

## **ABSTRACT**

*Auscultation method is one of the first steps to perform the body health diagnosis. This method is done by listening to the sounds of the heartbeat and lung sounds that are usually done directly by the doctor to the patient using an acoustic stethoscope. Health consultation is a routine needed activity, and auscultation check is a part of it. But sometimes people do not always consult their body health because of their dense activities.*

*With the existing problem, a stethoscope is needed that can aid in making it easier to do the auscultation check for routine health consultation. The device is an electronic stethoscope that can be connected to a smartphone that is available for heart rate recorder and lung sound application (Steder). The electronic stethoscope is a portable device with functions to listening to the heartbeat rate and lung sounds with analog signal as an output which can be used as input to the Steder application. Results of auscultation checks can be sent by the patient to the doctor. Through this device, health consultation can be done in real time by patients with a doctor's guidance to perform the auscultation check process.*

*The results of the auscultation check on this electronic stethoscope is in the form of heartbeat sounds and lung sound that have a gain  $> 18$  dB, the sound clarity level obtained by calculating the output signal to noise is 12.5 dB, and equipped with the main circuit that is the Butterworth Band Pass filter with a frequency of 20Hz-1KHz. The results of auscultation checks that have been carried out by can be sent and analyzed by the doctor.*

**Keywords: Electronic Stethoscope, Auscultation, Filter, Butterworth**