

# Service Manual

2/1 CHANNEL DIGITAL POWER AMPLIFIER  
MODEL NO: DPX1001.2

DATE: May 2, 2002

VERSION: 1.01

# Clarion

# DPX1001 .2 - Specifications

## Output Power (RMS)

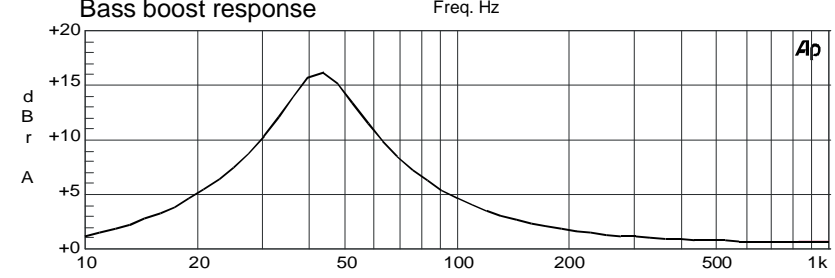
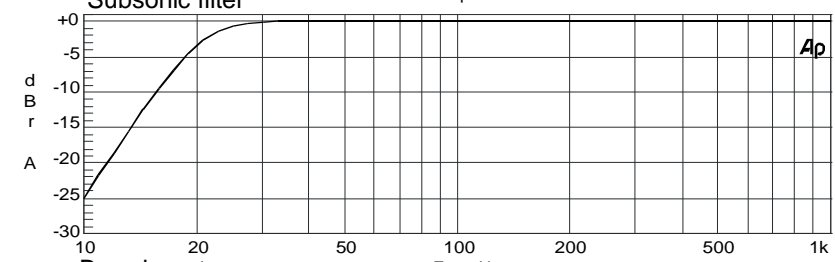
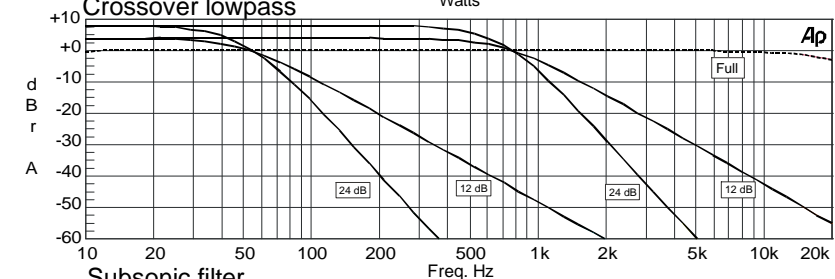
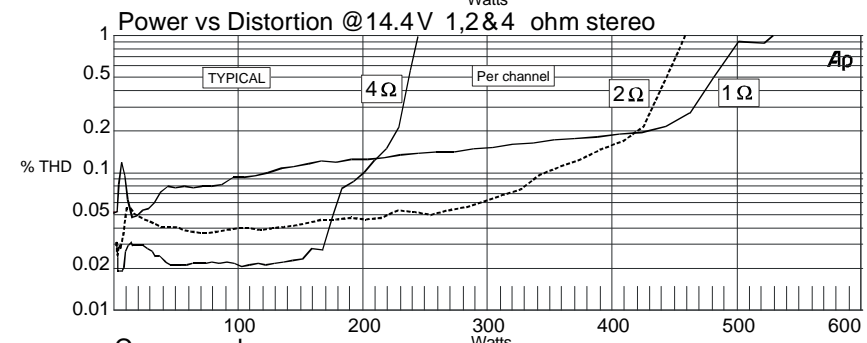
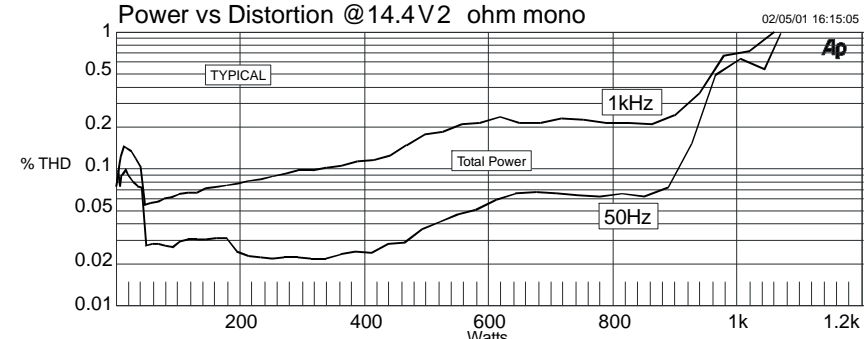
2 ohm mode  
 Stereo @ 4 ohms 2x 240Watts  
 Stereo @ 2 ohms 2x 450 Watts  
 Bridged @ 4 ohms 1x 900 Watts

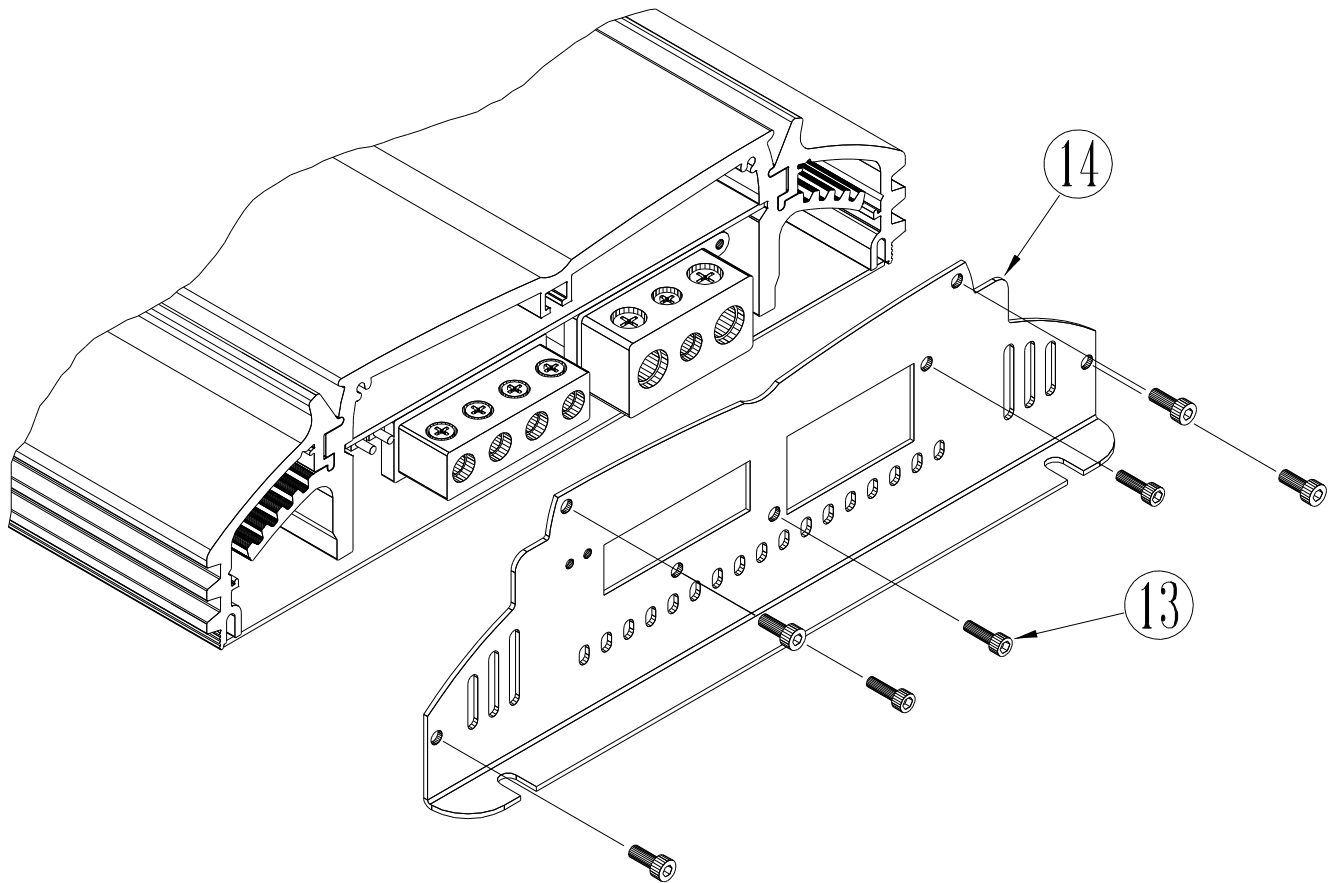
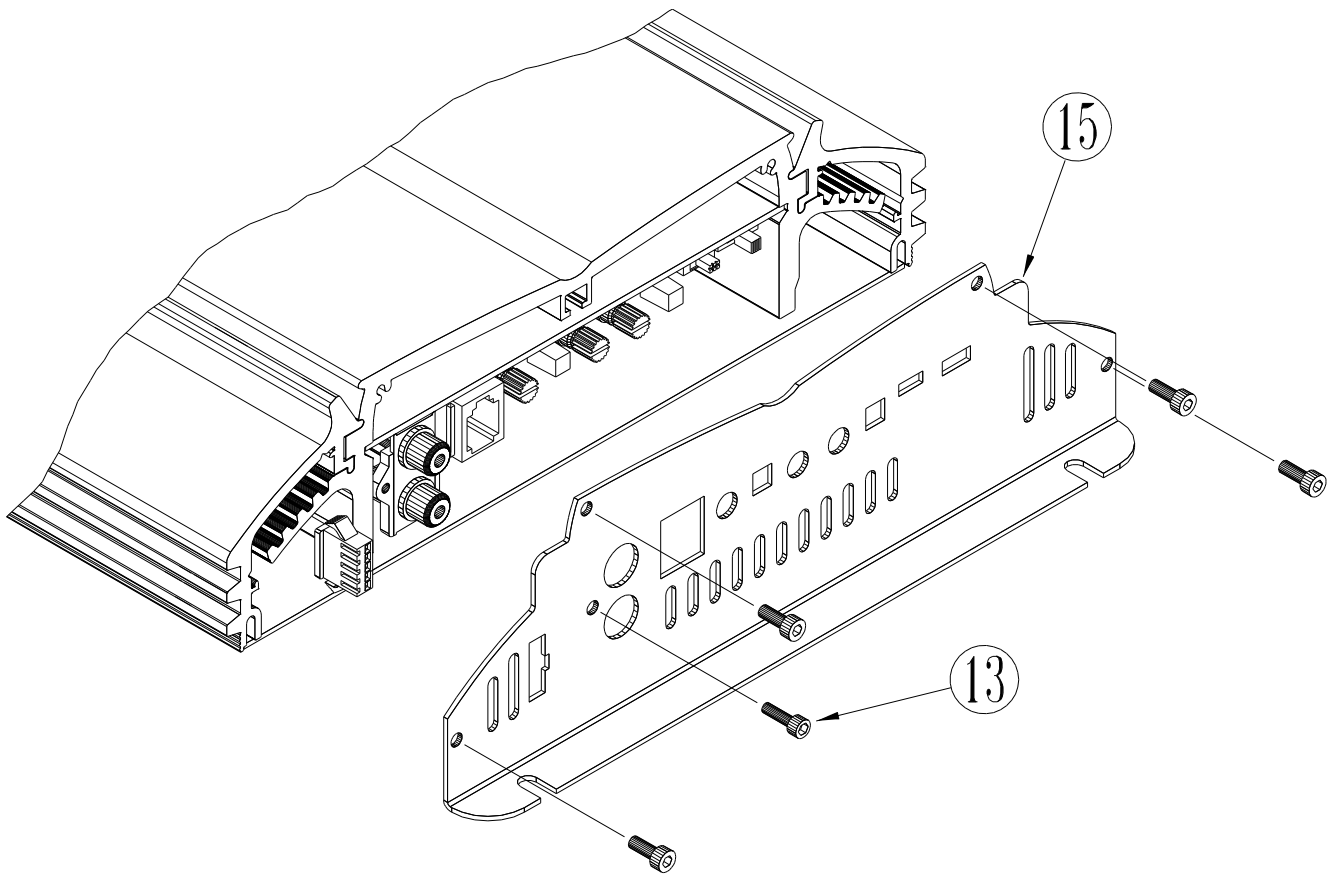
1 ohm mode  
 Stereo @ 4 ohms 2x 150Watts  
 Stereo @ 2 ohms 2x 290Watts  
 Stereo @ 1 ohms 2x 500 Watts  
 Bridged @ 2 ohms 1x 1000 Watts

