














Top-down view of the SMPBR pump board. The board is irregularly shaped with a central horizontal section. Key components and labels include:

- Top Section:** Two pump modules labeled "1 dH11d" and "2 dH11d". Below them is a "CONFIG 2x" section with a potentiometer and a "4x" section with two potentiometers.
- Left Side:** A vertical stack of components including a "P4" label, a "P3" label, and a "P2" label. Below these are two "P1" labels. A "4.2V" label is also present.
- Center:** A large "85 mm" dimension line spans the width of the central section. Below it, a "86 mm" dimension line spans the height of the central section.
- Right Side:** A vertical stack of components including a "P4" label, a "P3" label, and a "P2" label. Below these are two "P1" labels. A "4.2V" label is also present.
- Bottom Section:** Two pump modules labeled "PUMP 3" and "PUMP 4". Above them are two "PUMP 1" labels. A "PUMP 2" label is also present.
- Bottom Left:** A "UART" label and a "SWD" label.
- Bottom Right:** A "Trend" logo and a "Pump board 09/25 v1.0 Designed by: Peter Malanik" label.
- Dimensions:** A "90 mm" dimension line is shown at the bottom, indicating the total width of the board.

Stackup: JLC04161H-7628

	Material	Layer	Thickness	Dielectric	Type	Gerber
		F.Paste			Paste Mask	
		F.Silkscreen			Legend	GBR
		F.Mask	0.01mm		Solder Mask	GBR
	Copper	L1 (Sig)	0.035mm (1oz)		Signal	GBR
	Prepreg		0.21mm	7628	Dielectric	
	Copper	L2 (GND)	0.015mm (0.42857142857142855oz)		Plane	GBR
	Core		1.06mm	FR4	Dielectric	
	Copper	L3 (PWR)	0.015mm (0.42857142857142855oz)		Plane	GBR
	Prepreg		0.21mm	7628	Dielectric	
	Copper	L4 (Sig.)	0.035mm (1oz)		Signal	GBR
		B.Mask	0.01mm		Solder Mask	GBR
		B.Silkscreen			Legend	GBR
		B.Paste			Paste Mask	

Total thickness: 1.6mm
Note: external layer thicknesses are specified after plating

Transmission Line	Impedance [ohms]	Tolerance [ohms]	Layer	Trace Width [mm]	Gap [mm]	Ref. Layers
USB	90	±10 %	L1	0.17	0.275	L2

- | | |
|------------------|---------------------|
| BOARD SIZE | 90.000 × 100.000 mm |
| BOARD THICKNESS | 1.600 mm |
| TRACE WIDTH | 0.170 mm |
| TRACE TO TRACE | -0.000 mm |
| MIN. HOLE (PTH) | 0.300 mm |
| MIN. HOLE (NPTH) | 0.650 mm |
| ANNULAR RING | 0.075 mm |
| COPPER TO HOLE | 0.150 mm |
| COPPER TO EDGE | 0.300 mm |
| HOLE TO HOLE | 0.250 mm |

- 12) CONFIRM SPACE WIDTHS AND SPACINGS.

All dimensions are in millimeters unless otherwise specified.

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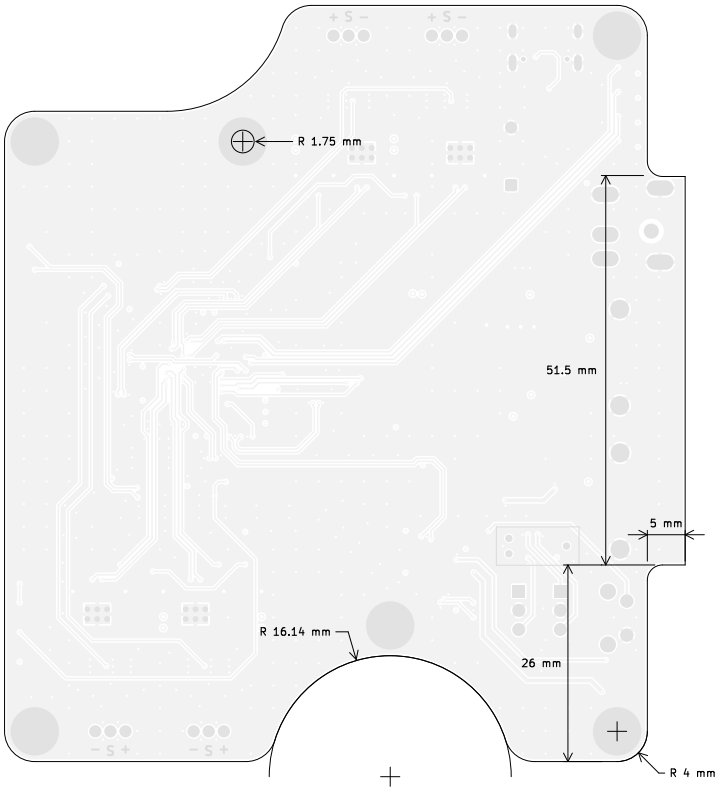
Project: SMPBR

