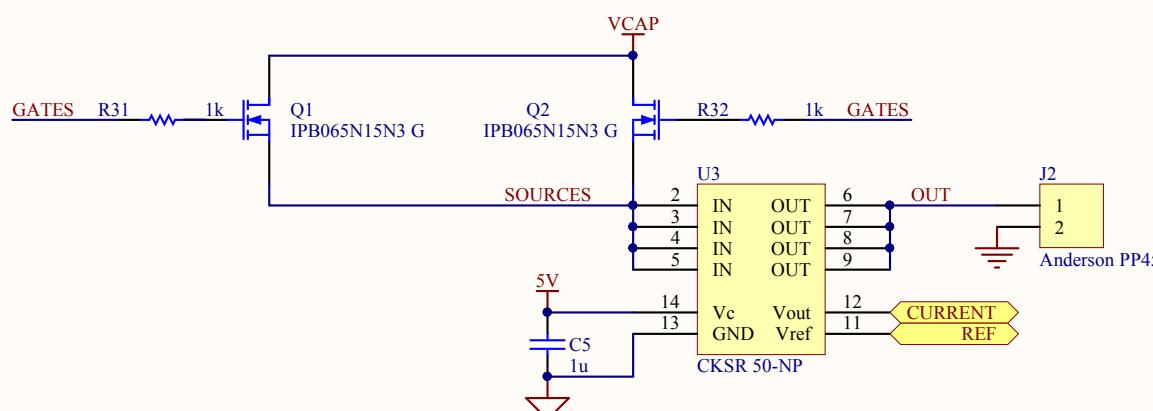
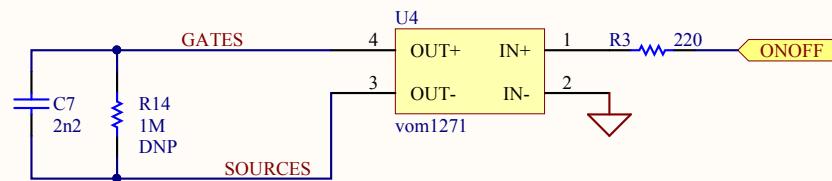


A



B



C

$V_f = 1.4$, so from 3.3v MCU pin the 220 ohm resistor we'll need $(3.3-1.4)/220 = 8.6 \text{ mA}$

D

Title Power Channel			OSRF
Size: A	Number:*	Revision:*	170 S. Whisman Road Building D, Suite A Mountain View, CA 94041 http://osrfoundation.org
Date: 4/9/2015	Time: 2:45:10 PM	Sheet 2 of 2	
Designer: Morgan Quigley			Open Source Robotics Foundation

A

A

B

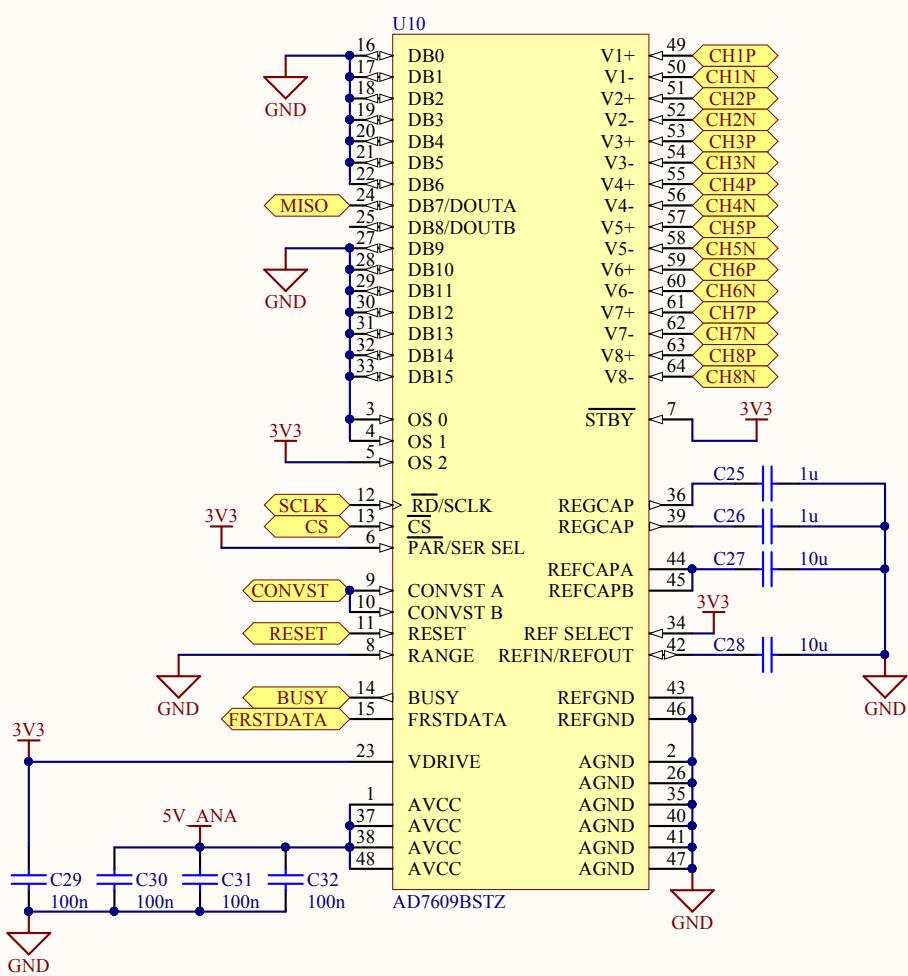
B

C

C

D

D



Title			OSRF
Size: A	Number:	Revision:	170 S. Whisman Road Building D, Suite A Mountain View, CA 94041 http://osrfoundation.org
Date: 4/9/2015	Time: 2:45:10 PM	Sheet of	
Designer: Morgan Quigley			Open Source Robotics Foundation