T.H.D.  
 4 ohm 160Watts < .05%  
 2 ohm 400 Watts < .2%  
 1 ohm 450 Watts < .5%

Frequency Response 20Hz - 20kHz  
 S/N Ratio (A wtg.) > 98dB  
 Separation @ 1 kHz > 65dB  
 Transient Distortion (100W) < .055% @ 4 ohms  
 Slew Rate 9 V $\mu$ S  
 Damping Factor > 165 @ 50Hz 4 $\Omega$  200W  
 Input Sensitivity 250mV - 2.8V  
 Bass Boost 0 - 15dB @ 45Hz  
 Crossover (Butterworth) 12dB Stereo,  
 24dB Mono 50Hz - 550Hz  
 Input Impedance 33K ohms  
 Idle Current 1.75A  
 Max Current Requirement 120A @ 1000 Watts  
 Dimensions 15.25" L x 8" W x 2.35" H

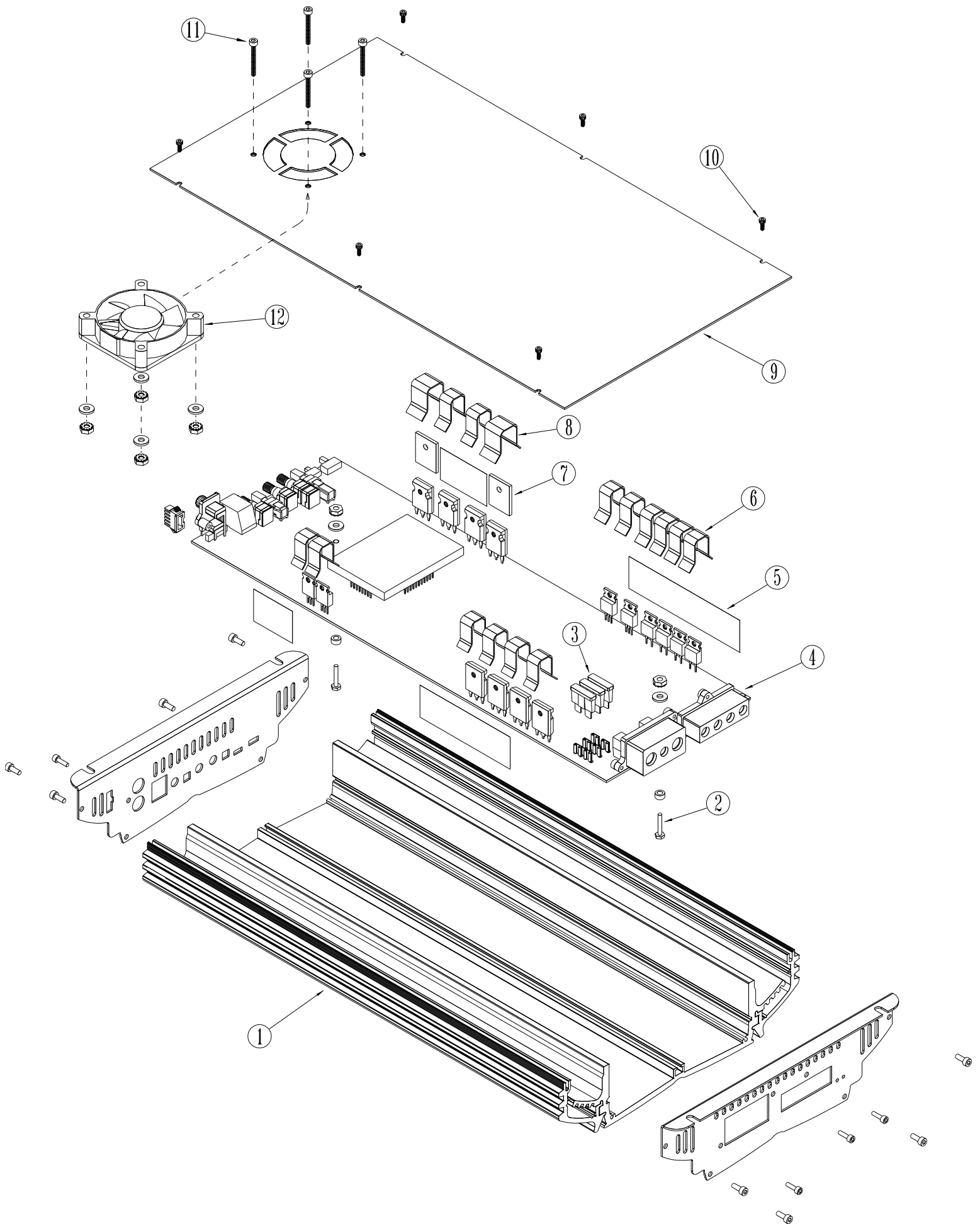
# DPX1001 .2 - Specifications





## PARTS LIST for DPX1001.2 EXPLODED VIEW

NO	PARTNO	QTY	DESCRIPTION	SPEC	Unit
1	77-00253-00	1	HEATSINK	381mm	PCS
1	77-00254-00	2	SUB HEATSINK	381mm	PCS
2	YH-00007-00	2	SCREW PCB	A+B+C+D	KIT
3	76-00224-01	3	FUSE	ATC-30A (UL)	PCS
4	32-00657-00	1	TERMINAL (4-PIN)]	KTU-9214A	PCS
4	32-00658-00	1	TERMINAL (3-PIN)]	KTU-9217A	PCS
5	78-00300-00	1	KAPTON	25mm*45mm	PCS
5	78-00301-00	1	KAPTON	25mm*95mm	PCS
6	74-00153-00	14	CLIP	BLACK	PCS
7	78-00302-00	2	INSULATOR	0.085 #4180	PCS
8	74-00158-00	2	CLIP- BIG	BLACK	PCS
9	72-00312-01	1	Bottom Panel	379.5mm	PCS
10	ST-RP230-08	6	SCREW for Bottom Panel	RP Head, Ni 3*8	PCS
11	SM-RP430-20	4	Screw for Fan	Big Pan Head3*20 Black	PCS
11	NM-OH330-01	4	BOLT for FAN	M3.0*P0.5+W	PCS
12	75-00001-00	1	FAN D6015B12M	150mm+2P (XH)	PCS
13	ST-IH230-08	11	Screw for Rear Panel	Ni 3*8	PCS
13	ST-IH230-12	1	Screw for Rear Panel	Hexa-Internal, Ni3*12	PCS
14	71-00457-00	1	Rear Panel	DPX1001.2	PCS
15	71-00456-00	1	Front Panel	DPX1001.2	PCS
	10-00546-00	1	PCB with Parts (Main)	DPX1001.2	KIT
	11-00546-00	1	P.C.B. w/o Parts	DPX1001.2	PCS
	11-22098-00	1	P.C.B. w/o Parts	BC2	PCS
	73-00108-03	2	MESH	381mm	PCS
	75-00005-01	2	NAMEPLATE	BC2 CLARION	PCS
	75-00008-00	1	LOGO	CLARION	PCS
	75-00009-00	1	NAMEPLATE SET		PCS
	78-00308-00	6	MICA	25*20mm	PCS
	79-D1001-GK	1	GIFT BOX	DPX1001.2	PCS
	80-D1001-GK	1	I/B	DPX1001.2	PCS
	SM-RP430-05	1	SCREW	M/R 3*5	PCS



