



IEEE Reference:

GSM Based Security integrated system based on wireless access
protocol for industrial applications with SMS Alert System

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Title of the project	:	Security integrated system based on wireless access Protocol for industrial applications with SMS Alert System using GSM Modem
Domain	:	Embedded Systems Design
Software	:	Embedded C, Keil, Proload
Microcontroller	:	AT89S52
Power Supply	:	+5V, 750mA Regulated Power Supply
Display	:	LED 5mm
Crystal	:	11.0592MHz
Security Channels	:	8
Access Sensor	:	Reed Switch / Magnetic sensors, IR Sensor Vibration Sensor, Piezo Electric sensor
Panic Alert	:	Push-to-on switch
Light Detector	:	LDR
Communication Device	:	GSM Modem
Applications	:	Industries, Banks, Jeweler Shops, Home security
Developed By	:	M/S Wine Yard Technologies
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ABSTRACT

Security integrated system based on wireless access protocol for industrial applications with SMS Alert System using GSM Modem

Security is primary concern for every one. This Project describes a design of effective security alarm system that can monitor an industry with eight different sensors. Unauthorized access, Fire accident, wall braking, IR detection, and fire detection can be monitored by the status of each individual sensor and is indicated with an LED. This LED shows whether the sensor has been activated and whether the wiring to the sensor is in order. Obviously, this burglar alarm also has an input to 'arm' the alarm, a tamper input and a couple of outputs to control a siren and Auto dialing system. The alarm is also fitted with a so-called 'panic button'.

The burglar alarm is built around the AT89C51 micro controller from Atmel. This micro controller provides all the functionality of the burglar alarm. It also takes care of filtering of the signals at the inputs. Only after an input has remained unchanged for 30 milliseconds, is this new signal level passed on for processing by the micro controller program. This time can be varied by adopting small changes in the source code.

A maximum of 8 sensors can be connected to the burglar alarm. These sensors need to have their contacts closed when in the inactive state (i.e. Normally Closed). In addition, each sensor needs to have its tamper connection wired as well. A power supply voltage of +5 VDC is available for each sensor at the corresponding wiring terminals.



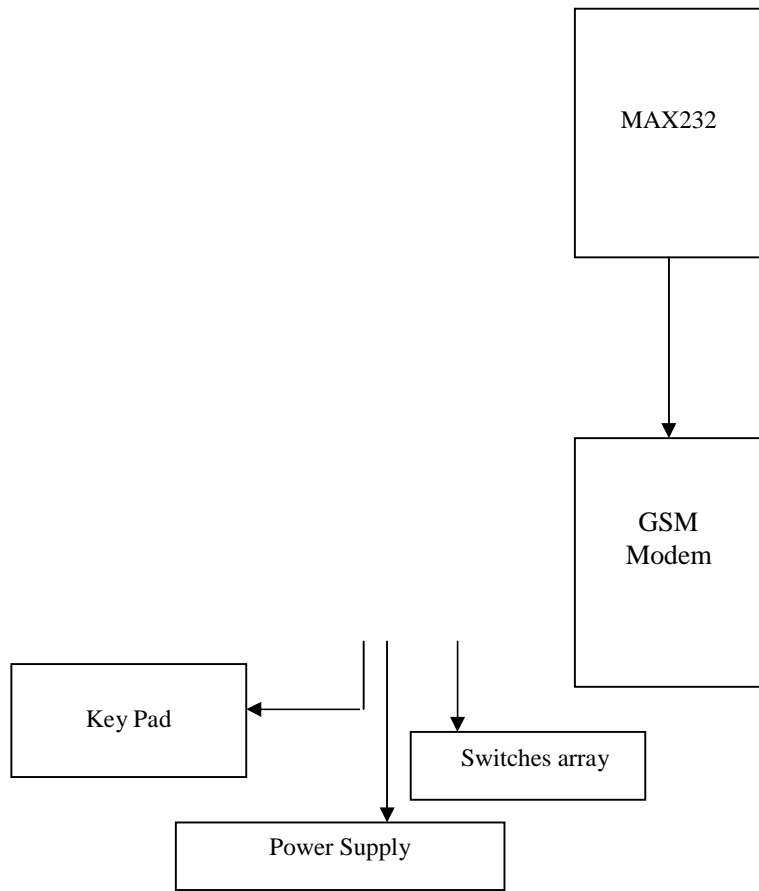
Eight LEDs indicate the status of the corresponding sensors. When the alarm has been activated, the LED of the sensor that caused the alarm will light up, or flash in the event of a cable failure.

When the alarm is armed, the LED 'alarm armed' will flash during the exit-delay. After the exit-delay, the LED will light continuously. The LED 'alarm triggered LED' flashes during the entry-delay and will turn on continuously once an actual alarm has been generated. 'Alarm triggered LED' turns off only when the alarm is switched off with key switch Sw1. When an alarm has taken place, it can be determined afterwards which sensor (or tamper input) caused the alarm to trigger. The LED 'tamper' lights up when the tamper input is opened. This LED will also continue to be on until the alarm is switched off.

The uniqueness of this project is, not only alerting the neighbors by its siren, but also it sends an caution SMS to four mobile numbers. This numbers can be changed at any time by the user using a 3X4 key pad. These numbers are stored in EEPROM.

This project uses regulated 5V, 750mA power supply. 7805 three terminal voltage regulator is used for voltage regulation. Bridge type full wave rectifier is used to rectify the ac out put of secondary of 230/12V step down transformer.







Advantages:

Sophisticated security

Monitors all hazards and threats

Alert message to mobile phone for remote information

Mobile number can be changed at any time

Scopes for Advancements:

- Rechargeable Battery can be connected to this system to enable it to work in power failure conditions also.

Applications:

Banks, Offices, Industries, Jeweler Shops and Home Applications