

Digital Electronic Circuits

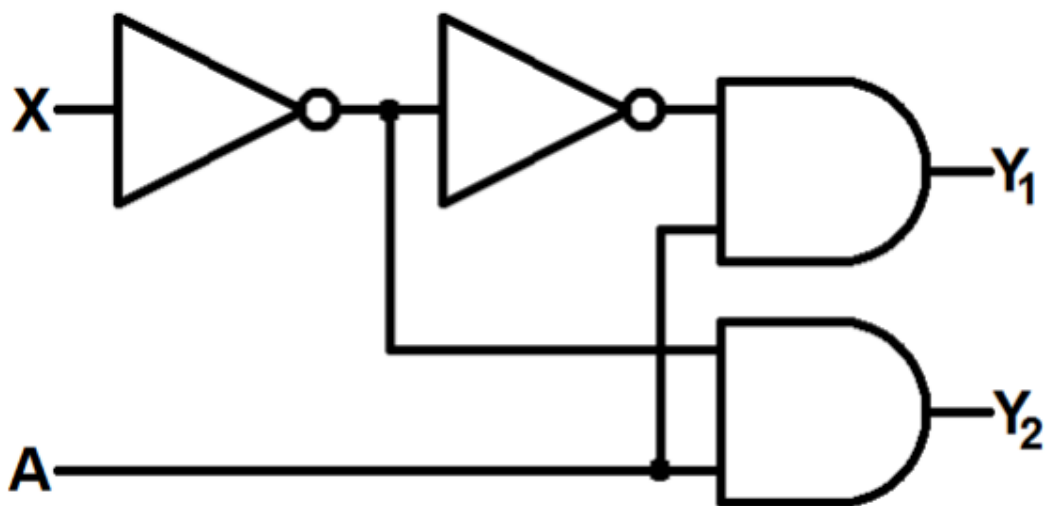
CA III

NooShin Taghavi