A

A

B

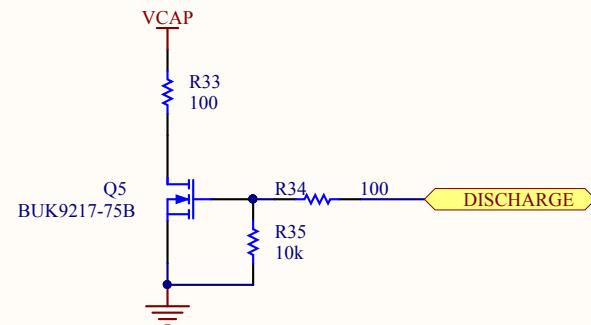
B

C

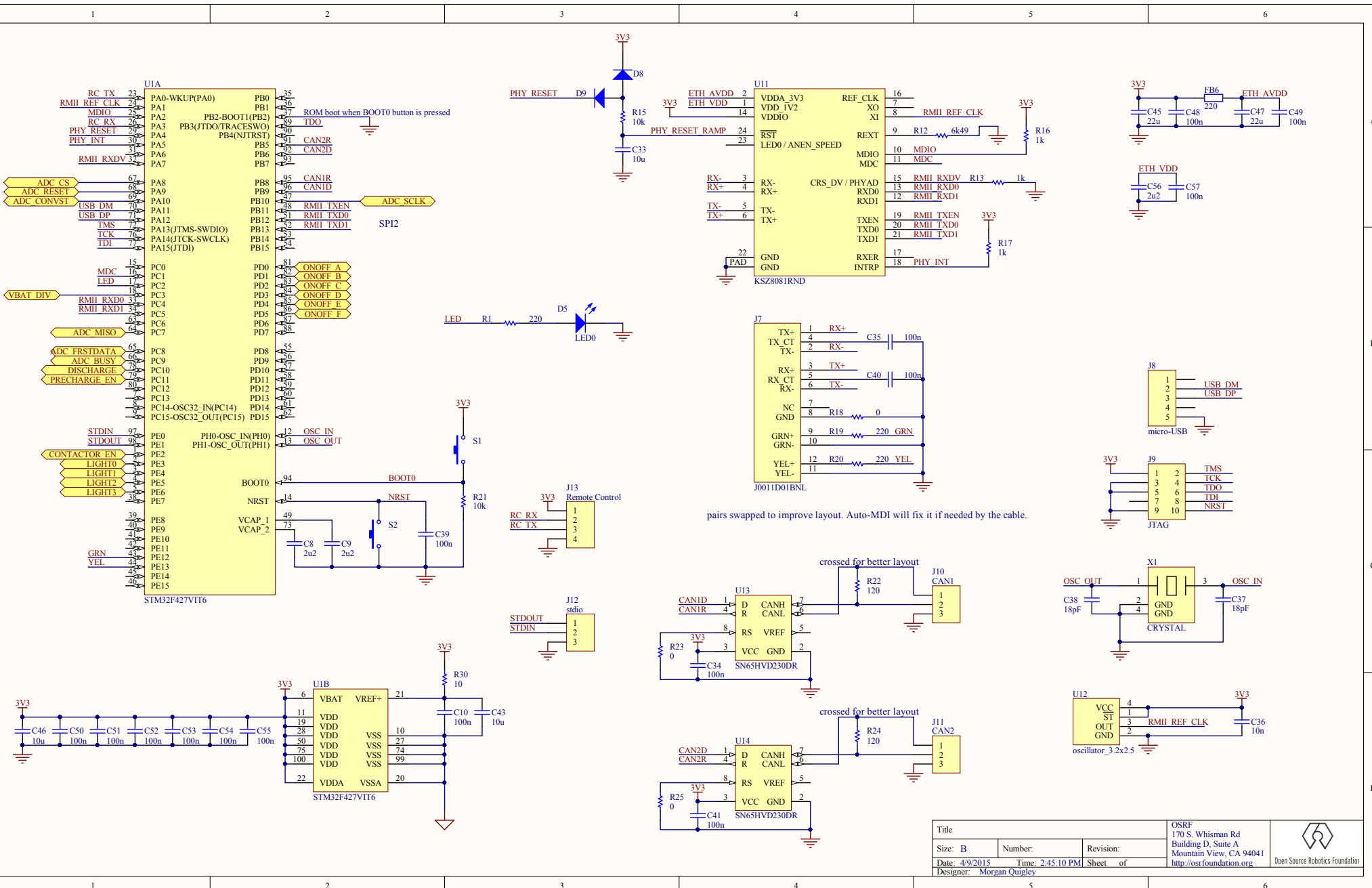
C

D

D



Title		
Size A	Number	Revision
Date: 4/9/2015		Sheet of
File: C:\Users\.\discharge.SchDoc		Drawn By:



