

HorizonLink-Wings_Breakout

smd-wings

Feather wing for the ARGOS-SMD module. This breakout board can be used with a Feather board (from Adafruit) to connect the ARGOS-SMD module. It exposes the ARGOS-SMD module pins to the Feather board and includes a specific LDO to power the RF amplifier.

Table of contents

Sheet 1: Project overview (this page)

Sheet 2: SMD_Breakout

Device Sheets:

Sheet 3: TPS63901_BuckBoost_lowIq_3V3_400mA

Legend

General comment such as function title, configuration, ...

Text to be added to silkscreen.

Warning text.

Notes to generate the board layout.

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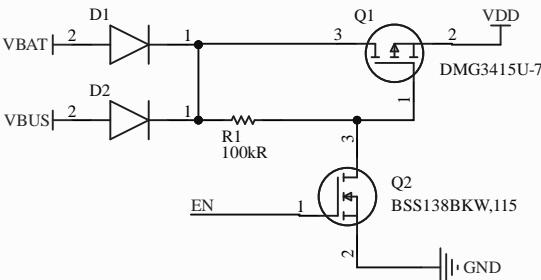
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smd-wings

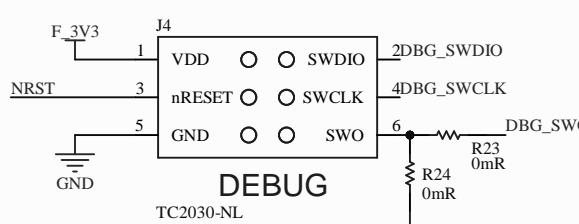


Title HorizonLink-Wings_Breakout			Arribada Initiative https://github.com/arribada contact@arribada.org arribada.org UK - Portsmouth	ARRIBADA * * * * * initiative
Size: A4	Reference: smd-wings	Revision: A	1.0	
Date: 22/11/2024	Time: 17:04:34	Sheet 1	of 3	
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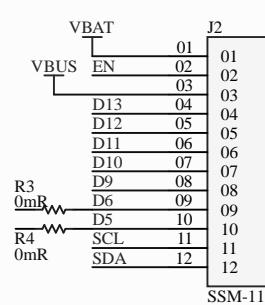
Manage power from Feather



Debug probe connector

DEBUG
TC2030-NL

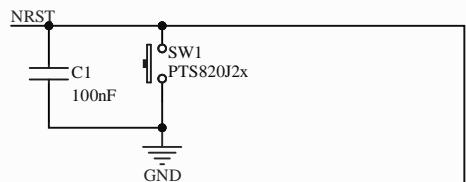
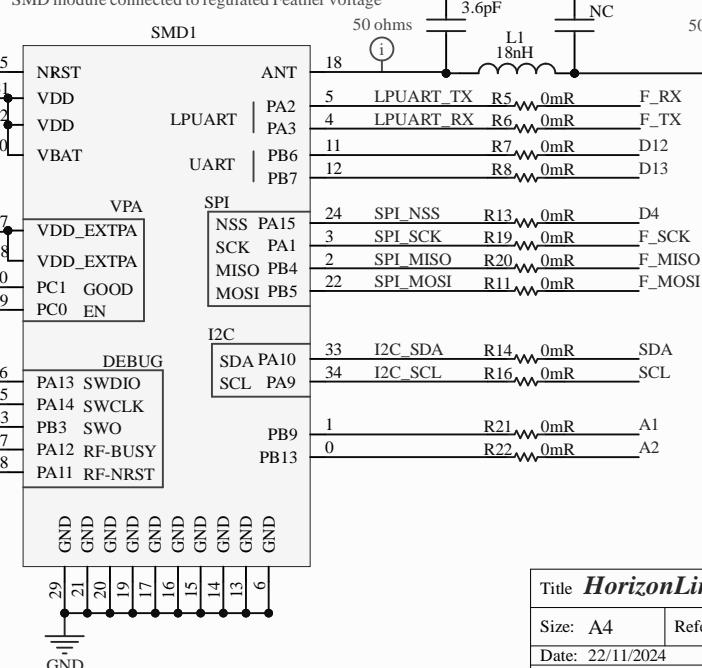
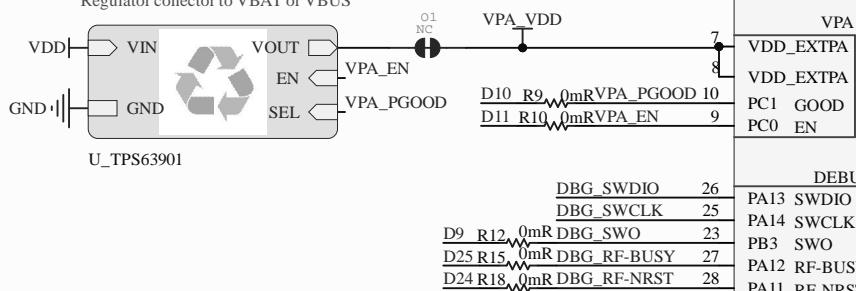
Main feather connector



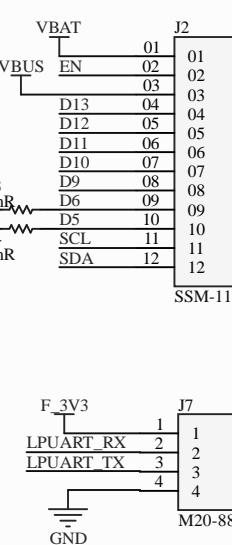
SSM-112-F-SV-P-TR

RESET

Pull up 100K already existing on SMD module

Argos SMD module
SMD module connected to regulated Feather voltagePower for GR5504 power amplifier
Regulator connector to VBAT or VBUS

Main feather connector



M20-8890445R

J5: $\text{VPA_VDD} \rightarrow 4$
 $\text{VPA_PGOOD} \rightarrow 3$
 $\text{VPA_EN} \rightarrow 2$
 $\text{GND} \rightarrow 1$

M20-8890445R

J6: $\text{SCL} \rightarrow 4$
 $\text{SDA} \rightarrow 3$
 $\text{F}_3\text{V}_3 \rightarrow 2$
 $\text{GND} \rightarrow 1$

PRT-14417

MP1
 $\text{GND} \rightarrow \text{MP1}$ Title **HorizonLink-Wings_Breakout**

Size: A4 | Reference: smd-wings | Revision: A 1.0

Date: 22/11/2024 | Time: 17:04:34 | Sheet 2 of 3

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Arribada Initiative
<https://github.com/arribada>
contact@arribada.org
arribada.org
UK - Portsmouth**ARRIBADA**

