

diffpair_test_routed

Design Report

Rev 1 | 2026-09-10 | jlcpcb-tier1

kicad-tools 0.20.0

Board Summary

Property	Value
Layers	4 copper (F.Cu, In1.Cu, In2.Cu, B.Cu)
Footprints	36 (33 SMD, 3 THT, 0 other)
Nets	18
Traces	196 segments
Vias	63
Board Size	90.0 x 70.0 mm

Stackup

Layer	Type	Thickness (mm)	Material
F.Cu	copper	0.035	--
dielectric 1	prepreg	0.2104	7628
In1.Cu	copper	0.0152	--
dielectric 2	core	1.065	FR4
In2.Cu	copper	0.0152	--
dielectric 3	prepreg	0.2104	7628
B.Cu	copper	0.035	--

Design Overview

Theory of Operation

Four-channel LVDS link demonstrator

Power Architecture

Power Rails: PWR_FLAG

Hand-Solder (THT) Components

The following 3 through-hole components are **excluded from the SMT pick-and-place file** and must be hand-soldered (or wave/selective-soldered) after SMT assembly. They appear in the BOM for sourcing.

Value	Package	Qty	References
3.3V regulated input	PinHeader_1x02_P2.54 mm_Vertical	1	J1
IN1-4 / GND	PinHeader_1x08_P2.54 mm_Vertical	1	J2
OUT1-4 / GND	PinHeader_1x08_P2.54 mm_Vertical	1	J3

