Wireless Machine Gun for Defence

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Abstract: In day to day human life, robots are designed in such a way that it assists humans in their daily lifestyle. For e.g. Robotic vacuum cleaner is designed for cleaning purpose, Robotic arm to perform complicated medical procedures, Loading and unloading heavy materials in industry. All the above given applications are performed in safe environment and condition. However, a dangerous task in an unsafe environment can cause harm to human life. In such a case robot can help the humans to complete hazardous tasks for e.g. on the line of control a soldier's life is always at risk due to the threats that are present on the border. Our project will assist the military personal in the defence of our land and for surveillance purpose. It will help to reduce **the loss of human life on the border area.**

Index Terms: -RF Module, Machine Gun, Wireless Communication etc.

1. Introduction:

The main agenda of this project is to build such a prototype which will be able to secure the life of a soldier and protect the line of control. The whole system is divided into two parts, the transmitter and the receiver. The transmitter side consist of a remote which wirelessly sends data to the receiver through RF frequency. The receiver consists of a robot.
Some new features that we are adding in our project are machine gun, Stepper motor for horizontal and vertical moments of the machine gun, wireless high definition camera. Our system is a wireless signal transfer system. This system can be very useful in ground level combat against the enemy.The proposed system is a combination of remote operated robot arm and safe control room at the transmitter side. The system is more powerful than other system because we provide portability of the robot

2. Goal and Objective:

The main purpose of our project is to detect the presence of the enemies in the line of sight, reduce human harm caused by any threat., sense any threat aiming at soldiers, and take down that enemy and to be used as a surveillance robot in order to sense any treat in the confidential area.

3. Existing System:

Keeping the same concern in mind many developers have come up with innovative applications. Few of such applications are as follows-

3.1 Wireless controlled robot with hand for dangerous task:

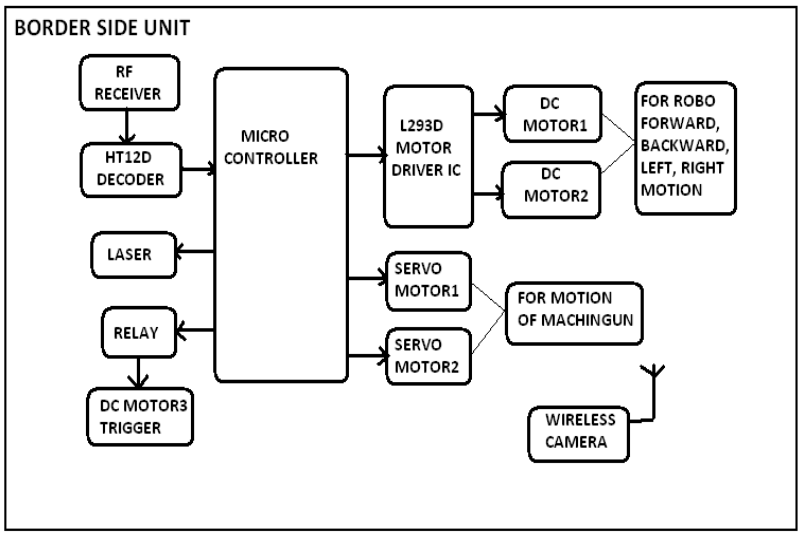
It is a robot with arm is developed and it can be control by joystick and sensor glove wirelessly. The mobile robot is able to capture the environment video using camera mounted on top of the mobile robot and send it back to user's laptop wirelessly. An image processing-based fire detection application will be developed using the video received from the camera

