ECG MONITORING AND HEART RATE MEASUREMENT USING WEARABLE SYSTEM

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Abstract: This method is used to obtain health information from an electrocardiogram (ECG). Through an ECG, characteristics such as patients' heartbeats, heart conditions, and heart disease can be identified. The aim of this study is to build a new system to monitor heart activity through ECG signals. The reliability of this system was achieved by the careful placement of sensors in the armband. Bluetooth is used as the protocol for data transmission at lower frequency. For robustness, the proposed system is equipped with analysis capabilities.

1. INTRODUCTION

Mobile health is used to describe the healthcare services with the help of mobile devices. To monitor heart function using ECG this is the most significant diagnostic methods. This system is fully wearable and for monitor. The heart disease, heartbeat, heart activities uses as armband and reduced stress. It cannot be used for Long-time measurement. The entire measurement should be stable and fixed more time consumption for measuring ECG signals. Patient health parameter such as ECG and temperature is monitored. Armband ECG is equipped for mobile monitoring.

2. OBJECTIVE

- To implement an arm device to achieve a non-obstructive system.
- To build a new system to monitor heart activity through ECG signals and thereby measure stress.
- To measure and display heart rate.

3. AREA OF PAPER

• Medical Electronics

4. HARDWARE REQUIRED

- Microcontroller
- LCD display

5. SOFTWARE REQUIRED

- MP LAB IDE
- VISUAL BASIC

6. TARGET DEVICE

• PICkit2 Microcontroller

7. ABBREVIATION

- LCD: Liquid Crystal Display
- UART: Universal Receiver/Transmitter
- **PIC**: Periferal Interface Control
- ADC: Analag Digital Conversion
- IDE: Integrated Development Environment

Block Diagram:



Asynchronous

CIRCUIT DESCRIPTION:



Software Program Executed:

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8. ADVANTAGES:

- Patients need not go to hospital. Patients can be monitor accurately.
- Doctors need not visit every patient.
- Since the databases are available in the mobile.
- The doctor can concentrate on the patient whose health condition is severe.

9. Conclusion:

The device is implemented in an armband to achieve a dynamic system. Electrodes is used to measure the bio signals. In the Hardware testing, output signal of this system shows different characteristics. In this method, an android application is also developed to achieve a mobile health care system.

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