ABSTRACT

Nowadays, science and technology is growing rapidly, including in the aspect of electrical science industry. Development of renewable electricity generation have also been developed, such as hydroelectric, and solar power plant, so the source of electrical energy is not only derived from PLN . However, renewable energy power plants tersebuat not have the output of an AC voltage source, but a source is from DC voltage. So in order to be used as a power supply for household appliances that most require an AC voltage source, it needs to be converted first. Tool used to convert DC voltage to AC Inverter called. Therefore, the final project will be designed power supply system of AC motor using single phase Inverter Resonant Full Bridge.

In general, the inverter produces an output voltage that is lower than the input DC voltage. Boost converters so it needs to be installed so that the voltage generated greater. In this Final Assignment, inverter circuit used as a regulator IC timer NE555 PWM. Where the PWM signal is then strengthened by the IR2103 MOSFET driver circuit for IR840 switching the inverter circuit. In the final stage, the output voltage of the inverter can drive resistive loads and inductive loads.

In the testing, the efficiency is calculated by comparing the output power and input power. Inverter output is tested using a resistive load 100 Watt obtained maximum efficiency of 98,57% with input voltage of 12Volt. Meanwhile, if tested using the inductive load 29 Watt AC motor obtained an efficiency of 6%.

Keyword : Inverter *resonant full bridge*, Boost Converter, AC single phase, efficiency.