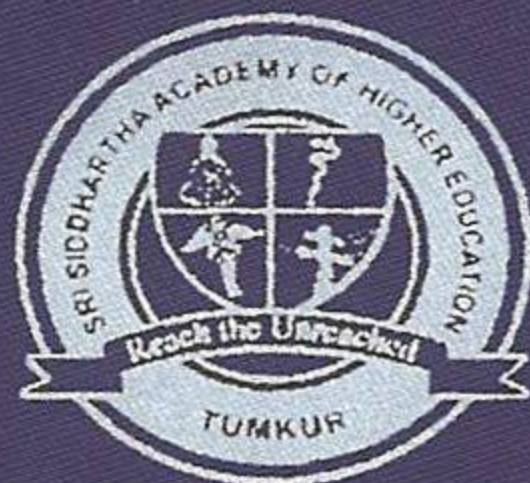


SRI SIDDHARTHA ACADEMY OF HIGHER EDUCATION

(Declared as Deemed to be University Under Section 3 of the UGC Act, 1956)

AGALKOTE, TUMKUR-572 107

KARNATAKA



Project Report

On

**“ECONOMICAL HEART RATE MEASUREMENT DEVICE WITH REMOTE
MONITORING USING FINGERTIP”**

Submitted in partial fulfillment of requirements for the award of degree of

**BACHELOR OF ENGINEERING
IN
TELECOMMUNICATION ENGINEERING**

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ABSTRACT

The heart rate is one of the significant physiological parameters of the human cardiovascular system. Heart rate is the number of times the heart beats per minute. Heart rate data reflects various physiological states such as biological workload, stress at work and concentration on tasks, drowsiness and the active state of the autonomic nervous system. Human cardiac dynamics are driven by the complex nonlinear interactions of two competing forces: sympathetic regulation increases and parasympathetic regulation decreases the heart rate. Thus, monitoring of heart rate plays a significant role in providing the status of cardiovascular system and clinically correlated information to medical professionals. Heart rate measurement is also regarded as an essential parameter in patient care monitoring system. Heart rate can be measured either by the ECG waveform or by sensing the pulse - the rhythmic expansion and contraction of an artery as blood is forced through it by the regular contractions of the heart. The pulse can be felt from those areas where the artery is close to the skin.

There is a vast growth of wireless technology and GSM communication in these days. This project deals about the implementation of GSM technology in Medical application. This wireless communications would not only provide safe and accurate monitoring but also the freedom of movement. In this, heart beat and of patient are measured by using fingertip sensors as analog data, later it is converted into digital data which is suitable for wireless transmission using paging messages through GSM modem. PIC16F628A microcontroller is used to count the Heart rate and PIC16F877A micro controller device is used for temporary storage of the data used for transmission.