A

A

B

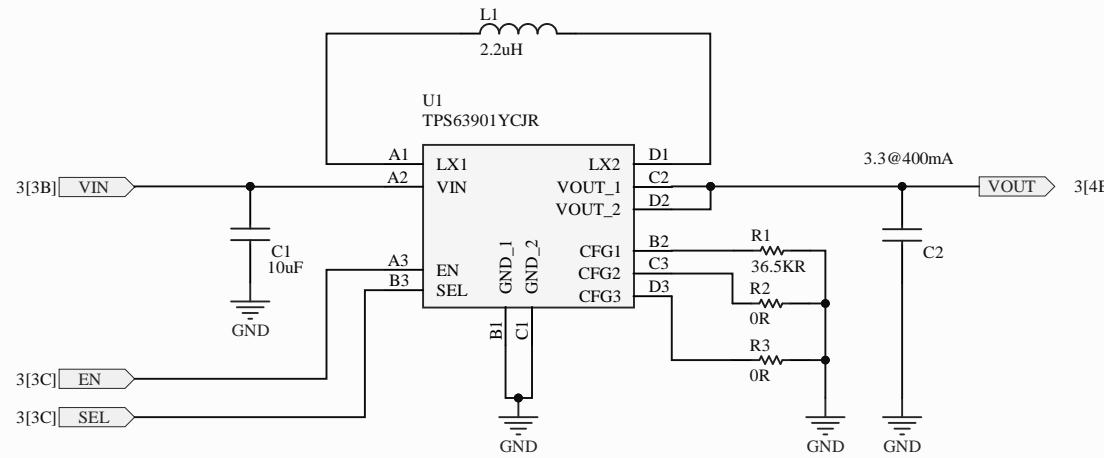
B

C

C

D

D



3[4C], 3[4D], 6[1B] || GND

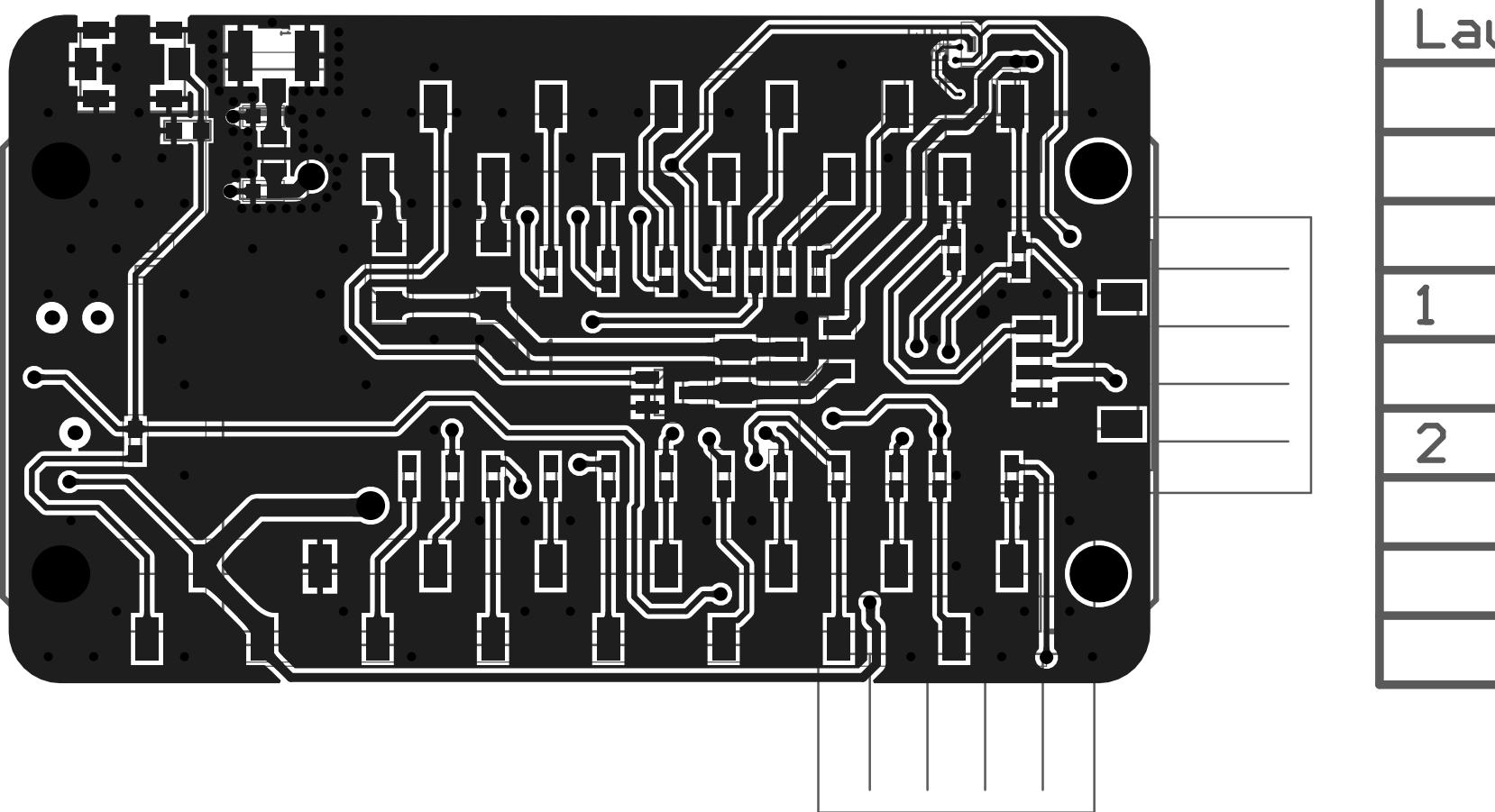
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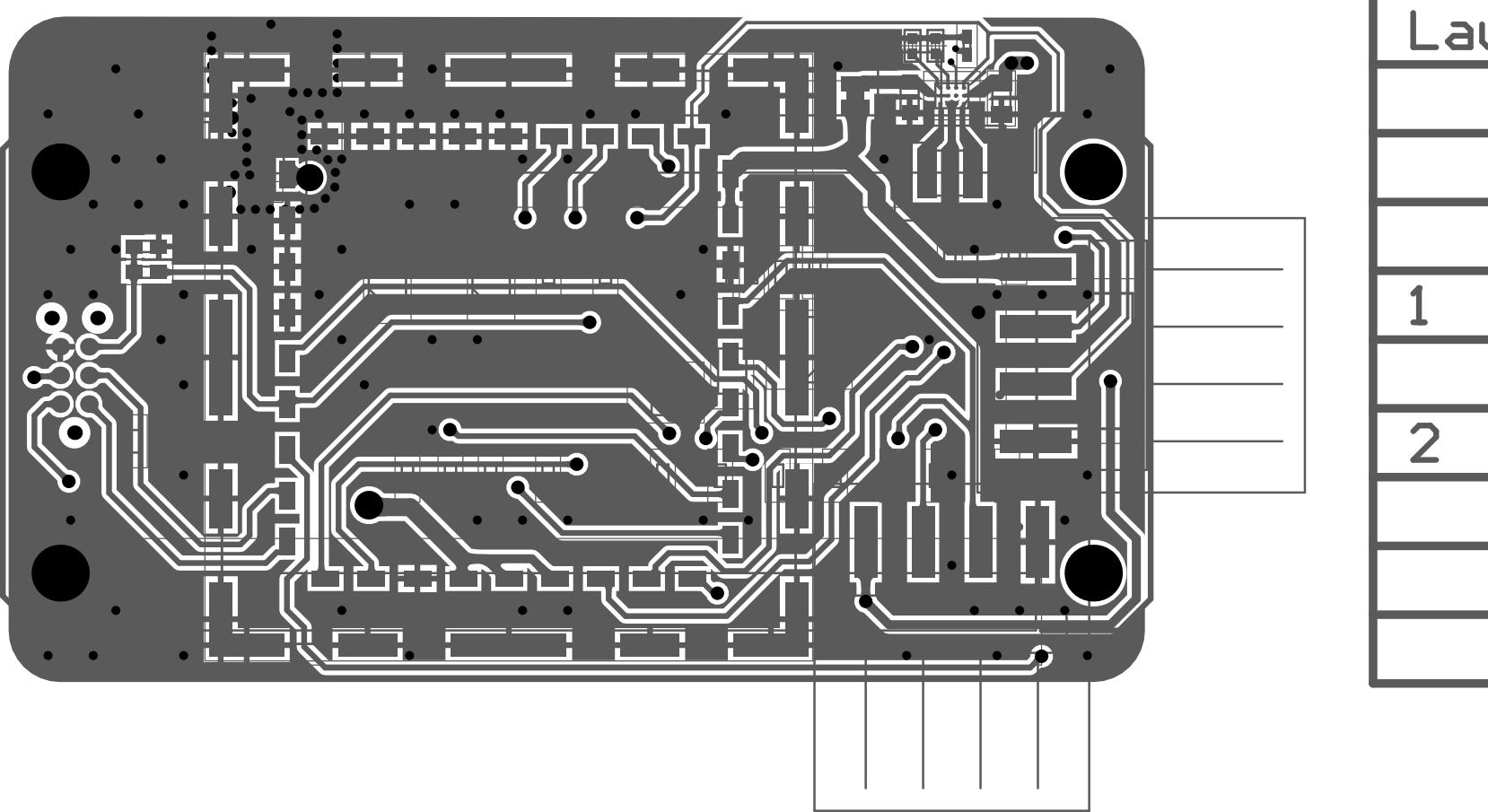
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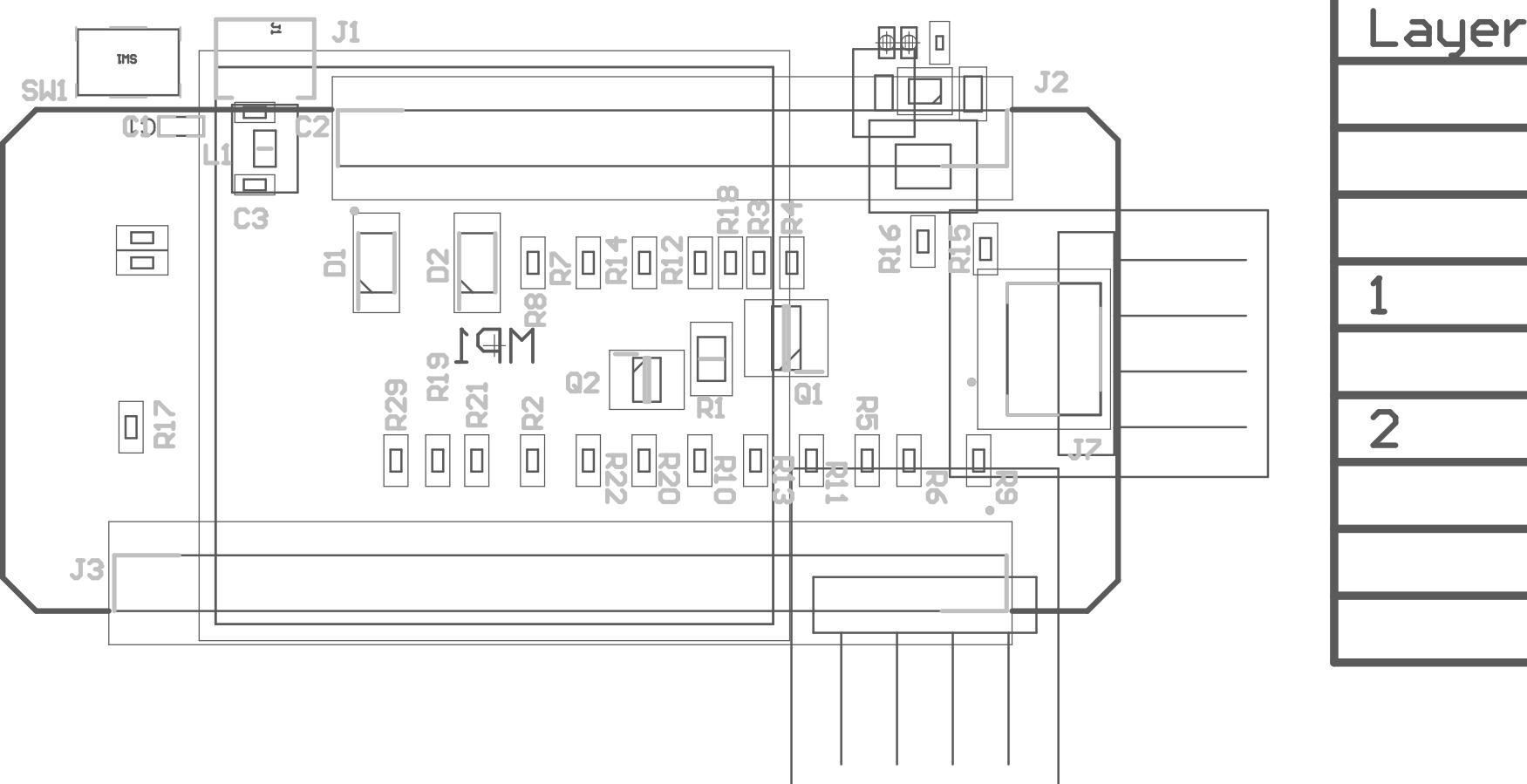
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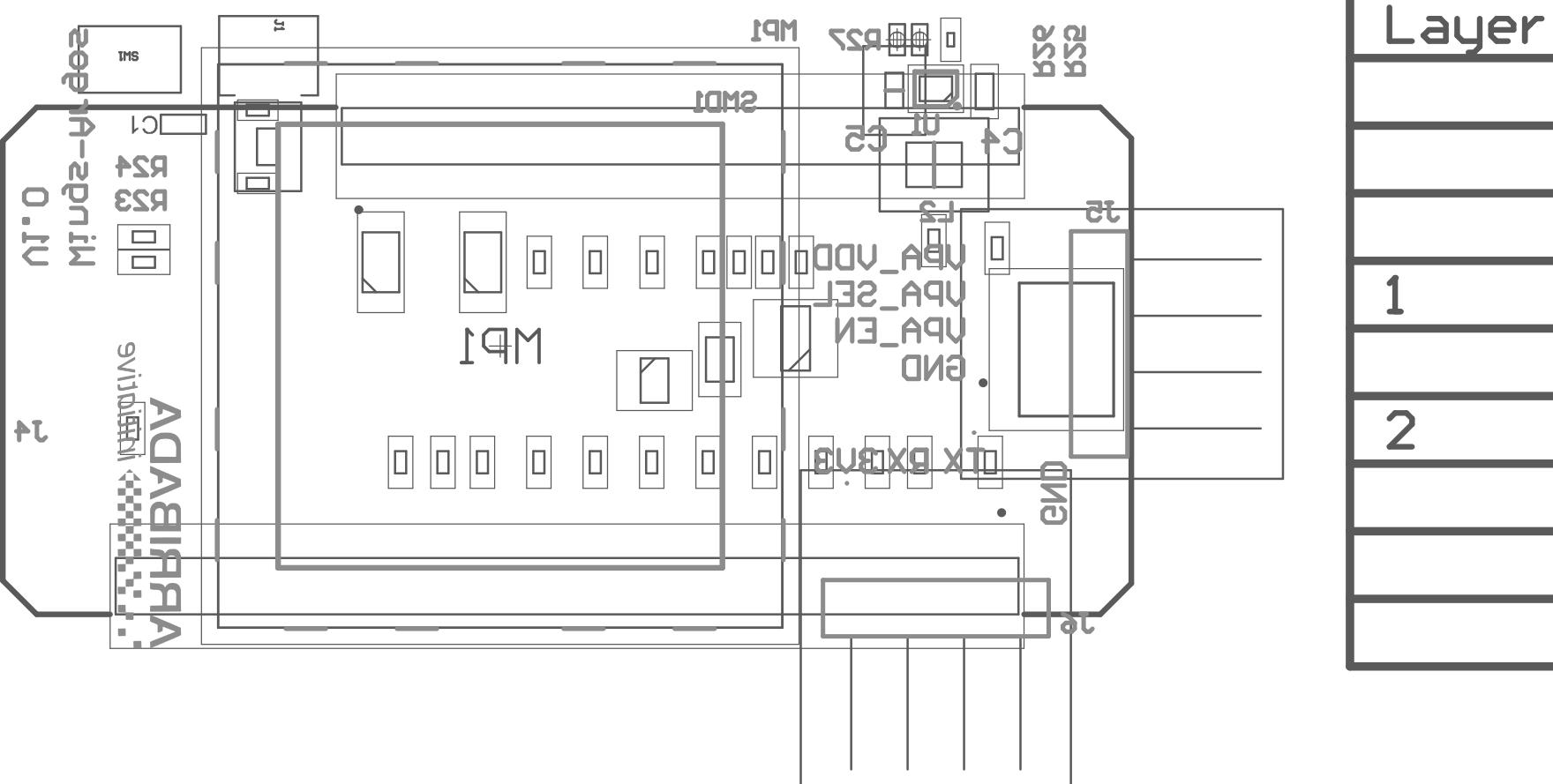
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	Top Overlay				
	Top Solder	SM-001	1,00mil	4	
	Top Surface Finish	PbSn	0,79mil		
1	Top Layer	CF-004	1,38mil		
	Dielectric 1	Core-043	59,00mil	4.3	
2	Bottom Layer	CF-004	1,38mil		
	Bottom Surface Finish	PbSn	0,79mil		
	Bottom Solder	SM-001	1,00mil	4	
	Bottom Overlay				