Board:	Pump_board
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Rev: 1.0

Id: 1/10

Bottom Fabrication (Scale 1:1)



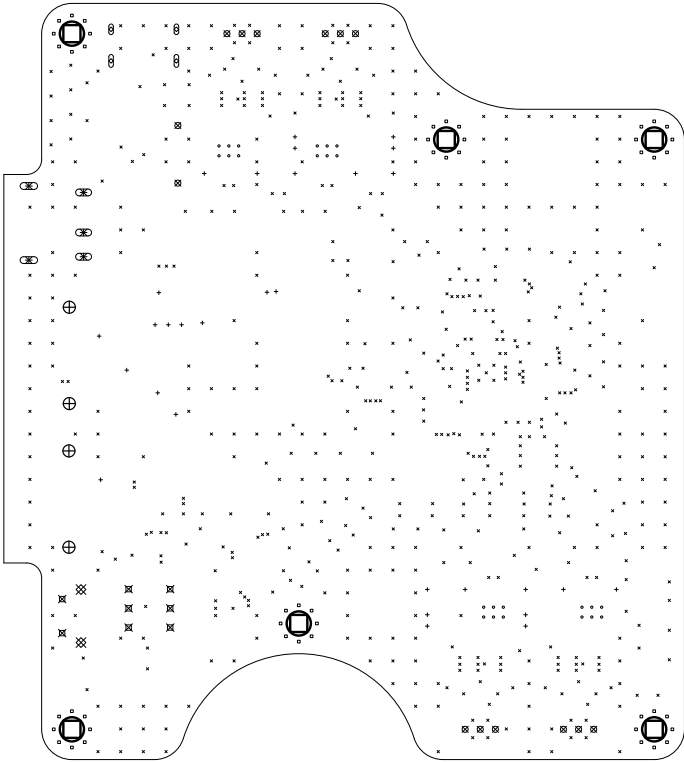
All dimensions are in millimeters unless otherwise specified.

				
Designed for: TrendBit				
Designed by: Petr_Malanik				
Sheet:				
File: pump_board.kicad_pcb		Project: SMPBR		
Title:		Board: Pump_board		
Size: A4	Date: 2024-12-04	GIT hash: 3e45ce8	Rev: 1.0	
KiCad E.D.A. 9.0.1+1 + KiBot v1.8.5			Id: 2/10	

Drill Drawing L1 - L4 (Scale 1:1)

Drill Table

Symbol	Count	Hole Size	Plated	Hole Shape	Drill Layer Pair	Hole Type
×	639	0,30mm (11,81mils)	PTH	Round	L1 (Sig.) - L4 (Sig.)	Via
○	24	0,30mm (11,81mils)	PTH	Round	L1 (Sig.) - L4 (Sig.)	Pad
+	30	0,50mm (19,69mils)	PTH	Round	L1 (Sig.) - L4 (Sig.)	Via
□	48	0,50mm (19,69mils)	PTH	Round	L1 (Sig.) - L4 (Sig.)	Pad
◇	4	0,60mm (23,62mils)	PTH	Slot	L1 (Sig.) - L4 (Sig.)	Pad
⊗	14	0,80mm (31,50mils)	PTH	Round	L1 (Sig.) - L4 (Sig.)	Pad
✱	5	0,90mm (35,43mils)	PTH	Slot	L1 (Sig.) - L4 (Sig.)	Pad
⊠	8	1,00mm (39,37mils)	PTH	Round	L1 (Sig.) - L4 (Sig.)	Pad
⊗	2	1,30mm (51,18mils)	PTH	Round	L1 (Sig.) - L4 (Sig.)	Pad
⊕	4	1,60mm (62,99mils)	PTH	Round	L1 (Sig.) - L4 (Sig.)	Pad
○	6	3,20mm (125,98mils)	PTH	Round	L1 (Sig.) - L4 (Sig.)	Pad
Total 784						



