MARA UNIVERSITY OF TECHNOLOGY
BUKIT MERTAJAM CAMPUS
PENANG

AMPLIFIER HIFI STEREO 20 WATTS

AZMAN BIN MOHAMED EUSOFF
98161940
EE112
ROZAIDE BIN YAAKUP
98162046
EE112

Faculty of Electrical Engineering
MARA UNIVERSITY OF TECHNOLOGY
13500 PERMATANG PAUH, PENANG

ACKNOWLEDGEMENT

We would like to thank my supervisor, Miss Taniza Bt. Tajuddin for her kindness, support and concern in completing our project report and for our presentation.

We would also like to express our thanks to all the lectures in UiTM for their time effort in helping us in our Project I and II subject.

We are also indebted to various help and discussion offered by all our friends who were willing to help us when we need.

Thanks again to all who help us in accomplishing our project.

ABSTRACT

This project is called "Amplifier HiFi Stereo 20Watts". This amplifier has been equipped with volume control, bass control, treble control and balance. The operation can be divided into four (4) different groups, they are, input signal, controlling, processing and output signal. Amplifier is used to increase an output signal from low input signal to a much greater output signal. In this amplifier, TDA2002 IC acts as an audio amplifier. It is well used with audio appliances such as walkman or discman.

TABLE OF CONTENTS

CHAPTER		PAGE
	ACKNOWLEDGEMENT	i
	ABSTRACT	ii
1.0	INTRODUCTION	01
2.0	CIRCUIT AND OPERATION	02
	2.1 Circuit Diagram	02
	2.2 PCB Layout	03
	2.3 Circuit Operation	04
	2.4 List Of Components	06
	2.5 Cost Of Project	07
3.0	COMPONENTS SPECIFICATIONS	08
	3.1 Integrated Circuit (IC)	08
	3.2 Resistors	10
	3.3 Capacitors	13
	3.4 Diodes	20
	3.5 Transformer	22
4.0	PROJECT IMPLEMENTATION	24
	4.1 Project 1 (KEU 280)	24
	4.1.1 Flow Chart	24
	4.1.2 Work Schedule	25
	4.1.3 Gantt Chart	28
	4.2 Project 2 (KEU 380)	29
	4.2.1 Flow Chart	29
	4.2.2 Work Schedule	31
	4.2.3 Gantt Chart	34
5.0	PROBLEMS AND TROUBLESHOOTING	35
	5.1 Problems	35
	5.2 Troubleshooting	35
6.0	CONCLUSION	36
	REFERENCES	37
	APPENDICES	

1.0 INTRODUCTION

An amplifier is an device capable of increasing the magnitude of a signal. An ideal amplifier provides infinite gain, zero output resistance and infinite input resistance. Although most transistors are capable of performing amplification, the term amplifier usually refers to the complete circuit in which the transistor operates. For example, the biasing resistors connected to a transistor would also be considered part of an amplifier circuit. A single amplifier circuit is often called a stage. Electronics circuit that combined more than one amplifier are called multistage amplifier. One advantage of using the multistage amplifier is that it is possible to combine the characteristics of one amplifier with those with another to produce a circuit with a combination of qualities. If an amplifier with a high input impedance is connected in series with an amplifier with a low output impedance, the result is the circuit with two excellent qualities. Another advantage is that the overall gain of a circuit can be increase by combining two amplifiers. When the output of one amplifier is connected to the input of another amplifier, it is called cascading.

Amplifiers are generally classified in term of their characteristics and inherent limitations. The most typical classification for an amplifier is frequency. There are three general divisions with in this category: audio frequency; radio frequency; and video frequency amplifiers. The frequency range of audio amplifiers is from approximately 15Hz to 20kHz. Frequencies above 20kHz are considered radio frequencies. Video amplifiers range is from 5Hz to over 10MHz. Amplifiers are also classified in terms of their voltage and power-handling capabilities. The main characteristics of linear amplifiers are as follows:-

i) The wave shape of the output signal is identical to the input signal;
ii) The transistors is usually biased near the center of its operating limits; and
iii) The transistors are never driven to either cutoff or saturation.

Amplifiers also are often classified in terms of signal strength. A signal can be any varying voltage, because many signals used in amplifiers circuits involves sine waves.