Sensor Networks and Mobile Data Comminucation, Assignment 2

UID: 1690550

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1   Preparation and initial readings

Before we could attempt to compare the different models ran with different parameters, some initial readings had to be taken. Originally, the readings were taken over a very narrow range of distances between nodes and the transmission power. Namely, the power ranged from 0.1 to 0.12 dB, and the distance ranged from 180 to 180.9 m. No packets were received during the original simulation.

We decided to look at a much wider range for both of these parameters. First note that 802.11b standard lists 20 dBm as the standard transmission power for WiFi, with -100 dBm being the minimal received signal power.

2   Log-distance propagation loss model

The equation to calculate loss in the log-distance propagation model[1] is:

$$L = L_0 + 10nlog_{10}(\frac{d}{d_0})$$

with

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[1] https://www.nsnam.org/docs/release/3.19/doxygen/classns3_1_1_log_distance_propagation_loss_model.html