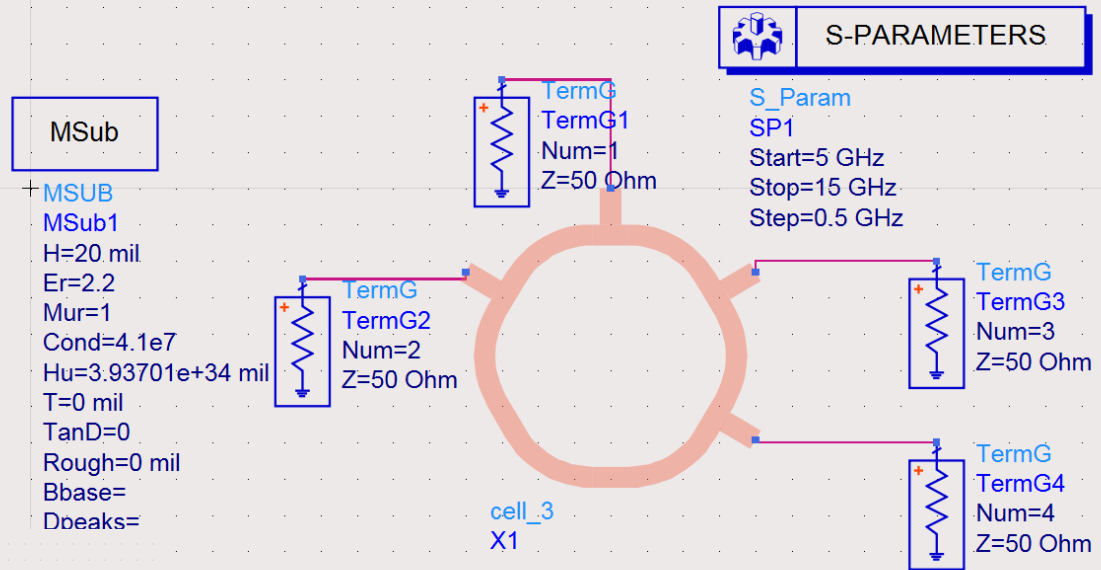
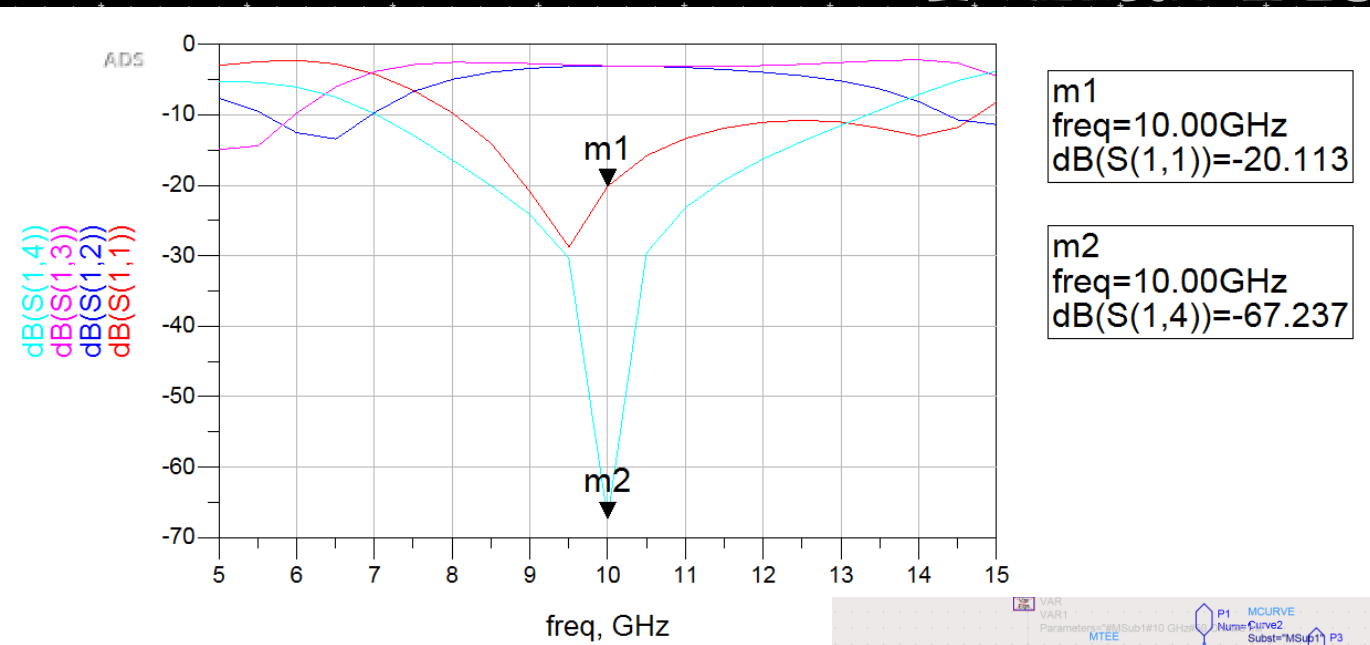


