



Senior Design Project

A Portable ECG Machine

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Faculty Advisor:

Dr. Tanzilur Rahman

Assistant Professor

ECE Department

Spring, 2018

CSE 499

Senior Design Project



A Portable ECG Machine

Submitted To:

Faculty Advisor:

Dr. Tanzilur Rahman

Assistant Professor

ECE Department

Submitted By:

Sabuj Golder ID 1330061042

MD Fatin Rahman Behon ID 1320907042

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Department of Electrical and Computer Engineering
North South University
Spring, 2018

LETTER OF TRANSMITAL

July, 2018

To

Dr. Shazzad Hossain

Chairman,

Department of Electrical and Computer Engineering

North South University, Dhaka

Subject: Submission of thesis paper on “A portable ECG machine”

Dear Sir,

With due respect, we would like to submit our **Capstone Project Report** on **“A Portable ECG Machine”** as a part of our BSC program. The report deals with acquiring ECG data from a person. The project was really challenging and helpful to us because it helped us to gain experience and overcome the issues we faced during the development period. We tried to the maximum competence to meet all the dimensions required from this report.

We will be highly obliged if you kindly receive this report and provide your valuable judgment. It would be our immense pleasure if you find this report useful and informative to have an apparent perspective on the issue.

Sincerely Yours,

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Sabuj Golder
ECE Department
North South University, Bangladesh

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MD Fatin Rahman Behon
ECE Department
North South University, Bangladesh

.....
Nasik Monowar
ECE Department
North South University, Bangladesh

APPROVAL

Sabuj Golder (ID # 1330061042), MD Fatin Rahman Behon (ID # 1320907042) Nasik Monowar (ID # 1320164042) from Electrical and Computer Engineering Department of North South University, have worked on the Senior Design Project titled “A Portable ECG Machine” under the supervision of Dr. Tanzilur Rahman partial fulfillment of the requirement for the degree of Bachelors of Science in Engineering and has been accepted as satisfactory.

Supervisor’s Signature

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Dr. Tanzilur Rahman

Assistant Professor

Department of Electrical & Computer Engineering

North South University

Dhaka, Bangladesh.

Chairman’s Signature

.....

Dr. Shazzad Hossain

Associate Professor

Department of Electrical & Computer Engineering

North South University

Dhaka, Bangladesh.

DECLARATION

This is to certify that this Project is our original work. No part of this work has been submitted elsewhere partially or fully for the award of any other degree or diploma. Any material reproduced in this project has been properly acknowledged.

Students' names & Signatures

1. Sabuj Golder

2. MD Fatin Rahman Behon

3. Nasik Monowar

ACKNOWLEDGEMENT

By kindness of the Almighty we have successfully completed our senior design project entitled "A Portable ECG Machine".

Our deep gratitude goes first to my faculty advisor Dr. Tanzilur Rahman, who expertly guided us in our senior design project throughout the whole CSE499A and CSE499B. His guidance helped us in all type of research, writings and completing the project.

Our sincere thanks also goes to North South University, Dhaka, Bangladesh for giving us such a platform where we can have an industrial level experience as a part of our academics.

Last but not the least, we would like to thank our family as their inspiration and guidance kept us focused and motivated.

ABSTRACT

Electrocardiography commonly known as ECG is the process of recording electric signals generated from the heart's rhythm. The accurate Electrocardiogram (ECG) and pulse rate information is one of the most important aspects for the various sorts of heart functioning disorder identification. The paper briefly shows how the project was carried towards the aim and demonstrates a solution for acquiring ECG signals in a portable way. The goal was to make a prototype of a portable ECG-monitoring device is for clinical and non-clinical environments as part of a telemedicine system to provide remote and continuous surveillance of patients. The aim was to make a smart, easy to use, less costly, portable device to observe the heart beat signal from anywhere in any emergency case.