ABSTRACT

Within modern digital communication system, there is transmission data in binary, to have need of reliable system to noise in transmission channel until data transmitted is match between transmitter and receiver. Error in transmission data is the basic problem and put on significant impact in communication system. To solve the problem, digital communication system devices must be fully equipped with detection and correction error scheme.

In this final task convolutional code scheme has been implemented to DSP card TMS320VC33 series. The reason using this device is the speed data processing that this device can do. Speed data processing of TMS320VC33 depend on duty cycle time per instruction. To process one instruction it is only need 13ns. Therefore in one second this device can process 75 million instructions.

A convolutional code encoder algorithm has been implemented to DSP card. To check the accuracy of the encoder's output hence these encoder's output will be use as decoder's input. Convolutional code that has been implemented in this final task is the convolutional code with $rate = 1/2$ and memory = 4. The decoder's algorithm is Viterbi algorithm. Beside analyzing the output of the system, other think that will be obtain is time processing. Time processing of TMS320VC33 can be calculated from duty cycle of the system.

Keywords **:** *TMS320VC33, DSP card, Convolutional code, Viterbi, Channel Coding*.