At 89C51 Based Missile Trigger Using GSM Technology

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ABSTRACT

The DTMF is a very challenging component used nowadays in the newer concepts. The auto missile trigger system works with the DTMF technology which receives information from microcontroller AT 89C51 .In these paper Ultrasonic sensors detects the object and sends a message to the GSM modem.

The modem automatically sends the information about the detected object and its distance to our Mobile sets.Then the user sends some signaling tone to the DTMF to take further actions. After receiving the signals from the ULN, Trigger system comes into action and ejects the missile.
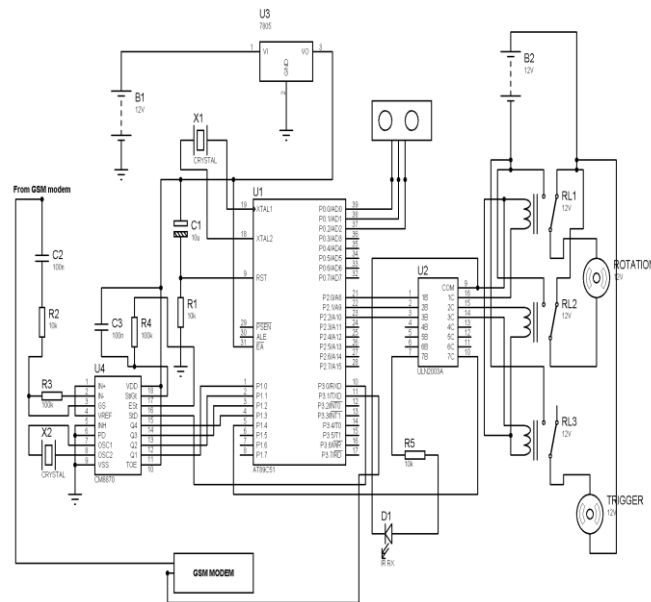
1. INTRODUCTION

The ultrasonic sensors scan through a specified range.[2] If object crosses the area the sensors gets alert.[5] Signal is sent to the microcontroller which sents a message using gsm to the person in charge.[7] The system comprises of:

1. DTMF Decoder (8870)
2. AT89C51 Microcontroller
3. Ultrasonic Sensors
 4. GSM

2. BLOCK DIAGRAM
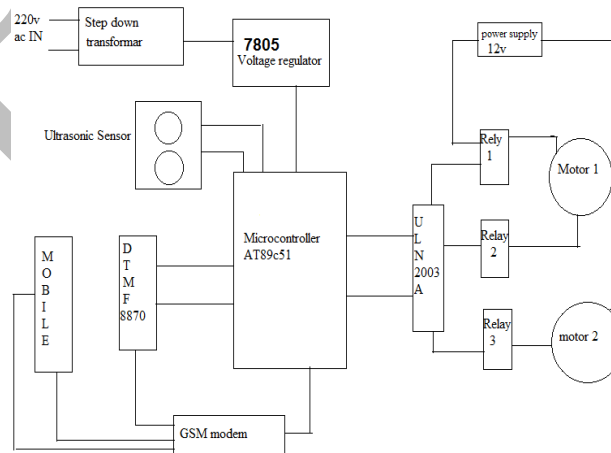
3. CIRCUIT DIAGRAM

WORKING

• GSM Interface is used to communicate with GSM to sense the incoming commands.[**5**].
 • Dc motor driver runs the dc motor. It allows in the rotation of Relays which help in tracking the components.[**2**]
• The receiver consists of two parts such as, DTMF and ultrasonic waves. The DTMF used here for detect the signal coming from GSM.[**4**].
• Embedded controller 89C51. It receives signal from the receiver and commands the driver to run the stepper motor and also communicate with the GSM to indicate the position of the antena .[**6**]
• In transmitter side GSM is used for sending the signal for control the robot and also trigger the missile.Hence the missile is triggered.[**9**]

4. DESCRIPTION OF THE SYSTEM

. DTMF DECODER (8870) The 8870 DTMF's internal architecture consists of a band-split filter section which separates the high and low tones of the received pair, followed by a digital decode (counting) section which verifies both the frequency and duration of the received tones before passing the resultant 4-bit code to the output bus.

. AT89C51 MICROPROCESSOR

The AT89C51 is a low-power, high-performance CMOS 8-bit microcomputer with 4K bytes of Flash programmable and erasable read only memory (PEROM). The AT89C51 provides the following standard features: 4K bytes of Flash, 128 bytes of RAM, 32 I/O lines, two 16-bit timer/counters, a five vector two-level interrupt architecture, full duplex serial port, on-chip oscillator and clock circuitry

. RELAYS

A relay is an electrical switch that opens and closes under control of another electrical circuit
.CRYSTAL OSCILLATORS
Crystal oscillators are oscillators where the primary frequency determining element is a quartz crystal stability.

CAPACITORS
It is an electronic component whose function is to accumulate charges and then release it.

VOLTAGE REGULATOR
A voltage regulator is designed to automatically maintain a constant voltage level

ULTRASONIC SENSORS
Ultrasonic sensors are devices that use electrical–mechanical energy transformation to measure distance from the sensor to the target object.

GSM
The microcontroller is used to communicate with GSM mobile to sense the incoming commands to operate the missile and to abort it remotely.

SOFTWARE USED
ASM 51 using TOPWIN CONVERTOR is used to burn the coding in 8051.

5. FUTURE ASPECTS
1. A fuzzy logic algorithm can be implemented for precession control of antenna position.
2. The antenna designed in this project moves in one plane and don't give any information regarding the axial movement of the target and also the distance of the target. A work on that regard can be carried out.
3. The range of the detection can be increased by changing the Ultrasonic sensor of larger range .
4. To get the better view of the area Wireless Cameras can be used.

6. APPLICATIONS
- Safety purpose
- Detection
- War control
- Army Weapons
- Nuclear Weapons
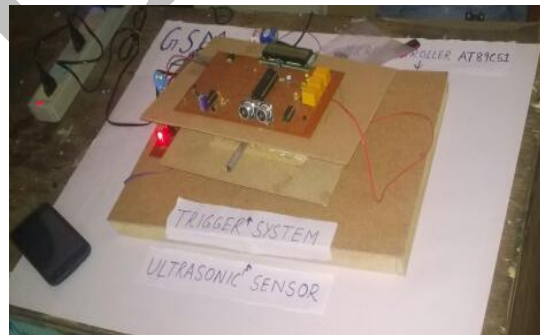
Fig: Future Model

7. OVERALL ANALYASIS
The analysis of the system helps to establish the feasibility from different angles. The system should satisfy the Technical, Economic and Operational Feasibility.

1. **Technical Analysis**: The Hardware & Software which was used to develop this project was technically feasible to requirements of the user, thus avoiding any software or hardware conflicts.

2. **Economic Analysis:** The is economically feasible because it uses the common software package FRONT END mod which is feasible in functioning, cost, & which meets the user requirements.

CONCLUSION

This paper presents a brief review of how a missile can track and destroy any unidentified object, using low maintenance raw materials and which is economical for any country to develop it. Thus a missile can track and destroy any unidentified object before it causes harm to our country.

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