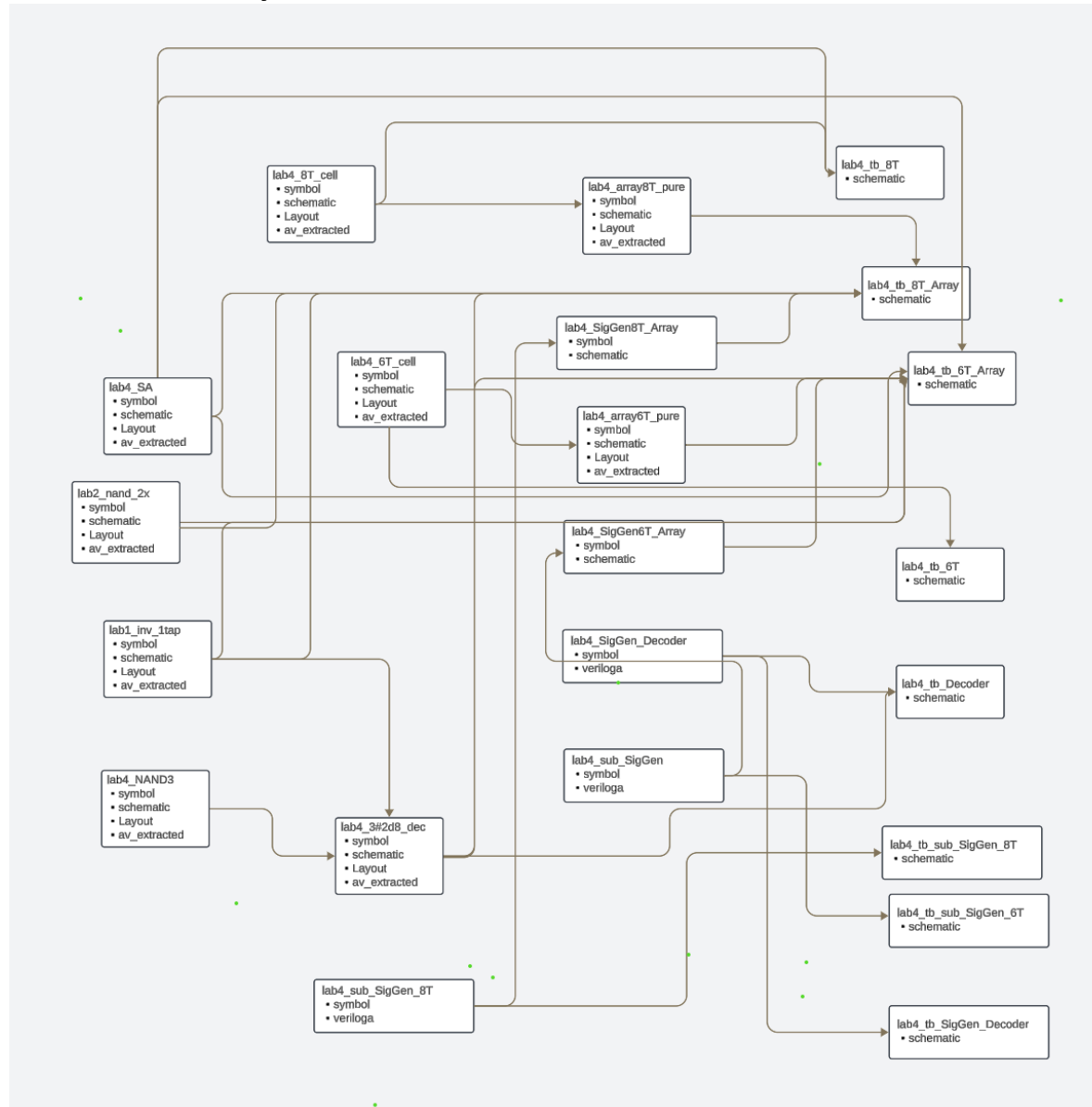


Overall hierarchy



Submitted files.

- Readme.
- Video.
- ece4740.zip.