A

A

B

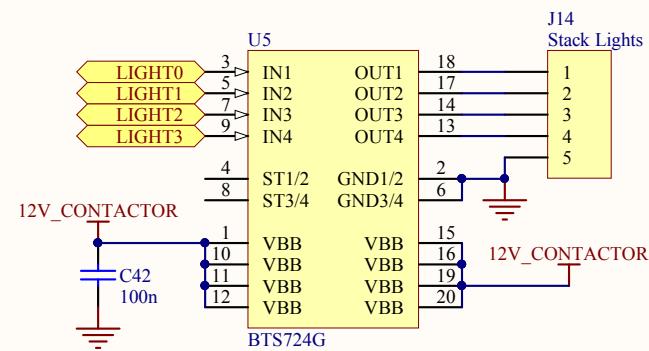
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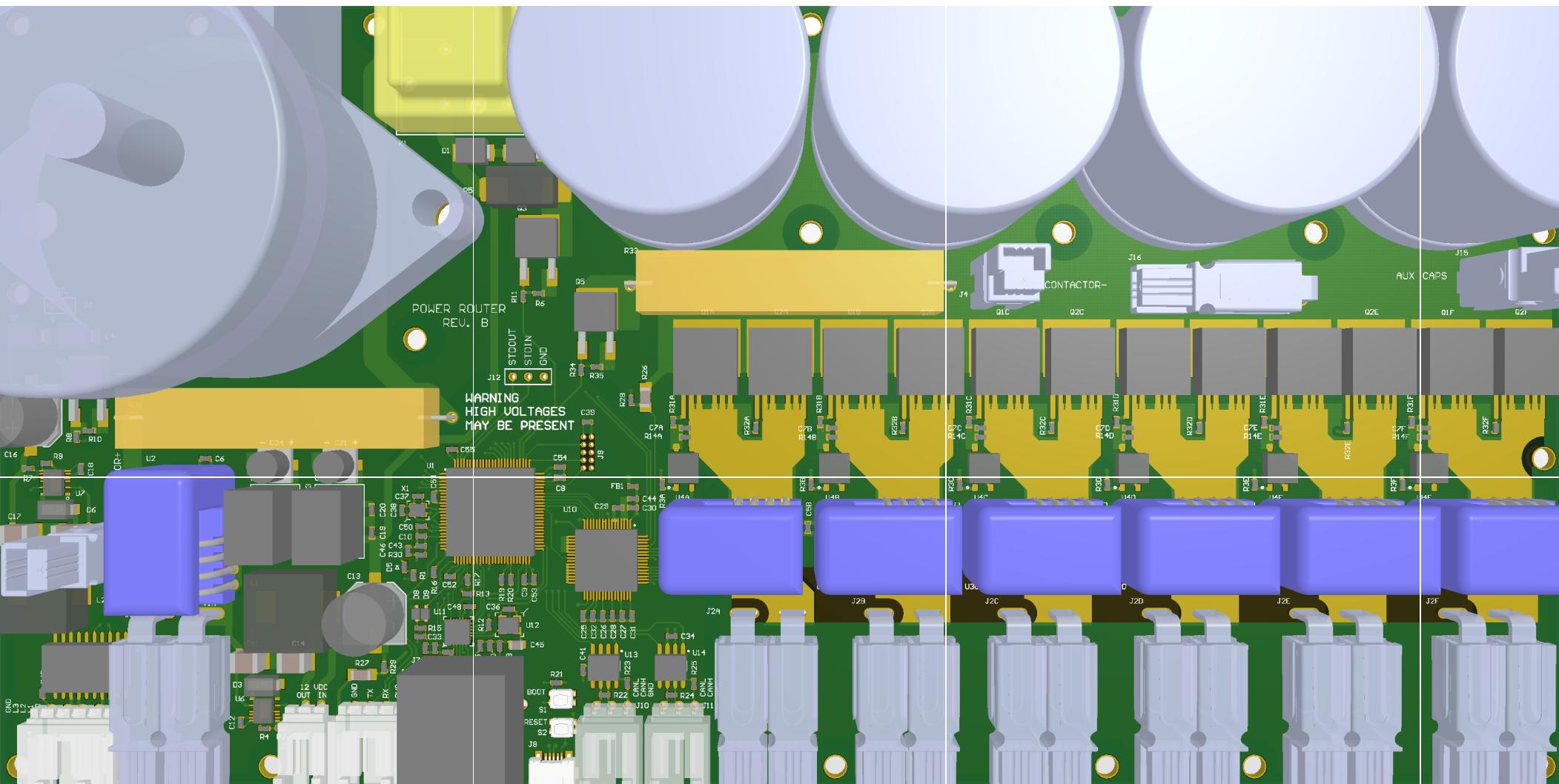
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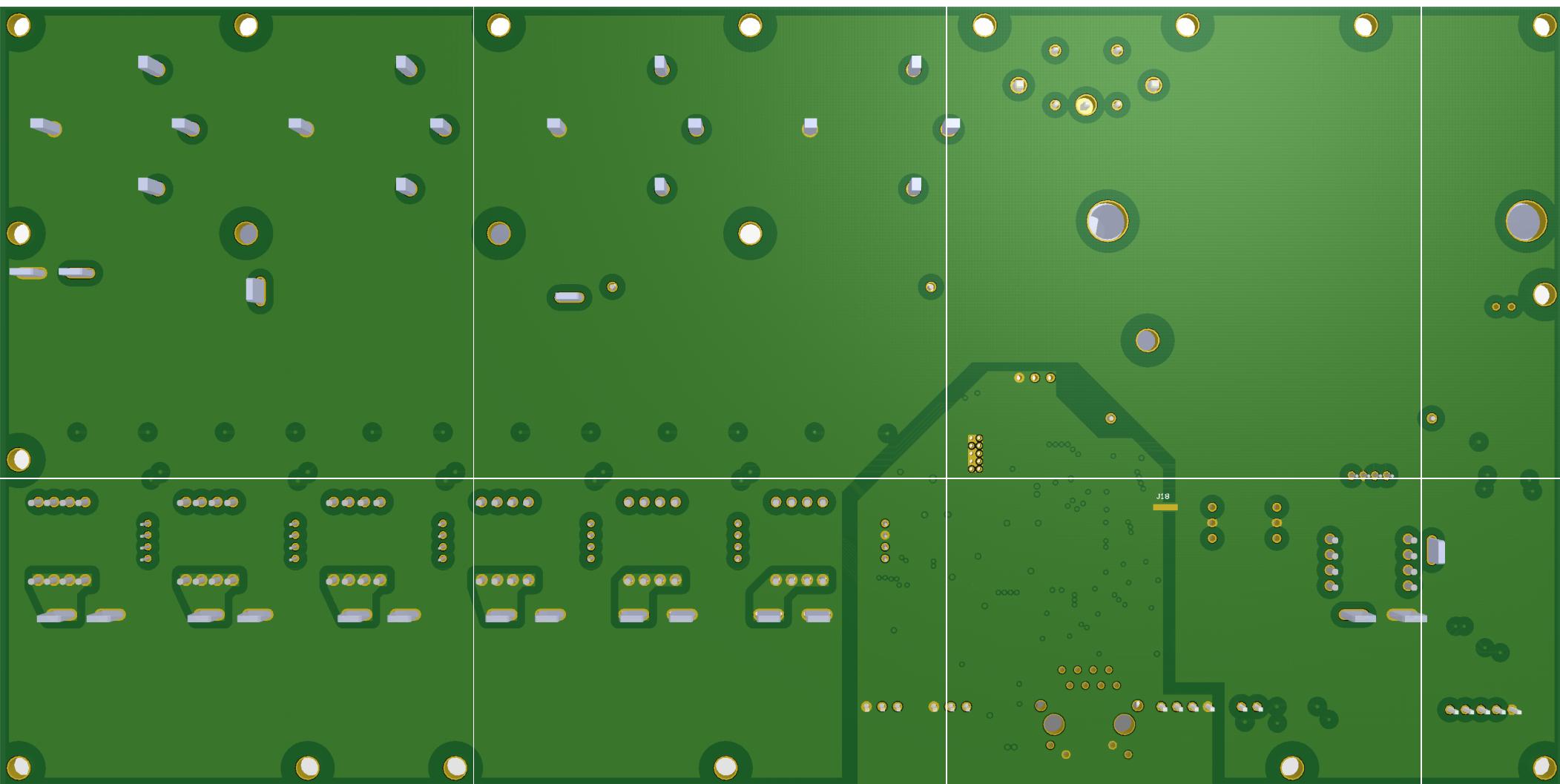
