

Automatic Wireless Tank System for Defense

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Abstract : A tank is an armored fighting vehicle designed for front-line combat, with heavy firepower, strong armor, and tracks providing good battlefield maneuverability. As a result of advancements, tanks underwent tremendous changes in capability in the years since their first appearance.

" Automatic Wireless Tank System " is capable to detect any target by using wireless camera in the range of border, target its position and destroy the object through firing control module. The system includes high resolution cameras and wireless communication. In this system the soldiers in the control unit room will be continuously monitoring the range of border with the help of camera and if any target is detected then the soldier in the control unit room will send command to firing control module which will then activate the gun to destroy the target. This system can be widely useful in battle fields. The communication between control room and firing control module is through wireless technique. A metal detector is used to detect whether the bomb is implanted in the ground on detecting metal it will set the buzzer.

Basically this system is an alternative of soldier. The camera system provides the 'eyes' for the tank, the gun system aims and 'shoots' the target, and wireless communication provides secure and reliable transmission of controls.

IndexTerms - Atmega16, LCD, Camera, RF Transmitter and Receiver.

I. INTRODUCTION

This work is needed because till today our border area is protected by iron spike wires and a watch tower where soldiers are continuously watching the border area and flashing the light 24/7 hours. Those soldiers are totally responsible for any intrusion. Till now the defense area security is totally depending on soldier. At high secured area, soldier's responsibility is to detect and target the enemy. If they are failed in doing so, then the enemy can easily enter in secured area. So for increasing the security level PC based wireless tank system is introduced. The basic purpose of this system is to secure the defense area using wireless technique and this will reduce the human effort and save human lives.

Basically, this work will not fully remove the responsibilities of soldiers, but shares the maximum responsibility.

II. EASE OF USE

To provide highly accurate security for 24x7 duty of soldiers for patrolling near border which is based on embedded platform. Maintaining the Integrity of the Specifications The basic objective of the project is to enhance the border security electronically with advance technology and to reduce the work load of soldiers. It also shares responsibilities of the border men that continuously keep a look on border 24x7.



Fig:1 Actual Defense Situation on border 24X7[4]

This technology is capable to detect any target by using wireless camera in range of border and automatically target its position and destroy the object through firing control module.

Basically this system is an alternative of soldier. The camera system provides the 'eyes' for the tank, the gun system aims and 'shoots' the target, and wireless communication provides secure and reliable transmission of controls.

III. BLOCK DIAGRAM

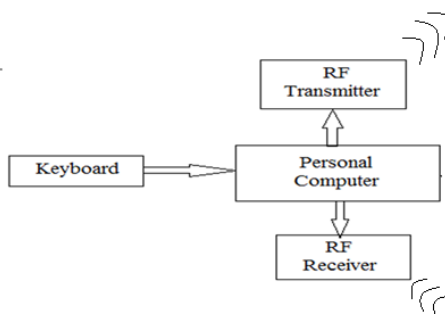


Fig:2 At of Receiving Section

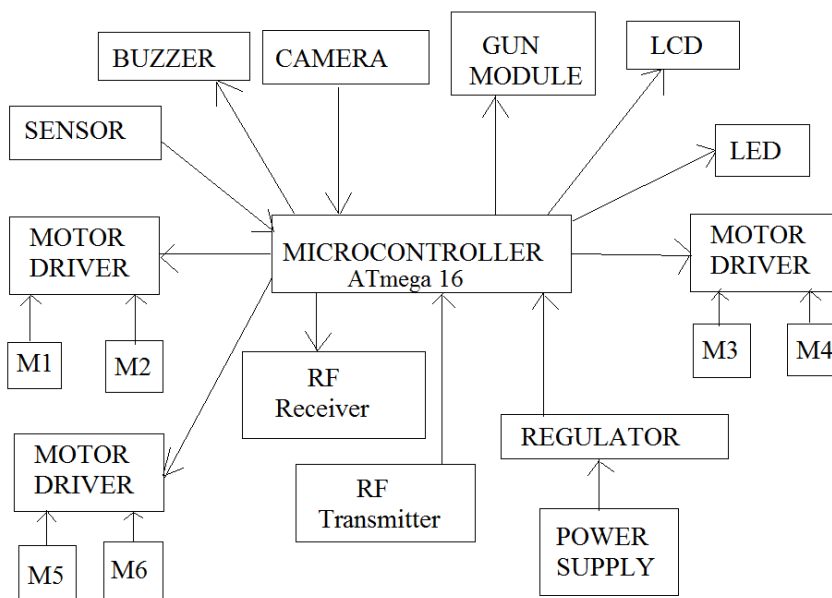


Fig:3 At of Transmitter Section

As shown in Fig:2 it is in control room which is far away from border line who are at safe location and observing continuously and in Fig:3 it is of transmitter section means one robot having Camera attached with it and one Gun who can fire on based on commands received from control room in the reference of camera pictures target. Along with it sensors are continuously sensing threads which are coming on path. As per the notifications of sensor buzzer will generate sound for an acknowledgement. There are many technologies existing in actual world having different technology but with all immense work cost is also increasing. Here at transmitter end Atmega16 is used which is easy to understand satisfying requirement.

