

PG9a Puls/Rechteck Generator max. 230MHz

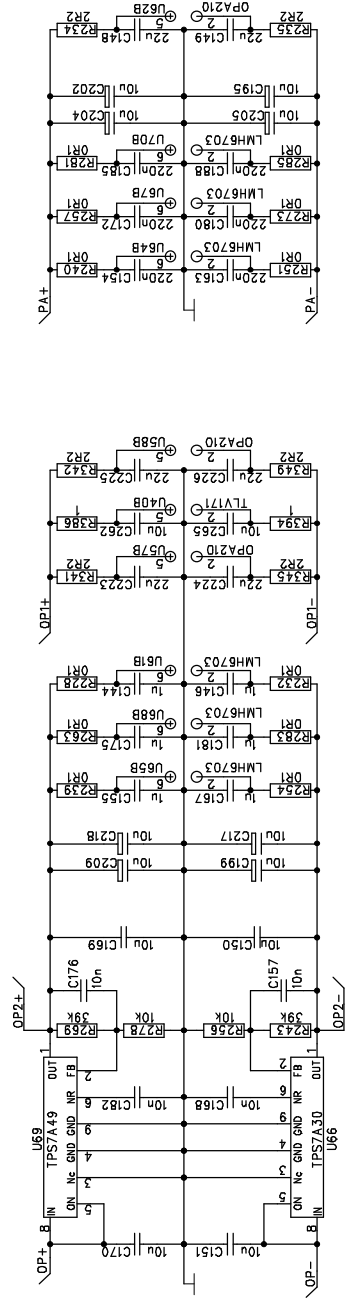
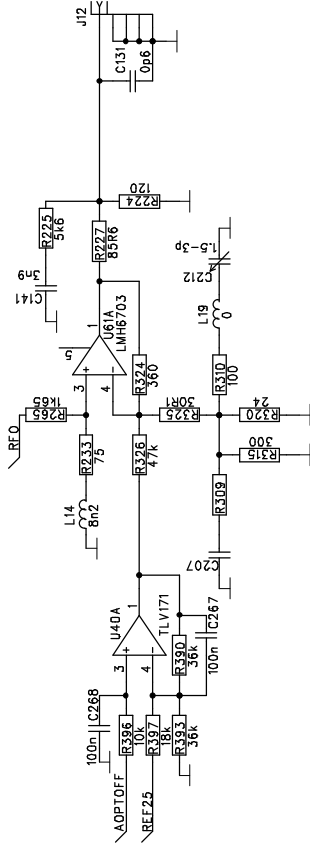
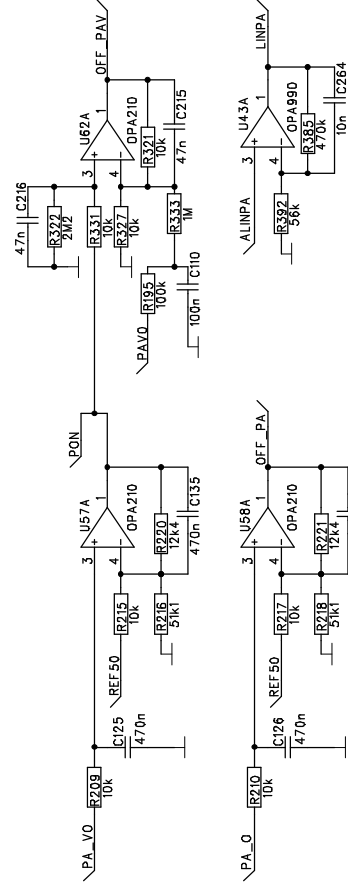
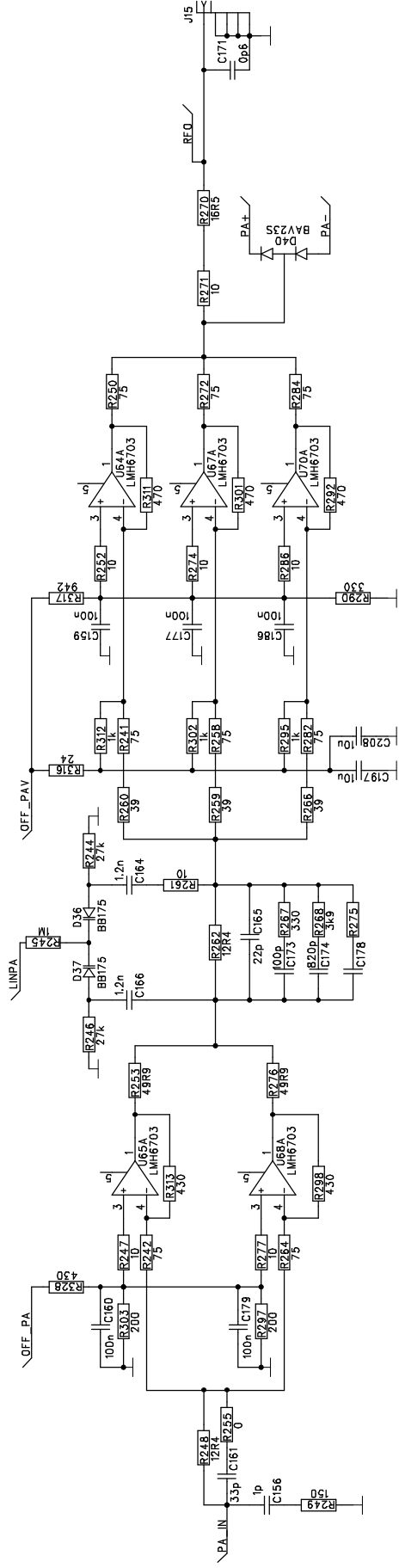
Rev 1.00: Schaltplan, Bestückung, Material Liste

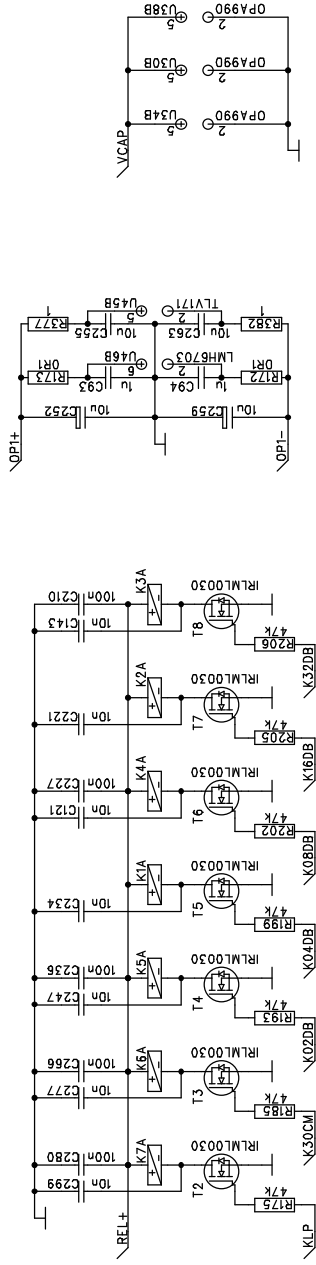
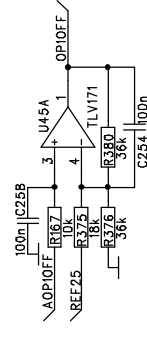
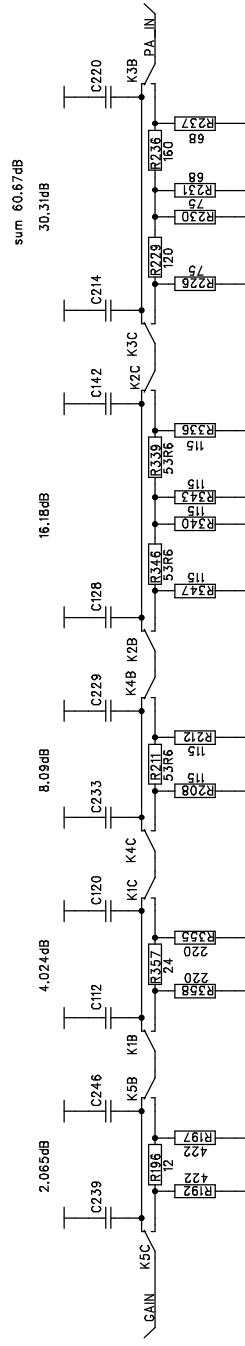
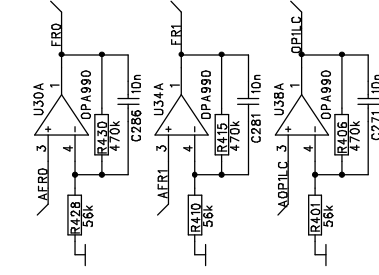
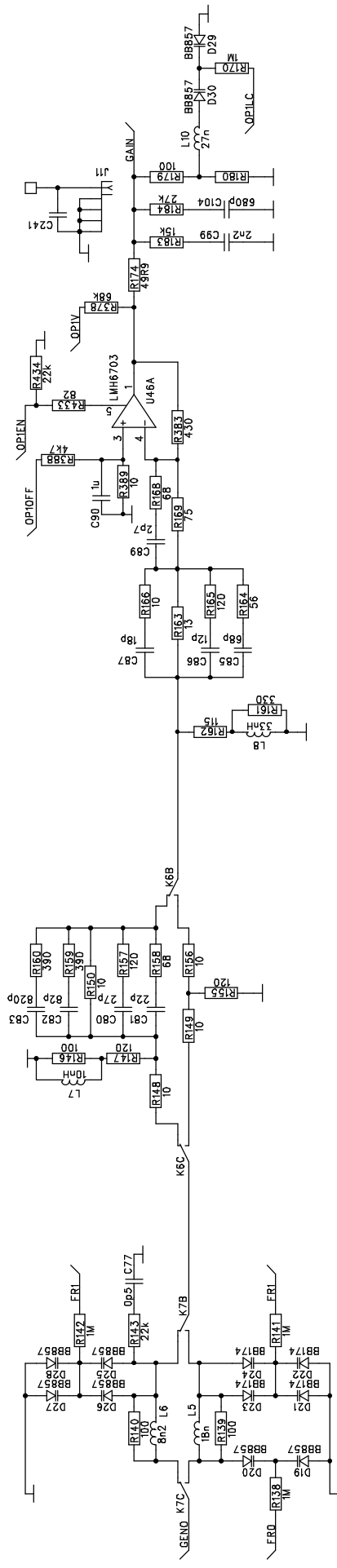
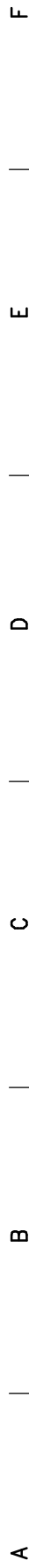


