

## ABSTRACT

Fetus health condition can be observed from the heart electric potential that called Fetal Electrocardiogram (FECG) signal. But it is not easy to observe it. It is caused when Abdominal ECG signal is taken, Maternal ECG signal mixes with the pure FECG signal.

In this Final Task, the result that be found is the recovery of FECG signal with the minimum error value that input signal is Abdominal ECG signal and adaptive filter method use Least Mean Square algorithm (LMS). As a reference signal is used to maternal ECG signal (torax signal). It must be known that reference signal is as 'noise' that obscure FECG signal in the abdominal signal..

This adaptive filter with LMS algorithm is simulated into TMS 320C50 program and by helping Matlab 7.01 to find the  $\mu$  value and tap filter exactly.

The reason choose TMS 320C50 if it is compared the other device because the speed of this device data processing. The speed of data processing in TMS 320C50 is measured by duty cycle every program line. To one program line in TMS 320C50 has 50 ns duty cycle. So it is only in millisecond, 1 frame with the length 255 bytes can be processed and get the output from the system.

In this system, it doesn't use ADC processing (Analog Digita Converter), so data will be processed is in the digital data and it will be saved in TMS 320C50 memory.