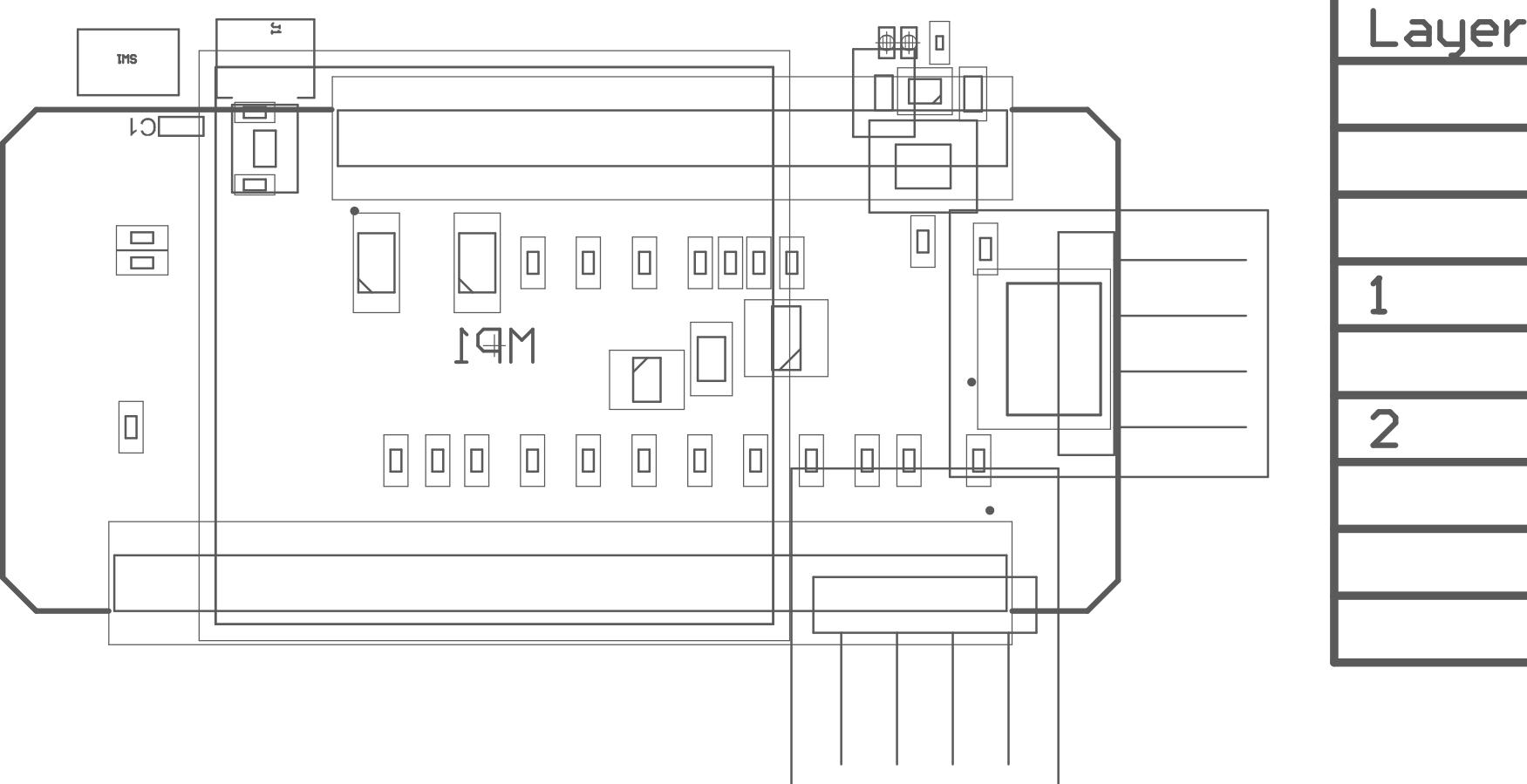
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	Bottom Overlay				



