

Assignment #: 01
EEE 6207: Broadband Wireless Communication
Department of Electrical and Electronic Engineering
Bangladesh University of Engineering and Technology

Marks: 40

Due Date: October 10, 2021

Instructions: (i) Use reasonable value if any data is missing.
(ii) Provide your comments with each of the tasks.

Task 01: Plot the received power by varying the distance between the transmitter and receiver under log distance path loss model with path loss exponents 2, 3 and 4. Assume, transmit power = 20 W, transmitter antenna gain = 8 dB, receiver antenna gain = 6 dB, frequency = 1800 MHz, and reference distance = 2 m.

Task 02: Plot the received power at different time instances under long distance path loss model with log normal shadowing. Assume, transmit power = 20 W, transmitter antenna gain = 8 dB, receiver antenna gain = 6 dB, frequency = 1800 MHz, reference distance = 2 m, path loss exponent = 3, channel changing time interval = 1 ms, distance between transmitter and receiver = 200 m and shadowing standard deviation = 4, 7 and 10 dB.

Task 03: Plot the outage probability by varying the distance between the transmitter and receiver under log distance path loss model with log normal shadowing. Assume, transmit power = 20 W, transmitter antenna gain = 8 dB, receiver antenna gain = 6 dB, frequency = 1800 MHz, reference distance = 2 m, path loss exponent = 3, required received power = - 80 dBm, standard deviation = 4, 7 and 10 dB.

Task 04: Plot the received power at different time instances under Rayleigh fading with log distance path loss model. Assume, transmit power = 20 W, transmitter antenna gain = 8 dB, receiver antenna gain = 6 dB, frequency = 1800 MHz, reference distance = 2 m, path loss exponent = 3, channel changing time interval = 1 ms and distance between transmitter and receiver = 200 m.