



Zigbee Based Soldier Tracking System and Monitoring Using Wireless Communication

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ABSTRACT: To design a soldier tracking system using wireless communication system using monitoring and tracking soldiers body temperature and their axis. Thermistor sensor, here used to find the the soldiers health condition and their present body temperature. These parameters are continuously monitored and will be stored as data. One of the important challenge in military situation is soldiers cannot able to communicate with control room of the nearby camp at the border areas. In addition, an organization needs to have administrative and operational work to the network and operated by other organization. Without careful coordination and planning one group cannot communicate with other groups. The propose of these investigation can be proceeded by soldier tracking system in the same region. This system of requirement is founded proposal. The next aim of investigation is to gather data and planning of both time and resource to ensure efficient use of soldier tracking system.

KEYWORDS: Action Detection, Thermistor, Gas sensor, Live monitoring

I. INTRODUCTION

We are in 21st century, we have to face many problems physically and mentally but it is small issue when we came to know about soldiers who are daily risking their lives for our safety and peacefulness. They have to face many problems in each and every situations in their day to day life but we are not aware of these things, many soldiers have died for our nation by fighting to the enemies but some soldiers had died without any particular reason they had died because lack of information passing and credibility of the system. Some soldiers had died because over coldness and over heat, and exposing to some toxic gases these are some silly reasons to die a brave soldier. There are many applications which supports the army camp by rescue them from such situations which shows their exact location and message alert to be given to the receiver end these are some of the references from other project. There are many applications have derived through many peoples to safe guard the lives of soldiers here we do something differ from it

Our project is based sensing and monitoring the moment of the soldiers by zigbee device as, well as allow efficient planning of both time and resources necessary to ensure efficient and productive use of the system for training the soldier.

II. WORKING OF COMPONENTS

Here to find the health status of soldier we are using a body temperature sensor . These sensors will measure the body temperature of soldier and will be stored in microcontroller memory, The various parameters such as pulse rate is obtained from the through the sensors attached to the body on receiving these parameters is first amplified to eliminate the noise and get a clear output signal. The pins according to the coding in the Xilinx the 4 pins are named as mes1, mes2, mes3, mes4 (i.e.) message bit 1, message bit 2, and message bit 3 and 4. The processed signal from the microcontroller is sent to the zigbee transmitter through MAX 232 or RS 232 which is a cable for transmitting and receiving the signals. Zigbee is a specification which suites , high-level communication used to create a personal area network Zigbee is based on the IEEE.802.15.4standard Zigbee transmission distance is 10-100meters Zigbee has the defined rate of 250kb/sec. Zigbee specification is simpler and less expensive when compared to other wireless personal

area networks The 89V51RD2 is an microcontroller with 64 kB Flash and 1024 bytes of data RAM. ISP allows a device to be reprogrammed in the end product under software control. The capability to field/update the application firmware makes a wide range of applications possible. The 89V51RD2 is also In-Application Programmable (IAP), allowing the flash program memory to be reconfigured even while the application is running. Gas sensor (mq5) module used for gas leakage detection it is suitable for detecting H₂, CO, CH₄ and alcohol. Sensitivity of the sensor can be adjusted by using the potentiometer. Gyro sensors are also known as angular rate sensor or angular velocity sensor. In simple terms angular velocity is change in rotational angle per unit of time.

