

# War Field Spying Robot with Wireless Camera & Bomb Diffusion

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**Abstract**— The aim of this venture is to lessen human casualties in fear based oppressor assault, for example, 26/11. So this issue can be overwhelmed by outlining the RF based covert operative robot which includes remote camera, So that from this it will be anything but difficult to look at rivals when it required. This robot can unobtrusively go into foe territory and sends us the data by means of remote camera. The development of this robot is remotely controlled by a hand held RF transmitter to send charges to the RF beneficiary mounted on the moving robot. Since human life is constantly significant, these robots are the substitution of officers in war regions. This government operative robot can likewise be utilized as a part of star lodgings, shopping centers, adornments demonstrate rooms, and so on where there can be danger from gatecrashers or fear based oppressors. At the season of war where it can be utilized to gather data from the foe landscape and screen that data at a far secure zone, and securely devise an arrangement for the counter assault, Tracking areas of psychological militant associations and afterward design assault at reasonable time. Making a reconnaissance of any catastrophe influenced zone where individuals can't go.

**Key words:** Robot, Wireless Camera & Bomb Diffusion

## I. INTRODUCTION

The venture is intended to build up a mechanical vehicle utilizing RF innovation for remote task connected with remote camera for checking reason. The robot alongside camera can remotely transmit continuous video with night vision capacities. This is somewhat robot can be useful for spying reason in war fields. An ATmega16 microcontroller is utilized for the coveted task. At the transmitting end utilizing Joysticks, orders are sent to the collector to control the development of the robot either to advance, in reverse and left or right, ARM all over and so forth. At the less than desirable end two engines are interfaced to the microcontroller where they are utilized for the development of the vehicle. The RF transmitter goes about as a RF remote control that has the benefit of satisfactory range (up to 200 meters) with legitimate reception apparatus, while the recipient unravels before encouraging it to another microcontroller to drive DC engines through engine driver IC for important work. A remote camera is mounted on the robot body for spying reason even in entire dimness by utilizing infrared lighting.

At the transmitting end utilizing Joysticks, orders are sent to the collector to control the development of the robot either to advance, in reverse and left or right, ARM here and there and so forth. At the less than desirable end two engines are interfaced to the microcontroller where they are utilized for the development of the vehicle. In the wake of getting the order robot will stop. After that the robot will move a similar way in which already the robot is moving. For this reason we composed projects in implanted C .so as to

satisfy this application there are few stages that has been performed i.e.

- 1) Designing the power supply for the whole hardware.
- 2) Selection of microcontroller that suits our application.
- 3) Selection of Robot.
- 4) Selection of DRIVER IC.
- 5) Selection of remote camera.

## II. LITERATURE SURVEY

In the wake of doing study of IEEE papers, we alluded a portion of the papers which are valuable for outlining the spying robot.

In R.A. Kadu, Prof. V.A. More, P.P. Chitte, J.G. Rana, M.R. Bendre. Worldwide Journal of Computer Technology and Electronics Engineering (IJCTEE) Volume 2, Issue 1. Wireless Control and Monitoring of Robotic Arm (SWORDS), Soldiers may have outfitted robots as fight mates by ahead of schedule one year from now, as per industry and military authorities going to the biennial Army Science Conference.

Kalyanee N. Kapadnis et al Int. Diary of Engineering Research and Applications ISSN: 2248-9622, Vol. 4, Issue 4(Version 2), April 2014, pp.06-09, The paper is alluded and it accordingly says that a robot is a virtual or mechanical simulated specialist practically speaking, it is normally an electro-mechanical machine which is guided by PC or electronic programming, and is along these lines ready to do undertakings all alone.

This report centers around issues identified with self-governing military mechanical autonomy, the exchange may apply similarly well and cover with issues identified with self-governing military frameworks, i.e., PC systems. Further, it is concentrating on war zone or deadly applications, rather than mechanical autonomy in assembling or medication regardless of whether they are bolstered by military projects, (for example, the Battlefield Extraction Assist Robot, or BEAR, that conveys harmed troopers from battle zones), for a few reasons as take after.

## III. PROBLEM STATEMENT

Design and implement war field spying robot with wireless night vision camera.

### A. Objectives

- 1) To design a robot.
- 2) To capture the videos at the night using night vision camera.
- 3) Monitoring using RFID.
- 4) To monitor the night activities at the war field.
- 5) To control the robot wirelessly.