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<http://www.aldccc.at/>

Hoefer Alfred
(hw16@aldccc.at)





(C)ALDccp

Title: PG9 GAIN

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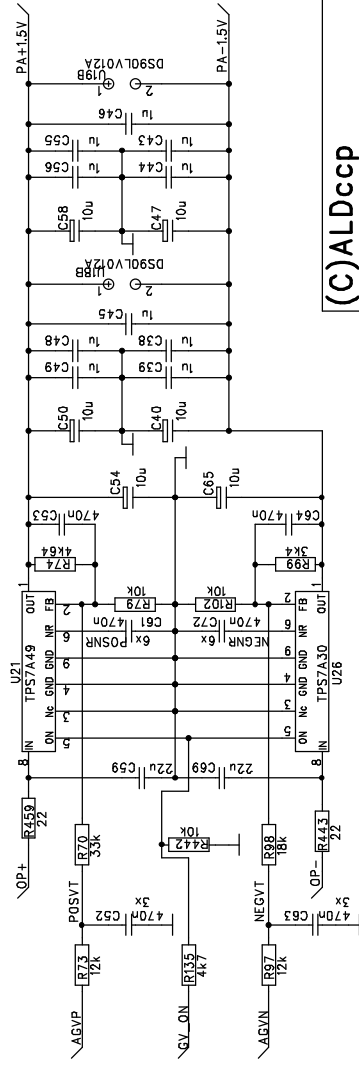
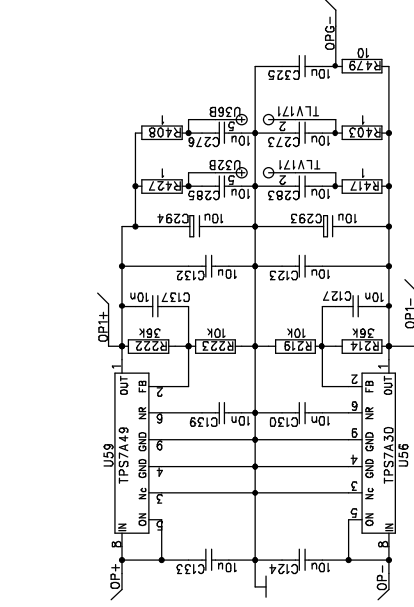
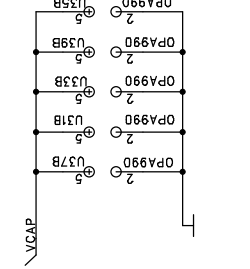
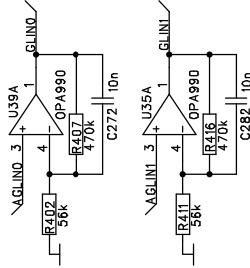
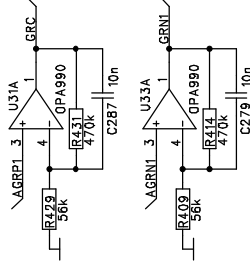
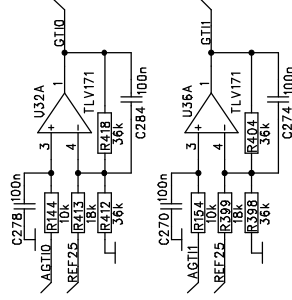
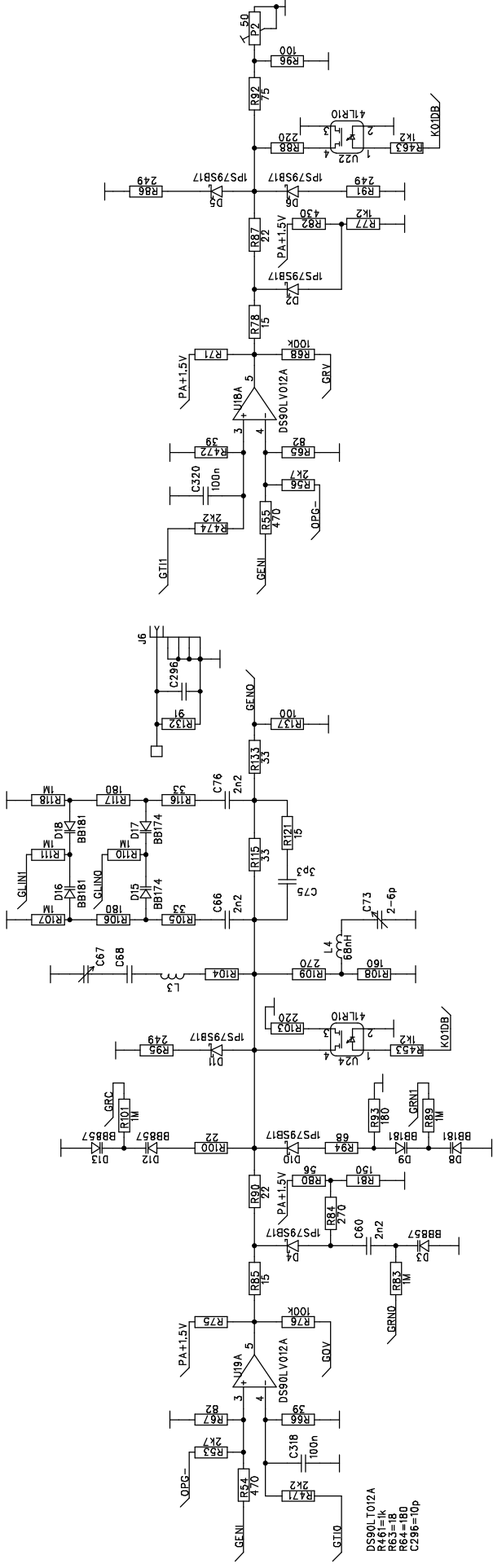
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4