To use files

1. Unzip ece4740.zip in the Cadence directory.
2. Ensure that the above files are present in the hierarchy.
3. Use the following steps to obtain desired results.

lab4_6T_cell testing

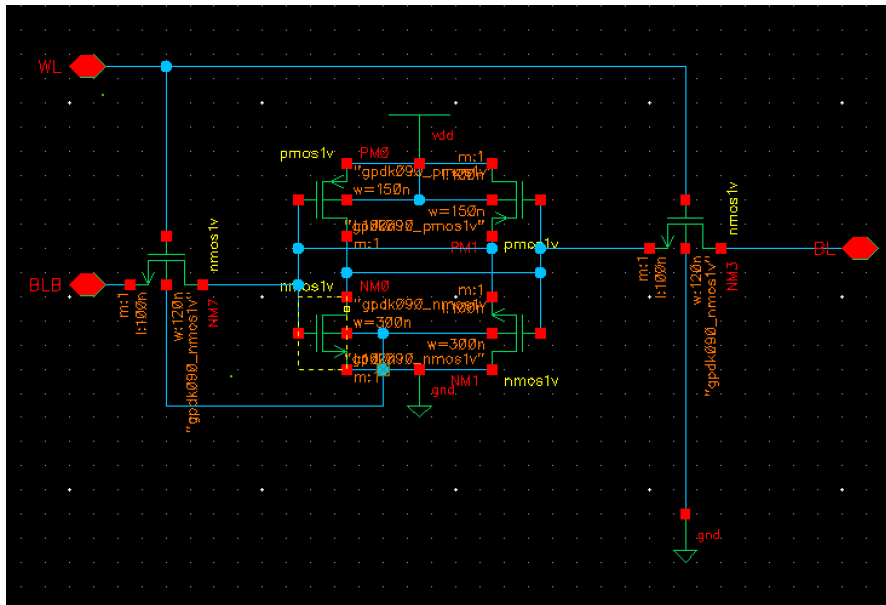
DRC/LVS on lab4_6T_cell

1. Open lab4_6T_cell layout
2. Run DRC check.
3. Run LVS check.

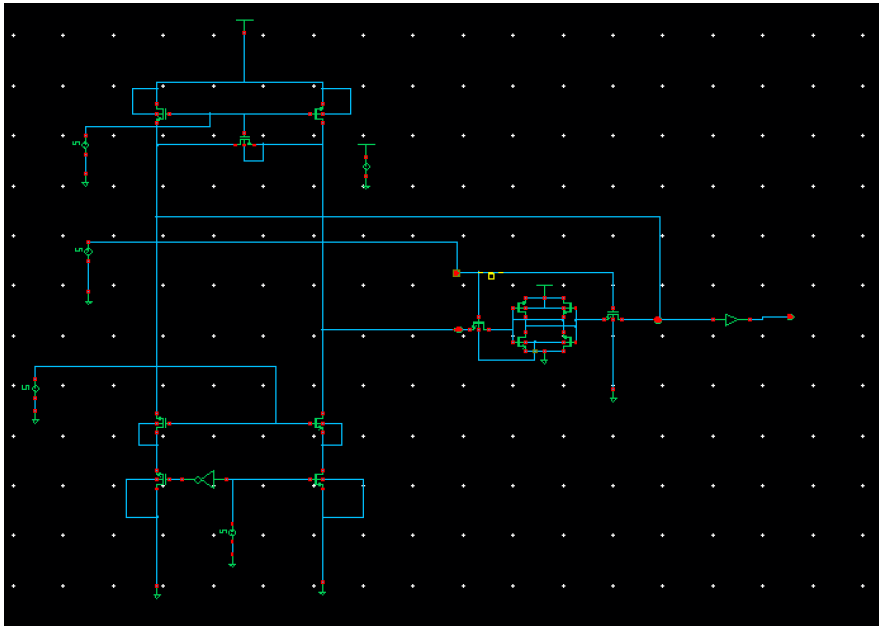
Lab4_tb_6T

Run the testbench.

