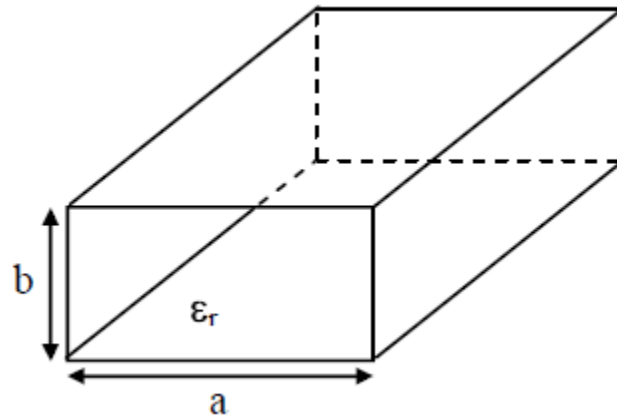


Project 1: Rectangular Waveguide (CST/HFSS)



The attached excel sheet assigns a different waveguide for every student, so take care what will you simulate.

Objective

- Using CST/HFSS, simulate an air-filled **WR-???** Waveguide shown above.
- Define the location of coaxial cable to excite the different modes.
- To obtain the Field patterns, intrinsic Impedance and wavelength for the first 4 modes.

Analysis

- 1.) Sweep a suitable frequency range according to your waveguide, for example (WR-90, from 4-20 GHz).
- 2.) Analysis must include first three modes (TE_{10} , TE_{20} , TE_{01})
- 3.) Generate a graph for β , λ , η vs. frequency for each mode using CST/HFSS

Report

- 1) Format should include title, objective, analysis/discussion, results, and conclusion
- 2) Include all relevant graphs and outputs from CST/HFSS
- 3) Explain and discuss results for each mode using relevant field expressions
- 4) Compare results for β , λ , η with those obtained using corresponding theoretical expressions