

Service Manual

Model: DPA 6000



www.altoproaudio.com

Version: .1.0

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Introduction

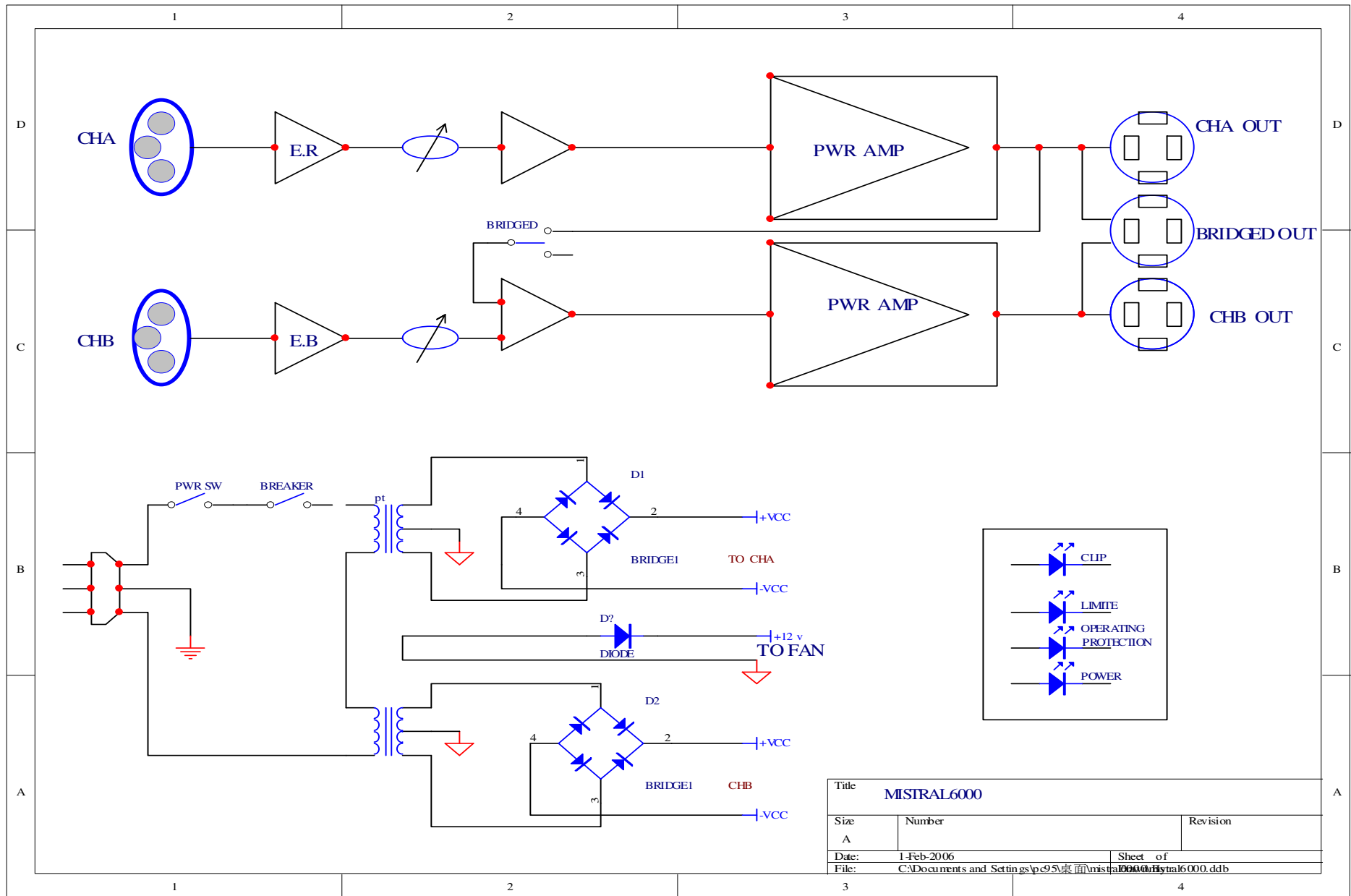