Rat Race Coupler: ECE435 – Project 7

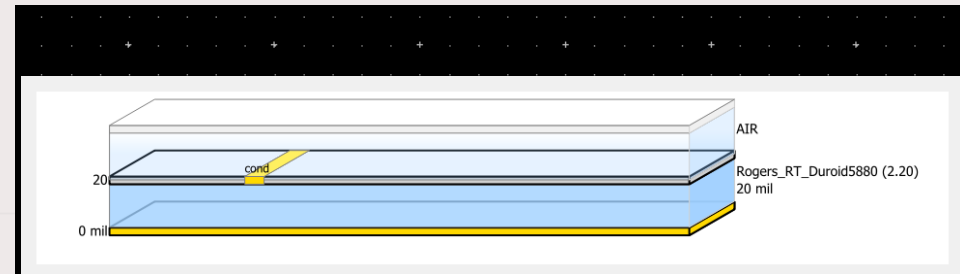
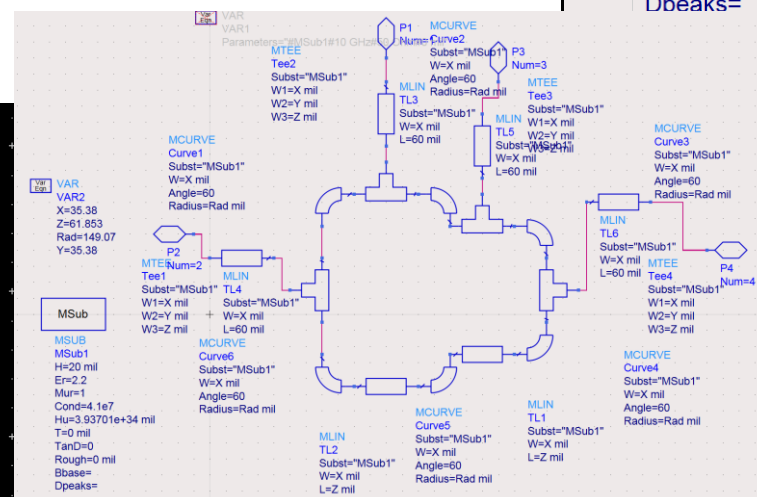
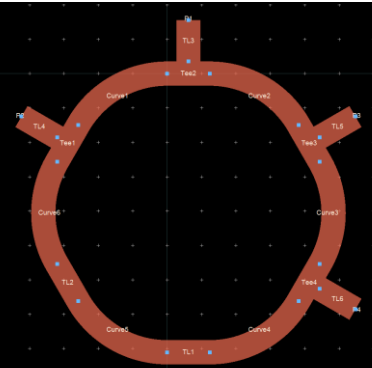
Michael Benker, Majed Alharbi, Luis Pinto, Dennis Rebelo, Vander Brito

