HFSS DUAL BAND PIFA TUTORIAL

John Claus

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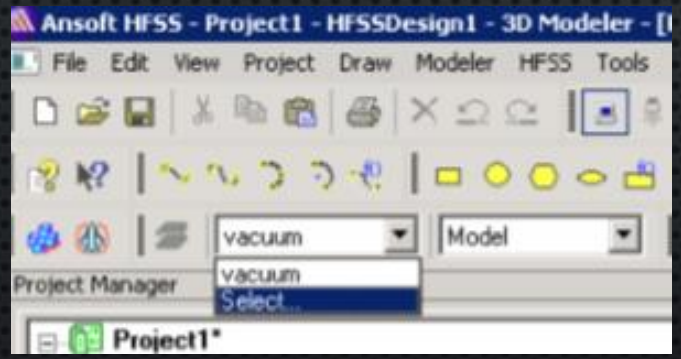
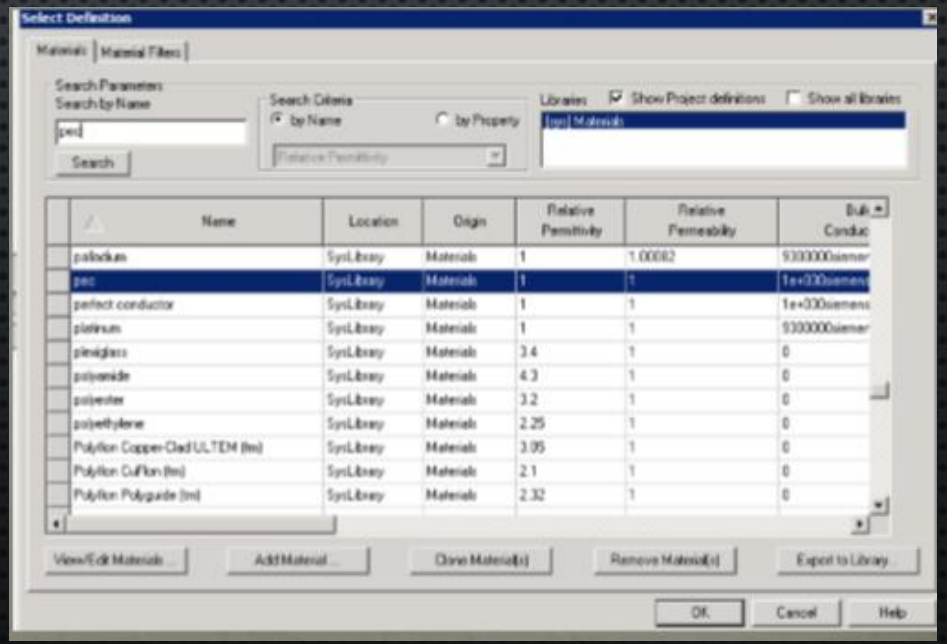
Open up the HFSS Simulator on your computer
**Note: If the program has issues coming up and you are off campus insure you are connected to the VPN

Once HFSS has loaded:
Click Project > Insert HFSS Design
Click HFSS > Solution Type… and Select Driven Modal
Click Modeler > Units and Select mm in the drop down menu

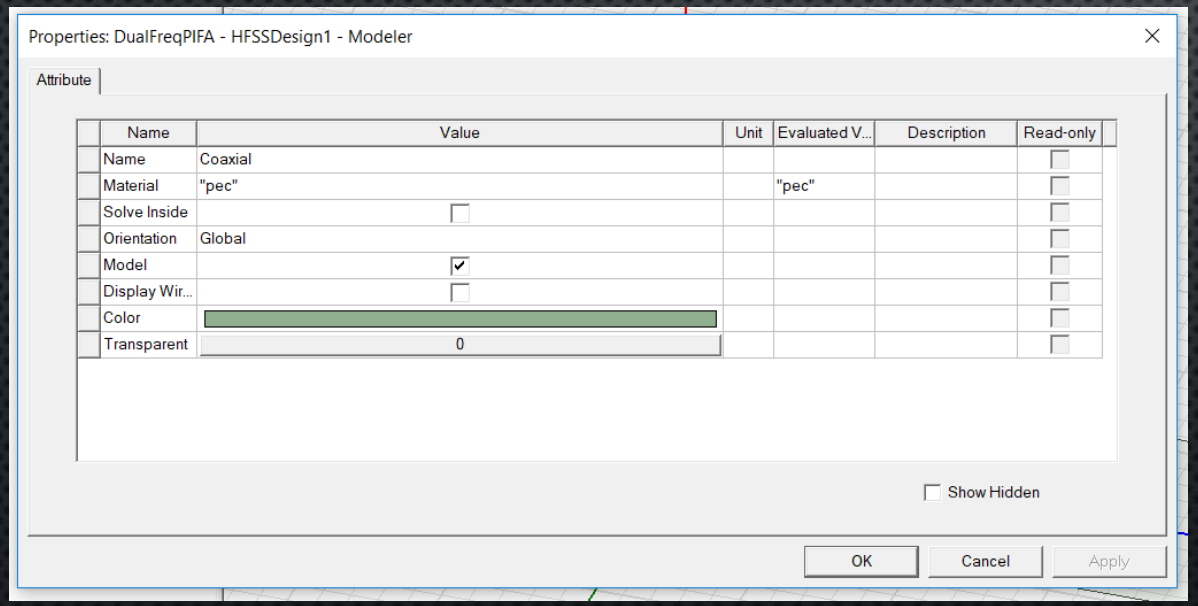
Adding an additional material:
From the drop down menu with vacuum displayed click on Select..
Click on PEC from the list and Click Ok