<b>DPX1001.2 rev: 1.02 BOM</b>				
<b>Qty</b>	<b>Reference</b>	<b>Part Name</b>	<b>Manufacturer</b>	<b>Description</b>
1	U2	7805	Motorola 7805	5V 1A pos. regulator
1	U1	7812	Motorola 7812	12V 1A pos. regulator
6	D11 D13 D15-18	1N4148	1N4148	Diode Axial DO-35 50mA 100V
4	D9-10 D12 D14	1N4934	General Instrument 1N4934	Diode DO-41 Fast Recovery 1A 100V
1	DZ3	1N5232B	1N752A or 1N5232B	5.6V ZENER
1	DZ1	1N5233B	1N5233B	6V ZENER
1	DZ6	1N966A	1N966A or 1N5246B	16V ZENER
1	DZ2	1N967A	1N967B or 1N5248B	18V ZENER
2	DZ4-5	1N975A	1N975A or 1N5259B	39V ZENER
4	Q1 Q3-5	2N6715	Central Semi 2N6715	NPN 2A 50V TO-237
2	Q6-7	2N6726	Central Semi 2N6726	PNP 2A 50V TO-237
2	L6-7	BEAD	Panasonic EXC-ELSA39	FERRITE BEAD 110 OHM @ 100MHz
29	C13-14 C30-31 C42 C47-49 C55 C62 C64 C68-70 C80-81 C84-85 C88 C95-96 C99 C102-103 C108 C110-111 C114-115	CAP-.1U-CER-MONO	Panasonic ECU-S1H104KBB	CAP mono ceramic .1U 50V 5mm LS
13	C7-8 C11-12 C15-17 C19 C41 C45 C57 C63 C82	CAP-.1U-MMYL	Panasonic ECQ-V1H104JL	CAP MMYL .1U 50V 5% 5mm LS
2	C9 C20	CAP-.22U-100V-MMYL	Panasonic - ECQ-V1224JM	CAP MMYL .22U 100V 5% 7.5mm LS
4	C79 C91 C101 C106	CAP-.22U-MMYL	Panasonic ECQ-V1H224JL	CAP MMYL .22U 50V 5% 5mm LS
7	C52 C60 C89-90 C104-105 C117	CAP-.47U-MMYL	Panasonic ECQ-V1H474JL	CAP MMYL .47U 50V 5% 5mm LS
2	C10 C21	CAP-.68U-100V-MMYL	Panasonic - ECQ-E1684KF	CAP MMYL .68U 100V 10% 10mm LS
12	C27-28 C34-35 C44 C46 C50-51 C56 C58 C66-67	CAP-1000U-50	Panasonic ECA-1HFQ102	1000U 50V RAD105C LOW ESR 16Dx25Hx7.5LS
1	C3	CAP-100U-25	Panasonic NHG ECA-1EHG101	100U 25V 20% RAD 105C 6.3Dx11Hx2.5LS
2	C5 C71	CAP-100U-25	Panasonic ECA-1EHG101	100U 25V 20% RAD 105C 6.3Dx11Hx2.5LS
1	C76	CAP-10P-CER	Panasonic ECC-F1H100D	CAP CERAMIC DISC 10P 50V 2.5 LS
4	C78 C83 C93 C109	CAP-10U-50	Panasonic ECA-1HFG100	CAP RAD 105C 5Dx11Hx2LS 10UF 50V
2	C40 C61	CAP-150P-MMYL	Panasonic ECQ-B1H151KF	CAP MMYL 150P 50V 5mm LS
2	C86-87	CAP-18P-CER	Panasonic ECC-F1H180J	CAP CERAMIC DISC 18P 50V 2.5 LS
7	C1-2 C18 C22-23 C112 C116	CAP-1N-MMYL	Panasonic ECQ-B1H102JF	CAP MMYL 1N 50V 5% 5mm LS
4	C33 C59 C65 C113	CAP-1U-50	Panasonic ECA-1HHG010	CAP ALECT 1U 50V 20% 5Dx11Hx2LS
6	C38-39 C53-54 C72-73	CAP-3300U-25	Panasonic ECA-1EFQ332	3300U 25V rad low ESR .023R 105C 20% 18dx31.5hx7.5mmLS
4	C74-75 C100 C107	CAP-33P-CER-2.5LS	Panasonic ECC-F1H330J	Ceramic Disc Cap 33P 100V 2.5mm LS
2	C97-98	CAP-39N-MMYL	Panasonic ECQ-B1H393JF	CAP MMYL 33N 50V 5% 5mm LS
2	C4 C6	CAP-470U-50	Panasonic EEU-FC1H471	470U 50V RAD105C LOW ESR 12.5Dx25Hx5LS
2	C24 C29	CAP-47P-CER-500V	PANASONIC ECC-D2H470K5	CAP MMYL 47P 500V 5% 5mm LS
2	C92 C94	CAP-47U-25	Panasonic ECE-A1EFG470	47U 25V 20% RAD 105C 6.3Dx11Hx2.5 LS
1	C77	CAP-4U7-50	Panasonic ECA-1HHG4R7	CAP ALECT 4.7U 50V RAD 105C 5Dx11Hx2LS
4	C25 C32 C36-37	CAP-56N-MMYL	Panasonic ECQ-B1H563JF	CAP MMYL 56N 50V 5% 5mm LS
2	C26 C43	CAP.47U-250V-COMBO	Thompson PK474J2L	.47UF 250V FILM CAP LS 17.5 19.5 22.5 COMBO
2	L1 L4	CHOKE-5.8UH-AIR	Drawing no: DPX1000-8	Inductor air core 5.8uH 44 turns 20 ga. .2 ID
2	L3 L5	CHOKE-9UH	Drawing no: DPX1000-7	Inductor Micro-Metal T106-2 core 9uH
2	L8-9	CHOKE100UH	J.W. MILLER 78F101J	Inductor 100uH
1	L2	CHOKE_1000_TRIPATH	Drawing no DPX1000-5	Inductor Micro-Metal T157-52 core 1KW
1	J9	CONN_2P_2.5MM	Fairland JS-1135-2	2.5mm 2 pos header stright
1	J3	CONIKTU-9214A-1X4	KYUNG DONG KTU-9214A	CONN BARRIER 1x4 AU RT ANGLE
1	J6	CONIKTU-9217A-1X3	KYUNG DONG KTU-9217A	Conn Barrier large power 1x3 rt angle