1. Lab4_6T_cell schematic



2. lab4_tb_6T schematic



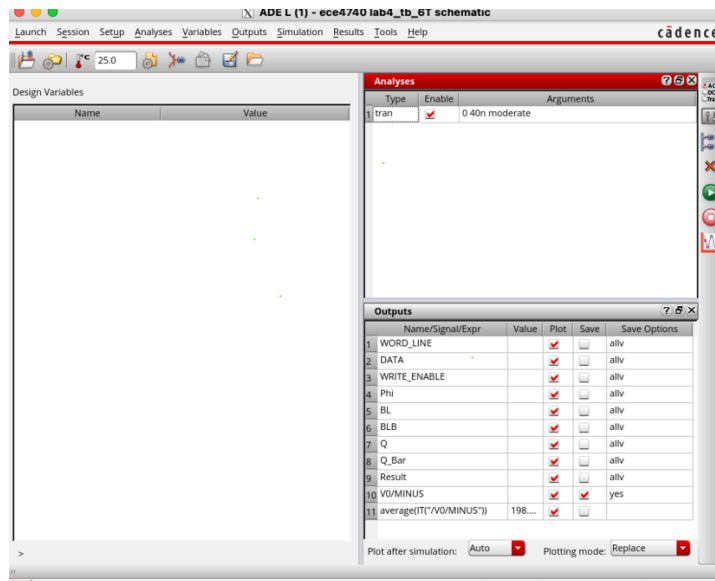
WL : 010000000100010000000100

Phi_BAR : 111100001111111100001111

Write_Enable : 111100000000111100000000

Data: 000000000000111111111111

RUN ADE L, and load saved state, check the relevant plot.



lab4_8T_cell testing

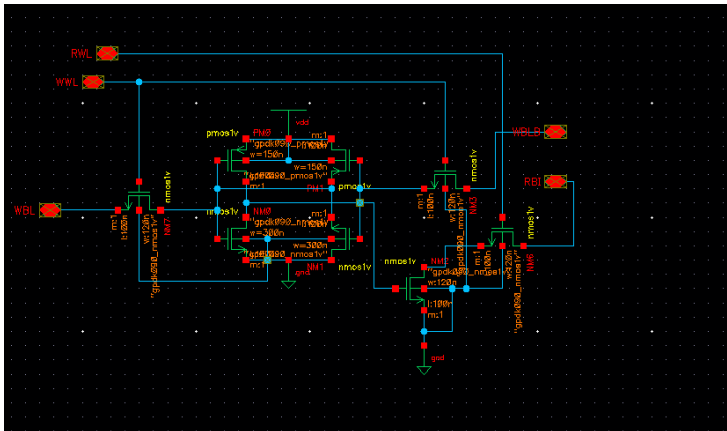
DRC/LVS on lab4_8T_cell

1. open lab4_8T_cell layout
2. Run DRC check.
3. Run LVS check.

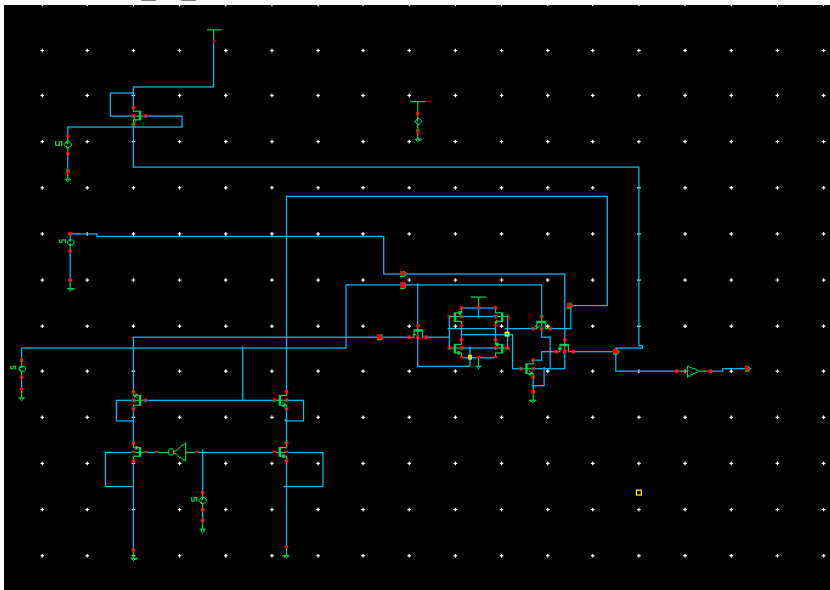
Lab4_tb_8T

Run the testbench.