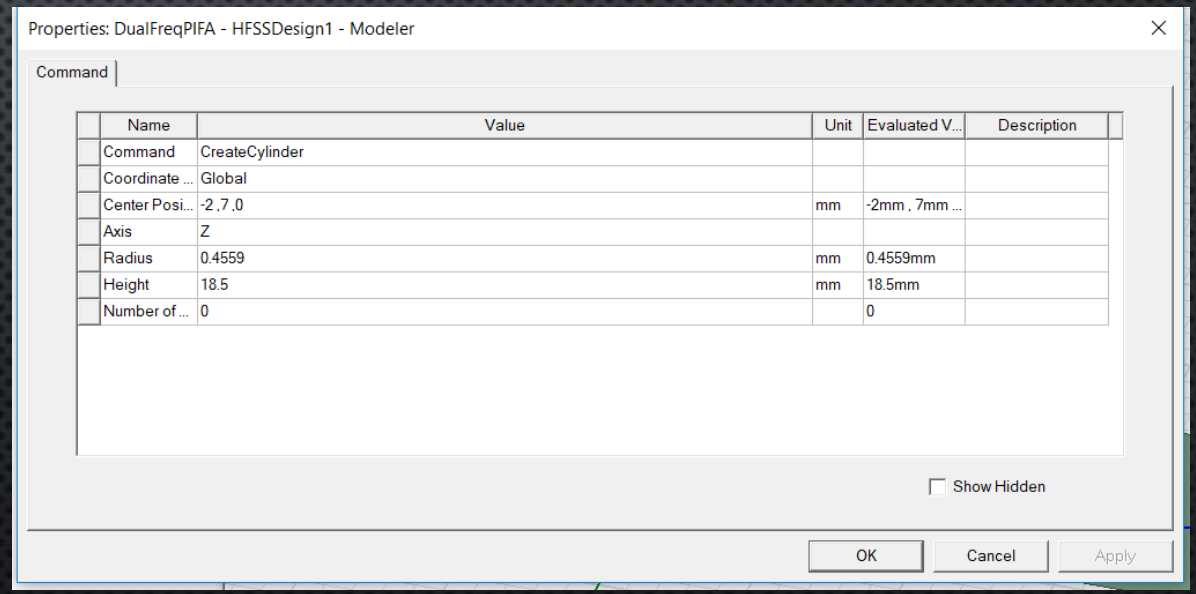




Draw the Coaxial

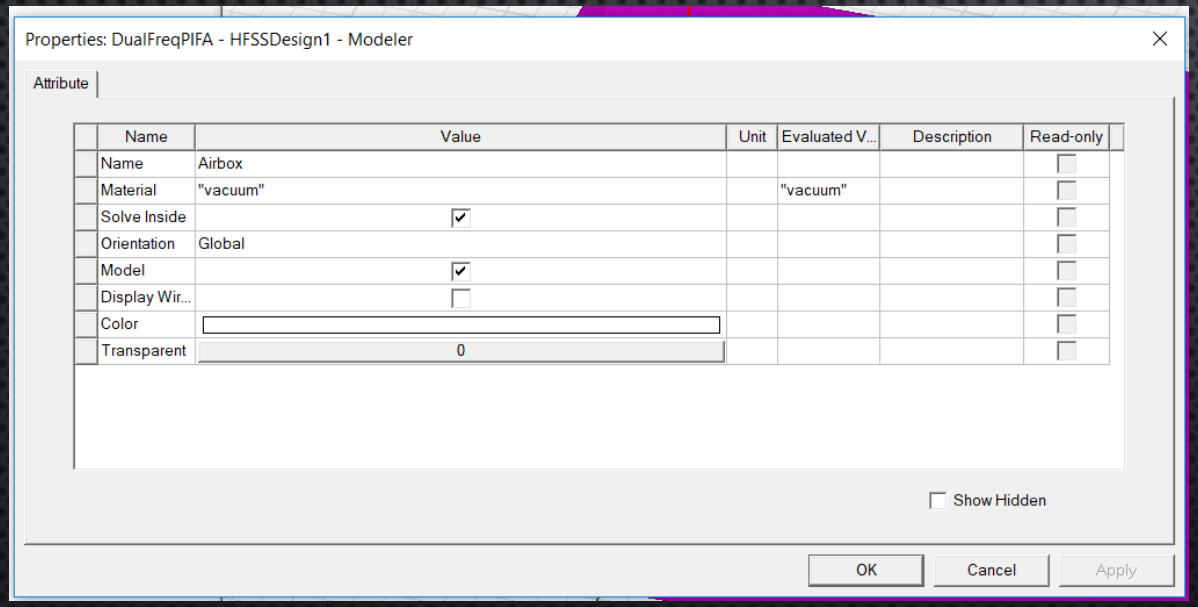
Select PEC from the Material Drop Down Menu
Click Draw > Cylinder
Draw a cylinder anywhere on the Modeling Space
Click on the newly created object on the list to the left of the Modeling Space and enter the following information from the graphic below:

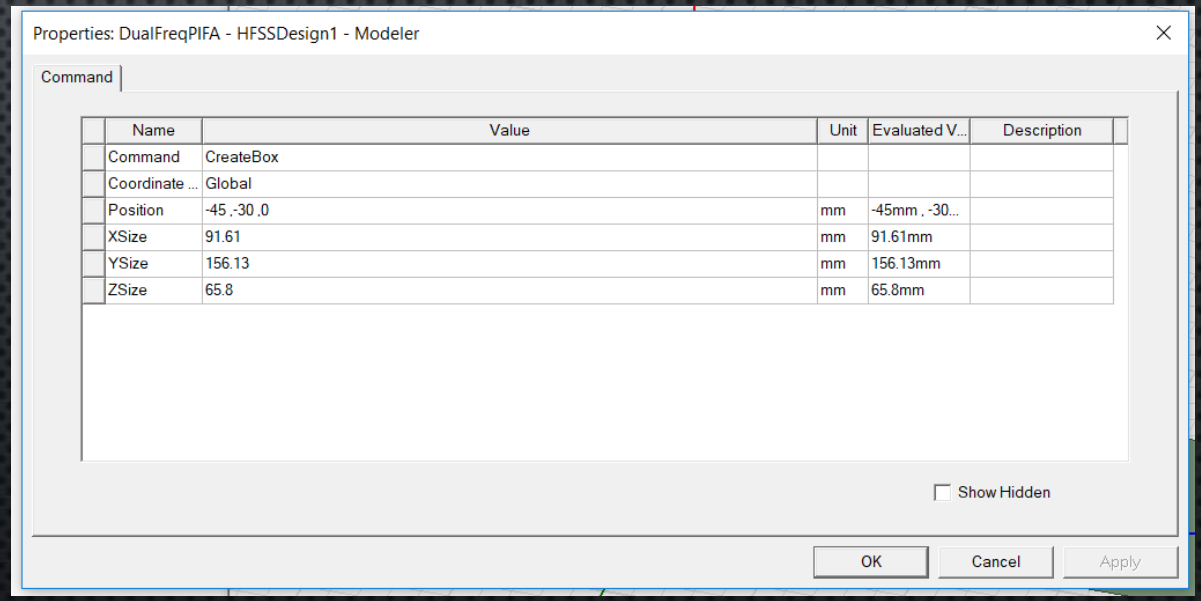




Draw the Airbox

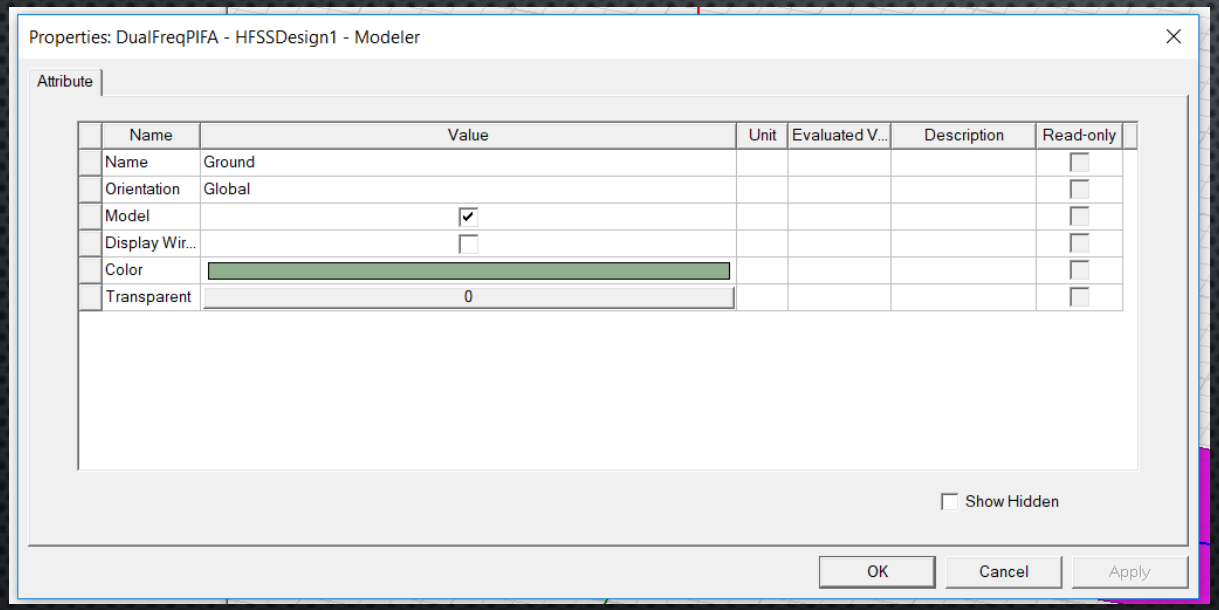
Select vacuum from the Material Drop Down Menu
Click Draw > Box
Draw a box anywhere on the Modeling Space
Click on the newly created object on the list to the left of the Modeling Space and enter the following information from the graphic below:

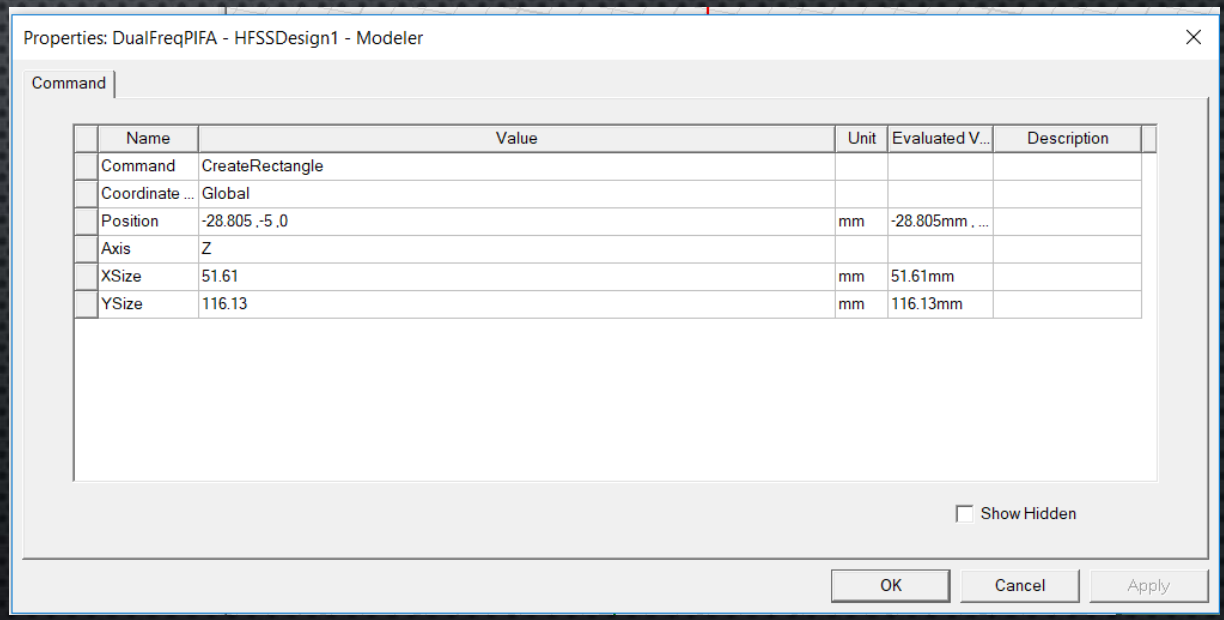




Draw the Ground Plane

Click Draw > Rectangle
Draw a box anywhere on the Modeling Space
Click on the newly created object on the list to the left of the Modeling Space and enter the following information from the graphic below:



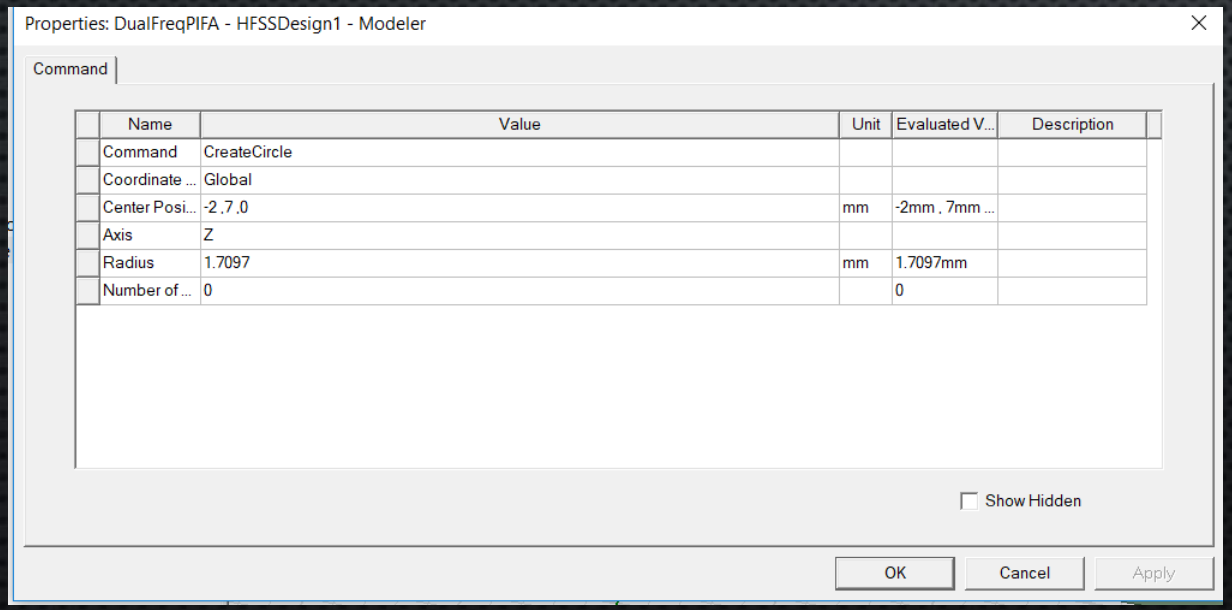


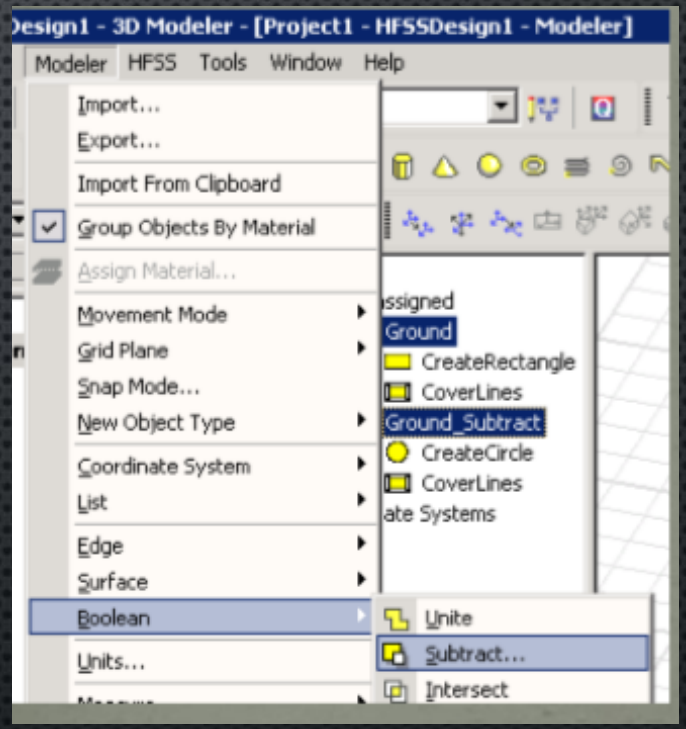
Create a Circle and Subtract

Click Draw > Circle
Draw a box anywhere on the Modeling Space
Click on the newly created object on the list to the left of the Modeling Space and enter the following information from the graphic below:

Once created, in the Modeling Space click on the Ground Plane the hold ctrl and click on the newly created circle.