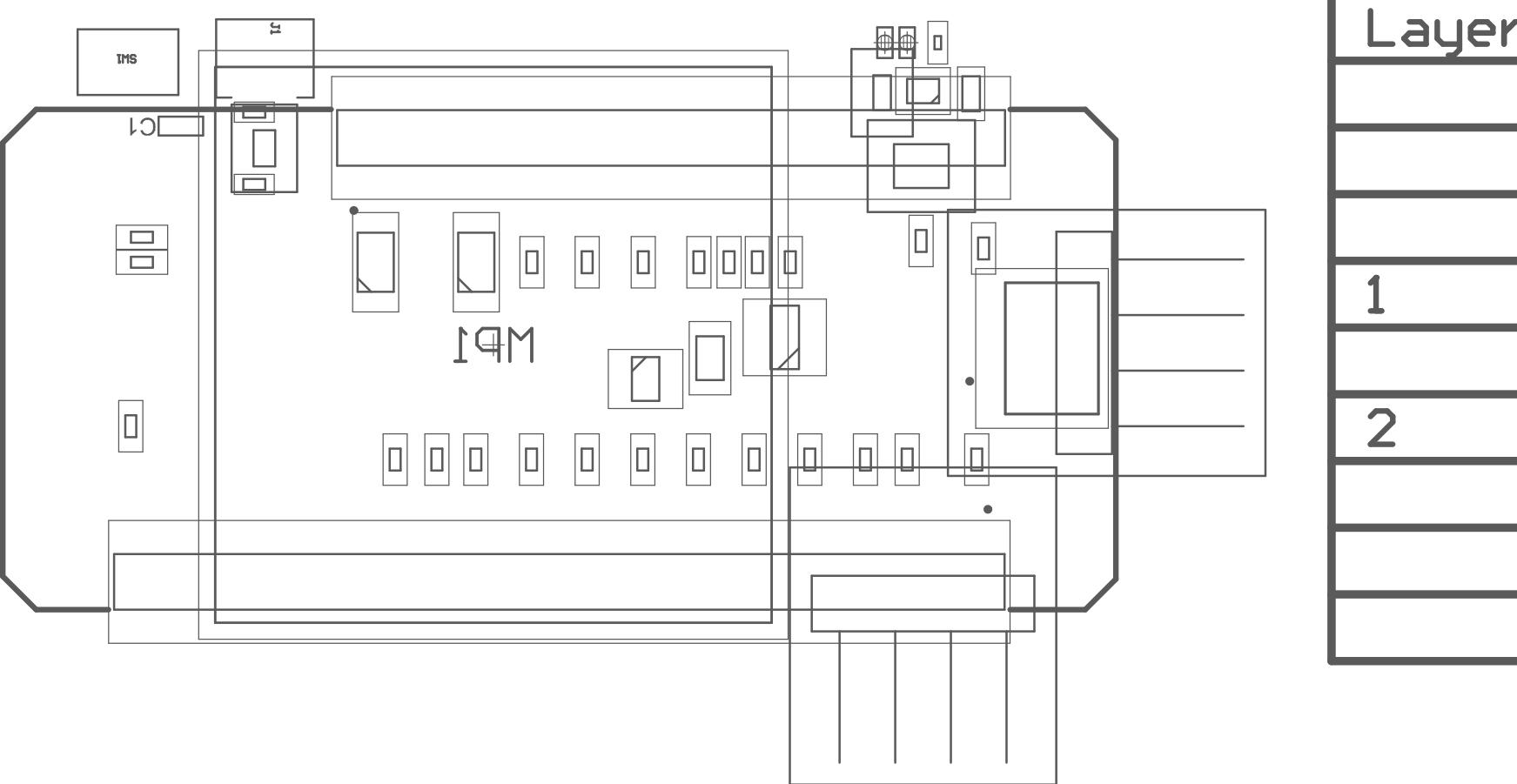
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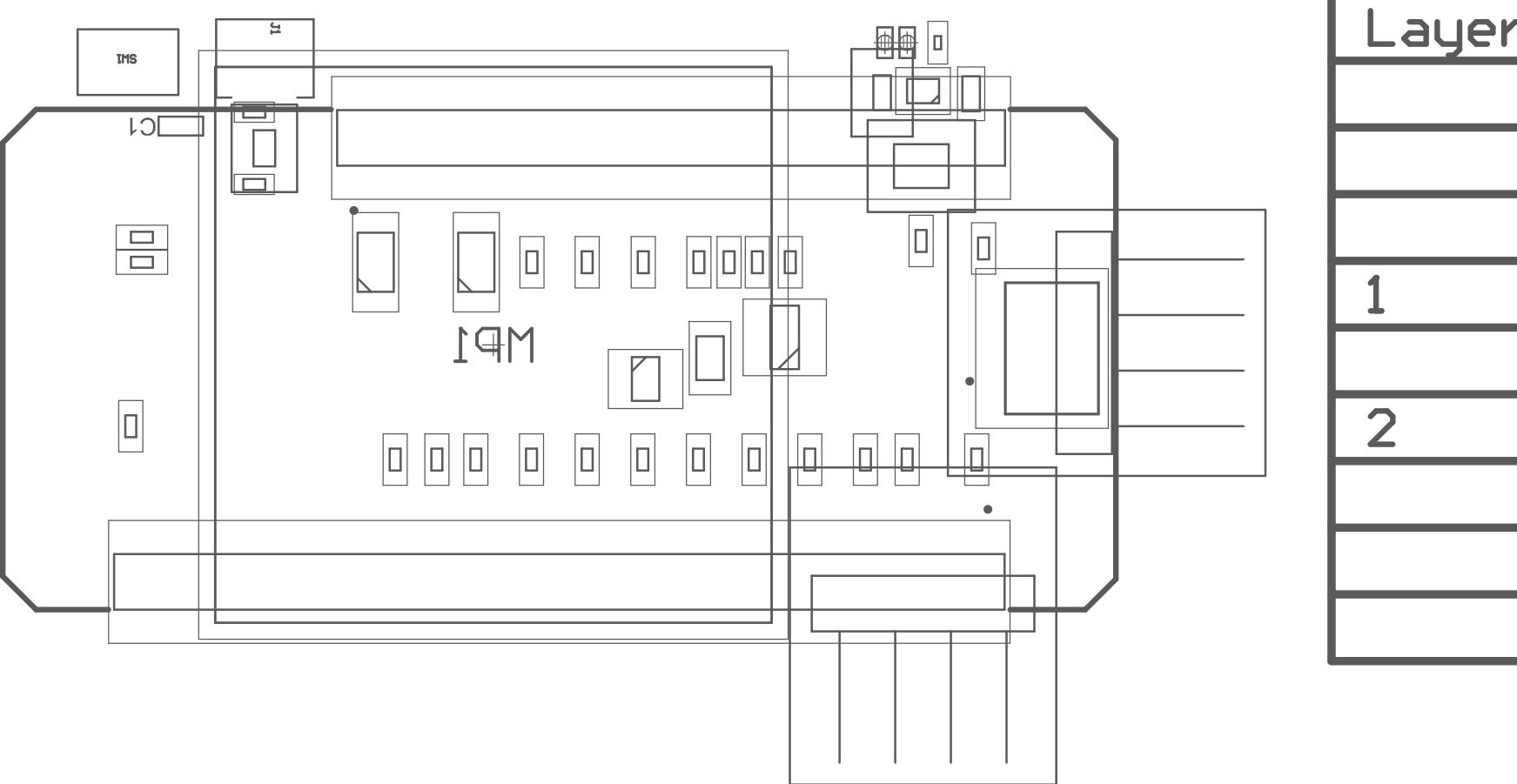
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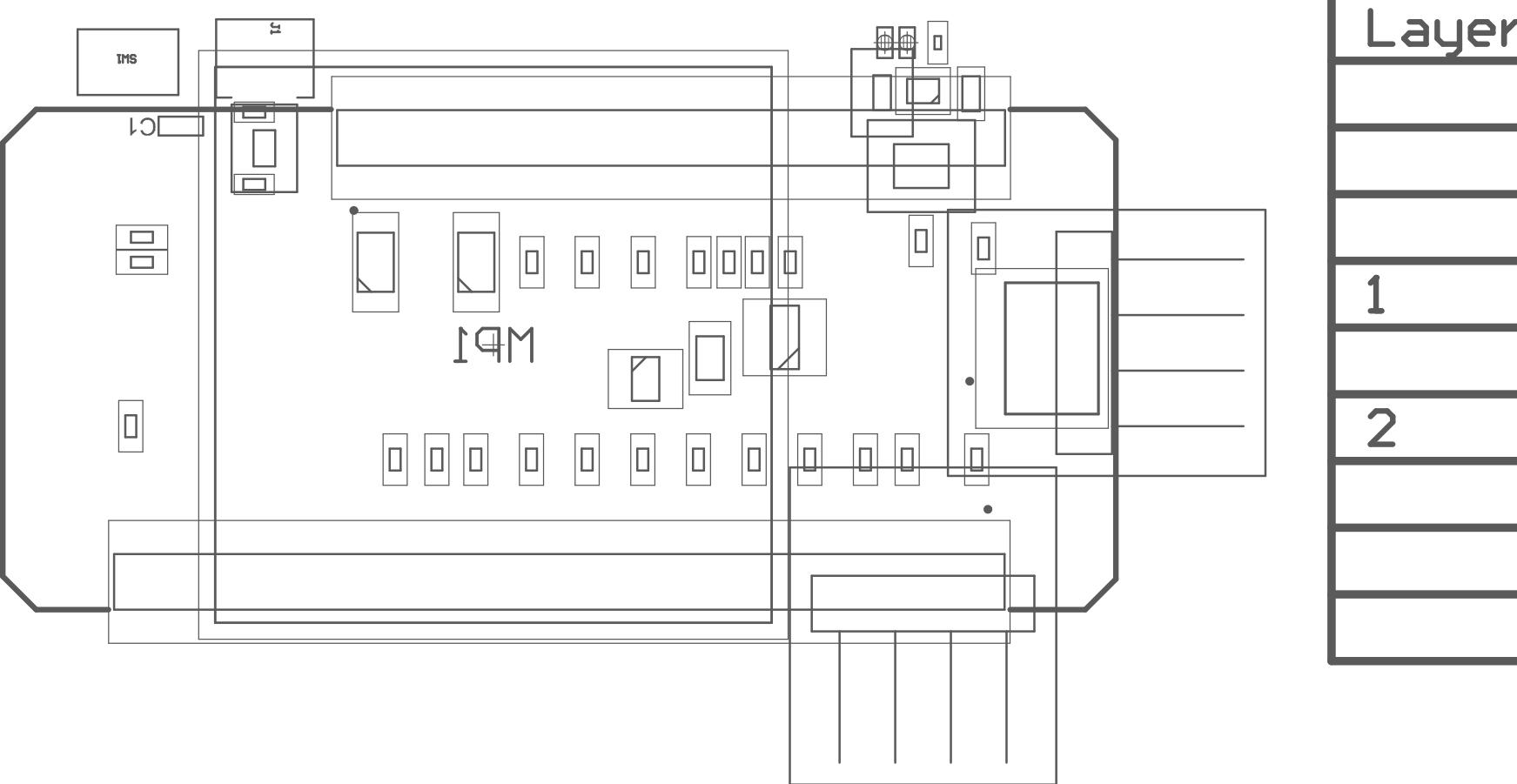
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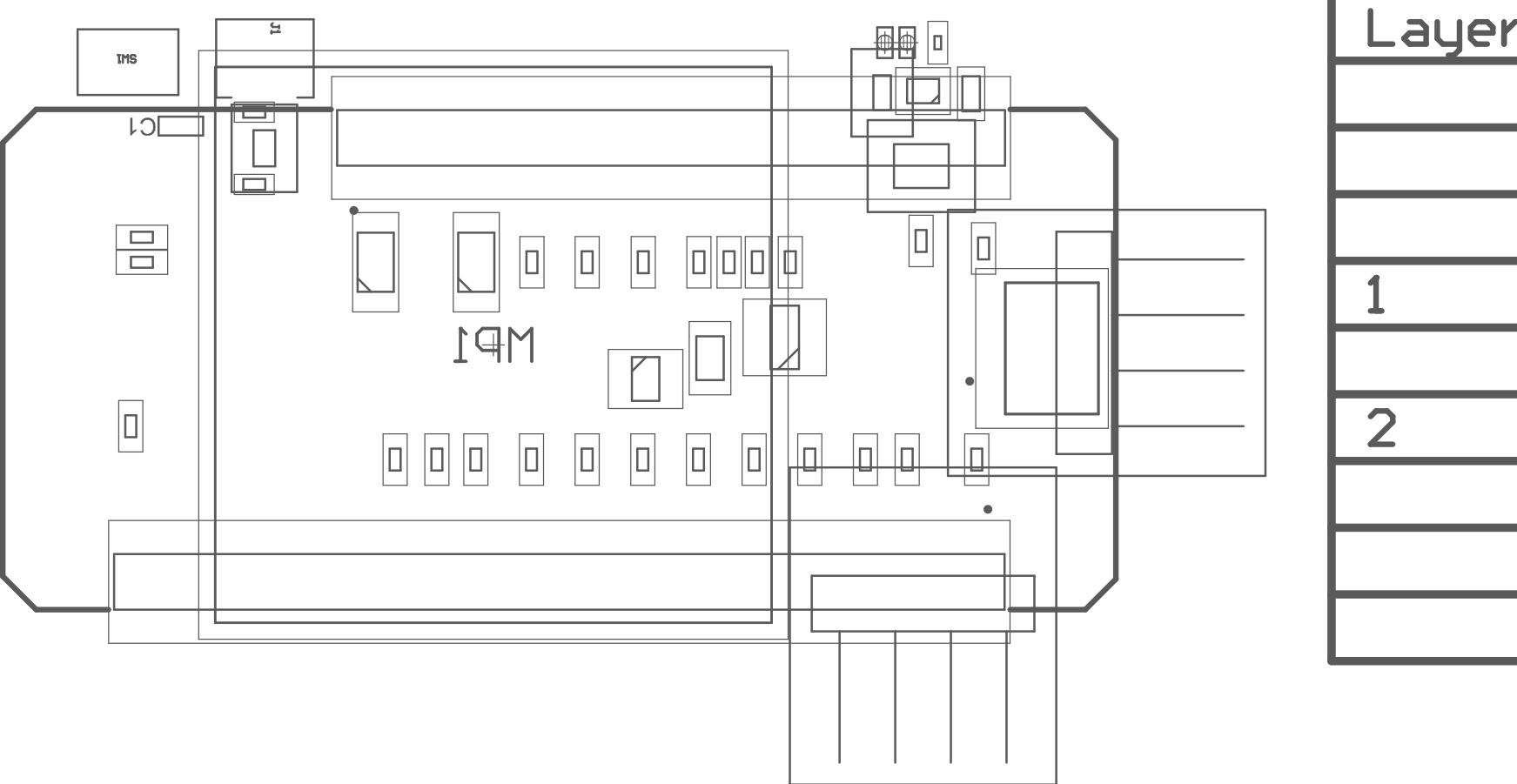
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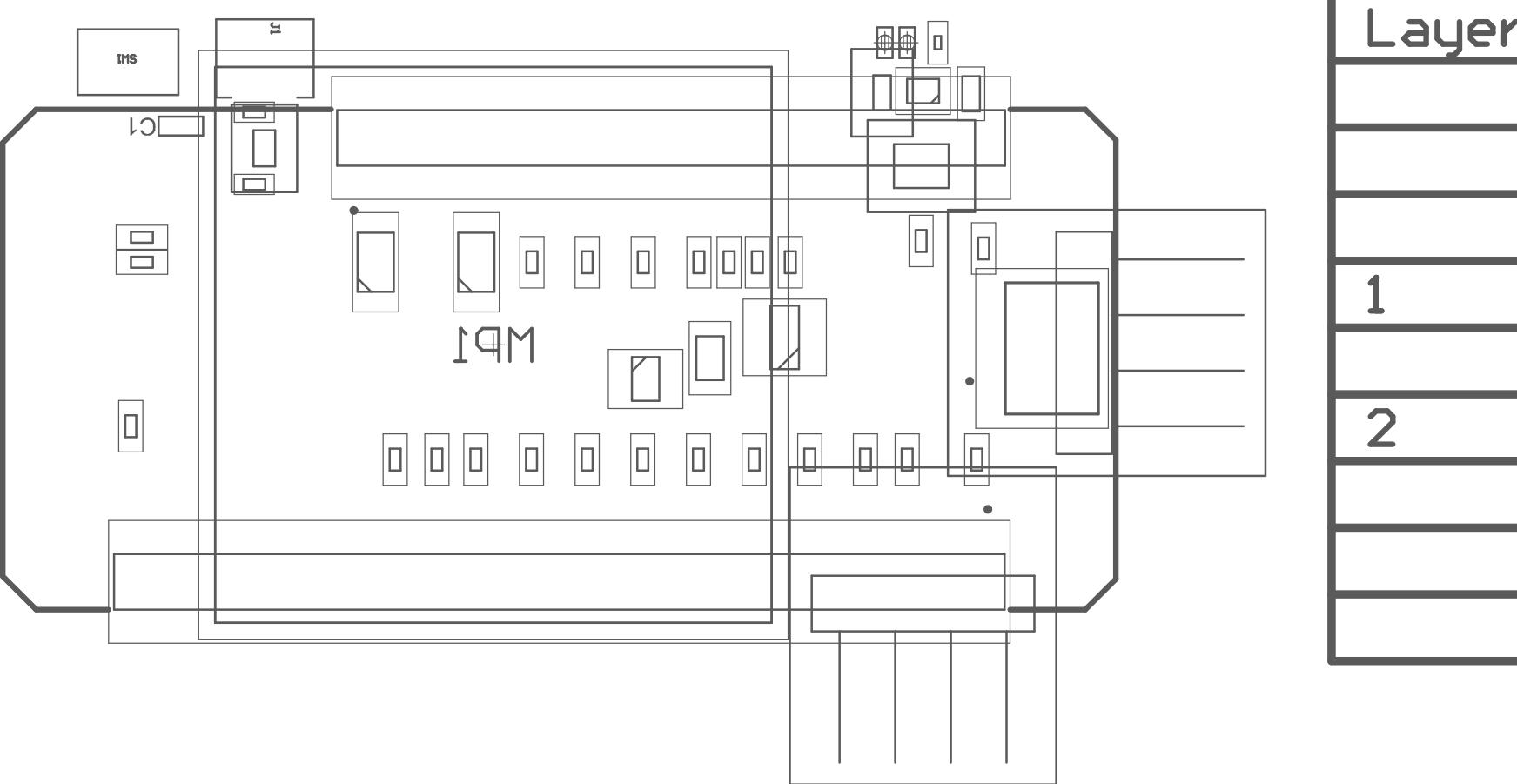
