

## SMART BIOKIT FOR MILITARY PEOPLE

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### ABSTRACT

The purpose of this paper is to design a smart biokit fixed up in the military jacket to monitor the biological parameters of the military people in the service. During floods, earthquakes, terrorist attacks, etc, the army provides humanitarian services and also conducts rescue operations. Armies protect our country by sacrificing their own life, so it is necessary to safeguard and monitor the soldiers continuously during the above said periods. The primary function of this system is to monitor the military people in the field. The system monitors temperature, aliveness and position of the military people and the data collected by these sensors are sent to the PIC Microcontroller. The PIC Microcontroller then transmits the data to the user. Here the system uses zigbee technology in order to transmit the information. From the transmitter, the recordings of biokit parameters are sent to the recipient. To monitor the biological parameters of the military personnel we attach a smart biokit in the jacket worn by them. The following advantages of smart biokit are tracking of soldier is purely based on our own network. So that no interference and no interrupt of communication by external source. This suit is compact and reliable for all environment.

*Index terms* – **Microcontroller, Zigbee**

### 1.INTRODUCTION

The vital role of army soldiers is to protect our nation from the enemies. For the safety measures of soldiers many devices are mounted to monitor them. Biokit system comprises different types of physiological sensors, transmission and processing unit for health monitoring. GPS are used to identify the current location of the soldiers in the battle field. These devices are incorporated into the jackets of military person, so that field commanders can track their soldier's condition in real time. Zigbee technology is a high-level protocol used for secured communication purpose by

creating personal area network. These devices are used to monitor the soldiers in low cost with high reliability.

## II.PROPOSED METHOD

### TRANSMITTER SECTION

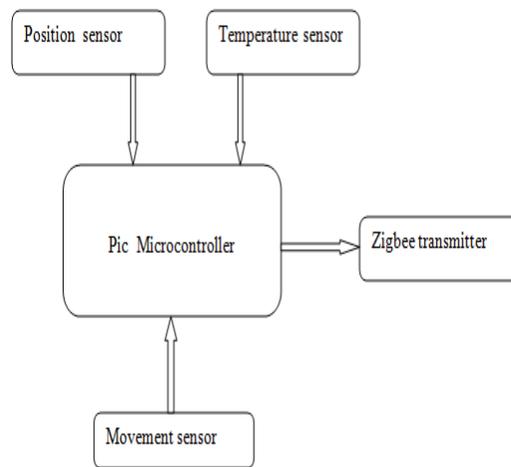


Fig.1.a.Transmitter block

### RECEIVER SECTION



Fig.1.b.Receiver block

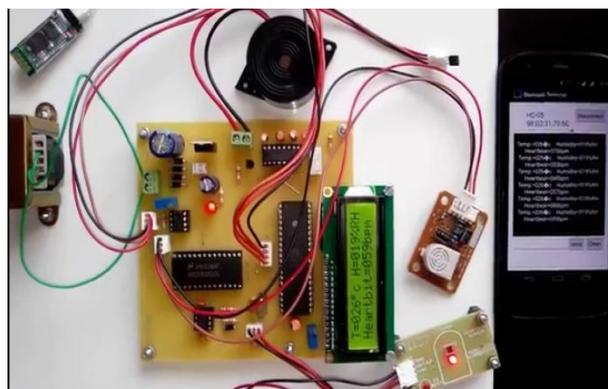
## 1. BLOCK DIAGRAM DESCRIPTION

Here pyroelectric sensor which can detect high level of infrared radiation is being used to sense the movement of the military people. This sensor consume low power. The position sensor here used is a IR sensor which is used to monitor whether the military person is in the state of danger or in free space.

The LM35 is an integrated circuit sensor that can be used to measure temperature with an electrical output proportional to the temperature (in °C).It can measure temperature more accurately than a using a thermistor. The LM35 generates a higher output voltage than thermocouples and may not require that the output voltage be amplified. The scale factor is .01V/°C.

The output of these sensor are given to pic16f877a microcontroller where the signals are converted into required output.These outputs are transmitted by means of Zigbee technology. Zigbee is an high level communication protocol used to create personal area network. By using this technology the information are communicated in a secured manner. The output obtained are monitored by the commanders in the military station.

## III IMPLEMENTATION



## **Fig.2. Smart biokit for military people**

### **IV. ADVANTAGES AND LIMITATIONS**

#### **1. ADVANTAGES**

- Personal area network is used for transmission of data.
- Continuous monitor of military people
- Compact in size.
- Low cost and high reliable.

#### **2. LIMITATIONS**

- The military person can be monitored within certain kilometer.

### **V. APPLICATIONS**

- The Biokit can be used in all types of military services.
- The commanders can monitor the soldiers continuously in the battle field.

### **VI. CONCLUSION**

This paper is aimed to monitor the state of military people in the field. In this system the temperature and movement of the soldiers are tracked. Proximity sensor is added to give information when the military man is in the case of emergency. The biokit is minimized to fit in the pocket or coat of the military person.

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