GSM Based Vehicle

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Abstract- **"GSM (SMS) Controlled vehicle" is automatic vehicle which capable of receiving a set of command instructions in the form of Short message service and performs the necessary actions. We will be using a dedicated modem at the receiver module i.e. with the vehicle itself and send the commands using SMS service as per the required actions. The GSM which is dedicated at the vehicle is interfaced with an intellectual device called Micro controller so that it takes the responsibility of reading the received commands in the form of SMS from the GSM and perform the corresponding predefined tasks such as move front or back, left or right etc. The micro controller is also interfaced with DC motors in order to move the robot in different directions. The ON and OFF of the DC motors depends on the direction it has to move whichis the complete responsibility of the controller to take those intelligent decisions.**

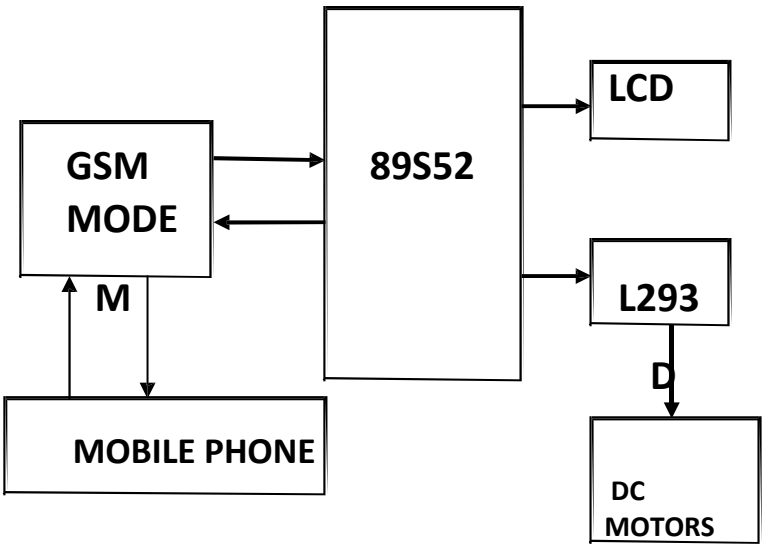
Keywords: GSM modem sim 300, Microcontroller, Dc motor

I. INTRODUCTION

GSM based Designs have developed another innovative and Public utility product for mass communication. This is a vehicle Control Device which control the vehicle through messages received as SMS Packets and also send acknowledgement of task. Such Devices can be Used at different areas of the human being life. Such as offices, houses, factories etc. Sent command from Mobiles or PCs to these devices for move the motor left, right and stop. These devices are designed to remotely control the vehicle from anywhere and anytime. Wireless communication has announced its arrival on big stage and the world is going mobile. We want to control everything and without moving an inch. This remote control vehicle Control device is possible through Embedded Systems. The use of "Embedded System in Communication" has given rise to many interesting Applications that ensure comfort and safety to human life. The main aim of the project will be to design a SMS electronic vehicle Control toolkit which can replace the traditional Robot Control Devices. The toolkit receives the SMS, validates the sending Mobile Identification Number (MIN) and performs the desired operation after necessary code conversion. The system is made efficient by SIMs so that the SMS can be received by number of devices boards in a locality using techniques of time division multiple access.

The main components of the toolkit include microcontroller, GSM modem. These components are integrated with the device board and thus incorporate the wireless features. The GSM modemreceives the SMS. The AT commands are serially transferred to the modem. The microcontroller validates the SMS and then perform specific task on the device. The microcontroller used in this case is ATMEL AT89S52. LCD display is used for simulation purpose. The results presented in the thesis support the proper functionalities and working of the system.

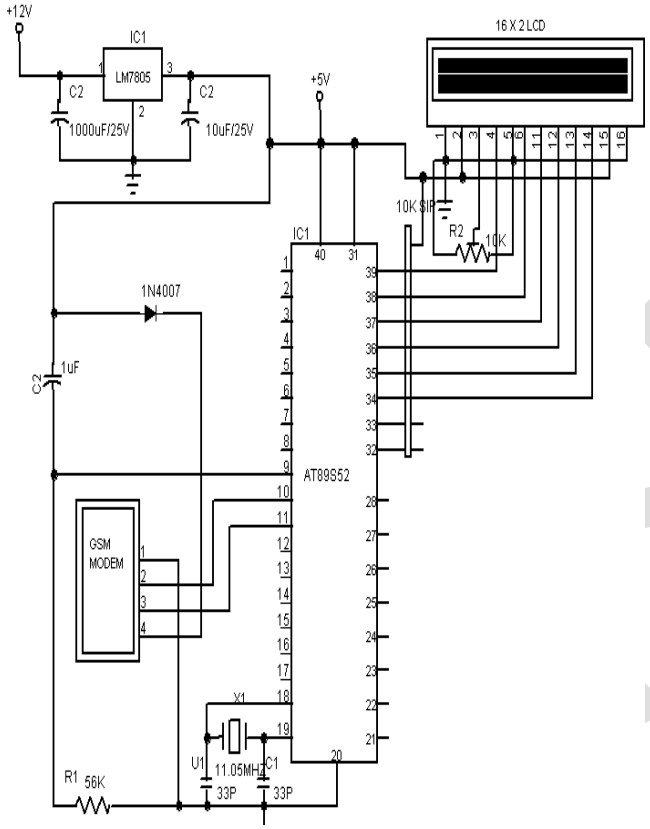
II. BLOCK DIAGRAM:



As shown in the block diagram mobile phone is at

transmitter side which is used to send the SMS.
GSM modem and Micro-controller is at receiver side for the given operation. From a mobile we send the message and that message is received by the GSM modem and according to message controller works. Here LCD is used simulation purpose and it shown the operation which is performs by controller.

