

WIRELESS ELECTROCARDIOGRAM MONITORING DEVICE

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ABSTRACT

The title of this project is the 'Wireless Electrocardiogram Monitoring Device'. Electrocardiogram often referred to by its acronym ECG is a commonly used term in the medical field. It is measurement of the heart's bio-electrical output during each heart beat.

Many devices are in the market to measure ECG signals and the trend now is leaning towards manufacturing equipment that are portable and suitable for use by medical technicians in the field. But the adoption of wireless technology in ECG monitoring has been slow. There are few devices that are capable of measuring ECG signals and then transmitting it to a remote location for interpretation.

The objective of this project is to design a portable device that can measure the ECG signals and transmit the signal to a remote location for interpretation. Portability is important because it allows the patient to be treated on location. As for wireless communications, this concept is important because by making the device capable of wireless communication, the patient's condition can be diagnosed by the medical team before he reaches the treatment room. This allows the medical team to consider the best method of treatment and prepare to administer treatment so that the patient can be treated as soon as he reaches the treatment room.

Since portability is a compulsory design factor, the device must be battery powered. For wireless transmission, 2 methods can be considered. Either infrared (IR) transmission or radio frequency (RF) transmission can be considered. RF is more suitable because it has higher bandwidth and range. Moreover, RF is more flexible because it does not require line-of-sight.