

stm32_devboard_routed

Design Report

Rev 1 | 2026-06-12 | jlpcb

kicad-tools 0.13.0

Board Summary

Property	Value
Layers	2 copper (F.Cu, B.Cu)
Footprints	17 (15 SMD, 2 THT, 0 other)
Nets	12
Traces	182 segments
Vias	28
Board Size	60.0 x 40.0 mm

Design Overview

Theory of Operation

STM32F103C8 Development Board

End-to-end design example

Demonstrates circuit blocks API

Power Architecture

Power Rails: +3V3, +5V, GND, PWR_FLAG

Regulator	Device
U1	AMS1117-3.3

Assembly Notes

1 fine-pitch component; 1 polarized component

- **Fine-pitch components:** 1 (U2)
- **Polarized components:** 1 -- check orientation markings

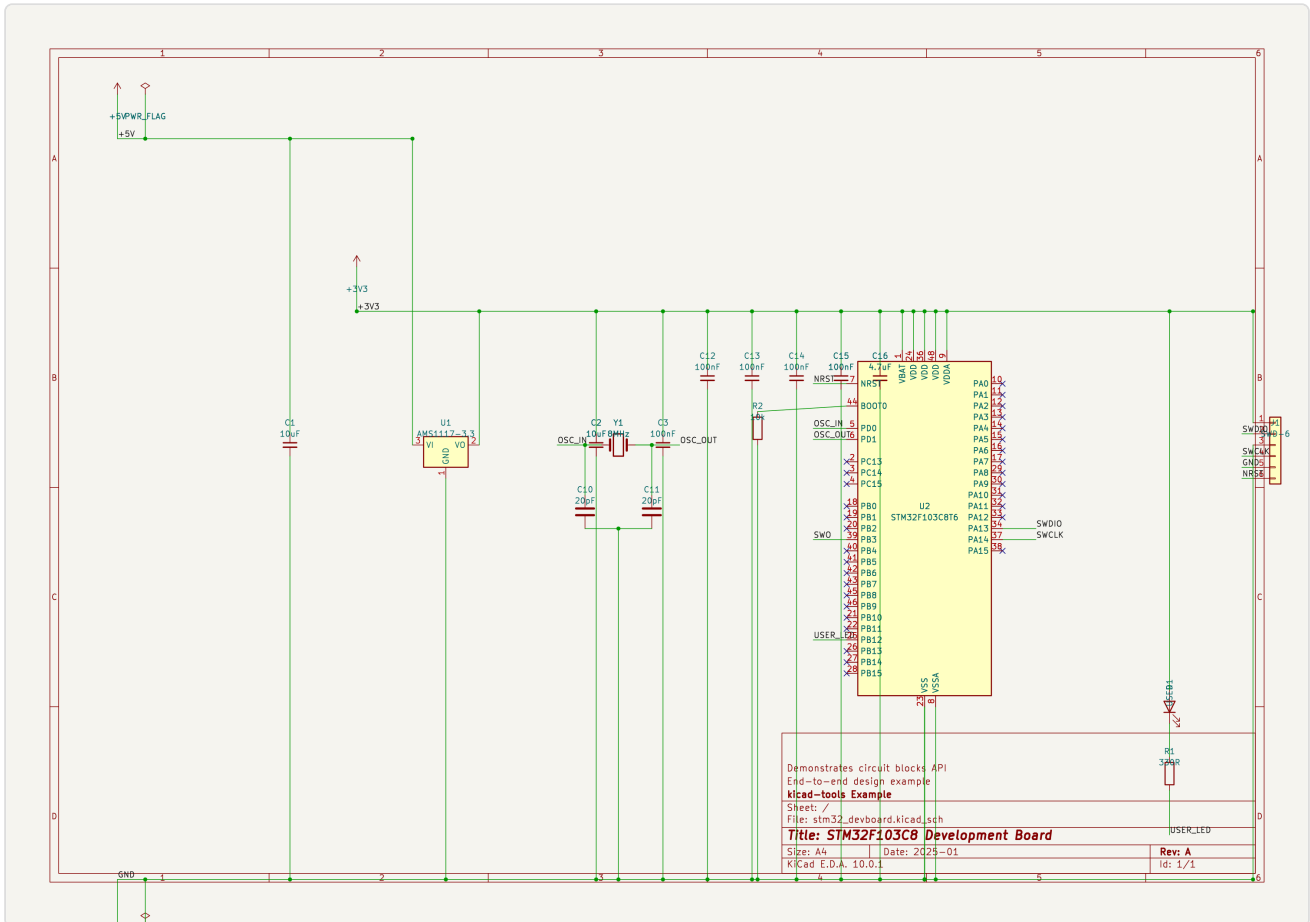
ERC Status

Metric	Count
Errors	0
Warnings	0

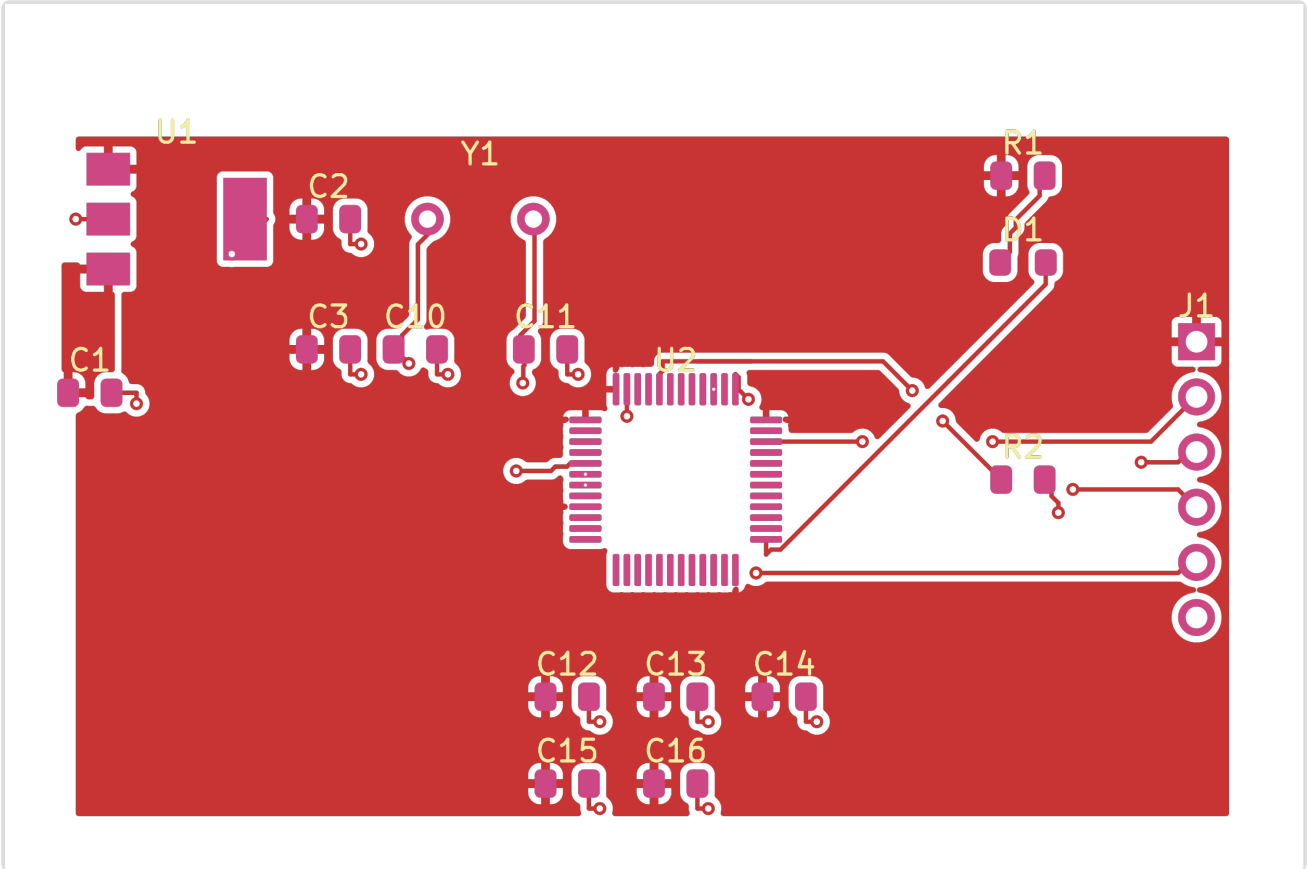
Status: SKIPPED -- ERC skipped by user request

