

DESIGN AND DEVELOPMENT OF PC CONTROLLED SMALL UNIT UNMANNED VEHICLE FOR TODAY'S ARMY

ABSTRACT:

Unmanned robot vehicles are increasingly being used in a variety of military missions. One such mission is that of Intelligence, Reconnaissance, and Surveillance.

In these missions, unmanned robot vehicles collect sensor data and communicate it to ground, air, and space assets to support decision-making. The model comprises of a PC which is interfaced to the transmitter through the RS232 cable. Transmitter is the desktop by which commands are sent wirelessly through serial port where RF transmitter is connected.

Receiver consists of microcontroller, IR sensor to sense any obstacle within its range of 10 cms. If any object comes in its range it raises an alarm using piezo electric buzzer, it also observes for any noise within its locality, if any sound like, firing towards the Tanker gets noticed, a servo turned towards it which has got a rifle on it will start firing back towards the enemy region. Another servo motor has been fitted with wireless camera on it to observe the surroundings where the Tanker is moving.

When IR sensors sense any obstacle within its range, it sends a bit one logic level high signal to microcontroller I/O pin where it is connected and this microcontroller checks for high signal and sends an alert beep sound by sending a high signal on buzzer, in the same way clap switch which senses any sounds around it will make its bit high and passes it to the microcontroller, the particular duration PWM signal will be sent to the servo motor which makes its shaft to rotate the firing point of the rifle towards the enemy and starts firing. Another servo motor will be controlled by the user so that he can adjust the direction of the camera and sense any foreign object.

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