ISSN: 2349 - 4891

International
Journal of Recent Research and Applied Studies
(Multidisciplinary Open Access Refereed e-Journal)

MILITARY INTELLIGENCE ROVER

Baby Girija B
Assistant Professor,Department of Electronics, NSS College Rajakumari, Idukki, Kerala

Received 25th November 2018, Accepted 10th December 2018

Abstract
Military Intelligence Rover system is mainly used for finding enemies. It has the capacity to identify toxic gases and bombs also. It is a robotic systemwhich uses the principal of Microcontroller. Arduino board is the main part of the system. The board accepts analog and digital inputs from sensors which actuates a motor

Introduction

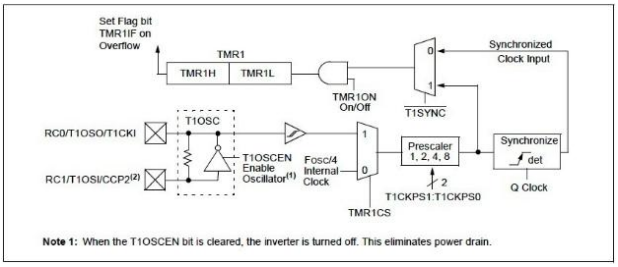
The rover system is made up of the following sub systems. Wireless Zigbee unit, Motor driver, Gas sensor , PIR sensor , Ultrasonic sensor and radar. A wireless transceiver called Zigbee controls the robot. Basically zigbee has two ports. One port is connected to microcontroller and other to PC. A message from software controls rover.The movement of rover is made possible by using a motor, which is of 12v dc. Object is detected by ultrasonic radar. The measurement from sensors is so accurate and it is not affected by surface,material,light ,dust etc.

Methodology

A triggering to ultrasonic module is given. The Echo can be listened. Timer is started when Echo received HIGH. Timer can get stopped when we receive Echo LOW. Monitor real timer value. Then convert to distance and then display. Function of Timer Module is given below.

T1CON: TIMER1 CONTROL REGISTER (ADDRESS 10h)

U-0	U-0	R/W-0	R/W-0	R/W-0	R/W-0	R/W-0	R/W-0
—	—	T1CKPS1	T1CKPS0	T1OSCEN	$\overline{\text{T1SYNC}}$	TMR1CS	TMR1ON
bit 7							bit 0



Correspondence
Baby Girija B
Assistant Professor,Department of Electronics, NSS College Rajakumari, Idukki, Kerala

Time = (TMR1H:TMR1L)*(1/Internal Clock)*Prescaler

Internal Clock = Fosc/4 = 8MHz/4 = 2MHz

Distance Calculation

- **Distance = Speed * Time**
- Let**d**be the distance between Ultrasonic Sensor and object.
- Total distance traveled by the ultrasonic burst :**2*d** (forward and backward)
- Speed of Sound in Air :**340 m/s**
- Thus,**d = (34000*Time)/2**, where Time = (TMR1H:TMR1L)/(1000000)
- **d = (TMR1H:TMR1L)/58.82 cm**
- **TMR1H:TMR1L = TMR1L | (TMR1H<<8)**

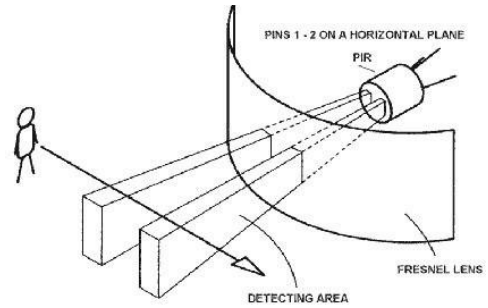
Gas Sensors

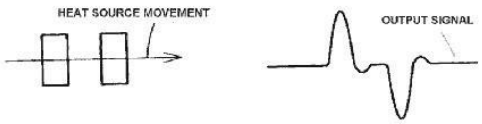
Smoke, Gas and Flame detectors can be used since it is important to check presence of various gases.Ionisation smoke detector, was an ancient method of smoke detection .Ionisation chamber contains a radioactive material. This material provides equal flow of electrons between electrodes. When a smoke particle enters, normal flow of electrons is interrupted and produces alarm. Photo electric smoke detectors have a transmitter and a receiver. A black wall absorbs projected light. No light comes at receiver. When smoke particle enters, light is scattered. PIR sensor allows motion. An

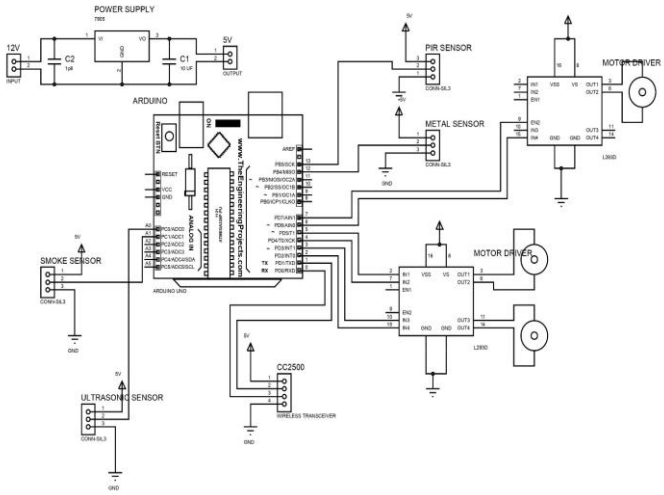
ISSN: 2349 – 4891

Arduino Board can be programmed by using ARDUINO IDE. Ultrasonic radar is used to calculate distance between robots and objects.Zigbeeis a communication systemused for low and medium power communication. The following diagram shows PIR sensors and general circuit diagram.

CC







Result

Military Intelligence Rover circuit can be used for surgical attack and to detect toxic gases.Different types of sensors, Arduino Boardetc can be used for the purpose.Zigbee unit can be used for a higher level communication. More different types of sensors and Zigbee units can be provided to increase efficiency.

References

1. Steve Coll, Ghost Wars (Penguin, 2005 edn), pp.529 and 658 note 6.
2. ^ Robots and Robotics at the Space and Naval Warfare Systems Center Pacific Archived 1999-02-20 at the Wayback Machine
3. ^ "Welcome to Grandchallenge". *www.grandchallenge.org*. Archived *from the original on 2007-10-11*.
4. ^ *Talbot, David.* "The Ascent of the Robotic Attack Jet". *MIT Technology Review.*
5. ^ *Hambling, David.* "Drones may have attacked humans fully autonomously for the first time". *New Scientist*. Retrieved 2021-05-30.
6. *Bowcott, Owen.* "UK opposes international ban on developing 'killer robots'". *the Guardian.* Archived *from the original on 2015-07-29*. Retrieved 2015-07-28.
7. ^ *Gibbs, Samuel.* "Musk, Wozniak and Hawking urge ban on warfare AI and autonomous weapons". *the Guardian.* Archived *from the original on 2015-07-27*. Retrieved 2015-07-28.
8. ^ "Musk, Hawking Warn of Artificial Intelligence Weapons". *WSJ Blogs - Digits. 2015-07-27.* Archived *from the original on 2015-07-28*. Retrieved 2015-07-28.

Please cite this article as: **Baby Girija B** (2018). **MILITARY INTELLIGENCE ROVER**. *International Journal of Recent Research and Applied Studies*, 5, 12(11), 48-49.