3

2

1



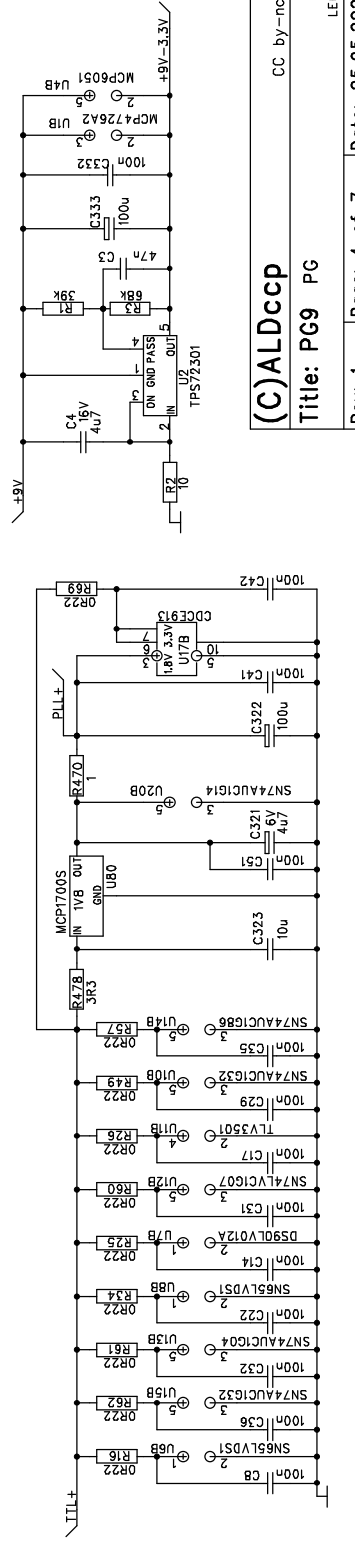
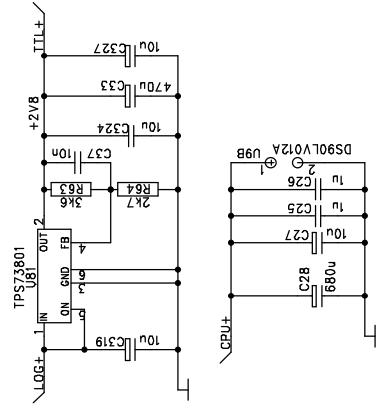
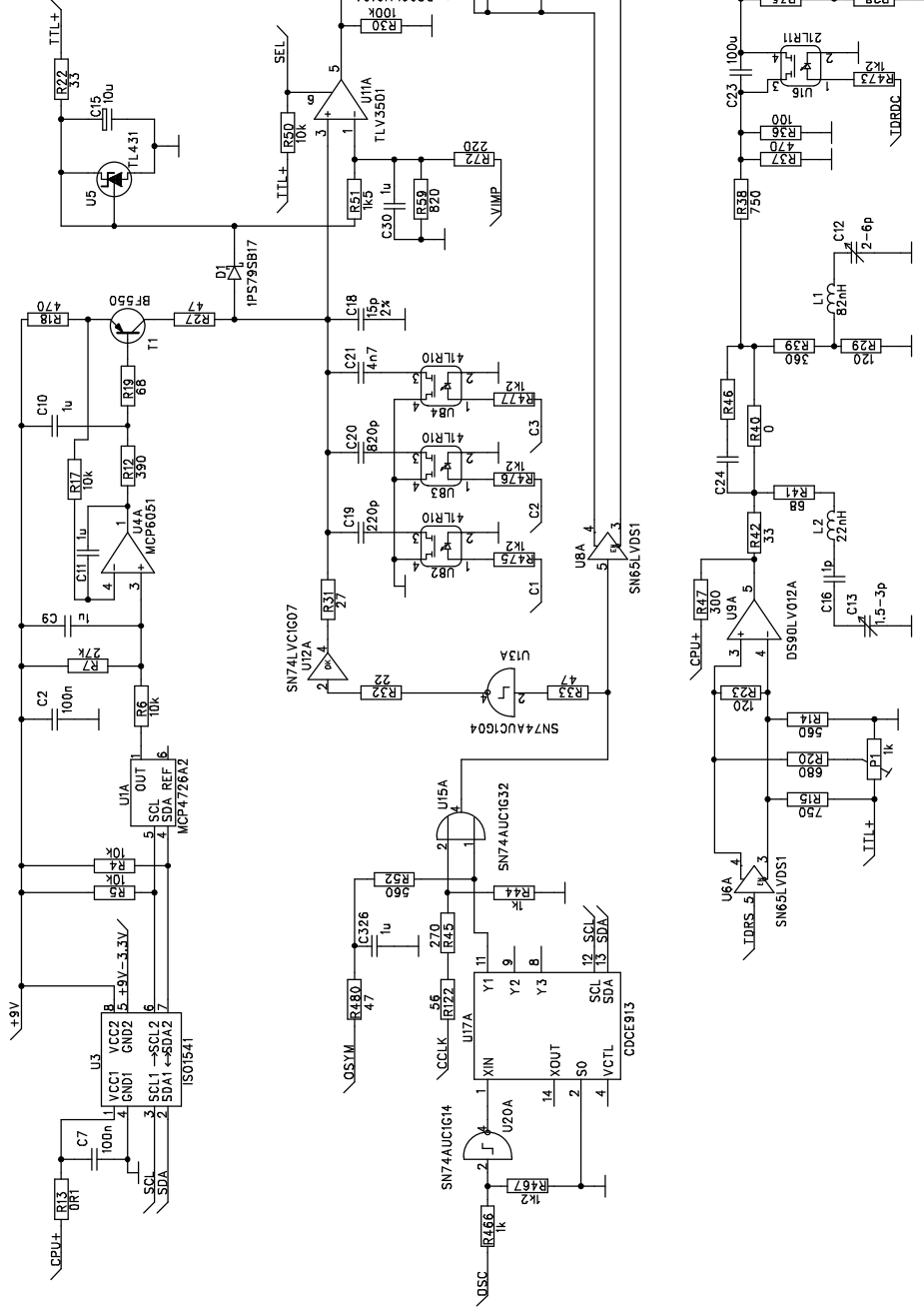
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Title: GP9 GEN

