

EE 525.632 Microwave Final Project

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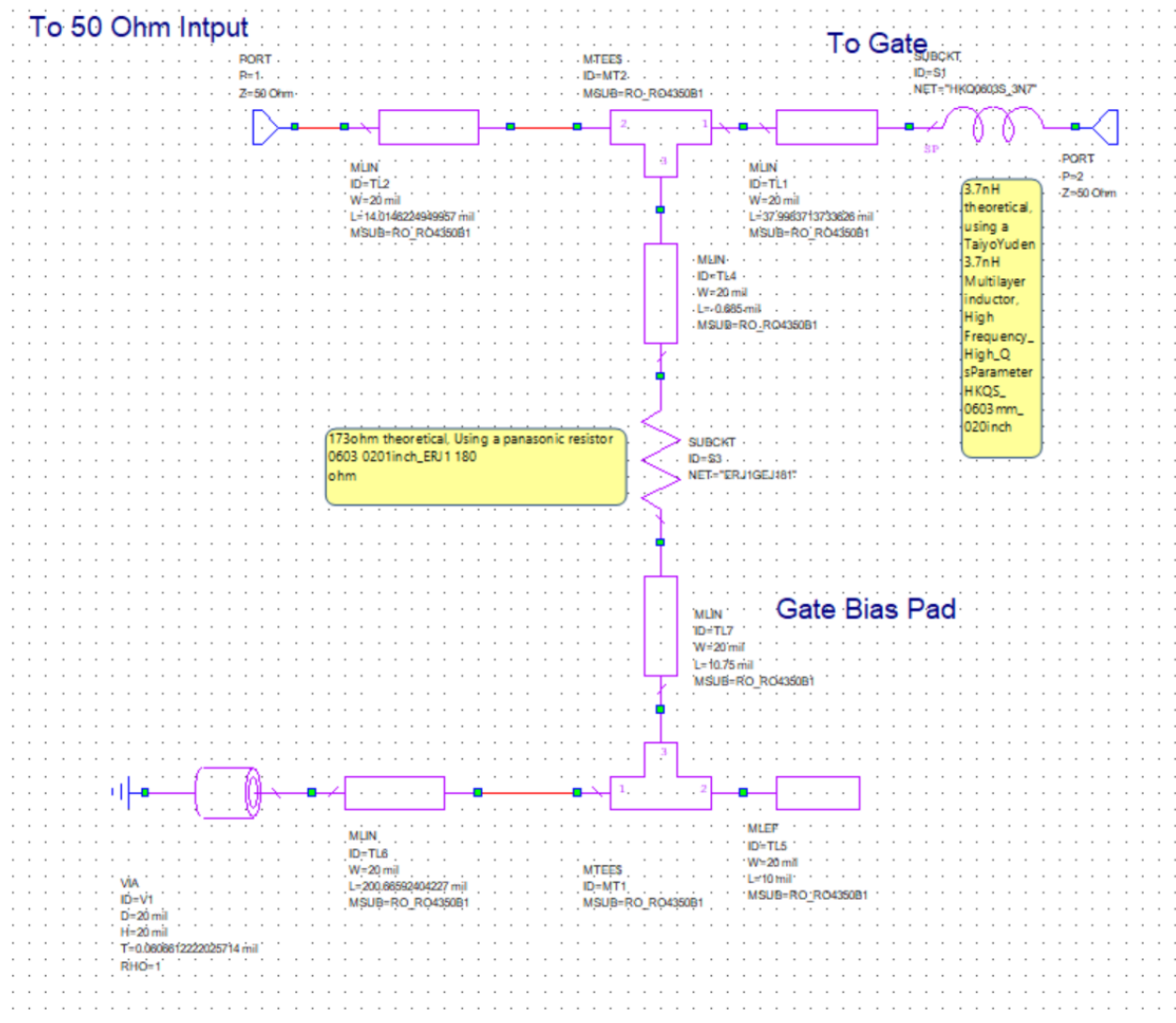
Section A