1. Lab4_8T_cell schematic



- 2 lab4_tb_8T schematic



Testing Vector for 8T CELL

RWL: 00000000010000000000100

Phi : 111100001111111100001111

WWL : 010000000000010000000000

Data: 000000000000111111111111

RUN ADE L, and load saved state, check the relevant plot.

LaunchSessionSetupAnalysesVariablesOutputsSimulationResultsToolsHelp

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LaunchSessionSetupAnalysesVariablesOutputsSimulationResultsToolsHelp

cadence

Design Variables

Name	Value
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Analyses

Type	Enable	Arguments
tran	<input checked="" type="checkbox"/>	0 40n moderate

Outputs

Name/Signal/Expr	Value	Plot	Save	Save Options
1 DATA		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
2 Pth		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
3 Q		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
4 Q_Bar		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
5 Result		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
6 WWL		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
7 WBL		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
8 RWL		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
9 WBLB		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
10 RBL		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
11 V0MINUS		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	yes
12 averageIT("V0MINUS")	235...	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Plot after simulation: AutoPlotting mode: Replace

Load State ...

Status: Ready | T=25.0 C | Simulator: spectre_aps | State: state1

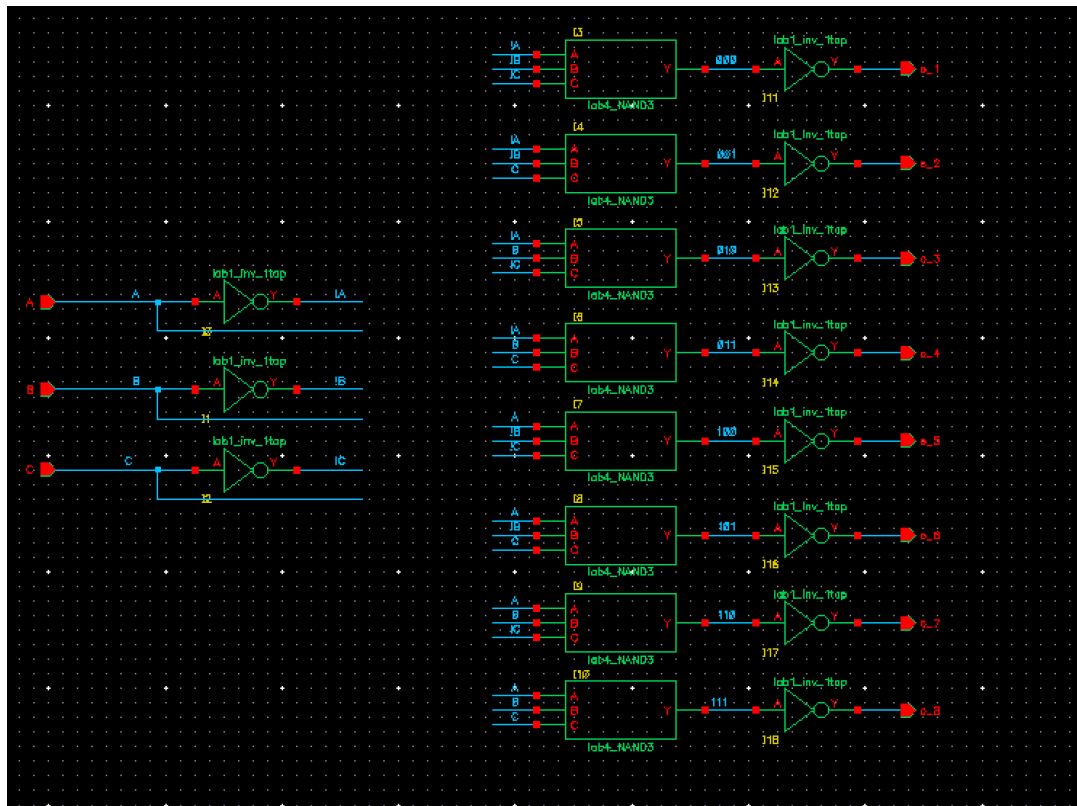
Decoder Testing

DRC/LVS on lab4 3-8 Dec layout

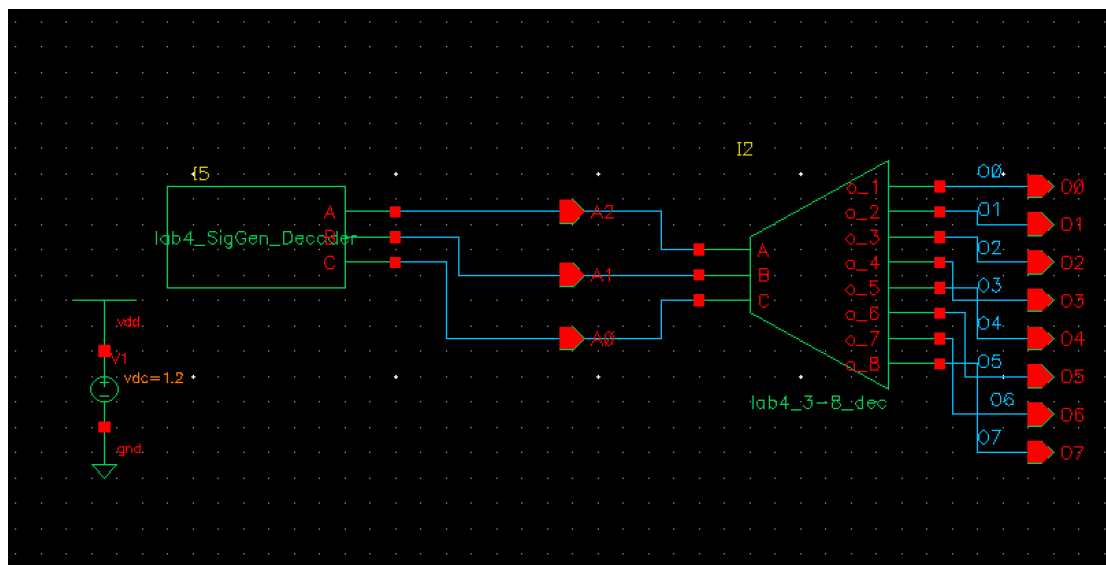
- 1.open lab4 3-8 dec layout
- 2.Run DRC check.
3. Run LVS check.

Run the testbench.

