



PROTOTYPE OF CHANNEL CODING ALGORITHM ON DIGITAL SIGNAL
PROCESSING BOARD

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A thesis submitted in partial fulfillment of the requirement for the awards of Bachelor
Engineering (Hons.) in Electrical

FACULTY OF ELECTRICAL ENGINEERING UNIVERSITI
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MAY 2011

ACKNOWLEDGEMENTS

“In the name of Allah, the most Beneficent, the most Merciful”

In preparing this project report, I was in contact with many people, researchers, academicians and practitioners. They have contributed toward the success, and given a moral support to accomplish this project. At the very beginning, I would like to thank my beloved father and mother for everything, and I ask Allah the almighty to grant them the Paradise.

I wish to express my sincere appreciation to my supervisor, Pn. Roslina Mohamad for her guidance, critics and friendship. And the great advice which she always used to gave me. I would like to thank En. Idnin Pasya as co-supervisor.

Not to forget my family members, friends and all my related I thank you sincerely and wish you the best, brighter success and blessedness in your live. Thank you.

ABSTRACT

This paper studies error-control coding using MATLAB Communications Toolbox. Channel coding deals with error control techniques. There are two methods of error control, which are Automatic Repeat Request (ARQ) and Forward Error Correction (FEC). In this research, focus only made to Convolutional Codes (CC) which is under FEC technique. FEC is widely used technique to achieve reliable data transmission. Transmitted signal always affected by random and burst errors. Therefore to reduce these errors, error-control coding is necessary to use. In this study, we will look into CC only. The parameters involved are different constraint lengths, modulation techniques and decoding decision types. This paper approaches for CC as error detecting and correcting system with simulation and implementation. The best CC will give lower Bit Error Rate (BER) given by constraint length, K equals to 9 as compared to the other lengths 7, 5 and 3. Besides that, from the results it is proved that Binary Phase Shift Keying (BPSK) and Quadrature Phase Shift Keying (QPSK) is the best among Quadrature Amplitude Modulation (QAM). This comparative study between those parameters will lead to the best selection of the CC. This paper concludes by the result of study carried out on simulations and implementations.

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