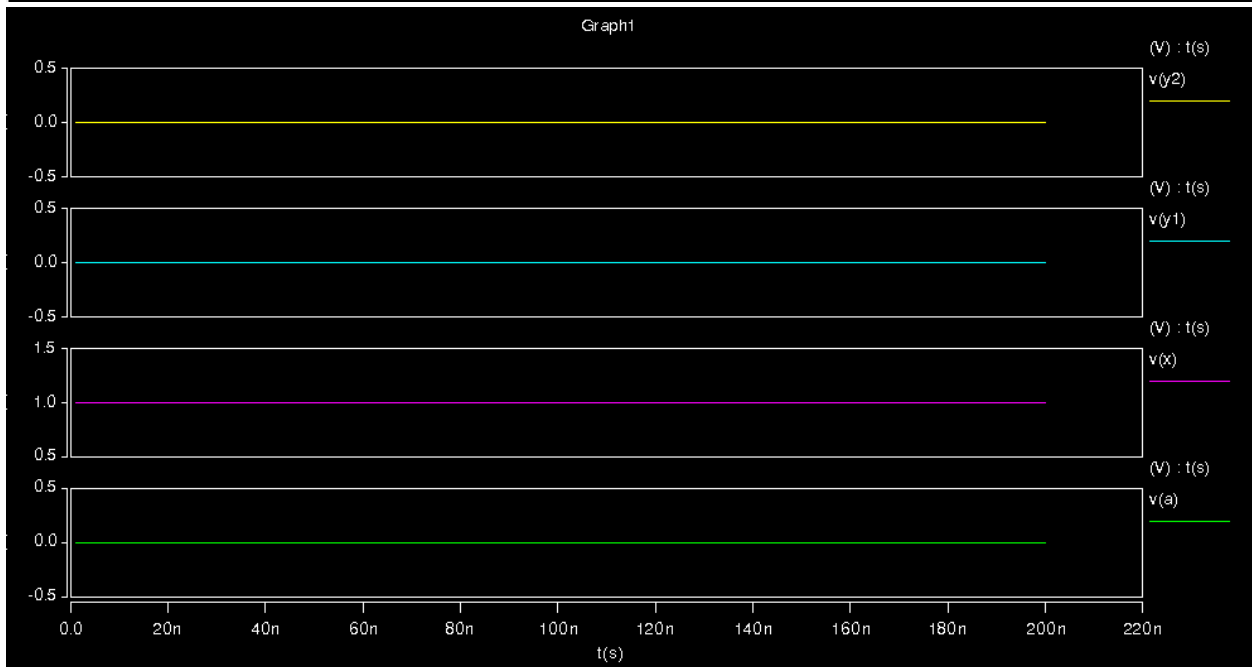
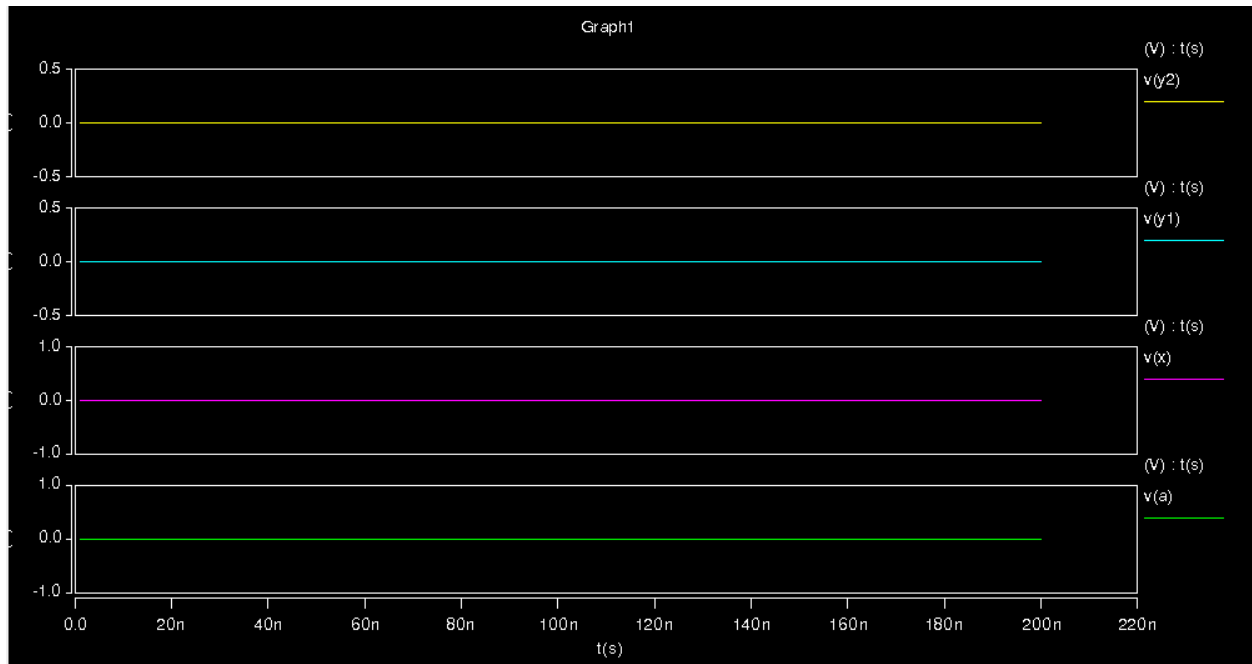
Nooshin.tghvi@gmail.com