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LED0051

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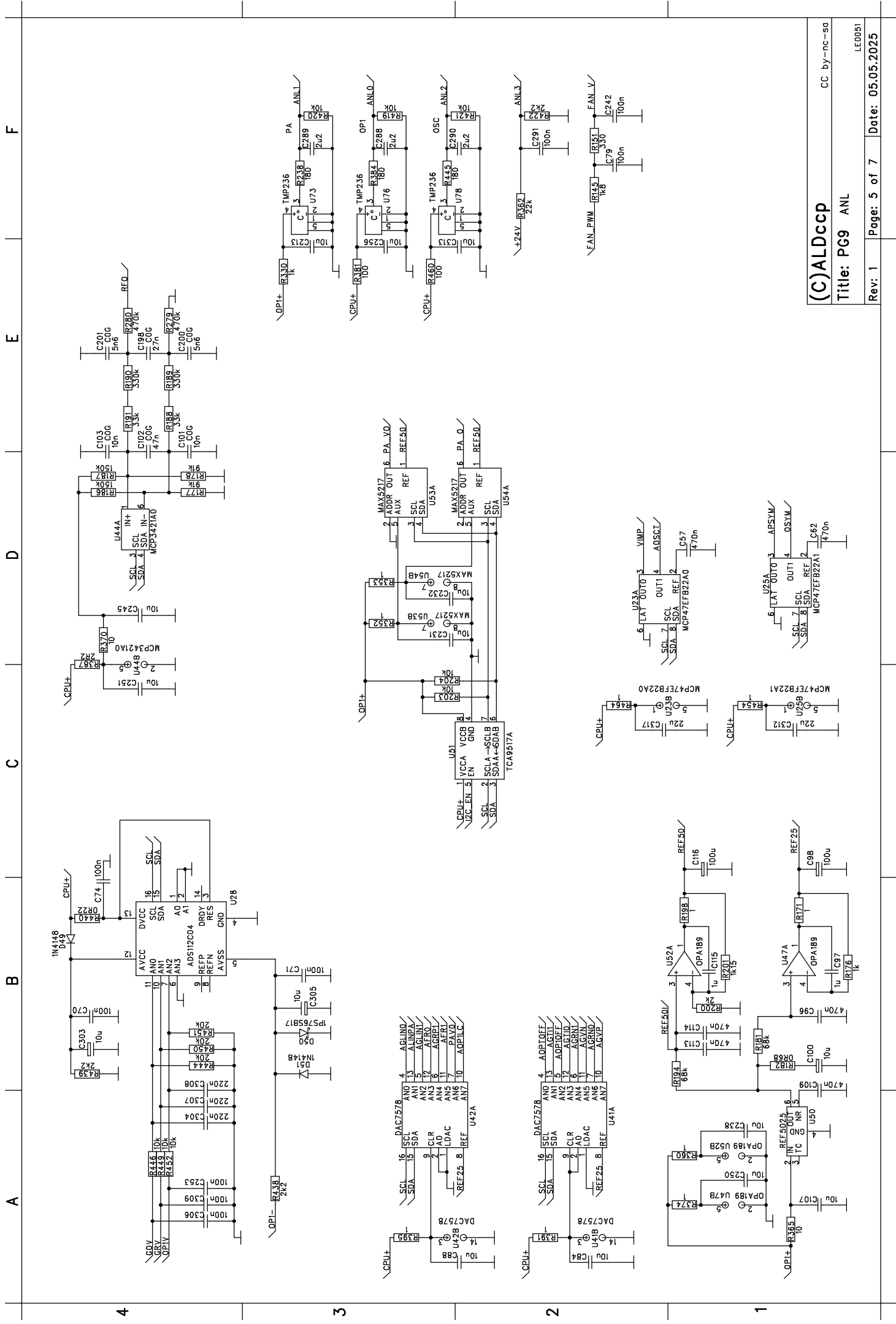
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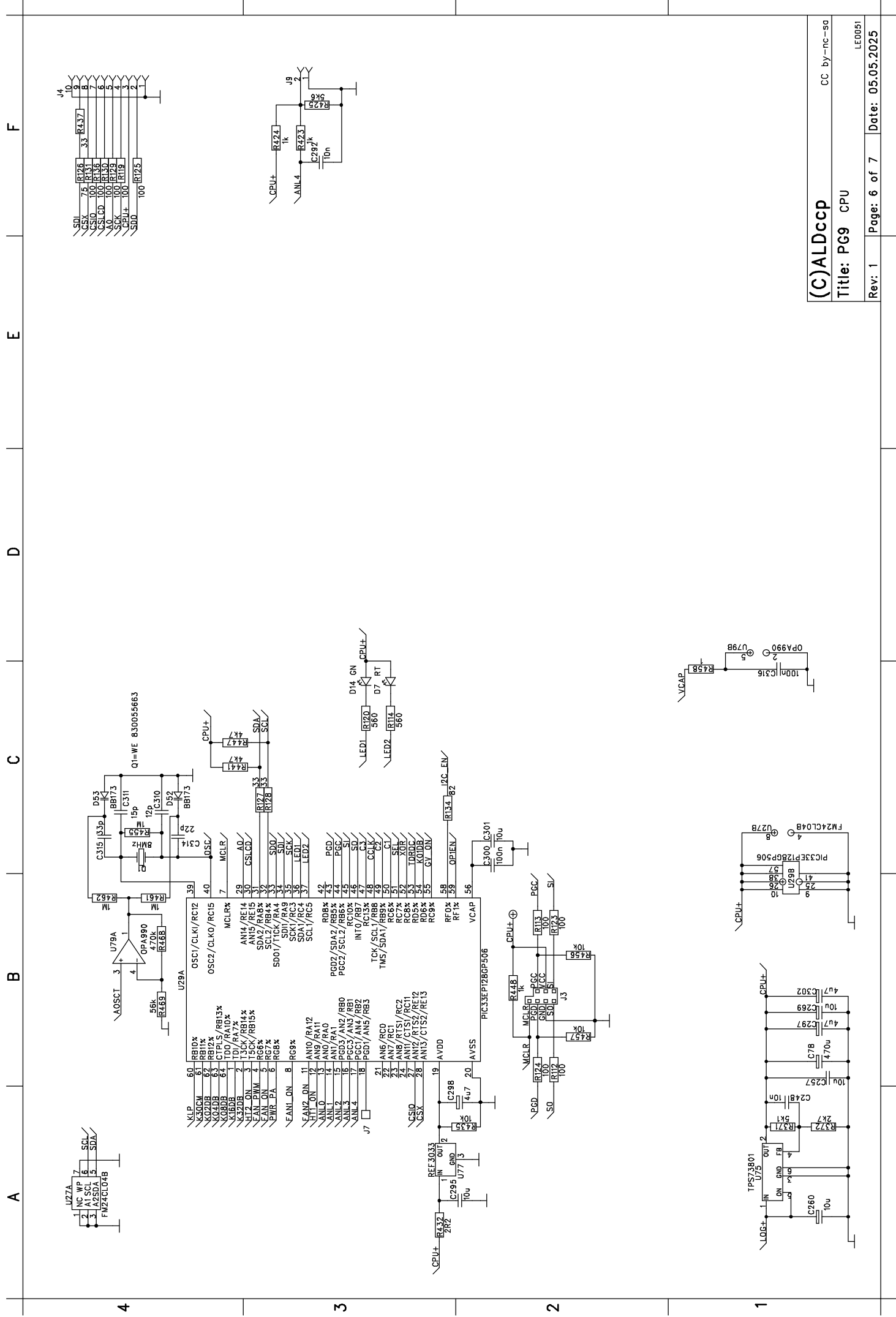
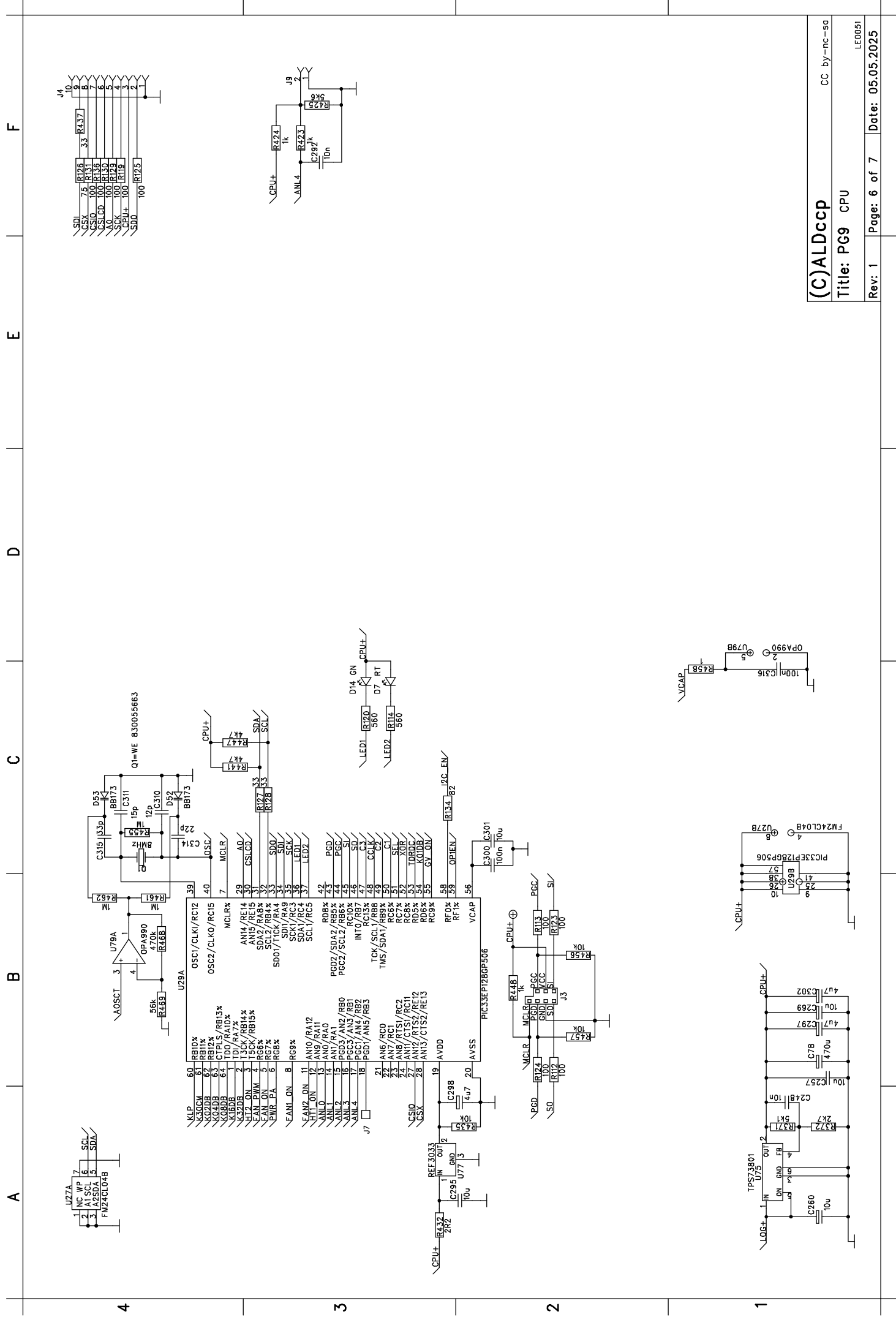
