

FACULTY OF ELECTRICAL ENGINEERING
MARA UNIVERSITY OF TECHNOLOGY



FINAL REPORT OF KEU 380

DATE:

9 APRIL 2001

10 X 10 DOT BAR EQUALIZER

PREPARED BY:

MARZLISHAH BIN ZUBIR @ OMAR
97321859
AZMAN BIN WAHAB
97321960

CONSULTED BY:

MISS TANIZA BINTI TAJUDDIN

ABSTRACT

10 X 10 Dot Bar Equalizer is an electronic device that changes an audio signal to waveform output on an LED display board. This circuit used 100 pieces of LED , one unit of IC LM3915N (Display Driver), one unit of IC 4017B (Decade Counter), one unit of IC 4011 (Quad 2 Input NAND Gate), three variables resistors and two units of capacitors.

The Display Driver controls the display that interfaced to the LED display panel. Meanwhile the horizontal output was controlled by the Decade Counter and the Quad 2 Input NAND Gate is used to control the speed of the LEDs that had been interfaced by the Decade Counter.

A +9V supply (battery) is used to generate the circuit and the display will blink when an audio signal input pinned into the input point. This circuit acts like the other equalizer circuit but the simplification and the cost make it a bit different from the other equalizer circuit. Any audio system such as television, radio or any audio appliances commonly use this circuit. It is because these device can produce an audio signal and as a result, a beautiful light blinks is displayed through the arrangement of LED's.

ACKNOWLEDGEMENT

Many students learn electronics for different reason. Some students are preparing for the career, some wish a deeper understanding in electrical functions, some are concerned about the necessity of the knowledge, and some are learning electronics just because it is apart of their course requirements.

We have wrote this paperwork not just to fulfill our syllabus, but more than that, we want to create a new generation with a strong enthusiasm of the knowledge, especially in the electronic audio system. We hope that, when the latest engineering's generation have come through this book, at least, they have the concept about the function of an electronic equalizer.

We are also committed to make a strong brief explanation about this project, to make sure that all its readers can understand about how the circuit works, or in other words, the readers can know how the circuit makes a consistent output after an input of any kind of sound converted to the LED display panel.

As it is much better to know something about everything than to know everything about one thing. We hope that, this paperwork can be a guide or reference to our younger brother, so that they can know something about we called *digital electronic equalizer*.

Besides, we would like to put into words a very special thanks to Ms. Taniza Binti Tajuddin, our sincere supervisor, as she was gave us the very useful helps to complete this project paper. We also proud to thank our parents and our friends on giving us their courage and spirit to make this project a reality. Not forgotten, our former supervisor, Mr. Ali Bin Othman and Mrs. Erni Hamiza, thanks for your work planning suggestion at the beginning of this project.

ALHAMDULILLAH.....



Marzlishah Bin Zubir @ Omar

97321859

EE 111



Azman Bin Wahab

97321960

EE 112

TABLE OF CONTENT

ABSTRACT	i
ACKNOWLEDGEMENT	ii
OBJECTIVES	iii
1.0 INTRODUCTION	1
<ul style="list-style-type: none">• Circuit overview• Application• Advantages	
2.0 GENERAL INFORMATION	2
<ul style="list-style-type: none">• Circuit diagram• Circuit description• Circuit operation	
3.0 LIST OF COMPONENTS	5
4.0 THEORITICALLY EXPLAINATION ABOUT COMPONENTS	6
<ul style="list-style-type: none">• LM 3915N - Bar/Dot Display Driver• 4017B - Johnson Decade Counter With 10 Decoded Outputs• 4011B - Quad 2 Input NAND Gate Buffered B Series Gate• Capacitor• Resistor• LED - Light Emitting Diode	
5.0 IMPLEMENTATION	22
<ul style="list-style-type: none">• Gantt Chart	

OBJECTIVES

There are two main objectives why we are constructing and finishing this project? First, we want to convert any audio signal from any audio system to a waveform output on the LED display panel. To display the output wave form on the LED display panel was the second objectives. We have faced a lot of problem in reaching this objectives. Mistake in constructing the circuit on the breadboard and on the PCB was the most happened. But that not lust our spirit in finishing this project.