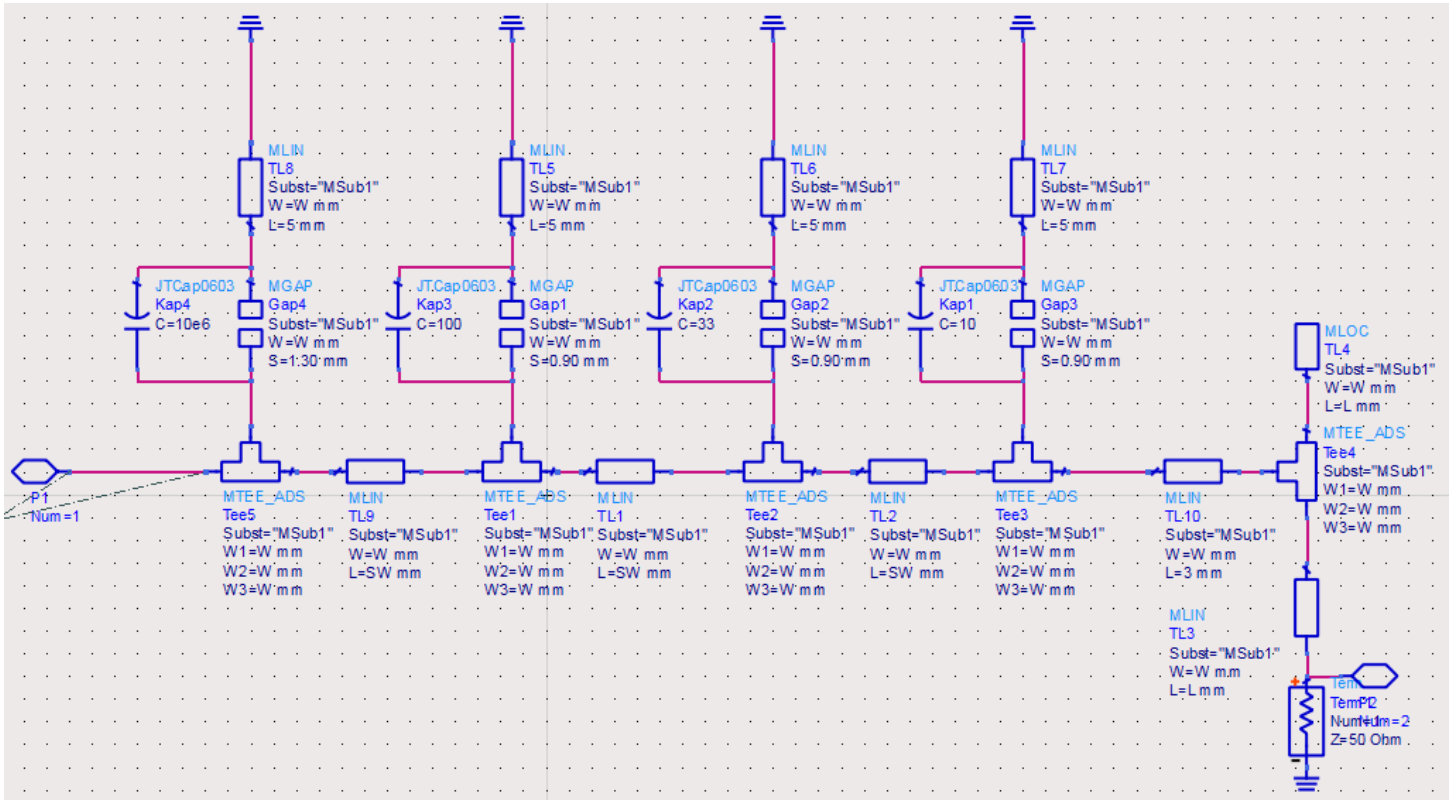
Design of power amplifier

- Design choices
- Bias/drain-network
- Stabillity
- Matching
- Layout
- Results