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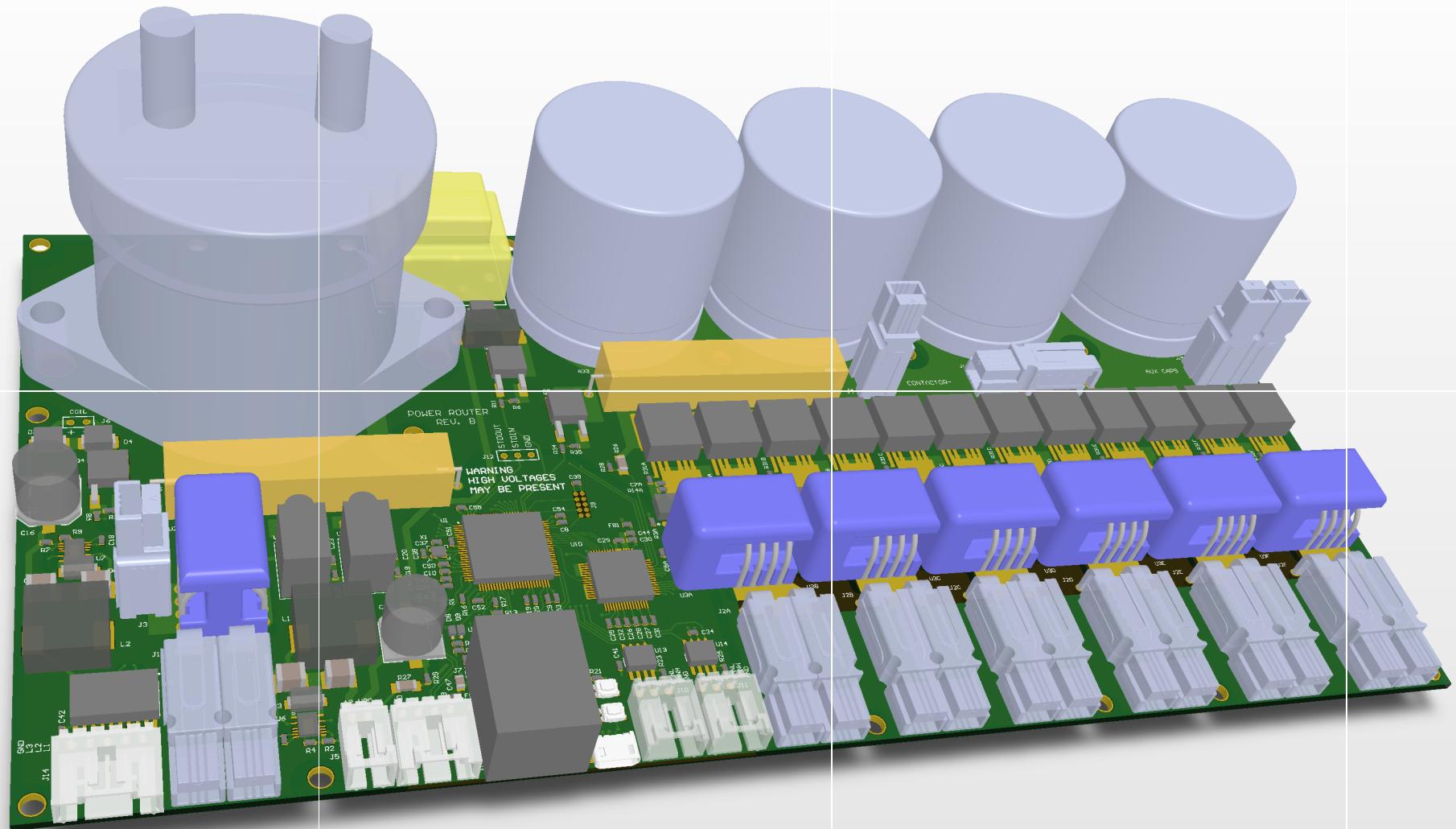
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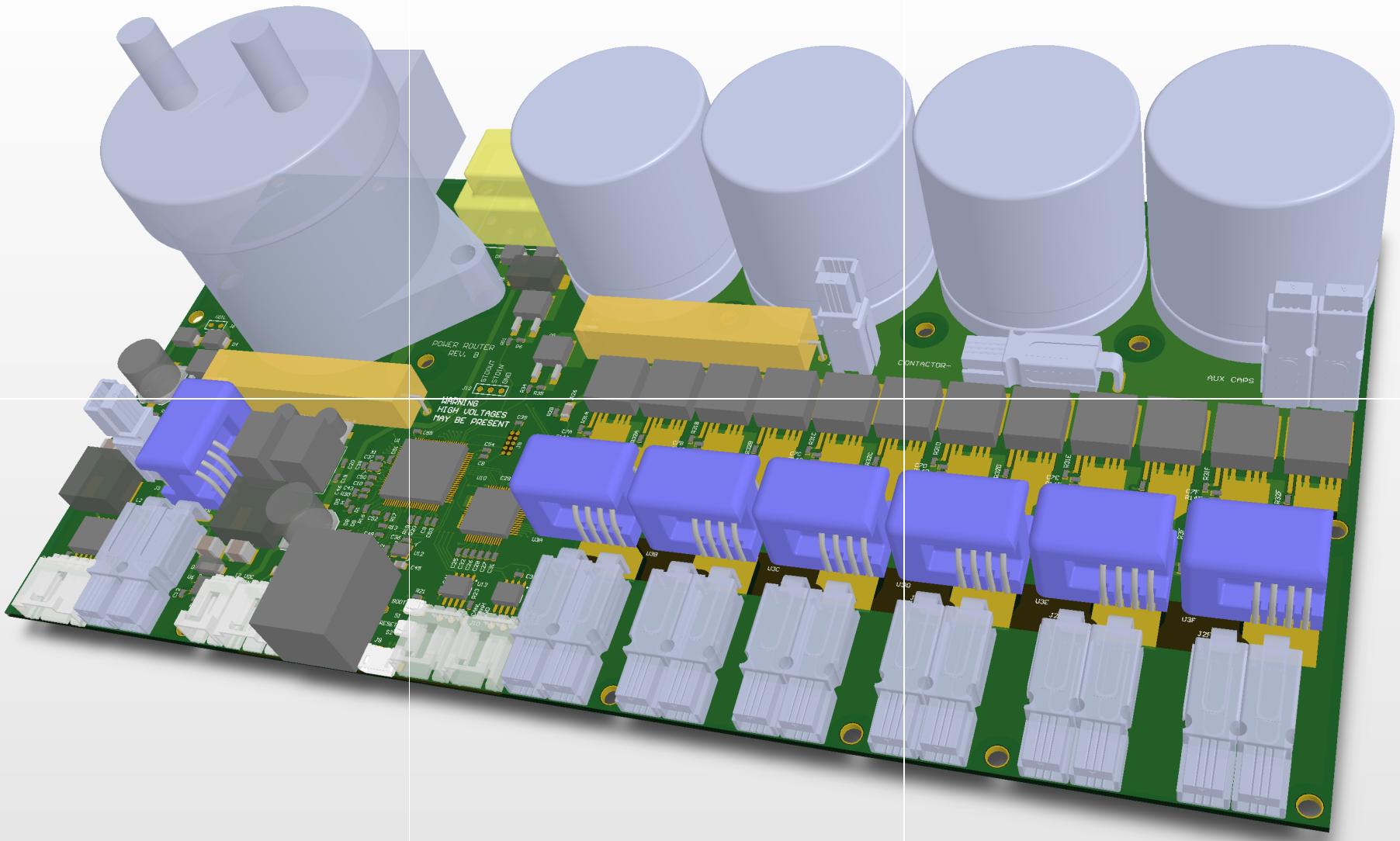


