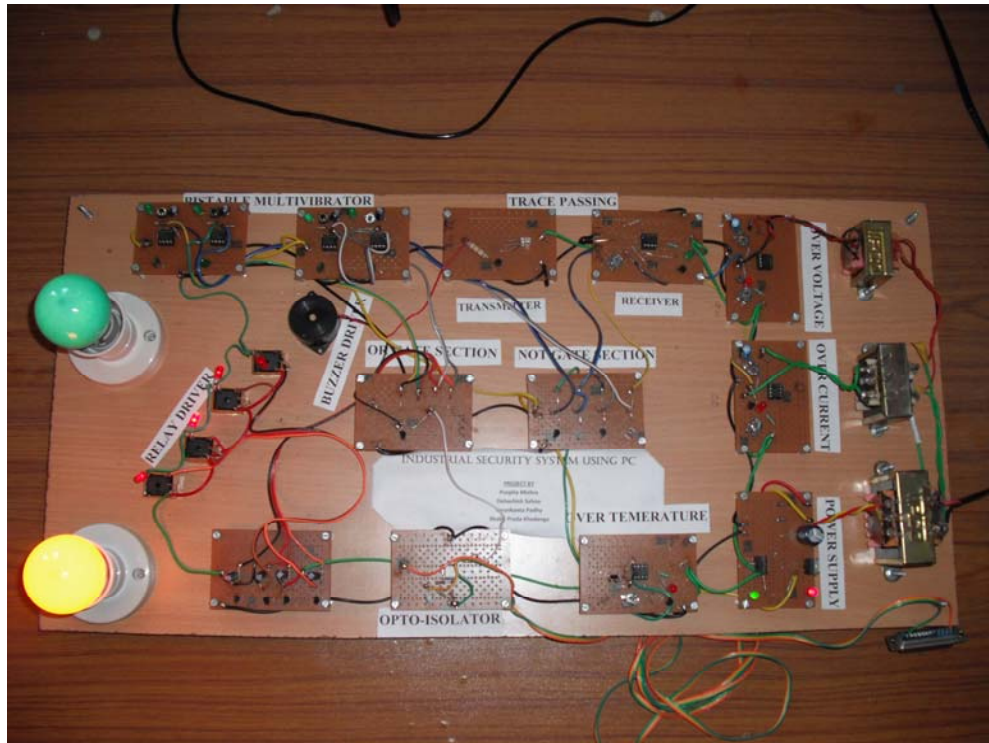


DEPARTMENT OF ELECTRONICS & INSTRUMENTATION ENGINEERING
BEST PROJECT OF THE YEAR 2008-2009

1 INDUSTRIAL SECURITY SYSTEM USING PC

The security system is one of the major focus areas in the present social and industrial environment. In the industries society security system is one of the important part. The growth and economy all depends on this. The traditional security system is not at all full proof and also very much expensive. To safe guard the industrial area, the most important aspects to be considered is the *trace passing*. It is also required to safe guard the industry from *fire* and *flood*. In certain industries it is required to protect the raw material from rain and icefall.