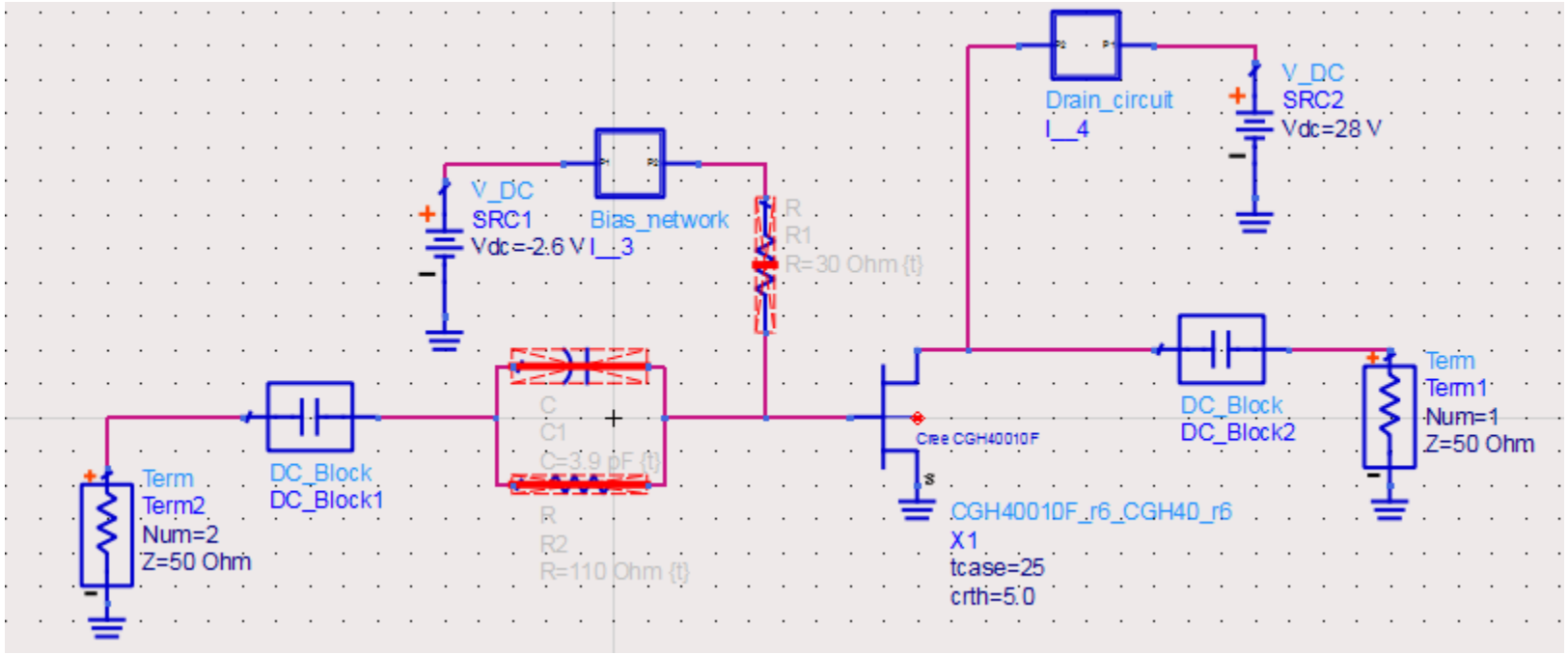
Design choices

- Class AB
- Efficiency
- Gain
- Stubs for matching

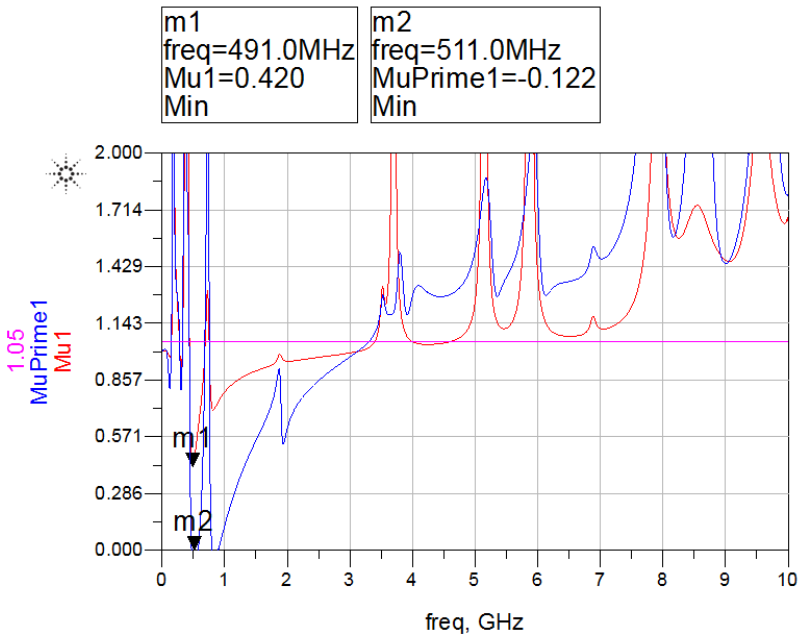
