## ABSTRACT

Ultrasonic Doppler Fetus Heart Detector has use widely in medical observation. This tool is very useful for medical practitioner (doctor) to analyze the behavior of fetus in abdominal periodically by do exam in routine time. Fetal heart rate has own it's standardization of health, so the doctor will know if the fetus is normal or not.

Ultrasonic doppler fetus detector has much available in the market with many brands. Unfortunately this tool is still expensive and too simple without database system. Meanwhile the computerize system growth fast now and use in medical institution such as hospital. So we need a system that integrated with the others to make the services better.

We had realized application for calculate fetus heart rate with Personal Computer. For detecting fetus signal we use ultrasonic Doppler sensor 2.5 MHz BL-500B. For gain the signal from probe, we used variable amplifier 1-10 times. The signal and then feed into computer through microphone soundcard for digital signal process purpose. It process begin with visual signal program, filter digital FIR windowing band pass filter 9-39 Hz with 4 Hz transition band. Average of Volts are the method that used to count BPM (Beats Per Minute) and then finally diagnostic's program applied.

With this application, we hope it will help the doctor to give more information so the analyze is more accurate. This application can use not only in hospital but also in home by using their personal computer.



**Keywords**: *fetus heart rate, microphone soundcard, ultrasonik doppler, digital filter FIR windowing, beat perminutes*