Communication and Information Engineering Program
Digital and Wireless communications
(CIE 428)

Assignment 3

It is required to build Matlab simulations to assess BPSK and QPSK passband transmission over AWGN as shown in the figure below.

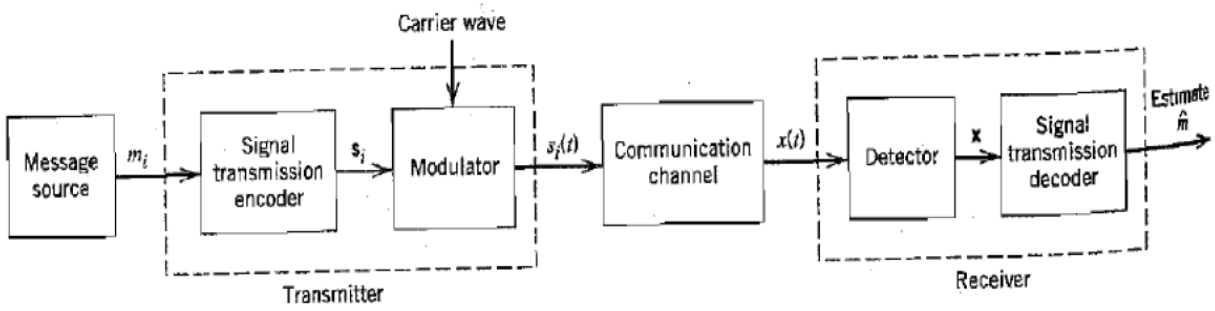

Fig. 1

Description

It is required to generate random binary information stream and send it using **BPSK** once and using **QPSK** once.
At the receiver side, AWGN $\sim \mathcal{N}(0, N_0/2)$ is added to the information stream. The receiver decodes the received signals using the ML rule.

Deliverables

Deliver the following in **one pdf file**:

1) Source codes (**.m** files with proper comments) of the whole project.
2) Figure of the constellation of transmitted BPSK symbols.
3) Figure of the constellation of received noisy BPSK symbols.
4) Figure of the constellation of transmitted QPSK symbols.
5) Figure of the constellation of received noisy QPSK symbols.
6) Figure of PSD of the transmitted baseband BPSK signal.
7) Figure of PSD of the transmitted baseband QPSK signal.
8) Figure of BERs of BPSK, QPSK, both theoretical and through simulations.
9) Comment on your results.

Due date 15/11/2019