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Sheet:
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Project: SMPBR
Board: Pump_board

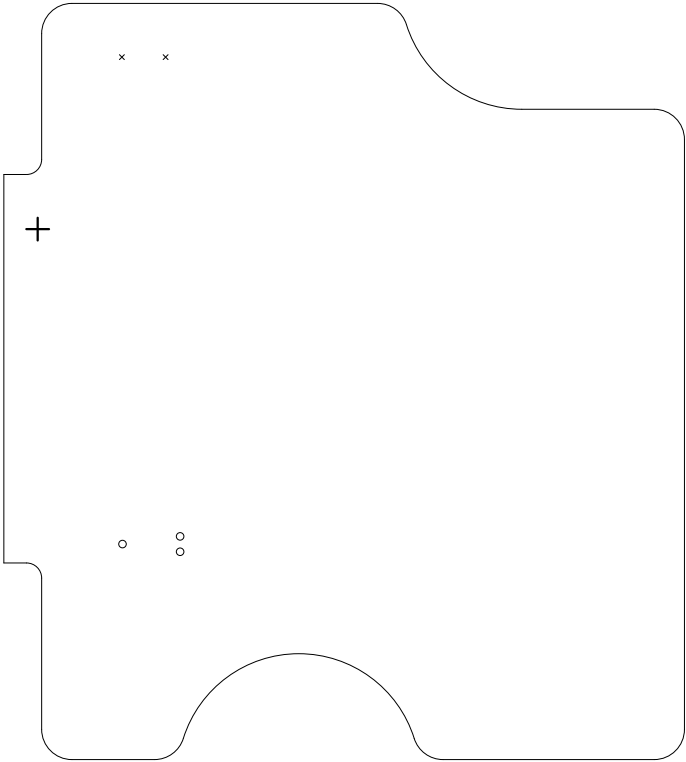
Title:

Size: A4 Date: 2024-12-04 GIT hash: 3e45ce8 Rev: 1.0
KiCad E.D.A. 9.0.1+1 + KiBot v1.8.5 Id: 3/10

Drill Drawing L1 - L4 (Scale 1:1)

Drill Table

Symbol	Count	Hole Size	Plated	Hole Shape	Drill Layer Pair	Hole Type
×	2	0,65mm (25,59mils)	NPTH	Round	L1 (Sig.) - L4 (Sig.)	Mechanical
○	3	1,00mm (39,37mils)	NPTH	Round	L1 (Sig.) - L4 (Sig.)	Mechanical
+	1	3,00mm (118,11mils)	NPTH	Round	L1 (Sig.) - L4 (Sig.)	Mechanical
Total 6						