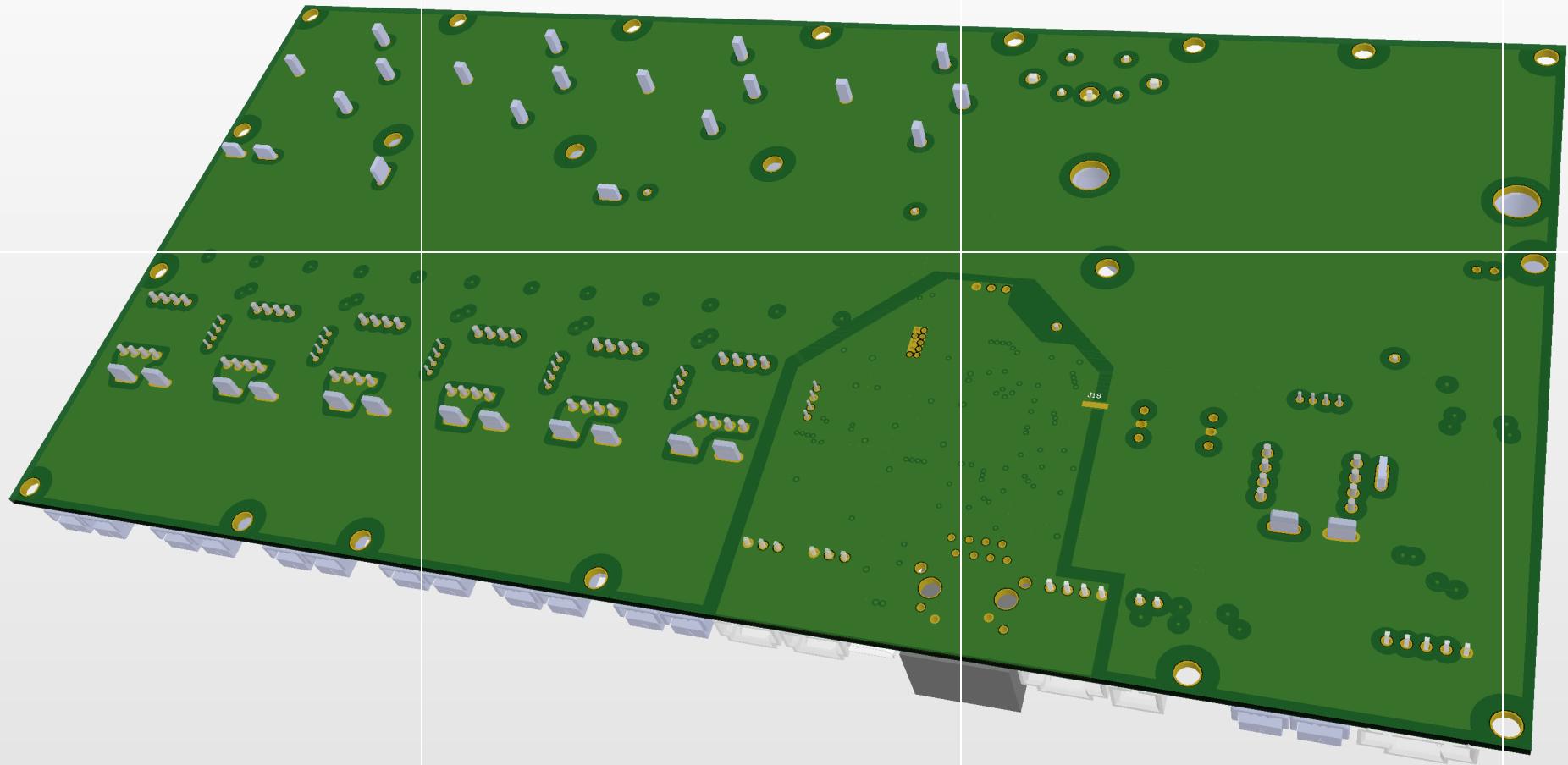
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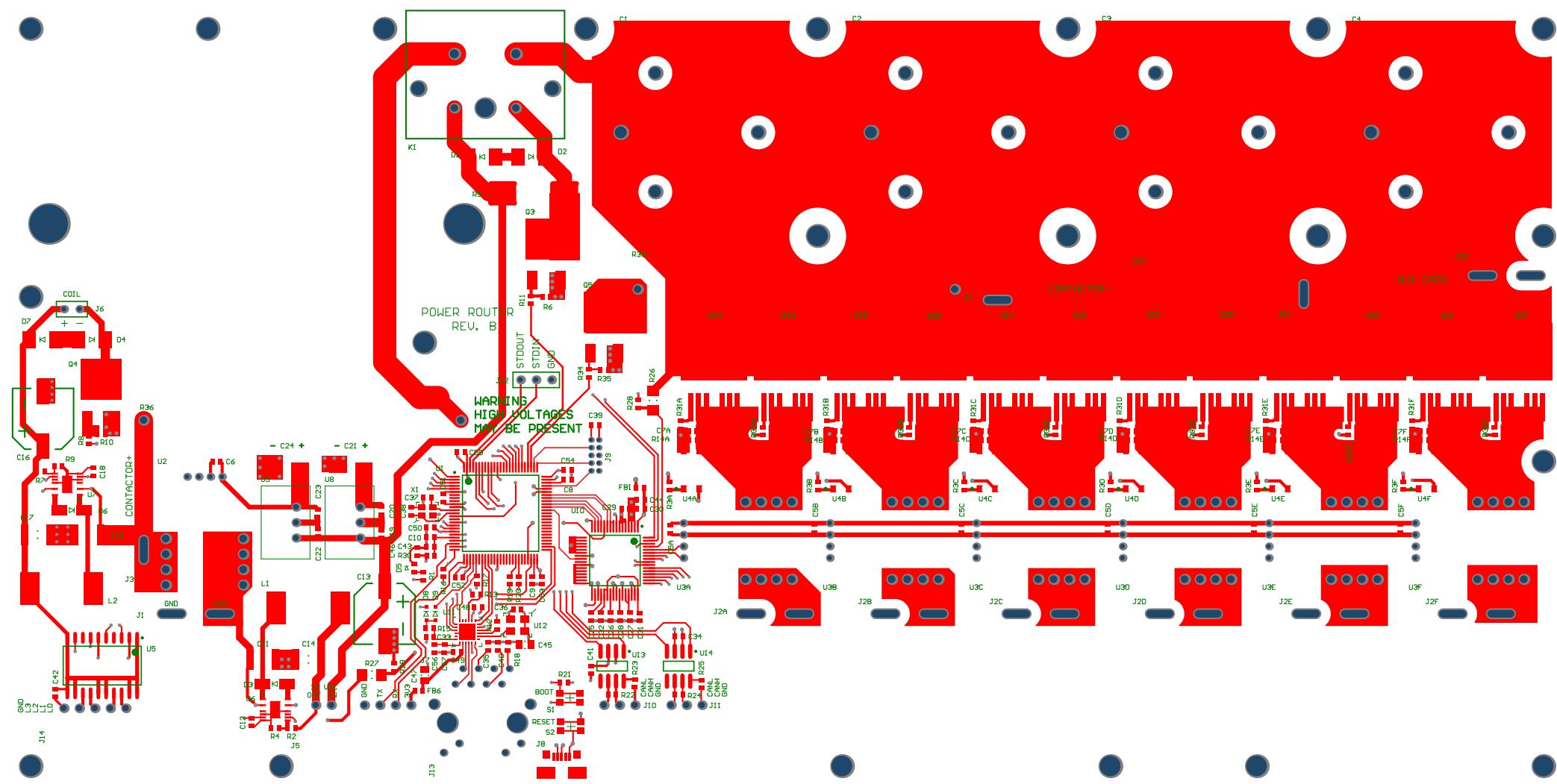


