ABSTRACT

As many as 7000 newborns in the world die every day (Indonesia: 185 / day). Neonatal mortality is closely related to the quality of delivery services, and the delay in diagnosis of the fetus. A study proved that the use of Non-Stress Test (NST) or Cardiotocography (CTG) in the United States appears to be moderately associated with a recent reduction in neonatal mortality, especially at preterm gestation, and an increase in cesarean delivery and surgery for inconclusive fetal status. . The Non Stress test itself has three parameters, namely, the Doppler parameter, the uterine contraction parameter, and the marker button. The purpose of this research is to make the Non Stress Test tool appear as a PC as monitoring. This tool is designed using a pre-experimental method with the type of research after only design. The way this tool works is, when the piezoelectric probe detects the fetal heart rate, the signal will be continued to the circuit and processed in the Arduino microcontroller to get the BPM value, then the BPM value will be displayed on the PC. From the design of this tool, the resulting data were compared with the Fetal Doppler Simulator with the largest error value of ±4,3%. The error percentage is obtained from the component tolerance factor and the limitations of the program used. In the "Guidelines for Testing and Calibrating Medical Devices" published by the Ministry of Health of the Republic of Indonesia in 2001, the maximum limit for error tolerance is 5%. From the results obtained, the Doppler parameter NST tool is feasible to use but still needs improvement so that the resulting error is smaller.

Keywords : Non Stress Test, Piezoelectic, Doppler