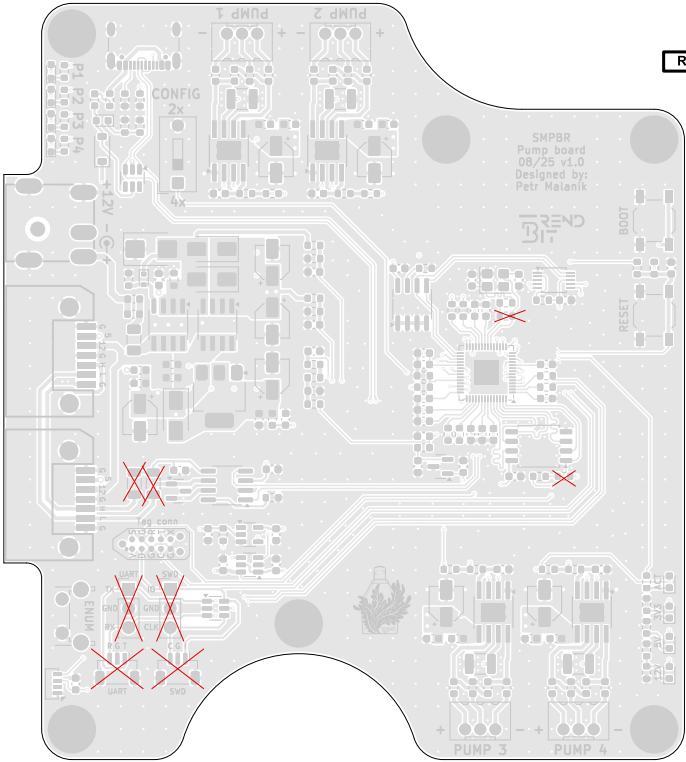
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Sheet:
File: pump_board.kicad_pcb

Project: SMPBR
Board: Pump_board

Title:
Size: A4 Date: 2024-12-04 GIT hash: 3e45ce8 Rev: 1.0
KiCad E.D.A. 9.0.1+1 + KiBot v1.8.5 Id: 4/10

Top Test Points (Scale 1:1)



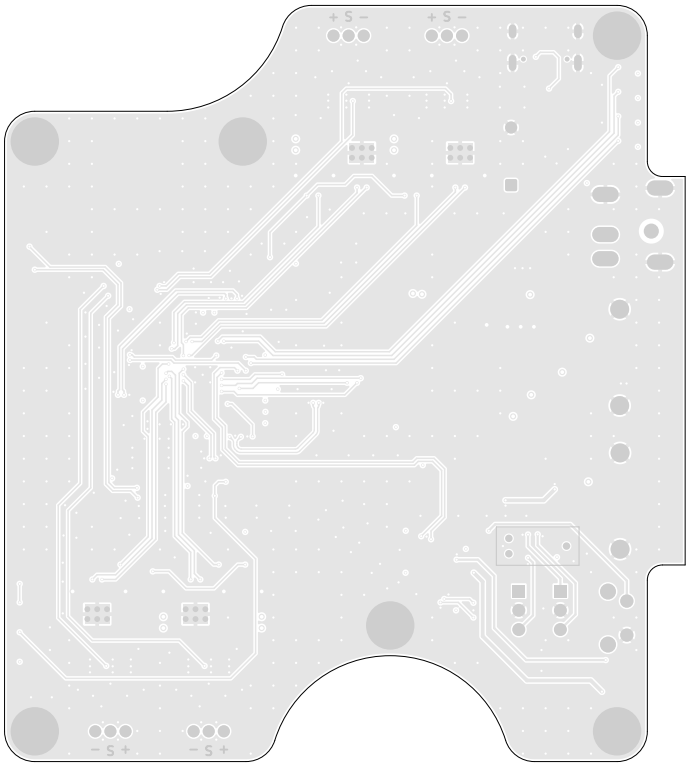
Ref.	Net	X [mm]	Y [mm]
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Ref.	Net	X [mm]	Y [mm]
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All dimensions are in millimeters unless otherwise specified.

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Sheet: File: pump_board.kicad_pcb		Project: SMPBR	
Title:		Board: Pump_board	
Size: A4	Date: 2024-12-04	GIT hash: 3e45ce8	Rev: 1.0
KiCad E.D.A. 9.0.1+1 + KiBot v1.8.5			Id: 5/10

Bottom Test Points (Scale 1:1)



