Visvesvaraya Technological University

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A PROJECT REPORT ON

"DESIGN AND FABRICATION OF MINIATURIZED ECG SYSTEM WITH BLUETOOTH CONNECTIVITY"

SUBMITTED IN PARTIAL FULLFILLMENT FOR THE AWARD OF DEGREE OF

BACHELOR OF ENGINEERING IN ELECTRONICS AND COMMUNICATION

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ABSTRACT

The technological advancements in today's contemporary world has paved a way for miniaturization of devices. This has helped to provide proper and effective way of analyzing various body conditions and diseases. The contraction and relaxation of the cardiac muscles result in generation of electrical potential which could be used to diagnose various disorders of the heart.

The aim of this project is to design a miniaturized ECG system and display the ECG output signals on the wireless PC which could help the physician to perform preliminary diagnosis of the heart. The proposed system has a microcontroller which has been programmed to indicate the working condition of the heart,based on the heart rate.

The three electrodes lead system is used here. One electrode is attached to the right arm, one to the left arm and the third one is used as the right leg-drive that act as grounding. This system consists of ECG ASIC ADS1292R to which input signals from the body is given.

The analog signal from the body is converted into digital by an inbuilt 24 bit ADC in ADS1292R.This digitized signal is then given to the microcontroller ATMEGA 328.

This system is built with a provision of enabling wireless transmission of ECG signals to a PC through Bluetooth. This helps the doctor to have visual description of the subject ECG without the need of mounted monitors. The experimental results show that device is clinically approbated, compact, cost effective and easy to use.