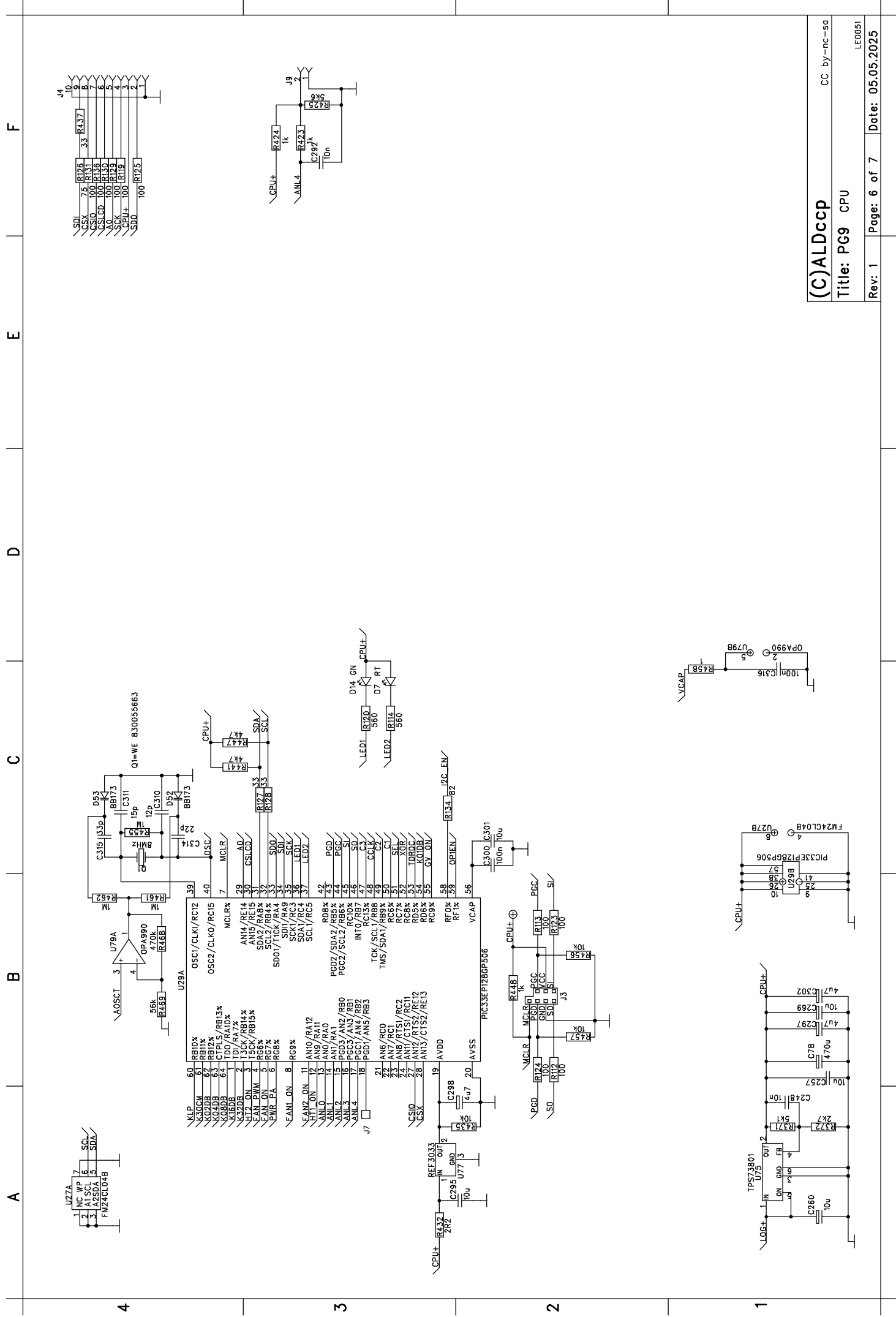
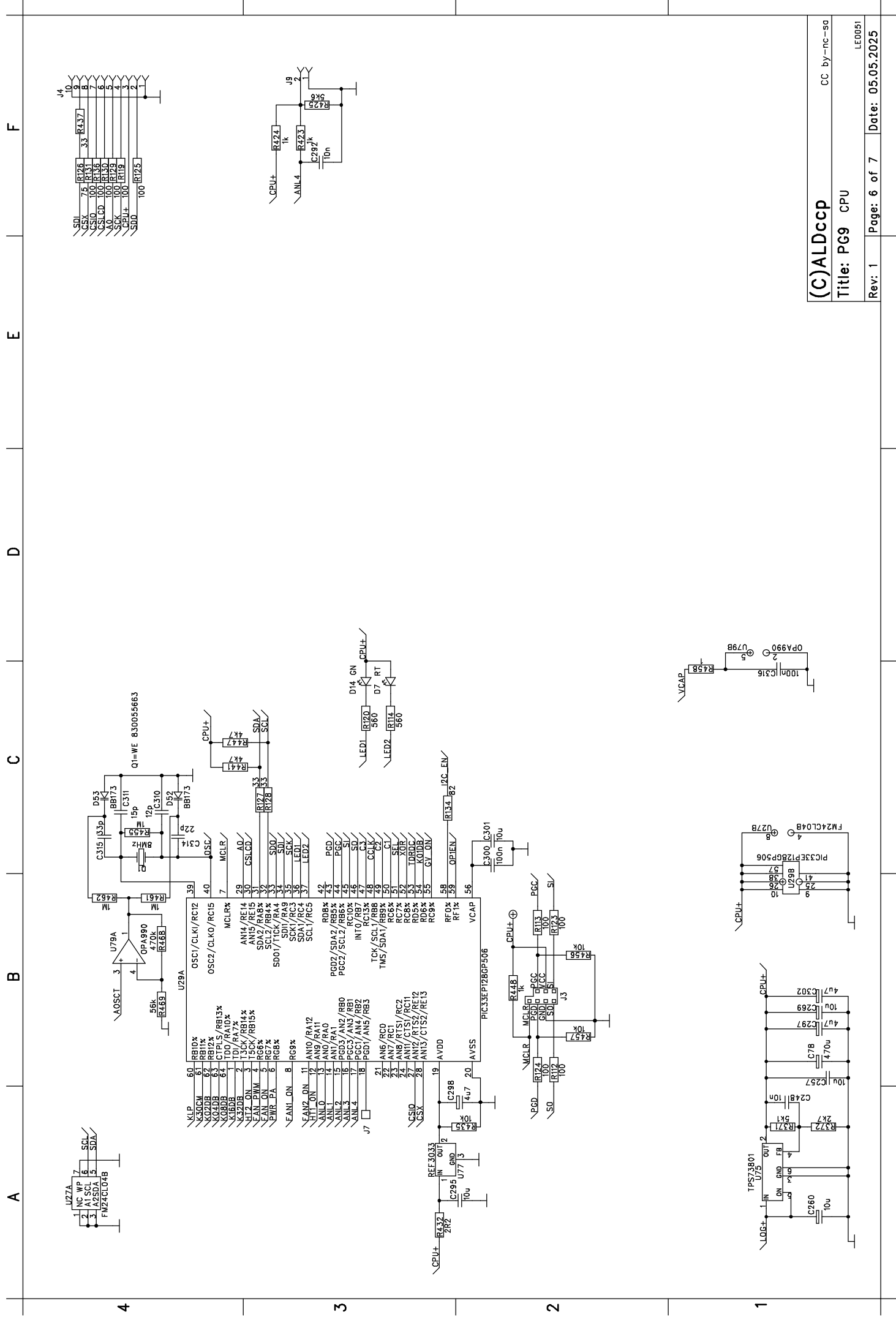
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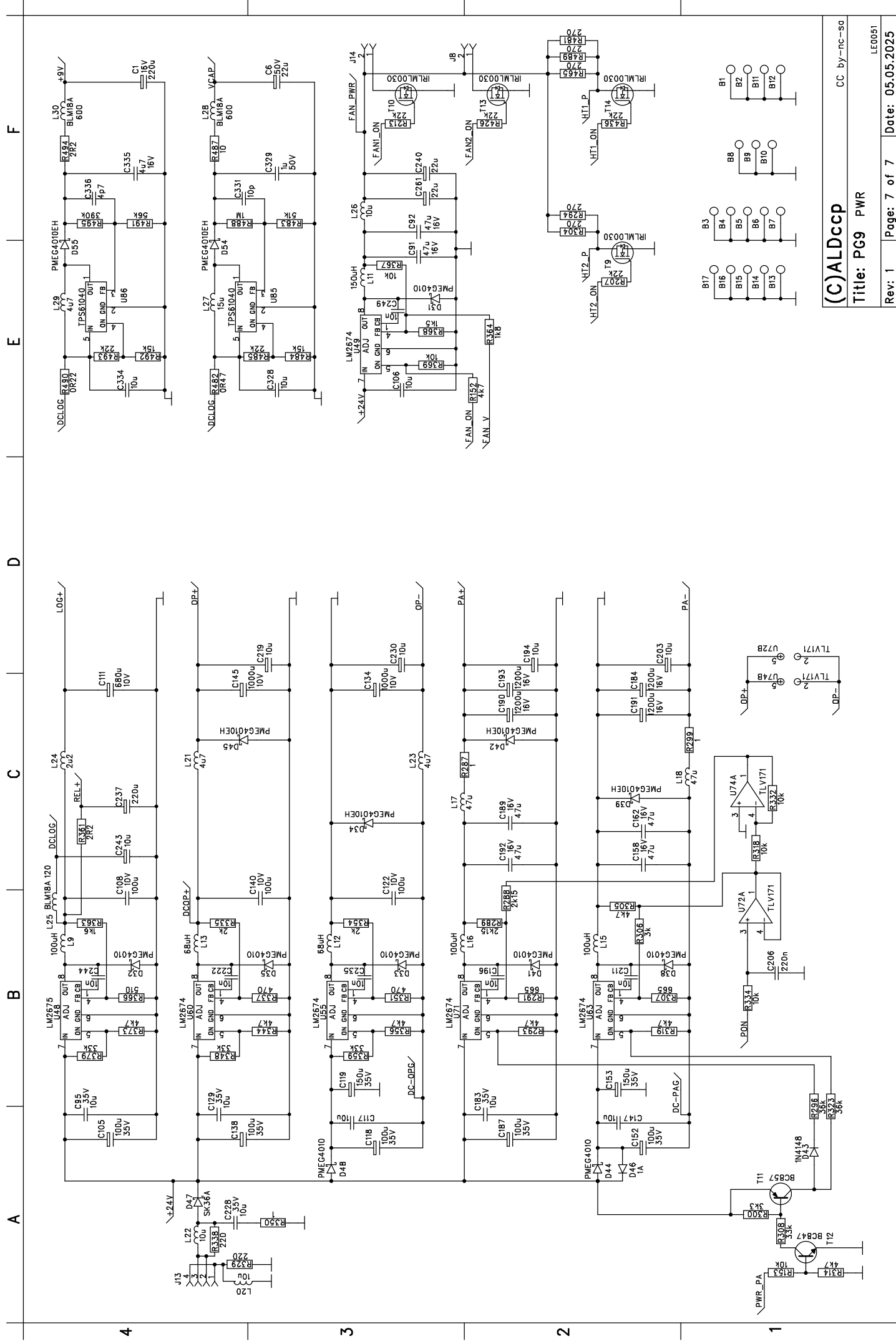
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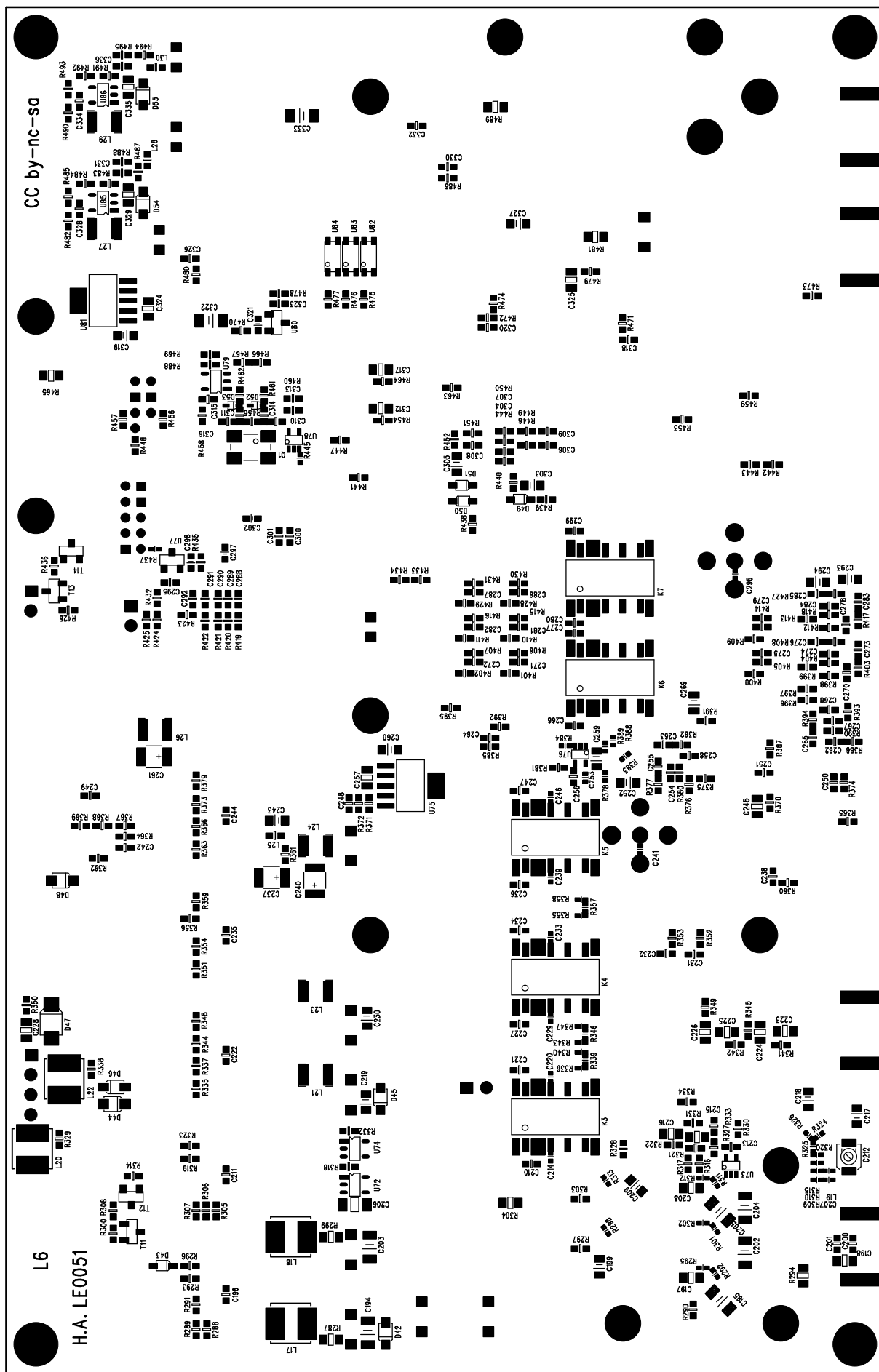
LED051

