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ECG Graph Monitoring System using Ad8232 with ECG Sensor and Arduino

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Abstract: *Patient monitoring is the heart of the fitness care domain in day to day lifestyles both at domestic or at medical institution. This paper affords the layout of a transportable electrocardiograph (ECG) device the use of the AD8232 microchip as the analog front-stop (AFE). Beginning with the producer's evaluation board of the AFE chip for testing circuit configurations, open-supply hardware and software components had been integrated into a breadboard prototype. In the long run, a custom printed circuit board (PCB) changed into produced. The prototype required to accommodate the microchip on a SMD-to-DIP adapter for checking out with the breadboard-pleasant Arduino microcontroller alongside a statistics logger and a Bluetooth breakout board. The analog ECG sign from the AFE output changed into digitized the use of one channel of the 10-bit analog-to-virtual Converter (ADC) of the ATmega328 microcontroller contained in the Arduino Nano board. The digitized ECG signal may be transmitted not simplest with the aid of serial cable using the Arduino capabilities, but also thru Bluetooth to a computer or to an Android telephone gadget whilst the HC-06 guard is used. The records logging guard presents gigabytes of garage, and the sign is recorded to a micro SD card adapter in conjunction with the date and time stamp information of the pattern seize (actual-time clock provided). further to hardware and software improvement, a simulation was used in the analog circuit design with SPICE Multisim software program and the related macro model library to assess machine stability. besides the analog filters within the AFE degree, virtual filtering through easy distinction equations become investigated. A menu turned into incorporated to pick out from the several modes of operation of the device. The ECG test signals were acquired from a affected person simulator (SimCube) and real sufferers. A portable ECG gadget for tracking applications that complies with electric protection regulations and medical equipment design became found out.*

Keywords: ECG graph

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