ABSTRACT

Non stress test, there are several parameters including the fetal Doppler. fetal doppler is used to detect the fetal heart in the womb. It can be seen that the fetal heart rate in the womb under normal circumstances is in the range of 120-140 beats per minute. Noise on doppler fetal output can affect fetal heart rate readings. the purpose of this research is to design a non stress test device that is displayed on nextion. The contribution of this research is the creation of a portable device with nextion display and using analog and digital filters that can be used as noise removal. the method used to eliminate noise by using a bandpass type filter design frequency 20-40 Hz by designing a large frequency suppression outside the cutoff so that noise is not counted as a fetal heart rate. to detect the fetal heart rate in the mother's womb using a piezoelectric sensor. then the fetal heart rate obtained is filtered and the data is processed using Arduino after the results of processing the filter between analog bandpass and digital bandpass type Chebyshev method I then the results of the tool will be displayed on nextion. The results showed that measurements on analog filter modules that have been made produce an error value of 8.62% and digital filters that have been made produce an error value of 12.97%. The results of this study can be applied to fetal heart rate gauges portable at a health clinic.

Keywords: Fetal doppler, piezoelectric sensor, filter analog, filter digital, LCD TFT Nextion.