

## ***ABSTRACT***

**Patient monitors are medical devices that are used to regulate a patient's vital condition. Detection of ECG signals using lead of leads 2. And using flex sensors to try to speed up the patient's breathing. The purpose of this study was to develop a system for monitoring the patient's condition with important cardiac signals and the patient's respiratory rate. The ECG circuit consists of a pre-amplifier, band pass filter, filter notch, amplifier addition, while the patient's breathing circuit consists of a differential amplifier, then processed with an Arduino microcontroller, a Bluetooth transmitter and Delphi for signal display. On ECG parameters calibration is done using an ECG simulator. This tool is also equipped with a Bluetooth transmitter to send data containing signals and BPM values & RR to the computer. After evaluation, errors in ECG parameters were -0.0054% and errors in parameters of respiratory rate were -0.0185%. All parameters used in this tool can be used to monitor patients in the ICU area, but need to add one parameter so that patients in need are more complex.**

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***Keyword : ECG, Respiration, Bluetooth, Delphi***