

PROJECT PHASE II

Consider a QPSK communication system. The information rate is 1 Mb/s and the carrier frequency is 10 GHz. We have a Doppler Spread due to mobile movement in the channel due to speeds of up to 60 Km/Hour. Consider that no equalizer is required (flat fading).

- a) Simulate uncoded system (QPSK modulation with no coding) and draw the system bit-error-rate.
- b) Apply single-error-correcting (15, 11) Hamming code into the system of part (a). Simulate the system and draw the system bit-error-rate.
- c) Design a block interleaver/de-interleaver for the system of part (b) to improve the coded performance results. Simulate the system and draw the system bit-error-rate.
- d) Discuss all the results.

Important Note:

Using MATLAB simulate the base-band system with channel coding in Rayleigh Fading channel. In the simulation process you are not allowed to use any toolbox. You have to use “mfile” programming. Use the MATLAB program that you have written for the part 1 of the project.

Report :

Length : Maximum of 10 pages with 12 pt font size

Modulation and Coding - AWGN channel (part 1b)

