ISSN (Online) 2394-6849

International Journal of Engineering Research in Electronics and Communication Engineering (IJERECE)
Vol 4, Issue 6, June 2017

GSM controlled robot

[1] Saranya S, [2] Lavanya E, [3] Keerthana H, [4] ,Pavithra G N
[1][2][3][4] Department of Electronics and Communication Engineering, R R Institute of Technology, Chikkabanavara, Bengaluru-560090

***Abstract*— In the past few decades there is rapid development in GSM controlled robotic. It plays an important role in the world wide economy. "GSM controlled wireless robot" is automatic robots which is capable of receiving a set of instructions in the form of short message service and perform the necessary motion[1]. Remote system allows the user to effectively monitor and control the robot using mobile phone. The robots Movement can be controlled and navigated by microcontroller without any limitation. The aim of this paper is to identify the error caused in the motor by using the buzzer.**

Index Terms—Microcontroller, LCD display, Motor, GSM, Buzze

I. INTRODUCTION

"ROBOT" (motor) is an automatically operated machine that replaces physical work of humans, though it may not look much like a human being or function in a human like manner. Advanced, high-functioned robots are used today in automobile manufacturing, assembly of aircrafts, and electronic based devices use robotic devices together with other computerized instruments to sort or test finished products. [2] GSM stands for Global System for Mobile Communications. GSM projects are based on one of the rising technology of the century. It have been designed in such a way the embedded system that can organize and monitor numerous devices remotely irrespective of distance limitations [3]. Generally sending and receiving SMS is the concept followed in embedded domain. resent development wireless communication is used by replacing wired communication. The mobile unit which is used at the robot is interfaced with an logical device called Micro controller. it takes the responsibility to perform

predefined work by reading the received information in the form of S MS from the mobile unit and tasks such as it directs and control the movements like front or back, left or right etc. The microcontroller is also interfaced with few 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 which is the complete responsibility of the controller to take those intelligent decisions. It also has a buzzer which monitors the error of the motor. [4] .

BLOCK DIAGRAM:

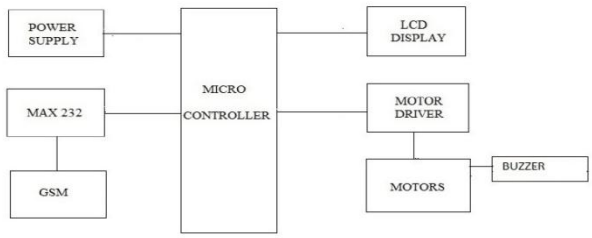

Fig.1. Block diagram of GSM controlled robot using microcontrofier

MICRO CONTROLLER.

The microcontroller heart of our project used here is 8051 the microcontrollers are programmed in such a way that when the input command crosses their prescribed limits it sends the signal to various controlling action of motor, GSM modem and sensors.

GSM MODEM (sim 300):

This is a modem that works with a GSM wireless network being a phone is specialized and wireless act as interface between microcontroller and GSM network helps in auto call receive by providing a authenticating user to access the robot sending a message alert during error is being detected to the authenticated user with help of sensors.

Motor driver :

This has L293D with DC motors works in H-Bridge principle which receive the commands from microcontroller and helps in driving the motors for required directions. here the motors are the robot .

SENSORS:

These help in detection of error in the motor respectively and is indicated through buzzer alert to the user by commands given from microcontroller.

LCD Display.
A LCD display of (16'2) is being used which helps in display of internal working taking place during the call process.

POWER SUPPLY :
it requires 5 volt dc in order to provide regulated 5 V dc voltage to controller use 7805 power supply circuit here two batteries of 9v are used one is to run the motor and the other is give as power supply circuit.

Working Principle:
The motor is initialized and the robot modules such as motor driver, sensor decoder etc is powered up for the access and microcontroller waits for the initialization of GSM command. The Initialized robot check for the command continuously to know the message is received or not by sending OTP password and read the particular message and extract the body of the message. For authentication purpose the 4 digit OTP (one time password) being generate is sent by GSM module to pre-stored number entered in the program when this password has to be entered by user as seen in next step. The received Password is being entered by calling person through the keypad of cell phone which is verified by robot for further access in them enabling BUZZER option in a basic cell phones but smart phones doesn't require this enabling process of BUZZER key. The password being received is entered by user, if any other numbers pressed during this process the call is disconnected and user must make a new call for access. This allows only valid users. Once the Robot is verified it is ready to be accessed works upon user commands. This shows the directions given by the user for the robot to move in which forward direction is given as the command by user in following step The text alert is through GSM module sent once an obstacle or fire is detected in the path travelling. This shows the directions given by the user for the robot to move in which backward direction is given as the command by user in following step. This shows the directions given by the user for the robot to move in which left direction is given as the command by user in following step. This shows the directions given by the user for the robot to move in which right direction is given as the command by user in following step. This depicts the vehicle when stopped. The snap shot of messages received upon error detection with one time password (OTP) to predefined user.

CONCLUSION:

By developing this motor with GSM module by providing immediate text alert to the user. The main feature of this robot is that it is password protected and authenticated so that unauthorized person cannot communicate with the robot at any cost. the error occurred in the motor is identified by using buzzer and rectified immediately. this system of application can be used in home appliances, industries, ect,.

REFERENCE:

1. http://www.electronicshub.org/gsm controlled-robot-using microcontroller

2. BasavannaM,AshwiniG,Divyashree G N, Pooja Bhat M S, Sanjana S Prabhu"(May 2015) GSM Based Wireless Robot Vehicle with POF features using DTMF" IRJ ES ISSN 2319-1821 Volume 4, Issue 5,PP.12-175.

3. Manish Chaudhary, Prof. Nishant, Dr.Noor Danish, (August 2015), GSM CONTROLLED WIRELESS ROBOTIC SYSTEM International Journal of Scientific Research Engineering & Technology, ISSN 2278 - 0882 Volume 4, Issue 8,

4. Kunal Kumar, Navneet S en, Sheikh Azid, Utkal Mehta, (December 2016), Fuzzy Decision in Smart Fire and Home Security System, 93 - 98 2016 IEEE International Symposium on Robotics and Intelligent Sensors, IRIS 2016, 17-20, Tokyo, Japan

5. Vishveshwar Ramanathan Subramanian, "Application of dual tone multi frequency technology and sensing in autonomous robotic navigation" International Journal of Research in Engineering and Technology

6. Prof. K S. Jadhav1, P. B. Madje (June 2015) 'GSM Controlled Robotics Using PIR' "International Journal of Advanced Research in Electrical ,Electronics and Instrumentation Engineering(An ISO 3297: 2007 Certified Organization) Vol. 4, Issue 6

7. 96acknowledging GSM Controlled Robot Vipin D. Vaidya, Sanjay L. Haridas M-Tech (VLSI) scholar G.H.R.AE.T.

8. Raj Hakanil" DTMF Based Controlled Robot Vehicle" 1 Department of Electronics& Communication Engineering.