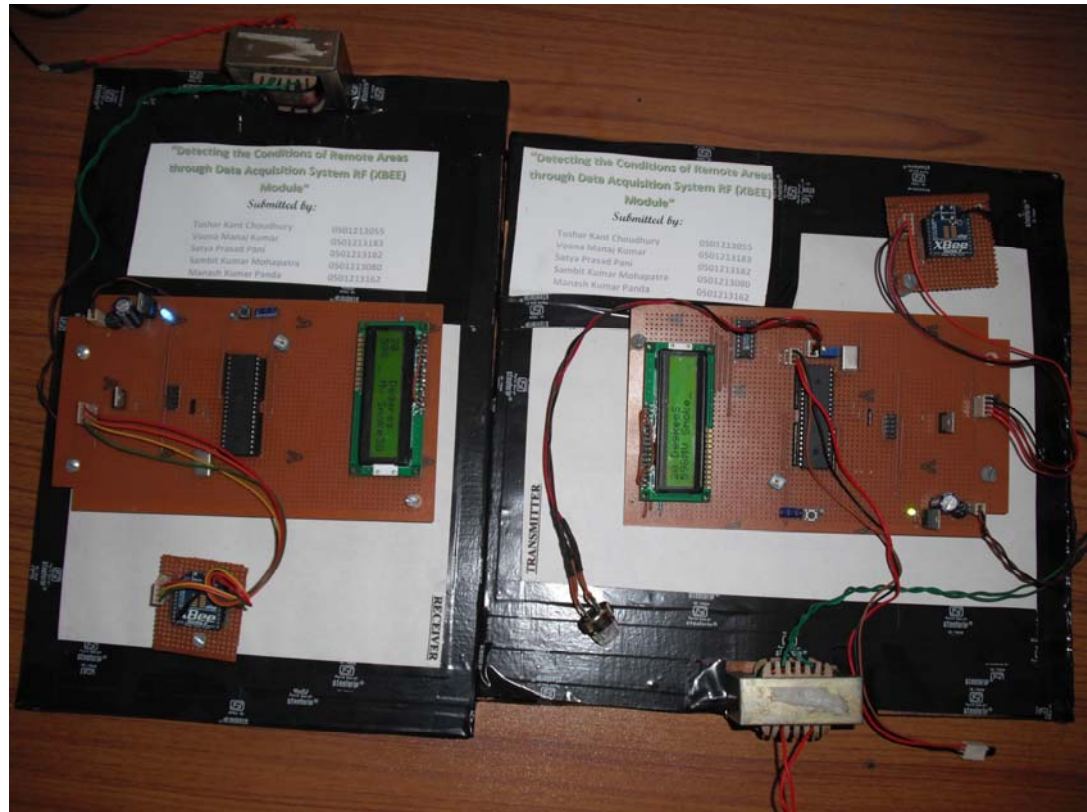
In this project the care is taken to design and general purpose security system for general application. This can be installed at small office, home and general areas, in which a security against over voltage, fire, trace passing, door opening or interlock is provided. The over temperature due to fire or electrical panel heating etc. This trace passing sensor is designed with a principle of infra-red signal. There are four sensors connected to the system if there is a security detection at any of the channel the automatically the system detect the same and gives indication to the local indicators and alarms. In these systems the security breaks it not only available to local access but also this can be accessed from the remote terminal through internet or LAN. This type of security system is quite useful in the small office, home, industries the different sensors can be implemented to make the system more versatile.



2 DETECTING THE CONDITIONS OF REMOTE AREAS THROUGH DATA ACQUISITIONS SYSTEM USING RF(XBEE) MODULE

The ranges of electromagnetic frequencies are above the audio ranges and below visible light. All broadcast transmission, from AM audio to satellites, falls into this range. Radio Frequency (RF) itself has become synonymous with wireless and high-frequency signals, describing anything from AM radio from 535 kHz to 1605 kHz to computer LANs at 2.4 GHz. However, Radio Frequency has traditionally defined frequencies from a few kHz to ~ 1GHz with Microwave being the consideration.

The XBee/XBee-PRO ZB OEM RF Modules are designed to operate within the ZigBee protocol and support the unique needs of low-cost, low-power wireless sensor networks. The modules require the minimal power and provide reliable delivery of data between the remote devices. The modules operate within the ISM 2.4 GHz frequency band.



ZigBee is a worldwide open standard for wireless radio networks in the monitoring and control fields. The standard was developed by the ZigBee Alliance (an association of international companies) to meet the following principal needs low cost, ultra-low power consumption, use of unlicensed radio bands, cheap and easy installation, flexible and extendable networks and integrated intelligence for network set-up and message routing.

In this project a data acquisition system was developed, that helpful in remote areas using 8-bit microcontroller, sensors, ADC and RF (XBEE) modules. We are connecting more than one sensor, so we need to select an ADC in such a way that it is capable of reading different sensor values at a single point of time. We select MCP3208 as an ADC.

Data Acquisition refers to continuously reading the data from any of the sensor that we connect. Here we are connecting temperature sensor (LM35) and smoke sensor. The sensors read the data and send it to the RF (XBEE) transmitters through microcontrollers. The controller sends the data through the transmitter to receiver.

This can be used as an application in Remote Lightning Controls, On-Site Paging, Asset Tracking, Wireless Alarm and security systems, Long Range RFID, Automated Resource Management and so.