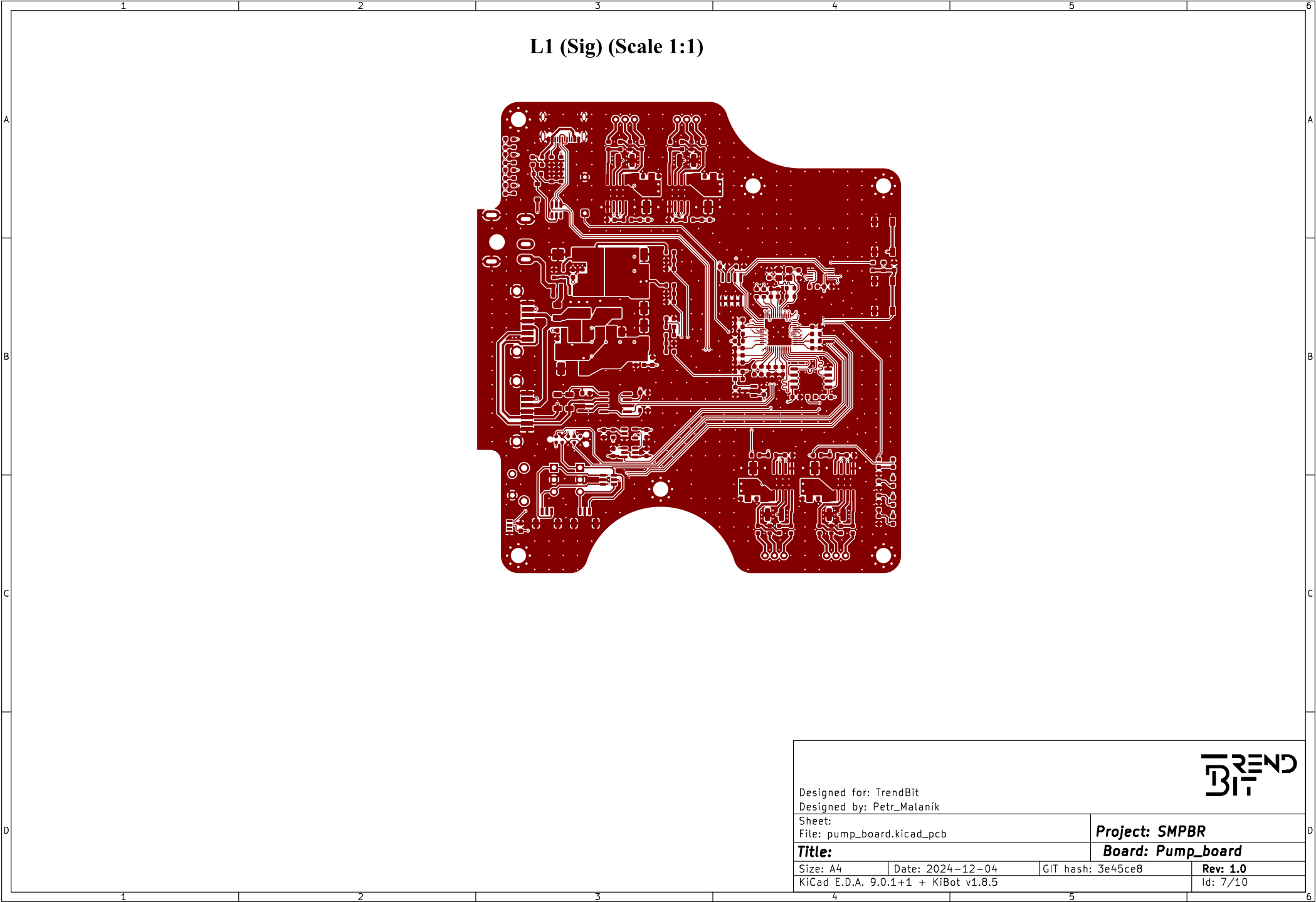
Ref.	Net	X [mm]	Y [mm]
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Designed by: Petr_Malaník

