

## ABSTRACT

*Electrocardiograph is a tool that can display a graphic signal of the process of the heartbeat. Electrocardiograph is very important in the process of diagnosing and treating heart disease. Because the results of the electrocardiograph are very influential in the diagnosis given by a doctor to the patient, which greatly affects the health status of the patient himself, every electrocardiograph must have a high level of accuracy and precision. So hopefully there will be no misreading of the results, and also a wrong diagnosis from a doctor. The purpose of this study is to make a Phantom ECG for a 12 channel ECG device which includes lead I, lead II, lead III, aVR, aVF, aVL, VI, V2, V3, V4, V5, and V6 and completes it with sensitivity selection and uses the method heart signal formation using MCP 4921 type DAC with Atmega2560 microcontroller and for display settings using a 2.4 inch Nextion TFT display. Based on the measurement results, the error value is 0.00% at the BPM values of 30 and 60 for each sensitivity, namely 0.5mV, 1.0mV, and 2.0mV. In the measurement of BPM 120, the highest error value is 0.83% at the sensitivity of 1.0mV and 2.0mV. And for the BPM 180 measurement, the highest error value is 0.44% at the sensitivity of 1.0mV and 2.0mV.*

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