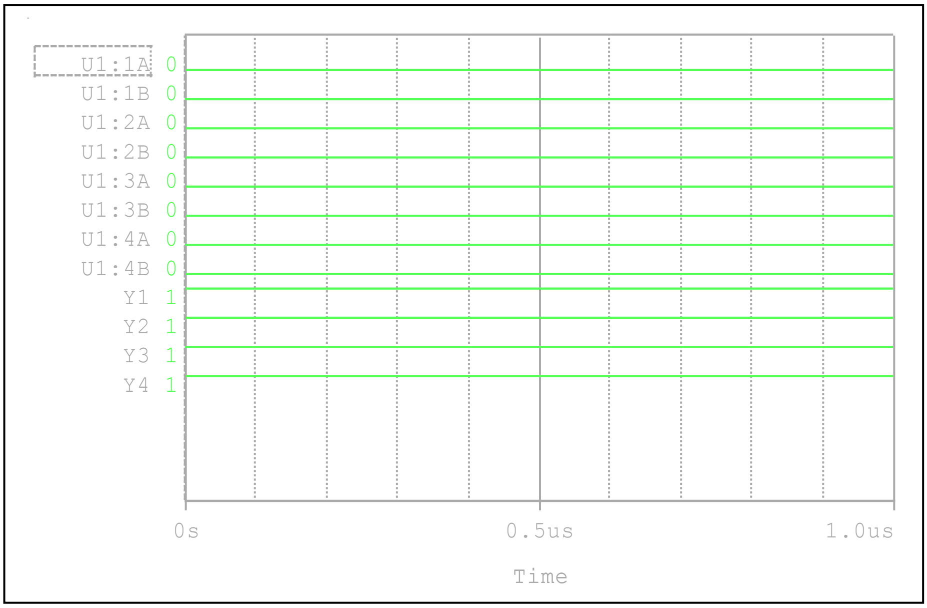
Device Modeling Report

COMPONENTS : CMOS DIGITAL INTEGRATED CIRCUIT
PART NUMBER : TC74HCT00AP
MANUFACTURER : TOSHIBA

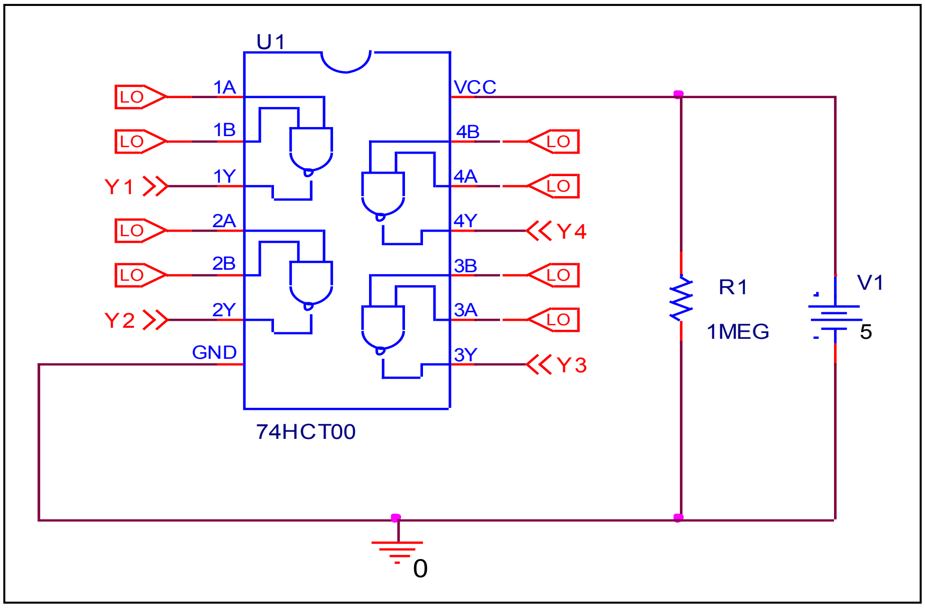
Bee Technologies Inc.