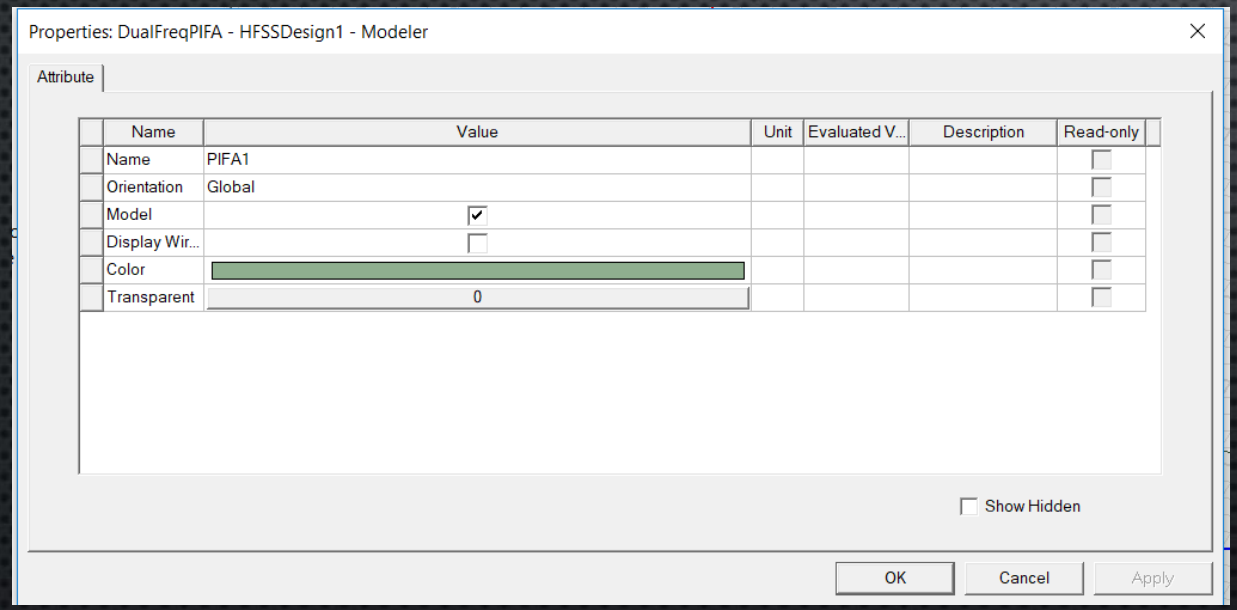
Now Click Modeler > Boolean > Subtract and Click Ok

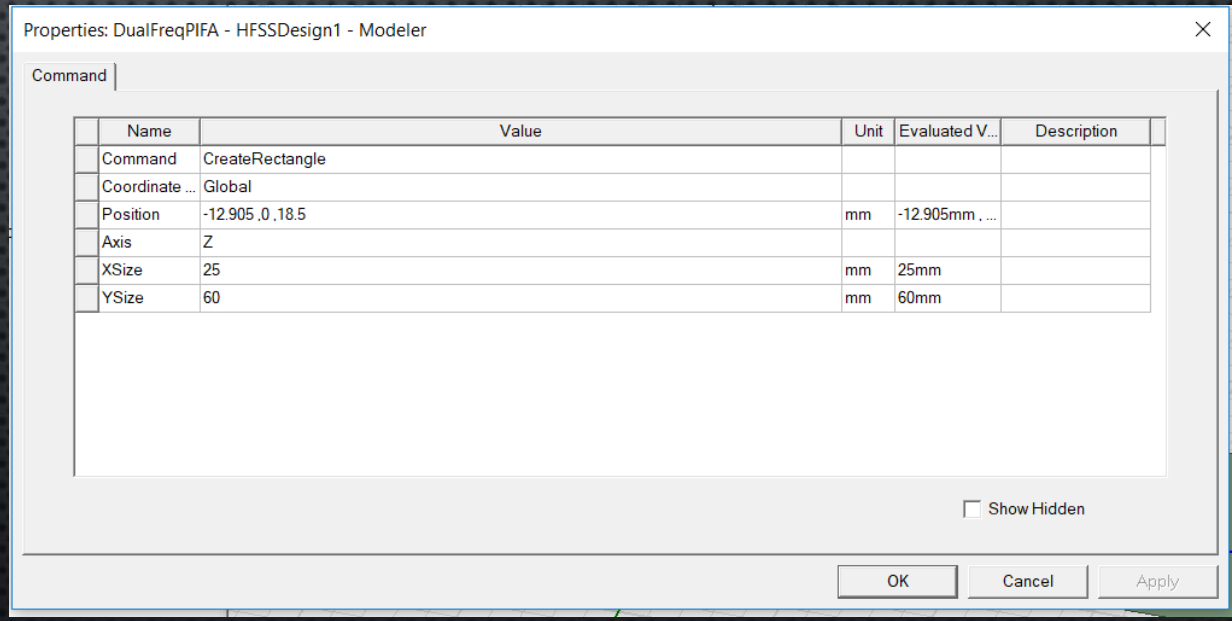




Draw the 1GHz PIFA

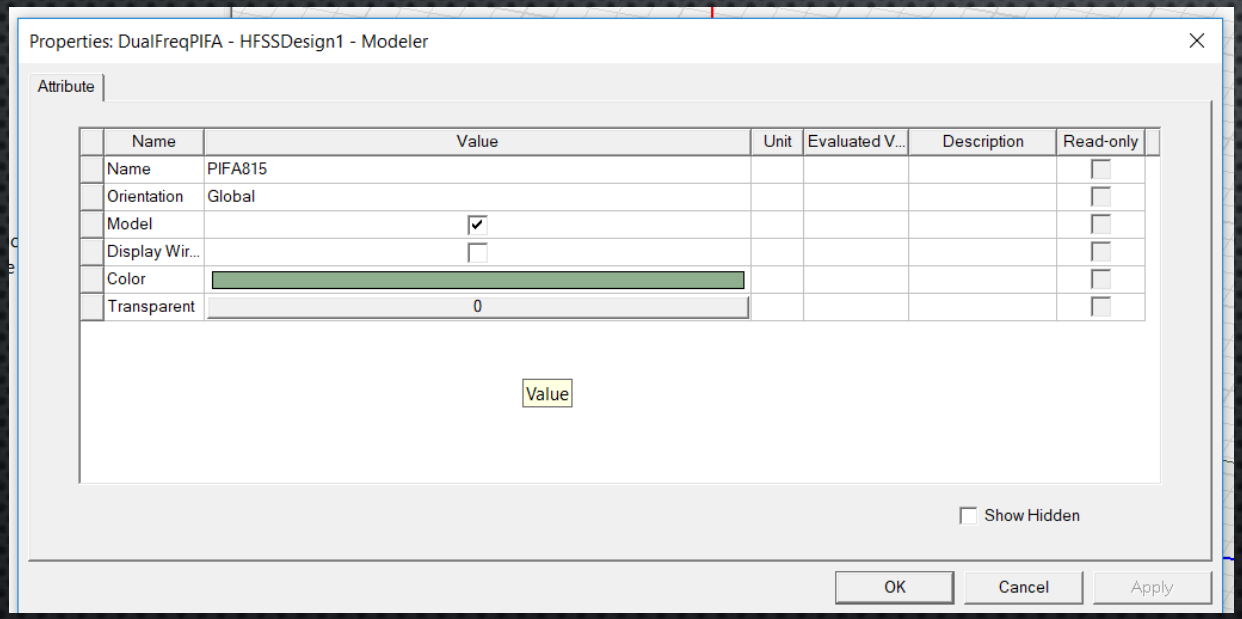
Click Draw > Rectangle
Draw a box anywhere on the Modeling Space
Click on the newly created object on the list to the left of the Modeling Space and enter the following information from the graphic below:

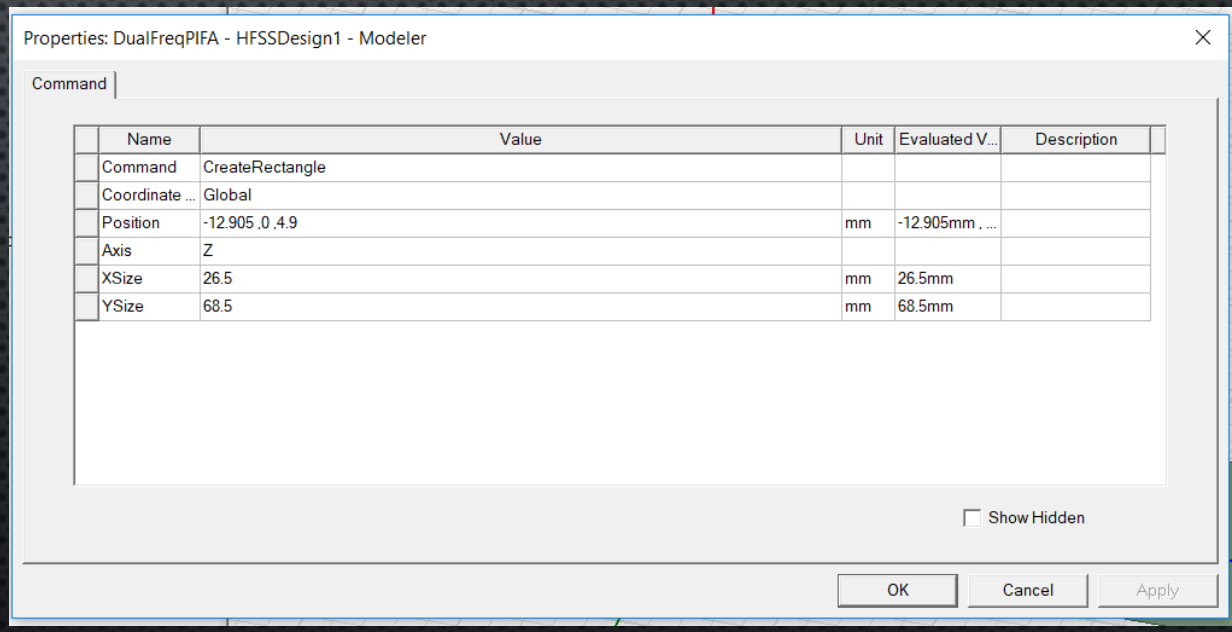




Draw the 815 MHz PIFA

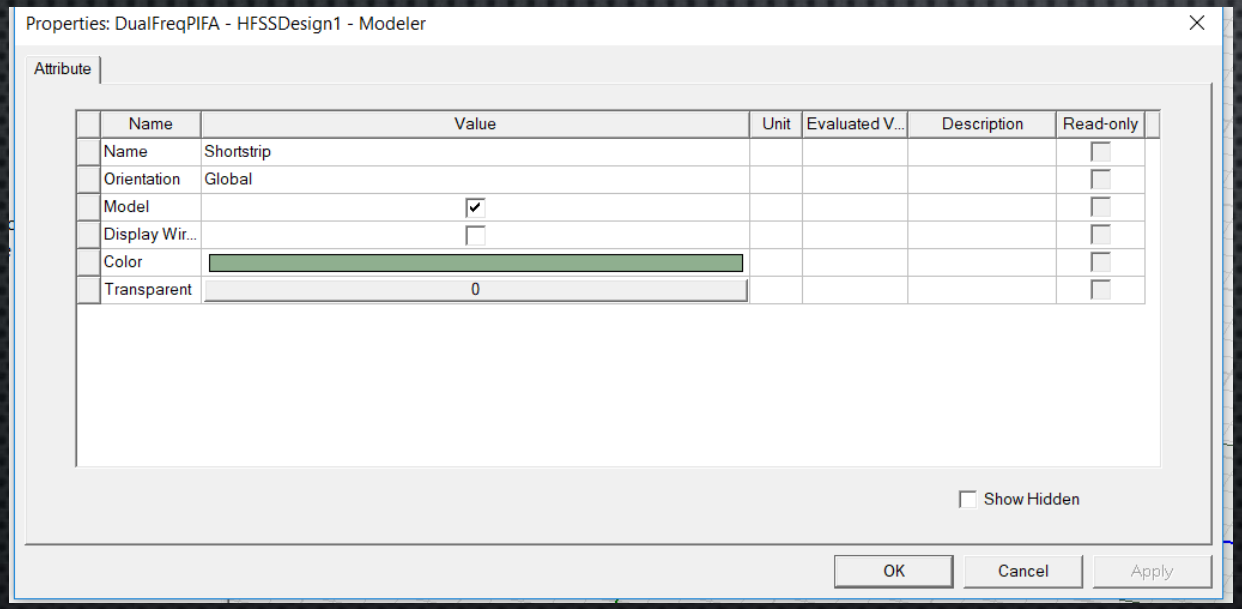
Click Draw > Rectangle
Draw a box anywhere on the Modeling Space
Click on the newly created object on the list to the left of the Modeling Space and enter the following information from the graphic below:

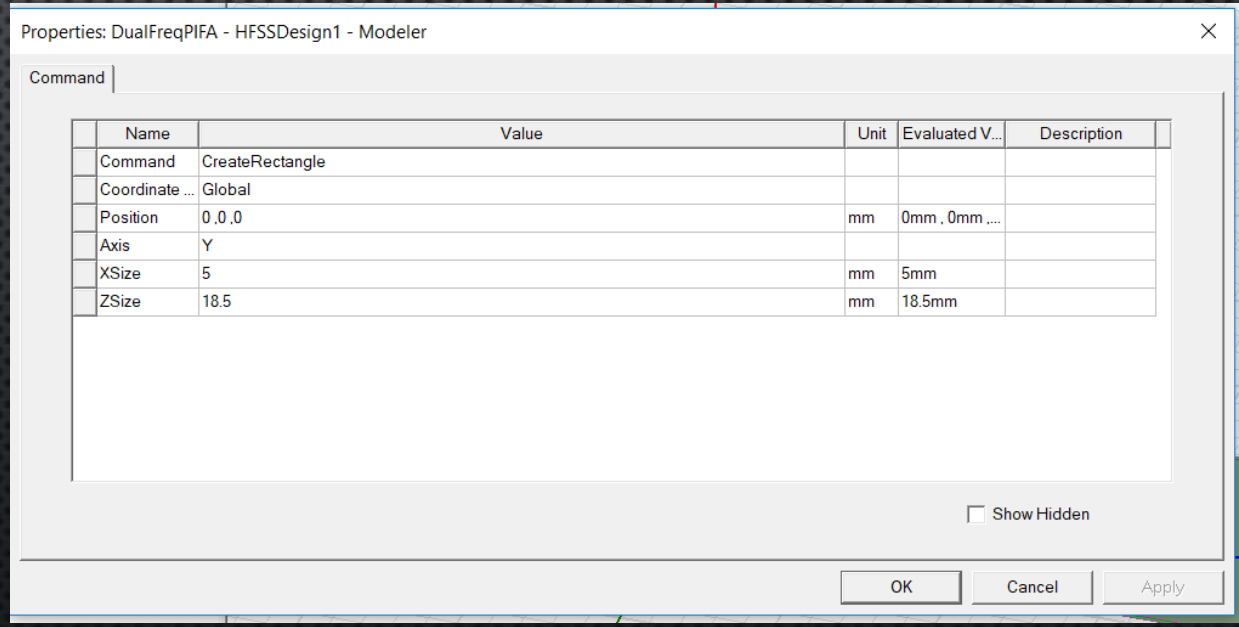




Draw the Grounding Strip

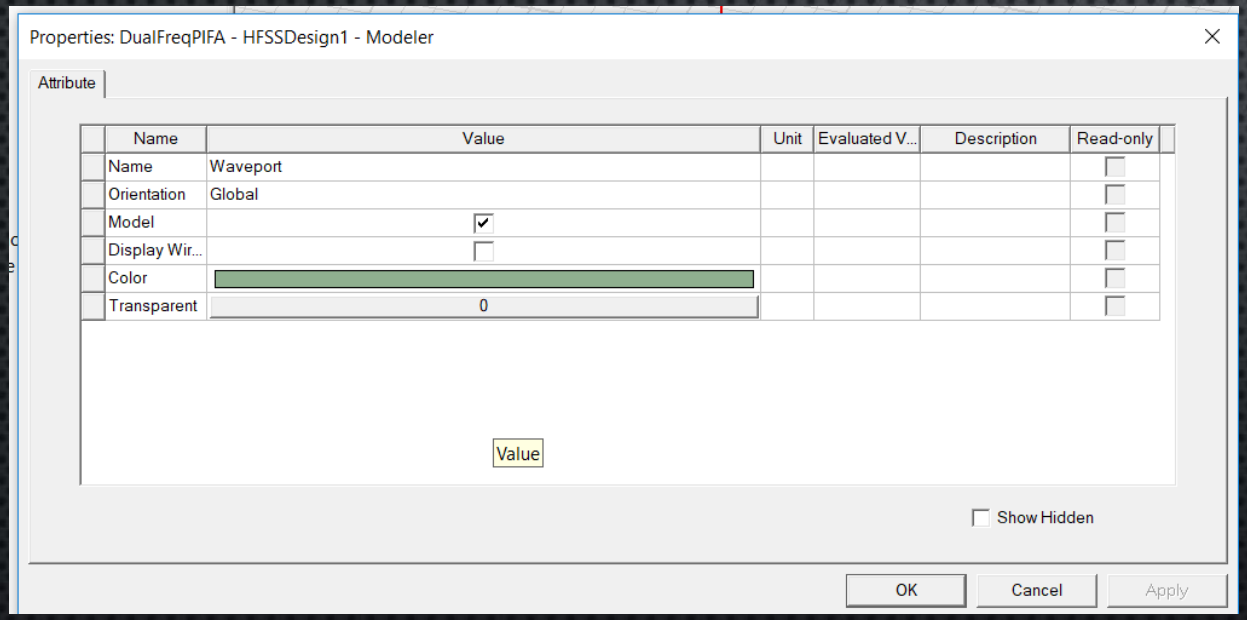
Select the ZX plane on the drop down menu below Tools
Click Draw > Rectangle
Draw a box anywhere on the Modeling Space
Click on the newly created object on the list to the left of the Modeling Space and enter the following information from the graphic below:

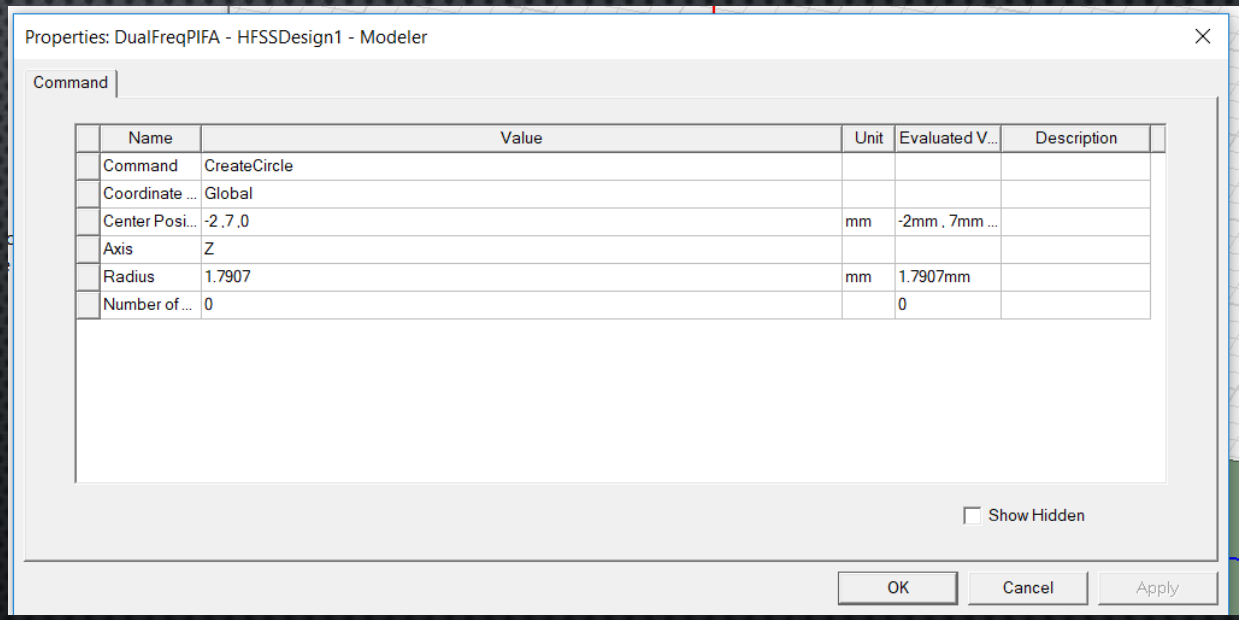




Draw the Waveport

Select the XY plane on the drop down menu below Tools
Click Draw > Circle
Draw a box anywhere on the Modeling Space
Click on the newly created object on the list to the left of the Modeling Space and enter the following information from the graphic below:



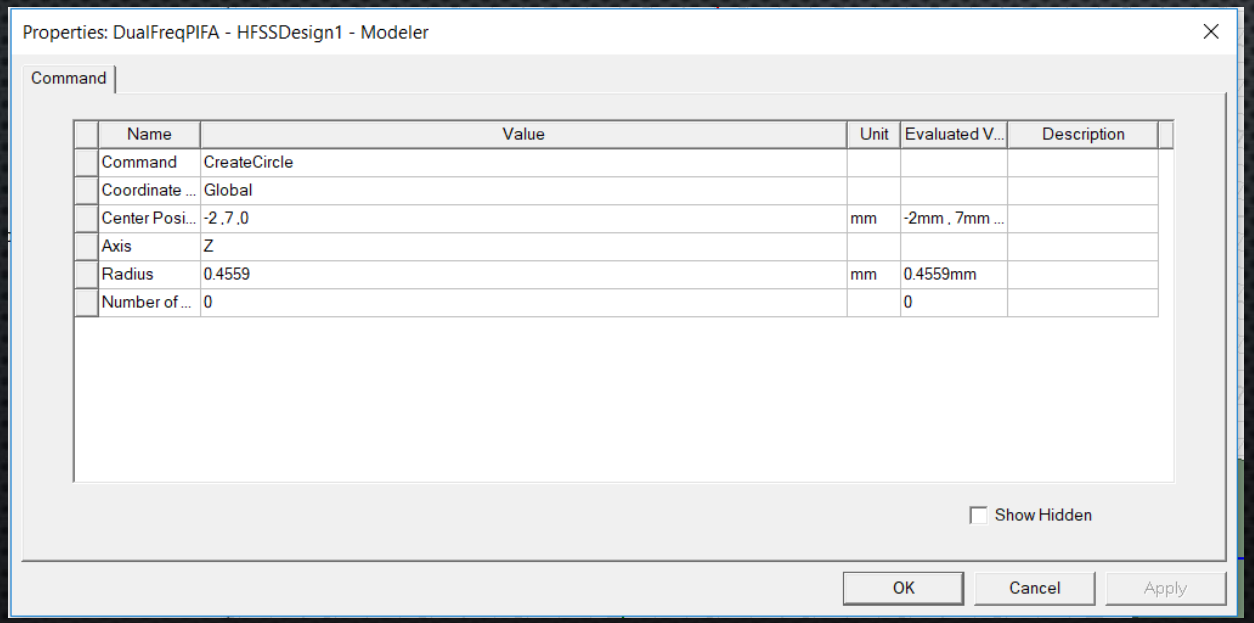


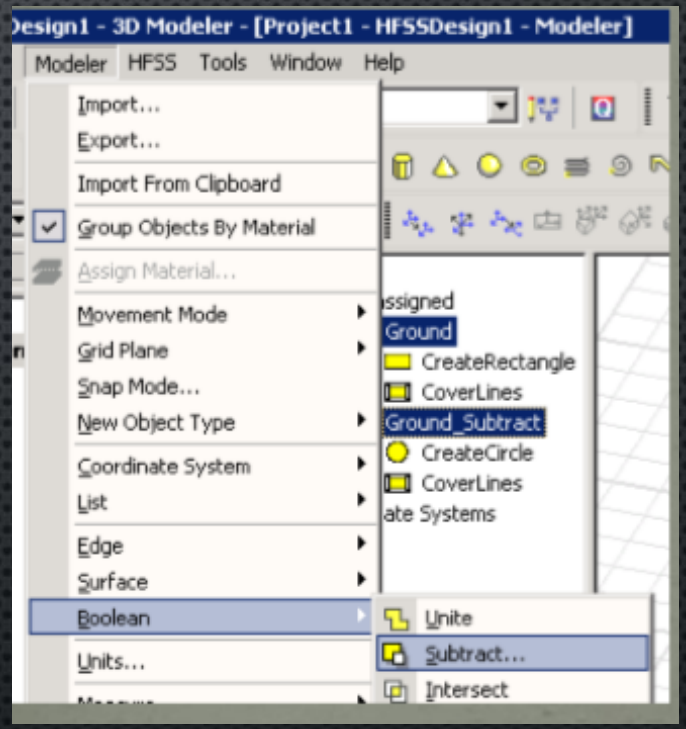
Create a Circle and Subtract

Click Draw > Circle
Draw a box anywhere on the Modeling Space
Click on the newly created object on the list to the left of the Modeling Space and enter the following information from the graphic below:

Once created, in the Modeling Space click on the Ground Plane the hold ctrl and click on the newly created circle.