1. Dual channel amplifier

2. The function of Bridge and Limiter

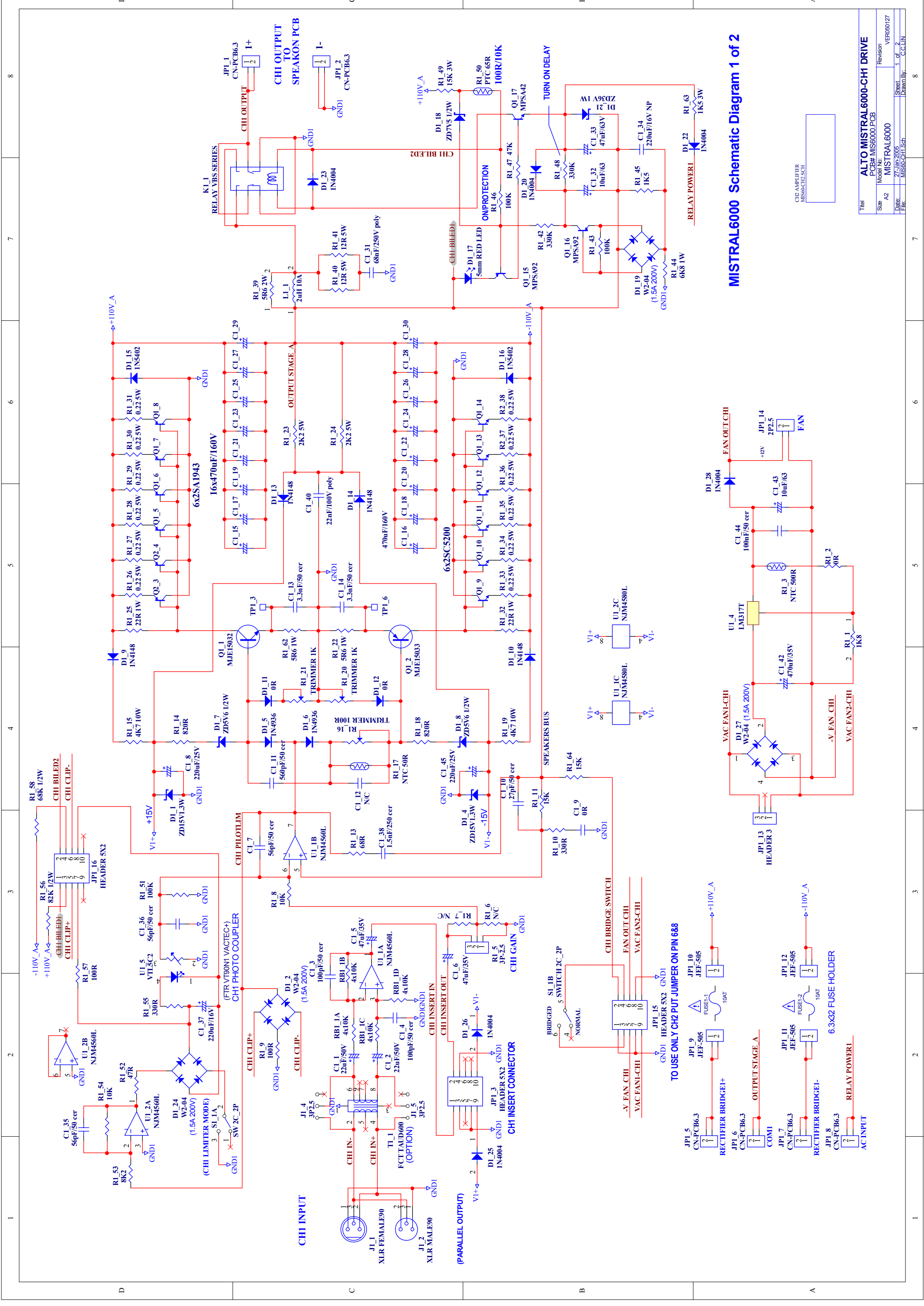
3. Over temperature protection and short circuit protection

