

Homework (2) 6

Due April 4th 2007.

1. Discuss the wave propagation along a microstrip line consisting of two thin ($d \ll a$) strips of metal of width a located in the same plane a distance b from each other. In particular, find
 - a. The fields and the energy flux of TEM mode
 - b. Impedance of the line
 - c. Find the energy spectrum of the modes in the line of finite length.
 - d. Estimate the attenuation of the wave for the $\delta \ll d \ll a$.
2. Consider again a microstrip line of problem 1.
 - a. What is its capacitance and inductance per unit length?
 - b. Approximate the line by a series of capacitances and inductors and compute its impedance. Compare the result with the solution of problem 1.