ABSTRACT

Nowadays, the neccesities of DC power supply becomes an important thing in technology and industry area. Most of the electronic devices need the DC power supply with different suitable input based on their own spesifications. The same case for testing an electronic device, we need some level voltage of DC source that possible for us to set until it gets the suitable voltage level needed by the electronic device. Therefore the variable power supply becomes the best choice for the neccesity of DC source in electronic industries.

In this final project, a variable power supply using monolithic IC (Integrated Circuit) switching regulator LM2576T-adj has designed and implemented. The monolithic regulator IC use for the simplicity design purpose. The variable power supply designed by short circuit protection system with relay circuit as the protector and the indicator by buzzer and led. Voltage display designed using mikrokontroler with voltage and current sensing by some resistor circuits. The analog value of voltage will be converted to digital display in LCD.

The test result shows that output voltage of variable power supply has been designed is 1.23-33.75 Vdc. The output ripple of power supply is 120-200mV. The test result with different resistive and inductive load shows the biggest power efficiency is about 90.77% with 10Ω resistive load. The biggest power output obtained is about 53 Watt in the 5Ω resistive load.

***Keywords**: variable power supply, switching regulator, monolithic IC LM2576*