*Smart Vehicle with Alcohol and Pollution Detection System*

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***Abstract –* The main aim of this embedded application is to detect the alcohol drunken people. We are developing an embedded kit which will be placed in a vehicle. Now, the vehicle will be under the control of the kit .If any drunken person enter in to the vehicle it gives a buzzer sound immediately , and now the car will be under the control of the hardware used.**

1. INTRODUCTION

 We run the vehicle by using wireless communication i.e. from Control section (acts as transmitter) we are ejecting the control signals, then the vehicle receives (acts as receiver) the signals, according to the signals it will give a alarm or buzzer.

 It aims at designing and executing the vehicle controlling using RF. By using the RF communication, whenever alcohol is detected using the alcohol detector, the micro controller sends the information to the encoder and the encoder encodes the values and is received by the Transmitter.  Receiver receives the information from the Transmitter and decoder decodes the serial input and sends the output to the micro controller .Gas sensor has recently attracted much attention due to increasing demand of environmental monitoring and other gas detecting applications.

 Gas sensors interact with a gas to initiate the measurement of its concentration. The gas sensor then provides output to a gas instrument to display the measurements. Common gases measured by gas sensors include ammonia, aerosols, arsine, bromine, carbon dioxide, carbon monoxide, chlorine dioxide, Diborane, dust, fluorine, germane, halocarbons or refrigerants, hydrocarbons, hydrogen, hydrogen chloride, hydrogen cyanide, hydrogen fluoride, hydrogen selenide, hydrogen sulfide, mercury vapor, nitrogen dioxide, nitrogen oxides, nitric oxide, organic solvents, oxygen, ozone, phosphine, silane, sulfur dioxide, and water vapor. Important measurement specifications to consider when looking for gas sensors include the response time, the distance, and the flow rate. The programming language used for developing the software to the microcontroller is Embedded/Assembly. The KEIL cross compiler is used to edit, compile and debug this program. Micro Flash programmer is used for burning the developed code on Keil in to the microcontroller Chip. Here in our application we are using AT89C51 microcontroller which is Flash Programmable IC. AT represents the Atmel Corporation represents CMOS technology is used for designing the IC.

1. OBJECTIVE

 The main aim of this embedded application is to design a alcohol detector using RF Communication and AT89c51 Programmable controller.

We run the vehicle by using wireless communication i.e. from Control section (acts as transmitter) we are ejecting the control signals, then the vehicle receives (acts as receiver) the signals, according to the signals it will give a alarm or buzzer.

 Gas sensors interact with a gas to initiate the measurement of its concentration. The gas sensor then provides output to a gas instrument to display the measurements. Common gases measured by gas sensors include ammonia, aerosols, arsine, bromine, carbon

dioxide, carbon monoxide, chlorine, chlorine dioxide, Diborane, dust, fluorine, germane, halocarbons or refrigerants, hydrocarbons, hydrogen, hydrogen chloride, hydrogen cyanide, hydrogen fluoride, hydrogen selenide, hydrogen sulfide, mercury vapor, nitrogen dioxide, nitrogen oxides, nitric oxide, organic solvents, oxygen, ozone, phosphine, silane, sulfur dioxide, and water vapor. Important measurement specifications to consider when looking for gas sensors include the response time, the distance, and the flow rate.

1. BLOCK DIAGRAM
2. *Transmitter Module*



1. *Receiver Module*

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1. WORKING DESCRIPTION OF THE PROJECT

 This application is in the area of embedded systems. An embedded system is some combination of computer hardware and software, either fixed in capability or programmable, that is specifically designed for a particular function.

 In this embeeded system the alcohol sensor and gas sensor will sense the alcohol and gas and that analog value is converted to digital one by 555 timer and it is given to the microcontroller..Microcontroller will convert this value in the compatible form with the encoder and it will give to the encoder,the encoder encodes the value and gives to the zigbee transmitter.

 The receiver zigbee will receive the signal and send the signal to the decoder which decodes the value and give it to the computer where the signal will covert into compatible form and will send a message to the GSM Module and this module send message to the respective number.

1. CONCLUSION

 The project “ALCOHOL AND GAS DETECTOR” has been successfully designed and tested. It has been developed by integrating features of all the hardware components used. Presence of every module has been reasoned out and placed carefully thus contributing to the best working of the unit.

 Wireless communication industry is blossoming at a great pace. As wireless communication systems evolve, service quality and capacity are of primary importance. To ensure reliable communication over a mobile radio channel, a system must overcome multi path fading, polarization mismatch, and interference. The trend towards low power hand held transceivers increases all of these challenges. Keeping all the above parameters in view we have designed a low cost integrated system for monitoring the different types of parameters between two systems.

 Finally we conclude that embedded system is an emerging field and there is a huge scope for research and development.

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