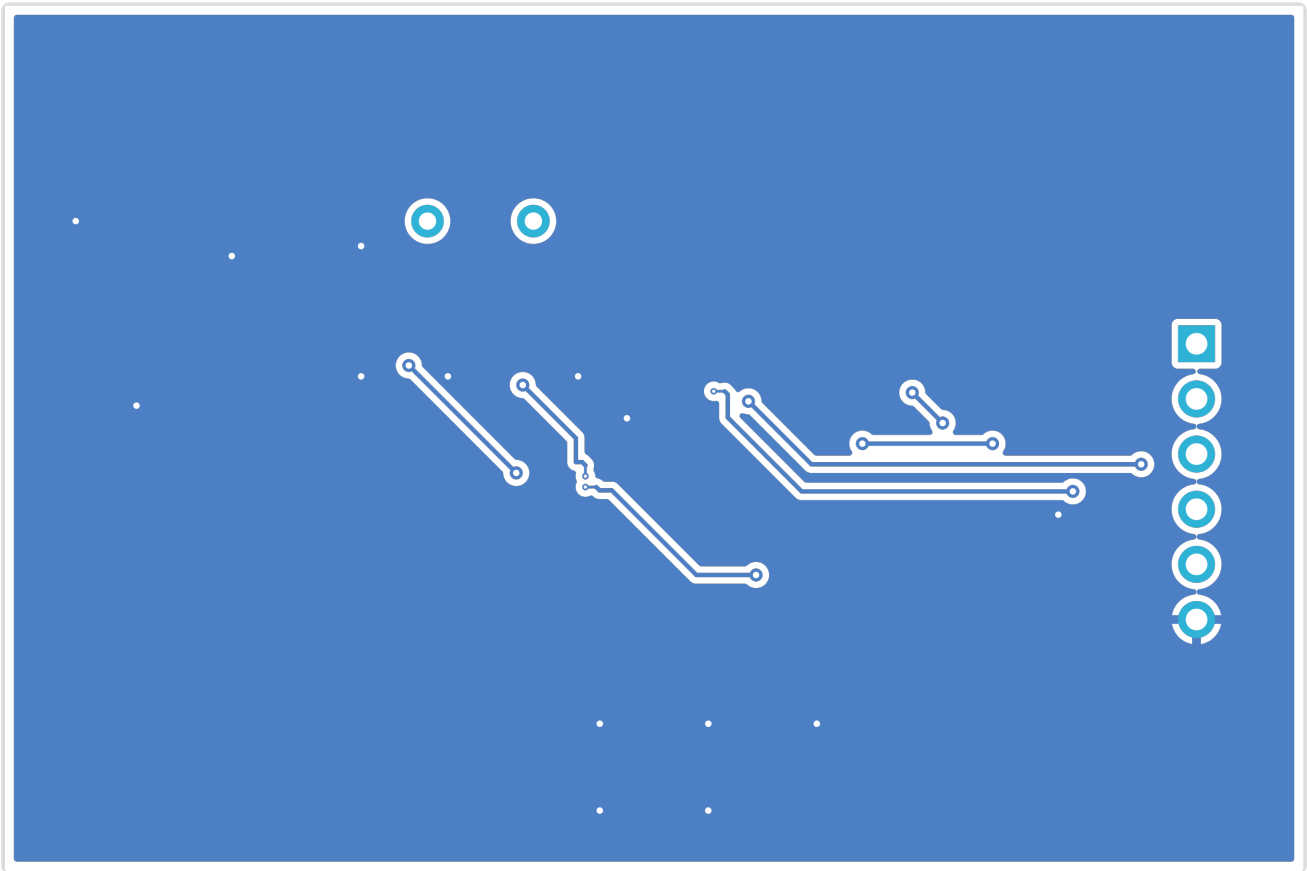
Schematic Overview

Schematic: stm32_devboard

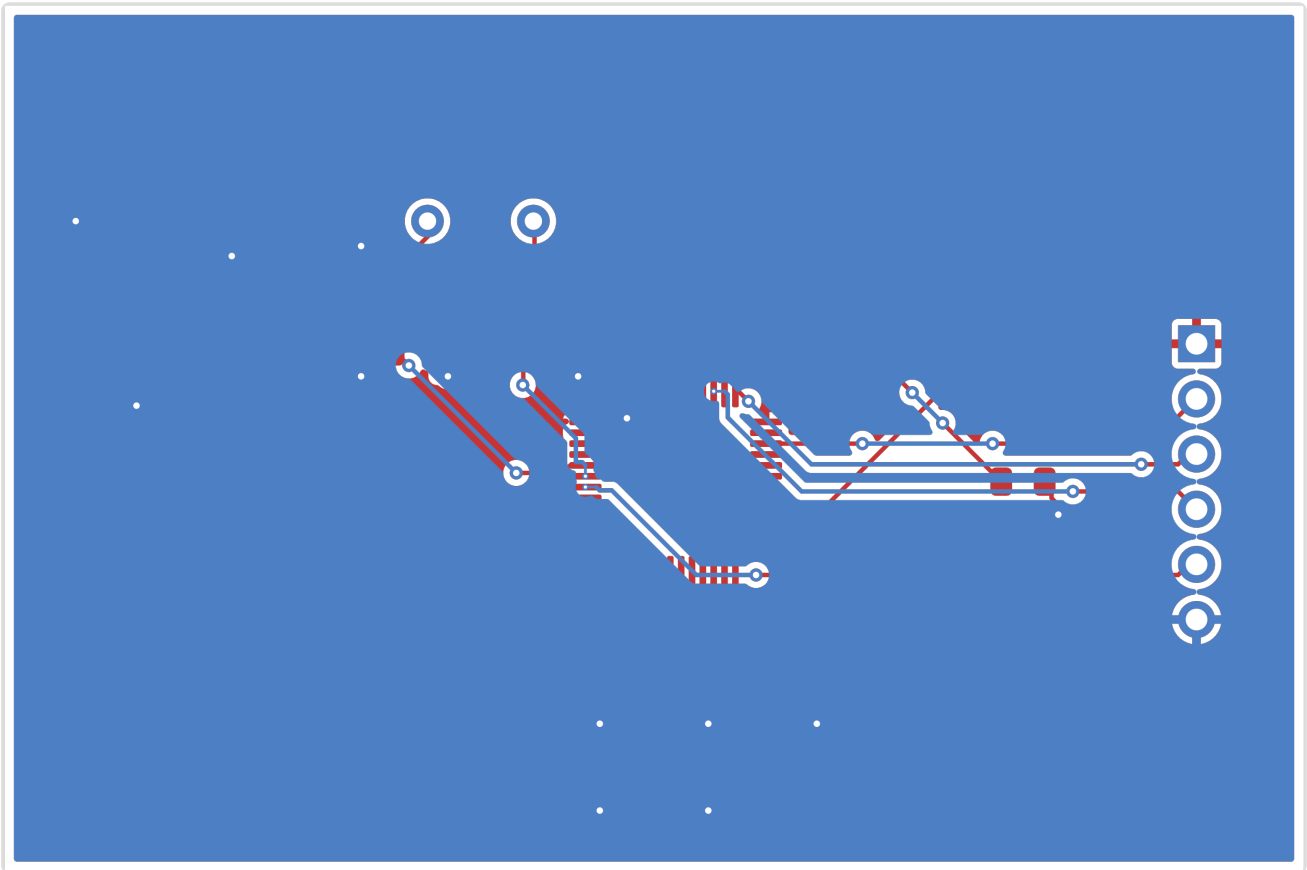


PCB Layout

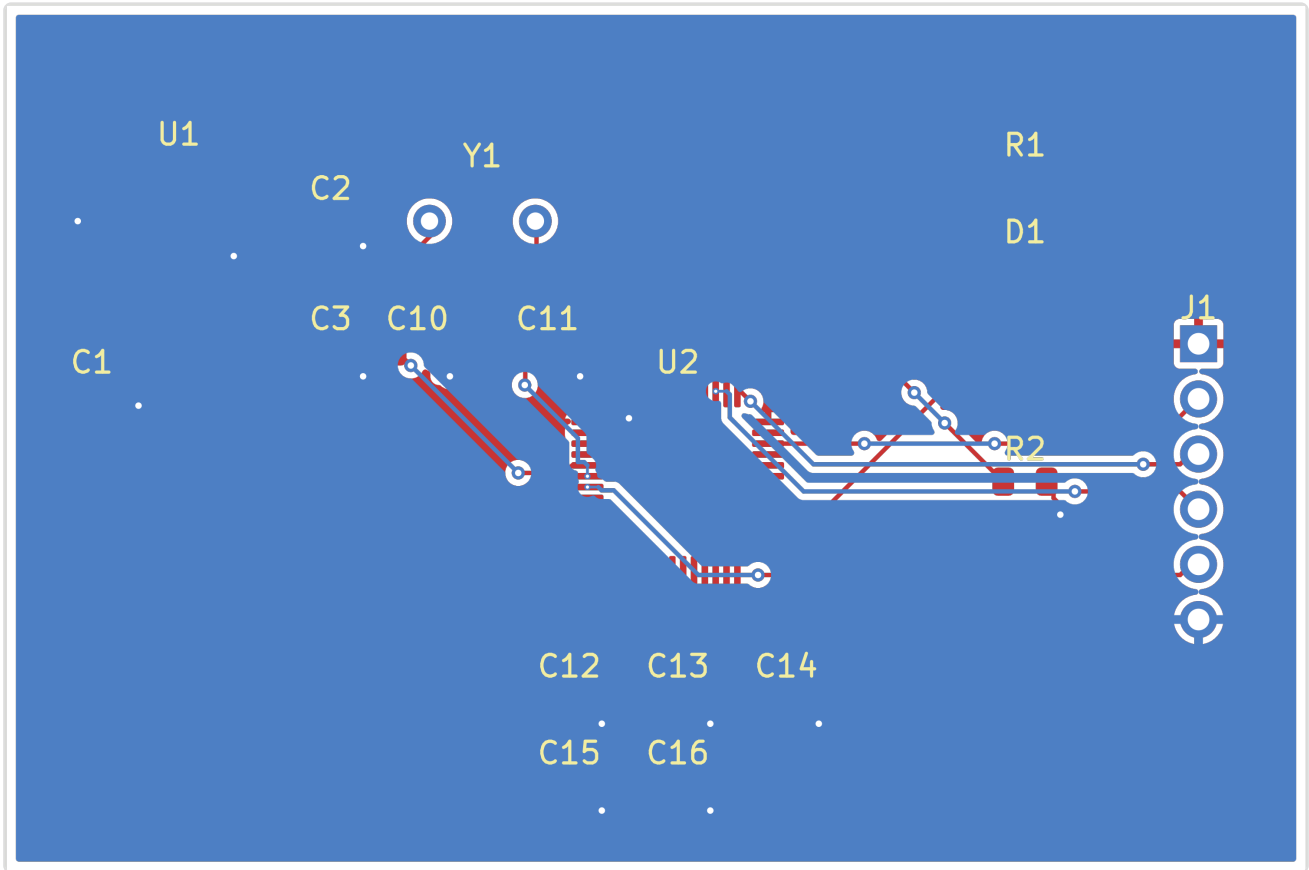




Copper

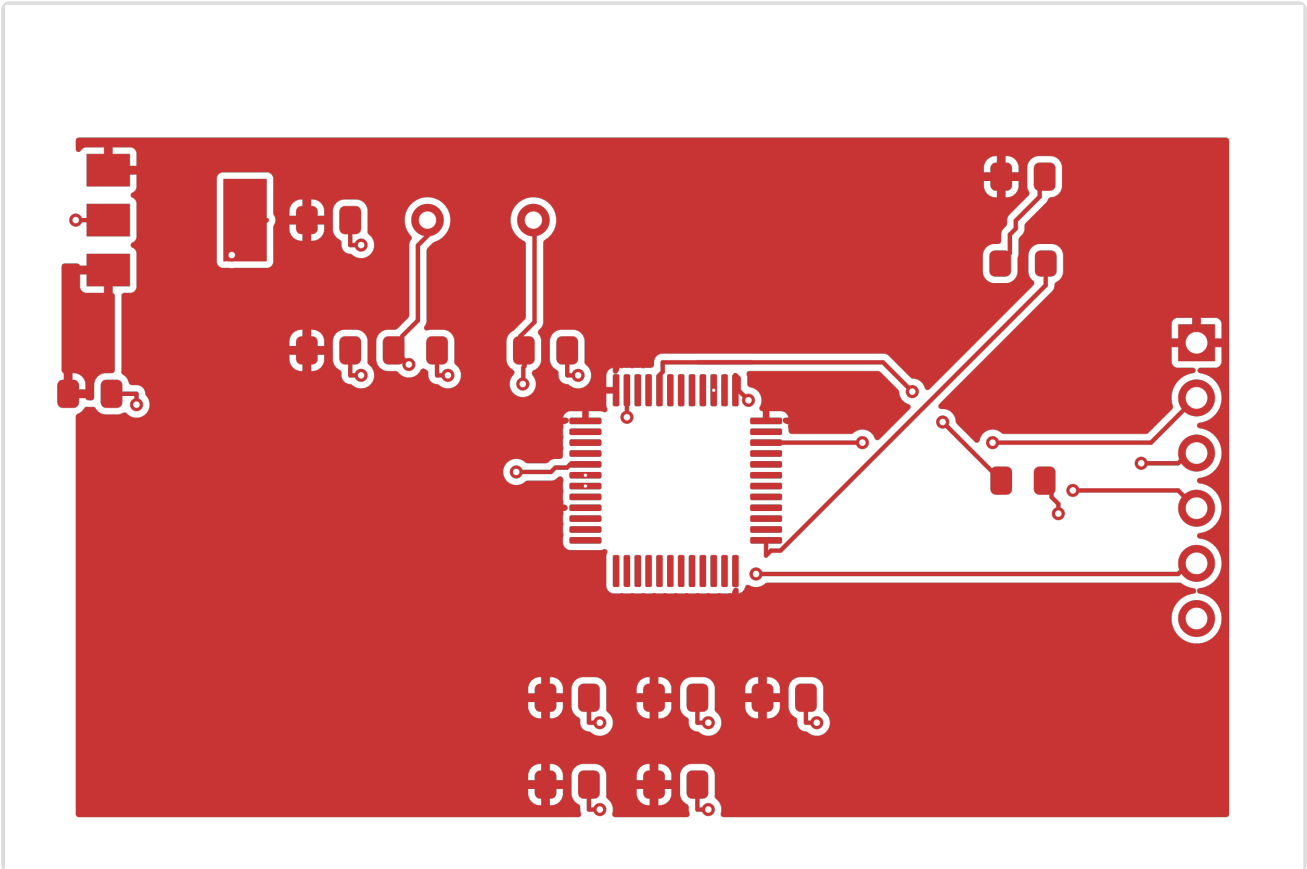


Assembly

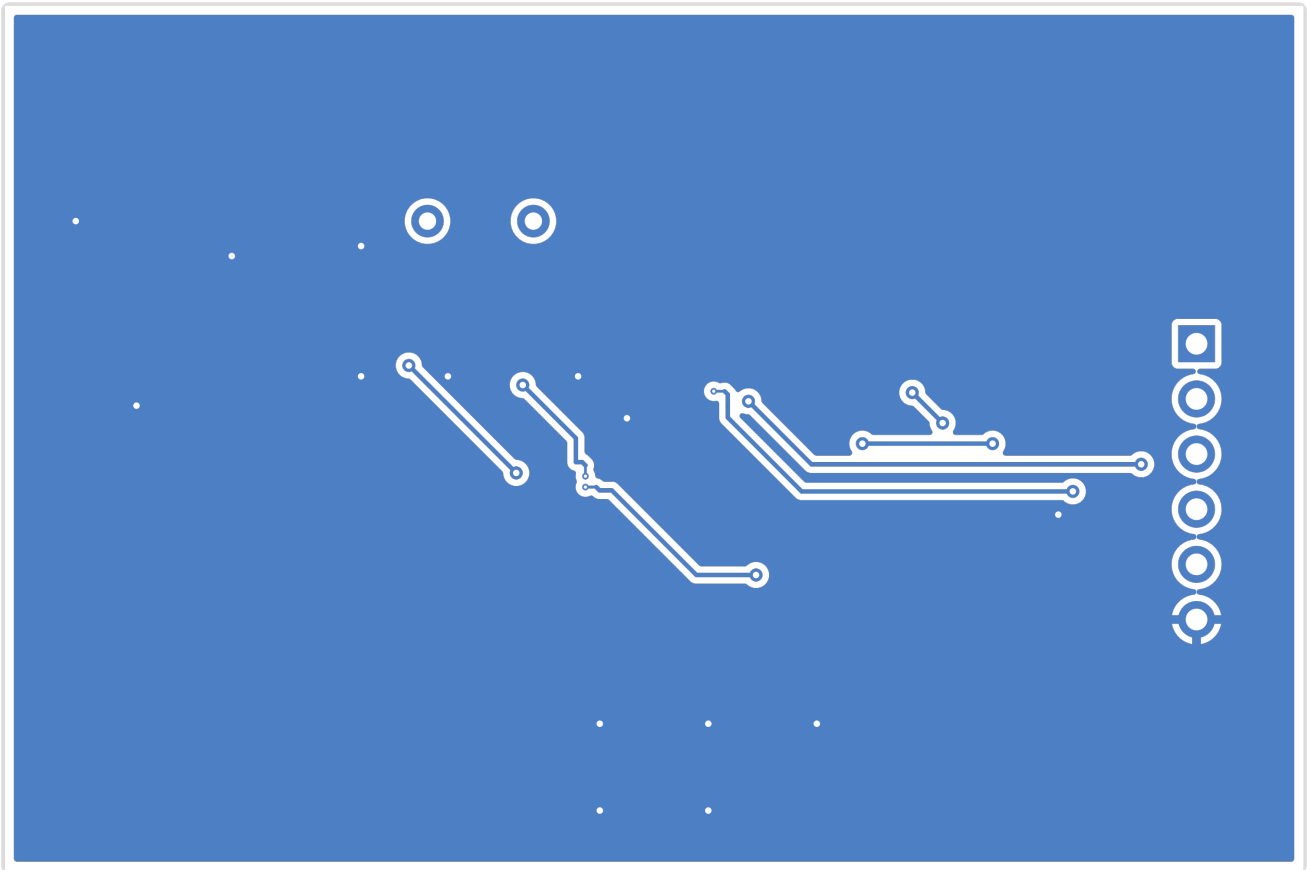


Copper Layers

F.Cu



B.Cu