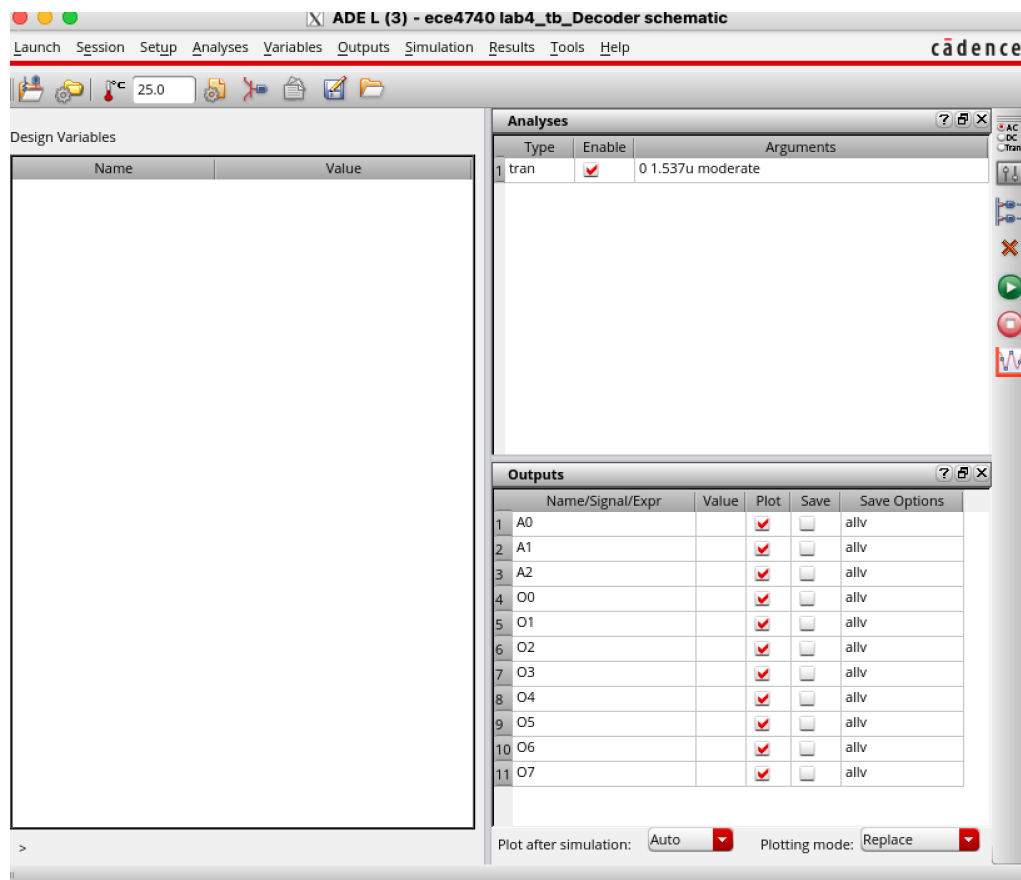
1. Lab4 3-8 dec schematic



2. lab4_tb_decoder schematic



RUN ADE L, and load saved state, check the relevant plot.

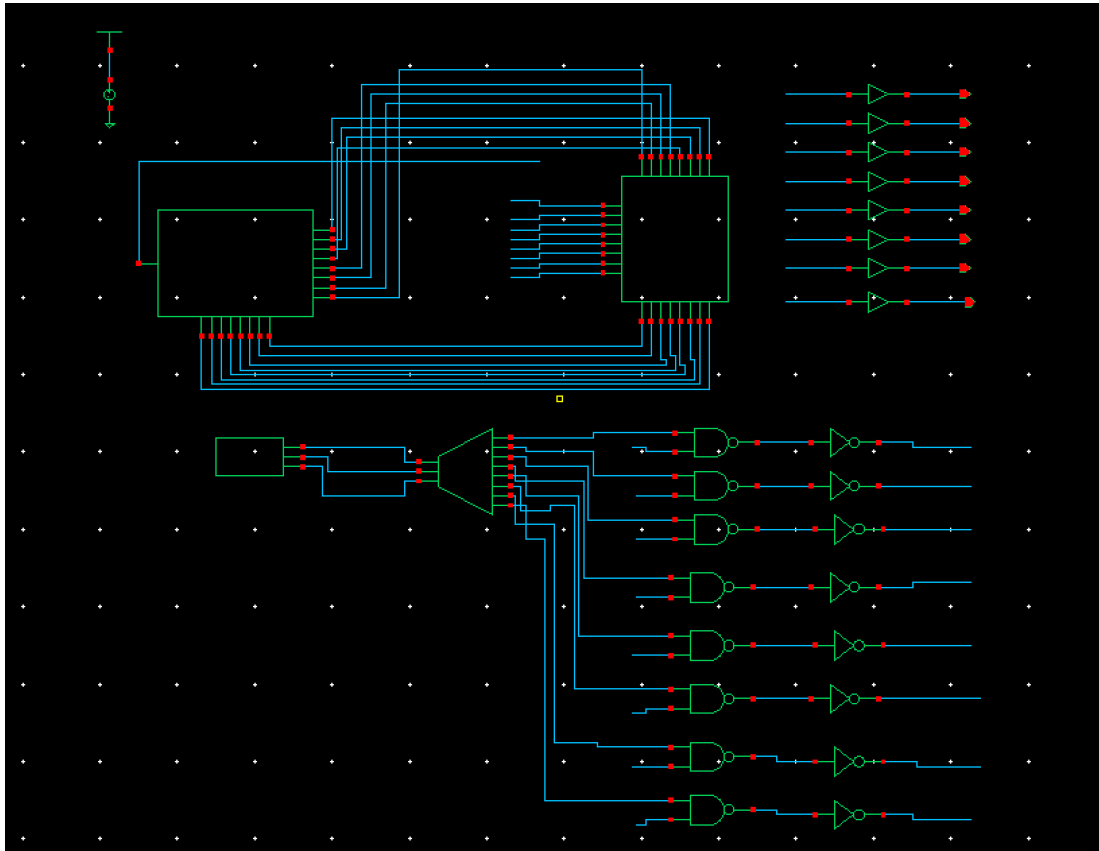


lab4_6T_Array testing

Lab4_tb_6T

Run the testbench.

