

# **HEALTH MONITORING SYSTEM USING MOBILE PHONE**

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## **ABSTRACT**

Health monitoring system using mobile phone is used to monitor the different parameters of patients remotely and simultaneously. In this system the doctor can monitor different parameters of patients sitting in his room & even when he is away from the patient.

This system is developed using 8051 microcontroller along with ADC attached with sensors & the serial communication between the system and controller is achieved by means of RS232 protocol. C program is used to read the obtained values and store it in a text file then a visual basic program is used to display these values on screen. This program by using Turbo FTP uploads the results to a particular website. Finally a doctor with the known URL(Uniform Resource locator) obtain the values in his Mobile phone.

Keywords: microcontroller, ADC, ECG & Heart Rate.

## **INTRODUCTION**

In the present era of technology everything is becoming technology driven. The health care is vast area requiring continuous Monitoring. In our attempt to develop a device which takes the heart beat rate temperature as input and message of whether it is high or lower than the normal value, we aim to provide small contribution to this field.

Here it will be used to monitor the heart rate, ECG & body temperature of the patient continuously, doctor can obtain the results in their mobile phone so that immediately the doctor can attend the patient for the further treatment if necessary.

## BLOCK DIAGRAM

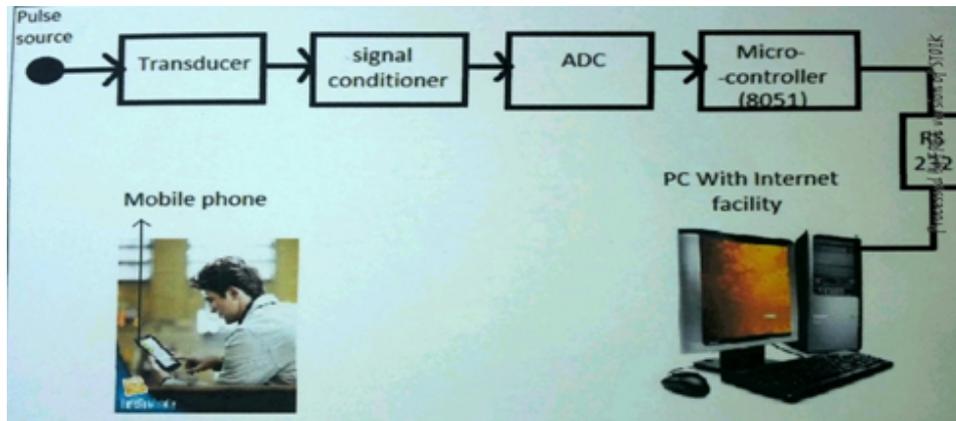


Figure 1: Block diagram of the health monitoring system

## DESCRIPTION

Transducer is a device that converts one type of energy to another. The conversion can be to/from electrical, electro-mechanical, electro-magnetic, photonic, photovoltaic, or any other form of energy.

Signal conditioner manipulates an analog signal in such a way that it meets the requirements of the next stage for further processing. Most common use is in ADC.

ADC is a device which converts analog to digital and sends to microcontroller.

Microcontroller is a small computer on a single integrated circuit containing a processor core, memory, and programmable input/output peripherals.

Personal computer receives the data from 8051uC through RS 232 cable and with the necessary programs in it stores the results in a file and converts into represent able format and the data is uploaded to the particular website.

Mobile phone using particular URL with GPRS in it the results are finally viewed. (fig:2)

## **SENSORS**

1. TEMPERATURE SENSOR (LM35) series are precision integrated-circuit temperature sensors, whose output voltage is linearly proportional to the Celsius (Centigrade) temperature. The LM35 does not require any external calibration or trimming to provide typical accuracies of  $\pm 1/4$  degree Celsius at room temperature and  $\pm 3/4$  degree Celsius over a full -55 to +150 degree Celsius temperature range. Less to operates from 4 to 30 volt. Less than 60uA current drain. (fig:3)
2. HEAR BEAT MONITORING SENSOR is designed to give digital output of heat beat when a finger is placed on it. Operating voltage is +5V D regulated, operating current 100mA, output data level 5V TTL level, heart beat detection indication by LED and Output High Pulse, Light source 660nm Super Red LED. (fig:3)
3. ECG SENSOR (piezoelectric sensor) is device that piezoelectric effect to measure pressure, acceleration, strains or force by converting them to an electrical signal. Modes of operation can be distinguished: transverse, longitudinal, and shear. (fig:3)

### **Results:**

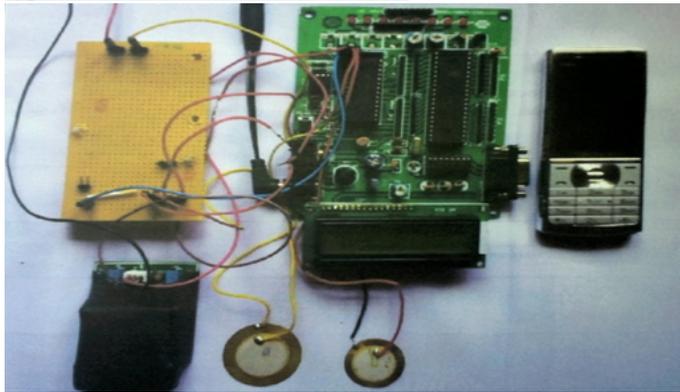


Figure 2:

Figure 3:

## CONCLUSION

The project "Health monitoring System using mobile phone" has been successfully designed and tested. (fig:3)

It has been developed by integrating features of all the hardware components used. Presence of every module has been reasoned out and placed carefully thus contributing to the best working of the unit.

Secondly, using highly advanced IC's and with the help of growing technology the project has been successfully implemented.

The whole health monitoring system, which we have proposed can be integrated into a small compact unit as small as a cell phone or a wrist watch. This will help the patients to easily carry this device with them wherever they go. The VLSI technologies will greatly come handy in this regard.

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