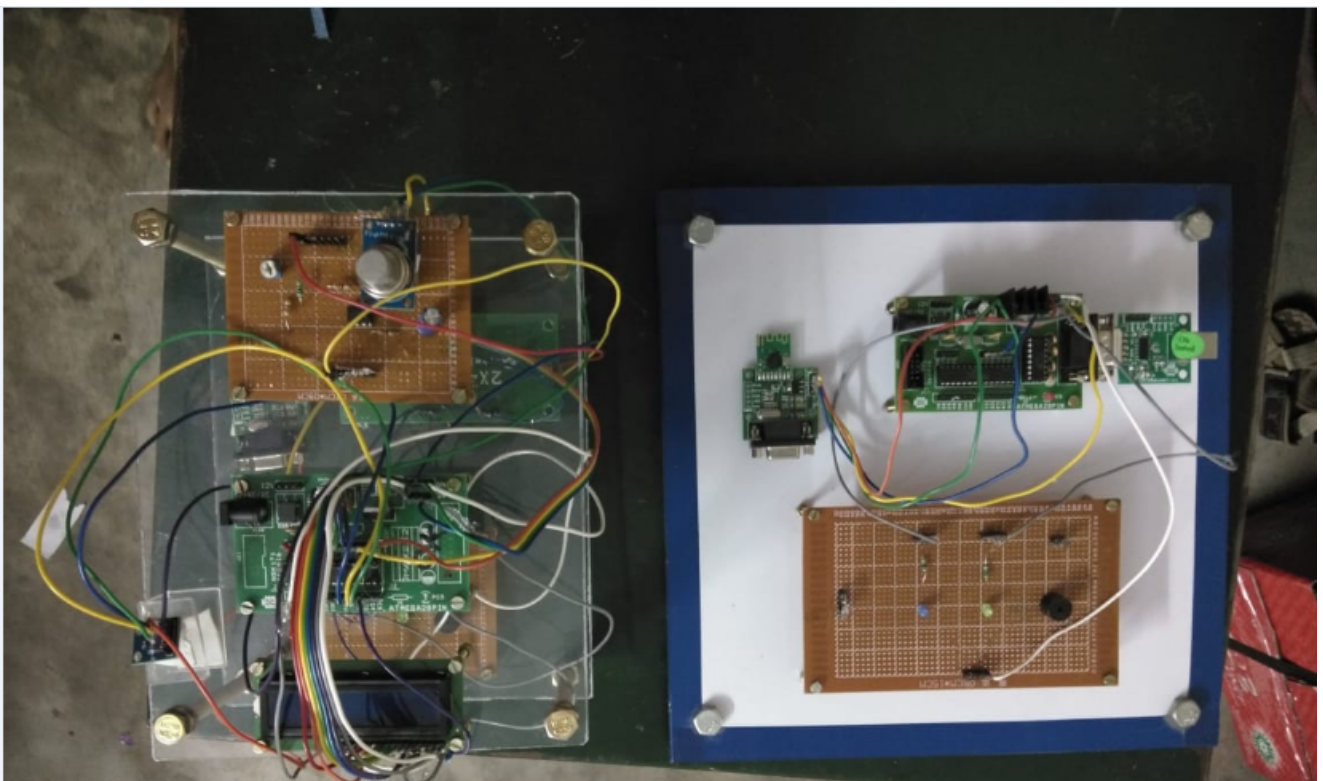
III. FUNCTIONAL DESCRIPTION

This user module has two interfaces one is receiver and transmitter end, where transmitter end to be carried by the soldier or stitched to soldier shirt. While soldier has stack in any mishap or injured due to some gas attack or any physical attack happens the Morse code will be generated from the transmitted end by the zigbee device to the receiver end, where receiver end will receive the actual axis and problem of the soldier.

This system also consists of gas sensor which detects the harmful gases which causes illness to the soldier. There will be a alert message when the soldier conference any physical attack the axis will be shared to the monitor and thermister sensor which detects the body temperature of the soldier.

IV. RESULTS AND DISCUSSIONS

The kit which is designed for the purpose of soldiers safety using zigbee.



The above fig are the kit module which is used for our proposed system . The figure shows the connections of components in the system.



V. CONCLUSION

The proposed system can be useful to save many human lives in army and military camps. Hereby we have successfully designed and tested the hardware and software for the zigbee based soldier tracking system. So this prototype can be made into product to help the military. The objective of the system is to provide a safe and secure life for each and every soldier.

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