

## ABSTRACT

*Monitoring the condition of heart signals is very important for patients with heart disease. The detection of a twenty-hour ECG signal will help the doctor to diagnose a heart condition. The aim of this study was to develop a portable and inexpensive and efficient ECG monitoring system, Holter Monitor. The main series of Instrumentation systems consist of Pre-Amplifiers, Band Pass Filters, Notch Filters, Adders, Non Inverting Amplifiers, Arduino microcontrollers, SD card memory, and Bluetooth transmitters.*

*ECG signals are tapped from the body based on the measurement points of LEAD II, namely RL (Right Leg), LL (Leg Left), RA (Right Arm). The ECG signal is sampled with a 200 Hz sampling frequency. To record ECG signals, SD card memory is used to store data so that it can be analyzed further. Calibration is done using the Phantom ECG Simulator. The design of this module is also equipped with a Bluetooth transmitter to send data to a computer.*

*The average results of module measurements as much as 5 times for 1 minute obtained the BPM Error value of -0.26% with a storage capacity of 25 Kb / minute. This ECG Holter design is portable and low cost for mass production to help people with heart disease*

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**Keywords :** *Holter Monitor, PC, SD card, Wireless, Microcontroller.*