1. Lab4_6T_Array schematic



RUN ADE L, and load saved state, check the relevant plot.

cadence

Launch Session Setup Analyses Variables Outputs Simulation Results Tools Help

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Design Variables

Name	Value
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Analyses

Type	Enable	Arguments
tran	<input checked="" type="checkbox"/>	0 1.537u moderate

Outputs

Name/Signal/Expr	Value	Plot	Save	Save Options
BL0		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
BL1		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
BL2		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
BL3		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
BL4		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
BL5		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
BL6		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
BL7		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
BLB0		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
BLB1		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
BLB2		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
BLB3		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
BLB4		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
BLB5		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
BLB6		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
BLB7		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
WORD_LINE		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
A2		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
A1		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
A0		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
WL0		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
WL1		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
WL2		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
WL3		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
WL4		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
WL5		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
WL6		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
WL7		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
Result0		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
Result1		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
Result2		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv

Plot after simulation: Auto Plotting mode: Replace

cadence

Launch Session Setup Analyses Variables Outputs Simulation Results Tools Help

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Design Variables

Name	Value
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Analyses

Type	Enable	Arguments
tran	<input checked="" type="checkbox"/>	0 1.537u moderate

Outputs

Name/Signal/Expr	Value	Plot	Save	Save Options
BL7		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
BLB0		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
BLB1		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
BLB2		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
BLB3		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
BLB4		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
BLB5		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
BLB6		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
BLB7		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
WORD_LINE		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
A2		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
A1		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
A0		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
WL0		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
WL1		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
WL2		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
WL3		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
WL4		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
WL5		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
WL6		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
WL7		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
Result0		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
Result1		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
Result2		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
Result3		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
Result4		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
Result5		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
Result6		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
Result7		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
V0/MINUS		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	yes
average((T1"/V0/MINUS"))	124.123u	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

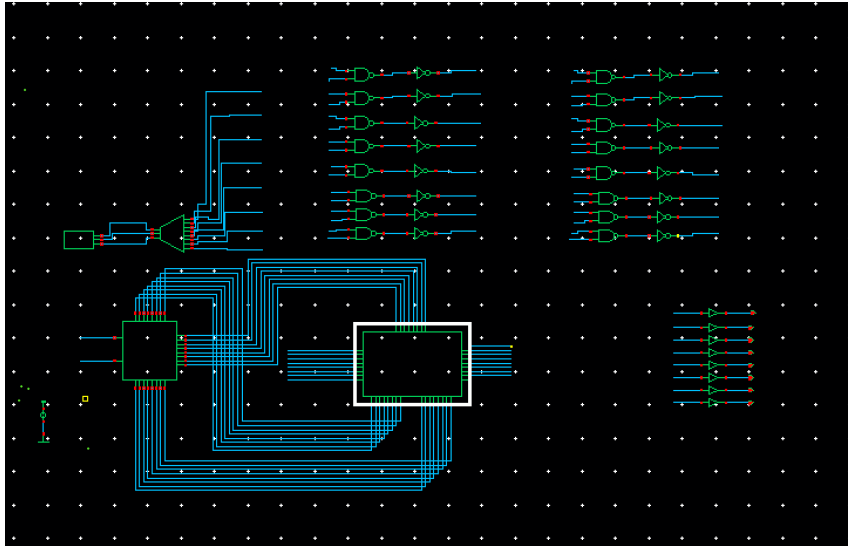
Plot after simulation: Auto Plotting mode: Replace