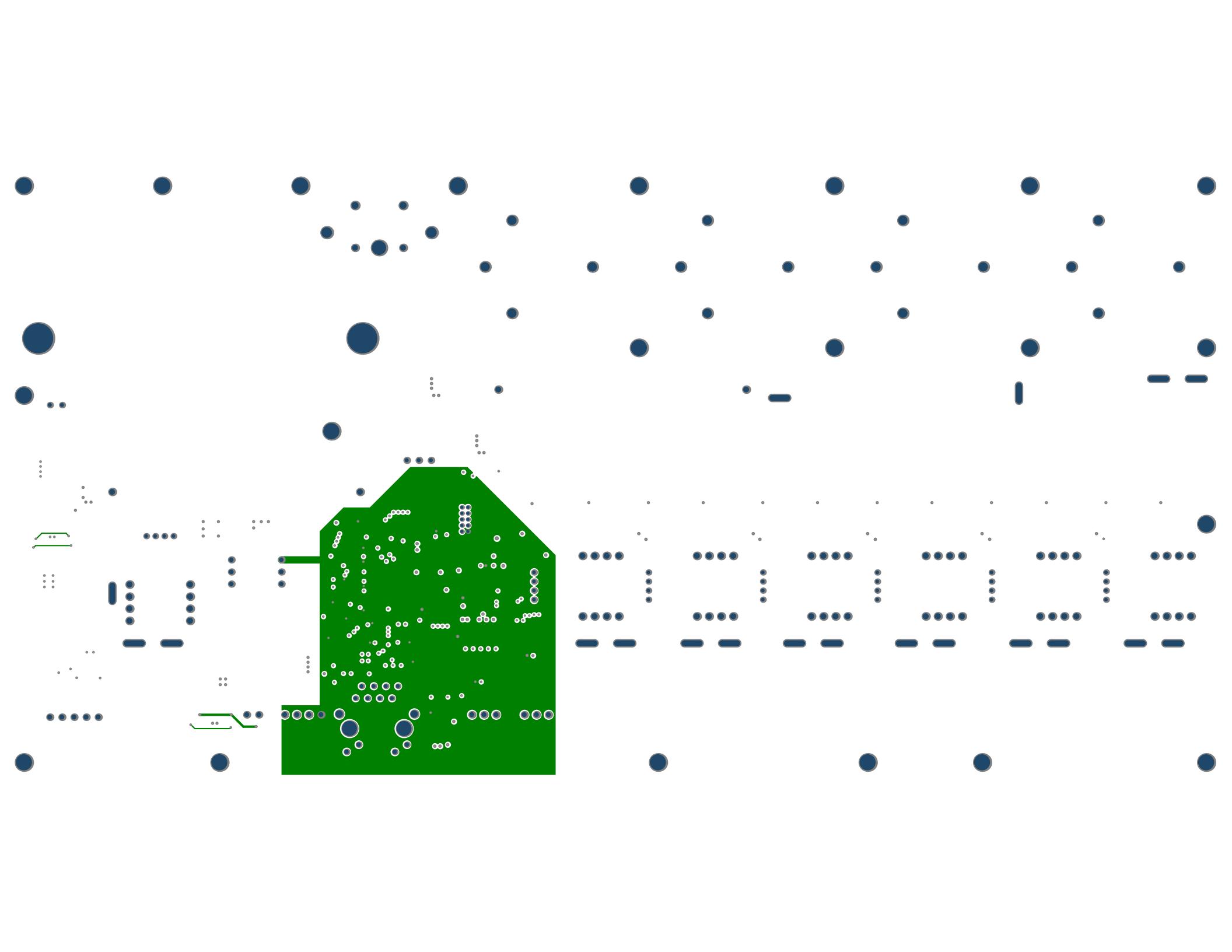


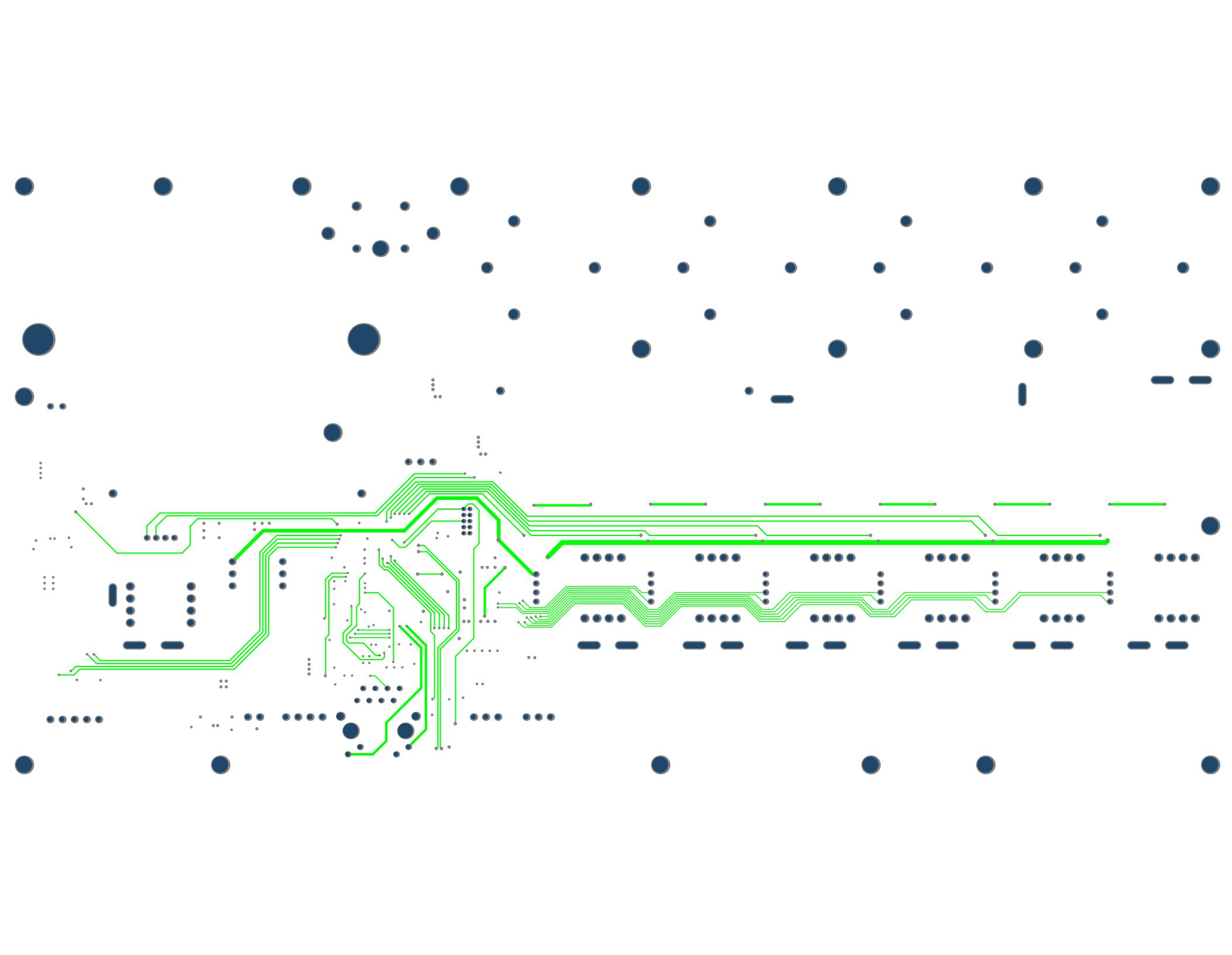


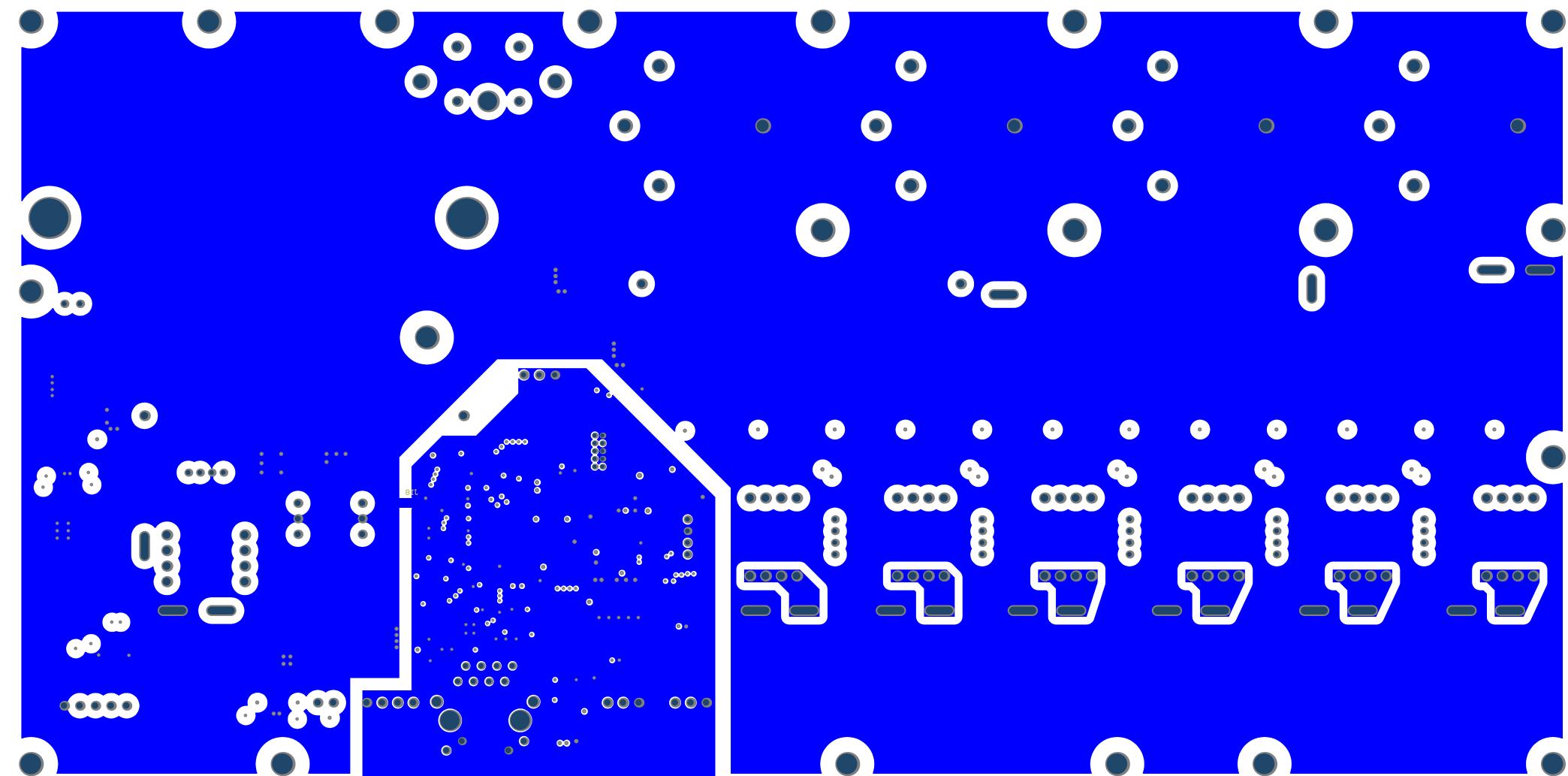


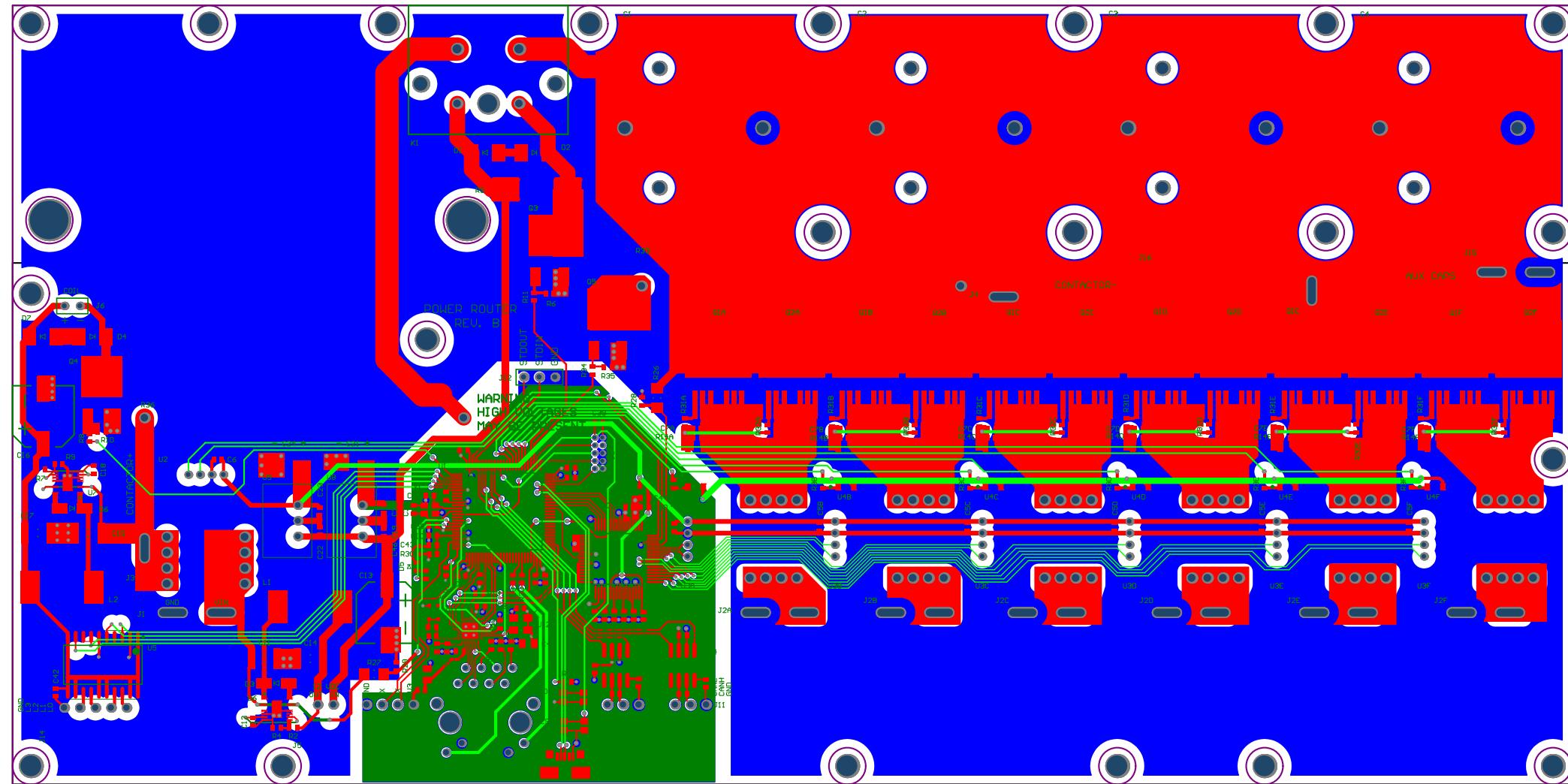












Bill of Materials

Board: Power Router, rev. A

Morgan Quigley, Open Source Robotics Foundation

morgan@osrfoundation.org

650-796-4881

Designator	Quantity	Value	Footprint	digikey	Mouse	Manufacturer	Manufacturer Part Number
C1, C2, C3, C4	4	4700 uF	ECE-T2DA472FA	DNP		DNP	DNP
C5A, C5B, C5C, C5D, C5E, C5F, C6, C25, C26	9	1u	GENERIC_0603	445-5956		TDK	C1608X7R1E105K080AB
C7A, C7B, C7C, C7D, C7E, C7F	6	2n2	GENERIC_0603	445-5958		TDK	C1608X7R1A225K080AC
C8, C9, C56	3	2u2	GENERIC_0603	445-5958		TDK	C1608X7R1A225K080AC
C10, C29, C30, C31, C32, C34, C35, C39, C40, C41, C42, C48, C49, C50, C51, C52, C53, C54, C55, C57	20	100n	GENERIC_0603	445-1316		TDK	C1608X7R1E104K080AA
C11, C15	2	1u	GENERIC_1812	445-6835		TDK	C4532X7T2E105M250KE
C12, C18	2	470n	GENERIC_0603	445-6929		TDK	CGA3E3X7R1E474K080AB
C13, C16	2	470u	panasonic_g	493-3944		Nichicon	UCL1E471MLN1G5
C14, C17	2	22u	GENERIC_1812	445-1607		TDK	C4532X7R1E226M250KC
C19, C20, C22, C23, C27, C28, C33, C43, C44, C46	10	10u	GENERIC_0603	445-9015		TDK	C1608X5R1E106M080AC
C21, C24	2	100u	panasonic_c	493-2248	Panasonic	UD1A1A01MLC1G5	
C36	1	10n	GENERIC_0603	445-1311		TDK	C1608X7R1H103K080AA
C37, C38	2	18pF	GENERIC_0603	445-1272		TDK	C1608CG1H180J080AA
C45, C47	2	22u	GENERIC_0805	445-6797		TDK	C2012X5R1C226K125AC
D1, D7	2		DIODE_SMB	ES2DFS		Fairchild	ES2D
D2, D4	2		DIODE_SMB	P6SMB10AT3GOS		On Semi	P6SMB10AT3G
D3, D6	2		DIODE_SMA	SS1200-LTPMS		Micro Commercial Co.	SS1200-LTP
D5	1		GENERIC_0603	160-1183		Lite-On	LTST-C190GKT
D8, D9	2		SOD323F	568-4138		NXP	PMEG6010CEI,115
FB1, FB6	2	220	GENERIC_0603	445-1965		TDK	MP21608S221ATA00
			POWERPOLE_1336G1				
J1, J2A, J2B, J2C, J2D, J2E, J2F	7		PAIR	DNP		DNP	DNP
J3, J4	2		PP45_133SG1	DNP		DNP	DNP
J5	1		100mil_th_ra_2x1_s				
J6	1		hrouted	DNP	DNP	DNP	DNP
J7	1		pulse_J0011d01bnl	DNP		DNP	DNP
J8	1		JAE_RX4R005HJ5R20				
		00	670-2674	656-DX4R005HJ5R2000	JAE	DX4R005HJ5R2000	
J9	1		50MIL_TH_VERT_5X2	DNP		DNP	DNP
J10	1		100mil_th_ra_3x1_s				
J11	1		100mil_th_ra_3x1_s				
J12	1		hrouted	DNP		DNP	DNP
J13	1		100mil_th_ra_4x1_s				
J14	1		hrouted	DNP		DNP	DNP
J15	1		PP45_1335G1_PAIR	DNP		DNP	DNP
J16	1		POWERPOLE_1336G1	DNP		DNP	DNP
K1	1		TE_MINI_K_HV	DNP	DNP	DNP	DNP
L1, L2	2	220 uH	SRR1260	SRR1260-221K		Bourns	SRR1260-221K
Q1A, Q1B, Q1C, Q1D, Q1E, Q1F, Q2A, Q2B, Q2C, Q2D, Q2E, Q2F	12		MOSFET_TO263_7	IPB065N15N3 G		Infineon	IPB065N15N3 G
Q3, Q4, Q5	3		MOSFET_DPAK	568-5857		NXP	BUK9217-75B,118
R1, R3A, R3B, R3C, R3D, R3E, R3F, R19, R20	9	220	GENERIC_0603	541-220H		Vishay	CRCW0603220RPFKA
R2, R7	2	267k	GENERIC_0603	541-267KH		Vishay	CRCW0603267KFKA
R4, R9	2	196k	GENERIC_0603	541-196KH		Vishay	CRCW0603196KFKA
R5	1	250	generic_4124_molded			Stackpole	SM4124FT250R
