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MARA UNIVERSITY OF TECHNOLOGY
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REPORT OF DIPLOMA PROJECT KEU380

PROJECT TITLE

STEP UP CONVERTER WITH DIGITAL VOLTAGE DISPLAY

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ACNKNOWLEDGEMENT

In the name of Allah The Most Gracious and The Most Merciful .With The Selawat and Salam to Prophet Muhammad.

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ABSTRACT

The step up converter is the power unit to make the output voltage which is higher than the input voltage. The converter which was made can make stable output voltage with the input voltage of +12V where get from car battery as sauces. The stable output voltage can be controlled in the range of +13V to +32V.It makes the limitation value of the input electric current about 1.3A, the maximum with the input electric power is about 16W.In this project, the step up converter has been combine with digital voltage display circuit.

The digital voltage display circuit was adding up to measure the output voltage form the converter. The display circuit is an easy to build, but nevertheless very accurate and useful digital voltmeter. It has been designed as a panel meter and can be used in DC power supplies or anywhere else, it is necessary to have an accurate indication of the voltage present. All this sounds quite easy but it is in fact a series of very complex operations which are all made by the ADC IC with the help of a few external components which are used to configure the circuit for the job. The circuits built into the IC are an analogue to digital converter, a comparator, a clock, a decoder and a seven segment LED display driver. The circuit as it is described here can display any DC voltage in the range of 0-1999 Volts. The supply voltage for this circuit is +/- 5V (symmetrical) was taking from voltage regulator circuit. Power requirement is 200mA (maximum) and it has accuracy 0.1%.

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CHAPTER 1

INTRODUCTION

1.1 OBJECTIVES

The main purpose of the project is to design circuits that generate power or more specific to control the power. Below are some objectives included

- To measure output voltage from source.
- To control output voltage from source.
- To protect any devices that connected to the source from overload voltage.
- As additional knowledge to learn designing and testing circuit using simulation software.
- As requirement for project 2 KEU380