ERC Status

Metric	Count
Errors	0
Warnings	0

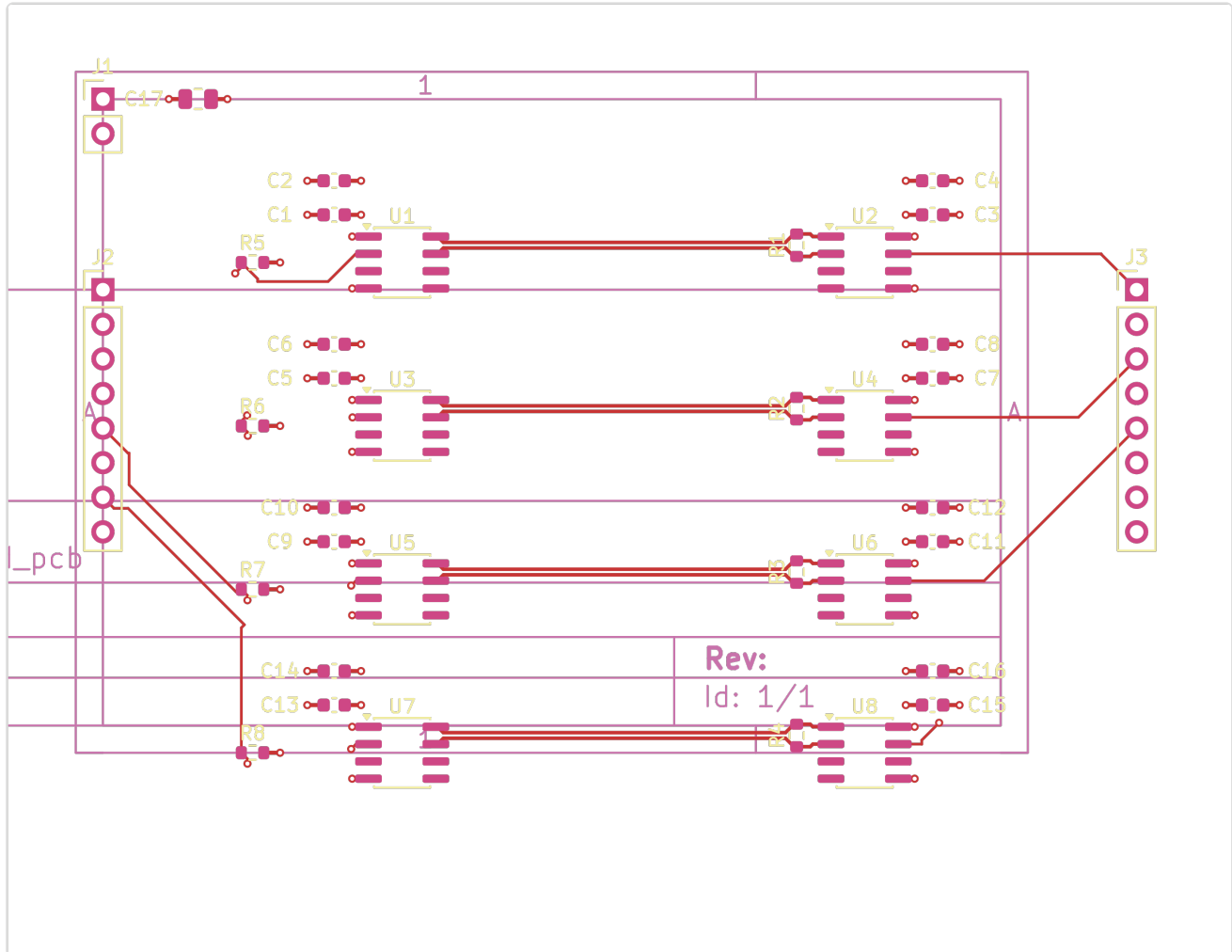
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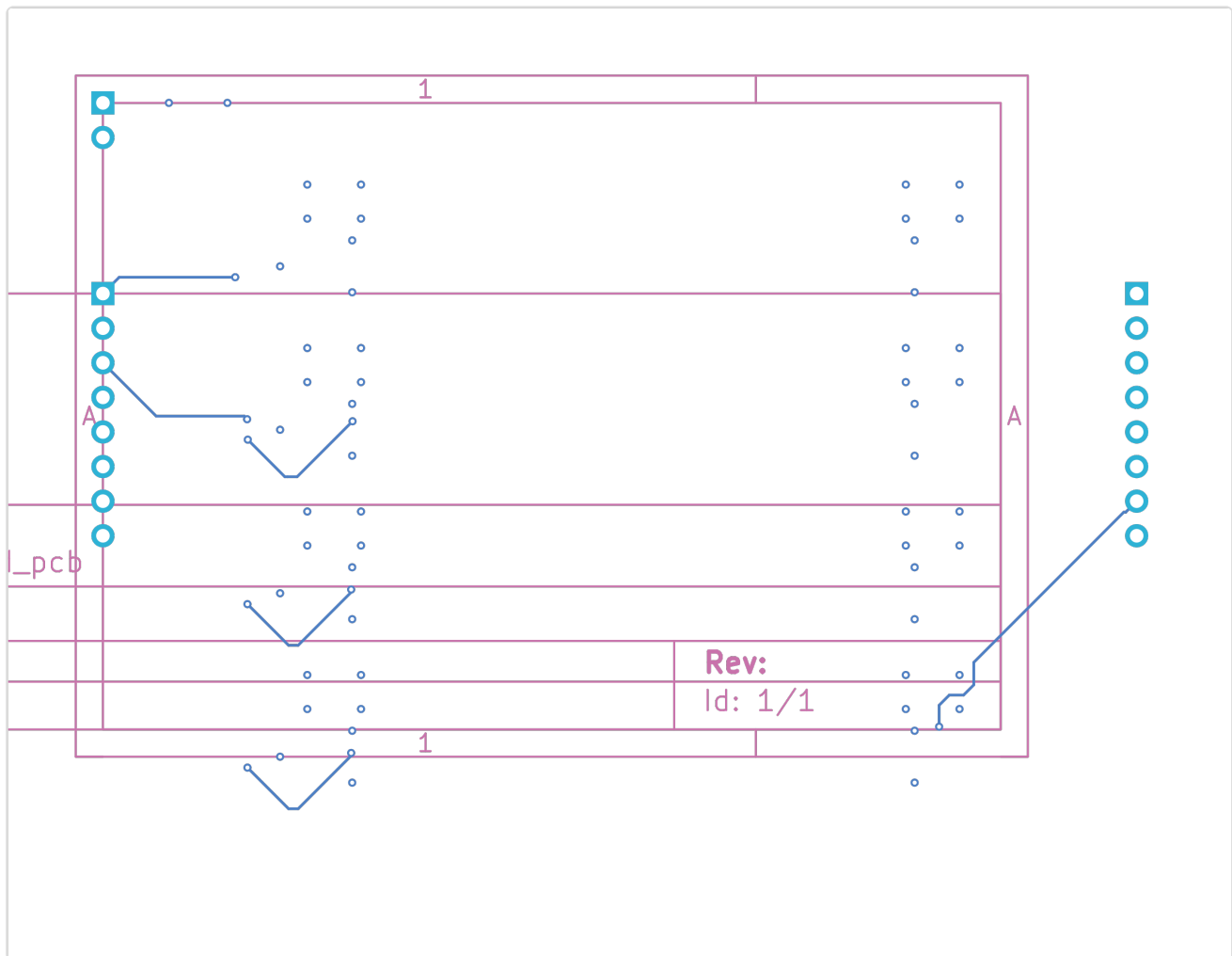
Schematic Overview

