



- Perfect Electric Conductor (PEC) Bounding Box
- Convolution Perfectly Matched Layer (CPML) Region [3]
- Waveguide Core Region
- Waveguide Cladding Region
- Core/Cladding Region Boundary
- Source Condition
- Port Location

ℓ_{eff} : Effective length
 ℓ_p : Port length
 δ : Waveguide width
 b_y : Cladding size. This parameter is automated in the FDTD setup. It is set as $5/\gamma$ by default [6].

- a) Source location for sim=1 and sim=2. Used for most simulations.
- b) Source location for sim=3 and sim=4. Used only for S-parameter Extraction.
- c) Port 1 location (S-parameters)
- d) Port 2 location (S-parameters)
- e) Test region. This is the only region in which nonideal simulation parameters exist, e.g., surface roughness.
- f) Surface Roughness Profile.