

## ABSTRACT

*Electrocardiograph (ECG) is a diagnostic tool that can record the electrical activity of the human heart. In ECG tools, calibration is usually done using a Phantom or ECG Simulator which is a device for simulating ECG signals and is useful for testing ECG devices during repairs. The purpose of this study is to create an ECG Simulator for a 12-channel ECG device which includes lead I, lead II, lead III, aVR, aVF, aVL, VI, V2, V3, V4, V5, V6, selecting a sensitivity of 0.5mV, 1.0mV and 2.0mV and BPM values ranging from 30 to 180. The method of forming the heart signal uses an IC DAC type MCP 4921 with an Atmega2560 microcontroller and for display settings using a 2.4inc TFT. The results of the research in making the instrument module were compared with the comparison of the phantom ECG ECG recorder (Digital Electrocardiograph, Model: ECG-9012A, SN: ECG- 9012A120435). The measurement obtained an error rate of 0.333% sensitivity 0.5mV, 1.0mV and 2.0mV at BPM 120 and 0.222% sensitivity 0.5mv, 1.0mV and 2.0mV at setting BPM 180. The ECG Simulator module is equipped with a battery charge feature that makes it easy for users.*

---

**Kata Kunci : Phantom ECG, BPM, Sensivitas**