Final Results



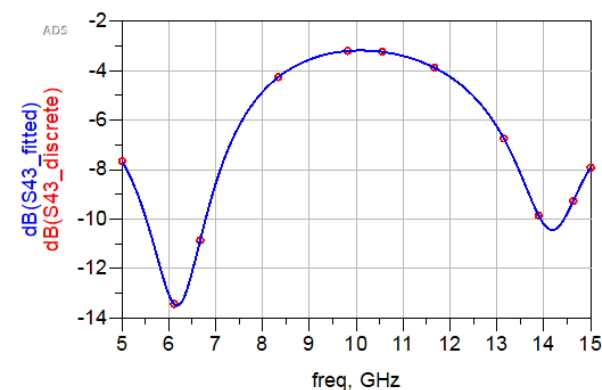
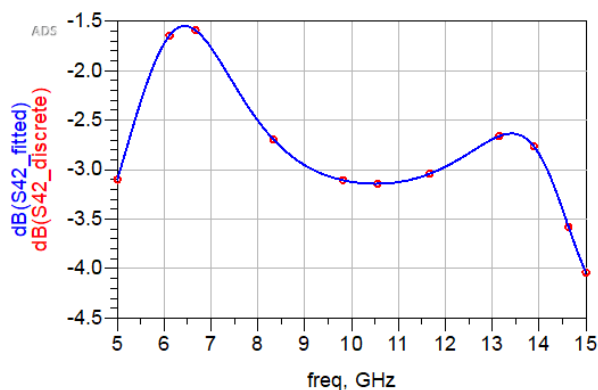
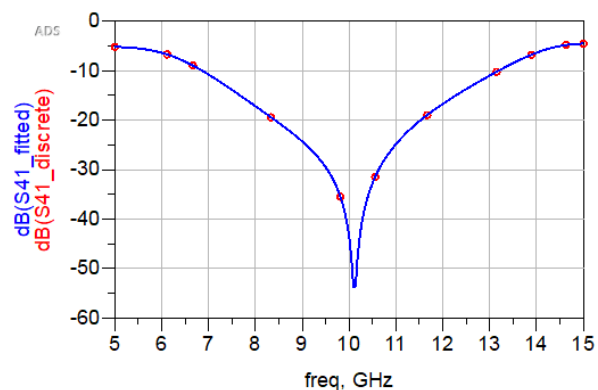
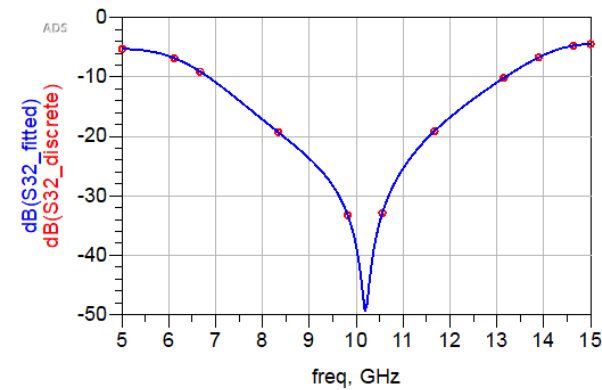
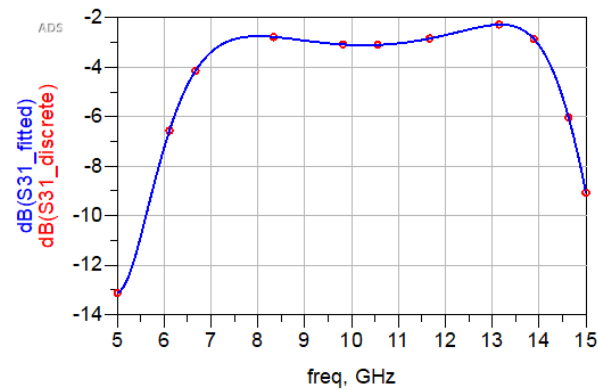