4. 1500W high power and low hums

5. DSP audio processing function

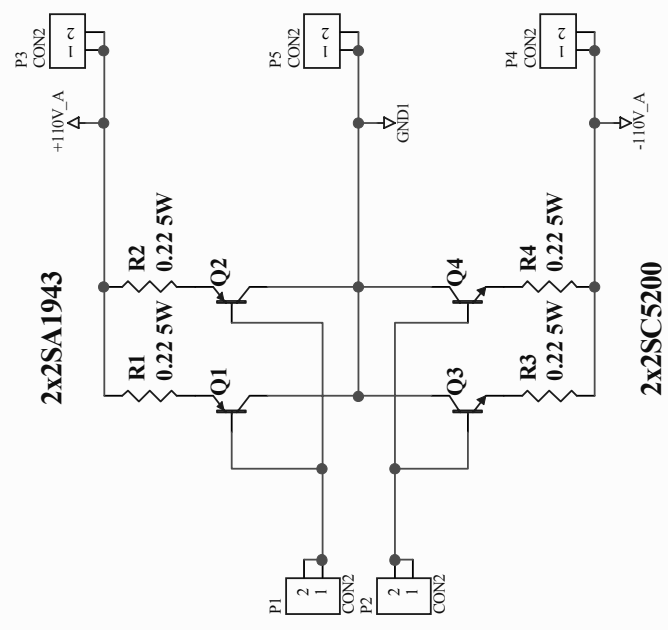


Title		
MISTRAL6000		
Size	Number	Revision
A		
Date:	1-Feb-2006	Sheet of
File:	C:\Documents and Settings\pc95\桌面\mistral6000\mistral6000.ddb	



MISTRAL6000 Schematic Diagram 1 of 2

Title	ALTO MISTRAL6000-CH1 DRIVE
PCB#	MIS6000.PCB
Model No.	MISTRAL6000
Revision	VER050127
Size	A2
Date	27-10-2005
Drawn By	G.C.LIN
Sheet	1 of 2



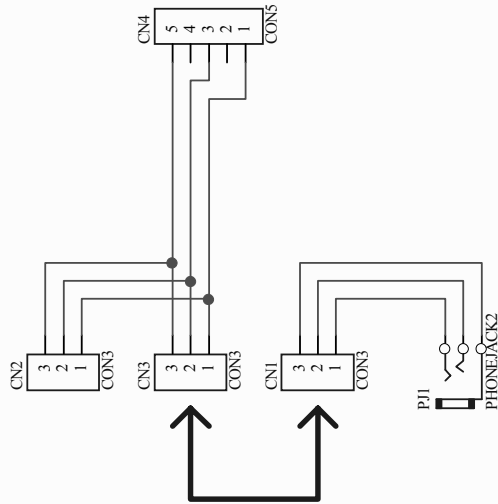
Title		ALTO : MISTRAL6000 MAIN2-BOARD	
Size	A2	Model No:	MISTRAL6000
Date:	27-Jan-2005	Revision	VER060127
File:	MIS60MN2.Sch	Sheet	1 of 1
		Drawn By:	C.CLIN