Schematic: diffpair_test

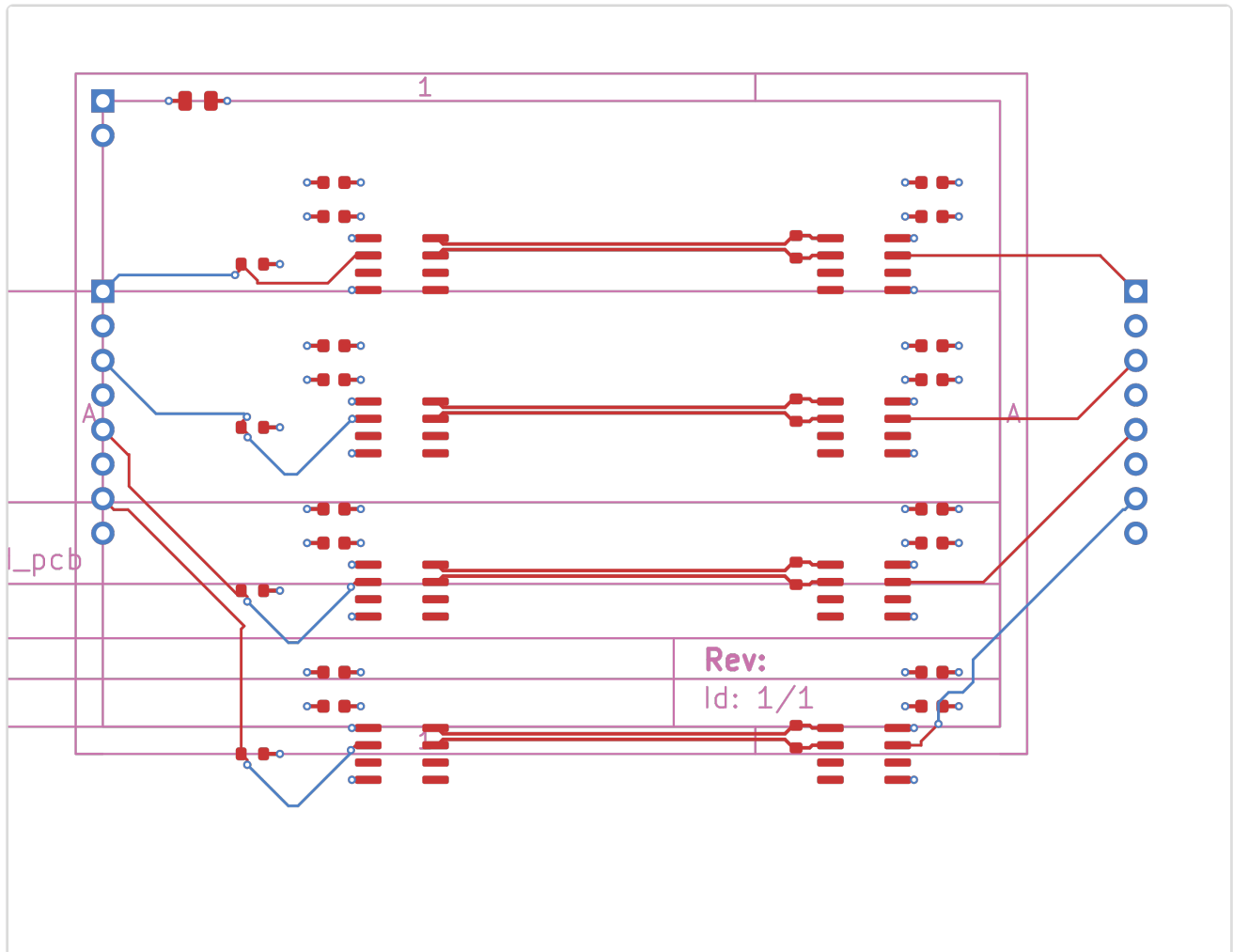


PCB Layout

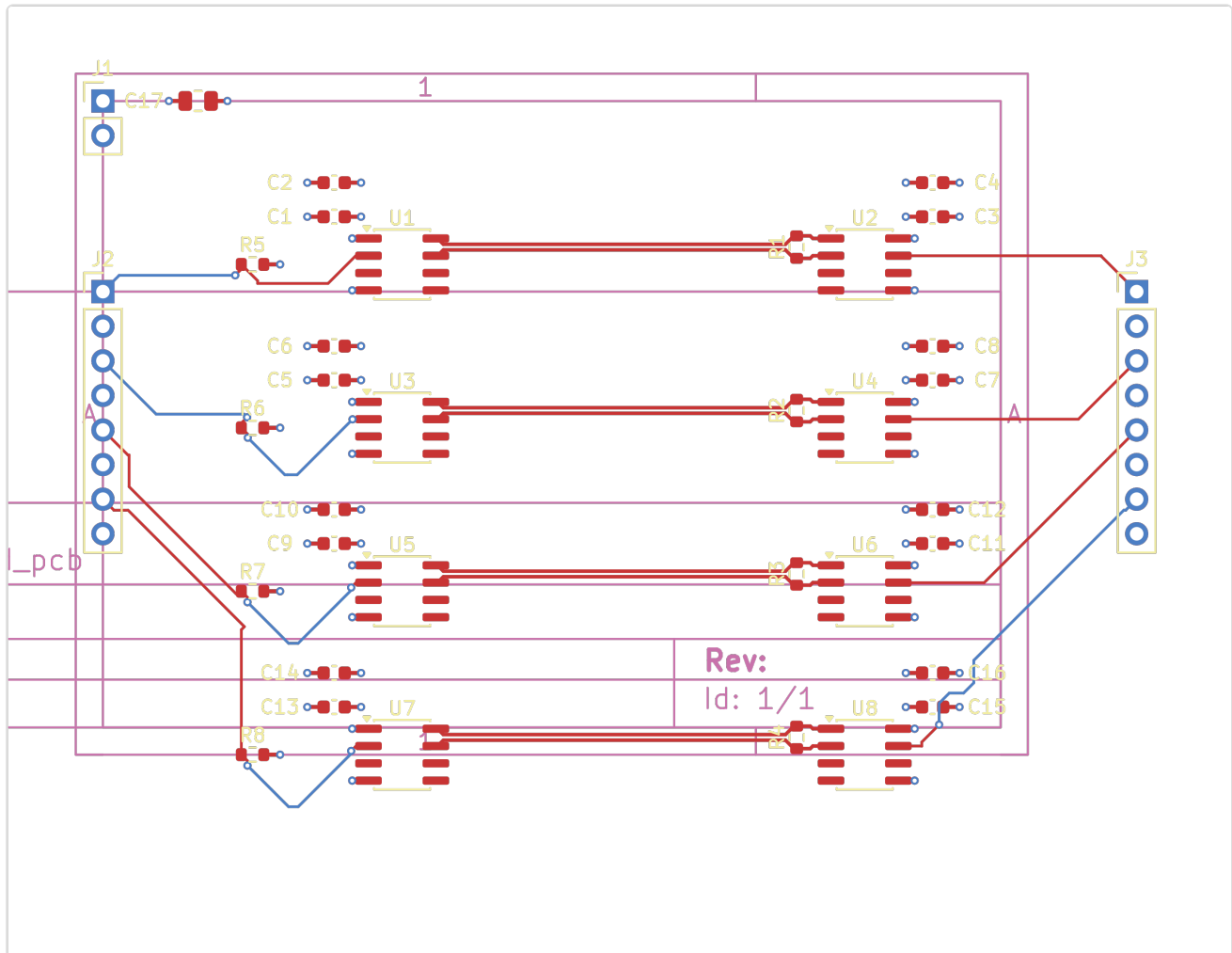




Copper

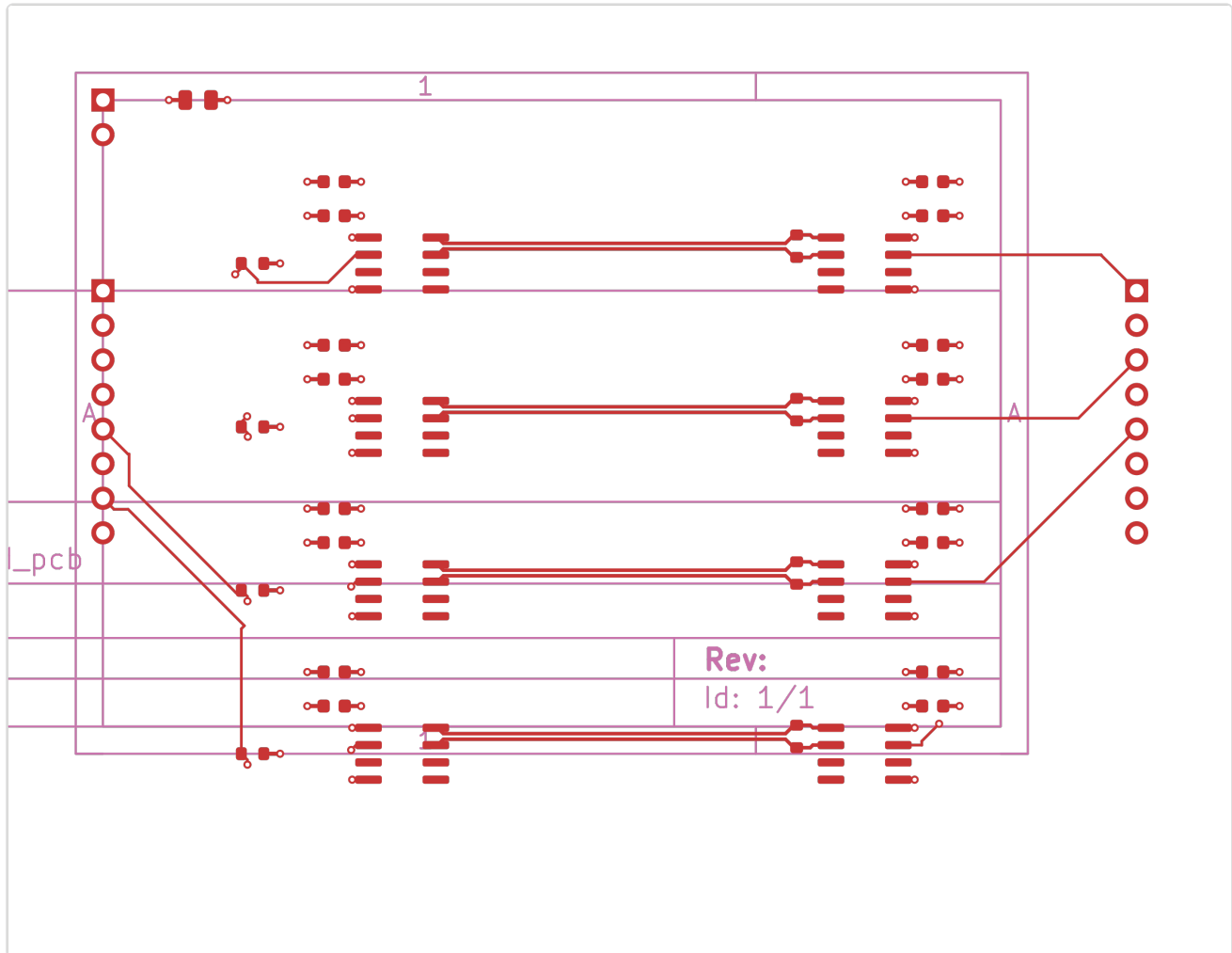


Assembly



Copper Layers

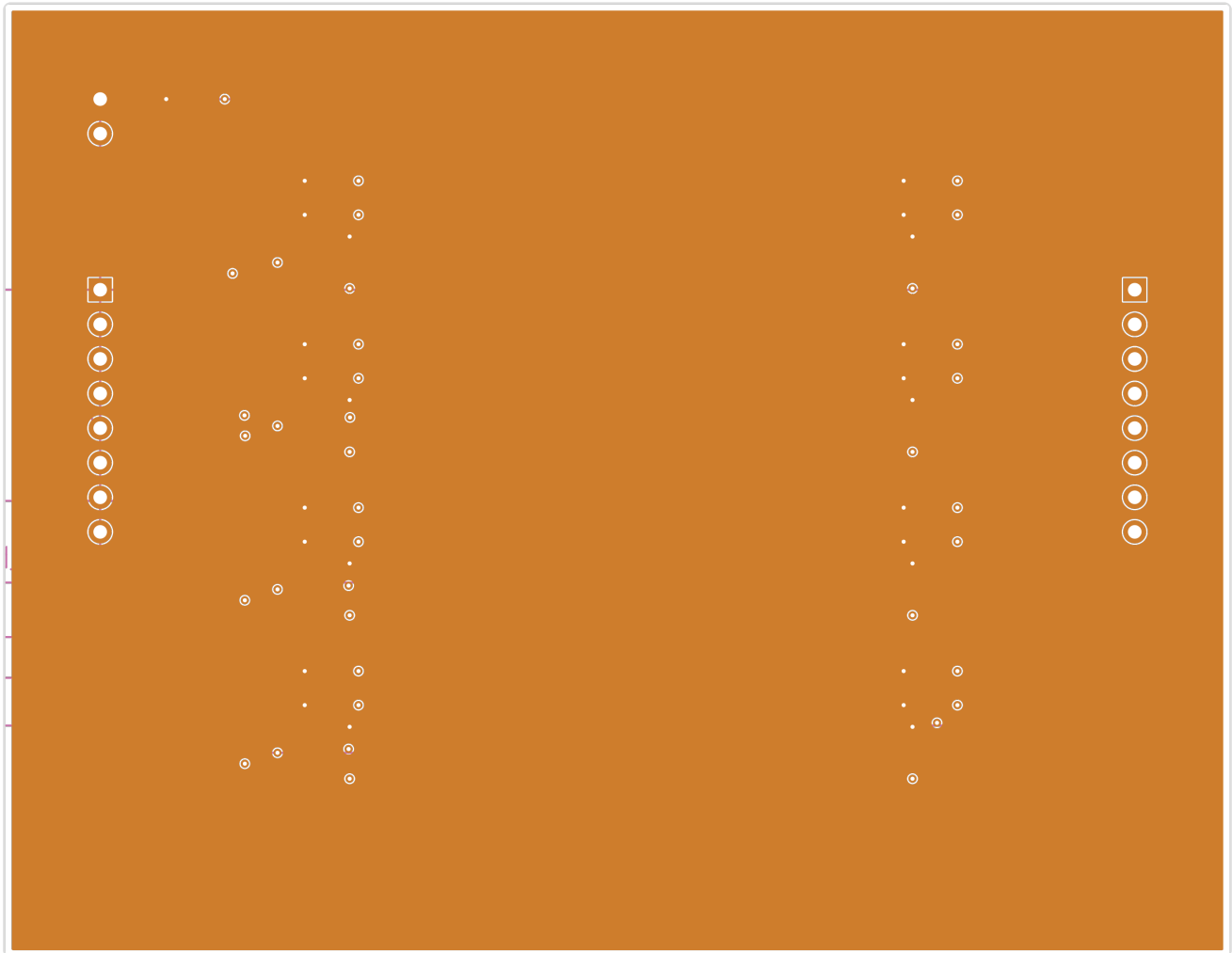
F.Cu



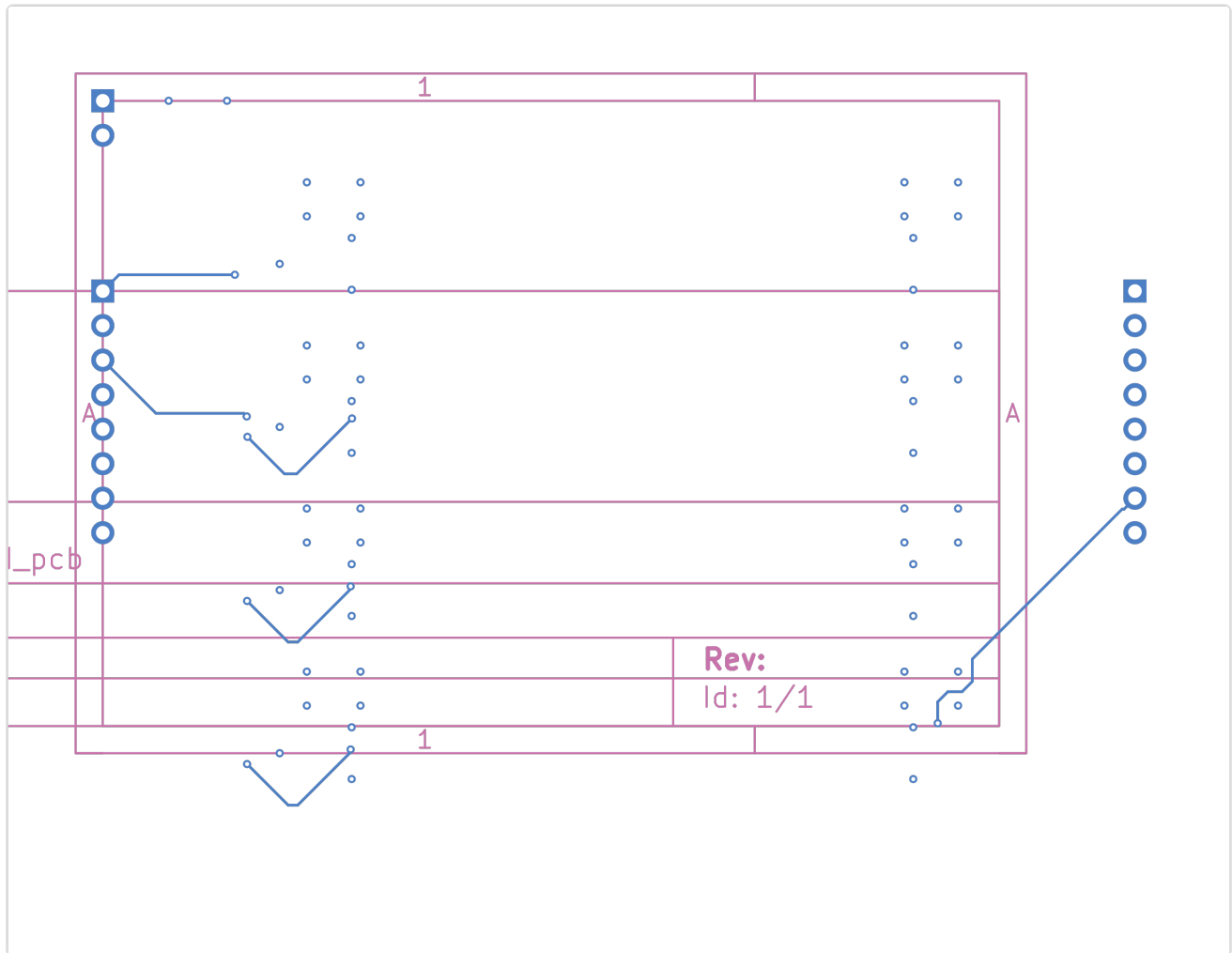