Now Click Modeler > Boolean > Subtract and Click Ok

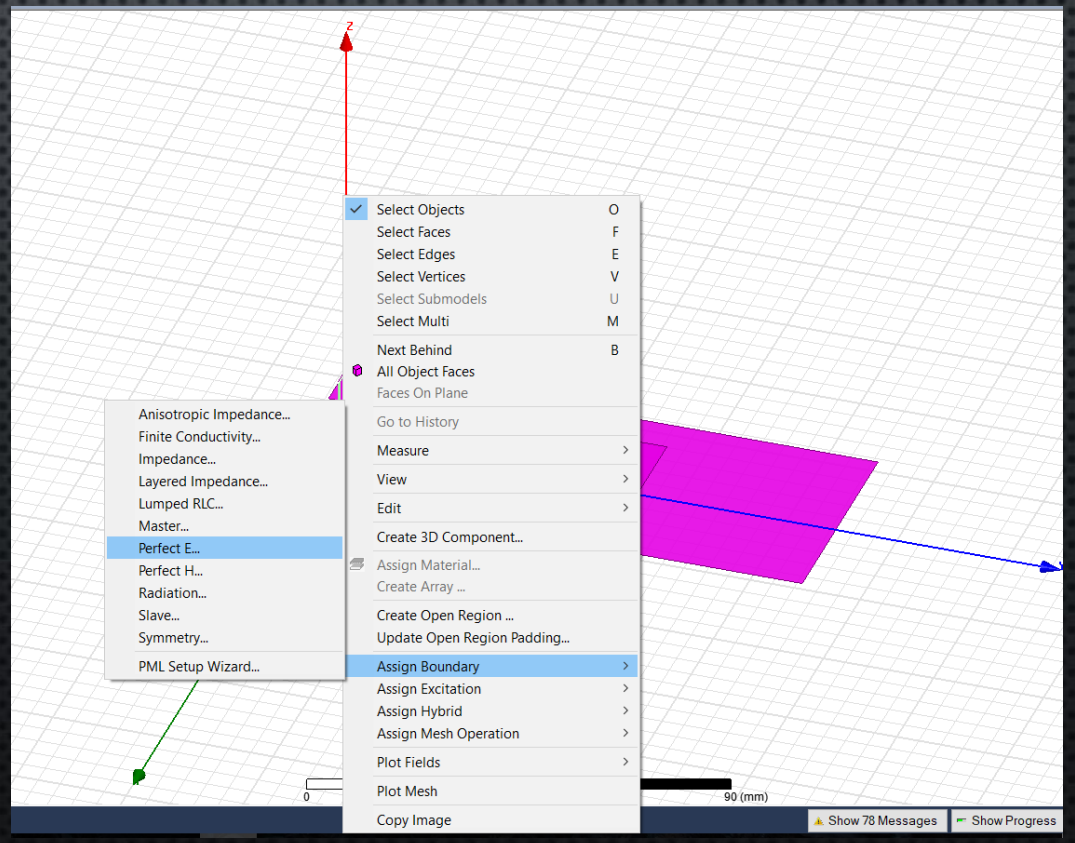




Assign Perfect E Boundary

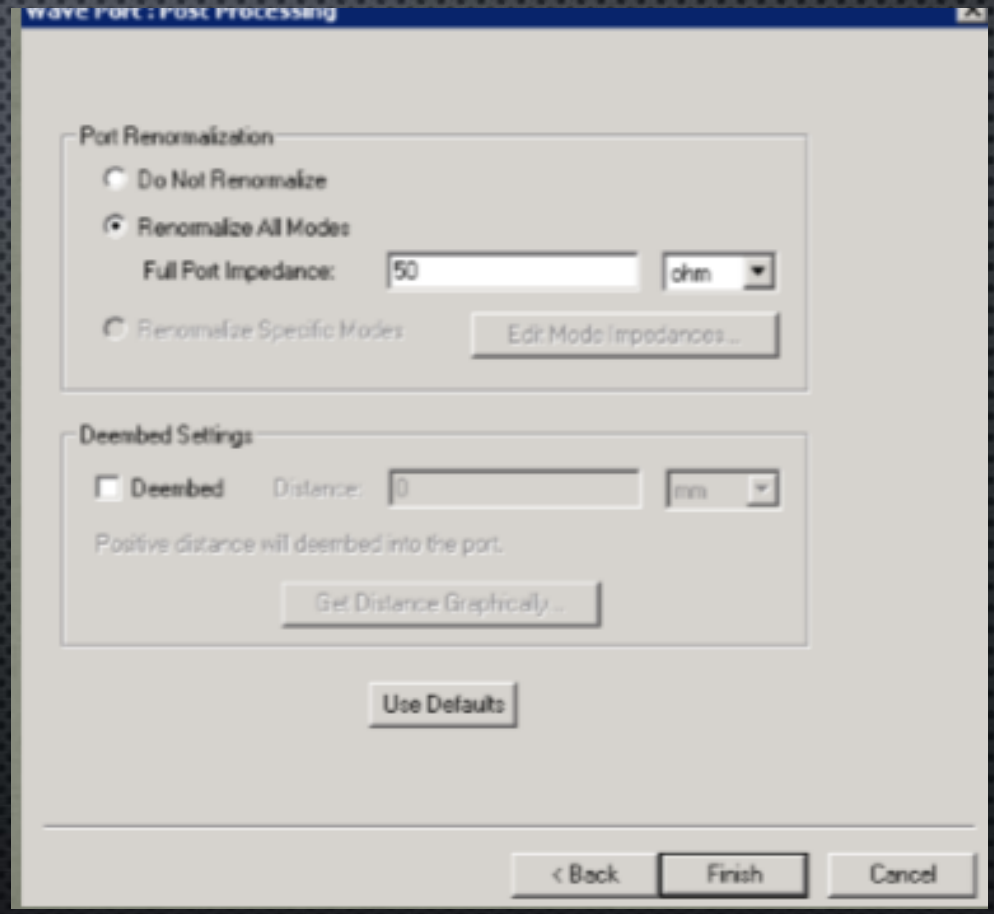
In the Modeling Window Click on the Ground Plane, PIFA1, PIFA815, and the Shortstrip while holding down on ctrl.

Right Click the selected Objects and
Click on Assign Boundary > Perfect E and Click Ok



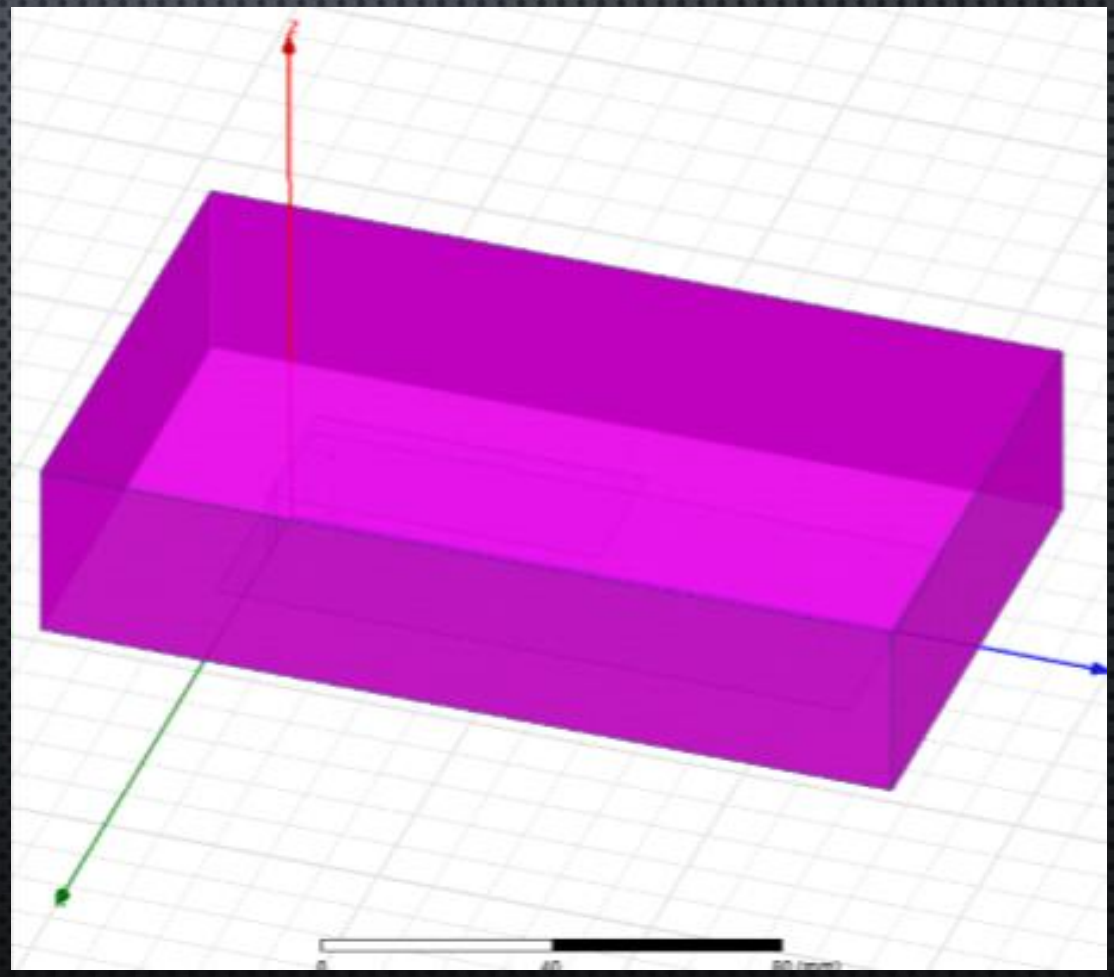
Assign Waveport Excitation

Click on the Waveport in the Modeling Window
Right Click the selected Object and
Click on Assign Excitation > Waveport
Click > Next > Next
Select “Renormalize All Modes” > Finish



Assign Radiation Boundary

Click Edit > Select > Faces
Click on each face of the Airbox in the Modeling Space while holding down the ctrl key
Click > Boundaries > Assign > Radiation



Congratulations! You have successfully created a Dual Band PIFA Antenna in HFSS!