4	D1-4	FES16DT	General Instrument FES16DT	RECT ULTRAFAST 16A200V35nS
3	F1-3	FUSEATO	Keystone #3522-2	ATO blade fuse holder
4	M5-8	HUF75344G3	Intersil	75A 55V .008 ohm N-Channel UltraFET TO-247
1	LED1	LED-DOT-GREEN	KINGBRIGHT L-13GD	LED green dot style
1	LED2	LED-DOT-YELLOW	KINGBRIGHT L-13YD	LED yellow dot style
1	U20	LM317T	Motorola LM317T	Adjustable pos. regulator
1	U21	LM337T	Motorola LM337T	Adjustable neg. regulator
4	Q8-11	MPSA06	MPSA06	EBC TO-92 NPN Small signal Transistor
1	Q2	MPSA56	MPSA56	EBC TO-92 NPN Small signal Transistor
4	D5-8	MUR120	Motorola MUR120	Ultra fast rectifier 1A 200V 25ns
8	U3-5 U10-13 U19	NJM4560D	JRC NJM4560D	Dual Op Amp DIP 8 pin
2	U14 U22	OPTO-CYN17-3	QT Opto. CNY17-3	Single opto-coupler 70V dip-6
4	U6 U9 U16 U23	OPTO-H11A817	QT H11A817	Single opto-coupler thru hole
1	U18	PIC16C711	MICROCHIP PIC16C711-04I/P	8-Bit CMOS Microcontroller with Analog Converter
1	VR1	POTALPH-C50K-X4	ALPHA	Pot ALPHA quad 50K RZ 9mm sq 6mm shaft 18 teeth
2	VR2-3	POTALPH-L20K-X2	ALPHA	Pot ALPHA dual 20K lin 9mm sq 6mm shaft 18 teeth
2	R145-146	R1/2W-1.1		RESISTOR 1/2W 10% 1.1 OHM
1	R46	R1/2W-3.3	SEI type MP metal film	RESISTOR 1/2W 5% 3.3
2	R97 R106	R1/4W-10		RESISTOR 1/4W 1% 10
1	R95	R1/4W-13K		RESISTOR 1/4W 1%
1	R90	R1/4W-15K		RESISTOR 1/4W 1%
1	R34	R1/4W-5.1		RESISTOR 1/4W 1% 5.1
2	R109 R112	R1/4W-7.87K		RESISTOR 1/4W 1% 7.87K
3	R75 R79 R99	R1/8W1%-100		RESISTOR 1/8W 1% 100
2	R50 R52	R1/8W1%-110		RESISTOR 1/8W 1% 110
5	R96 R137-138 R164-165	R1/8W1%-221		RESISTOR 1/8W 1% 221
2	R133 R135	R1/8W1%-274		RESISTOR 1/8W 1% 274
2	R115 R151	R1/8W1%-475		RESISTOR 1/8W 1% 475
1	R123	R1/8W1%-681		RESISTOR 1/8W 1% 681
2	R53-54	R1/8W1%-750		RESISTOR 1/8W 1% 750
2	R60 R68	R1/8W1%-1.1K		RESISTOR 1/8W 1% 1.1K
1	R124	R1/8W1%-1.5K		RESISTOR 1/8W 1% 1.5K
3	R8 R33 R121	R1/8W1%-1.74K		RESISTOR 1/8W 1% 1.74K
2	R120 R148	R1/8W1%-100K		RESISTOR 1/8W 1% 100K
6	R100 R105 R150 R154-155 R162	R1/8W1%-10K		RESISTOR 1/8W 1% 10K
3	R142 R160-161	R1/8W1%-12.1K		RESISTOR 1/8W 1% 12.1K
2	R61-62	R1/8W1%-15.8K		RESISTOR 1/8W 1% 15.8K
4	R59 R67 R76 R78	R1/8W1%-18.2K		RESISTOR 1/8W 1% 18.2K
15	R10-12 R21-22 R27 R55 R63 R74 R83 R86 R149 R158-159 R163	R1/8W1%-1K		RESISTOR 1/8W 1% 1K
4	R72-73 R81-82	R1/8W1%-1M		RESISTOR 1/8W 1% 1M
2	R65-66	R1/8W1%-2.15K		RESISTOR 1/8W 1% 2.15K
2	R45 R49	R1/8W1%-2.74K		RESISTOR 1/8W 1% 2.74K
13	R18-19 R24-25 R58 R64 R89 R119 R139-141 R144 R157	R1/8W1%-20K		RESISTOR 1/8W 1% 20K
1	R94	R1/8W1%-21K		RESISTOR 1/8W 1% 21K
4	R127-130	R1/8W1%-22.1		RESISTOR 1/8W 1% 22.1
4	R77 R84 R110 R117	R1/8W1%-22.1K		RESISTOR 1/8W 1% 22.1K

2	R57 R70	R1/8W1%-243K		RESISTOR 1/8W 1% 243K
1	R3	R1/8W1%-274K		RESISTOR 1/8W 1% 274K
1	R166	R1/8W1%-2K		RESISTOR 1/8W 1% 2K
2	R134 R136	R1/8W1%-3.32K		RESISTOR 1/8W 1% 3.32K
5	R35 R47-48 R91 R98	R1/8W1%-3.92K		RESISTOR 1/8W 1% 3.92K
6	R92 R113 R122 R131-132 R147	R1/8W1%-33.2K		RESISTOR 1/8W 1% 33.2K
2	R114 R116	R1/8W1%-39.2K		RESISTOR 1/8W 1% 39.2K
4	R5-6 R36-37	R1/8W1%-4.02K		RESISTOR 1/8W 1% 4.02K
10	R1 R4 R9 R26 R32 R40 R51 R93 R152-153	R1/8W1%-4.75K		RESISTOR 1/8W 1% 4.75K
2	R111 R118	R1/8W1%-41.2K		RESISTOR 1/8W 1% 41.2K
1	R2	R1/8W1%-43.2K		RESISTOR 1/8W 1% 43.2K
1	R156	R1/8W1%-47.5K		RESISTOR 1/8W 1% 47.5K
2	R56 R69	R1/8W1%-475K		RESISTOR 1/8W 1% 475K
1	R143	R1/8W1%-5.11		RESISTOR 1/8W 1% 5.11
1	R85	R1/8W1%-56.2		RESISTOR 1/8W 1% 56.2
2	R108 R126	R1/8W1%-6.34K		RESISTOR 1/8W 1% 6.34K
2	R71 R80	R1/8W1%-68.1K		RESISTOR 1/8W 1% 68.1K
6	R43-44 R87-88 R107 R125	R1/8W1%-7.87K		RESISTOR 1/8W 1% 7.87K
2	R101-102	R1/8W5%-0-OHM		RESISTOR 1/8W 5% 0 ohm
4	R7 R28 R103-104	R1/8W5%-OMIT		RESISTOR 1/8W 5% OMIT
2	R39 R41	R1W-1K	SEI - RSM1 1K 5%	RESISTOR 1W 1K ohm in a 1/2Watt size
4	R13-16	R1W-5.6	SEI - RSM1 5.6 ohm 5%	RESISTOR 1W 5.6 ohm in a 1/2Watt size
1	R38	R2W-30	SEI type RS metal oxide	RESISTOR 2W 5% 30 OHM
4	R20 R23 R29-30	R3W-.005	Dale - LVR-3-.005-1%	RESISTOR 3W 1% .005 OHM
2	R17 R42	R5W-10	Dale -CPW-5-3-10-5%	RESISTOR 5W 5% 10 OHM
1	J8	RCA-PJ261G	FEDERAL PACIFIC PJ261G	RCA gold right angle 2 vert PCB mount
1	J7	RJ11-6-15MM-TALL	SY Sy005-6P	RJ 6 Pin right angle 15mm tall
1	U17	SG3525	Linfinity SG3525AN	SG3525AN DIP-16 reg PWM
4	M1-4	STW34NB20	SGS THOMPSON - STW34NB20	N-Channel MOSFET 34A 200V .062R
1	SW2	SW-EG2211	E-SWITCH EG2211	Switch 2P2T slide right angle
1	SW1	SW-EG2315	E-Switch EG2315A	Switch 2P3T slide right angle
1	SW4	SW-JPFB-2P2T	AD ELECT JFPB-21S-A(N)	2 POLE PUSH PUSH SWITCH
1	SW3	SW-JPFB-4P2T	AD Electronics JFPB-41S-A(N)	Switch 4 pole push push
1	U7	TA0102A	Tripath TA0102A	Class D driver module 28V to 49V
2	_M1-2	TEENUT		
1	TH1	THERMISTOR-100K		Thermistor 100K NTC 6mm dia.
1	U8	TL074	JRC (NJR) NJM074D	Quad J-FET OP Amp DIP 14
1	U15	TL431-TO92	National LM431ACZ	Precision Reference
1	P3	TRIM-6MMVERT-220	VIMEX #CA6V 220ohm lin.	Pot trim 220 ohm vert adj 6mm sq.
2	P1-2	TRIM-6MMVERT-10K	VIMEX #CA6V 10Kohm lin.	Pot trim 10K ohm vert adj 6mm sq.
1	X1	XFMR1000	Drawing no DPX1000-6	Transformer Toroid 1000 watts
1	X2	XTAL4M	Citizen CSA310-4.00MABJ	quartz crystal 4Mhz

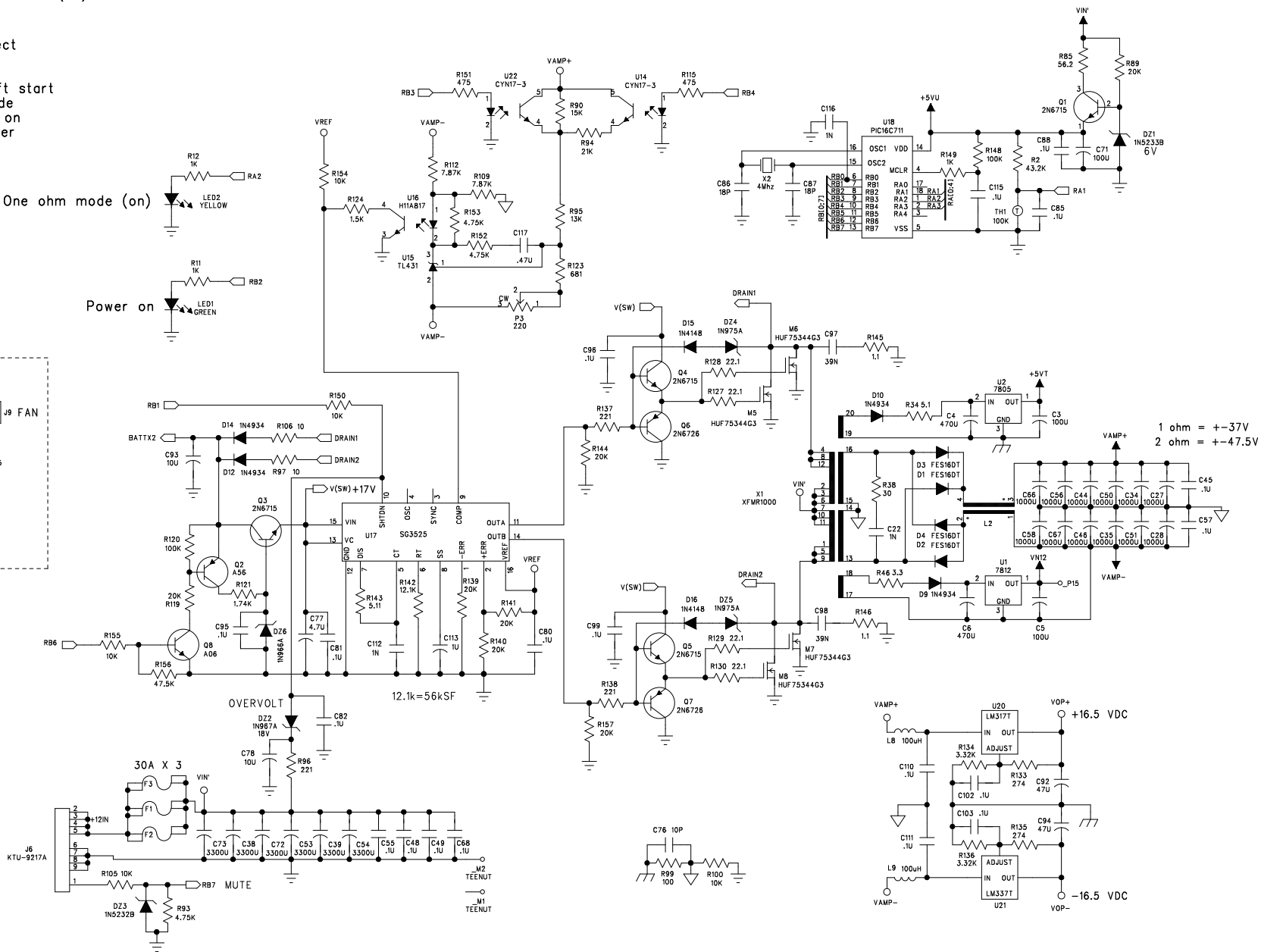
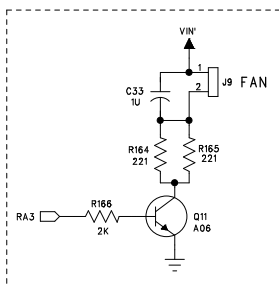