In1.Cu



In2.Cu



B.Cu



Bill of Materials

Value	Package	Qty	References
100nF	C_0603_1608Metric	8	C2, C4, C6, C8, C10, C12, C14, C16
10uF	C_0805_2012Metric	1	C17
1nF	C_0603_1608Metric	8	C1, C3, C5, C7, C9, C11, C13, C15
3.3V regulated input	PinHeader_1x02_P2.54 mm_Verical	1	J1
IN1-4 / GND	PinHeader_1x08_P2.54 mm_Verical	1	J2
OUT1-4 / GND	PinHeader_1x08_P2.54 mm_Verical	1	J3
100	R_0603_1608Metric	4	R1, R2, R3, R4
100k	R_0603_1608Metric	4	R5, R6, R7, R8
SN65LVDS1DR	SOIC-8_3.9x4.9mm_P1.27mm	4	U1, U3, U5, U7
SN65LVDS2DR	SOIC-8_3.9x4.9mm_P1.27mm	4	U2, U4, U6, U8

DRC Status

Metric	Count
Errors	0
Warnings	0
Blocking	0

Status: PASS

Manufacturing Readiness

Verdict: READY

Action Items

- **[OPTIONAL]** Verify zone fill in KiCad for 2 zone-connected nets

Routing Status

Metric	Value
Signal Net Completion	100.0% (16/16)
Overall Completion	100.0%
Complete Nets	18 / 18
Zone-Connected Nets	2
Incomplete Nets	0
Unconnected Pads	0

Zone-Connected Nets

- +3V3
- GND

Cost Estimate

Metric	Per Board (estimated)
PCB Fabrication	~3.26 USD
Components (estimated)	~4.4 USD
Assembly (estimated)	~2.14 USD
Total (estimated)	~9.81 USD
Batch Quantity	5
Batch Total (estimated)	~49.03 USD