Final Design Specs

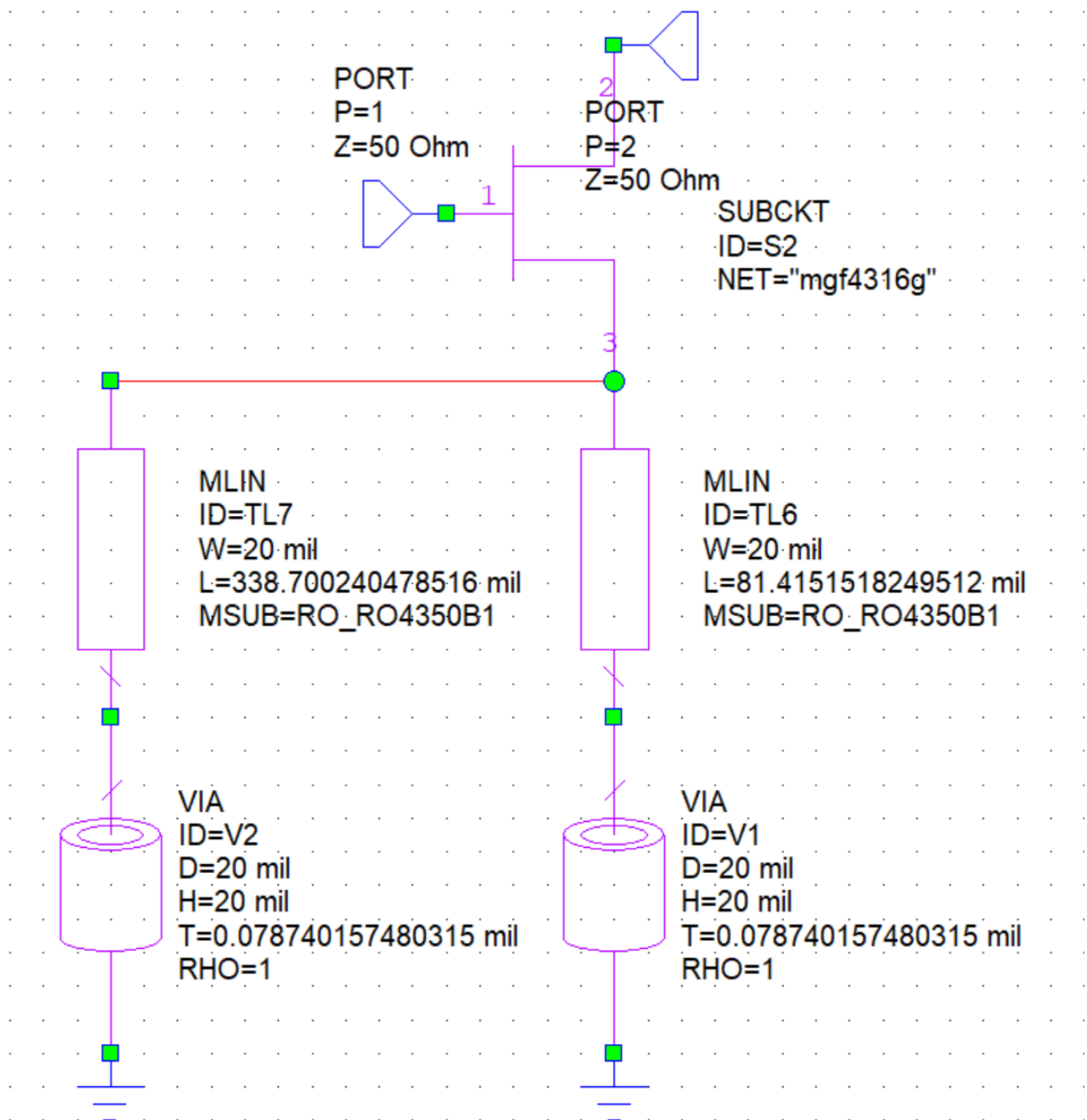
Parameters	Target Specification	Achieved
f_c	3.6Ghz	3.6Ghz
Gain(S21)	$10.56\text{dB} < S21 < 12.56\text{dB}$	12.56dB at 3.6Ghz
Input Return Loss(S11)	$ S11 < -7\text{dB}$	(-12.52dB)
Output Return Loss(S22)	$ S22 < -10\text{dB}$	(-13.94dB)
NF	$NF < (1.5\text{dB} + 0.3\text{dB}_{NFmin Transistor})$	1.611dB
Relative Bandwidth	>20%	55% (3.5Ghz to 3.7Ghz)
K	Unconditionally Stable ($k > 1$ from .1 to 6Ghz)	$K > 1, B > 0$