- RA0 :
- RA1 : Thermister - Temp
- RA2 : One ohm mode LED (on)
- RA3 : Fan option
- RA4 :
- RB0 : Tripath protect
- RB1 : Supply Enable
- RB2 : power on led
- RB3 : Regulator soft start
- RB4 : One ohm mode
- RB5 : Tripath Turn on
- RB6 : Switcher Power
- RB7 : Turn On

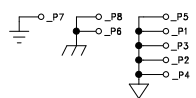
One ohm mode (on)

Power on

FAN - OPTIONAL



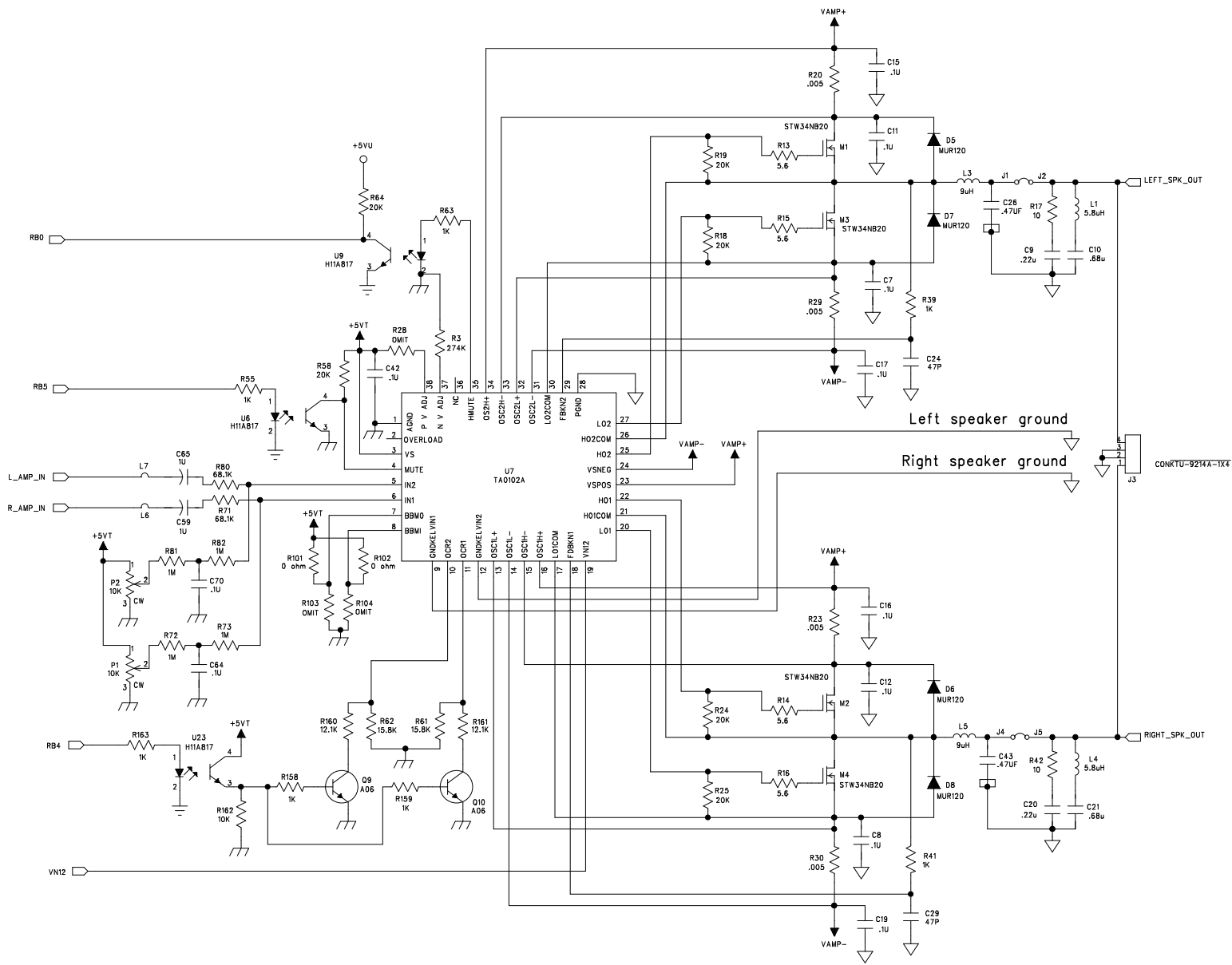
1 ohm = +-37V  
2 ohm = +-47.5V



REVISION RECORD	
DESCRIPTION	DATE:

DRAWN: B WADDELL		DATED: 01/10/01		TITLE: DPX1001.2 SUPPLY SECTION	
CHECKED:	DATED:	CODE:	SIZE:	DRAWING NO:	REV: 1.02
RELEASED:	DATED:	SCALE:	SHEET: OF		

COMPANY: CLARION CORP.



REVISION RECORD	
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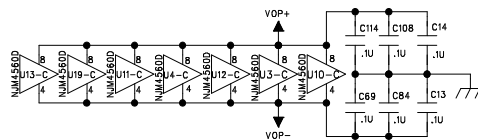
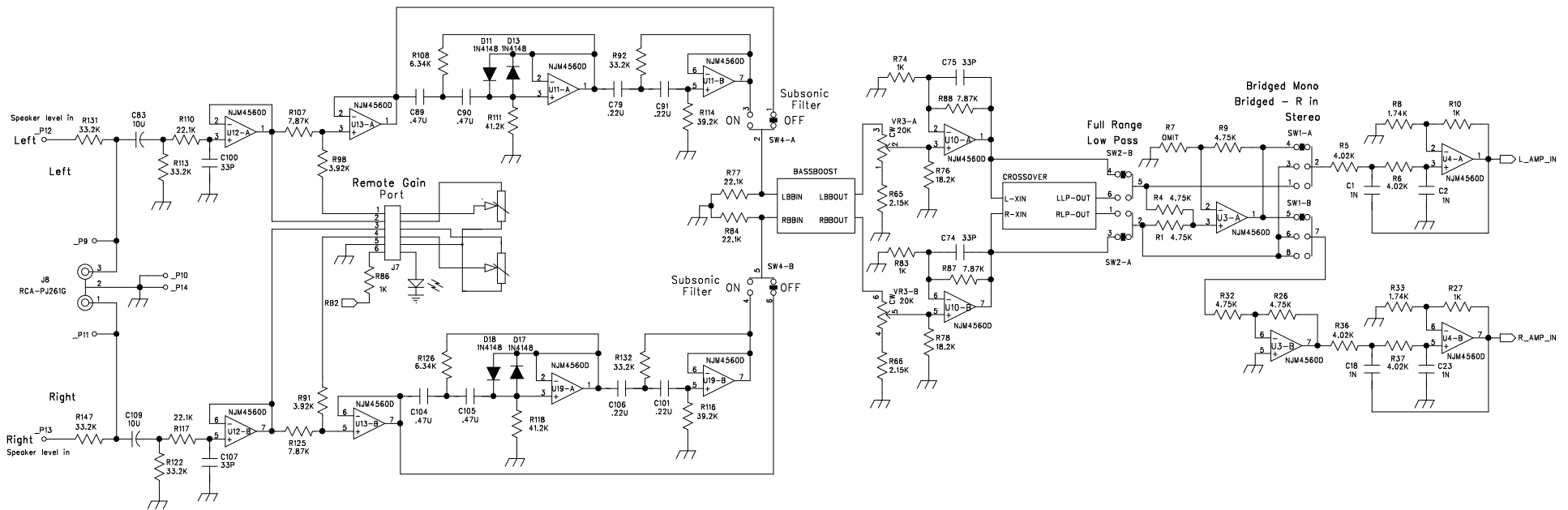
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RELEASED:	DATE:	SCALE:	SHEET: OF		

CLARION CORP.