Bias/drain-network

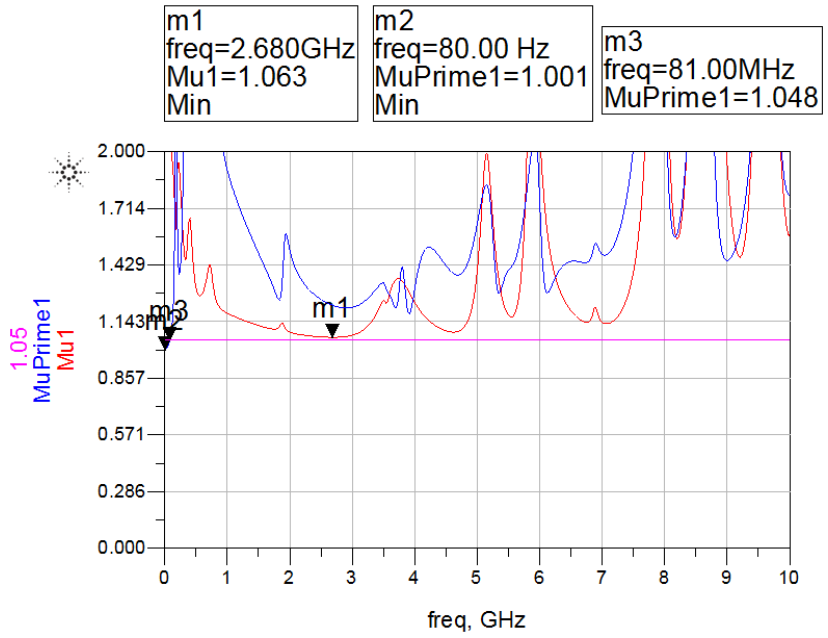


Stabillity schematic

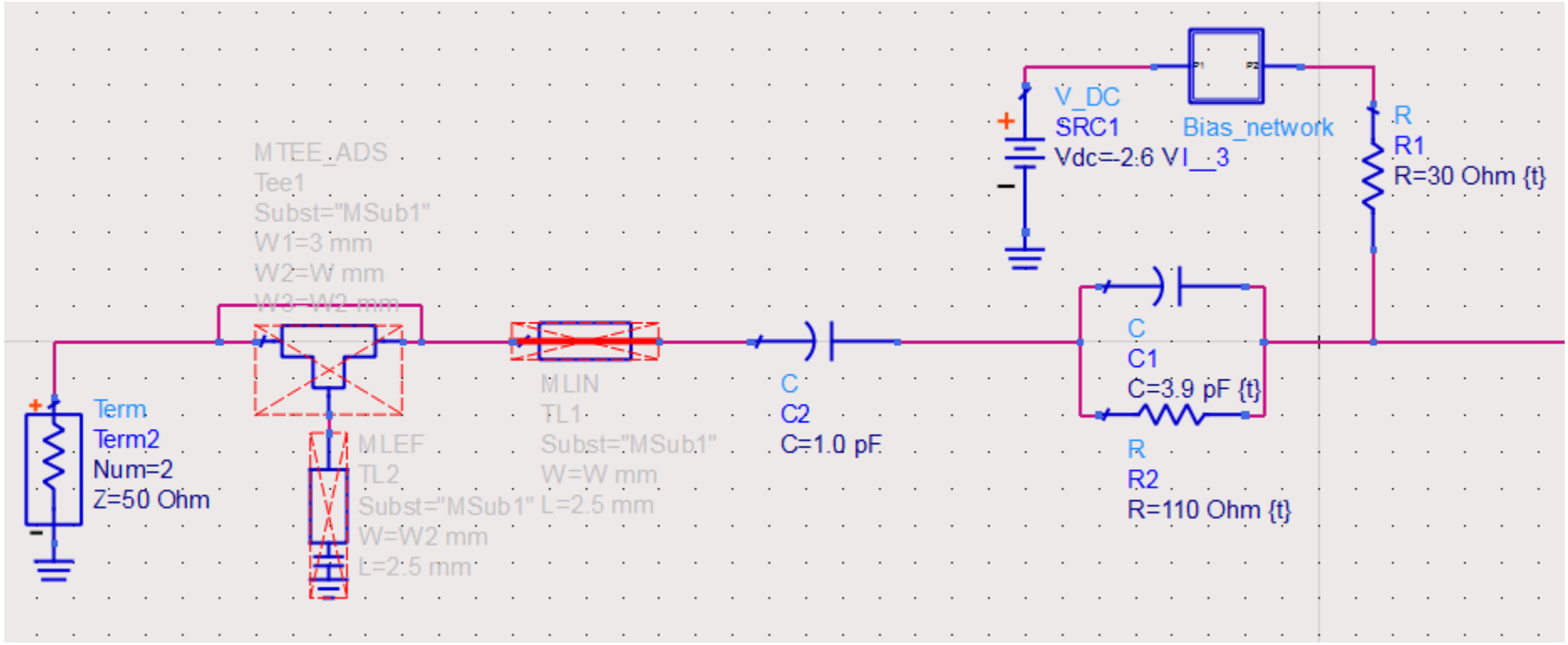


Stabillity before-after