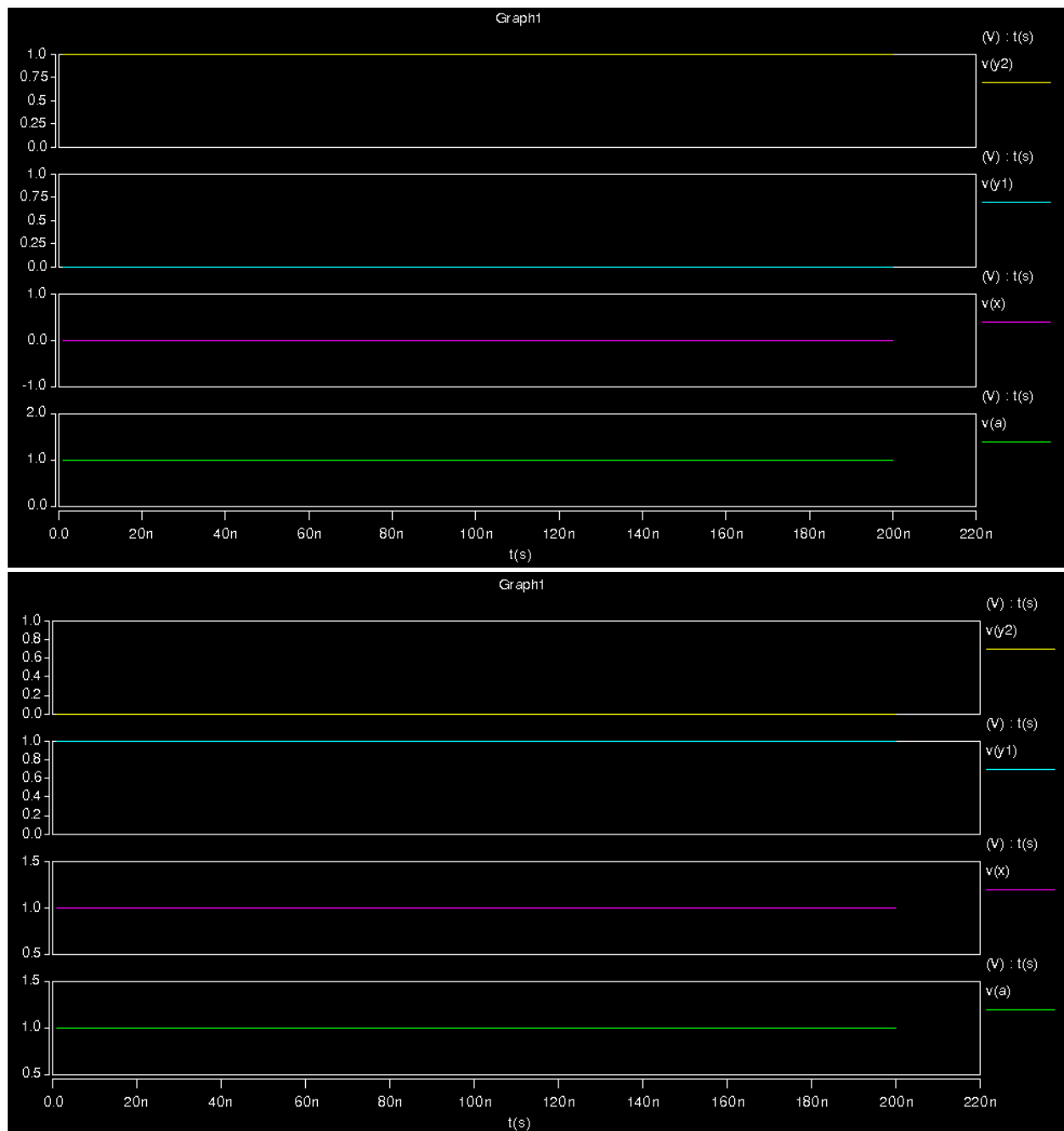
810194289

در این تمرین کامپیوتری تلاش شده تا مدار مربوط به یک 1 to 2 decoder را در سطح ترانزیستور به سه روش مقایسه کنیم و نتایج را مقایسه کنیم.



- Static CMOS





خروجی به ازای وروی های مختلف

Avgpower = 1.349e-07

Trig	Trag	Tphl	Tplh	Another	Reason
X	Y1	2.017e-09	3.020e-09	A = 1	it is ok.
X	Y1	failed	failed	A = 0	Y1 does not change.
A	Y1	2.007e-09	3.010e-09	X = 1	it is ok.
A	Y1	failed	failed	X = 0	Y1 does not change.
X	Y2	1.345e-11	1.517e-11	A = 1	it is ok.
X	Y2	failed	failed	A = 0	Y2 does not change.
A	Y2	failed	failed	X = 1	Y2 does not change.
A	Y2	2.007e-09	3.010e-09	X = 0	it is ok.