Section B

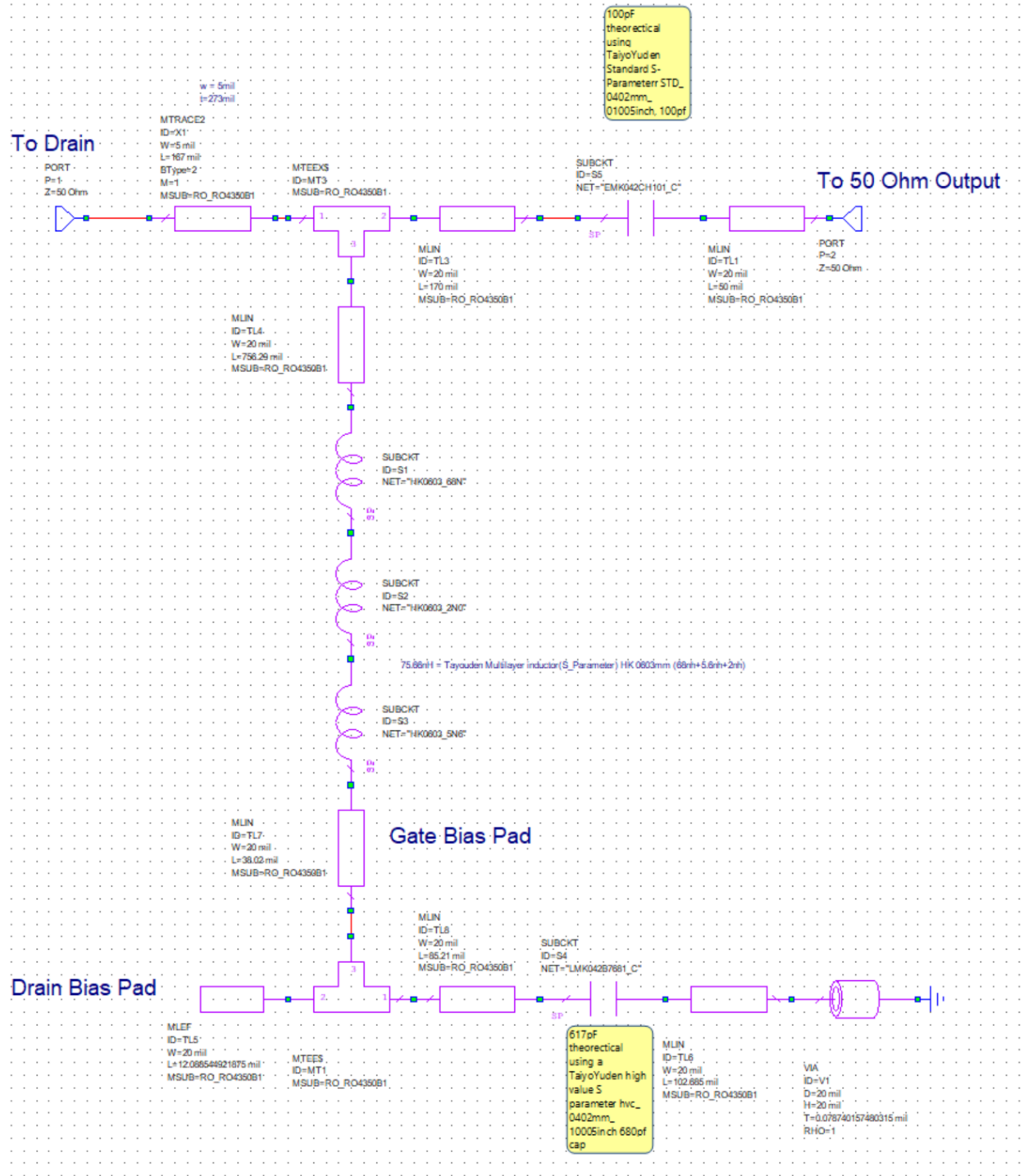
IMN



Transistor Stage

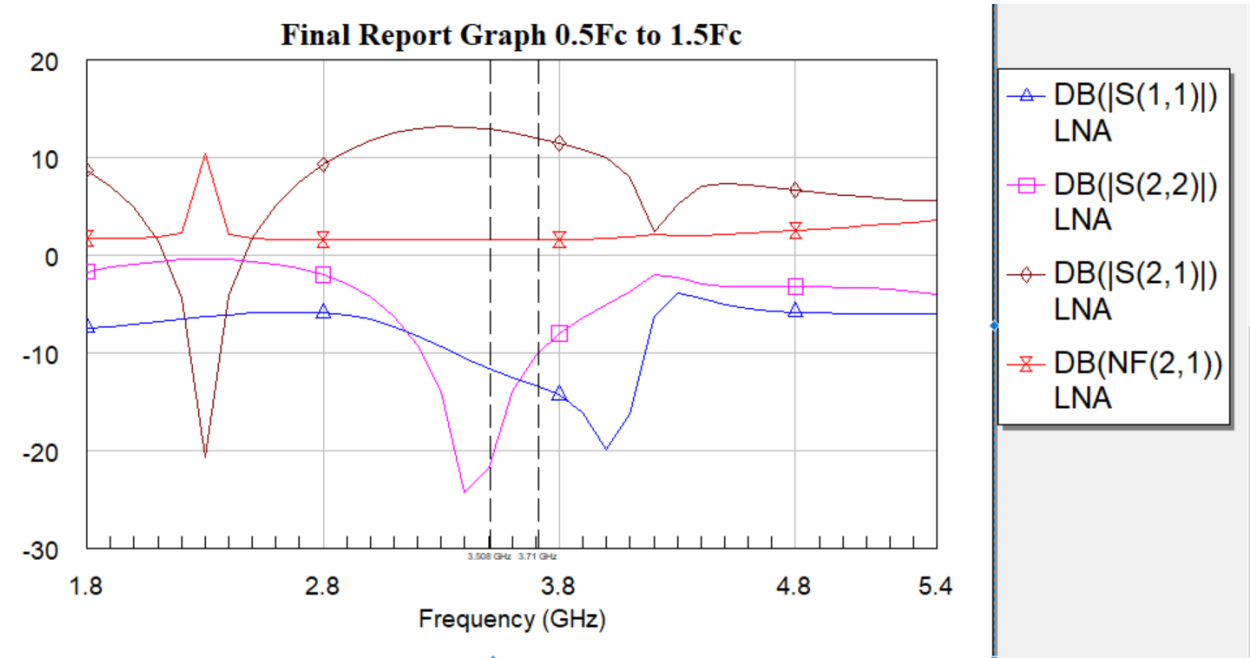