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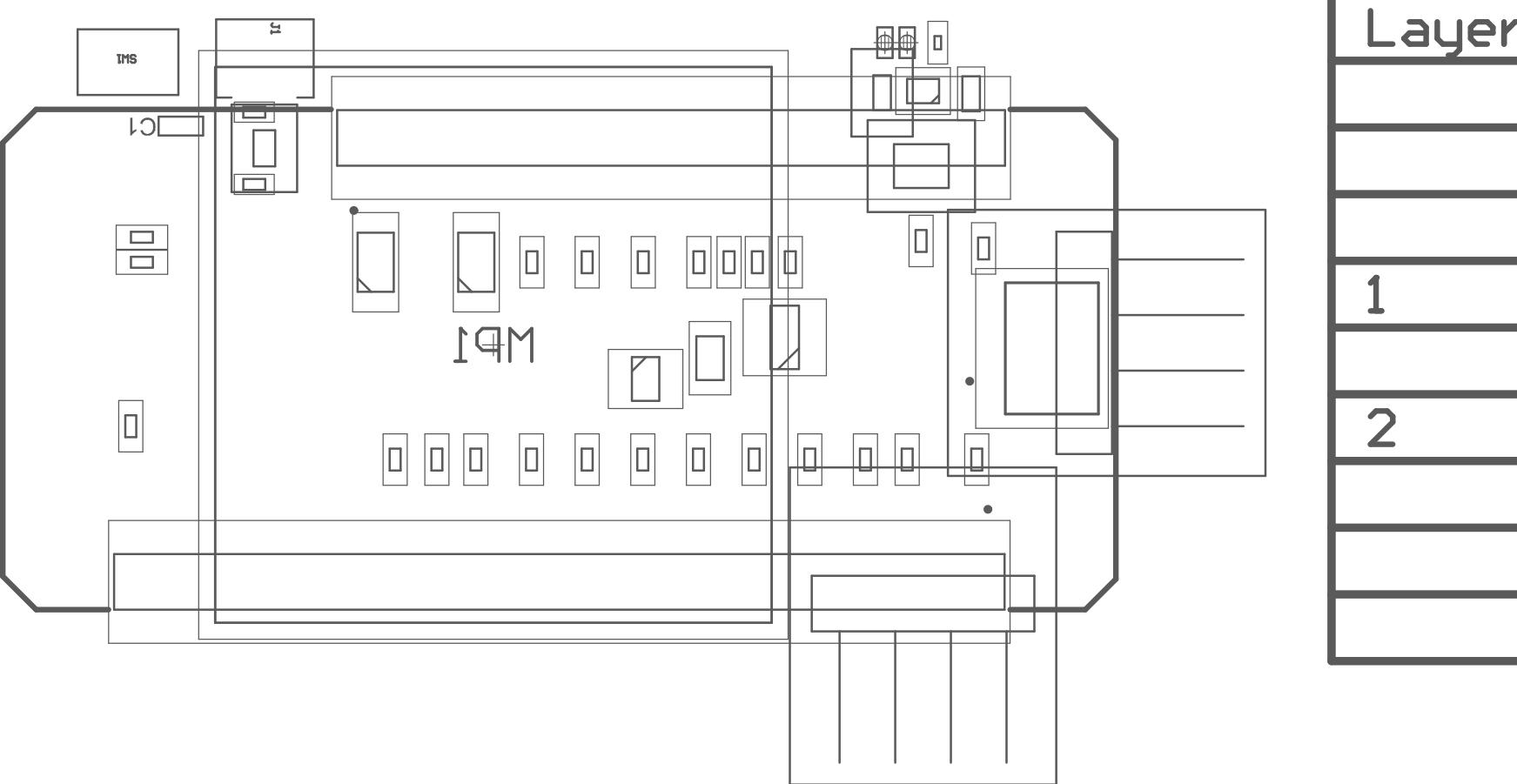
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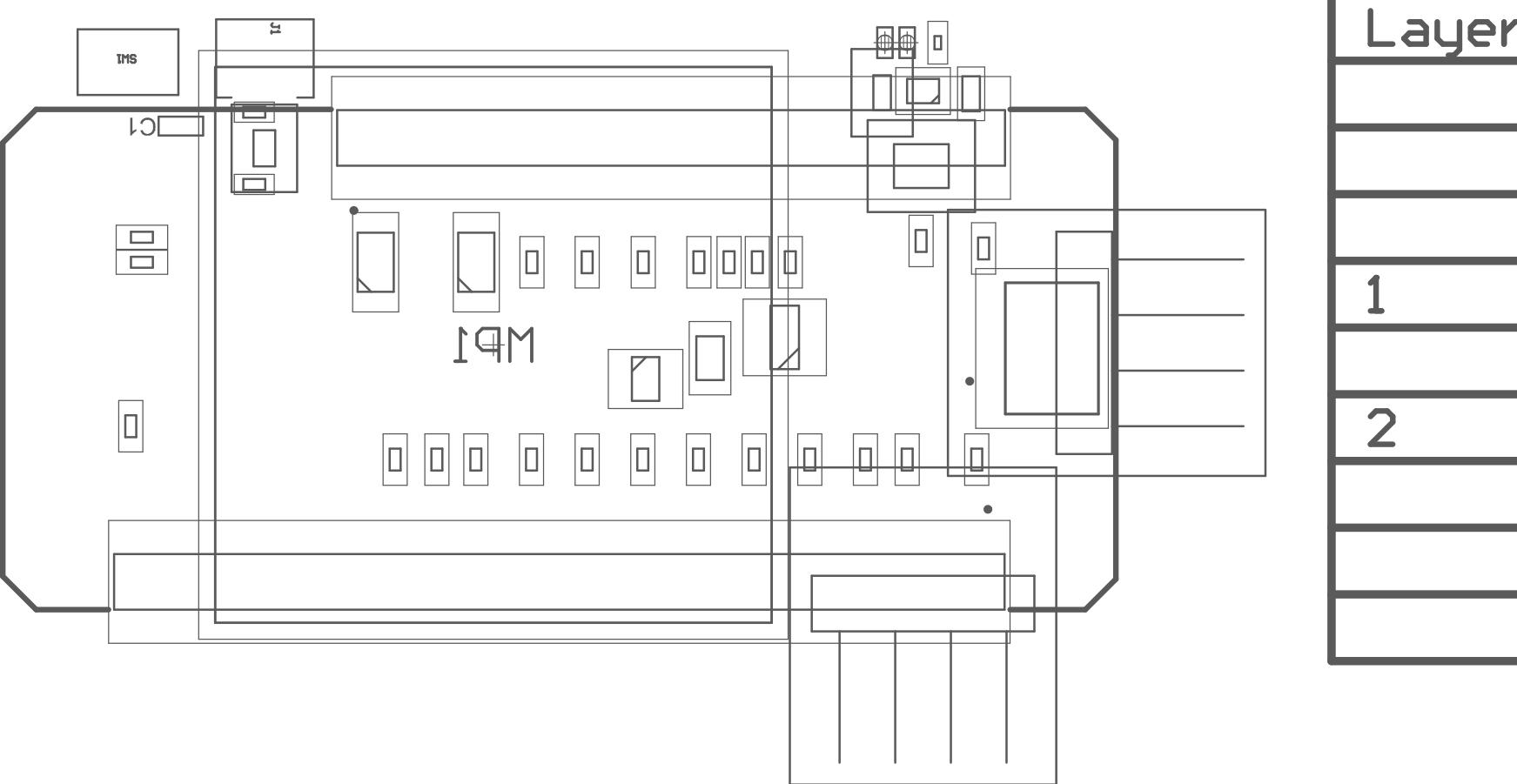
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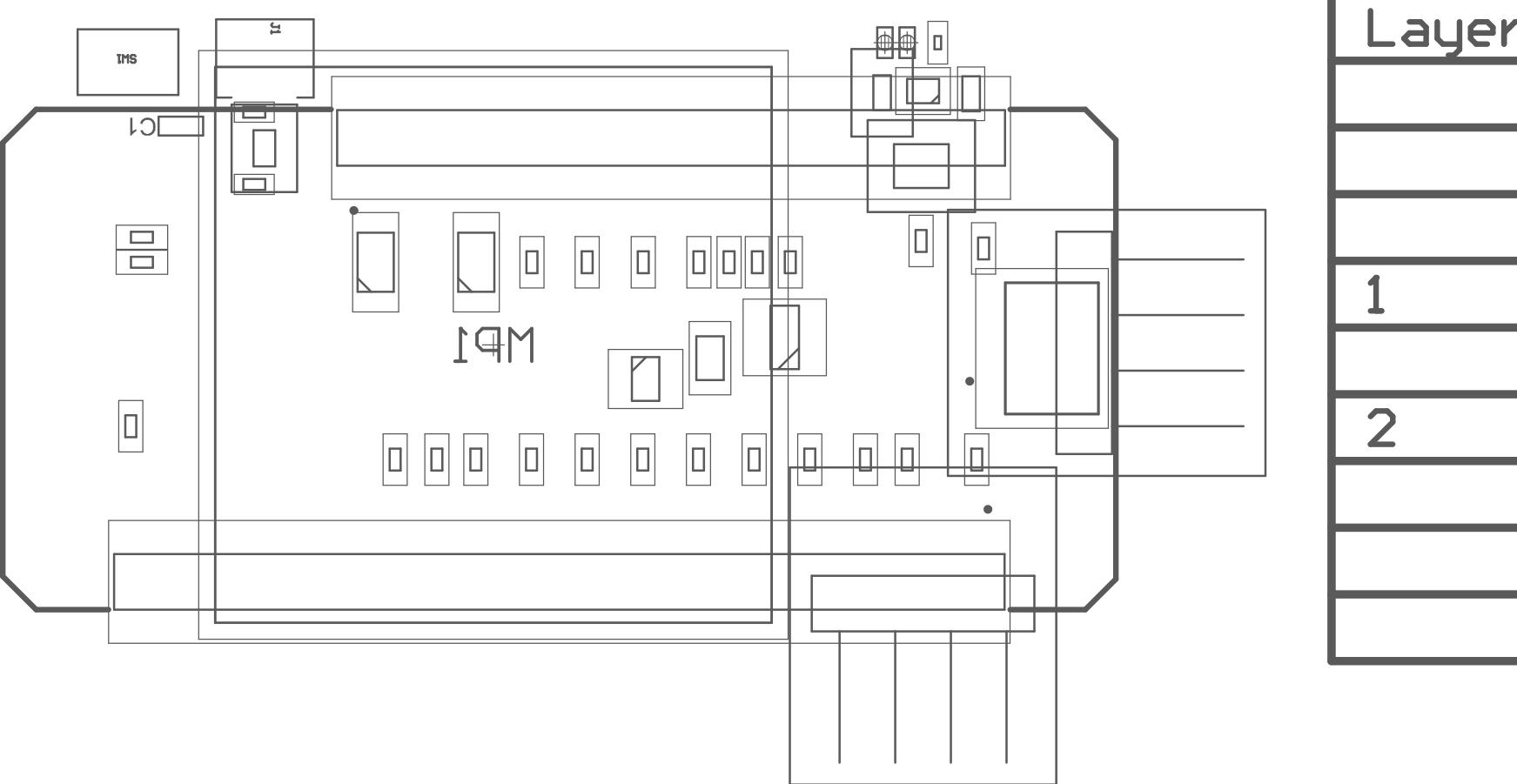
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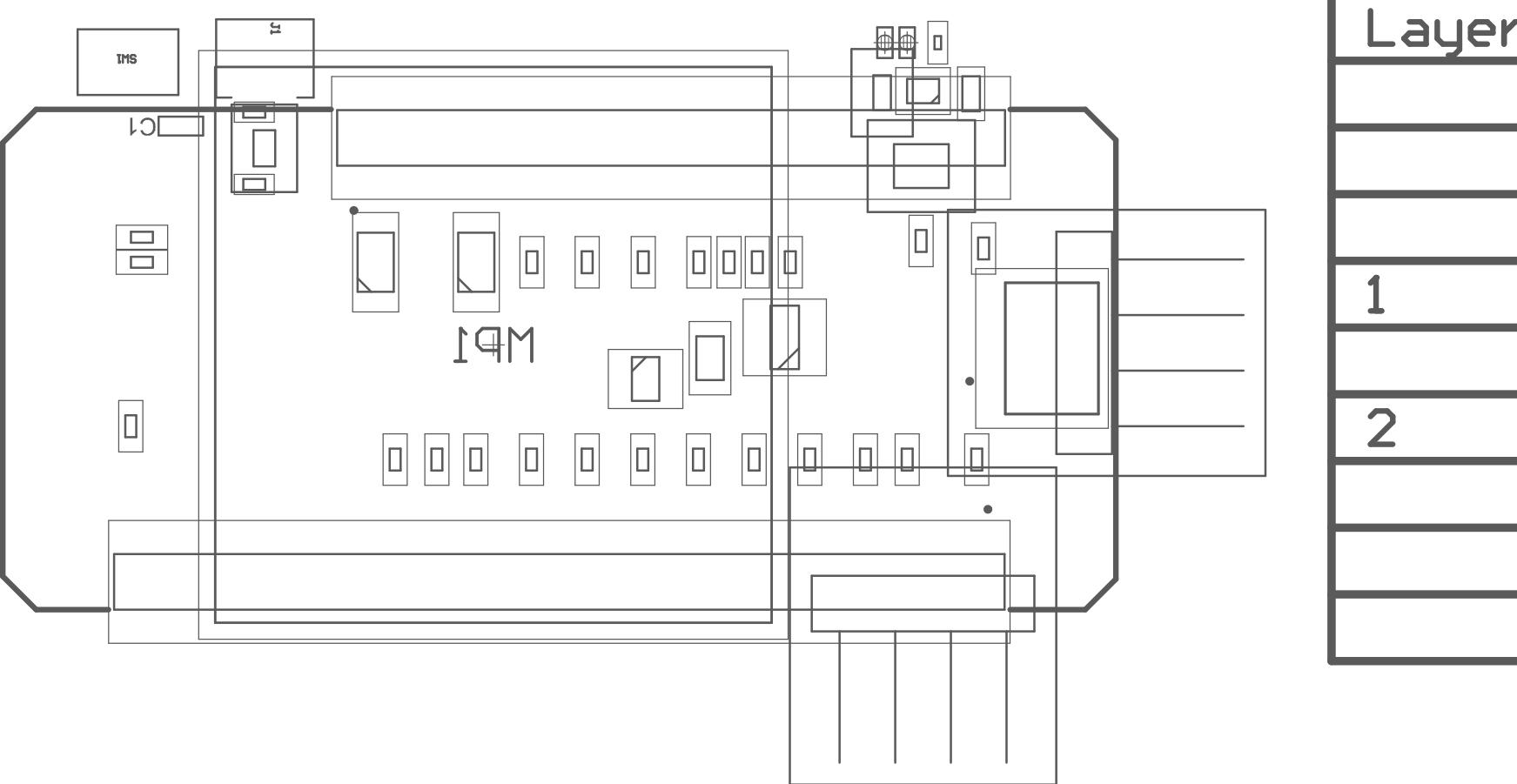
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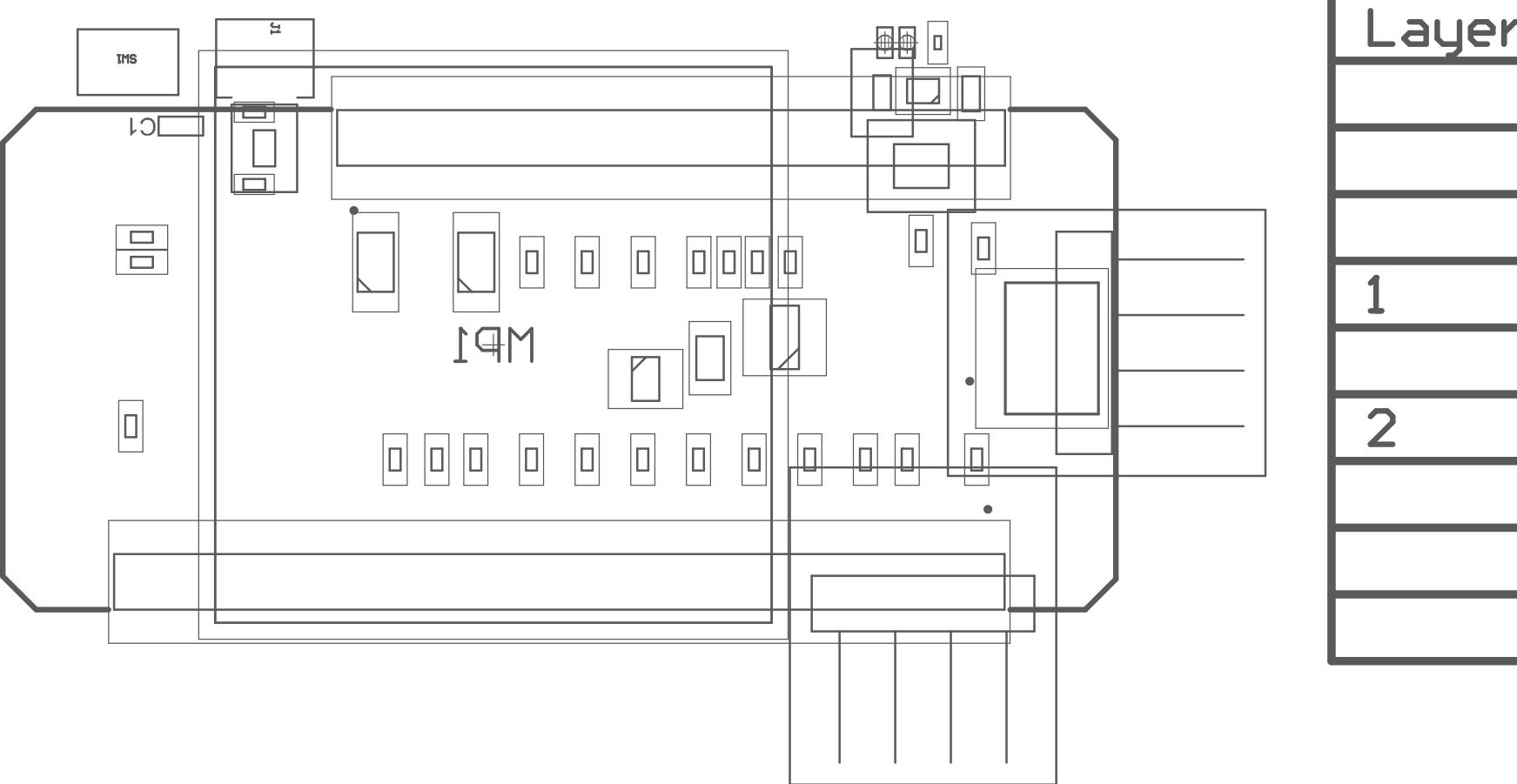