Truth Table

Circuit simulation result



Evaluation circuit

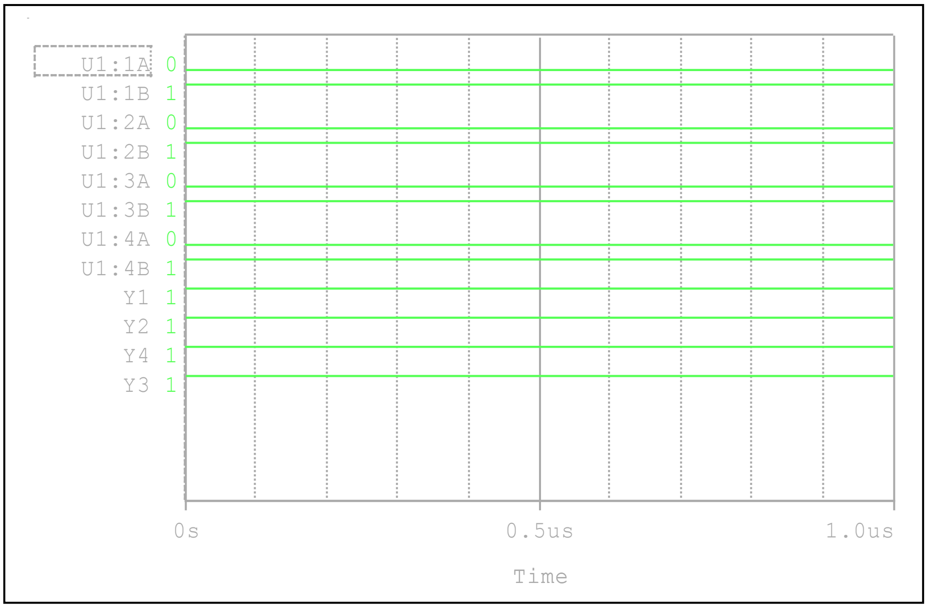


Comparison table

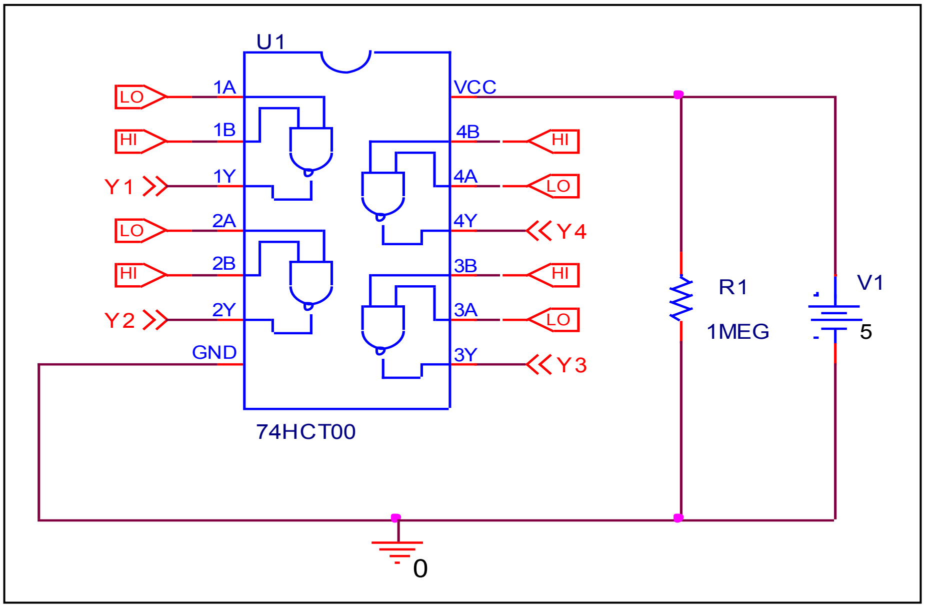
Input		Output		%Error
An	**Bn**	**Yn (Measurement)**	**Yn (Simulation)**	
L	**L**	H	H	0