D

C

B

A



ALTO : MISTRAL4000 INPUT

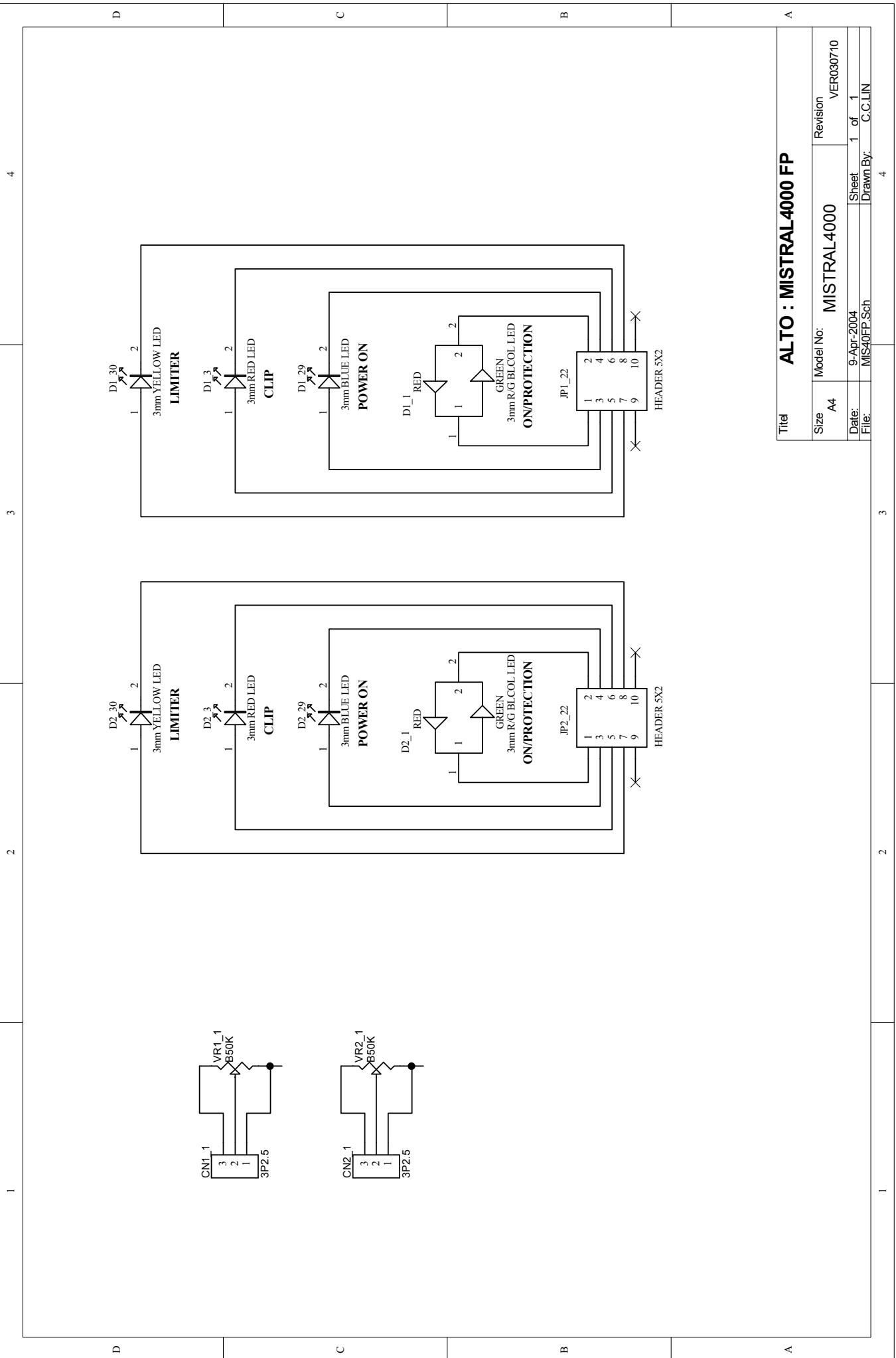
Titel	ALTO : MISTRAL4000 INPUT		
Size	A4	Model No:	MISTRAL4000
Date:	27-Jan-2005	Revision	VER031206
File:	MIS40IN.Sch	Sheet	1 of 1
		Drawn By:	C.C.LIN