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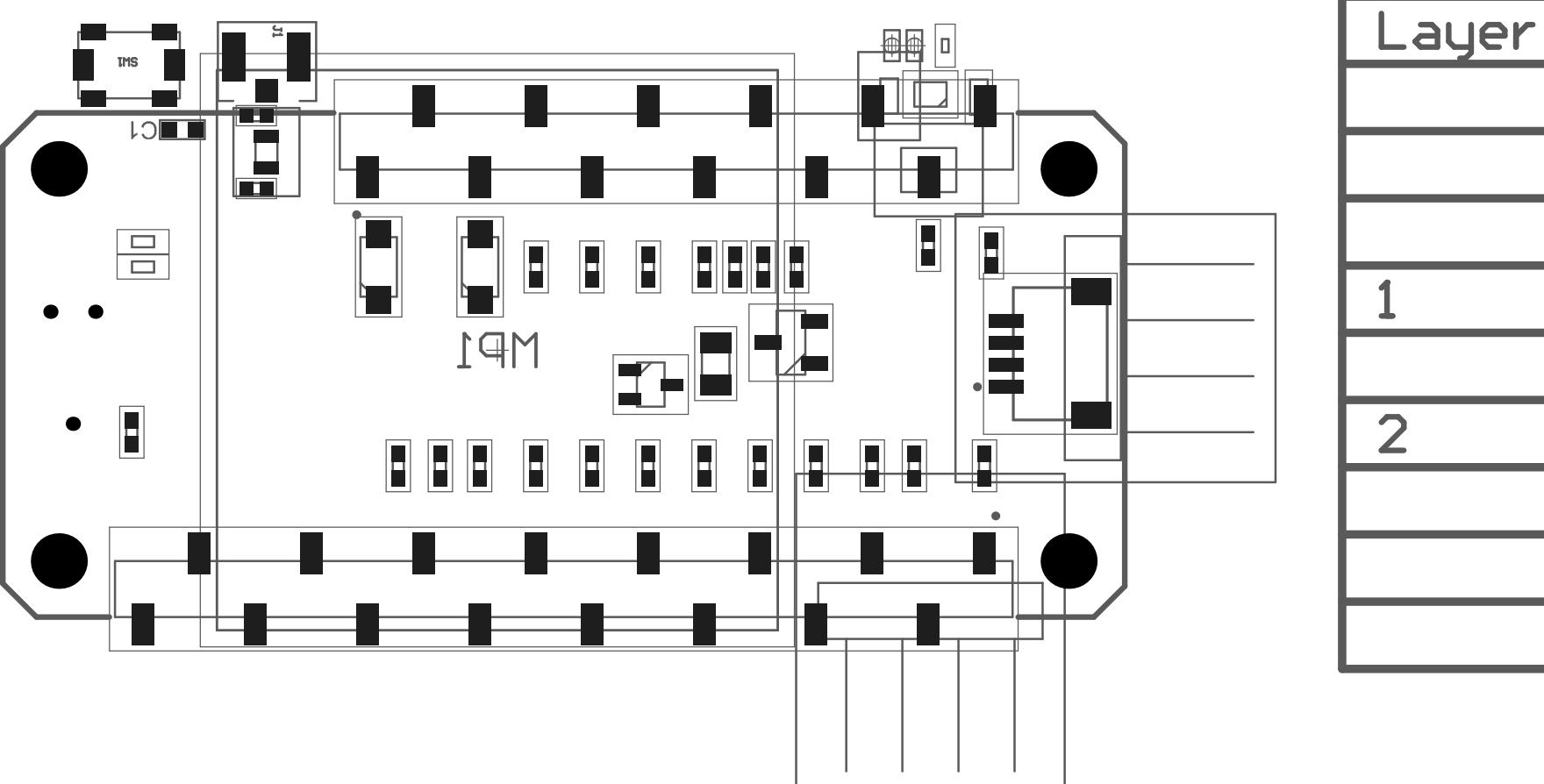
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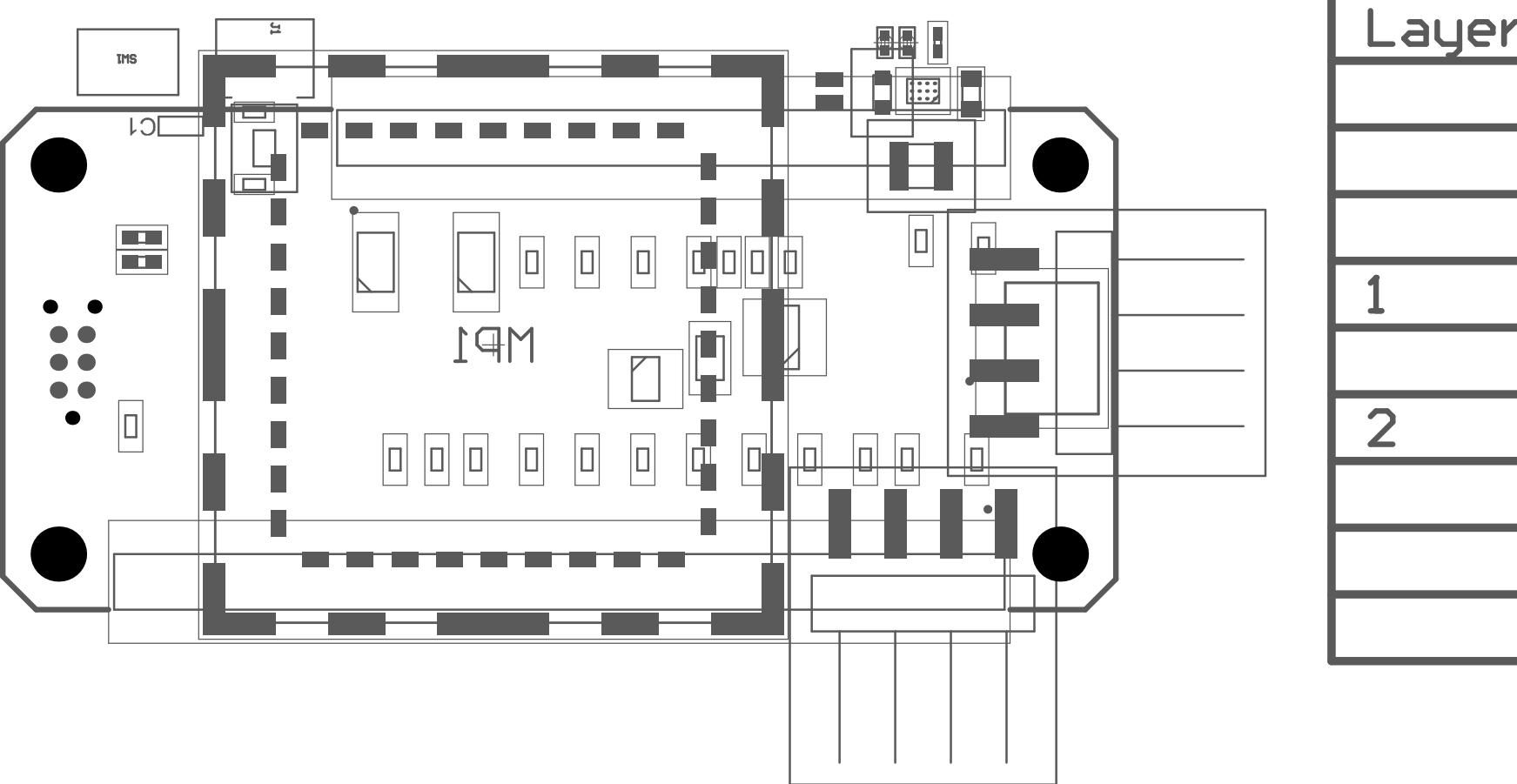
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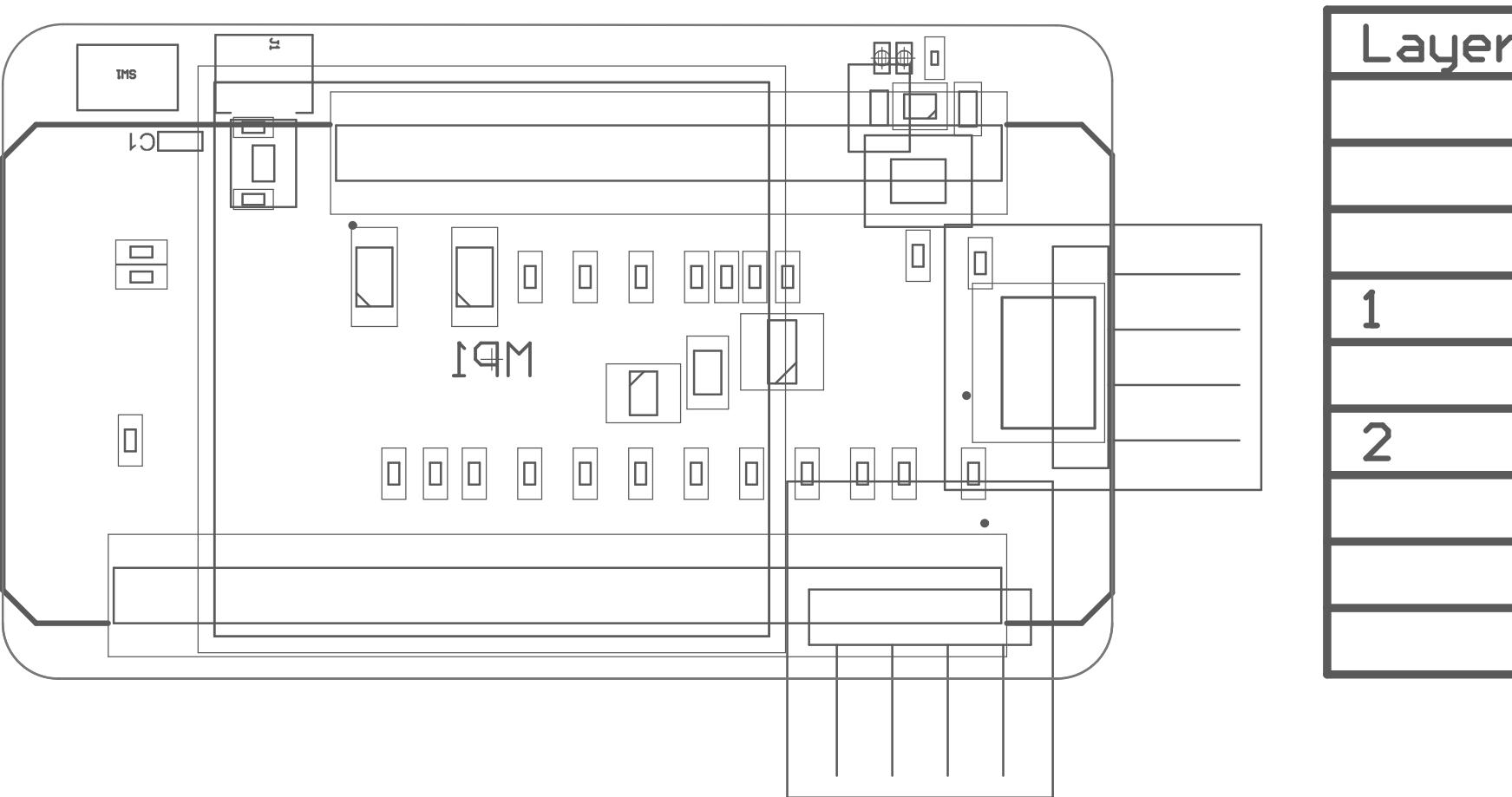
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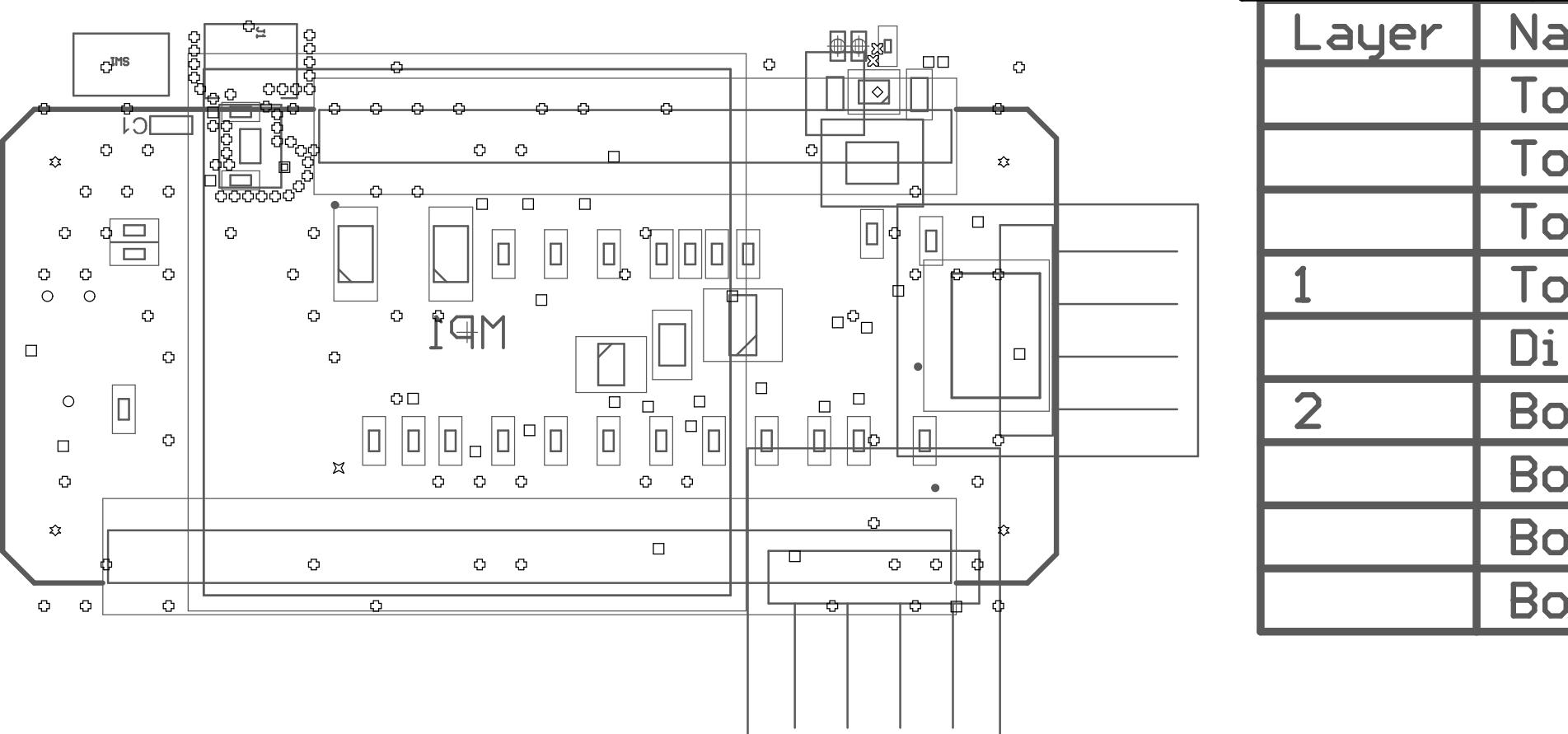


