

Spy Robot With Wireless Camera Using GSM

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Abstract- With the aim of the satisfying and meeting the changing needs of human from manufacturing unit to the household unit robotics and automation has been a distinct key player throughout. This project focuses on building a GSM based spying robot attached with wireless camera that can reduce the human victim. This robot sends the signal to the base station using wireless camera. One of the major applications of this project can be analyzed using android based smart phone which can be used to control the movement of the robot. The robot sends the signal to the receiver mounted on the robot via transmitter at the base station. With this feature the robot can transmit real time videos and cannot be identified by the enemies in war zone.

Key words: Wireless camera, Robot, GSM, Sensor, AVR Microcontroller

1. INTRODUCTION

The project is designed to develop a robotic vehicle using GSM for remote operation attached with wireless camera for monitoring purpose. The project has major aspects of Computer and electronic Engineering from Software to Hardware and from Signalling to Control. The robot along with camera can wirelessly transmit real time video with more sensing capabilities with the help of different sensors. The robotic vehicle is fitted with a wireless video camera which transmits live video to a base-station. The base-station, then, submits controlling signals to the vehicle to navigate through its course. It can be used in a lot of areas where sending humans is too dangerous or where human cognition skills are utilized only minimally, such as for surveillance, scanning pipes and tracking moving objects.

2. MAIN OBJECTIVE

The main objective of this project is to develop an embedded system, which guides the vehicle using GSM technology and also acts as a spy using a wireless camera.

In the project, the indication signals are transferred wirelessly using GSM module. Robot is driven with the help of L293D as driver IC. LCD is used to display the direction of the robot. The power supply of the project is regulated as 5V, 7805 three terminal voltage regulator is used for voltage regulation. The programming languages

used for developing the software to the microcontroller is Embedded C as well as assembly language.

2.1 EMBEDDED SYSTEM

Embedded system = Software + hardware

An embedded system is a computer system with a dedicated function within a larger mechanical or electrical system, often with real-time computing constraints. It is embedded as part of a complete device often including hardware and mechanical parts. Embedded systems control many devices in common use today. 98 percent of all microprocessors are manufactured as components of embedded systems.

3. WORKING PROCESS

3.1 HARDWARE

Microcontroller:

Microcontroller is a microprocessor designed specifically for control applications, and is equipped with ROM, RAM and facilities Input/ Output on a single chip. The ATmega16 is a low-power, high-performance CMOS 8-bit microcomputer with 4K bytes of Flash programmable and erasable read only memory (PEROM). The device is manufactured using Atmel's high-density non-volatile memory technology.

Motors:-

A motor is a device which converts electrical energy into mechanical energy while a generator is a device which converts mechanical energy into electrical energy. Both use the same principle of electrical induction that is when electricity is passed through a conductor there is a magnetic field which is created.

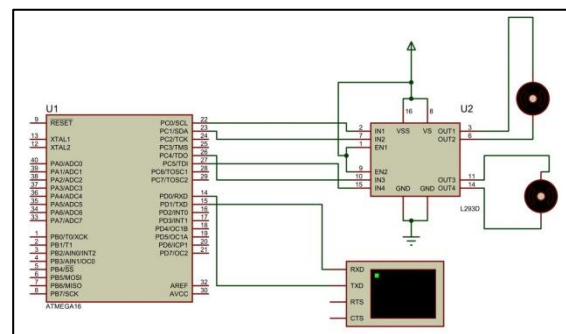


Fig-1: Motor Interfacing

3.2 SOFTWARE

Proteus: It is an application program for simulation of system using virtual hardware component with hex code generated by KEIL as shown in Fig. 1.

The main aim of the project is to control the robot with wireless technology. For this purpose receiver board is designed. At the transmitting end, commands are sent to the receiver to control the movement of the robot either to move forward, backward and left or right etc from a smart phone. Receiver board is placed on the robot. Here we are using wireless communication between transmitter and receiver. At the receiving end two motors are interfaced to the AVR microcontroller where they are used for the movement of the vehicle. For the movement of the robot, DC motors are used. A wireless camera is mounted on the robot body for spying purpose.

The robot has the capability of sensing temperature of its surrounding. For this purpose corresponding sensor is used on the robot according to environmental condition.

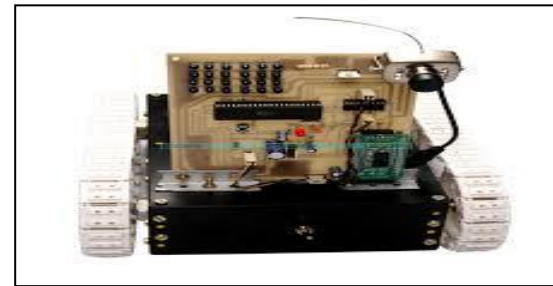


Fig-3: War field spying robot.

5. FUTURE SCOPE

We can connect this system directly to internet by using Zig-bee with wi-fi. By using internet we can control the system via remote location. We do not require any simulation tool by using GUI(Graphic User Interface) software. Halogen light can be used for the vision of the robot. We can also control the device by giving it voice command thereby making it a voice recognition system.

6. CONCLUSION

With the help of camera we are able to view the things that are happening in the surrounding area where the robot is hidden. This kind of robot can be helpful for spying purpose in war field. The robot will move depending on the motor direction based upon the input. By keeping the circuit easy and simple, most of the users will be able to use it without any difficulty. Our design has not caused any sort of disturbances and not for long range application it can be used as a spy robot within short distances.

6. REFERENCES

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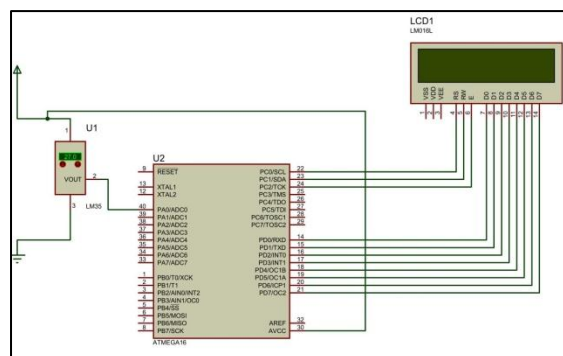


Fig-2: Temperature sensor interfacing

4. RESULT

With the help of this robo wheel, we have been able to view the things accurately that are happening. In our experience, our design has not caused any sort of disturbances. The robot will move based on the motor direction depending upon the input we give through command. With the help of interfacing LCD, it displays the current operation and with the help of wireless camera we are able to view the things that are happening in the area where the robot is hidden. By keeping the circuit simple, most users will be able to use it easily.