DPX1001.2 AMPLIFIER SECTION

COMPANY:

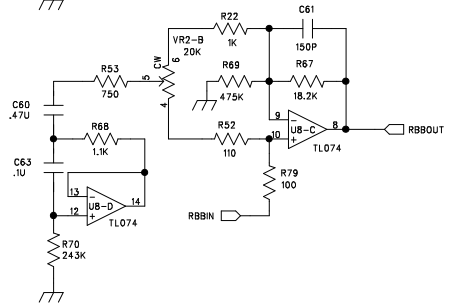
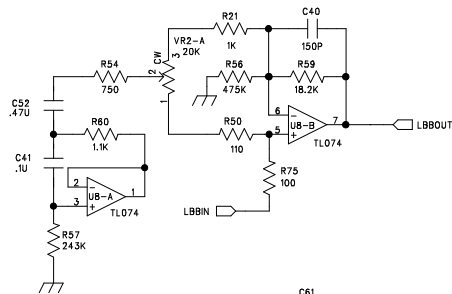
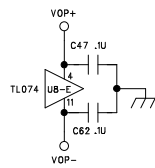
SHEET: OF



REVISION RECORD	
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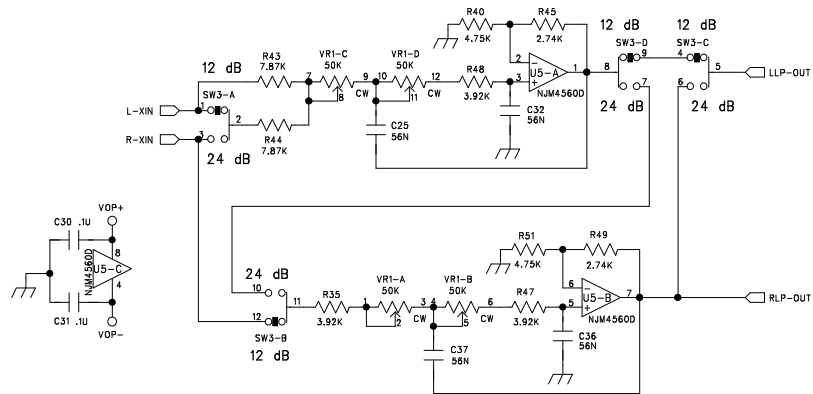
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COMPANY: CLARION CORP.



REVISION RECORD	
DESCRIPTION	DATE:

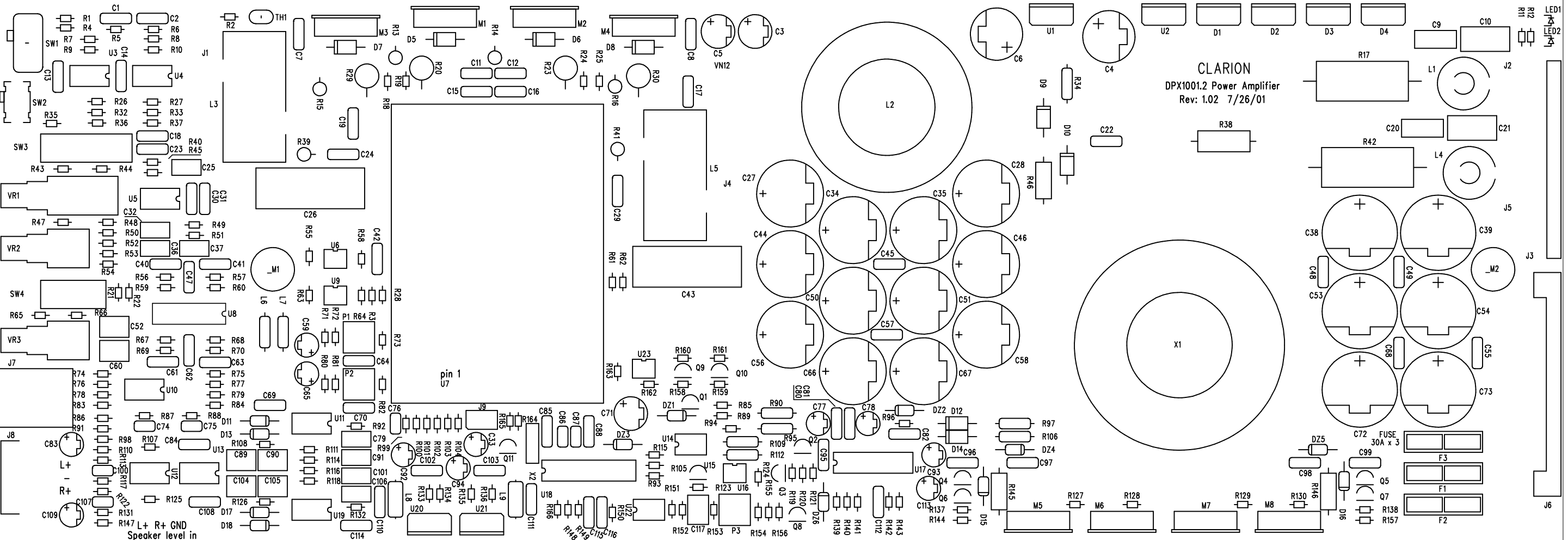
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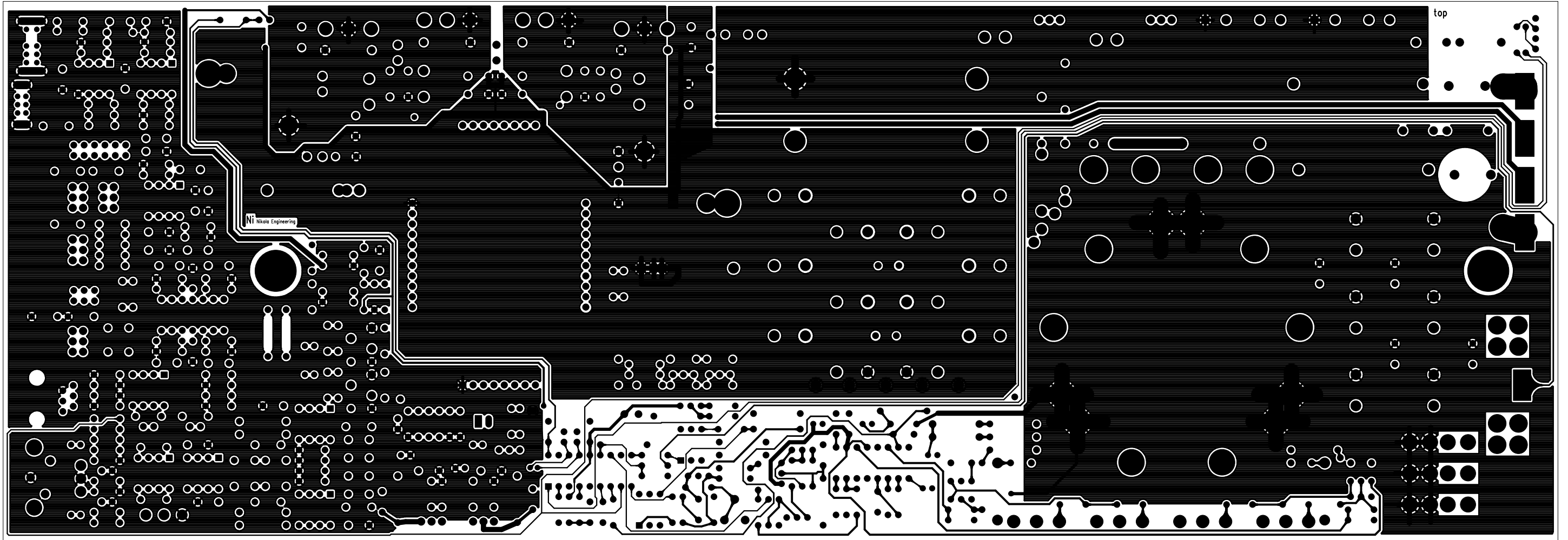
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DESCRIPTION	DATE:

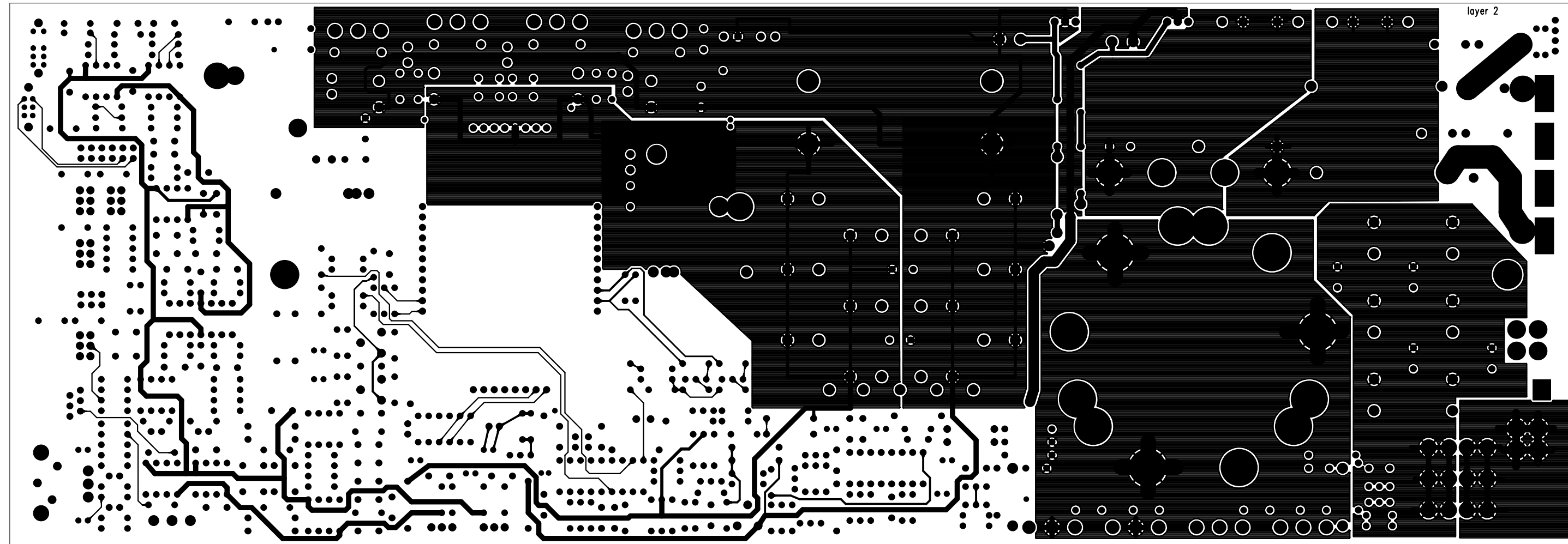
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CLARION  
DPX1001.2 Power Amplifier  
Rev: 1.02 7/26/01