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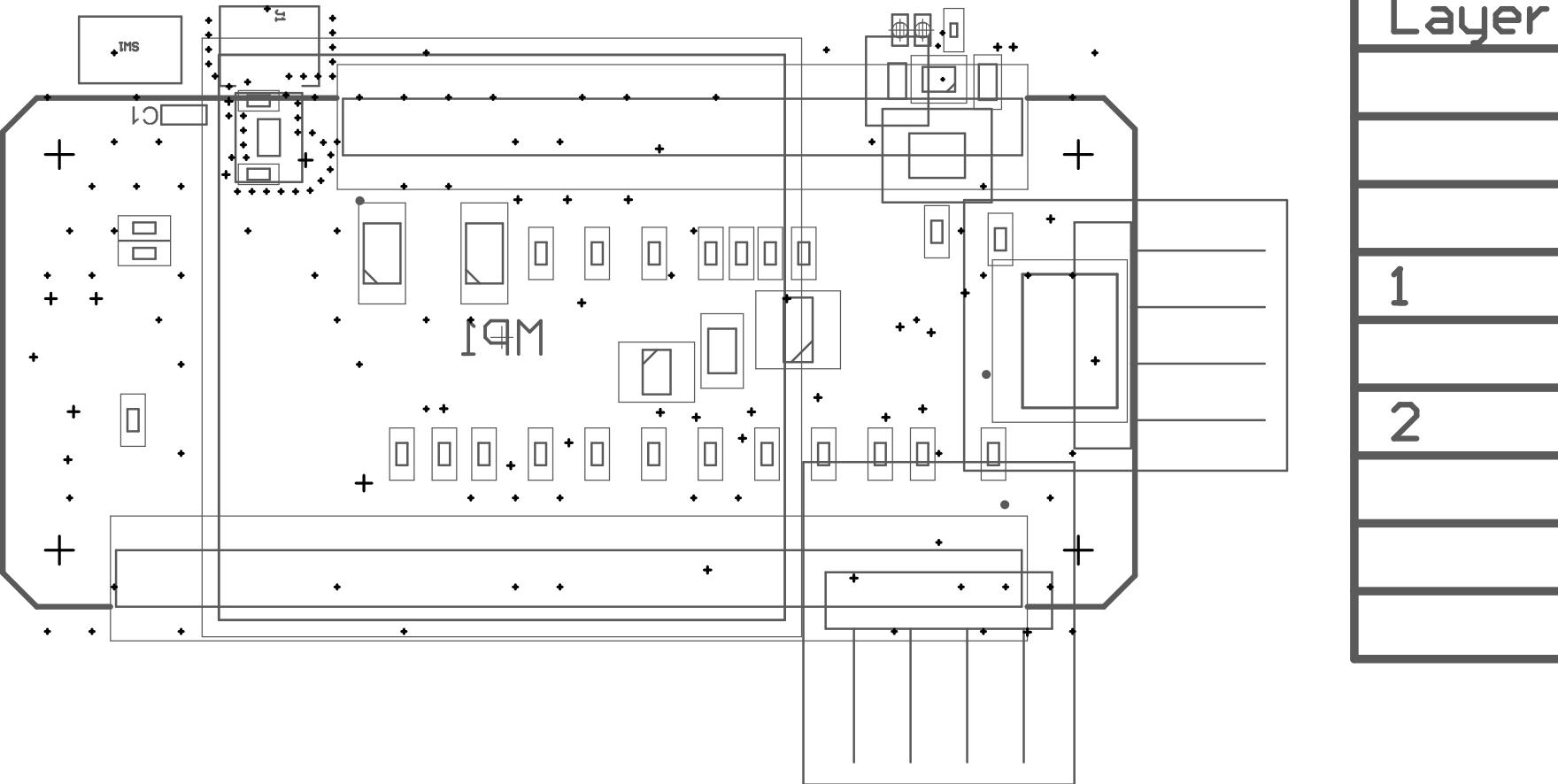