Truth Table

Circuit simulation result



Evaluation circuit

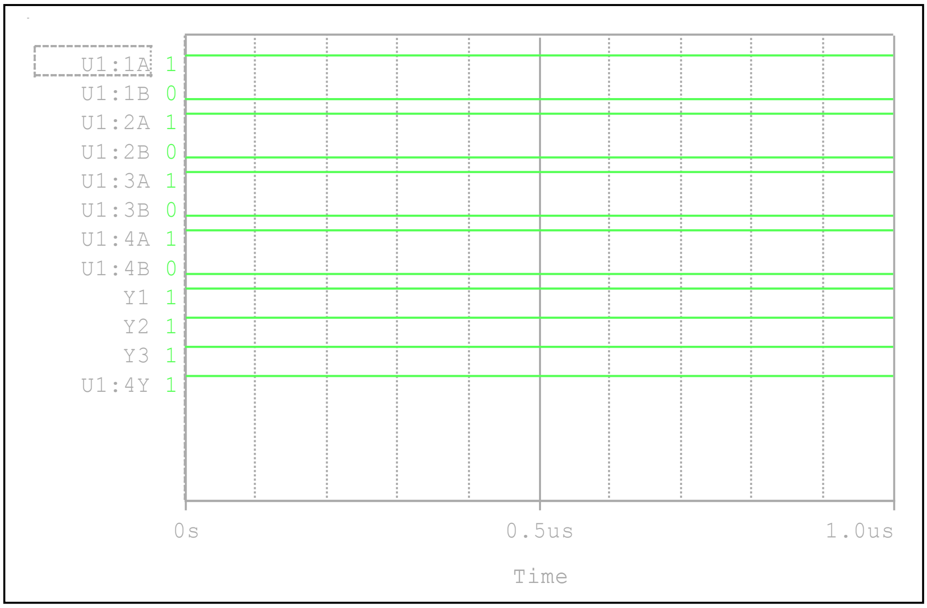


Comparison table

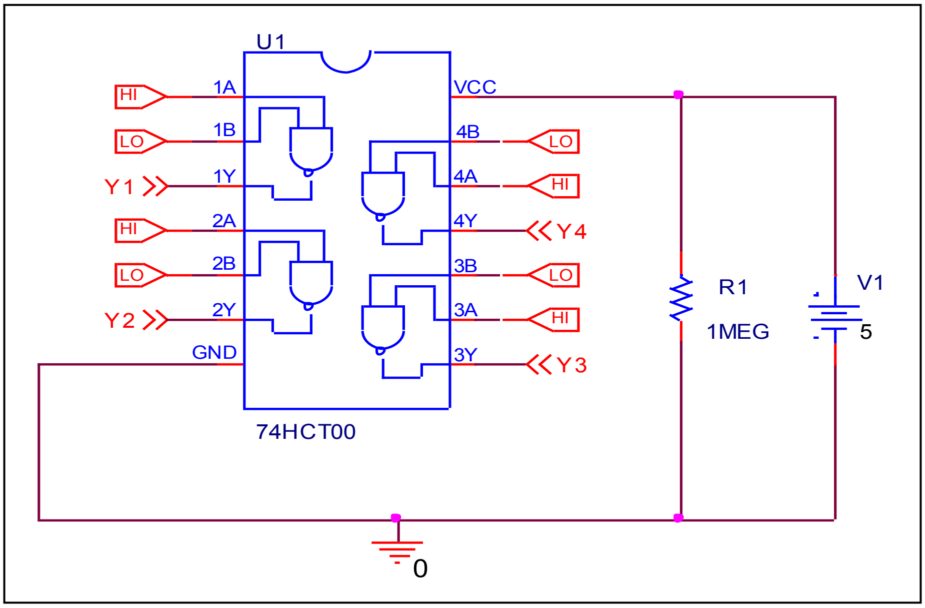
Input		Output		%Error
An	**Bn**	**Yn (Measurement)**	**Yn (Simulation)**	
L	**H**	H	H	0

