

ABSTRACT

Stethoscope is a simple acoustic medical device that serves to examine the sound in the human body. Medical personnel often use this mystical stethoscope to check the sounds of the heart and lungs. Lung sound recording is used by medical personnel to examine a person's physical condition, especially those associated with the respiratory system. Problems arising in 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 differently. In this study a modified stethoscope was built by combining a series of instrumentation. This stethoscope is able to retrieve voice data of the heart and lungs of normal patients. The results of the data are displayed on a computer monitor connected to the soundcard jack. With PC (Personal Computer), voice data obtained can be stored and processed offline, and can be displayed in various forms to facilitate the analysis.

Based on the mapping of digital filter frequency settings that writers have done, for proper heart sound in the digital frequency range of 20 Hz and 50 Hz where the smallest amplitude of 0.2 Vpp can still be heard the sound of the heart that has been free from noise outside noise. As for the sound of the most appropriate lung in the digital frequency range of 200 Hz and 500 Hz where the amplitude can be at 1.0 Vpp can still be heard lung sound that is free from noise outside.

Keywords: Stethoscope, Filter, Heart and Lung Sound