

ABSTRACT

Along with the progress of time in the field of electronics, various electronic devices are created with a wide - range of models and usability in order to assist people in completing their work. Electronic devices can work with require an energy source in accordance needs. We all know, the majority of electronic devices utilizing energy sources Direct Current (DC). DC energy source can be obtained from the energy battery and DC Power Supply. Battery energy source has the disadvantage , disable to supply all the energy for long time. This is due to capacity of storage energy battery is limited. So that electronic devices to get a supply of continue energy, we can to use the DC Power Supply as a source of energy.

In this thesis, it has been designed a DC Switching Power Supply with output voltage 5 V with a 10 Watt power capability and can operate at input voltages between 90 to 220 V AC. Topology used in this design is using topology Flyback Converter with Flyback Transformer as switching transformers. Used IC UC3842XX as setting Pulse Width Modulator (PWM) and IRF540 as the Power Switch. The output voltage is not constant and then will be controlled by the Voltage Regulator IC TL431 as a voltage reference which will be feedback.

In testing, to determine the value of the output current and voltage used a variable resistor that has a maximum power of 10 Watts. From the results obtained measurement data is output voltage and current in this design generated at 4.8 V with a maximum current of 1.8 A.

Key words in this thesis is: Switch Mode DC Power Supply,
Low-Power Flyback Converter.