Truth Table

Circuit simulation result



Evaluation circuit



Comparison table

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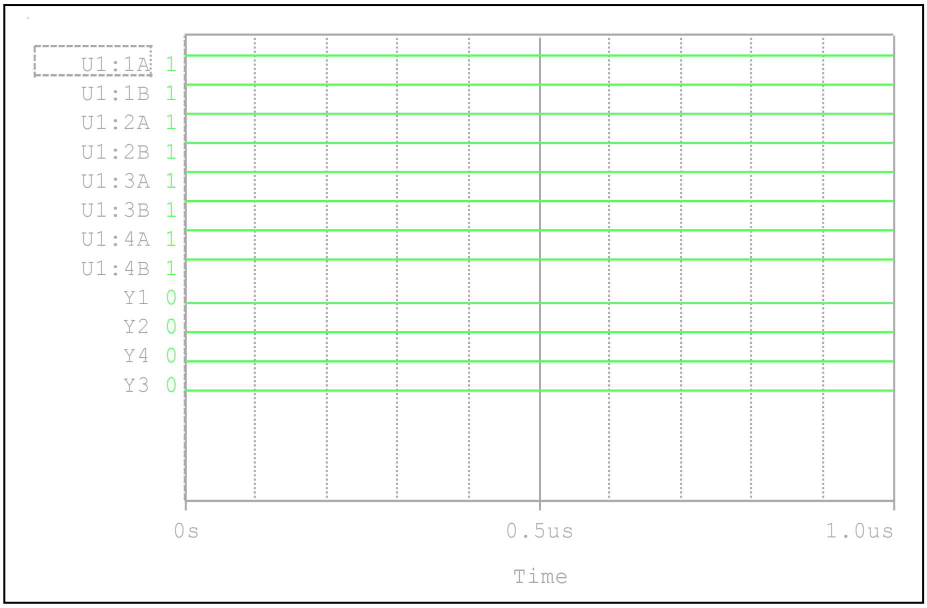
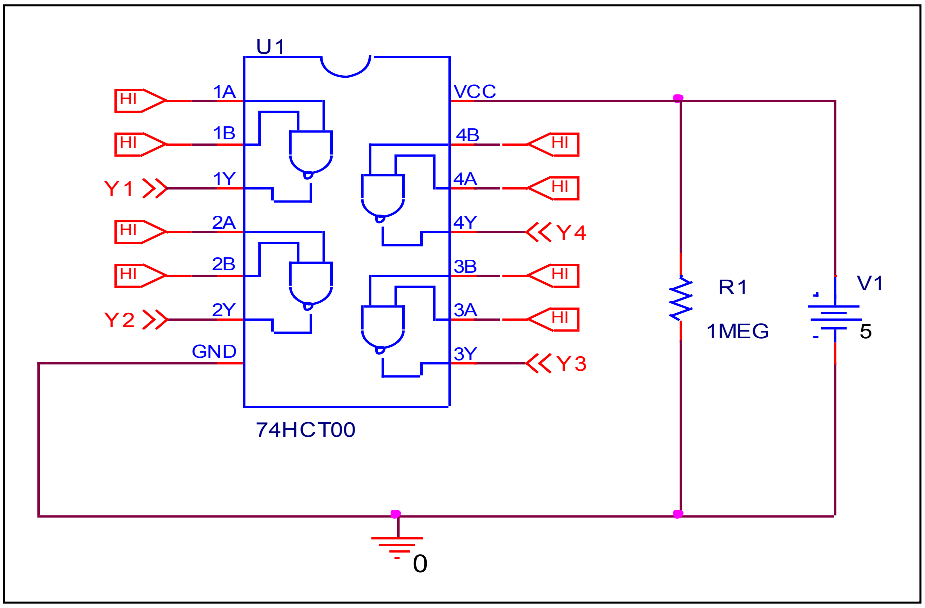
An	**Bn**	**Yn (Measurement)**	**Yn (Simulation)**	
H	**L**	H	H	0