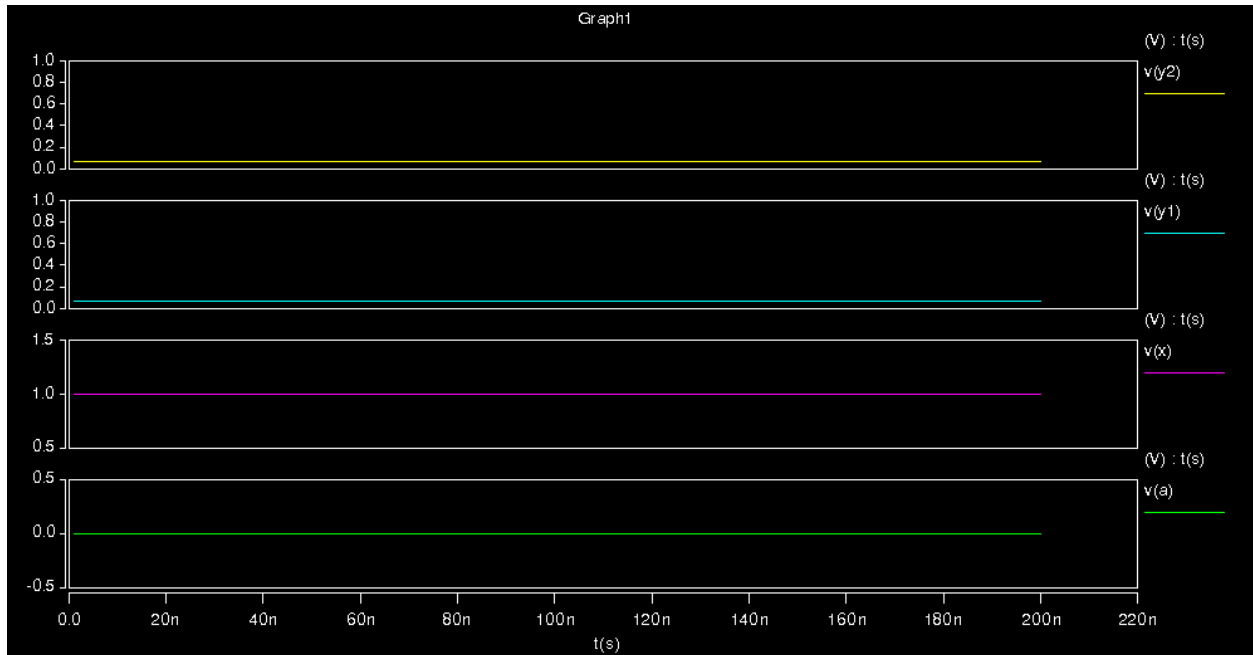
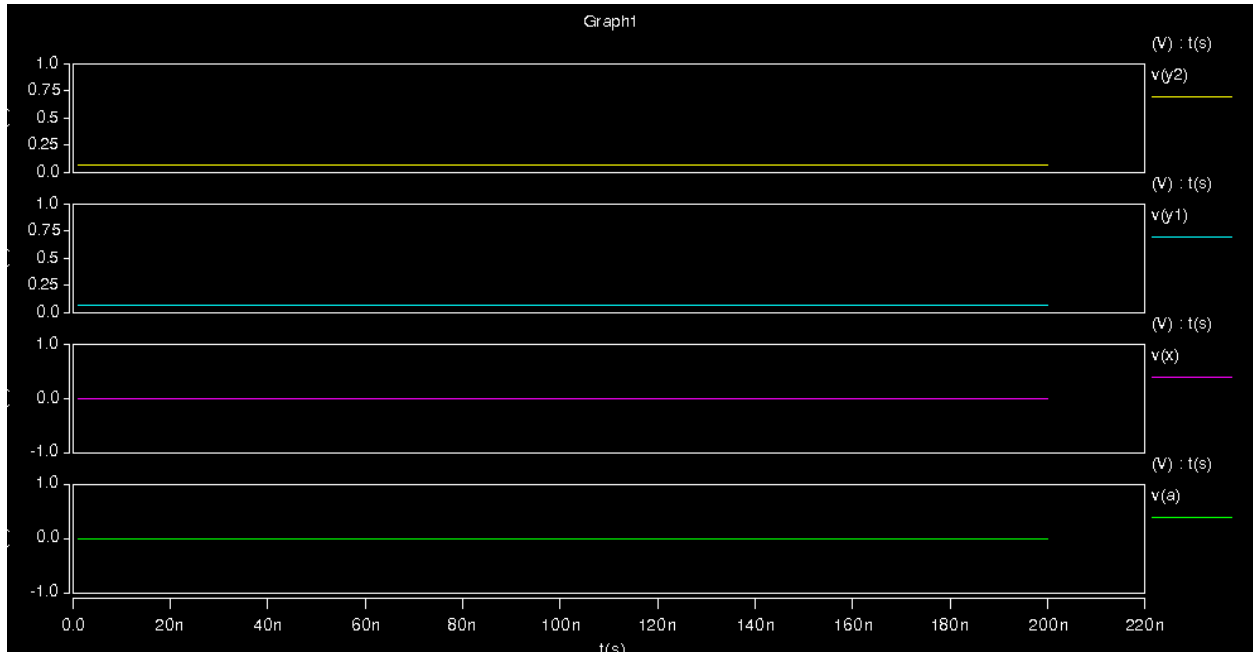
Sum Tphl : 7.376e-09