D

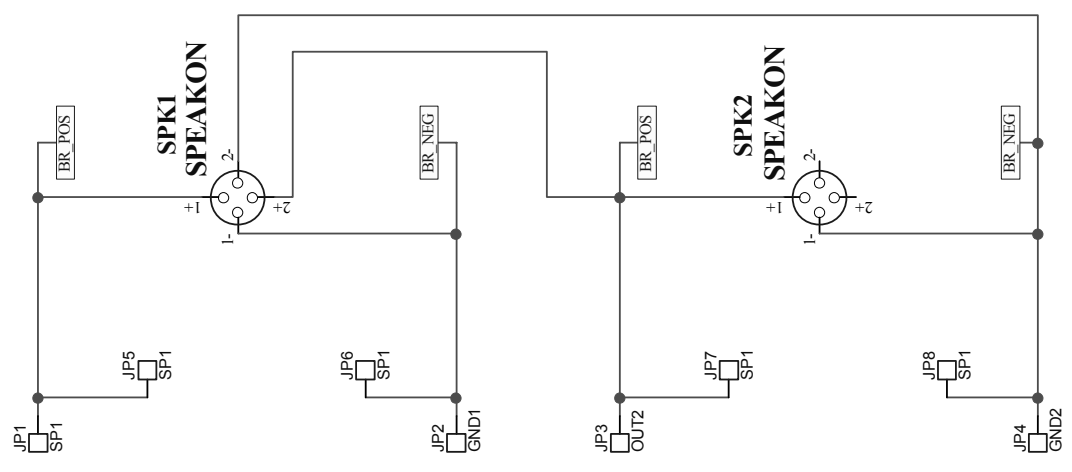
C

B

A

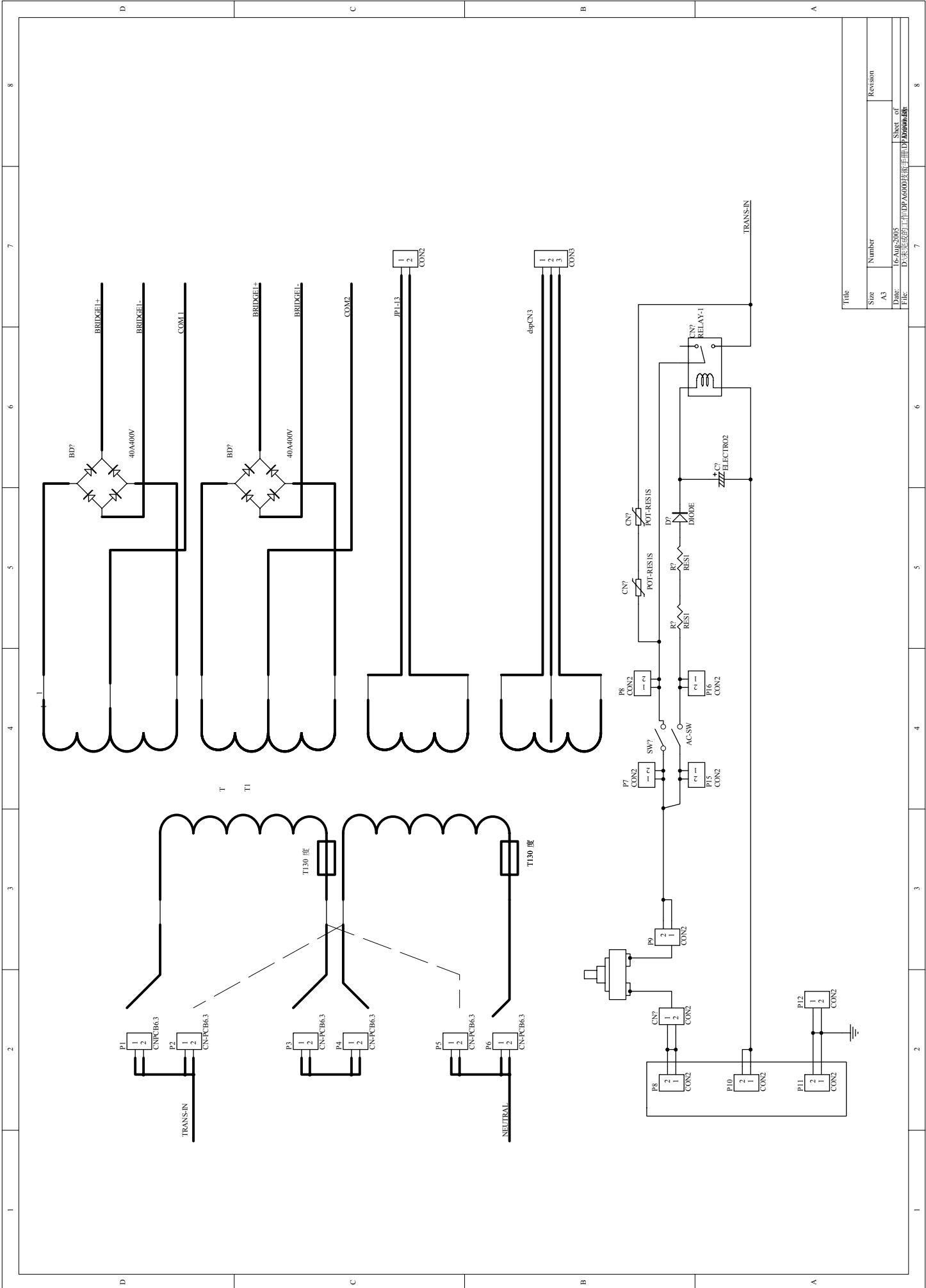


Titel		ALTO : MISTRAL4000 FP	
Size	A4	Model No:	MISTRAL4000
		Revision	VER030710
Date:	9-Apr-2004	Sheet	1 of 1
File:	MIS40FP.Sch	Drawn By:	C.C.LIN