Truth Table

Circuit simulation result



Evaluation circuit

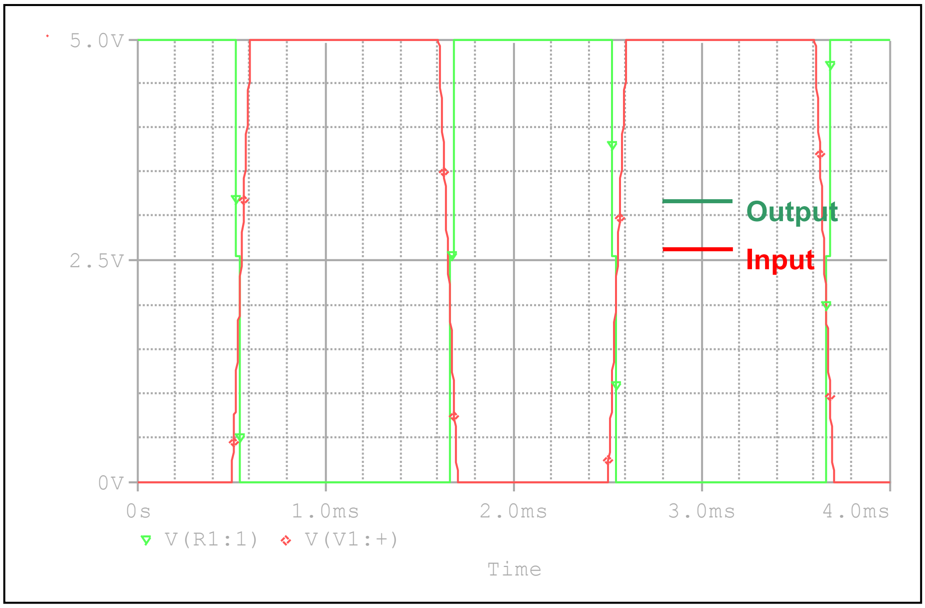


Comparison table

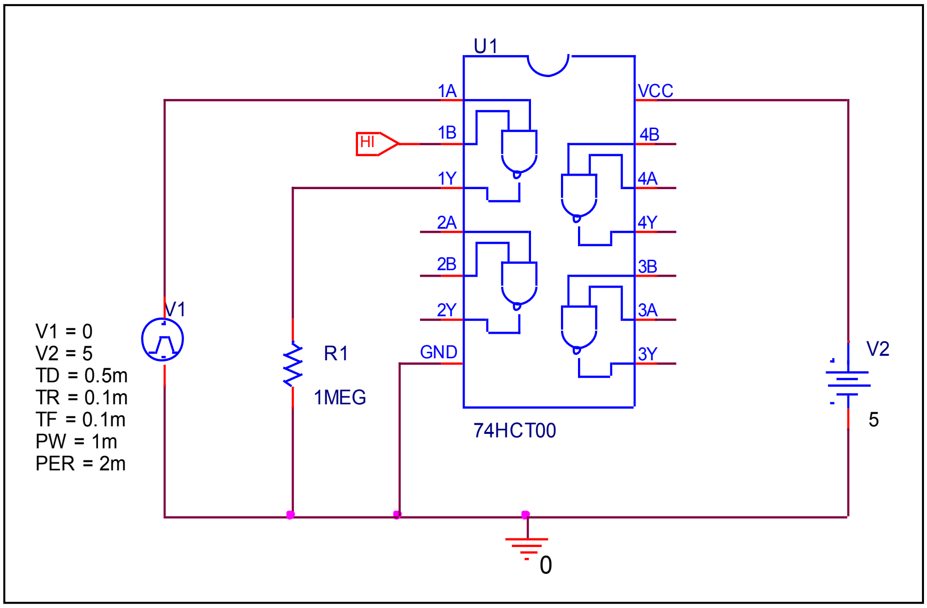
Input		Output		%Error
An	**Bn**	**Yn (Measurement)**	**Yn (Simulation)**	
H	**H**	L	L	0