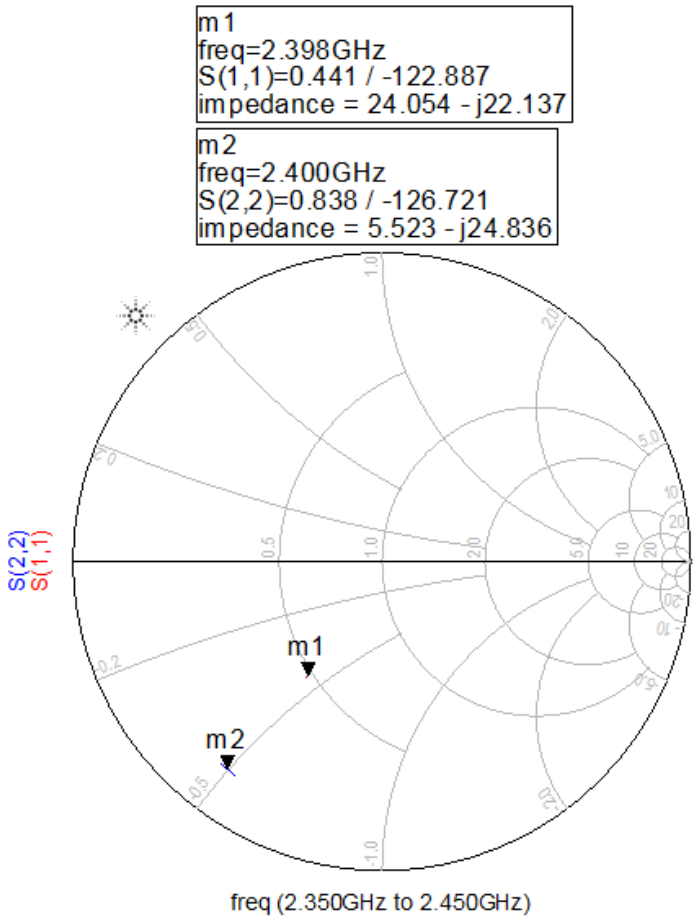


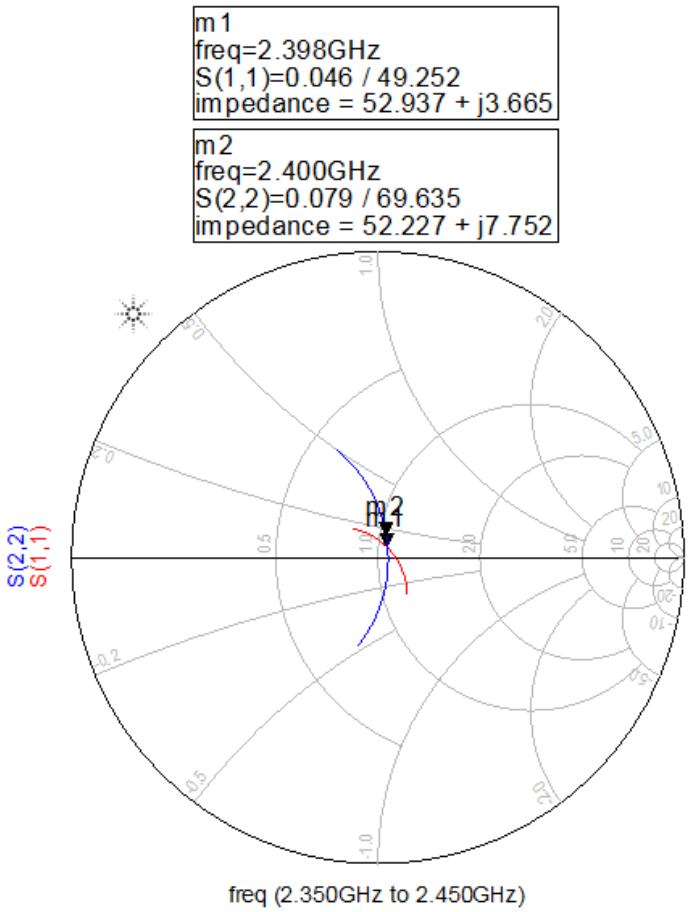


Matching schematic



Matching before-after

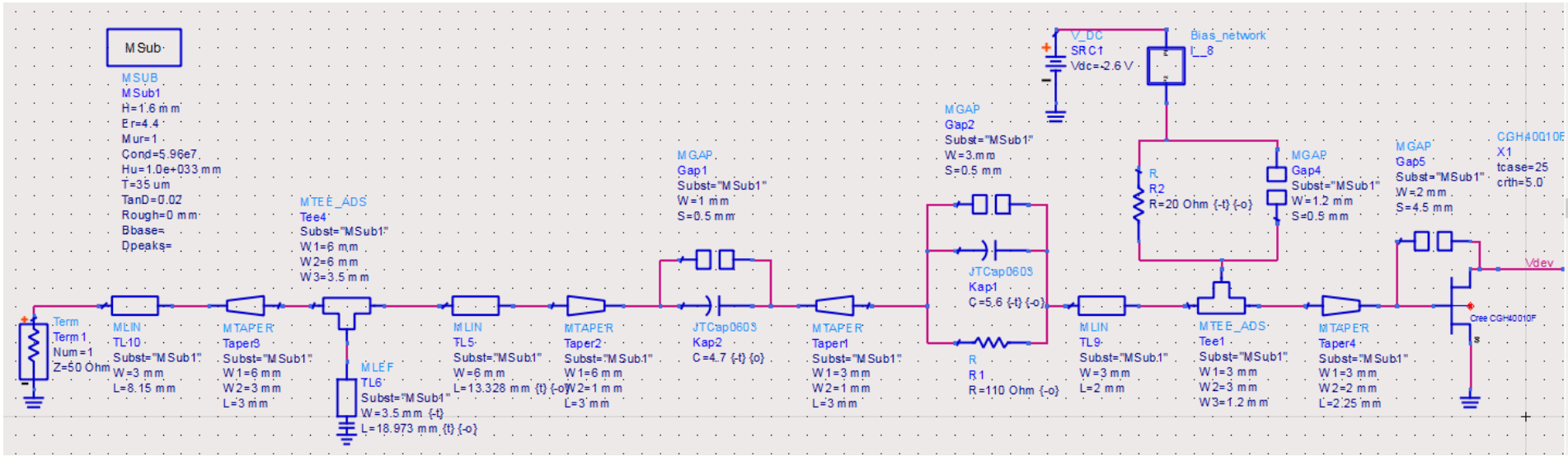