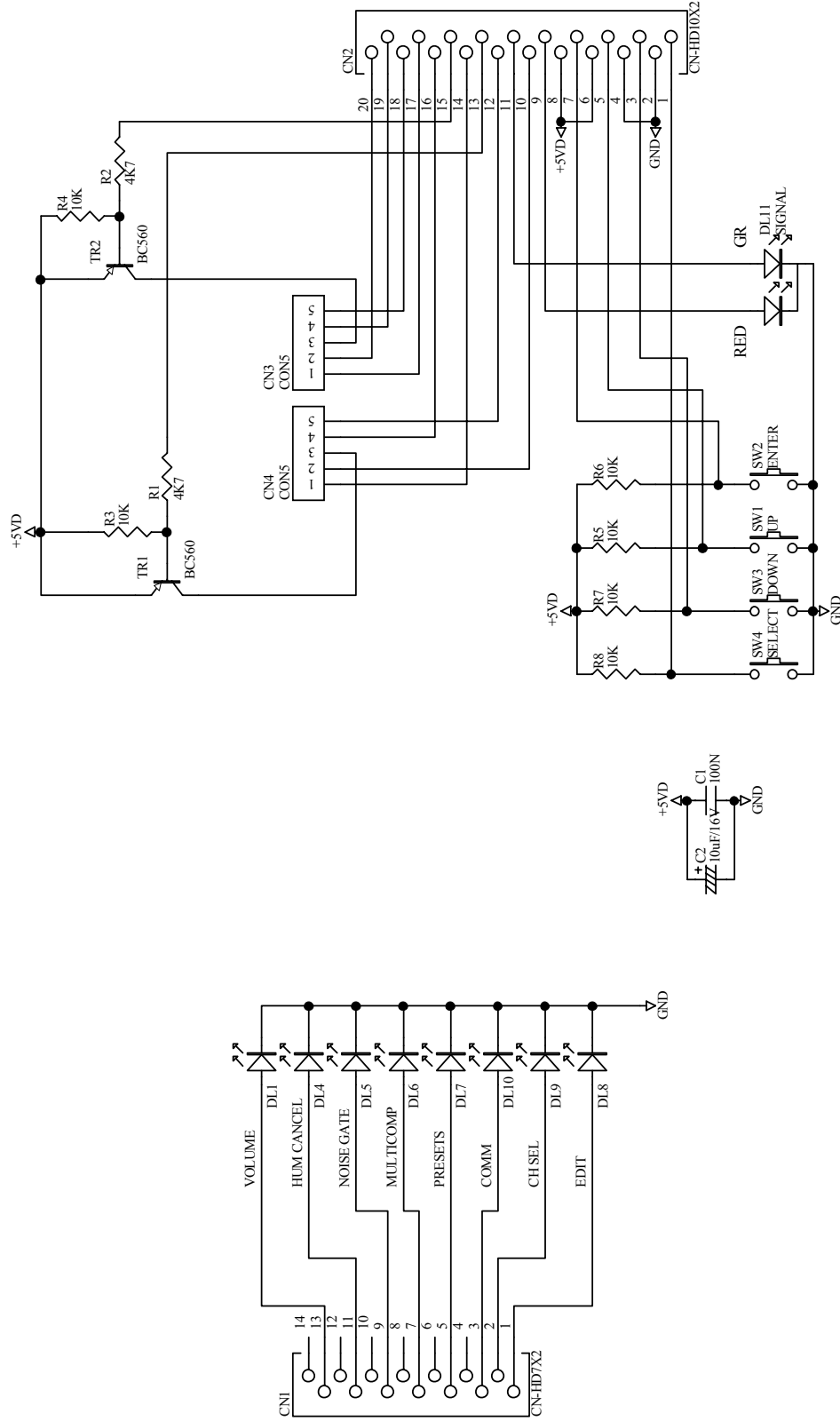


ALTO : MISTRAL6000 SP-BOARD

Titel	ALTO : MISTRAL6000 SP-BOARD		
Size	A2	Model No:	MISTRAL6000
		Revision	VER060127
Date:	27-Jan-2005	Sheet	1 of 1
File:	MS60SP.Sch	Drawn By:	C.CLIN