High Level and Low Level Input Voltage

Circuit simulation result



Evaluation circuit

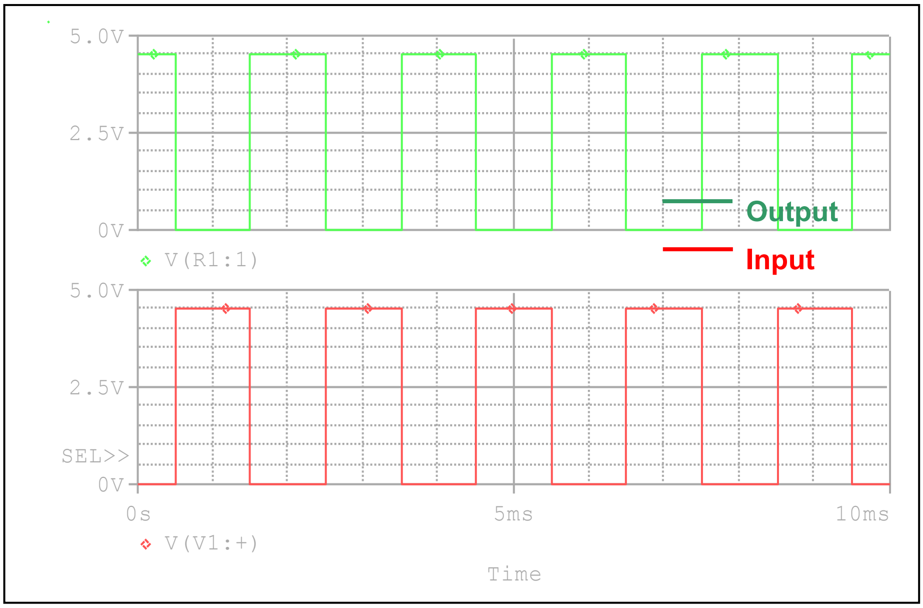


Comparison table

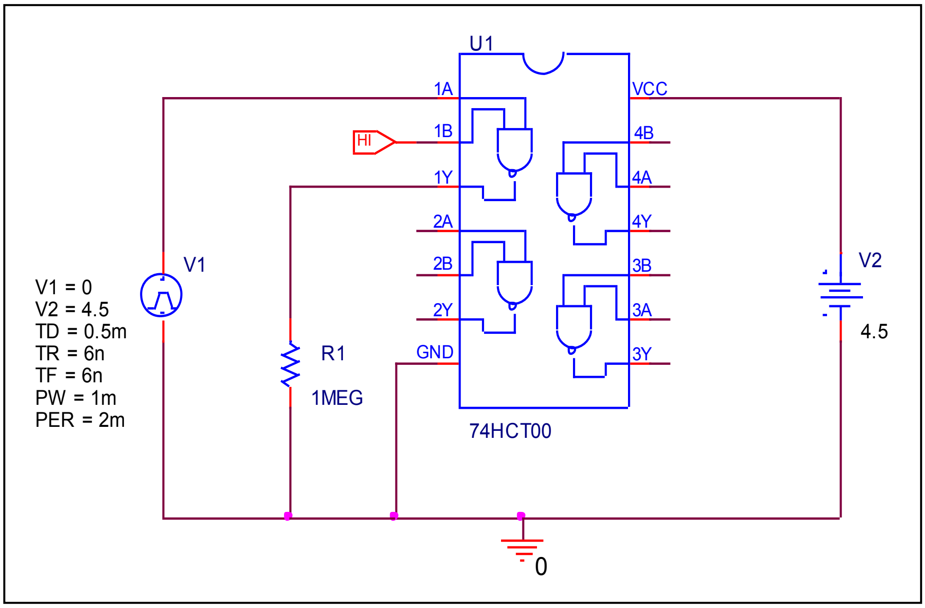
V_{CC} = 5V	Measurement	Simulation	%Error
V_{IH} (V)	2	2	0
V_{IL} (V)	0.8	0.799234	-0.096

