

Border Security System (Automatic Gun Targeting System)

Shubham Sanjay Patil

Department of Information Technology

B. K. Birla College of Arts, Commerce and Science, India

Abstract— National security is highest priority of any country. Every country secure their national border day by day because technology is also developed in few years. So, terrorists improve their technology for performed operation. Therefore technology is also improved so, automatic gun targeting system (AGTS) as our project. The main purpose of the project is to reduce the responsibility and work load of the soldiers and enhance the border security system using automatic gun targeting system (AGTS). The soldiers are continuously look on border 24/7 can be reduced to some extent using border security system. Using this project we can easily analyse and identify how many terrorist entering the border. In our project we have used laser and ultrasonic sensor. Ultrasonic sensor generates high frequency sound and determine the distance to an object. So it cover the large area and one advantage of laser light is visible only source and incident point. So, ultrasonic sensor scan human body using high frequency sound and transmitter port are transferred signal to receiver and a siren is loud noise making device. The aim of the project is to reduce the responsibility and work load of the soldiers and enhance the border security using Automatic Gun Targeting System. Every soldier of any country is a real hero.

Keywords: Border, Laser, Ultrasonic Sensor, Transmitter, Security

I. INTRODUCTION

India shares international land border with seven countries with China, Bangladesh, Pakistan, Nepal, Myanmar, Afghanistan, Bhutan has 15,016 km of land border. But most sensitive border area share with Pakistan in Jammu And Kashmir State. India shares 3321 km (including line of control) Border in Jammu And Kashmir Sector.

This project is required in today life because till today border is protected by spike wires and watch tower so soldier take a more responsibility and those soldier are fully responsible for the area. The spike wires or fences built for stopping illegal activities such as drug supplier, terrorists from crossing border so, we are doing this project to stop this illegal activity. Border Security System project is a based on Arduino and electronic components. This system develop for secure the border develop for secure the border area and reduce the work and responsibility of the Border Security Force (BSF). The System can be more accurate by using one master microprocessor and several slave microprocessors. This system will be more accurate. This project is capable to detect any IR radiation in the area of border and Automatic Gun Targeting System (AGTS) can activate and destroy the object.

II. DATA COLLECTION

FOR gathering data, I cannot go to the border to collect the data for security reason, but since my family belongs to defense background so, I have discussed about issues and Solution to the problem. I could get from them, as well as a

lot of information I received from the news and the internet, that when I got the data and I created a small project to prevent this crisis.

III. METHODOLOGY

It is security based project so, basic requirement for the project is accuracy and consistency. So system should be able to target properly and consistency. So we required to maintain under surveillance.

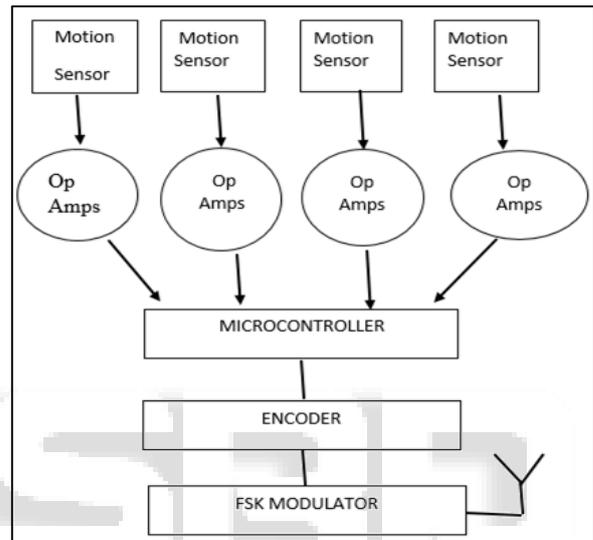


Fig. 1.1: (working model of AGTS)

Top portion of block diagram (1.1) consist of PIR (passive IR) that sense invisible IR radiation of living thing and create a signal which goes to OPAMP for amplification.