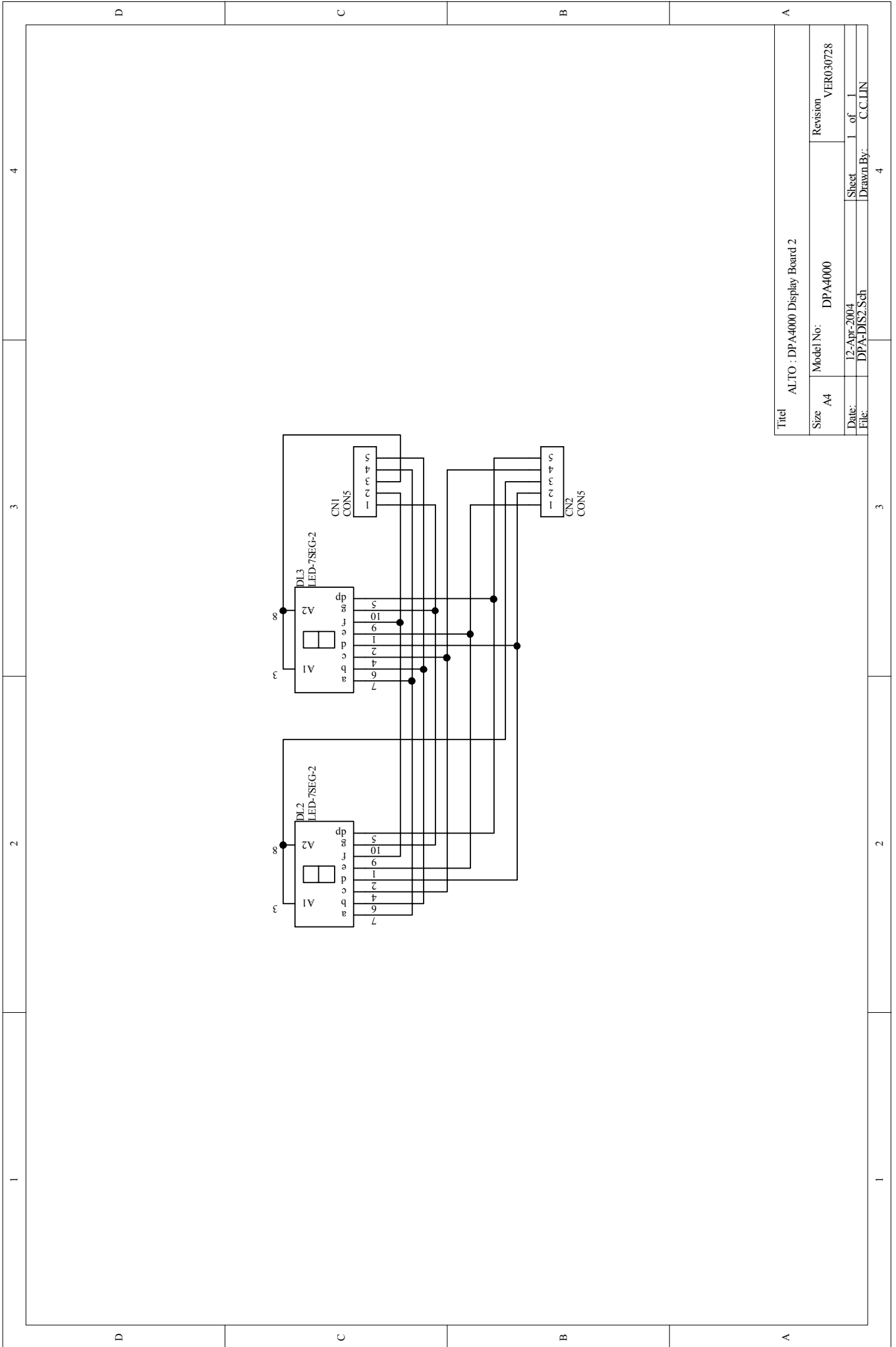


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Size	Number
A3	
Date	Sheet of
File	Drawn
D:\未完成的工程\DF-AG0001\板卡\DF-AG0001A.DWG	