High Level and Low Level Output Voltage

Circuit simulation result



Evaluation circuit

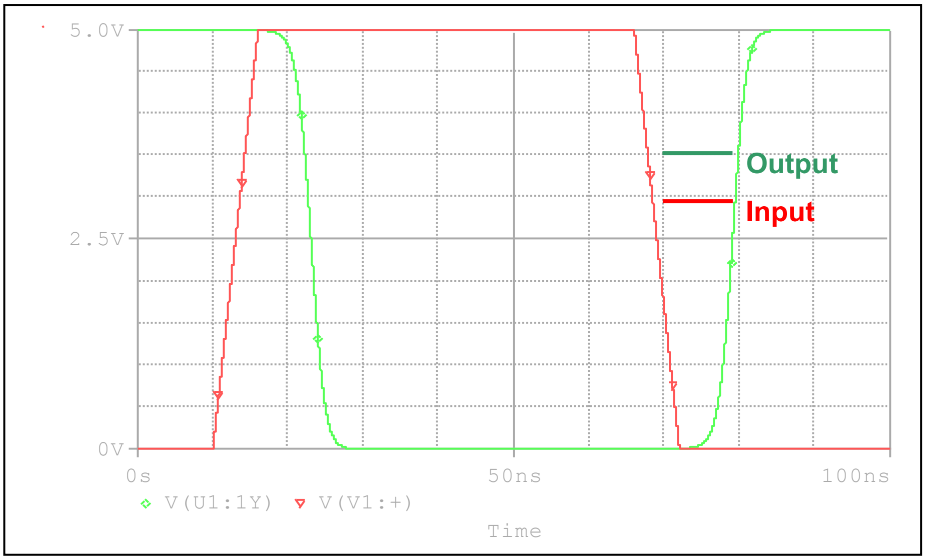


Comparison table

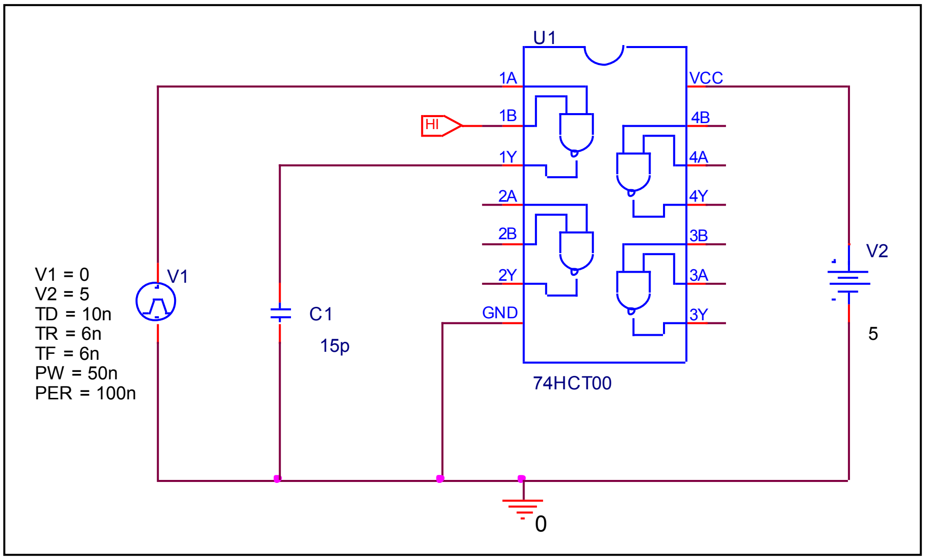
V_{CC} = 4.5V	Measurement	Simulation	%Error
V_{OH} (V)	4.5	4.4977	-0.051
V_{OL} (V)	0	0	0

Propagation Delay Time

Circuit simulation result



Evaluation circuit



Comparison table

C_L=15pF,V_{CC}= 5V,t_r=t_f=6ns	Measurement	Simulation	%Error
t_{TLH} (ns)	4	4.0133	0.333
t_{THL} (ns)	4	4.0011	0.028
T_{pLH} (ns)	10	10.072	0.720
T_{pHL} (ns)	10	10.041	0.410