IV. FLOWCHART

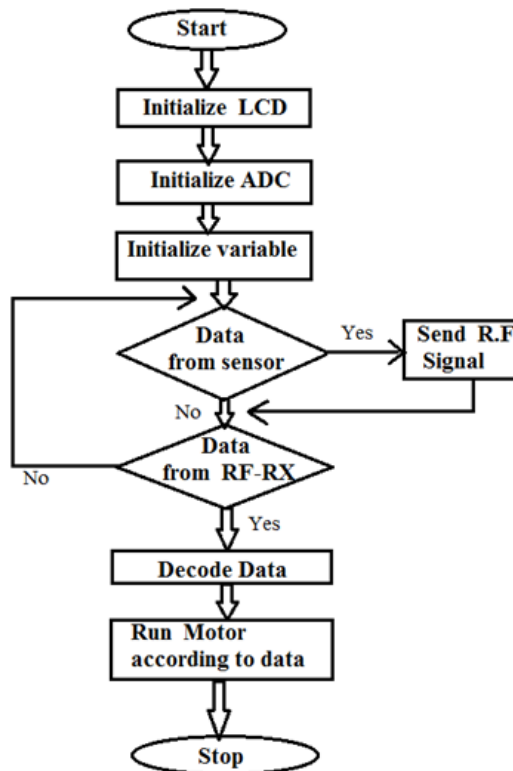


Fig: 4 Flow of Working

As shown in Fig:4 very first step is to initialize Liquid crystal display and Analog to digital convertor. Hence as sensor detect any thread from distance than can transmit information from border to control room. Control room person can take decision on the base of received data and send come to robot to take further action.

V. RESULTS IN SOFTWARE AND HARDWARE

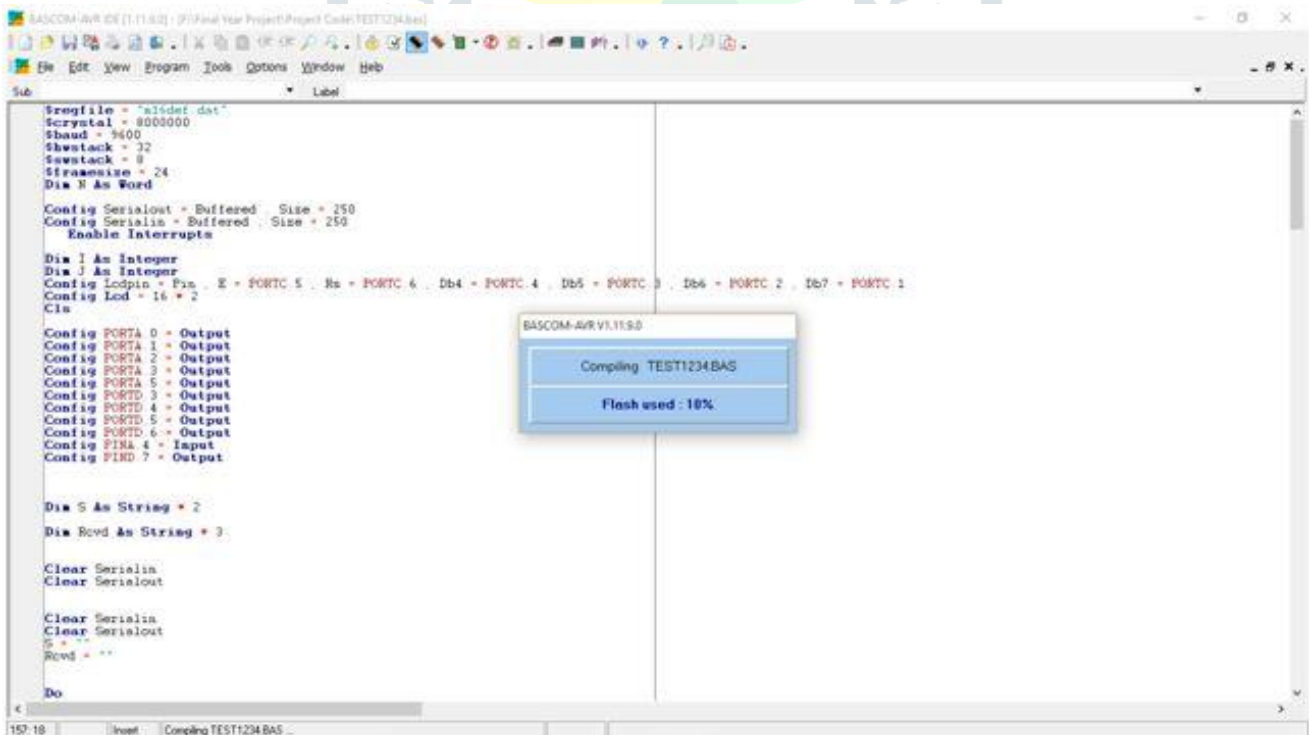


Fig: 5 Software Results



Fig: 6 Hardware Results

VI. ADVANTAGES AND DISADVANTAGES

1. As it is not completely automatic and decision is based on human so chances of error is reduced. This system can provide high accuracy.
2. Soldier's life is not at risk.
3. Share the human work load.
4. This system is highly secured.
5. Due to wireless system reliability increases.
6. Microcontroller used to reduces the processing time and improve efficiency

VII. CONCLUSION

One of the basic requirements for this project is Accuracy. The targeting system should be accurate enough to target and fire the target correctly. For that we require to maintain the high resolution of the area under surveillance. Hence, cost of hardware, programming and designing the area to which surveillance is to set, are the major three requirements of the system. The accuracy of the project will significantly increase under manual assistance as the basic thinking of the project is taken by working with human but not alone taking responsibility of the complete security. Hence, by considering all the features this system proves to be robust, reliable, accurate and efficient enough to provide security and protect human life.

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