Dedication

It is our genuine gratefulness and warmest regard that we dedicate this work to our mothers, who taught us that even the largest task can be accomplished if it is done one step at a time.

It is also dedicated to our teachers, who taught us that the best kind of knowledge to have is that which is learned for its own sake.

Acknowledgment

Dr. EL Tahir Mohamad Hussein has been the ideal thesis supervisor. His sage advice, insightful criticisms, and patient encouragement aided the writing of this project in innumerable ways. I would also like to thank Teacher Omer Abd-Allah Ishaq and Ibtihal Hassan ALShaikh whose steadfast support of this project was greatly needed and deeply appreciated.

Abstract

This project ‘designing and implementing ECG signal using microcontroller’ deals with a transfer of ECG data from the patients to be displayed in labVIEW.

The idea of our project is firstly taking up an ECG signal from the patient using electrodes. Then the signal is applied to an instrumentation amplifier (AD624) then to band pass filter (TL072) and amplification using TL072.

After that the signal was read in PC using an Arduino UNO (an open-source electronics prototyping platform based on flexible, easy-to-use hardware and software) board then sent to labVIEW (system design software) software.

The obtained signal is then compared to a normal one then determined either it is normal or not.

المستخلص

هذا المشروع " التصميم والتنفيذ لاشارة ECG باستعمال مايكروكنترولر" يهتم بتحويل بيانات اشارة ECG من المريض ليتم عرضها في برنامج LabVIEW.

فكره المشروع تتم اولا بأخذ اشارة ECG من المريض باستخدام الكترودات . ثم تم تتطبيق الاشارة على AD624 وبعدها طبق عليها مرشح باستخدام TL072 ومن ثم تم تكبيرها باستخدام TL072 كمكبر.

بعد ذلك الاشارة تمت قراءتها في حاسوب شخصي باستخدام Arduino UNO board ثم أرسلت الى LabVIEW.

الاشارة التي تم الحصول عليها تمت مقارنتها مع اشارة طبيعية لتحديد إذا كانت الاشارة المتحصل عليها طبيعية او لا بإستخدام.

Table of Content

List of Figures

List of Tables