A. RINGKASAN: Tuliskan secara ringkas latar belakang penelitian, tujuan dan tahapan metode penelitian, luaran yang ditargetkan, serta uraian TKT penelitian.

Cardiac auscultation is a technique used to diagnose heart conditions through the heart sounds produced and detected by a stethoscope. Many studies have used an electric stethoscope as an alternative in auscultation of heart ounds But it needs further development on the electronic stethoscope to reduce the noise received by the tool. Therefore, this study aims to determine the effectiveness of digital Kalman filters with coefficient values of R:100 and

Q1, R:10 and Q:1, R:1 and Q:1, R:1 and Q:0.1 as well as the Butterworth digital Bandpass Filter. with order 2, order 4, order 6, and order 8 in reducing noise on an electronic stethoscope using the MAX 9814 sensor. This research

uses the MAX 9814 sound sensor, ESP 32, Matlab, Mannequin for heart sound capture, and a bluetooth headset for listening to heart sounds detected. The method used to analyze the effectiveness of digital filters is SNR (Signal to

Noise Ratio) by comparing the increase in SNR before and after filtering using 2 types of digital filters along with their coefficient and order values. These results will be analyzed by looking at the average SNR value obtained after

going through 2 types of digital filters. The result is that the digital Bandpass Butterworth filter with order 8 has a higher SNR value compared to the other SNR values of 4.198 dB, while for the Kalman digital filter the highest SNR

is found in the use of coefficient values R: 100 and Q: 1 with a value of 2,868 dB. It can be concluded that the digital filter Bandpass Butterworth filter with order 8 has the best effectiveness value. The implication in this study is that

we can find out the use of a good digital filter which is read from the SNR value measured on an electronic stetoscope that uses the MAX9814 sensor.

B. KATA KUNCI: Tuliskan maksimal 5 kata kunci.

1.Stetoscop , Pemasangan modul sensor MAX 9814, Pemrograman Filter Kalman dan Butterworth Bandpass