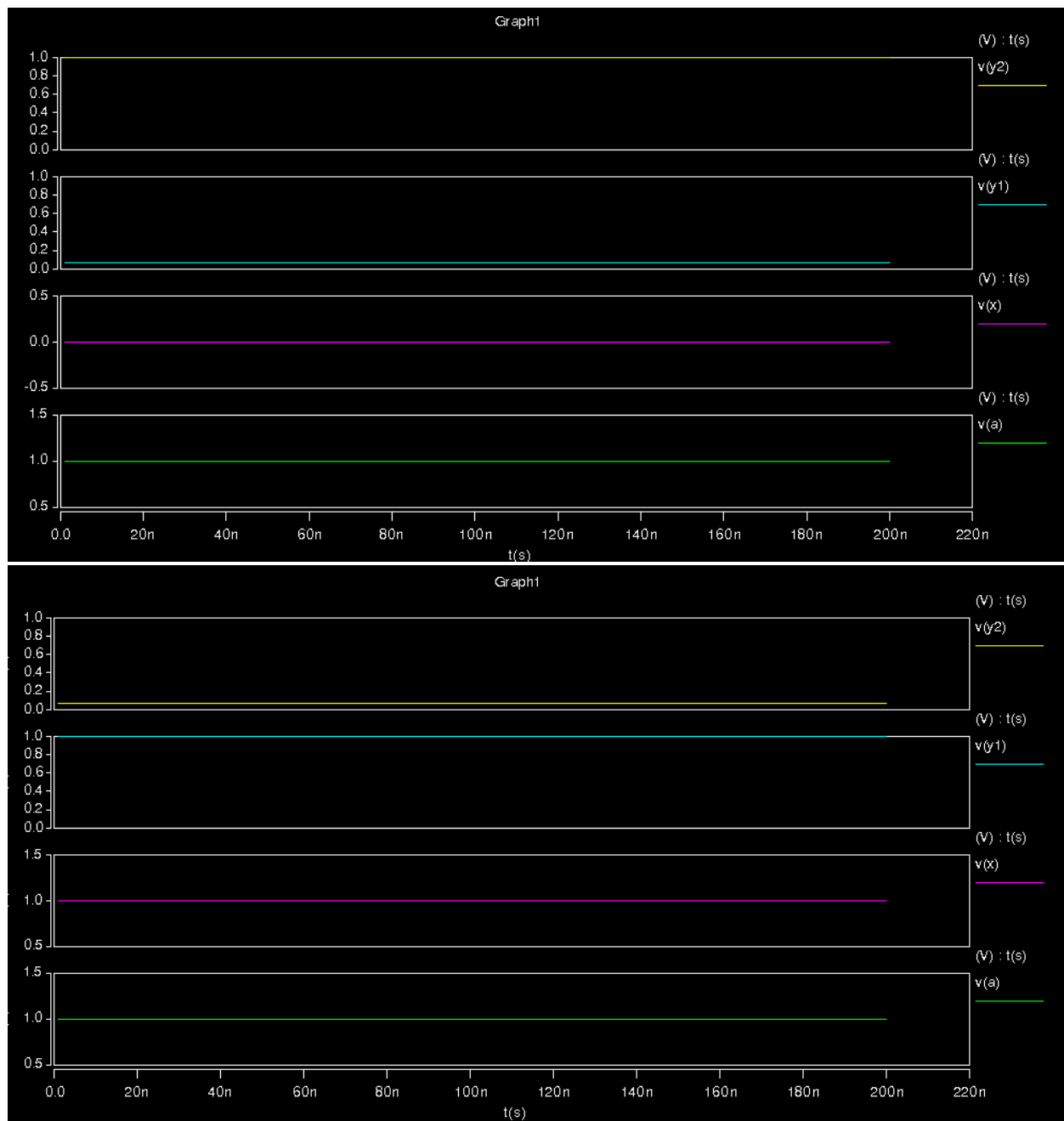
Average Tphl : 1.844e-09

Sum Tplh: 10.557e-09

Average Tplh : 2.63925e-09

- Pseudo – NMOS





خروجی به ازای ورودی های مختلف

Avgpower = 1.028e-04

Trig	Trag	Tphl	Tplh	another	reason
X	Y1	2.014e-09	3.011e-09	A = 1	it is ok.
X	Y1	failed	failed	A = 0	Y1 does not change.
A	Y1	2.008e-09	3.005e-09	X = 1	it is ok.
A	Y1	failed	failed	X = 0	Y1 does not change.
X	Y2	5.007e-09	1.212e-11	A = 1	it is ok.
X	Y2	failed	failed	A = 0	Y2 does not change.
A	Y2	failed	failed	X = 1	Y2 does not change.
A	Y2	2.008e-09	3.005e-09	X = 0	it is ok.