#### IV. SYSTEM SPECIFICATION

The following components to design a war field spying robot apart from a base with wheels and motors.

##### A. Sensor Unit

A wireless Night Vision Camera: Apart from what a basic camera consists of, it consists of a transmitter unit. It captures images and transmits these images through the transmitter in form of digital signals, which are received by the receiver unit connected to the TV or computer. The camera can be as far as 30 miles away from the receiver. A night vision camera can receive illumination either by amplifying the visible light using image intensifiers or using infrared light directly by objects – thermal imaging or infrared light reflected by objects-near infrared illumination.

##### B. A Receiver Unit

The robot also consists of a receiver unit which receives the command signals for controlling the motors and thus the robot unit.

##### C. Actuators

It consists of two DC motors as actuators which provide reverse and forward motion to the robot.

##### D. Control Unit

It consists of a remote transmitter unit consisting of microcontroller, encoder and a RF module and a receiver unit embedded on the circuit consisting of an RF receiver module, a microcontroller and a decoder.

#### V. SYSTEM BLOCK DIAGRAM

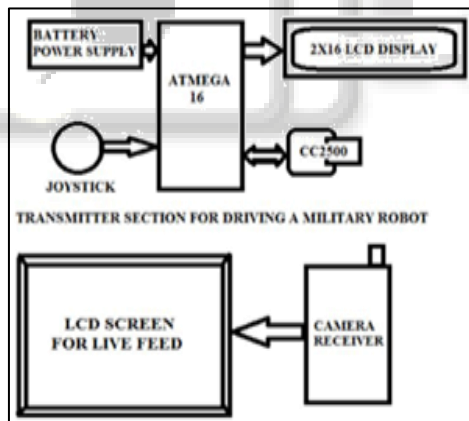


Fig 1. Transmitter Section

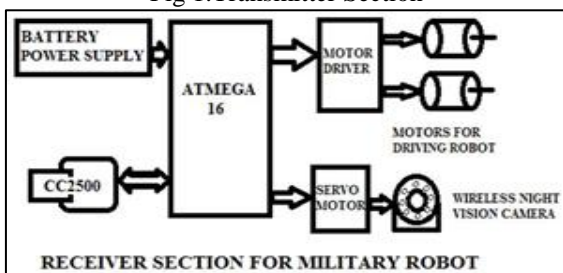


Fig 2. Receiver Section

#### VI. BLOCK DIAGRAM DESCRIPTION

The remote night vision camera installed on the robot comprises of a remote transmitter.

A bunch of IR LEDs are set which are utilized to give IR light to the picture sources. The reason IR light is favored is on the grounds that during the evening time, it is normally dim and since any camera needs light for enlightenment, infra-red light is the most favored choice as all articles emanate a scope of Infra-red light.

The camera is fueled with a 9V battery and catches these pictures and transmits them to the collector unit associated with a Television unit. The pictures are changed over to advanced flags by the transmitter unit and the collector unit gets these computerized flags and reconverts them to pictures and these pictures or recordings are then observed and investigated on a Television unit.

The transmitter unit comprises of an encoder which gets parallel information contribution from the microcontroller through the push catches and transmits this parallel information in serial configuration through the RF module. On squeezing the separate push catch, Microcontroller is customized to send applicable signs to the Encoder in parallel frame. The encoder changes over these parallel signs to serial shape to be transmitted by the RF module.

This serial information is adjusted with a transporter flag utilizing a RF transmitter and is transmitter. For instance on the off chance that we press the left catch, the microcontroller sends the charge to the recipient unit through the encoder and the RF module.

##### A. Night Vision Camera

A night vision camera is a gadget that permits to find oblivious. The light that can see is electromagnetic radiation. Human eyes are just ready to see a little piece of the electromagnetic range. The part which can see is called "Unmistakable Spectrum". There are numerous sorts of radiation that can find in the picture underneath.

