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BIOMEDICAL AMPLIFIER SYSTEM FOR ELECTROCARDIOGRAPHY SIGNALS

Project submitted by

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ABSTRACT

A biopotential signal amplifier capable of amplifying ECG signals is discussed here with. The basic idea of such amplifying system is the differential amplifier having a very high input impedance,high Common Mode Rejection Ratio and high Gain.

In more modern systems the basic circuit of the instrumentation amplifier is commonly used. Such a circuit has been designed analysed, constructed and tested and the report that follows gives, apart from the general theory of the action of the heart and the circulation system, mathematical analysis and constructional problems and how these were faced in practice.

ECG machines are of course very costly and it was not possible nor it is claimed that the amplifying system so designed matches in any way any ECG machine. In deed one of the terms of this project was the cost of such an amplifying system should not exceed £30.

However the project has given the author the opportunity to study and learn some of the basic theory of the circulatory system in man, typical ECG systems and the many problems associated with the design construction and testing of biopotential amplifying systems.

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APPENDIX B: Common mode rejection ratio

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