

ABSTRACT

Stethoscope is a simple acoustic medical device that serves to diagnose sounds in the human body. Medical personnel often use this aquatic stethoscope to check heart sounds. One sound that can be detected is the sound associated with the activity of the pumping heart. Sounds claim heart rate indications and heart rhythms. Problems arising from auscultation of the lungs or heart using a conventional stethoscope are environmental noise, ear sensitivity, low frequency and amplitude, and relatively similar sound patterns.

Sound hearing results are also very subjective, so that each person can interpret it differently. In this research an electronic stethoscope was built to auscultate the heart with TFT display and was designed portable so that it could make it easier for users to operate it. This stethoscope is able to retrieve the patient's heart sound data and display the plot data from the examination. The results of the data will be displayed on the TFT and also displayed the BPM value of the patient.

Based on the research that the author has done, it can be obtained the heart sound plot data by using a filter at the cut off frequency of 56,679 Hz - 88,646 Hz and BPM values obtained with an most error of $\pm 0,72\%$. The error value of the module is still within the tolerance limit of $<1\%$ based on the provisions of the Health Facility Safety Center (BPFK).

Keywords: Stethoscope, Filter, Heart and Lung Sound