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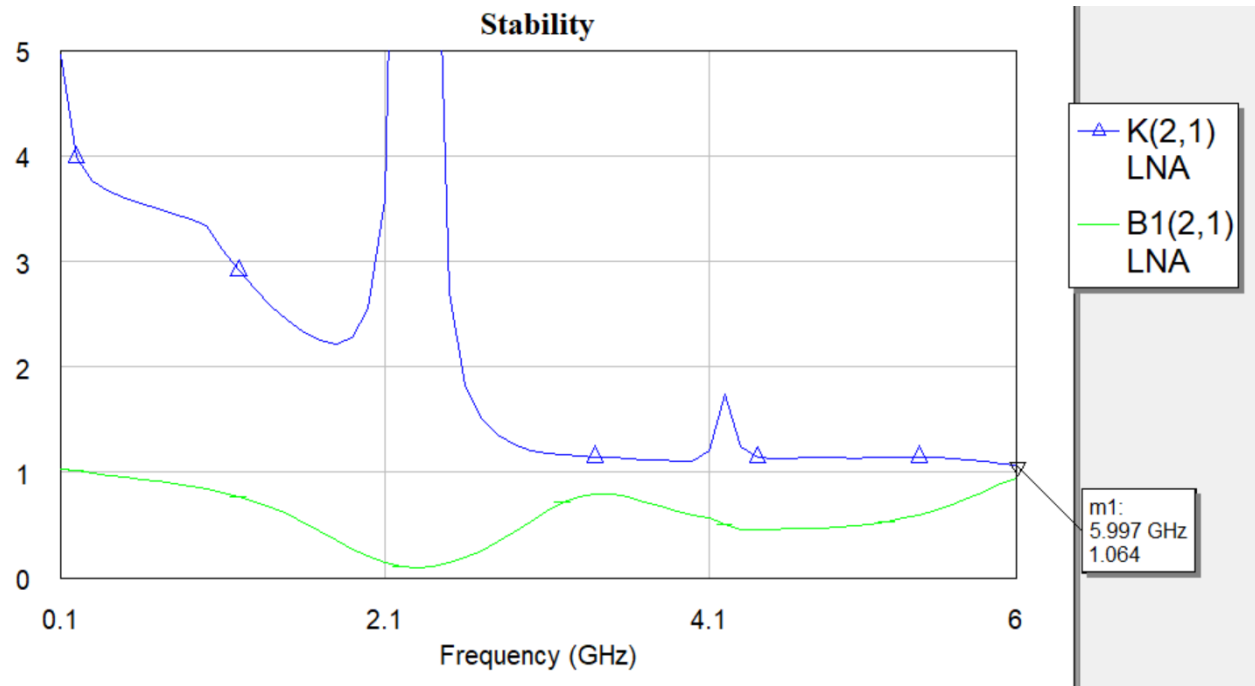


