ABSTRACT

Nowadays we can see the field of electronics is growing very fast, there are many of electronic devices designed to make people easy to do their activities. The electronic devices would require a suitable energy source to work. As we know, the majority of electronic devices using Direct Current (DC) energy sources, which can be obtained from the energy storage battery and DC Power Supply. However, the energy source of batteries have a limited capacity so it can not continuously provide the energy. Therefore, the electronic devices to get a supply of energy continuously, then we can use the DC Power Supply as a source of energy.

In this final project designed a DC Switch Mode Power Supply with output voltage of 5 V and can operate at 220V AC input voltage. Topology that used in this design is using Cuk Converter topology. IC NE555 is used as Pulse Width Modulation (PWM) and IRFP460 as switching components.

In testing and analysis has been performed, the output obtained is -15,3 volt but the output will drop at the given load. Efficiencies generated by Cuk Regulator Power Supply by an average of 71.57%. In addition, the test also compare the results of testing the efficiency and voltage drop with a linear power supply. Voltage drop produce by Cuk Regulator Power Supply which is 6.67% smaller compared with the Linear Power Supply 12.7%. These results were obtained when using the 12Volt DC Lamp.

Keywords : DC Switch Mode Power Supply, Cuk Converter