

## ABSTRACT

Nowadays, we are required to keep our activities wherever we are. Including the processing of data, exchange data, even do online meetings in a vehicle with using a laptop. However, laptop or gadget has limited battery energy. One of solution to overcome the limitations of battery energy during use is to make the vehicle charger.

In this final project, charger designed by using a combination of boost converter and flyback converter method arranged in series. Boost converter raises the input voltage to 25V to avoid voltage drop when supplied by the load. At the same time, flyback converter generate a varying voltage is 19 volts to 5 volts for laptops and cell phones. In addition, method of boost converter and flyback converter is created to produces the efficient use of power.

Laptop charger uses a car battery with 12 Volt /60 Ampere hour as a main power supply. Input voltage is increased through the boost converter up to 25 Volts. After that, the output voltage forwarded to the flyback converter. From testing and analysis that has been done, the output voltage is generated by 19 Volt and 5 Volt. These results according with the requirement of laptops.

*Keyword: boost converter, flyback converter, laptop charger.*