


Exercise 10

11.4

Discuss how ISI can affect the performance of high data rate applications, and which environments are most susceptible for such effects.

12.4

A microcellular system is to be used to create cells in an urban area with a range (base-mobile) of 150 m at 2.5 GHz. Predict the necessary maximum acceptable loss, including shadowing effects, using at least two of the models given in this chapter, stating any necessary assumptions. 

12.5 Assuming a quaternary modulation scheme, estimate the maximum data rate available at the edge of the cells described in Problem 12.4 for 95 % of locations.

13.6

Use Table 13.6 to calculate the reflection coefficient for a smooth concrete wall at 1 GHz for normal incidence.

13.3

Estimate, using 13.2.2, the number of floors required to separate two co-channel transmitters in an isolated building if a medium signal-to-interference ratio of 12 dB is required.

13.4

Repeat problem 13.3 in the case where the signal-to-interference ratio is required to be 12 dB at 90 % of locations with location variability of 5 dB.