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Bill Of Materials for PG9.sch on Mon May 05 14:29:02 2025

Item	Qty	Reference	Part Name	Wert	Wert2	PCB DECAL
1	3	D43 D49 D51	1N4148			SOD-323F
2	1	U28	ADSX12C04	ADS112C04		TSSOP16
3	1	T12	BC847			SOT23
4	1	T11	BC857			SOT23
5	1	T1	BF550			SOT23
8	25	C2 C79 C210	C	100n		0603
		C227 C236				
		C242 C254				
		C258				
		C266-268				
		C270 C274				
		C278 C280				
		C284 C291				
		C300 C306				
		C309 C316				
		C318 C320				
		C330 C332				
9	18	C34 C68 C112	C			0402
		C120 C128				
		C142 C178				
		C207 C214				
		C220 C5 C229				
		C233 C239				
		C241 C246				
		C296 C24				
10	21	C56 C90	C	1u		0402
		C93-94				
		C38-39 C144				
		C146 C155				
		C167 C175				
		C181 C43-46				
		C48-49 C55				
		C25-26				
11	1	C82	C	82p		0402
12	2	C83 C174	C	820p		0402
13	1	C85	C	68p		0402
14	1	C86	C	12p		0402
15	1	C87	C	18p		0402
16	32	C88 C107	C	10u		0603
		C123-124				
		C132-133				
		C150-151				
		C169-170 C84				
		C213				
		C231-232				
		C238				
		C250-251				
		C255-256				
		C262-263				
		C265 C273				
		C276 C283				
		C285 C295				
		C301 C313				
		C323 C328				
		C334				
17	12	C127 C130	C	10n	C0G	0603
		C137 C139				
		C157 C168				
		C176 C182				
		C101 C103				
		C248 C37				
18	1	C141	C	3n9		0402
19	16	C62-64 C96	C	470n	C0G	1206
		C135-136 C72				
		C52 C61 C109				
		C113-114 C53				

20	1	C57 C125-126	C	33p		0402
21	6	C161	C	47u	16V	1206
		C189 C192				
		C158 C91				
22	6	C163 C172	C	220n		0402
		C180 C185				
		C188 C154				
23	4	C99 C76 C60	C	2n2		0402
		C66				
24	22	C41 C179 C70	C	100n		0402
		C186 C42 C71				
		C74 C7 C51				
		C8 C253 C36				
		C177 C14 C17				
		C22 C29 C35				
		C159 C31-32				
		C160				
25	7	C183 C228	C	10u	35V	0805
		C129 C95				
		C106 C117				
		C147				
26	10	C224-226 C69	C	22u	16V	0805
		C59 C149				
		C312 C317				
		C223 C148				
27	23	C235 C143	C	10n		0603
		C244 C247				
		C249 C221				
		C196 C264				
		C271-272				
		C275 C277				
		C279				
		C281-282				
		C222				
		C286-287				
		C292 C121				
		C299 C211				
		C234				
28	4	C197 C325	C	10u	X7R	0805
		C208 C245				
29	2	C200-201	C	5n6	C0G	0603
30	1	C77	C	0p5		0402
31	2	C156 C16	C	1p		0402
32	1	C75	C	3p3		0402
33	2	C115 C97	C	1u		0805
34	1	C19	C	220p		0603
35	2	C164 C166	C	1.2n		0402
36	1	C89	C	2p7		0402
37	2	C165 C81	C	22p		0402
38	1	C21	C	4n7		0603
39	3	C140 C108	C	100u	10V	1206
		C122				
40	3	C288-290	C	2u2		0603
41	4	C215 C3 C102	C	47n	C0G	0805
		C216				
42	1	C110	C	100n	C0G	1206
43	1	C23	C	100u		1206
44	1	C173	C	100p		0402
45	3	C304	C	220n		0603
		C307-308				
46	2	C257 C324	C	10u		0805
47	1	C310	C	12p		0603
48	1	C311	C	15p		0603
49	3	C10 C9 C11	C	1u	X7R	0603
50	1	C315	C	33p		0603
51	1	C20	C	820p		0603
52	2	C131 C171	C	0p6		0402
53	2	C30 C326	C	1u		0603
54	1	C80	C	27p		0402
55	1	C314	C	22p		0603

