

Module:	EE6621 ASICs 1 (Digital ASICs)
Date:	09/11/2021
Lab Number:	10
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1. References

[1] Cadence: Overview of Running the Incisive Enterprise Simulator [Online]. Available: Through the Cadence Incisive help system.

[2] Cadence: Compiling Verilog Source Files [Online]. Available: Through the Cadence Incisive help system.

[3] Cadence: Elaborating Your Design [Online]. Available: Through the Cadence Incisive help system.

[4] Cadence: Simulating Your Design [Online]. Available: Through the Cadence Incisive help system.

[5] Cadence: Using the Incisive Simulator Utilities [Online]. Available: Through the Cadence Incisive help system.

[6] Cadence: SimVision Introduction [Online]. Available: Through the Cadence Incisive help system.

[7] Cadence: SimVision: Using the FSM Window [Online]. Available: Through the Cadence Incisive help system.

[8] Cadence: Innovus User Guide [Online]. Available: Through the Cadence Genus help system.

[9] Cadence: Innovus Text Command Reference [Online]. Available: Through the Cadence Genus help system.

2. Lab Challenges

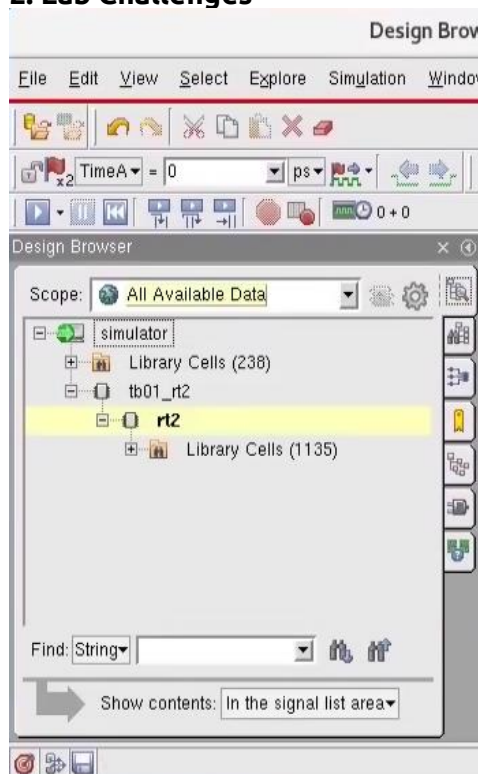


Figure 1. Challenge 10.1: rt2 standard cell count

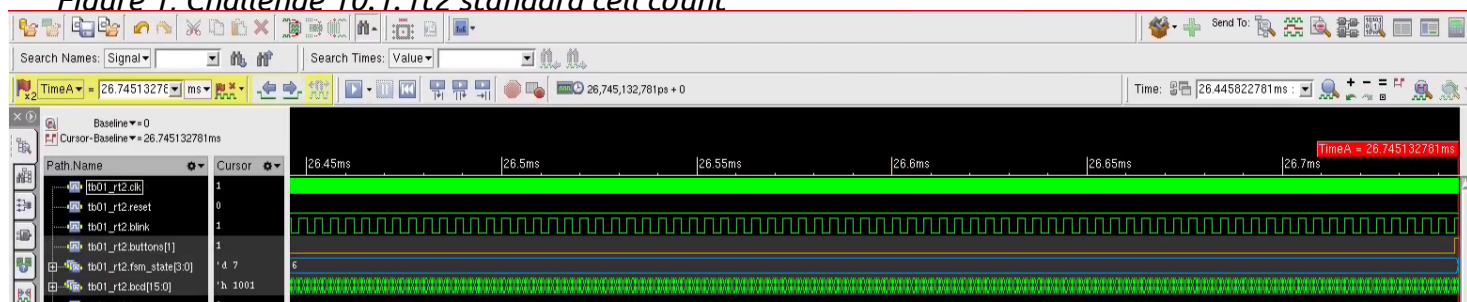
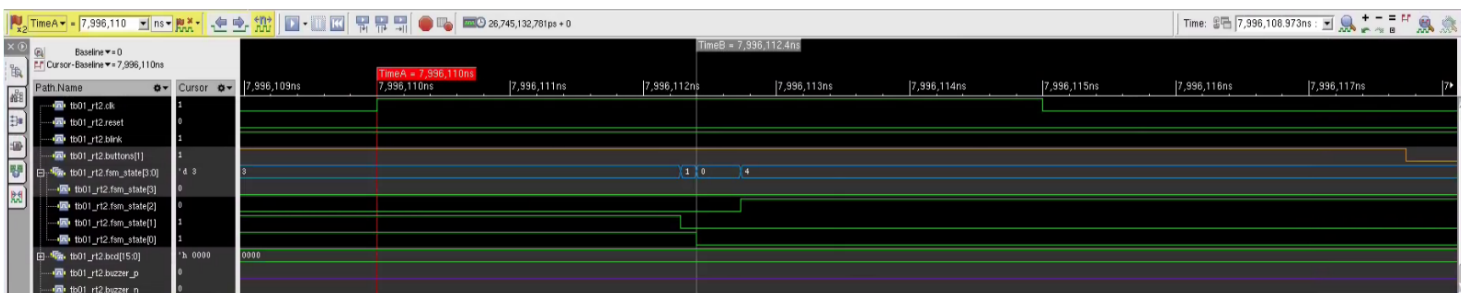