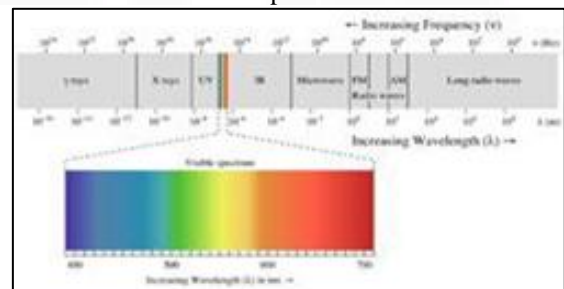


Fig. 3: Night Vision Camera

Be that as it may, some portion of it is the infrared radiation. Infrared is a low vivacious radiation and it is broadly utilized as a part of night vision cameras. Essentially the idea is basic – A night vision camera is a gadget that transmits infrared "light" and is fit for distinguishing it in a camera. The main distinction between a night vision camera and a camera that is taking a film of a situation that is being lit by a typical light which can't see the infrared "light" with human eyes yet it can be seen with the infrared camera. This gives opportunity to find oblivious.

- 1) Transmission Power : 50mW
- 2) Bandwidth :20 MHz
- 3) Power Supply :9V
- 4) Consumption Current :80 to 120 Ma Operating

### B. RF Module CC2500

The CC2500 is a minimal effort 2.4 GHz handset intended for low-control remote applications. The circuit is planned for the 2400-2483.5 MHz ISM (Industrial, Scientific and Medical) and SRD (Short Range Device) recurrence band. The RF handset is incorporated with a very configurable baseband modem. The modem bolsters different balance groups and has a configurable information rate up to 500 kBaud. CC2500 gives broad equipment support to bundle dealing with, information buffering, burst transmissions, clear channel appraisal, connect quality sign, and wake-on-radio. The primary working parameters and the 64-byte transmit/receive FIFOs of CC2500 can be controlled via an SPI interface. In a typical system, the CC2500 will be used together with a microcontroller and a few additional passive components. transmit/receive FIFOs of CC2500 can be controlled via an SPI interface. In a typical system, the CC2500 will be used together with a microcontroller and a few additional passive components.

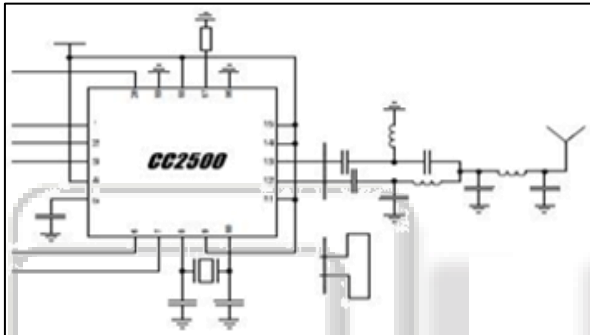


Fig. 4: RF MODULE CC2500

### VII. ADVANTAGES

- a) Reduces human casualties.
- b) Makes all kind of work easier.
- c) Helps disabled people in living their lives.

### VIII. APPLICATIONS

- a) Military robots are autonomous or remote controlled devices or robots designed for military applications.
- b) Robots could reduce the number of military personnel injured or killed in combat situations.
- c) It can be use for search & rescue type operations.
- d) In bomb defusing.
- e) It is also use this robot for animal tracking in forest.
- f) It can be use for pick up injured soldier from war station and dropping them in safe place. It can carry extra material like as bombs, missiles, blankets etc.

### IX. RESULT



Fig. 5: War Field spying robot Transmitter & Receiver

The image seen from the night vision camera(Wireless) it's transmission power is 50mW and the bandwidth is 20MHz and received by a standard television antenna. The TV connected to the antenna must be set to cable mode and turned to AV mode in order to view the transmitted image. Successful video transmission is capable up to 100meter away through walls, floors and windows. The camera up or down at a range of 180-degrees. This allows for a large field of vision.

The simple task of Robotic Arm With Gripper is moving an object from one location to another within the work area is one of the most common applications.

Grippers are the most common end-effectors. They provide the equivalent of a thumb and an opposing finger, allowing the robot to grasp small parts.

### X. CONCLUSION

This paper has displayed a novel strategy for spying reason in light of night vision camera to catch the night exercises at the war field or then again any outside field where person can't go.

The paper turns out with the tasks of Receiver and transmitter circuit. The capacities and the activities of the circuits interrelated are vital to be examined. With fitting advances and philosophy, any procedure of finishing the undertaking can be overseen carefully and will be make a decent outcome. As of now Wireless controlled Omni-directional checking robot with video bolster that can screen utilizing webcam.

According to the present situation, human conditions on innovation and future patterns robots will be utilized as an ideal substitution for person in all parts of life.

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