

**VISVESVARAYA TECHNOLOGICAL UNIVERSITY**  
**BELGAUM -590018, KARNATAKA, INDIA.**



**REAL ECG MACHINES FOR DOCTORS WITH DATA  
TRANSMISSION THROUGH GSM MODEM**

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## ABSTRACT

Current advancements in computing power, digital signal processing techniques and data communications have helped to usher in a new era in the delivery of medicine and patient management. The coming together of these technologies into the discipline of telemedicine facilitates the remote diagnosis and care management of patients, irrespective of location. At present, some systems allow for remote diagnosis by using a combination of mobile communication systems such as GSM and GPRS. With respect to above said ideas, this abstract is manifesting the usage of one of the key components in the discipline of Medicine, that is ECG and transmission of ECG signals through wireless GSM Modem.

The project aims at implementation of a real time wireless communication system. It is designed to monitor patient from a remote place, by applying a wireless protocol. Despite of the improvement in communication link and progress in advanced communications technologies, there is a strong need for interactive real – time wireless communication system.

Electro Cardio Gram (ECG) is a diagnostic tool which executes a transthoracic interpretation of heart electrical activity of the over time captured and externally recorded by skin Electrodes. It's a non- evasive recording produced by an Electro Cardio Graphic device. Cardiologists can determine the heart rate, the heart rhythm, conduction abnormalities (abnormalities in how the electrical impulse spreads across the heart) and conditions prior to heart attack, coronary artery disease, abnormal heart muscle thickening, as such data from the ECG tracing.

Real time wireless communication system is implemented using cellular technology, which provides an easy and cost-effective way to connect field devices to the control centre. There is no need to lay new cable, no need to physically connect to an Ethernet or phone network, but just by connecting the device to a cellular modem or device server communication can be accomplished. GSM services are a standard collection of applications and features available to mobile phone subscribers all over the world. The GSM standards are defined by the 3GPP collaboration and implemented in hardware and software by equipment manufacturers and mobile phone operators. The key feature of this is the ability to receive and transmit in any area where coverage is available.