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	Bottom Overlay				

Symbol	Count	Hole Size	Plated	Hole Type	Drill Layer Pair	Via/Pad	Pad Shape	Template	Description	Hole Tolerance (+)	Hole Tolerance (-)
◊	1	0,100mm (3,94mil)	PTH	Round	Top Layer - Bottom Layer	Via	Rounded	v17h10			
□	1	0,600mm (23,62mil)	PTH	Round	Top Layer - Bottom Layer	Via	Rounded	v120h60m140mx0			
☒	1	0,711mm (27,99mil)	PTH	Round	Top Layer - Bottom Layer	Via	Rounded	v127h71m147mx0			
☒	2	0,150mm (5,91mil)	PTH	Round	Top Layer - Bottom Layer	Via	Rounded	v30h15			
○	3	0,991mm (39,02mil)	NPTH	Round	Top Layer - Bottom Layer	Pad	Rounded	c65hn99			
✿	4	2,540mm (100,00mil)	NPTH	Round	Top Layer - Bottom Layer	Pad	Rounded	c254hn254			
□	30	0,300mm (11,81mil)	PTH	Round	Top Layer - Bottom Layer	Via	Rounded	(Mixed)			
✚	111	0,200mm (7,87mil)	PTH	Round	Top Layer - Bottom Layer	Via	Rounded	(Mixed)			
153 Total											



Layer	Name	Material	Thickness	Constant	Board Layer Stack
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Comment	Description	Designator	Footprint	LibRef	Quantity
GRM155R71C104KA88-D	Multilayer Ceramic Capacitors MLCC-SMD/SMT0.1uF16VDC10%0402X7R	C1	0402	GRM155R71C104KA88-D	1
NC	Generic capacitor	C2	CAPC1005X5N	GEN_CAP_0402	1
CC0402BRNPO9BN3R-6	Multilayer Ceramic Capacitors MLCC-SMD/SMT50V3.6pF C0G/0402 Tol 0.1pF	C3	CAPC1005X5N	CC0402BRNPO9BN3R-6	1
GRM188R61A106MA-LJ	Multilayer Ceramic Capacitors MLCC-SMD/SMT10uF10VDC20%0603X5R	C4	CAPC1608X90N	GRM188R61A106MA-LJ	1
GRM188R61A226ME15-D	Multilayer Ceramic Capacitors MLCC-SMD/SMT22uF10VDC20%0603X5R	C5	GRM18x	GRM188R61A226ME15-D	1
MBR120LSFT3G	Schottky Diodes & Rectifiers 1A20V	D1, D2	SOD13616A98N	MBR120LSFT3G	2
20279-001E-01	CON PEPM/HF SMT RECEPTACLE RF DC-6GHz VSWR: 1.3 max. at 0.1-3GHz VSWR: 1.5 max. at 3-6GHz	J1	MHF SMT REC	20279-001E-01	1
SSM-112-F-SV-P-TR	Headers & Wire Housings Surface Mount, 12pos, PCB Socket Strips, .100" pitch	J2	SAMTEC_SSM-112-F-SV-P-TR	SSM-112-F-SV-P-TR	1
SSM-116-F-SV-P-TR	Headers & Wire Housings Surface Mount, 16pos, PCB Socket Strips, .100" pitch	J3	SAMTEC_SSM-116-F-SV-P-TR	SSM-116-F-SV-P-TR	1
TC2030-NL	CON PLUG OF NAILS 6 PIN FOOTPRINT NO LEGS	J4	TC2030NL	TC2030-NL	1
M20-8890445R	QMIC_JST CONNECTOR- SMD 4-PIN	J5, J6	M208890445R	M20-8890445R	2
LQW18AN18NG8ZD	Inductor Wirewound, 18nH, 75 Milliohm, ± 2%, 1.4 A, 0603[1608 Metric]	L1	LQW18AN10NG80D	LQW18AN18NG8ZD	1
DFE252012F-2R2m-P2	Inductor Power Chip Shielded Wirewound 2.2uH 20% 1MHz Metal 2.3A 0.0820mm DCR1.008 T/R	L2	DFE2HCAH1R0M0JL	DFE252012F-2R2m-P2	1
36103255S	WE-SHC Shielding Cabinet, SMT Frame, Tin Plated, Tray, 25x25x3mm	MP1	36103255S	36103255S	1
NC	Normally closed trace jumper. This jumper has a trace between two pads so it's normally closed (NC). Use a razor knife to open the connection. For best results follow the IPC guidelines for cutting traces: Cutout at least 0.063 mm (0.005 in). Remove all loose material to clean up the cut area. Seal the cut with an approved epoxy. Reapply solder to reclose the connection.	O1	SMT-JUMPER_2_NC_TRACE_SILK	JUMPER_SMT_2_NC_TRACE_SILK	1
DMG3415U-7	MOSFET (P-Channel) 16V Enh FET 8Vgss - 120A 0.65W	O2	SOT96P240X120-3N	DMG3415U-7	1
BSS138BKW,115	MOSFET (N-Channel)	O2	SOT85P210X110-3N	BSS138BKW,115	1
RC0805JR07100KL	Thick Film Resistors - SMD 100kOhms 125mW 0805 5%	R1	RESC2012X60N	RC0805JR07100KL	1
0R	Thick Film Resistors - SMD 0402 0.063 W0 Ohm Jumper	R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, R23, R24, R29	RESC1005X40N	RCRW04020000ZJED	24
CRCW020136GSFNED	Thick Film Resistors - SMD 35.5kOhm 1% 200ppm	R25	RESC0603X28N	RCRW020136GSFNED	1
RC0201FR-070RL	Thick Film Resistors - SMD 0.01ms 50mW (0201 1%)	R26, R27	RESC0603X26N	RC0201FR-070RL	2
stm32w-SMD	Arribada SMD module Argos communication with PA GR6504	SMD1	stm32w-SMD_noLegs	stm32w-SMD	1
PTSB20J2x	SV-SFSI-PB50MA12V SMT/C variant	S/W1	TL1015	PTSB20J2x	1
TPS63901YC.R	Integrated Circuit	U1	146x35	TPS63901YC.R	1