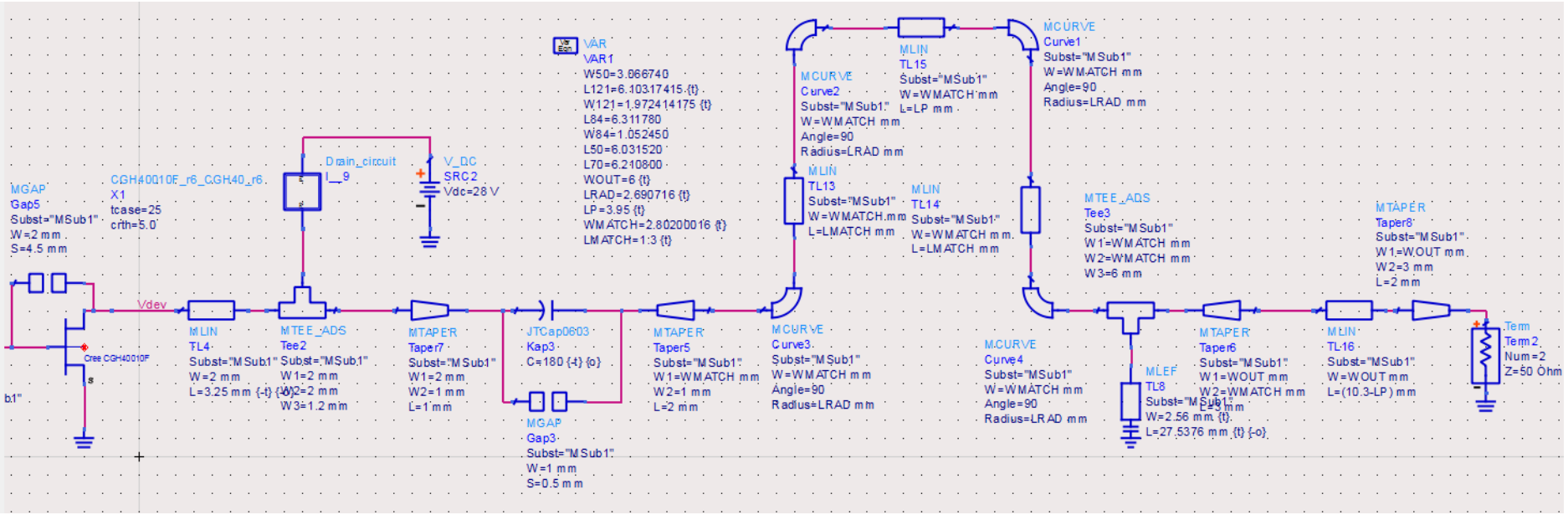
Layout

- Conversion to real components
- One at a time
- Tuned values
- Geometrical restrictions

