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# **SUBSTATION MONITORING AND CONTROL SYSTEM USING GSM**

## **ABSTRACT**

This project is aimed to design a system which can monitor and control the substation by using a wireless technology called GSM technology.

A GSM modem provides the communication interface. It transports device protocols transparently over the network through a serial interface. A GSM modem is a wireless modem that works with a GSM wireless network. This GSM Modem can accept any GSM network operator SIM card and act just like a mobile phone with its own unique phone number. Advantage of using this modem will be that you can use its RS232 port to communicate and develop embedded applications. Applications like SMS Control, data transfer, remote control and logging can be developed easily. The modem can either be connected to PC serial port directly or to any microcontroller.

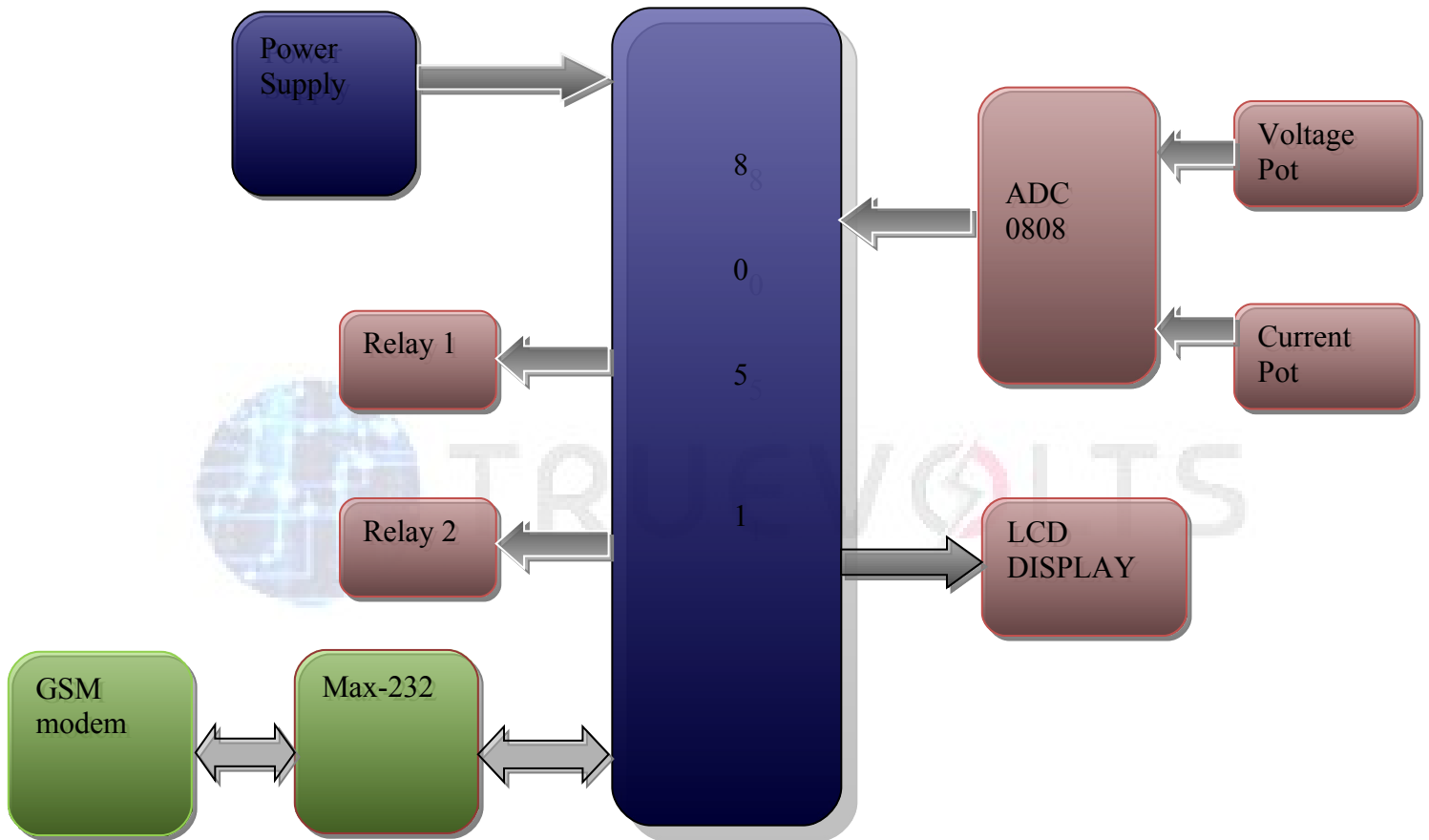
In our project we are considering two substation parameters, voltage and current. The project will be designed in such a way that an ADC0808 will be interfaced to the controller. Here the inputs for the ADC are the analog values of voltage, current . In this project microcontroller is connected to GSM modem through serially. By varying these two pots microcontroller detects voltage and current fluctuations and sends that particular values to the predefined mobile with some constant time delay, in the form of an SMS. According to voltage and current fluctuations two relays has to be triggered for protecting substation. These two relays are controlled through the SMS sent by the user to the modem. A 16x2 LCD is also provided to display the status of the system.

This project uses regulated 5V, 500mA power supply. Unregulated 12V DC is used for relay. 7805 three terminal voltage regulator is used for voltage regulation. Bridge type full wave rectifier is used to rectify the ac output of secondary of 230/12V step down transformer.

### APPLICATIONS:

- Industrial
- Substations
- Transco department

### BLOCK DIAGRAM:



### POWER SUPPLY BLOCKDIAGRAM:

