

ABSTRACT

In communication system, modulation and demodulation influence the signal transmission process so that the signal transmitted can reach the information destination. Modulation is a process of transporting the information signal to the carrier signal, while, demodulation is a signal conversion process that makes the signal back to the original information after being modulated. Currently, in the process of communication learning, application that simulate digital signal have not existed. As the result, the learning of communication system lacks of visualization. This case affects the student comprehension in the class. Therefore, a simulator of Amplitude Shift Keying and Frequency Shift Keying is made for the learning of digital signal in communication system class.

In this final project has designed a simulator for ASK, 4ASK and FSK modulation process using Matlab (Matrix Laboratory). The steps taken in ASK, 4ASK and FSK digital modulation simulation testing include input process, modulation process, noise adding process in AWGN (Additive White Gaussian Noise) channel, Rayleigh Channel technique, and demodulation process. he method used to test the performance of this system is BER (Bit Error Rate) by comparing the bits that occur in the demodulation process with the initial information bit that is sent.

From this Final Project, the results of MOS testing with a percentage of 72.5% found that this modulation simulator can help with the communication of the Communication System course.

Keywords: *ASK (Amplitude Shift Keying), FSK (Frequency Shift Keying), AWGN (Additive White Gaussian Noise), Rayleigh dan BER (Bit Error Rate).*