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Wireless Monitoring of Heart-Rate And Temperature Using Bluetooth Technology

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ABSTRACT

Stethoscope is an important device to sense heartbeat and analyze pulmonary abnormalities. Moreover acoustic stethoscopes are used. It is difficult to analyze the heart sound and diagnose it. Also the chest piece and the connecting tubes are known to facilitate transmission of pathogens from patient to patient and from patient to user. Therefore, this idea was to develop a wireless transmission. Three different data are fed through pot specifying the following conditions: normal, below normal and above normal. These are visualized in the handheld device as digital data with certain indications.

Keywords: LM35 Temperature Sensor, Heart Rate Monitoring, Bluetooth Module For Wireless Transmission.

I. INTRODUCTION

Stethoscope play an important role along with electronic stethoscope in healthcare unit to diagnose the internal organs like lungs, heart and bowel sounds, and also used to measure blood pressure. They are amplified by the body impulses. They convert acoustic sound waves into electrical signals and further amplified for maximal listening. In order to get an amplified sound output, ambient noise reduction and enhanced frequency range, wireless monitoring using Bluetooth technology is made. It enables them to connect with other Bluetooth devices. Subsequently, health care has become a challenge to many advancements and impairment.

II. BLOCK DIAGRAM

Here the ATMEGA 328 microcontroller is given with the power supply of AC voltage typically 220V RMS





Fig 1.1 Block Diagram

the level of the attained DC output. A regulator circuit avoids ripples and even remains constant DC value if DC volume varies. Potentiometer is used to feed the data with three different conditions with three different varying ranges. To detect the temperature here used is LM-35. Temperature varies directly as the electrical output and acts as an integrated circuit sensor which can measure temperature in °C.They are more accurate than thermistor. This circuitry temperature measures with a resolution of up to 0.5°C.

Microcontroller ATMEGA used here is 328microcontroller with the low power. Bluetooth is a special interest group which serves in computing, networking, consumer electronics and telecommunication. They interconnect with many other devices which synchronize the upcoming problems. Here used Bluetooth 4.0 of 2MHz spacing, which allows 40 channels. Hence it performs an excellent procedure in wireless transmission of heart rate and temperature to the device with high efficiency and transfer rate.



III. CIRCUIT DIAGRAM

Fig 1.2 Circuit Diagram

The data is fed as an input to the microcontroller and it will process the digital data and waits at the transmitting end of the Bluetooth. This is viewed once the bluetooth application is interfaced with our mobile. This can be logged in by entering the security code which it had generated in the software. Once it matches it gets connected automatically. These parameters are viewed through the ASCII code. It can also process data through the added comments.

IV. RESULT



Fig 1.3 Wireless monitoring of heart rate and temperature using bluetooth technology.

This idea has resulted into a proposed system detecting the heart rate and temperature through Bluetooth technology. It aids the physician to monitor the bodily conditions of an individual with an handheld device. Several diagnostic assessments could be performed. Also the transfer rate of data is so fast that it could yield result with higher efficiency.

V. CONCLUSION

This system generally monitors the heart rate and temperature in real time environment and it can also be very much effective in the absence of connectivity tubing. This proposed system does not allow any type of pathogens that can affect the patient in any direct or indirect methods. All the data are continuously monitored and sent to physician or guardian in case of any issue or bad situation. The one who have undergone heart surgery could make use of it so that they don't need to rush through hospital often.

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