Development of Respiratory Monitor using Smartphone VIA Bluetooth for Bedridden Elderly or Patients

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Abstract

The vital sign is a clinical measurement such as pulse rate, temperature, respiration rate and blood pressure. This project to design and develop a prototype of an electronic gadget which is used to detect respiration rate of bedridden elderly and the pati ents. It consists of LM35 as a thermal sensor, microcontroller 16F767, App -link Bluetooth module, LED and buzzer as an indicator and an android smartphone. The LM35 sensor converts the temperature into voltage. The scale factor for LM35 is 10mV/°C meaning whenever the temperature changes per °C, the reading output of LM35 is 10mV depend on the temperature increase or decrease. If the temperature increase, the output is +10mV and if the temperature decrease it will -10mV from the output of LM35. LM35 is dete cting the temperature from the surrounding first and stored in microcontroller 16F767, during exhale, the microcontroller will count the amount of temperature increased from the surrounding and process the data. LM35 is placed on the nebulizer mask and pla ce right in front of the nostril. The data is transmitted via Bluetooth module into the android smartphone with installed application to display the respiratory rate. If there is no signal the microcontroller will detect as the patient is not breathing and the device will send the text message via smartphone and alarm is turned on. The main objective is to implement and design of wireless real -time respiration monitor (Bluetooth) using a smartphone has been achieved.