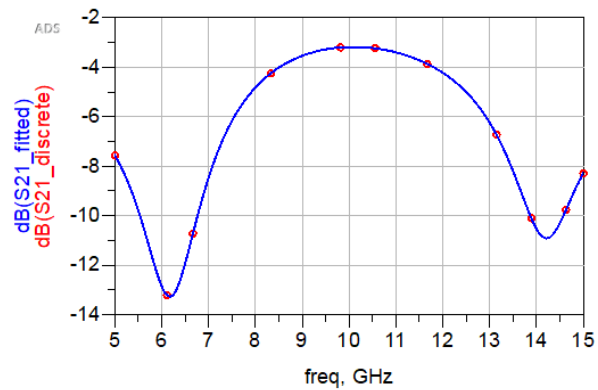
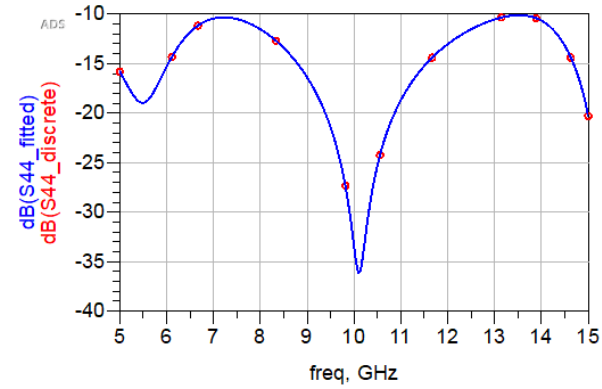
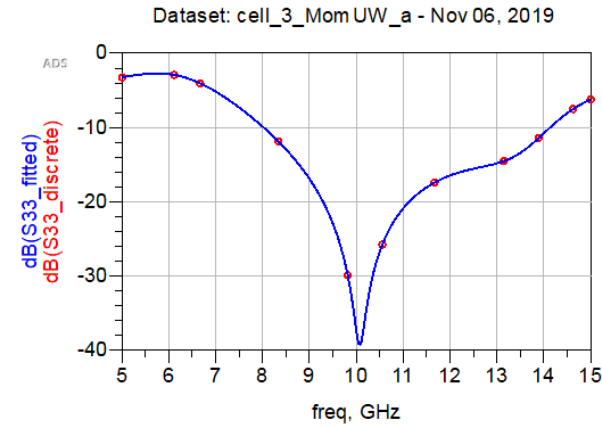
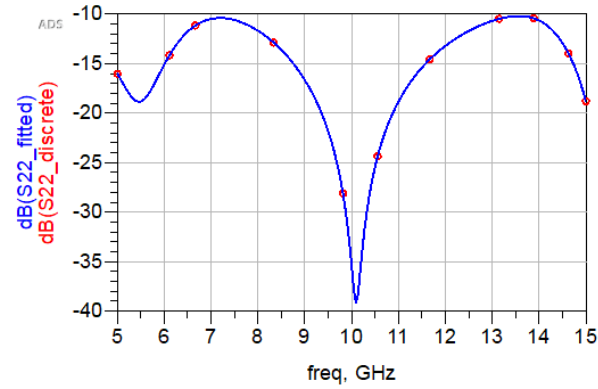
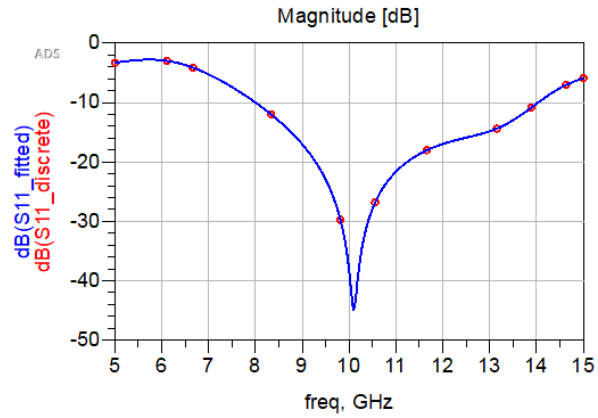
MSub

