

ABSTRACT

BTS (Base Transceiver Station) is an important tool in a cellular network as an access point of mobile phone users. In the operation of the BTS, need power supply system that can not be interrupted so that backup power supply in the form of Genset is needed, which will be executed when the main power supply from PLN disconnected. The transfer switch from PLN to the Genset or otherwise performed by the ATS (Automatic Transfer Switch) automatically. Before Genset work with stable, there is a backup power supply that supply the load on the BTS, in the form of battery that connected with the previous rectifier.

Based on these problems, the final project designed and realized as PLN, Genset, ATS, rectifier, and load detector when on or off by using relay. And then the surface level of diesel fuel detector in Genset fuel tank by using ultrasonic sensors. The surface level that detected by ultrasonic sensor will be displayed on the LCD (Liquid Crystal Display). The monitoring system will be processed by microcontrollers, which directly connected is mobile phone, that can send SMS(Short Message Service) AT-Command to monitoring center automatically.

Testing result show that the fastest time to send SMS is at 5am with the average result is 5,68 seconds. The longest time to send SMS is at 8pm with the average result is 8,5 seconds. And then the success rate of SMS delivery is 90% to 95%.

Keywords: Relay, Ultrasonic Sensors, Microcontroller, LCD, SMS, BTS