

PCB #3: ALU Design Optimization and PCB Layout with OrCAD PCB Editor

COVER SHEET

Honor Code: I have neither given or received nor have I tolerated others use of unauthorized aid.

Name: Jon Bayert **Signature:** Jonathan Bayert

Honor Code: I have neither given or received nor have I tolerated others use of unauthorized aid.

Name: Joe Leveille **Signature:** Joseph Leveille

A complete assignment will contain:

- 1) A bill of materials for your original ALU design, with chip-count noted**
- 2) A bill of materials for your optimized ALU design, with chip-count noted**
(make sure to re-annotate just before generating the bill of materials)
- 3) Output waveforms from PSpice for your optimized ALU, verifying correct operation. You MUST have outputs (not necessarily inputs) in HEX form... combine outputs into busses. Use ALL four 8-bit input combinations. Make 4 pages, one for each input combination, each page containing the 5 operations.**
- 4) Printout of your routed PCB artwork for the small design.**

Label each of these at the top of the 1st page of each part.

Note: You MUST have outputs (not necessarily inputs) in HEX form... combine outputs into busses. You do not need to add busses in OrCad Capture, just in the Pspice simulation window. Use “Add Trace” and put your signals in braces for a bus: { r7 r6 r5 ... }.

1: Revised: Tuesday, September 08, 2020

2: Revision:

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10: Bill Of Materials September 8, 2020 16:00:45 Page1

11:

12: Item Quantity Reference Part

13:

14:

15: 1 6 U1,U3,U7,U14,U21,U26 7432

16: 2 1 U2 7404

17: 3 6 U4,U11,U19,U22,U24,U27 7408

18: 4 8 U5,U8,U9,U10,U12,U15,U16, 74153

19: U17

20: 5 7 U6,U13,U18,U20,U23,U25, 7486

21: U28

22:

1: Revised: Tuesday, September 08, 2020

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10: Bill Of Materials September 8, 2020 18:05:46 Page1

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