Bill of Materials

Value	Package	Qty	References
100nF	C_0805_2012Metric	5	C3, C12, C13, C14, C15
10uF	C_0805_2012Metric	2	C1, C2
20pF	C_0805_2012Metric	2	C10, C11
4.7uF	C_0805_2012Metric	1	C16
USER	LED_0805_2012Metric	1	D1
SWD-6	PinHeader_1x06_P2.54 mm_Vertical	1	J1
10k	R_0805_2012Metric	1	R2
330R	R_0805_2012Metric	1	R1
AMS1117-3.3	SOT-223-3_TabPin2	1	U1
STM32F103C8T6	LQFP-48_7x7mm_P0.5 mm	1	U2
8MHz	Crystal_HC49-4H_Vertical	1	Y1

DRC Status

Metric	Count
Errors	4
Warnings	0
Blocking	4

Status: FAIL

Violations by Type

Violation Type	Count
via_in_pad	4
connectivity	1

Manufacturing Readiness

Verdict: NOT_READY

Action Items

- **[CRITICAL]** Fix 4 blocking DRC violations (via_in_pad (4))
- **[CRITICAL]** Increase min via drill: 0.150mm < 0.300mm required
- **[OPTIONAL]** Verify zone fill in KiCad for 3 zone-connected nets

Routing Status

Metric	Value
Signal Net Completion	100.0% (9/9)
Overall Completion	91.7%
Complete Nets	11 / 12
Zone-Connected Nets	3
Incomplete Nets	1
Unconnected Pads	3

Zone-Connected Nets

- +3.3V
- +5V
- GND

Incomplete Nets

- GND

Cost Estimate

Metric	Per Board (estimated)
PCB Fabrication	~0.88 USD
Components (estimated)	~1.36 USD
Assembly (estimated)	~2.02 USD
Total (estimated)	~4.26 USD
Batch Quantity	5
Batch Total (estimated)	~21.3 USD