ABSTRACT

One of the important life saving equipments used in hospitals is ECG. On thinking about ECG, a picture of patient connected to a machine with a dozen of wires comes into mind. Wireless replaces that idea. Using a series of filters, amplifiers, and encoder circuits, a small voltage signal detected on a human subject is transmitted to receiving circuitry wirelessly using Zigbee technology. A receiver unit uses decoders that recover the signal, which is again conditioned so that it is of suitable amplitude. A computer installed with MATLAB processes the waveform and displays it. The goal of this project is to create a reliable, safe, low-cost, low-power electrocardiogram system.

INTRODUCTION

An electrocardiogram (ECG) is a medical test that detects cardiac (heart) abnormalities by measuring the electrical activity generated by the heart as it contracts. The machine that records the patient's ECG is called an electrocardiograph. The electrocardiograph records the electrical activity of the heart muscle and displays this data as a trace on a screen or on paper. This data is then interpreted by a medical practitioner. ECGs from normal, healthy hearts have a characteristic shape. Any irregularity in the heart rhythm or damage to the heart muscle can change the electrical activity of the heart so that the shape of the ECG is changed. A doctor may recommend an ECG for patients who may be at risk of heart disease because there is a family history of heart disease or because they smoke, are overweight, or have diabetes, high cholesterol or high blood pressure.

Block Diagram

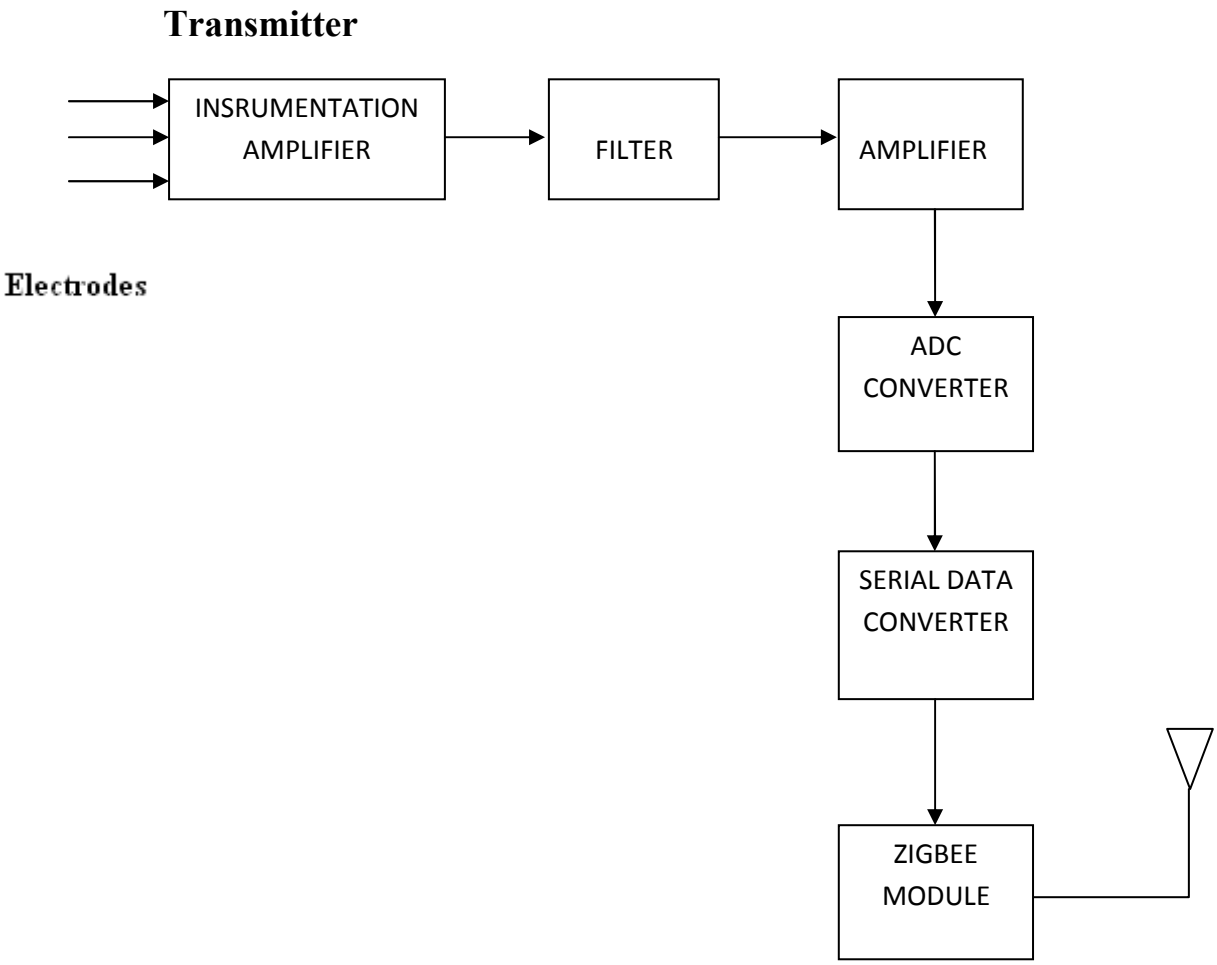

Fig.1 Transmitter

Receiver

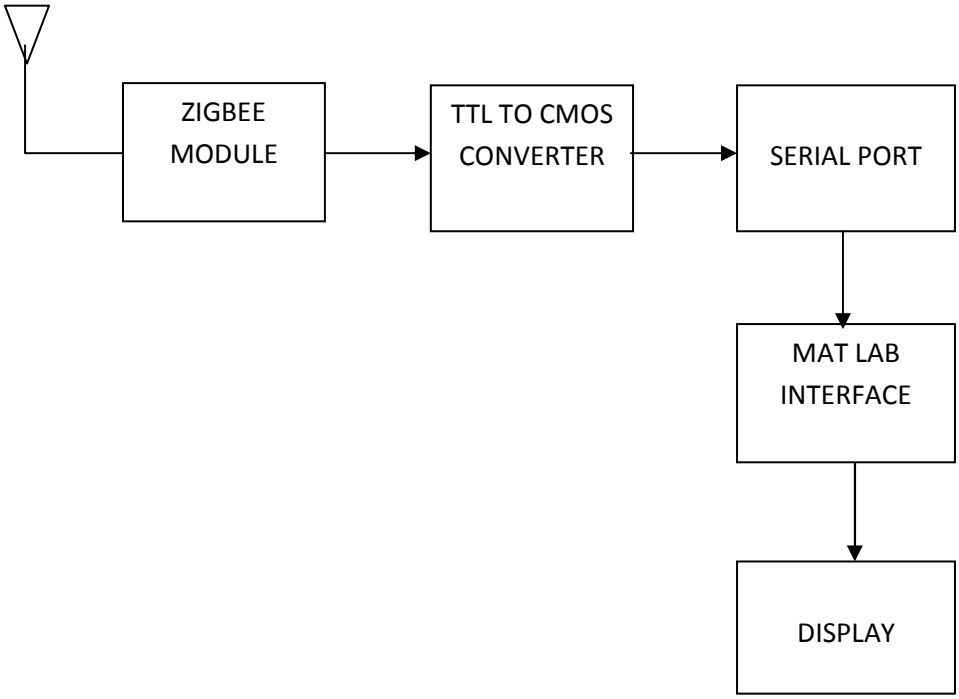

Fig.2 Receiver

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