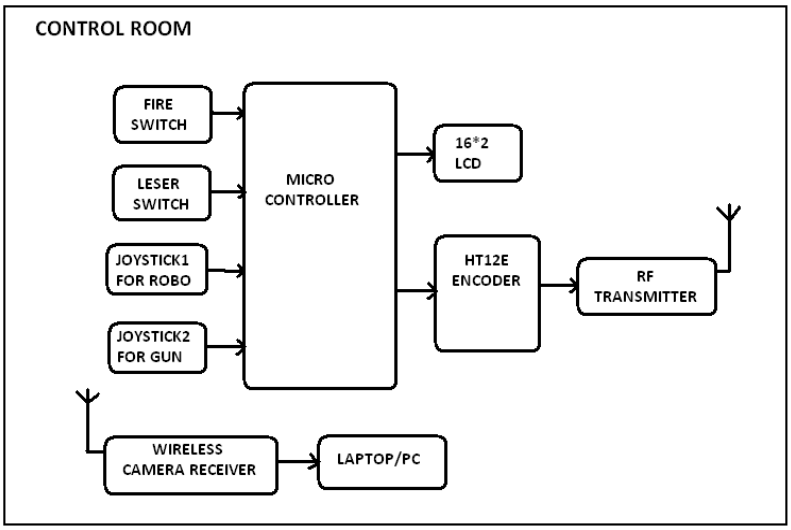
3.2 A

Surveillance Robot for Home Security with Docking System

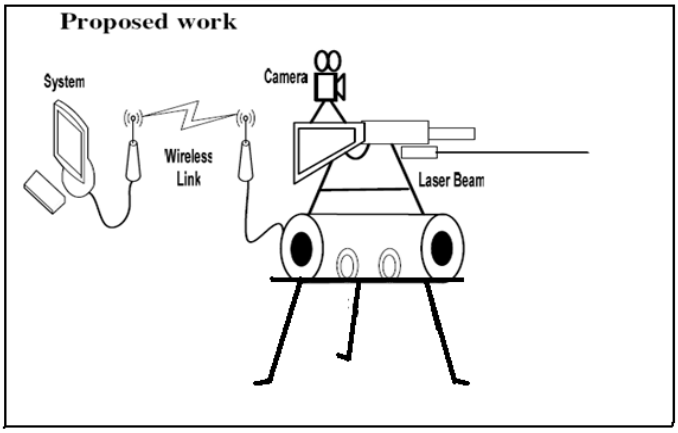
The proposed system was to depict and implement a home surveillance robotic system using PIR sensor and CMOS camera. The communication is established by using ZigBee. Whenever a person comes near the door the PIR sensor is activated and the image is nabbed. The robot can be manipulated in two modes. One is normal mode and another is security mode.

4. Block Diagram:





5. Method:



Concept Diagram

5.1. DESCRIPTION:

1. **Battery: -** A 12V battery is used as a power source.
2. **Microcontroller: -** PIC18F4520 is used in our system It plays very important role in our system.
3. **Machine Gun: -** It is one of the main components of our system which is mounted on the robot which can be operated by the soldier from the control room.
4. **RF Module (434 MHZ) :-**The aim of wireless communication between transmitter and receiver is fulfilled by the RF module. The operating frequency of this module is from 433.05 MHZ and 434.725 MHZ. This RF module supports signal transmission upto 400 meter.
5. **Wireless HD Camera**: - The real time situation will be captured by the camera for the surveillance.
6. **Servo Motor: - The** arm moment is achieved with the help of servo motor in horizontal and vertical direction.
7. **Remote Keypad:** - All the control commands to the robot are provided by the remote keypad. Commands like forward backward left right and fire can be given by the remote.

6. Applications:

1. To protect line of control and for surveillance purpose.
2. The system can be use in forest or terrorist areas for defence.
3. The system can be use at VIP places such as 'SANSAD BHAVAN', Taj hotel etc.

7. Future Scope:

1. We can make a mini-robot using the same concept.
2. We can make a automatic enemy detection and fire system
3. We can interface this system with Smart system.
4. Voice commands can be sent during need.

8. Conclusion:

Thus, we have developed **"A Wireless Machine Gun for Défense** "systems for protecting our border. The remote controlling improves its efficiency, security and accuracy.

9. References:

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WIRELESS CONTROLLED ROBOT WITH HAND FOR DANGEROUS TASK
A report submitted to University Tunku Abdul Rahman