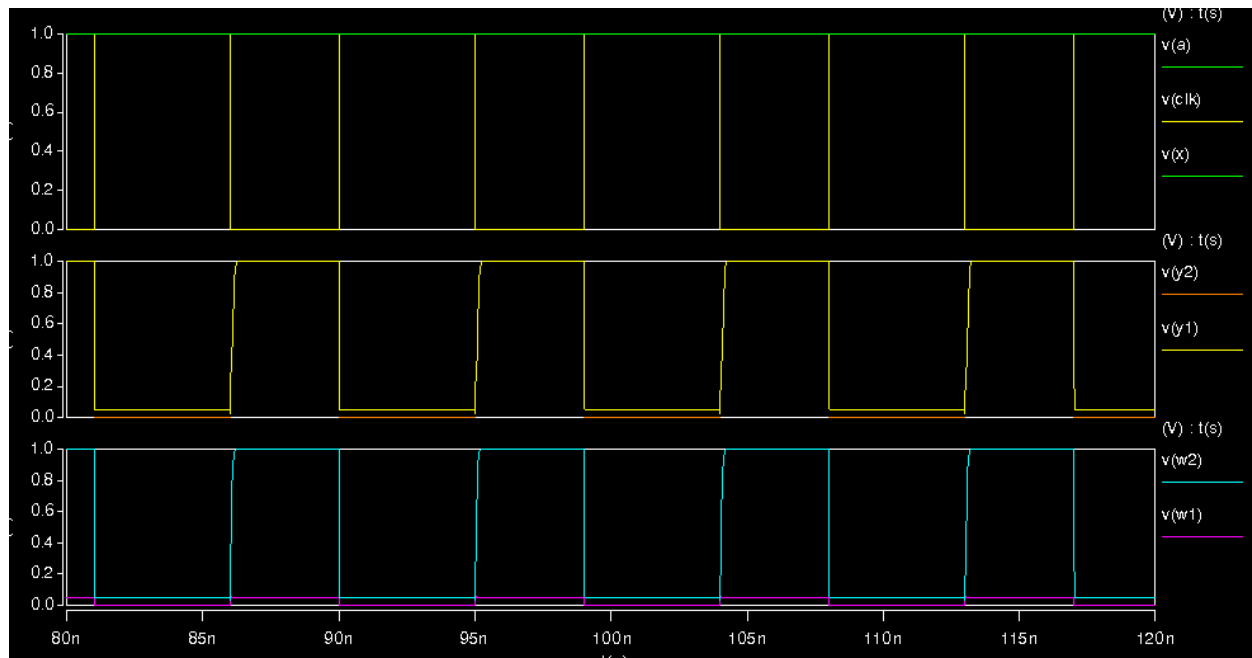
Sum Tphl : 11.037e-09

Average Tphl : 2.75925e-09

Sum Tplh: 10.233e-09

Average Tplh : 2.55825e-09

- Dynamic Logic



Avgpower = 5.542e-05

Trig	Trag	Tphl	Tplh	another	reason
X	Y1	4.007e-09	2.939e-09	A = 1	it is ok.
X	Y1	failed	failed	A = 0	Y1 does not change.
A	Y1	4.007e-09	2.937e-09	X = 1	it is ok.
A	Y1	failed	failed	X = 0	Y1 does not change.
X	Y2	4.007e-09	5.102e-09	A = 1	it is ok.
X	Y2	failed	failed	A = 0	Y2 does not change.
A	Y2	failed	failed	X = 1	Y2 does not change.
A	Y2	4.007e-09	2.844e-09	X = 0	it is ok.

Sum Tphl : 16.028e-09

Average Tphl : 4.007e-09

Sum Tplh: 13.822e-09

Average Tplh : 3.4555e-09