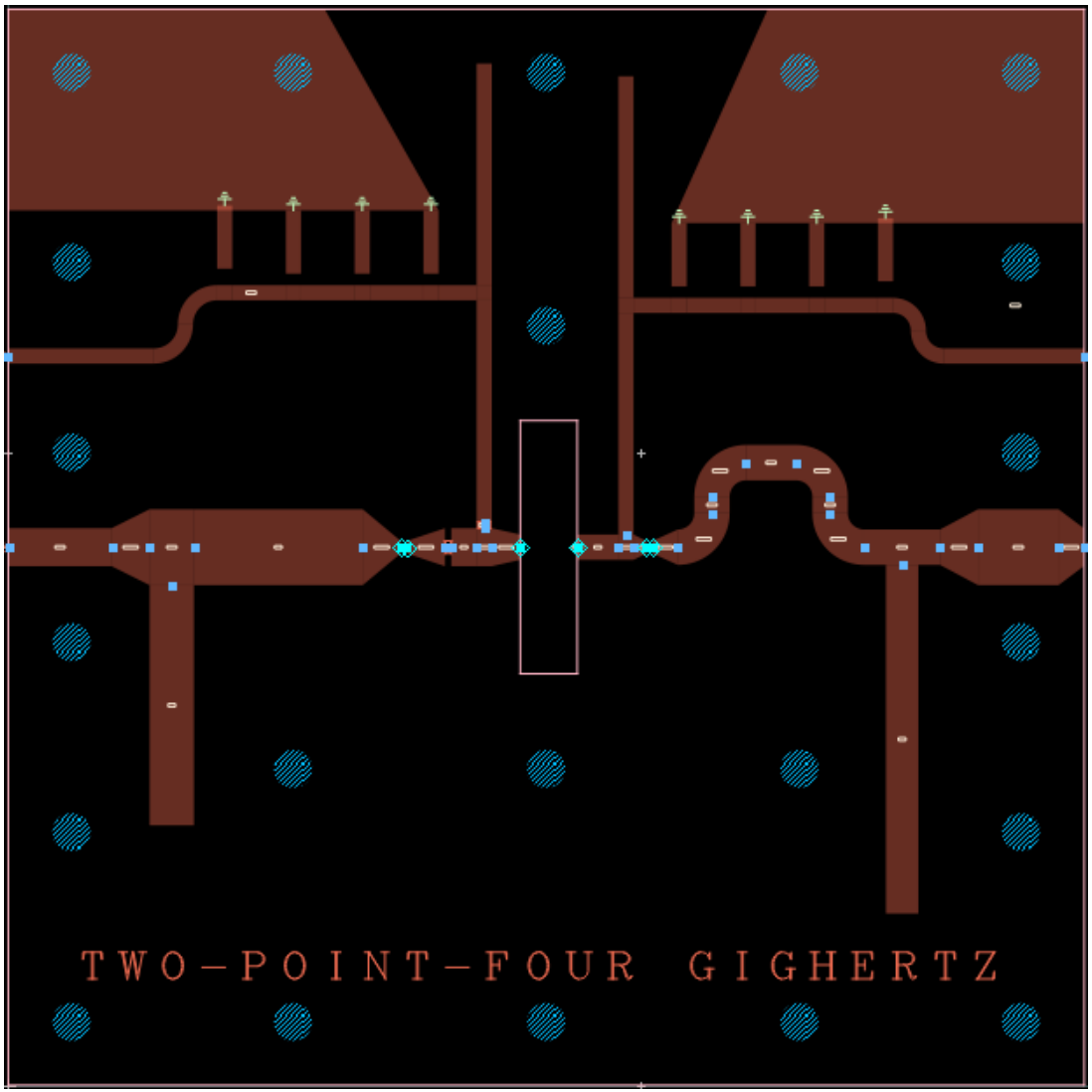
Schematic input



Schematic output



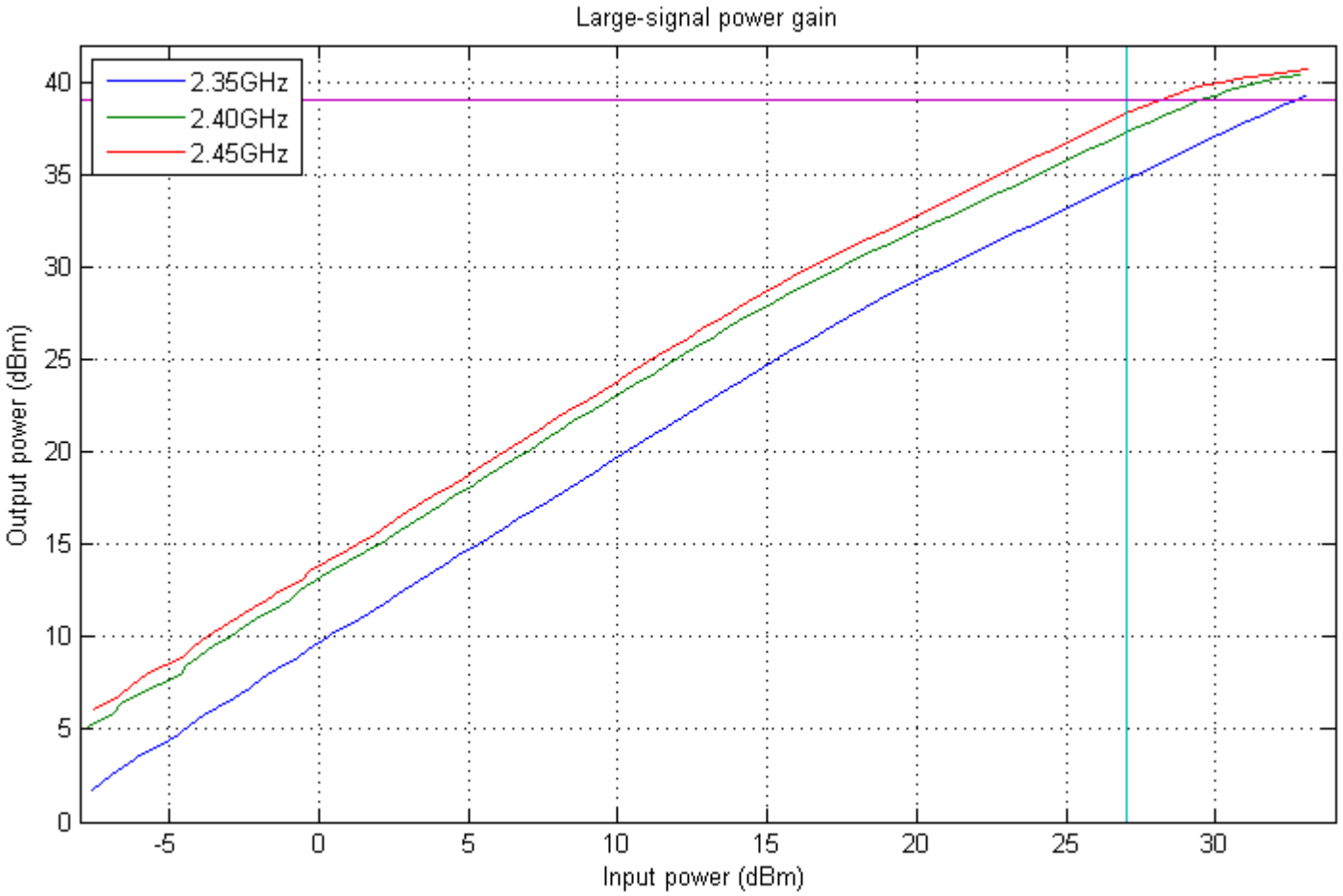
Layout



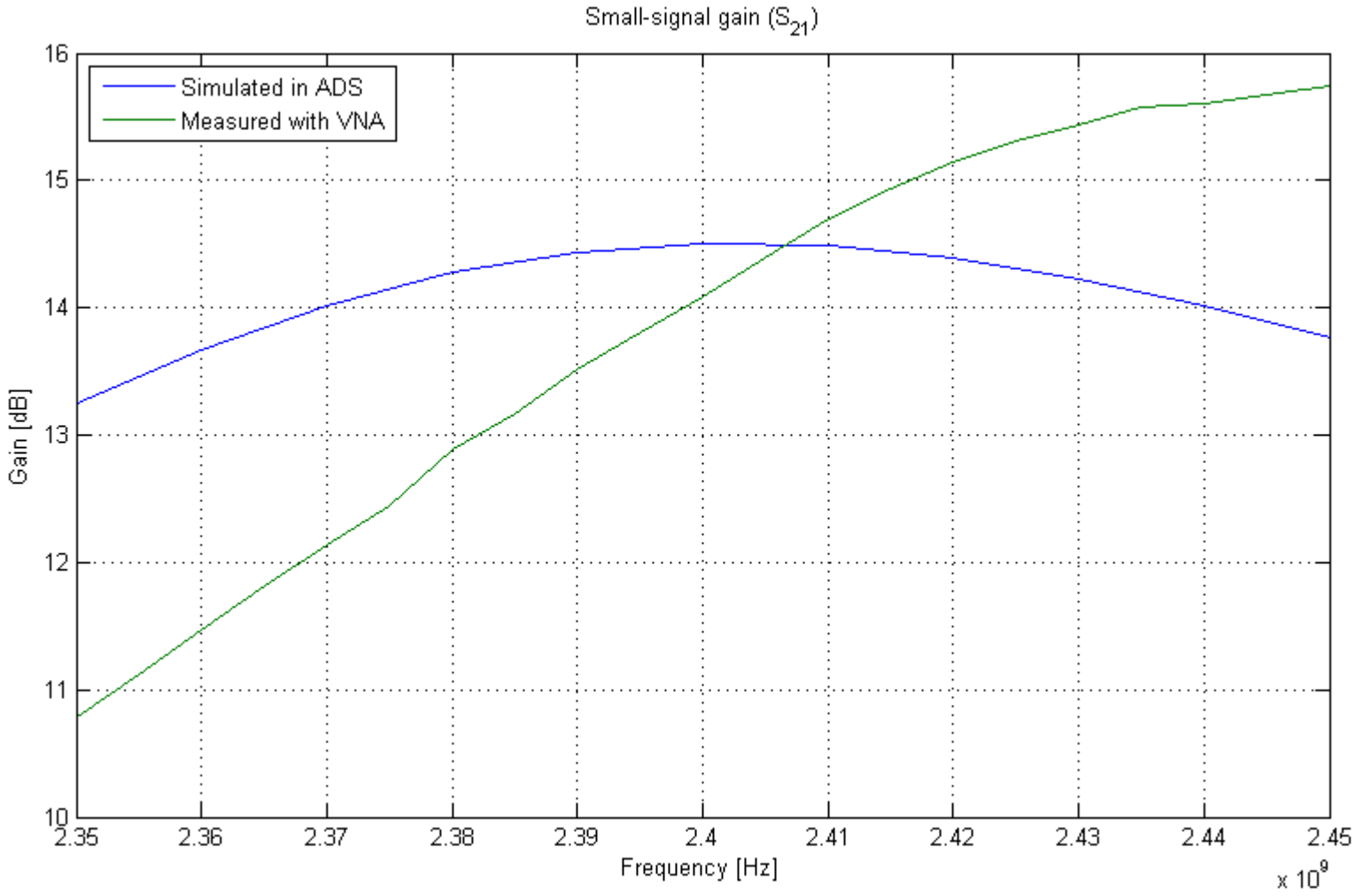
Results

Parameter	2.35GHz	2.40GHz	2.45GHz	Requirement
Small-signal gain	10.79dB	14.08dB	15.74dB	>13dB
Output power with 27dBm input	34.73dBm	37.17dBm	38.37dBm	>39dBm
Power added efficiency	18.26%	35.02%	46.99%	NA
Third order intermodulation distortion		High: -22.41dBc Low: -22.45dBc		

Large-signal power gain



Small-signal gain



Conclusion

- Unconditionally stable
- Gain slightly off frequency wise
- Steep learning curve

Questions?