MSub
 MSub1
 H=20 mil
 Er=2.2
 Mur=1
 Cond=4.1e7
 Hu=3.93701e+34 mil
 T=0 mil
 TanD=0
 Rough=0 mil
 Bbase=
 Dpeaks=

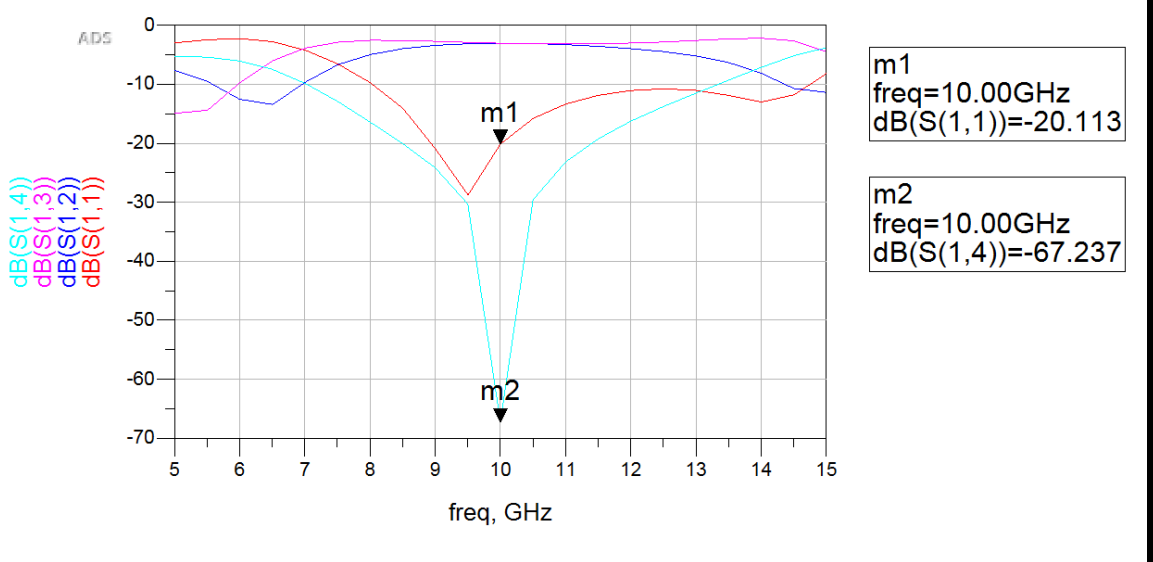
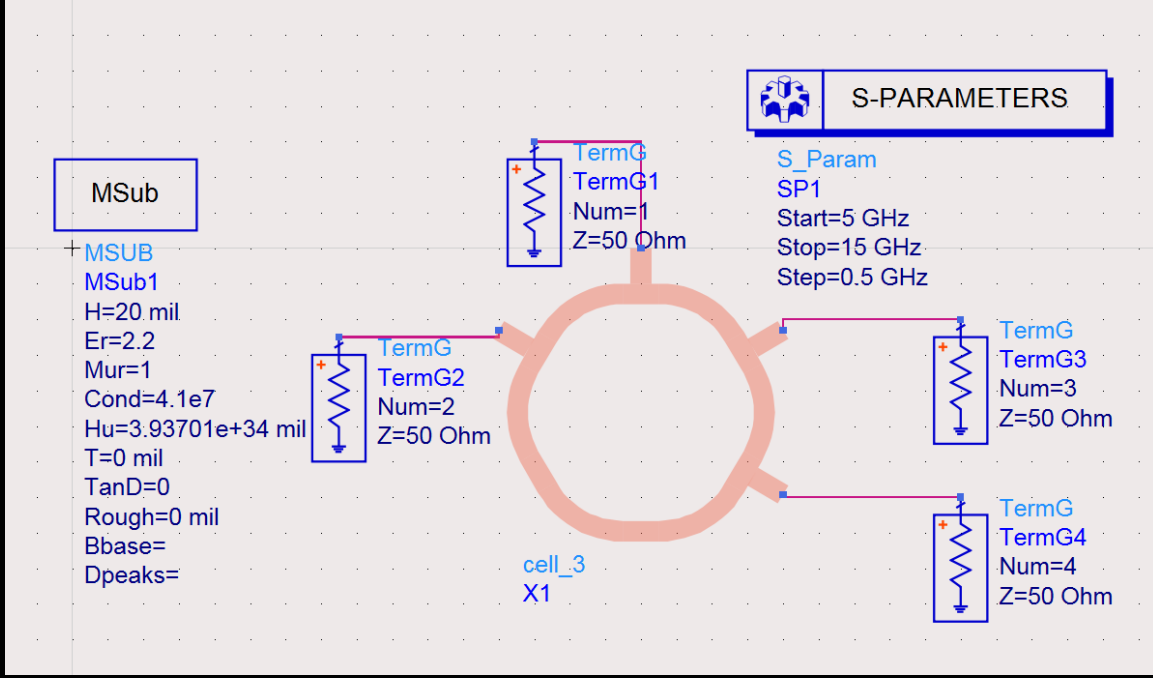
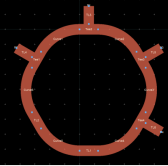


Discrete Frequencies vs. Fitted (AFS or Linear)