56	1	C206	C	220n	C0G	1206
57	1	C198	C	27n	C0G	0805
58	1	C329	C	1u	50V	0805
59	2	C4 C335	C	4u7	16V	0805
60	1	C104	C	680p		0402
61	1	C18	C	15p	2%	0603
62	1	C331	C	10p		0603
63	1	C336	C	4p7		0603
64	1	U17	CDCE913			TSOP14
65	1	D46	D	1A		SOD-123F
66	2	U41-42	DAC7578	DAC7578		TSSOP16
67	4	U7 U9 U18-19	DS90LV012A			SOT23-5
68	1	D40	D_ACC	BAV23S		SOT23
69	11	D3 D12-13 D19-20 D25-30	D_C	BB857		SOD-523
70	6	D21-24 D15 D17	D_C	BB174		SOD-523
71	4	D16 D18 D8-9	D_C	BB181		SOD-523
72	2	D36-37	D_C	BB175		SOD-523
73	2	D52-53	D_C	BB173		SOD-523
74	7	D1-2 D4-6 D10-11	D_S	1PS79SB17		SOD-523
75	1	D50	D_S	1PS76SB17		SOD-323F
76	1	C1	EC	220u	16V	EC100D60
77	1	C6	EC	22u	50V	EC100D60
78	2	C28 C111	EC	680u	10V	EC150D80
79	2	C78 C33	EC	470u	6V3	EC100D60
80	5	C105 C118 C138 C152 C187	EC	100u	35V	EC-SMD-D63
81	2	C145 C134	EC	1000u	10V	EC150D80
82	2	C153 C119	EC	150u	35V	EC-SMD-D63
83	4	C184 C190-191 C193	EC	1200u	16V	EC150D80
84	14	C15 C199 C209 C217-219 C230 C243 C252 C259-260 C293-294 C319	EC_SMD	10u	T55P106M010 C0200	0805P
85	6	C202-205 C194-195	EC_SMD	10u	TCJA106M016 R0200	1206P
86	12	C50 C54 C58 C65 C100 C269 C40 C47 C303 C305 C27 C327	EC_SMD	10u	T55P106M6R3 C0200	0805P
87	2	C240 C261	EC_SMD	22u	T55B226M016 C0070	1411P
88	4	C298 C302 C297 C321	EC_SMD	4u7	6V	0603P
89	1	C237	EC_SMD	220u	T55B227M6R3 C0035	1411P
90	4	C116 C322 C98 C333	EC_SMD	100u	T55A107M6R3 C0045	1206P
91	7	K1-7	G6K-2F-RF-S			G6K-2F-RF-S
92	1	U27	I2C-6-MEM	FM24CL04B		SO8
93	11	T2-10 T13-14	IRLML0030			SOT23
94	1	U3	ISO1541			SO8
95	1	L9	L	100uH		PIS3920
96	1	L11	L	150uH		PIS2816
97	2	L12-13	L	68uH		PIS2816
98	2	L15-16	L	100uH		PIS2816
99	1	D7	LED_SMD	RT		0805D
100	1	D14	LED_SMD	GN		0805D
101	5	U49 U55 U60 U63 U71	LM2674	ADJ		SO8

102	1	U48	LM2675	ADJ		SO8
103	7	U46 U61 U64-65 U67-68 U70	LMH6703			SOT23-6
104	3	J5 J7 J10	LPA			LP
105	1	U12	LVC1G07	SN74LVC1G07		SC70-5
106	1	U13	LVC1G14	SN74AUC1G04		SC70-5
107	1	U20	LVC1G14	SN74AUC1G14		SC70-5
108	2	U10 U15	LVC1G32	SN74AUC1G32		SC70-5
109	1	U14	LVC1G86	SN74AUC1G86		SC70-5
110	1	L1	L_SMD	82nH	LQG15HS	0402
111	1	L2	L_SMD	22nH	LQG15HS	0402
112	1	L3	L_SMD		LQG15HS	0402
113	1	L4	L_SMD	68nH	LQG15HS	0402
114	1	L5	L_SMD	18n	LQG18HN	0603
115	1	L6	L_SMD	8n2	LQG18HN	0603
116	1	L7	L_SMD	10nH	LQG15HS	0402
117	1	L8	L_SMD	33nH	LQG15HN	0402
118	1	L10	L_SMD	27n	LQG15HS	0402
119	1	L14	L_SMD	8n2	LQG15HS	0402
120	2	L17-18	L_SMD	47u	LQH5BPN	2020L
121	1	L19	L_SMD	0	LQG15HS	0402
122	2	L20 L22	L_SMD	10u	LQH5BPN	2020L
123	3	L21 L23 L29	L_SMD	4u7	LQH32PB	1210
124	1	L25	L_SMD	120	BLM18A	0603
125	1	L26	L_SMD	10u	LQH32PB	1210
126	1	L27	L_SMD	15u	LQH32PB	1210
127	2	L28 L30	L_SMD	600	BLM18A	0603
128	1	L24	L_SMD	2u2	LQH32PB	1210
129	2	U53-54	MAX5217	MAX5217		MSOP-8
130	1	U44	MCP3421	MCP3421A0		SOT23-6
131	1	U80	MCP1700S	1V8		SOT23
132	1	U23	MCP47FEBX2	MCP47EFB22A 0		TSSOP8
133	1	U25	MCP47FEBX2	MCP47EFB22A 1		TSSOP8
134	1	U1	MCP47X6	MCP4726A2		SOT23-6
135	1	U4	OP-SOT23-5	MCP6051		SOT23-5
136	10	U30-31 U33-35 U37-39 U43 U79	OP-SOT23-5	OPA990		SOT23-5
137	6	U40 U36 U45 U72 U74 U32	OP-SOT23-5	TLV171		SOT23-5
138	3	U58 U62 U57	OP-SOT23-5	OPA210		SOT23-5
139	2	U52 U47	OP-SOT23-5	OPA189		SOT23-5
140	1	U16	OPTO	21LR11	G3VM-21LR11	SSOP4
141	5	U22 U24 U82-84	OPTO	41LR10	G3VM-41LR10	SSOP4
142	1	U29	PIC33EP128GP506			TQFP64
143	1	J3	PICPG7			PICPG7_79
144	8	D31-33 D35 D38 D41 D44 D48	PMEG4010	PMEG4010ETR		SOD-123W
145	6	D42 D39 D45 D34 D54-55	PMEG4010	PMEG4010EH		SOD-123F
146	1	P1	POTI	1k		P4SS_SMD
147	1	P2	POTI	50		P4L_SMD
148	1	Q1	Q4SMD	8MHz		Q50X32
149	3	R1 R243 R269	R	39k		0603
150	31	R4-5 R144 R153-154 R167 R203-204 R209-210 R219 R223 R256 R278 R318 R331-332 R334 R367 R369 R396	R	10k		0603

		R419-421 R435 R442 R446 R449 R452 R456-457				
151	1	R35	R	120		0603
152	3	R36 R381 R460	R	100		0603
153	1	R39	R	360		0402
154	2	R40 R255	R	0		0402
155	6	R42 R105 R116 R127-128 R437	R	33		0402
156	5	R48 R65 R67 R134 R21	R	82		0402
157	2	R53 R56	R	2k7		0402
158	3	R55 R54 R37	R	470		0402
159	3	R58 R50 R17	R	10k		0402
160	10	R61-62 R49 R69 R16 R60 R57 R25-26 R34	R	0R22		0402
161	7	R71 R75 R104 R46 R180 R275 R309	R			0402
162	2	R78 R121	R	15		0402
163	3	R80 R122 R164	R	56		0402
164	12	R83 R89 R101 R107 R110-111 R118 R138 R141-142 R170 R245	R	1M		0402
165	3	R95 R86 R91	R	249		0402
166	1	R98	R	18k	0.1%	0603
167	1	R99	R	3k4	0.1%	0603
168	3	R100 R87 R32	R	22		0402
169	3	R103 R355 R358	R	220	0.1%	0402
170	6	R106 R117 R93 R238 R384 R445	R	180		0402
171	16	R112-113 R96 R119 R123-125 R129-131 R136 R139-140 R146 R179 R310	R	100		0402
172	1	R74	R	4k64	0.1%	0603
173	2	R115 R133	R	33	0.1%	0402
174	7	R79 R6 R215 R217 R321 R327 R102	R	10k	0.1%	0603
175	1	R90	R	22	0.1%	0402
176	1	R44	R	1k		0402
177	2	R114 R120	R	560		0603
178	2	R92 R126	R	75		0402
179	1	R132	R	91		0402
180	2	R145 R364	R	1k8		0603
181	3	R147 R155 R229	R	120	0.1%	0402
182	4	R150 R148 R156 R149	R	10	0.1%	0402
183	3	R8 R14 R52	R	560		0402
184	5	R157 R165 R11 R23 R29	R	120		0402
185	7	R162 R208	R	115	0.1%	0402