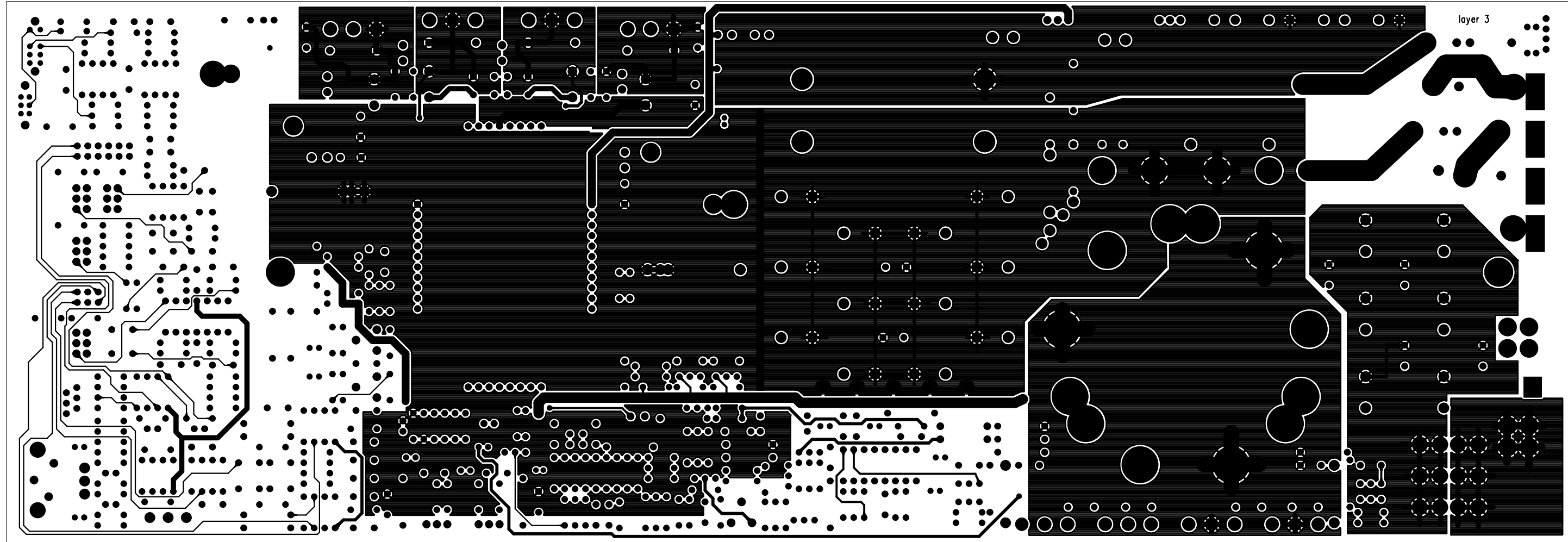


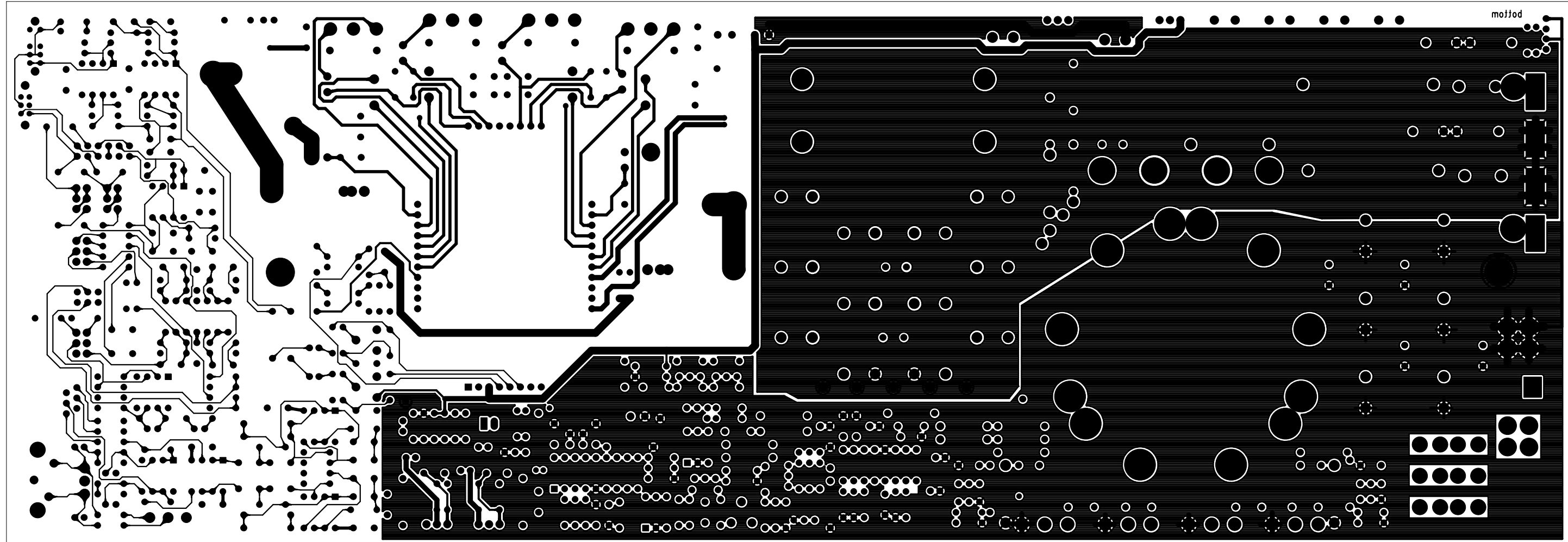
L+ R+ GND  
Speaker level in

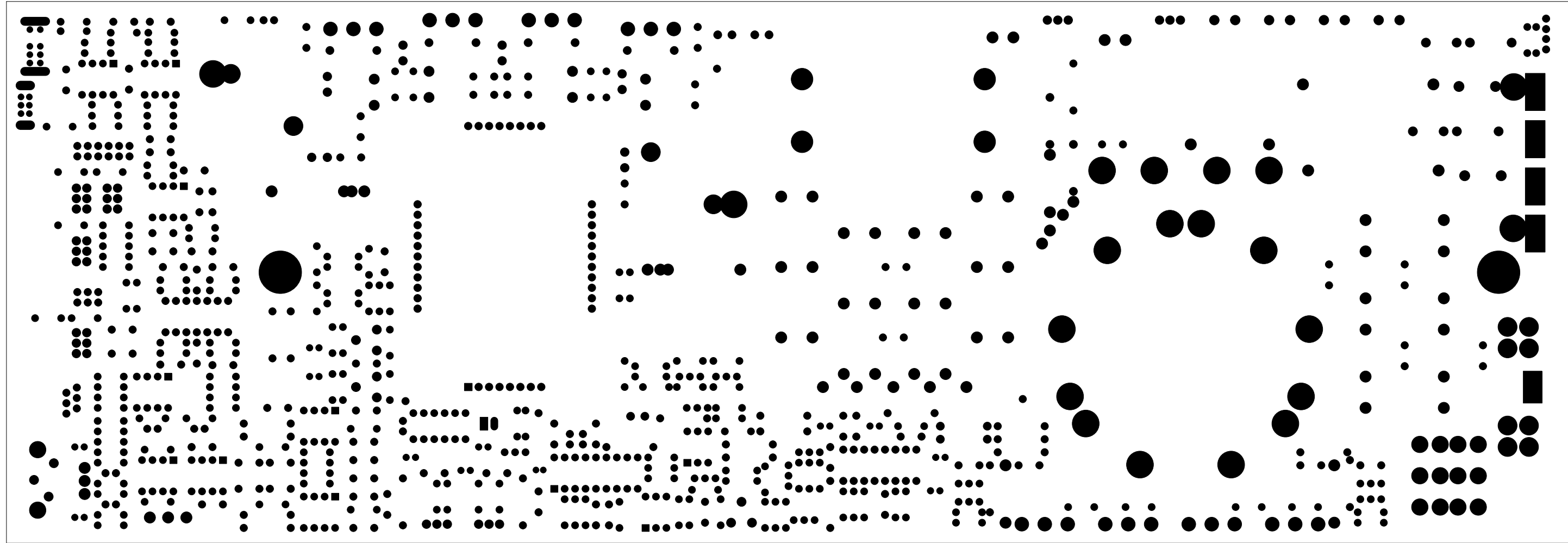


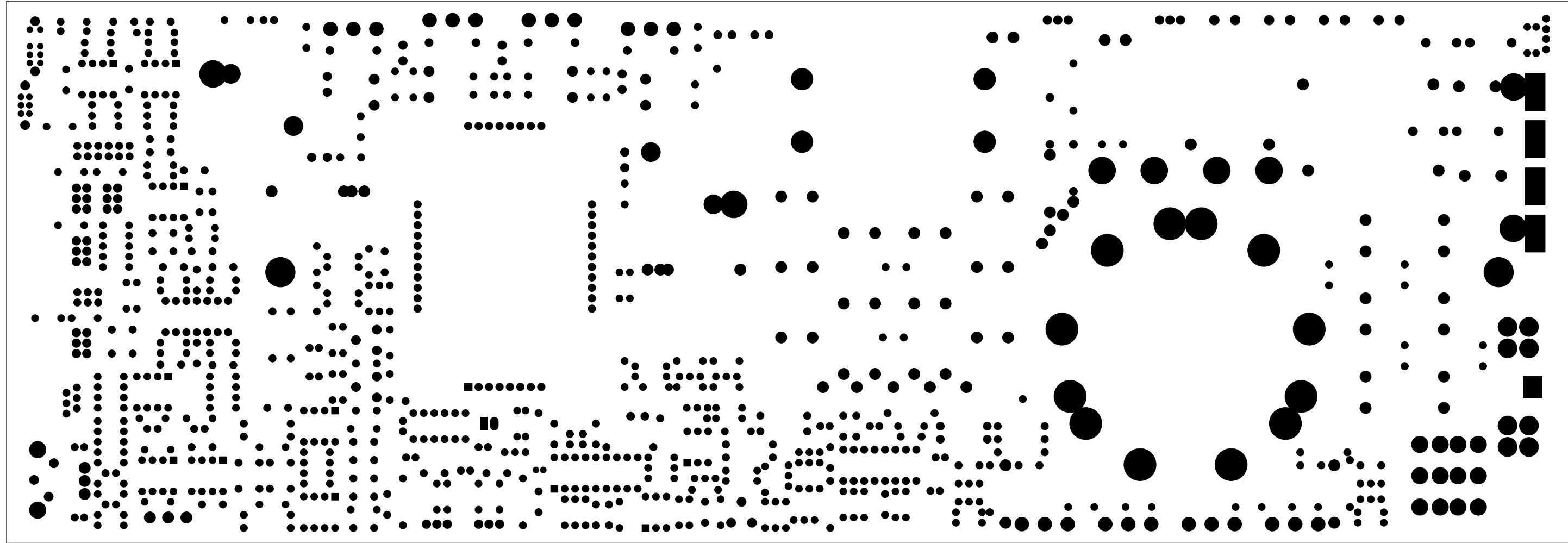




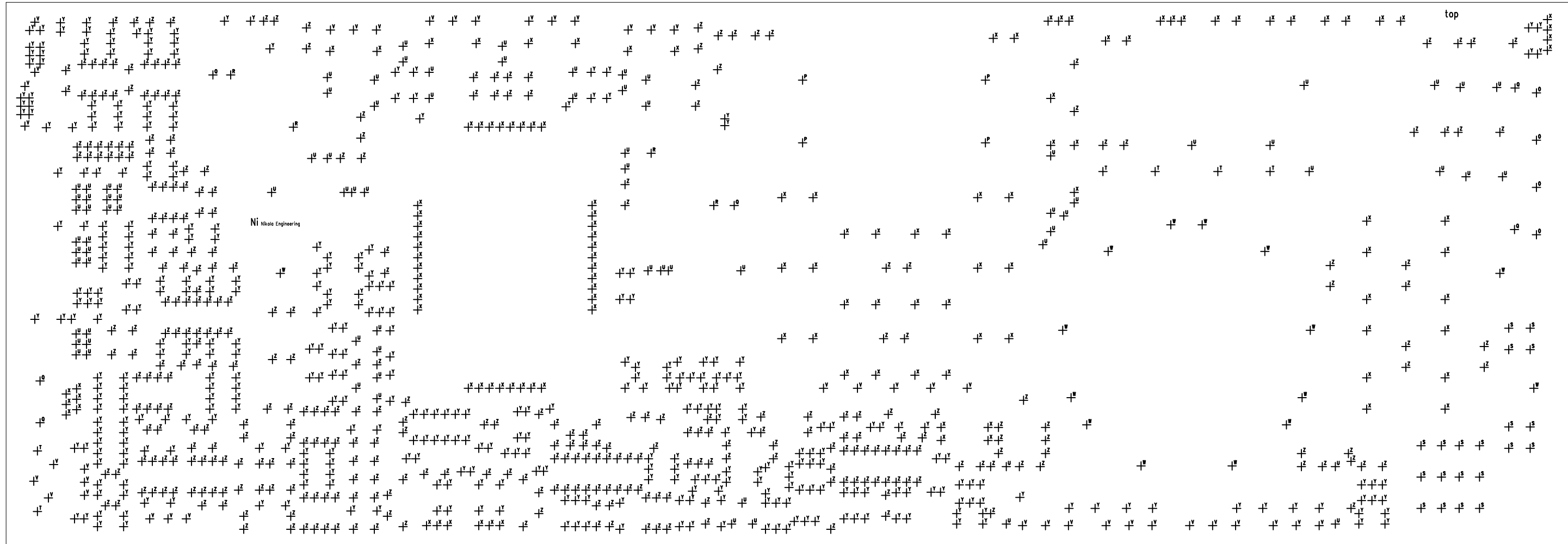


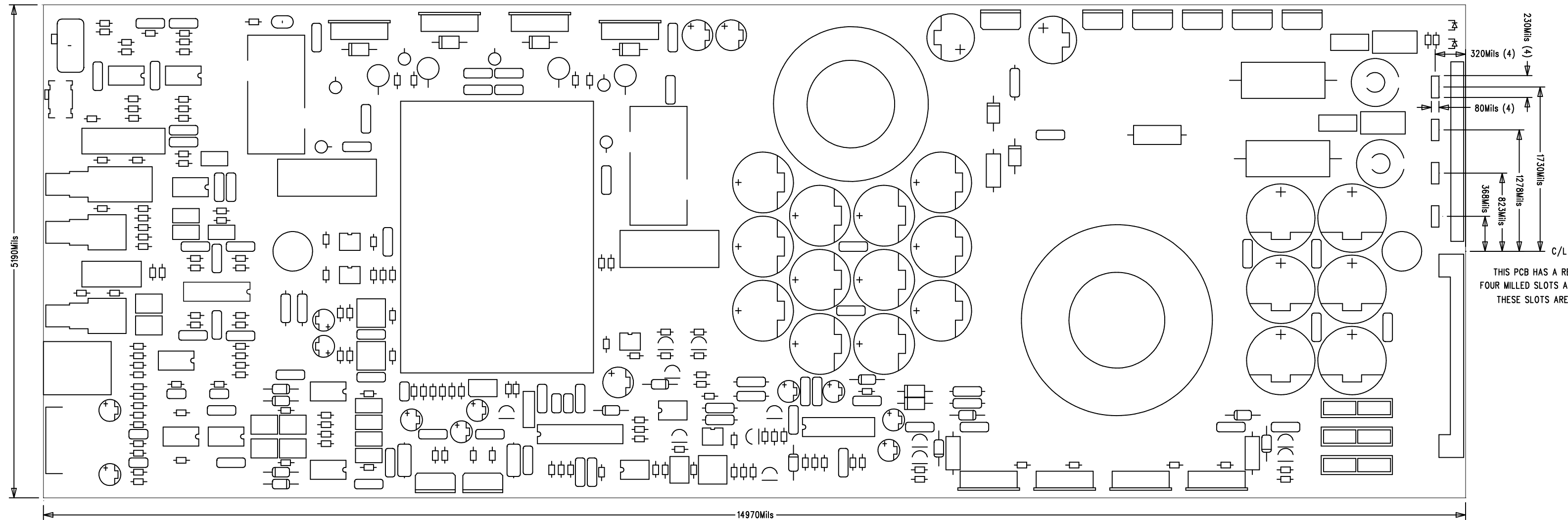






SIZE	QTY	SYM	PLTD
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105	4	P	PLTD
130	6	Q	PLTD
75	4	R	PLTD
95	20	S	PLTD
125	6	T	PLTD
45	81	U	PLTD
55	42	V	PLTD
150	15	W	PLTD
40	124	X	PLTD
30	387	Y	PLTD
35	358	Z	PLTD





ASSEMBLY DRAWING FOR SLOT LOCATION