DEFENSE ROBOT WITH CAM AND GSM

ABSTRACT

It is a remote guided robot vehicle with an on board wired camera with visual feedback and GSM interface, The robot path and surroundings can be monitored from a distance of approx 100mtrs on a standard TV. Robot movements and camera rotation are controlled using the GSM cell phone. Its main application is defense surveillance.

The need for unmanned surveillance is growing day by day to protect valuable human lives. The rapid explosion of personal computers, cellular phones, availability of high band width combined with powerful embedded systems has spurred the growth of Robotics in every walk of life. The idea of this project is to design a robot which can take care of risky day and night surveillance job of border area patrolling and report any untoward incident or activity to the nearby army personnel, thereby avoiding human causalities. The project has three main modules

1) Power supply module

2) Processor module

3) Command and control using GSM cellular phone

4) Audio video communication using CMOS camera sensor module

It is mounted on a set of wheels attached to DC geared motor. The gear tooth are so choosen For suitable torque and speed. The camera is provided with has very high sensitivity microphone which is capable of picking murmuring sounds also. The camera has manual focus adjustment.

The robot has two wheels and is driven using differential drive mechanism. The rear end is provided with a free wheel for balancing the robot. The robot is remotely controlled using any GSM or CDMA cell phone. The various functions assigned to the remote are move forward, backward, right, left, stop etc. All the motors are controlled by microcontroller based embedded system. LM293 based H bridge motor driver is used to drive the geared DC motors. We are using 89S52 microcontroller in our project.

This project uses regulated 5v, 500mA power supply. 7805, a three terminal voltage regulator is used for voltage regulation. Bridge type full wave rectifier is used to rectify the ac output of secondary of 230/12v step down transformer.

BLOCK DIAGRAM