		R212 R336 R340 R343 R347				
186	9	R169 R226 R230 R233 R241-242 R258 R264 R282	R	75	0.1%	0402
187	2	R178 R177	R	91k	0.1%	0603
188	3	R72 R329 R338	R	220		0603
189	1	R183	R	15k		0402
190	3	R184 R244 R246	R	27k		0402
191	2	R187 R186	R	150k	0.1%	0603
192	2	R189-190	R	330k	0.1%	0603
193	3	R191 R188	R	33k	0.1%	0603
		R70				
194	3	R194 R3 R181	R	68k		0603
195	2	R197 R192	R	422	0.1%	0402
196	7	R199 R202 R205-206 R185 R175 R193	R	47k		0603
197	1	R200	R	2k	0.1%	0603
198	8	R207 R213 R362 R426 R434 R436 R485 R493	R	22k		0603
199	2	R97 R73	R	12k	0.1%	0603
200	1	R51	R	1k5		0402
201	2	R218 R216	R	51k1	0.1%	0603
202	2	R220-221	R	12k4	0.1%	0603
203	12	R222 R296 R323 R376 R380 R390 R393 R398 R404 R412 R418 R214 R234-235	R	36k		0603
204	2	R236 R108	R	2R2		0402
205	2	R109	R	160	0.1%	0402
206	1	R239-240	R	270	0.1%	0402
207	15	R173 R251 R254 R257 R263 R273 R281 R283 R285 R228 R232 R13 R172		0R1		0402
208	5	R2 R365 R370	R	10		0603
209	3	R479 R487 R259-260 R266	R	39	0.1%	0402
210	2	R262 R248	R	12R4	0.1%	0402
211	6	R176 R330 R423-424 R448 R466	R	1k		0603
212	1	R270	R	16R5	0.1%	0805
213	1	R271	R	10	0.1%	0603
214	3	R272 R284 R250	R	75	0.1%	0603
215	3	R76 R68 R30	R	100k		0402
216	1	R66	R	39		0402
217	2	R279-280	R	470k	0.1%	0402
218	8	R247 R286 R166 R389 R274 R261 R252 R277	R	10		0402
219	2	R289 R288	R	2k15		0603
220	2	R291 R307	R	665		0603

221	11	R293 R305 R314 R319 R135 R152 R344 R356 R373 R441 R447	R	4k7		0603
222	5	R304 R294 R465 R481 R489	R	270	0.5W	0805
223	1	R77	R	1k2		0402
224	2	R45 R84	R	270		0402
225	3	R312 R295 R302	R	1k	0.1%	0402
226	2	R315 R47	R	300		0402
227	1	R317	R	942	0.1%	0603
228	4	R18 R311 R301 R292	R	470	0.1%	0402
229	1	R322	R	2M2		0603
230	1	R224	R	120	0.1%	0603
231	1	R324	R	360	0.1%	0402
232	1	R325	R	30R1	0.1%	0402
233	1	R326	R	47k		0402
234	2	R81 R249	R	150		0402
235	1	R196	R	12	0.1%	0402
236	1	R265	R	1k65	0.1%	0402
237	5	R19 R158 R94 R168 R41	R	68		0402
238	2	R20 R10	R	680		0402
239	1	R182	R	0R68		0603
240	3	R339 R346 R211	R	53R6	0.1%	0402
241	8	R342 R345 R349 R361 R387 R432 R341 R494	R	2R2		0603
242	21	R350 R352-353 R360 R374 R377 R382 R386 R198 R391 R394-395 R403 R171 R408 R417 R427 R454 R458 R464 R470	R	1		0603
243	1	R371	R	5k1		0603
244	2	R372 R64	R	2k7		0603
245	2	R354 R335	R	2k		0603
246	1	R225	R	5k6		0402
247	1	R151	R	330		0603
248	1	R378	R	68k		0402
249	4	R379 R359 R348 R308	R	33k		0603
250	3	R383 R298 R313	R	430	0.1%	0402
251	2	R357 R320	R	24	0.1%	0402
252	1	R388	R	4k7		0402
253	3	R43 R27 R33	R	47		0402
254	11	R392 R400-402 R409-411 R428-429 R469 R491	R	56k		0603
255	3	R12 R160 R159	R	390		0402
256	10	R406-407 R414-416 R430-431 R385 R468	R	470k		0603

257	4	R405 R397 R375 R399 R413	R	18k		0603
258	5	R333 R455 R461-462 R488	R	1M		0603
259	1	R425	R	5k6		0603
260	2	R287 R299	R	1		0805
261	1	R174	R	49R9	0.1%	0603
262	1	R328	R	430	0.1%	0603
263	1	R7	R	27k	0.1%	0603
264	2	R231 R237	R	68	0.1%	0402
265	1	R433	R	82		0603
266	1	R59	R	820		0402
267	1	R28	R	75		0603
268	1	R82	R	430		0402
269	1	R316	R	24	0.1%	0603
270	5	R438-439 R422 R471 R474	R	2k2		0603
271	2	R443 R459	R	22		0603
272	1	R88	R	220		0402
273	1	R290	R	330	0.1%	0603
274	2	R303 R297	R	200	0.1%	0603
275	1	R31	R	27		0603
276	3	R450-451 R444	R	20k		0603
277	7	R453 R463 R467 R473 R475-477	R	1k2		0603
278	3	R38 R15 R9	R	750		0402
279	1	R22	R	33		0603
280	1	R363	R	1k6		0603
281	1	R306	R	3k		0603
282	1	R195	R	100k		0603
283	1	R227	R	85R6	0.1%	0603
284	2	R440 R490	R	0R22		0603
285	1	R63	R	3k6		0603
286	2	R276 R253	R	49R9	0.1%	0402
287	1	R85	R	15	0.1%	0402
288	2	R161 R267	R	330		0402
289	1	R368	R	1k5		0603
290	1	R137	R	100	0.1%	0402
291	1	R478	R	3R3		0603
292	2	R337 R351	R	470		0603
293	1	R268	R	3k9		0402
294	1	R482	R	0R47		0603
295	1	R483	R	51k		0603
296	2	R484 R492	R	15k		0603
297	2	R486 R480	R	47		0603
298	1	R201	R	1k15	0.1%	0603
299	1	R300	R	3k3		0603
300	1	R24	R	27		0402
301	1	R143	R	22k		0402
302	1	R163	R	13	0.1%	0402
303	1	R472	R	39		0603
304	1	R366	R	510		0603
305	1	R495	R	390k		0603
306	1	U77	REF30XX	REF3033		SOT23
307	1	U50	REF50XX	REF5025		MSOP-8
308	1	D47	SK36A			SMAD
309	3	J8-9 J14	SL2			PSS254_2G
310	1	J13	SL4			PSS254_4G
311	1	J4	SL10			SL79U_2X10
312	4	J1-2 J12 J15	SMA_B			SMA-180
313	2	J6 J11	SMA_B			SMA-90
314	2	U6 U8	SN65LVDS1	SN65LVDS1		SOT23-5
315	2	U75 U81	SOT223_6	TPS73801		SOT223-6
316	2	C12 C73	TC	2-6p	JR060	TC35SMD
317	1	C67	TC			TC35SMD
318	2	C13 C212	TC	1.5-3p	JR030	TC35SMD

319	1	U51	TCA9517	TCA9517A	MSOP-8
320	3	U73 U76 U78	TEMP5	TMP236	SC70-5
321	1	U5	TL431-SMD	TL431	SOT23
322	1	U11	TLV3501		SOT23-6
323	2	U85-86	TPS61040		SOT23-5
324	1	U2	TPS72301		SOT23-5
325	3	U21 U59 U69	TPS7A	TPS7A49	VSSOP9A
326	3	U26 U66 U56	TPS7A	TPS7A30	VSSOP9A

Zusätzliche Komponenten:

Lüfter: SUNON MF25101V2-1000U-A99 DC12V

Schirmung:	2x Laird	BMIS-202-F	+	BMIS-202-C	(SMS-202)
	2x Laird	SMS-255F	+	SMS-255C	
	1x Laird	SMS-457F	+	SMS-457C	
	1x Masach Tech Ltd.	MS168-10F	+	MS168-10C	

ACHTUNG: !!!

Alle Tantal Kondensatoren sind Polymer Kondensatoren
mit kleinen ESR ca. 300 ... 500 mOhm.

Polymer Kondensatoren niemals durch Keramik Kondensatoren ersetzen !!!
zu kleiner ESR (sie werden zum Schwingkreis oder bilden Schwingkreise)

Bei den Aluminium Elektrolyt Kondensatoren auf kleinen ESR achten

Bei den Widerständen (0.1%) in den Spannungsteilern ist auch auf
thermische Stabilität zu achten min. 25ppm