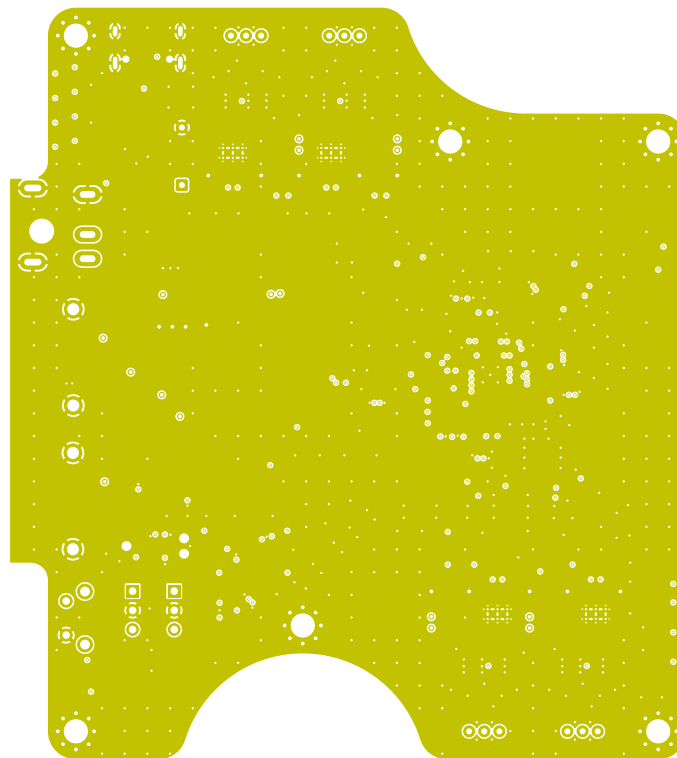


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Title:			Board: Pump_board	
Size: A4	Date: 2024-12-04	GIT hash: 3e45ce8		Rev: 1.0
KiCad E.D.A. 9.0.1+1 + KiBot v1.8.5			Id: 6/10	



				
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File: pump_board.kicad_pcb		Board: Pump_board		D
Title:				
Size: A4	Date: 2024-12-04	GIT hash: 3e45ce8	Rev: 1.0	
KiCad E.D.A. 9.0.1+1 + KiBot v1.8.5			Id: 7/10	

L2 (GND) (Scale 1:1)



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Sheet:
File: pump_board.kicad_pcb

Title:

Project: SMPBR

Board: Pump_board

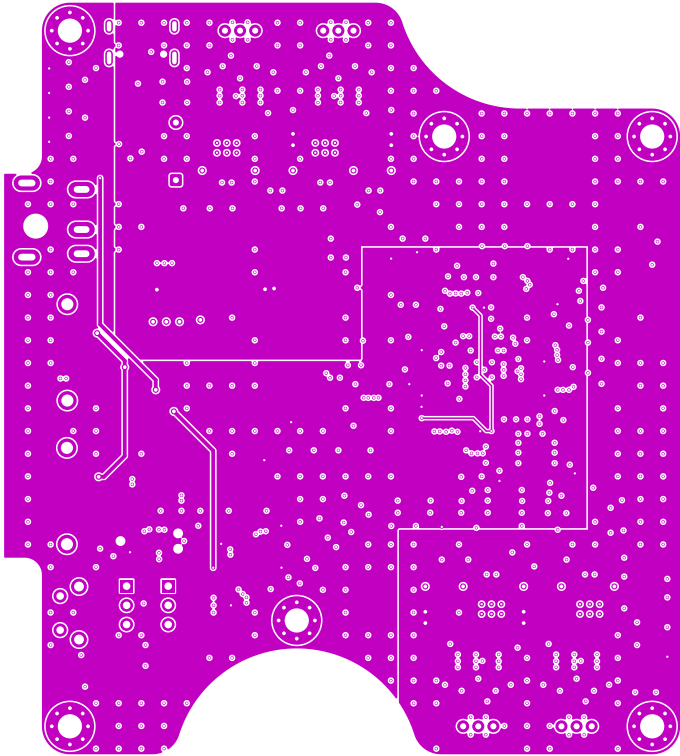
Size: A4
KiCad E.D.A. 9.0.1+1 + KiBot v1.8.5

Date: 2024-12-04
GIT hash: 3e45ce8

Rev: 1.0
Id: 8/10

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L3 (PWR) (Scale 1:1)



