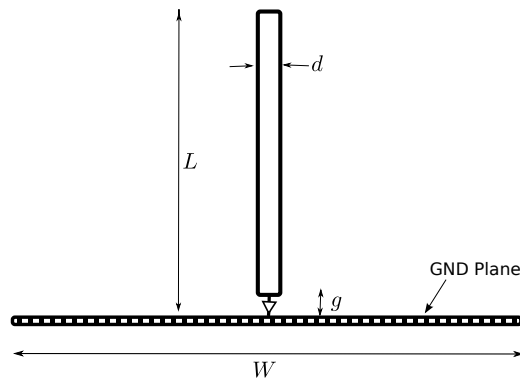


# Monopole Simulation on CST Microwave Studio

1. Build using modeler the following shown wire monopole placed above a square ground plane,



The parameters shown in the figure are: monopole length  $L = 35.625$  mm, square ground plane width  $W = 200$  mm, wire diameter  $d = 0.3$  mm, and gap width where discrete port excitation is placed  $g = L/200$ .

2. Place the side absorbing boundary box walls touching the GND conducting plane (i.e. use open boundary). This placement corresponds to the use of infinite ground plane. Place the upper absorbing boundary at a distance above the tip of the monopole (i.e. use open (add space) boundary). Plot the S-parameters between 1 GHz and 3 GHz, and find dipole resonance frequency.
3. Plot the radiation pattern in the E-plane, and show it comply with the theoretical monopole results.
4. Now instead of using absorbing boundaries touching the edges of the conducting square, use absorbing boundaries placed at a distance from the structure in all directions (i.e. use open (add space) for all boundaries). Plot again the radiation pattern in the E-plane and compare it with the results obtained in part 3. Explain the difference.