

Smartphone Based Automatic R-R Interval Measurement using Open Multimedia Application Platform (OMAP)

(Sponsored By K.S.C.S.T., Bangalore)

A Project Report submitted in partial fulfillment of the requirements for the award of the Degree of Bachelor of Engineering in Bio-medical of the Visvesvaraya Technological University, Belgaum

Submitted by

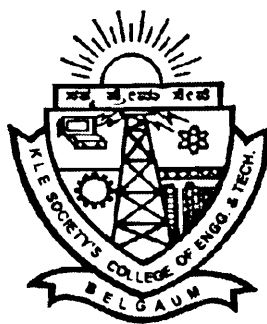
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ABSTRACT

Heart rate is the number of heartbeats per unit of time, typically expressed as beats per minute (bpm). Heart rate can vary as the body's need to absorb oxygen and excrete carbon dioxide changes, such as during physical exercise, sleep, illness, or as a result of ingesting drugs. The typical resting heart rate in adults is 60–80 beats per minute (bpm). Heart rates are most accurately measured with a diagnostic tool known as an electrocardiograph (ECG or EKG), which are often used in a medical setting to noninvasively and painlessly record electrical activity of the heart over time. The use of Electrocardiogram (ECG) system is important in primary diagnosis and survival analysis of the heart diseases.

Smartphone can do so much more than make calls, send text messages, and play games. This project aims towards calculating the R-R interval which is helpful in measuring heart rate and displayed on smartphones using wireless technologies.

This project is implemented on OMAP (Open Multimedia Application Platform) 3530, where the signal is processed and the result is displayed on various peripherals. This approach shortens the time for data collection and cardiologist can quickly analyze the results. Besides, it is convenient for the test subjects as they do not need to visit the lab frequently.