Figure 2, Post implementation timing simulation signal response*Figure 3, Challenge 10.2 rt2 fsm state and cathodes signal and timing interval*

```
*****
Product   : Virtuoso(R) XStream Out
Program   : e(\#)SCDS: virtuoso version 6.1.7-64b 18/06/2017 20:26 (sjfh905) $
           : sub-version IC6.1.7-64b.500.15
Started at: 15-Nov-2021 15:40:11
User Name : s18223451
Host Name : ececad1.u1.campus
Directory : /home/s18223451/ee6621/cadence/labs/rt2/virtuoso
CADENCE Design Systems, Inc.
*****
Info: Cellview Rev Num:99, Tech Rev Num:99

Summary of Options :
library             ee6621
strnFile            rt2.gds
topCell            rt2
view                layout
logfile            strnOut.log
layerMap           /home/u1admin/pdk/xfab/XLIT/xh018/cadence/v6_0/PDK/IC61/v6_0_1/TECH_XH018_1143/TECH_XH018.layermap
case               Preserve
convertDot          node

Summary of Objects Translated:
Scalar Instances:   2110
Array Instances:    0
Polygons:          136
Paths:             0
Rectangles:        1375
Lines:             0
Arcs:              0
Donuts:            0
Dots:              0
Ellipses:          0
Boundaries:        0
Area Blockages:    0
Layer Blockages:   0
Area Halos:        0
Markers:           0
Rows:              0
Standard Vias:     982
Custom Vias:       6369
CdsGen Vias:       0
Pathangs:          983
Text:              242
TextDisplay:       0
Cells:             182

Elapsed Time: 0.1s User Time: 0.0s CPU Time: 0.0s Peak VM: 1399KB
INFO (XSTRM-234): Translation completed. '0' error(s) and '0' warning(s) found. Please see the log file, './strnOut.log', for detailed log.

mouse.L: mouseSingleSelectPg) M: hiZoomAbsoluteScale(hiGetCurrentWindow() 0.9) R: hiHiMousePopUpL)
1 >
```

```
[s18223451@ececad1: /home/s18223451/ee6621/cadence/labs/rt2/virtuoso] cws$  
[s18223451@ececad1: /home/s18223451/ee6621/cadence/labs/rt2/virtuoso] cws$ ll -h rt2.gds  
-rw-rw-r--. 1 s18223451 s18223451 1.1M Nov 15 15:40 rt2.gds  
[s18223451@ececad1: /home/s18223451/ee6621/cadence/labs/rt2/virtuoso] cws$ more rt2.gds  
  
e6621  
via1Array_CDNS_636990811002  
  
via2Array_CDNS_636990811003  
  
via3Array_CDNS_636990811004  
  
viaTPArray_CDNS_636990811005  
  
IA2_o  
IA1_o  
IA3_o  
IA3_west_T0S_so  
  
--More-- (0%)
```

Figure 5, Challenge 10.3 rt2.gds file view in terminal

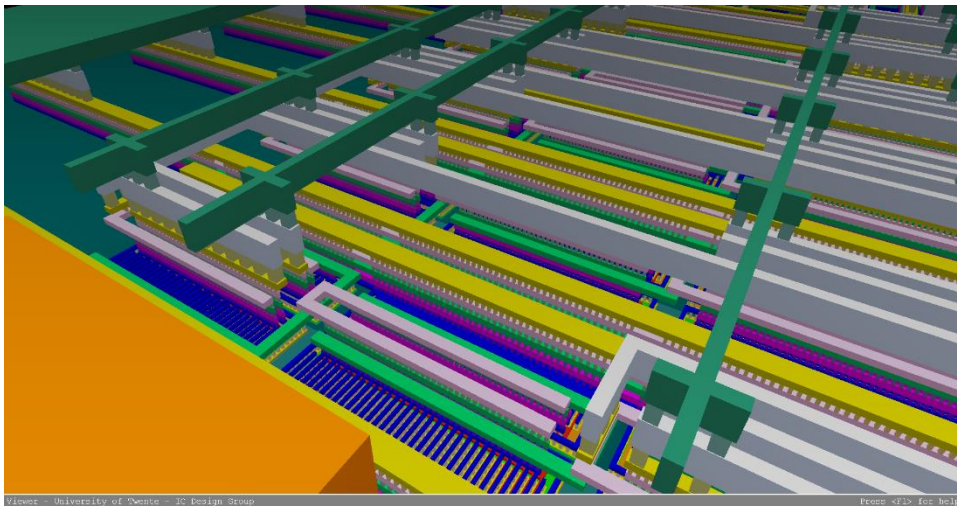


Figure 6, GDS3D 3D view of rt2.gds top metal METTPL not shown

3. Declaration of Authorship

I confirm that this lab report, submitted for assessment, is my own original work.