Section C: Performance Plots

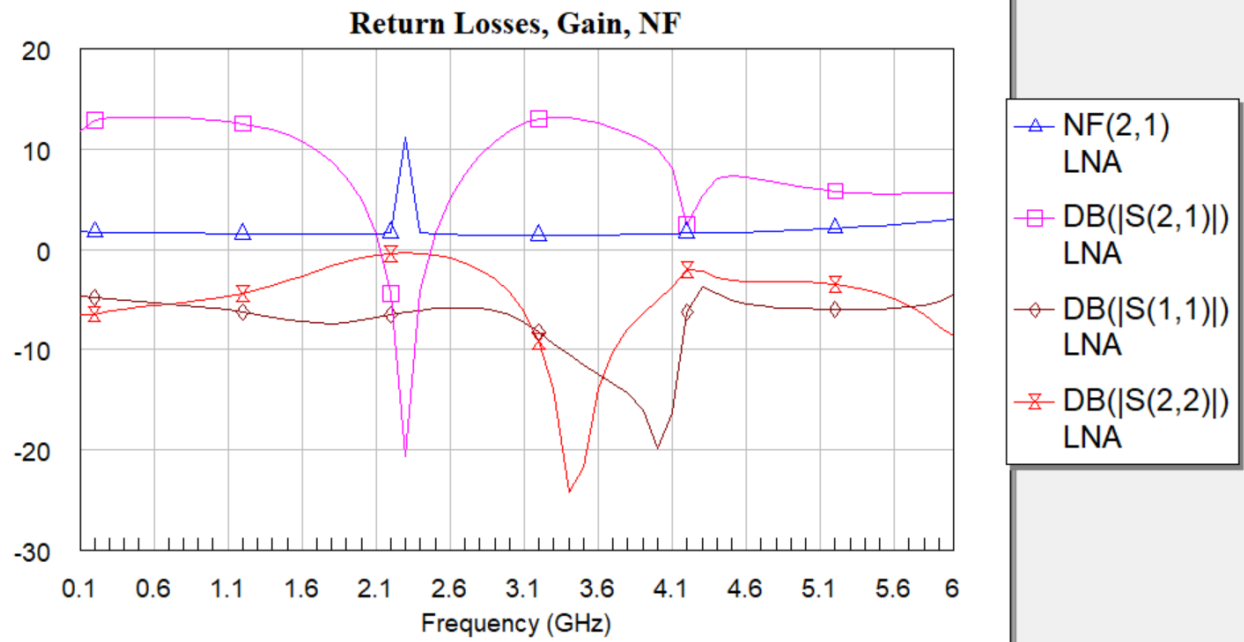
Plot showing (in dB) S21, S11, S22, and NF over the frequency band 0.5 – 1.5 fc



A plot of stability over the frequency band 0.1 – 6 GHz



A plot showing (in dB) S21, S11, S22, and NF over the frequency band 0.1 – 6GHz



Section D: Final Layout

