ANALYSIS PERFORMANCE OF 256-QAM AND 1024-QAM USING R-S CODE APPLY IN DVB THROUGH AWGN CHANNEL

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ABSTRACT

This project is highlight about the performance of 256-Quadrature Amplitude Modulation (QAM) and 1024-QAM applying in Digital Video Broadcasting (DVB) through Additive White Gaussian Noise (AWGN) channel. Besides, this project using Reed-Solomon (R-S) code as the decode/encode technique in order to act as a forward error correcting (FEC) code. Furthermore, this project is basically deal with one transmit antenna and one receive antenna at the transmission part and receiving part respectively. There are some comparison will be made between the 256-QAM and 1024-QAM purposefully to obtain the best performance when applying in DVB through AWGN channel in which both of them are using the same forward error correcting code (Reed-Solomon code) technique. Basically, the best performance is determined in term of Bit Error Rate (BER) and Signal Energy to Noise Power Density Ratio (E_b/N_o). It is observed that as the constellation order of QAM increase the performance will be degraded. Thus, 256-QAM will give the best performances either in term of E_b/N_o or BER. In the mean time, both of the QAM (256-QAM and 1024-QAM) also being compared in term of the symbol-error correcting capability that is known as t in which it is observed that the performance is graded in response to the increasing of the value of t. During this project, all the simulation process that presented the performances of both of the QAM is done by using software that is known as MATLAB version 7.6.0.

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