Gps Based Advance soldier Tracking with Emergency Messages and Communication System

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Abstract— In today's world enemy warfare is an important factor in any nation's security. The national security mainly depends on army (ground), navy (sea), air-force (air).The important and vital role is played by the army soldier's. There are many concerns regarding the safety of these soldiers. As soon as any soldier enters the enemy lines it is very vital for the army base station to know the location as well as the health status of all soldiers. In our project, the soldier can ask for directions to the army base unit in case he feels that he is lost. By using the location sent by the GPS, the base station can guide soldier to safe area & GSM will help to communicate the Soldier unit with Base unit. By getting the exact location of soldiers it will help the Soldiers to discuss about their war strategies and take guidance from Base unit. The various Health Sensors such as Temperature sensor, Heart rate sensors, Humidity sensors, Gas detection sensors will help to decide the health status of that particular soldier.

Keywords— Tracking, GPS, Sensors, Navigation, GSM, Differential GPS, EGPRS, UMTS.

INTRODUCTION

The infantry soldier of tomorrow promises to be one of the most technologically advanced modern warfare has ever The challenge was to integrate these piecemeal components into a lightweight package that could achieve the desired result without being too bulky and cumbersome or requiring too much power. It is necessary for the base station to guide the soldier on correct path if he is lost in the battlefield, around the world, various research programs are currently being conducted, such as the United States'. One of the fundamental challenges in military operations lies that the soldier's are not able to communicate with control room station. In addition, the proper navigation between soldier's organizations plays which is useful for control room station to know the exact location of soldier and accordingly they will guide them. Also High -speed, short-range, soldier-to-soldier wireless communications to relay information on situational awareness, GPS navigation, Bio-medical sensors, Wireless communication with large amount of data & we have to copy this data into another flash drive then it can be possible using this small device which can be handled easily. As shown in the figure the user can transfer the data from source to destination. We can also able to select which folder is to be transfer with the help of user interface LCD with Up- Down arrows & option & select buttons. Thus it makes the device more flexible. By addition of some extra software part it may be possible to the functions like delete, copy single file or folder to the base system.

REMAINING CONTENTS

System's Block Diagram consists of two units such as Soldier Unit and Base Unit.

I. SOLDIER UNIT:

In this module, we have come up with an idea of tracking the soldier as well as to give the health status of the soldier during the war, which enables the army personnel to plan the war strategies. also the soldier can ask for directions to the army base unit in case he feels that he is lost. By using the location sent by the GPS the base station can guide the soldier to safe area. Here to find the health status of soldier we are using a body temp sensor as well as pulse rate sensor. These sensors will measure the body temperature and the pulse rate of soldier and will be stored in μc memory. These signals, travelling at the speed of light, are intercepted by your GPS

receiver, which calculates how far away each satellite is based on how long it took for the messages to arrive. These sensors will help to sense physical parameters & informs to Base Station through GSM.

This unit is placed on the soldier. It has mainly 4 parts:
- Biomedical sensors
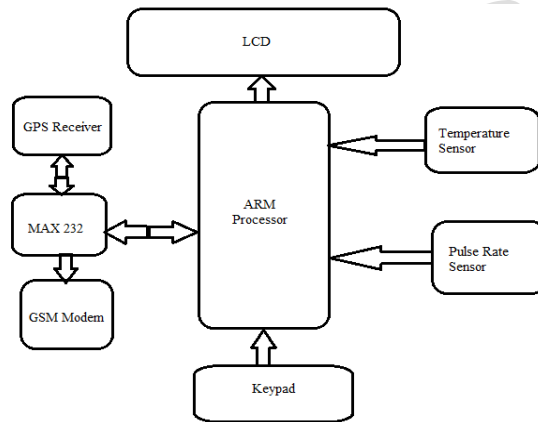- Key pad
- GPS Receiver
- GSM Modem

Fig 1. Soldier Unit

II. BASE UNIT:

In this unit upon receiving the SMS, the VB s/w shows the solder's location on Google maps based on the GPS co-ordinates also the health status is displayed. In this way the army official's can keep a track of all their solders.
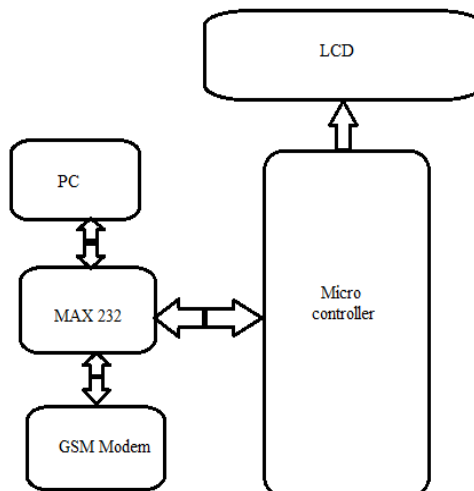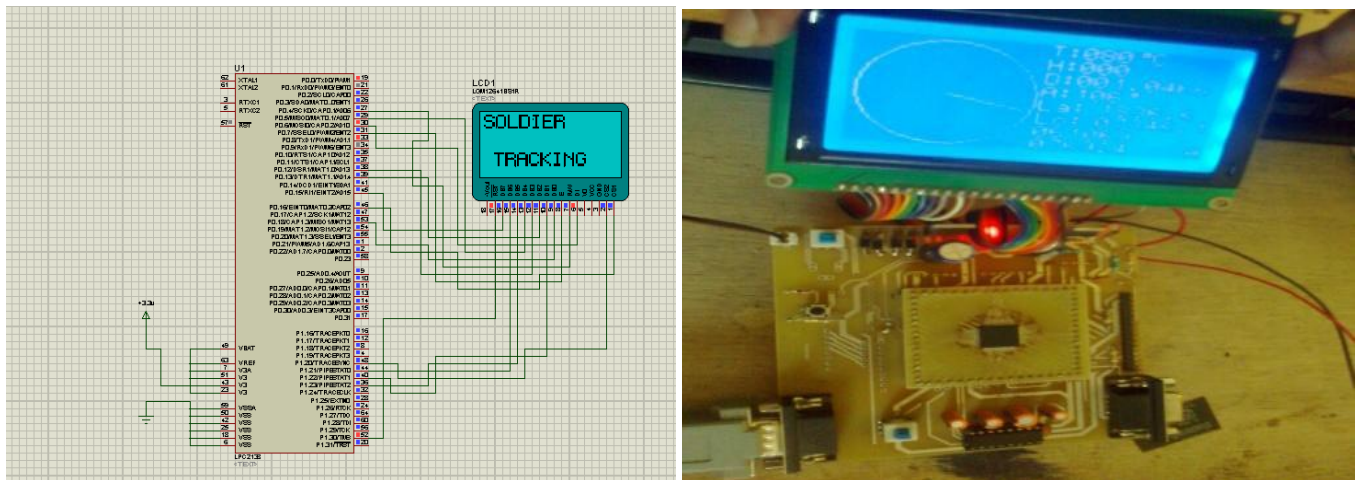

Fig 1. Base Unit

III. SIMULATION RESULTS

Above fig. shows interfacing of Graphical LCD with ARM processor and Hardware arrangement. To perform this we have written code in keil software and proteus is used for simulation results.

CONCLUSION

Following conclusion can be retrieved from above implementation are:
Continuous Communication is☐ Possible: Soldiers can communicate anywhere using RF,DS- SS,FH-SS which can help soldier to communicate among their squad members whenever in need.
Less complex circuit and power☐ consumption. Use of ARM processor and low power requiring peripherals reduce overall power usage of system. Modules used are smaller in size and also lightweight so that they can be carried around.

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