



APPLICATION OF ZIGBEE FOR POLLUTION MONITORING CAUSED BY AUTOMOBILE EXHAUST GASES

ABSTRACT

Air pollution is a major environmental health problem affecting the developing and the developed countries alike. The effects of air pollution on health are very complex as there are many different sources and their individual effects vary from one to the other. These chemicals cause a variety of human and environmental health problems Increase in air pollution effects on environment as well on Human health. The system consists of a Mobile Data-Acquisition Unit (Mobile- DAQ) and a fixed Internet-Enabled Pollution Monitoring Server.

The Mobile-DAQ unit integrates a single-chip microcontroller, air pollution sensors array, and Global Positioning System Module (GPS Module). The Pollution-Server is a high-end personal computer application server with Internet connectivity. The Mobile- DAQ unit gathers air pollutants levels (CO, NO₂, and SO₂), and packs them in a frame with the GPS physical location, time, and date. The frame is transmitted to the Pollution-Server via zigbee module.

The Central-Server is interfaced to Google Maps to display the location of hardware unit. We can connect database server to the Pollution- Server for storing the pollutants level for further usage by various clients such as environment protection agencies, vehicles registration authorities, and tourist and insurance companies.

EXISTING SYSTEM

Does not provide the real time values.

It is not a reliable and more expensive

DISADVANTAGE

system is having short comings at large and dynamic range, such as complex network cabling,

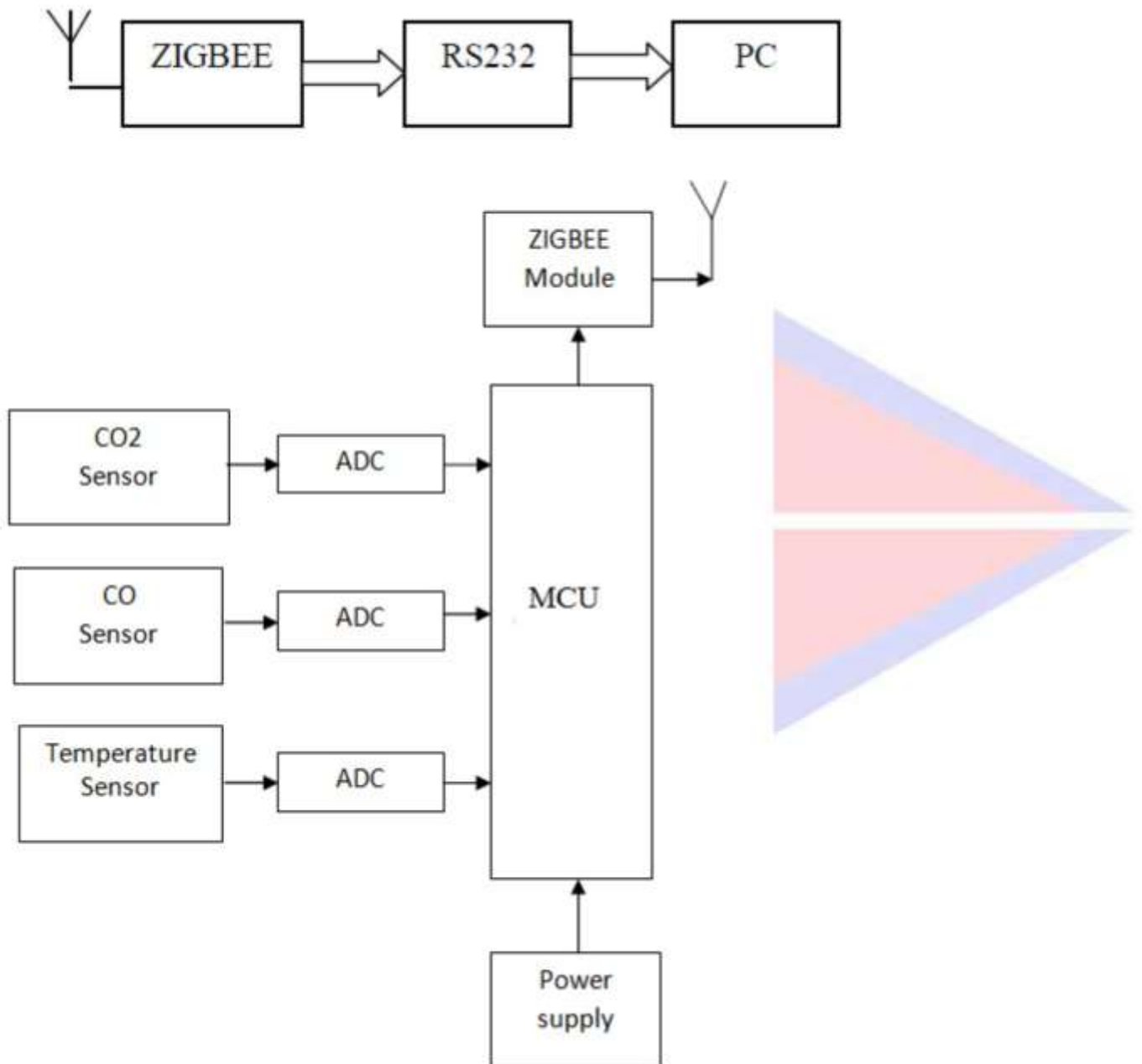
PROPOSED SYSTEM

Here we have used continuous online method so as to get the real time values of Concentration of pollutants. Also we have decided to use microcontroller which is having in built ADC, thus it reduces extra circuitry of ADC for signal conditioning. As we have decided to use electrochemical sensors the overall system will be energy efficient and low cost in terms of sensors. System measures the concentration of gases such as CO, SO₂, and NO₂ using electrochemical sensor.

ADVANTAGE

Energy efficient and low cost in terms of sensors.

BLOCK DIAGRAM



HARDWARE REQUIREMENTS

CO2 Sensor

SO2 Sensor

temperature Sensor

ADC

Micro Controller 8051

Zigbee Module

Power supply

RS232

PC

SOFTWARE REQUIREMENTS

MCU COMPIERS

PROTEUS SOFTWARE

MICROCONTROLLER may ATMEGA,8051,PIC OR Arduino