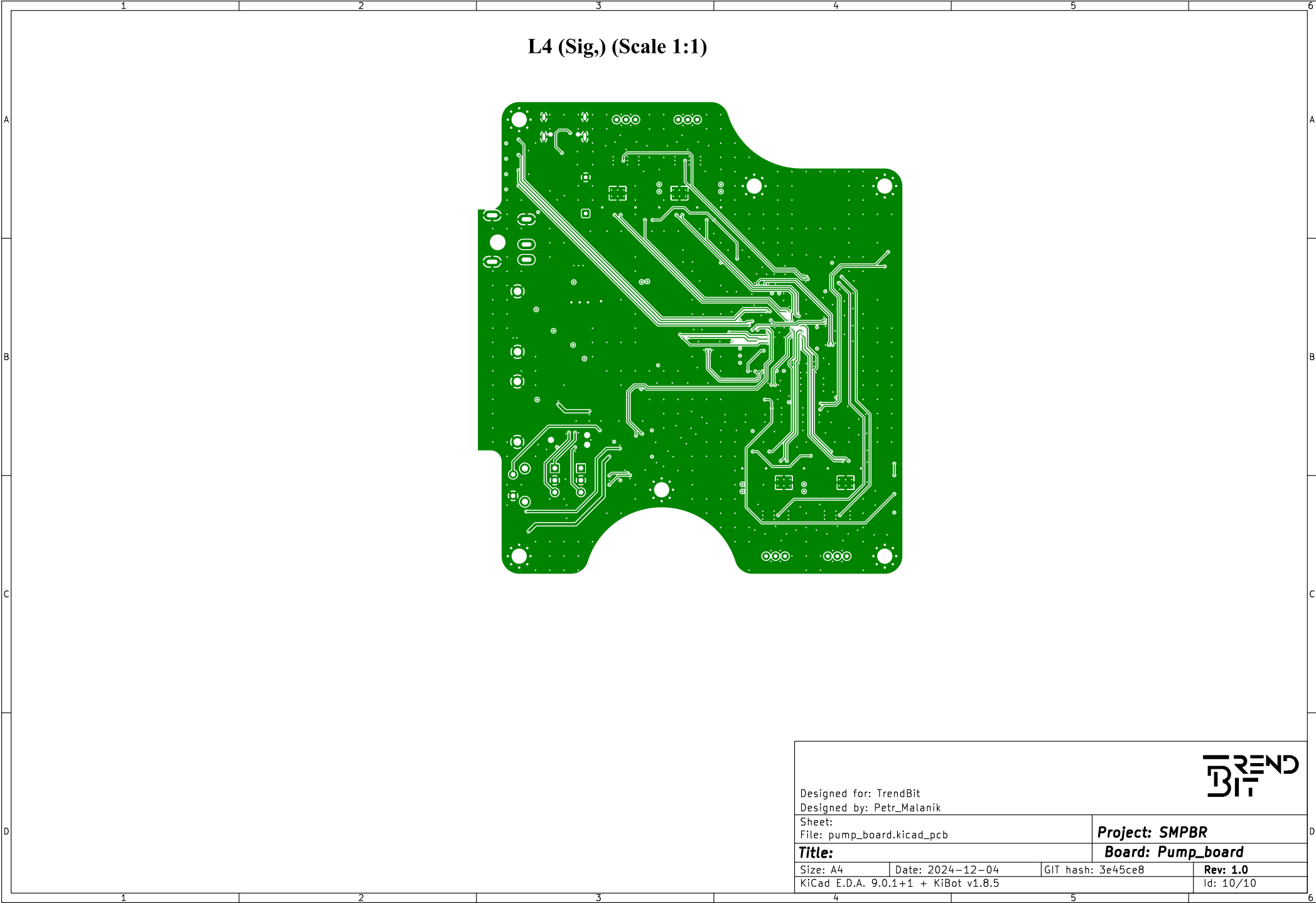
Designed for: TrendBit
Designed by: Petr_Malaník


Sheet:
File: pump_board.kicad_pcb

Project: SMPBR
Board: Pump_board

Size: A4	Date: 2024-12-04	GIT hash: 3e45ce8	Rev: 1.0
KiCad E.D.A. 9.0.1+1 + KiBot v1.8.5			Id: 9/10





Designed for: TrendBit					
Designed by: Petr_Malanik					
Sheet:			Project: SMPBR		
File: pump_board.kicad_pcb					
Title:			Board: Pump_board		
Size: A4	Date: 2024-12-04	GIT hash: 3e45ce8		Rev: 1.0	
KiCad E.D.A. 9.0.1+1 + KiBot v1.8.5				Id: 10/10	