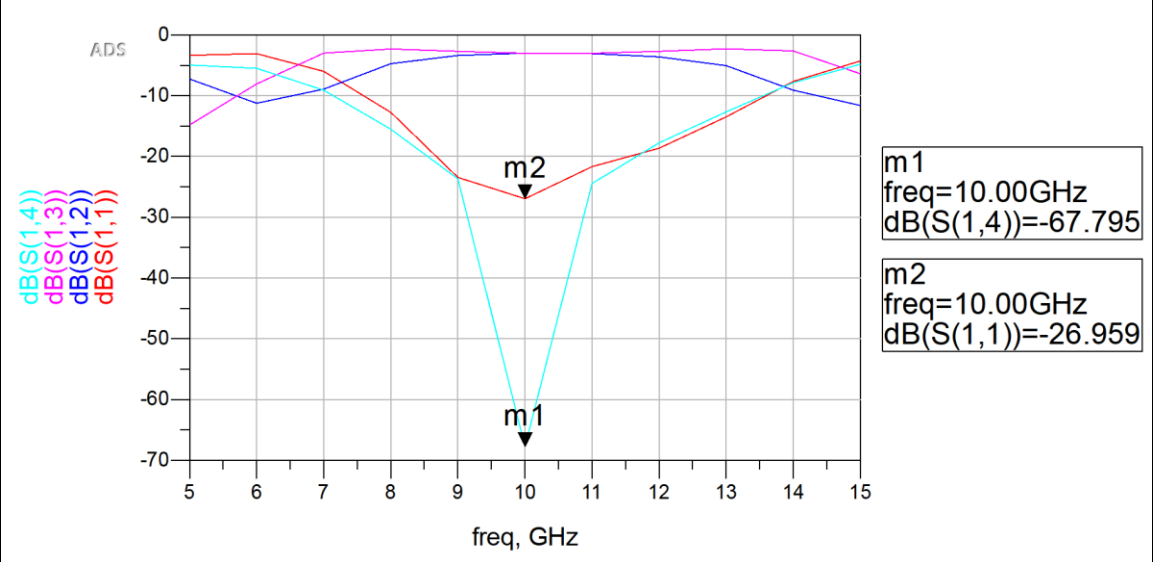
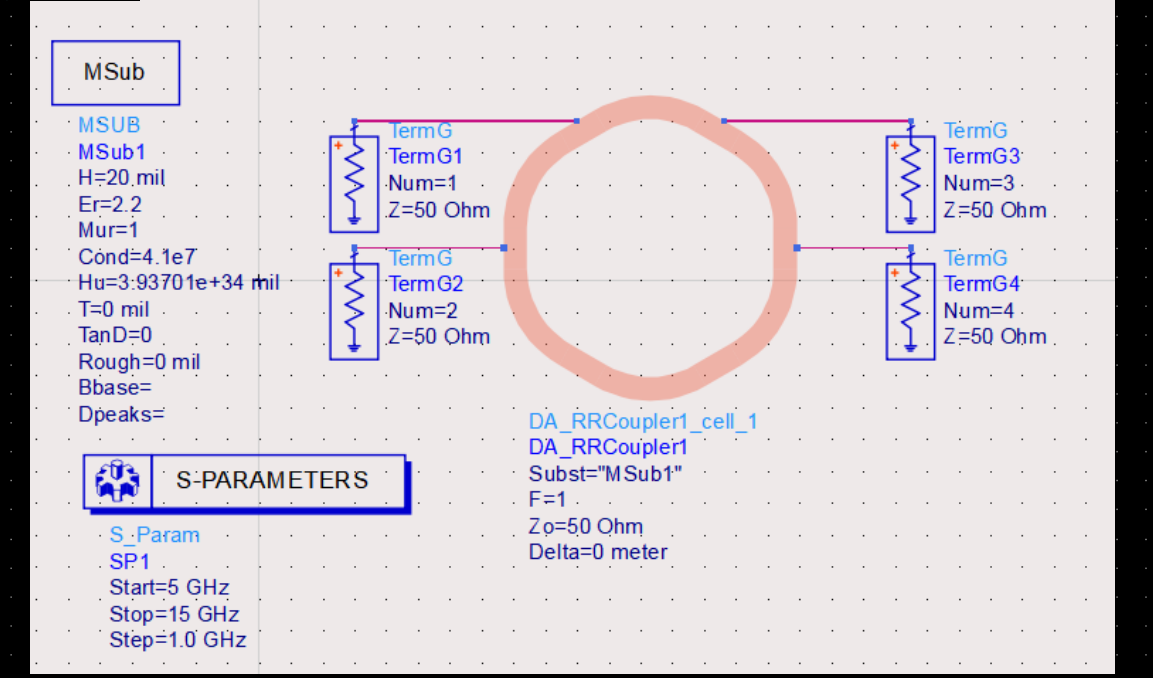
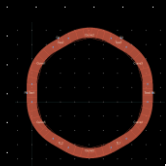
Adaptively Fitted Points Discrete Frequency Points



