

Experiment No. 6

Bit error rate of Differential BPSK (DBPSK) and Differential QPSK (DQPSK) in AWGN

Write a MATLAB program (without using communication toolbox inbuilt functions like 'comm.DQPSKModulator', 'comm.DQPSKModulator', 'dpskmod' etc) to perform DBPSK and DQPSK Modulation and demodulation technique in AWGN.

Find out the error probability and plot Bit Error Rate (BER) vs. Signal to Noise Ratio (SNR) curves for simulated values for both DBPSK and DQPSK. Compare these plots with the theoretical values obtained using the equation based on Q-function.

You can use the links below for reference.

<https://electronicspost.com/differential-phase-shift-keyingdpsk/>

<https://www.youtube.com/watch?v=XiuySih5qN0>