphins and serotonin, preventing fibrosis or scar tissue, increasing the flow of lymph, and improving sleep but such effects are yet to be supported by well designed clinical studies.

1.1.3 Types of Massage Treatment

There are nearly 100 different massage and body work techniques. Each technique is designed to achieve a specific goal.

- i) Back & Body Massagers
- ii) Foot Massagers
- iii) Electric Massagers
- iv) Wooden Massagers
- v) Face Massager
- vi) Massager Machine

1.1.4 Future of Massage Treatment

More research is needed to determine how effective massage therapy is, which health problems improve the most from this technique, and whether it is more cost-effective than other types of treatment. Although massage is usually offered in the community by private practitioners, it is slowly being integrated into a variety of healthcare settings, such as hospice care facilities and hospitals.

1.2 Project Summary

This project aims to design a portable massager prototype with various modes. The massager is controlled by a low cost PIC and assisted by other circuit components. The massager has three different modes namely massage face, massage feet, and massage tired. The massager is furnished with an indicator operating time. The massager involves the use of a motor that connects with force torsion.

1.3 Objective of Project

To achieve goal of this project, some objectives has been fixed as line implementation guide.

- a) Massager system this have 3 modes different namely slow, medium and strong.
- b) It operate by using battery power
- c) Having circuit simple, small and low cost
- d) Two DC motor will be used for massager machine various this mode
- e) For time, should study amount of time minimum and minimum for process massage to decide right time and give impact to consumer.
- f) Know what the suitable program will be used supply PIC 16F873 software.

1.4 Problem Statement

Usually, the massager is expensive such as Ogawa and Osim. With the low cost massager which controlled by PIC, it is cheaper and more effective. In addition, the previous project used one mode only. But in this project, with the three mode massager were used by using battery power.

1.5 Scope of Project

- a) To design a portable massager circuit with 3 different modes powered by a battery.
- b) To design massager system that small and portable
- c) To design a portable massager that effective and low cost by using PIC 16F873
- d) To analyze and simulate the portable massager circuit by using Protel Advanced and PIC Board Pro.

1.6 Report Structure

This thesis containing 5 chapters and scopes of each chapter will be explained in detail.

The first chapter is related with the introduction explaining briefly about the project background, the objective, the problem statement, and the scope of work.

The second chapter would to discuss study and information which relating with the project. The information gathered from different type of source will be analyzed to choose the best technique for this project.

The third chapter explained the method or approaches which are used in problem solving technique. Technique and method selected were divided to 2 parts which are hardware and software used in this project.

The fourth chapter explained the result and discussion of this project.

The fifth chapter explained summarized this report and also future planning for this project.

CHAPTER II

LITERATURE RIVIEW

This chapter explained about the theory and concept of project which used to solve the problem of project.

2.1 System Model

The system consists 3 major parts; **INPUT**, **PROCESSOR** and **OUTPUT**

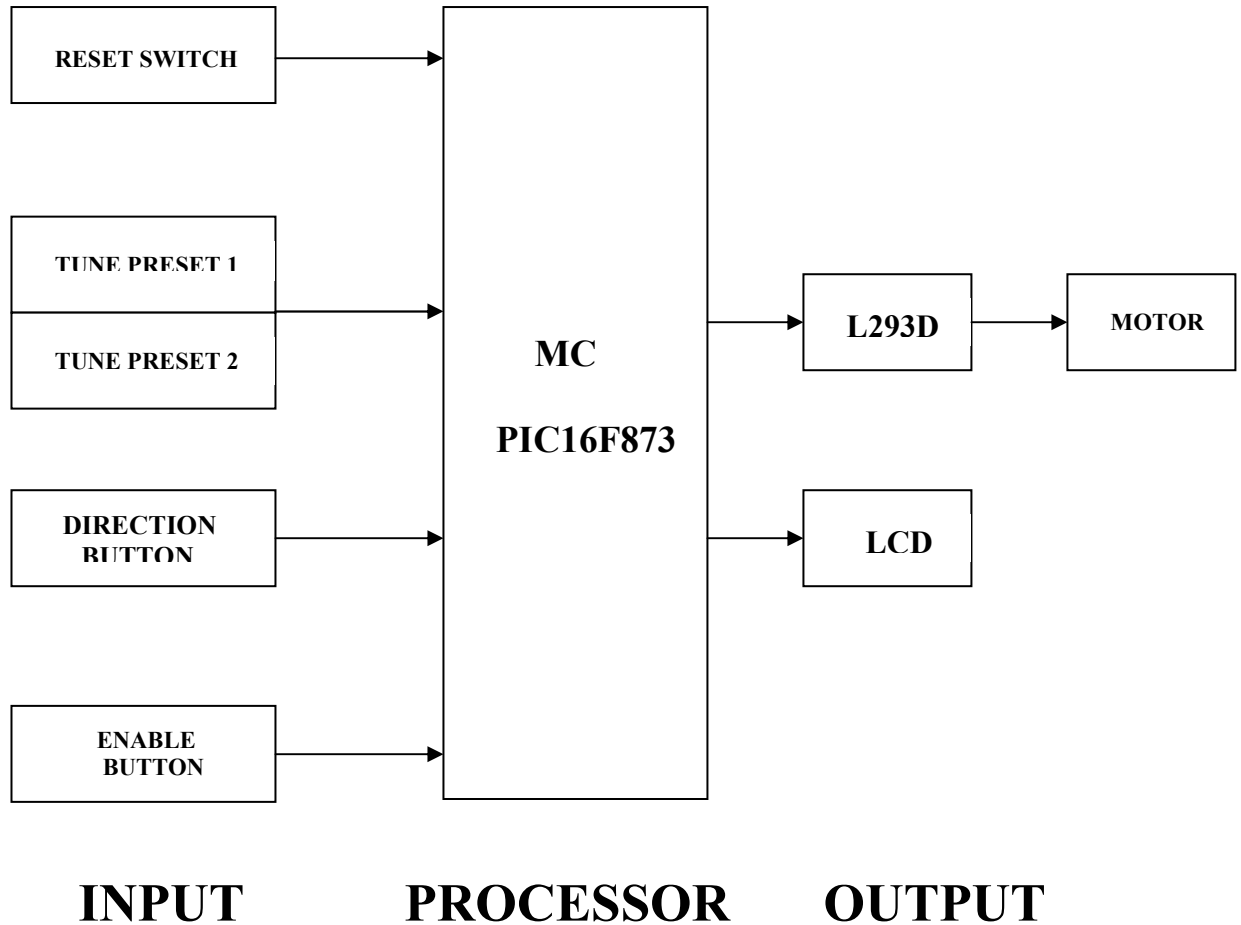


Figure 2.1 The System Model of Portable Massager

2.1.1 Brief Information the System Model

a) INPUT

The massager machines operate by using 9V battery power. It also consist Reset Switch, Preset Variable, Direction Button and Enable Button.

b) PROCESSOR

This part also known as microcontroller. This project used PIC 16F873 which is used to control the motor speed.

c) OUTPUT

This part consists of IC L293D which is use as driver to control DC motor and LCD HD44780 to display the instruction and percentage of motor speed.