R6, R10, R15, R21, R28, R29, R35	7	10K	GENERIC_0603	541-10.0KH		Vishay	CRCW060310K0UFKA
R8, R11, R34	3	100	GENERIC_0603	541-100H		Vishay	CRCW0603100RPFKA
R12	1	6.49	GENERIC_0603	541-6.49KH		Vishay	CRCW06031049KFKA
R13, R16, R17, R31A, R31B, R31C, R31D, R31E, R31F, R32A, R32B, R32C, R32D, R32E, R32F	15	1k	GENERIC_0603	541-1.00KH		Vishay	CRCW06031K00FKEA
R14A, R14B, R14C, R14D, R14E, R14F	6	1M	GENERIC_0603	DNP		DNP	DNP
R18, R23, R25	3	0	GENERIC_0603	541-0.0G		Vishay	CRCW0603000020EA
R22, R24	2	120	GENERIC_0603	541-120H		Vishay	CRCW0603120RPFKA
R26, R27	2	470k	GENERIC_1206	541-470KF		Vishay	CRCW1206470KFKA
R30	1	10	GENERIC_0603	541-10.0H		Vishay	CRCW060310R0FKEA
R33	1	100	POWER_RESISTOR_9				
		x48	DNP			DNP	DNP
R36	1	25	x48	DNP		DNP	DNP
S1, S2	2		EVPA4A02_switch	P133495	667-EVP-AA402W	Panasonic	EVP-AA402W
U1	1		STM-LQFP100_N	497-14049		STMicroelectronics	STM32F427VIT6
U2, U3A, U3B, U3C, U3D, U3E, U3F	7		CKSR	398-1098-5		LEM	CKSR 50-NP
U4A, U4B, U4C, U4D, U4E, U4F	6		VOM1271	VOM1271T		Vishay	VOM1271T
U5	1		INF-PG-DSO-20-31_L	BTSZ24G		Infineon	BTSZ24G
U6, U7	2		Itc7138	LTC7138IMSE#PBF		Linear	LTC7138IMSE#PBF
U8	1		RECOM_R_78xx_0.5	DNP		DNP	DNP
U9	1		RECOM_R_78xx_0.5	DNP		DNP	DNP
U10	1		ST-6A-2_M	AD7609BSTZ		Analog Devices	AD7609BSTZ
U11	1		KS28081RNX	576-4177		Micrel	KS28081RNDC
U12	1		OSCILLATOR_3.2x2.5	535-9577	815-A5E-50.000MLCT	Abracor	A5E-50.000MHZ-LCT
U13, U14	2		D8_M	296-11654		Texas Instruments	SN65HV230DR
X1	1		CRYSTAL_2.25	887-1339		TXC	82-25.000MEEQ-T