ELECTRONIC STETHOSCOPE CIRCUIT DESIGN

This project report is presented in partial in fulfillment for the award of Bachelor in Electrical Engineering (Honours)

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ABSTRACT

The objectives of this project is to design an electronic stethoscope for the purpose of capturing real heart sound .The capture of real heart sound is then compared with the signal obtained from the conventional stethoscope and simulated data.The designed of the electronic stethoscope is consisted of an amplifier and a low-pass filter. The sound transmitted from the heart to the stethoscope is recorded and extracted using MATLAB SIMULINK SOFTWARE.

The captured of real heart sound will be used as part of the diagnosis system where this signal is analyzed and classified into normal and abnormal heart sound. The output is then recorded for future reference. The recorded signal can be transferred via internet to the specialist for instant check out.

TABLE OF CONTENTS

CHAPTER 1

INTRODUCTION

1.1 Background

The first stethoscope was constructed by Rene' Laennec, a French physician, in 1816.Early days physicians would place their ear to the patient's chest to hear sounds of the lungs and heart. In trying to hear the sounds coming from the thoracic organs, the doctor would press an ear directly against the patient's chest a maneuver known as direct auscultation, from the Latin auscultare, to listen carefully. This type of stethoscope is called a Monaural stethoscope.

This technique was considered undignified and sometimes imprudent. Since it required close physical contact between doctor and patient, it will increased the incidence of contagious diseases. Such transmission may have contributed to the death of one proponent. This is proved when the French physician Robert Bayle, who died of tuberculosis.

Laennec solved his dilemma by remembering the phenomenon he had experimented with a female patient in Brittany. Laennec noted examining a Marie-Melanie Basset, who was 40 years old.Interestingly, Laennec preferred to have his instrument simply called "Le Cylindre," as he thought naming such a fundamental instrument was unnecessary. He became remorse at the names it was being given by his colleagues however, and decided that if it should be called anything, it should be "Stethoscope," which is derived from the Greek words for 'I see,' and 'the chest.

Other physicians soon adopted Laennec's method, and as early as the 1820s some patients began to expect their doctors to conduct stethoscopic examinations. A doctor who didn't