III. CIRCUIT DIAGRAM:



IV. WORKING

In this system, vehicle will perform multiple operations in one message. When we send the message to vehicle according to that it will move. Suppose if we send message like" A-2, B-3, C-1, D" then our vehicle will move. 'A' means forward with 2 meter distance. 'B' means right with 3 meter distance. 'C' means left with 1 meter distance and 'D' means stop. Like this we can perform many operation within one message which will save the time and also message cost.

V. GSM MODEM

Global system for mobile communication (GSM) is an architecture use for mobile communication. GSM module consists of a power supply and communication interfaces (like RS-232, USB) for computer. It requires a SIM (subscriber identity module) card just like mobile phones to activate communication with the network. A GSM Modem can perform the operations like receive, send, delete or read SMS. As well as make receive or reject voice call. It operates on the AT (Attention) commands. In this project we have used SIM 300 GSM module for communication with controller.

Following are some AT commands used in the programming.

Command	Operation
AT	To check communication between the module and the controller.
AT+CMGF=<mode>	To set the SMS mode. Text mode can be selected by assigning 1 or 0 in the command.
AT+CMGW	To store message in the SIM
AT+CMGS	To send a SMS message to a phone number.
AT+CMGR	To read the message from the GSM
AT+CMGD	To Delete the message from the GSM

*Microcontroller***:** Here we are using 89s52 controller. 89s52 has 4 different ports, each one having 8 input/output lines providing Total no. of I/O lines. Those ports can be used to output data and orders to other devices (or to read the state of a sensor or a switch). Most of the ports of the 89s52 have dual function. It is having 256 bytes of RAM and 4 kb ROM

VI. IMPLEMENTATION AND RESULT

1) The analysis of the programming is check through proteus software.
In this diagram it shows the operation 1 which is forward operation. As per the message which is send through

virtual terminal of the proteus. In this message we have send number 1 which means OPT 1, motor is rotating in forward direction & also displays on LCD.

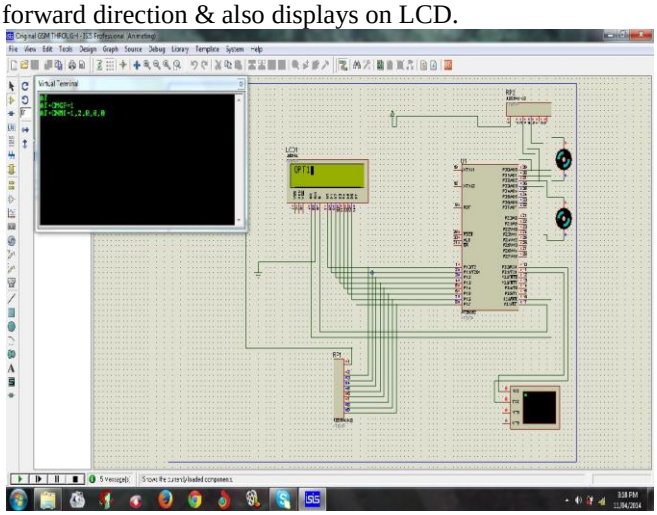


Fig1.Proteus Simulation of Forward Operation.

In this diagram it shows the operation 2 which is reverse operation. As per the message which is send through virtual terminal of the proteus. In this message we have send number 2 which means OPT 2, motor is rotating in reverse direction & also displays on LCD.

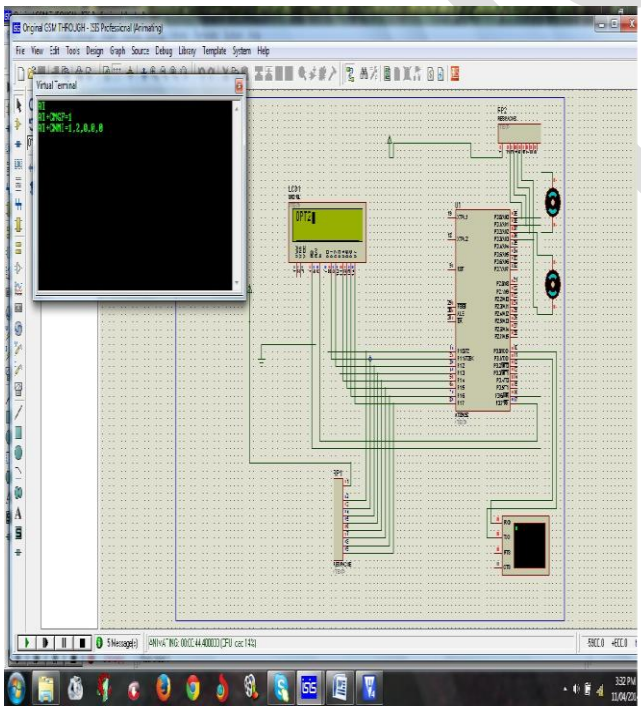


Fig2. Proteus Simulation of Reverse Operation

CONCUSION

The prototype of the GSM based vehicle Control device is efficiently designed. By using message we can operate the vehicle. The vehicle accepts the SMS, stores it, validates it and perform specific operations. The SMS is deleted from the phone each time it is read, thus making room for the next SMS.

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