lab4_8T_Array testing

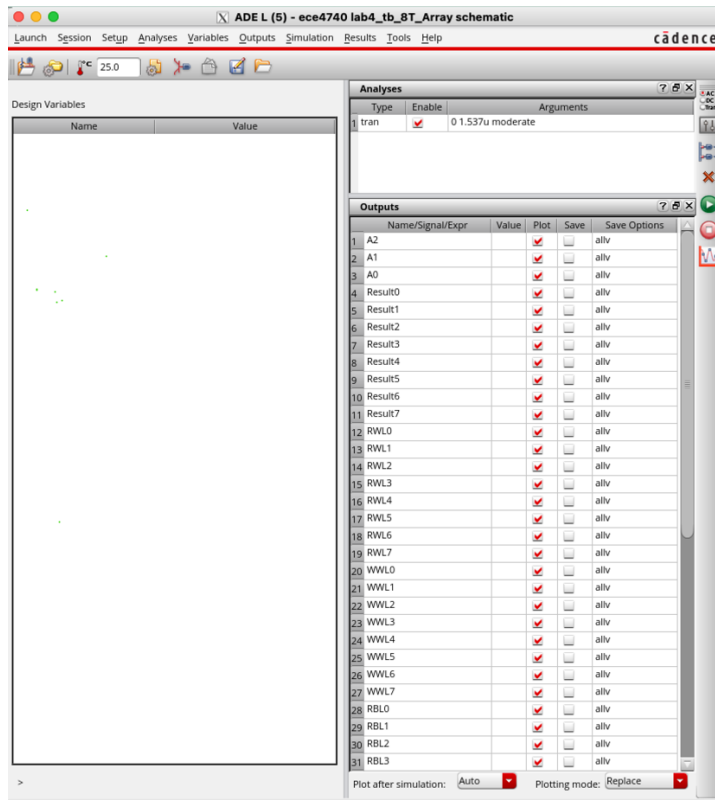
Lab4_tb_8T

Run the testbench.

1. Lab4_8T_Array schematic



RUN ADE L, and load saved state, check the relevant plot.



Launch Session Setup Analyses Variables Outputs Simulation Results Tools Help

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Design Variables

Name	Value
------	-------

Analyses

Type	Enable	Arguments
1 tran	<input checked="" type="checkbox"/>	0 1.537u moderate

Outputs

Name/Signal/Expr	Value	Plot	Save	Save Options
23 WWL3		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
24 WWL4		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
25 WWL5		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
26 WWL6		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
27 WWL7		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
28 RBL0		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
29 RBL1		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
30 RBL2		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
31 RBL3		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
32 RBL4		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
33 RBL5		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
34 RBL6		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
35 RBL7		<input checked="" type="checkbox"/>	<input type="checkbox"/>	allv
36 WBL0		<input type="checkbox"/>	<input type="checkbox"/>	allv
37 WBL1		<input type="checkbox"/>	<input type="checkbox"/>	allv
38 WBL2		<input type="checkbox"/>	<input type="checkbox"/>	allv
39 WBL3		<input type="checkbox"/>	<input type="checkbox"/>	allv
40 WBL4		<input type="checkbox"/>	<input type="checkbox"/>	allv
41 WBL5		<input type="checkbox"/>	<input type="checkbox"/>	allv
42 WBL6		<input type="checkbox"/>	<input type="checkbox"/>	allv
43 WBL7		<input type="checkbox"/>	<input type="checkbox"/>	allv
44 WBLB0		<input type="checkbox"/>	<input type="checkbox"/>	allv
45 WBLB1		<input type="checkbox"/>	<input type="checkbox"/>	allv
46 WBLB2		<input type="checkbox"/>	<input type="checkbox"/>	allv
47 WBLB3		<input type="checkbox"/>	<input type="checkbox"/>	allv
48 WBLB4		<input type="checkbox"/>	<input type="checkbox"/>	allv
49 WBLB5		<input type="checkbox"/>	<input type="checkbox"/>	allv
50 WBLB6		<input type="checkbox"/>	<input type="checkbox"/>	allv
51 WBLB7		<input type="checkbox"/>	<input type="checkbox"/>	allv
52 VO/MINUS		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	yes
53 average(IT("VO/MINUS"))	15.8...	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Plot after simulation: Auto Plotting mode: Replace