The OPAMP amplify the signal, makes it readable to the microprocessor and the microcontroller create a code is generated which look like something 0000 0001 0101 1100 0011 1010 etc. is transmitted to encoder at every 1ms to the FSK transceiver section for modulation. Each PIR sensor senses and generates signal at different part of microcontroller it totally depend on microcontroller to generates a unique code for PIR detection. Multiple PIR sensor can sense the object and generates code in the form of signal or multiple parts of microcontroller.

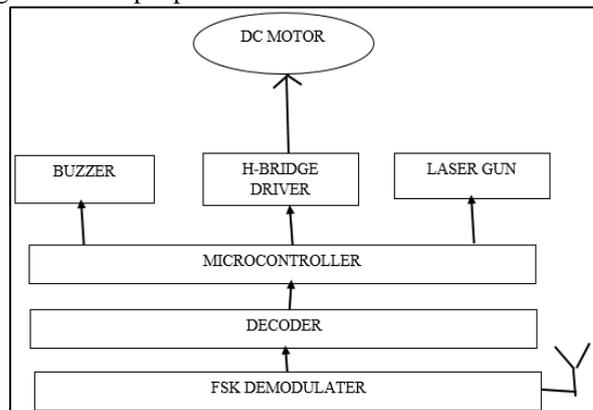


Fig. 1.2: (Layout of AGTS)

The receiver contain FSK transceiver, 8085 microcontroller, DC Motor, Firing Laser Gun. Buzzer Alarm and Decoder IC. The signal is transmitted by transmitter is received by FSK receiver and demodulated by demodulator signal is decoded by decoder IC. Signal transmitted to microcontroller and microcontroller retain code generates is called obtained code. In the form of 11100101 11001011 11100111 etc.

Depend on code, hoe much degree will the motor rotate and target itself to object location. Targeting activities and buzzer alarm system activities alarm in the military camp. The transmitter and receiver works on 443MHz frequency.

Once the buzzer system get activated, after very small deferment gun firing system get activated and laser gun starts firing over object. The gun fire system rotate accordingly to the sensation of the sense as the code transmitted will rapidly changes it depends on the object movement. The transmitter and receiver can be maximum 200m at each other else receiver with create problem in reception of code.

IV. CONCLUSION

The idea is implemented for basically large scale E.g. border area, but can be modified and used in any of the security requirement on depend on cost and complexity but one thing should matter security increases, program complexity increases. The cost of system is incredible. Range can be varied as per requirement by setting sensor.

There are certain future improvement that should be under development for further improvement of system.

REFERENCES

- [1] <https://www.engineersgarage.com/contribution/automatic-gun-targeting-system>
- [2] Harshal Hemane, Deborati Sen; Asst. Professor dept. of electronics engineering, BVU of Pune, Maharashtra India, B. Tech, dept. of electronics engineering, BVU of Pune, Maharashtra India, LASER BASED SECURITY SYSTEM for home; international research journal of engineering and technologies (IRJET), VOL: 05 - ISSUE:01 | jan-2018.
- [3] Ajinkya V. Deshpande, Jahed R. Shaikh, Snehal C. Ingole, Yogeshwari D.Kolapkar, UG Student dept. of electronics and telecommunication ENGG SCS COE, Rahuri, Ahmednagar, Maharashtra , India 413706. UG Student dept. of electronics and telecommunication ENGG SCS COE, Rahuri Ahmednagar, Maharashtra, India 413706.UG Student dept. of electronics and telecommunication ENGG SCS COE, Rahuri Ahmednagar, Maharashtra , India 413706. UG Student dept. of electronics and telecommunication ENGG SCS COE, Rahuri Ahmednagar, Maharashtra, India 413706. international research journal of engineering and technologies (IRJET), VOL:4-ISSUE:08| jan-2018
- [4] Jagruti R. Shinde, Prof. Naredra M. Wagdrikar smt. Kashibai Navale College of Engineering. smt. Kashibai Navale College of Engineering. international research journal of engineering and technologies (IRJET), VOL:5-ISSUE:03| march 2018