Abstract

The objective of this research work is to develop a low cost circuitry for Electrocardiogram (ECG) data acquisition system that outputs optimum ECG data with very low noise and minute spectral information loss. The experimental results demonstrate that by the careful choice of electrodes and placement of electrodes, it is indeed possible to collect pure ECG signal. By using this system, acquires the filtered and amplified ECG data through Line-In port of sound card of computer through MATLAB software. In the design of ECG data acquisition used the
instrumentation amplifier packed IC module instead of separate opamp module which results in high common mode rejection ratio up to 80db and minimizes the offset voltage, to very low value up to 25µV and in the design of the notch filter circuits uses UAF42IC, and in the design circuitry of low pass, high pass filter uses the opamp TLO84ICs. The ECG data recorded by developed system useful for purposes of diagnosis of heart related diseases and also researchers study purposes.

References

- S Warren, Lesson learned from The Application of Virtual Instruments and Portable Hardware to Electrode Based Biomedical Laboratory Exercise, American Society for Engineering Education, 2012.


Index Terms
Computer Science
Image Processing
Low Cost Data Acquisition System for ECG

Keywords
Electrocardiogram  Labview  Notch Filter  Cmrr