With Connectors

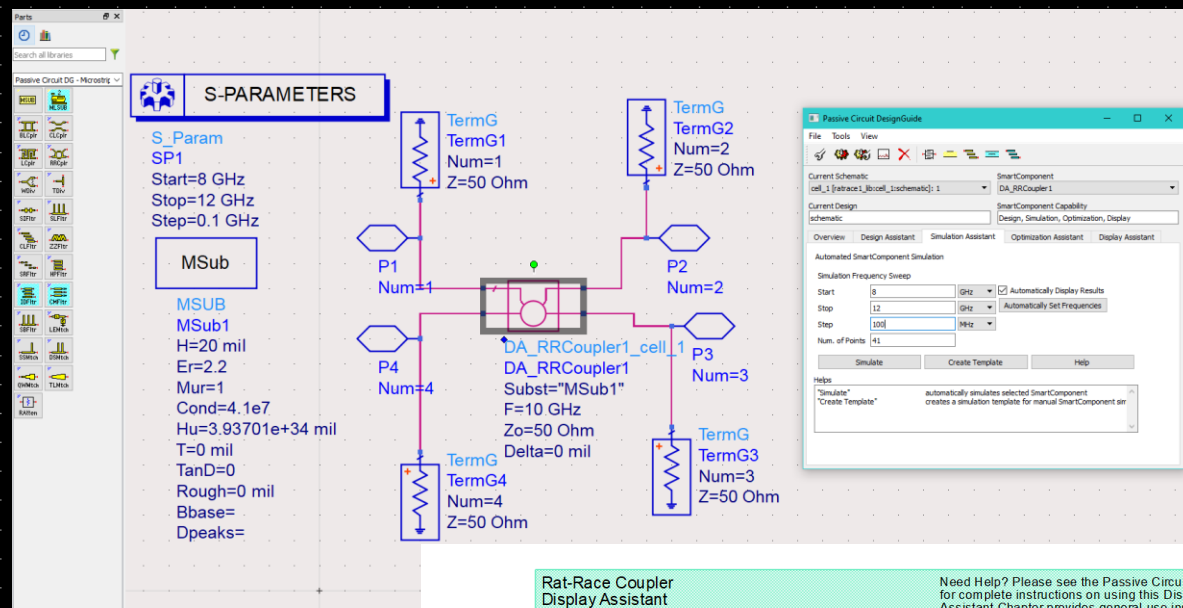


Without Connectors



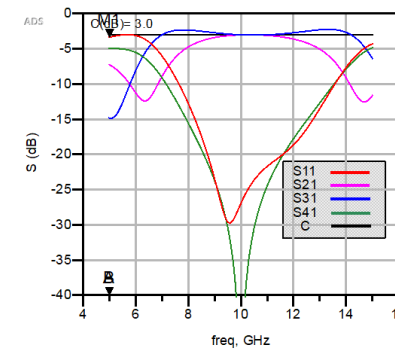
Steps

1. Select the RRCoupler under the Parts menu “Passive Circuit DG – Microstrip”
2. Run the DesignGuide Tool and select the Rat Race Coupler
3. Set the simulation parameters.
4. Run the Optimization Assistant.
5. Display Simulation Results.
6. Step into the optimized Rat Race Coupler to view the microstrip lines used in the optimized rat race coupler.
7. Generate Layout and model.
8. Final Simulation.



Rat-Race Coupler
Display Assistant
Passive Circuit DesignGuide

Need Help? Please see the Passive Circuit DesignGuide User Manual for complete instructions on using this Display Assistant. The Display Assistant Chapter provides general-use instructions, and specifics for this Display Assistant are found in the component documentation.



	F	S11	S21	S31	S41	Phase0	Phase180
Desired Center Frequency	10.00	-26.96	-3.02	-3.02	-67.79	-0.04	-180.04
Actual Center Frequency	9.60	-29.78	-3.11	-2.93	-32.39	2.40	-177.58
Change/Worst A->B	0.00	-3.36	-7.26	-14.82	-4.98	0.00	0.00
Marker M1	5.00	-3.36	-7.26	-14.82	-4.98	-30.79	-54.85
Marker M2	5.00	-3.36	-7.26	-14.82	-4.98	-30.79	-54.85

F: Frequency
1: Sum Port
2: Port 2
3: Port 3
4: Difference Port
C: Desired Coupling
Phase0: S21-S31 Phase Difference
Phase180: S24-S34 Phase Difference

Note: Change/Worst A->B provides performance over the range from marker A to B. The change of F, Phase0, and Phase180 are given, and the worst case S-parameter values are given.