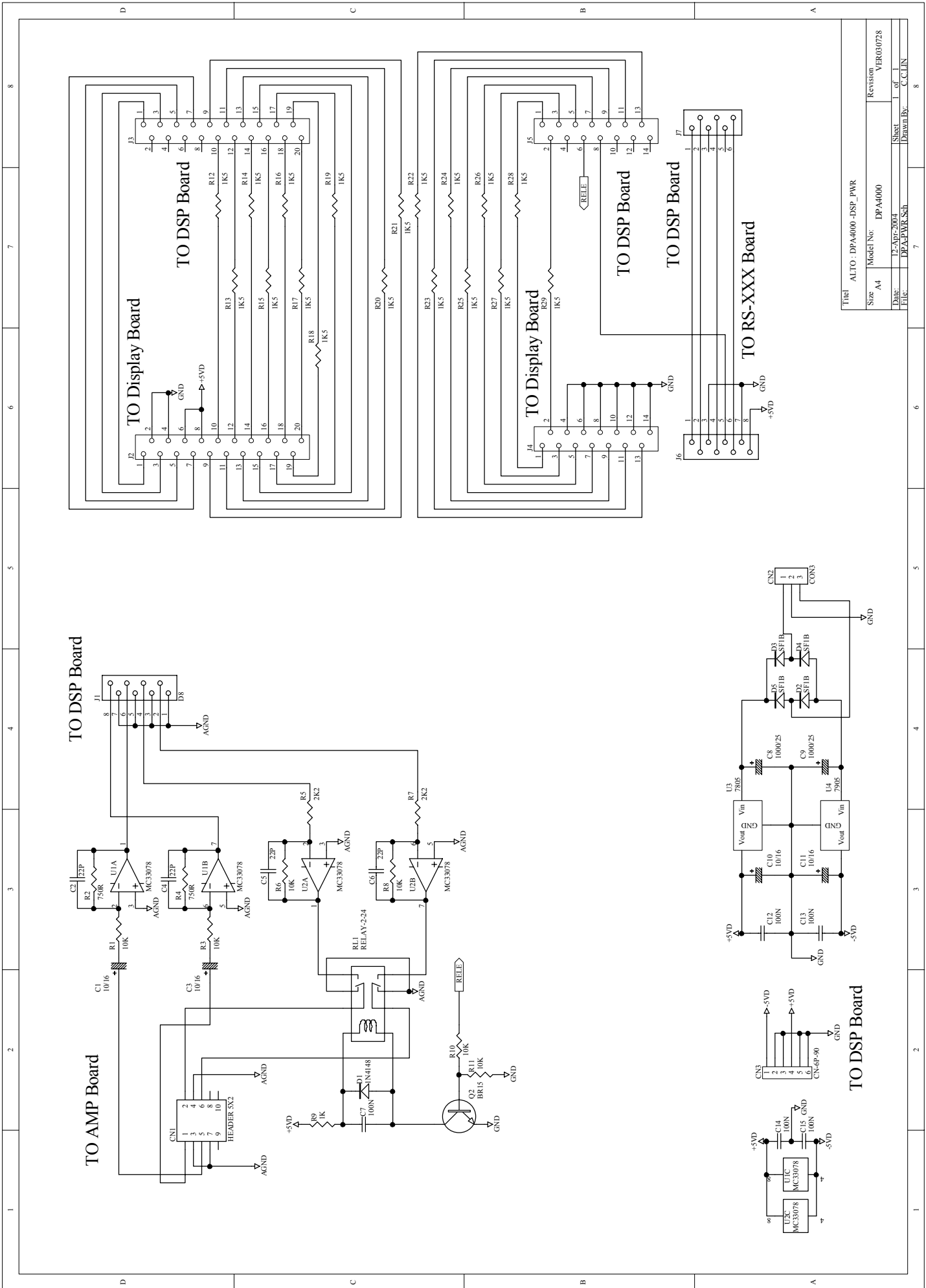


Titel ALTO : DPA4000 Display Board 1

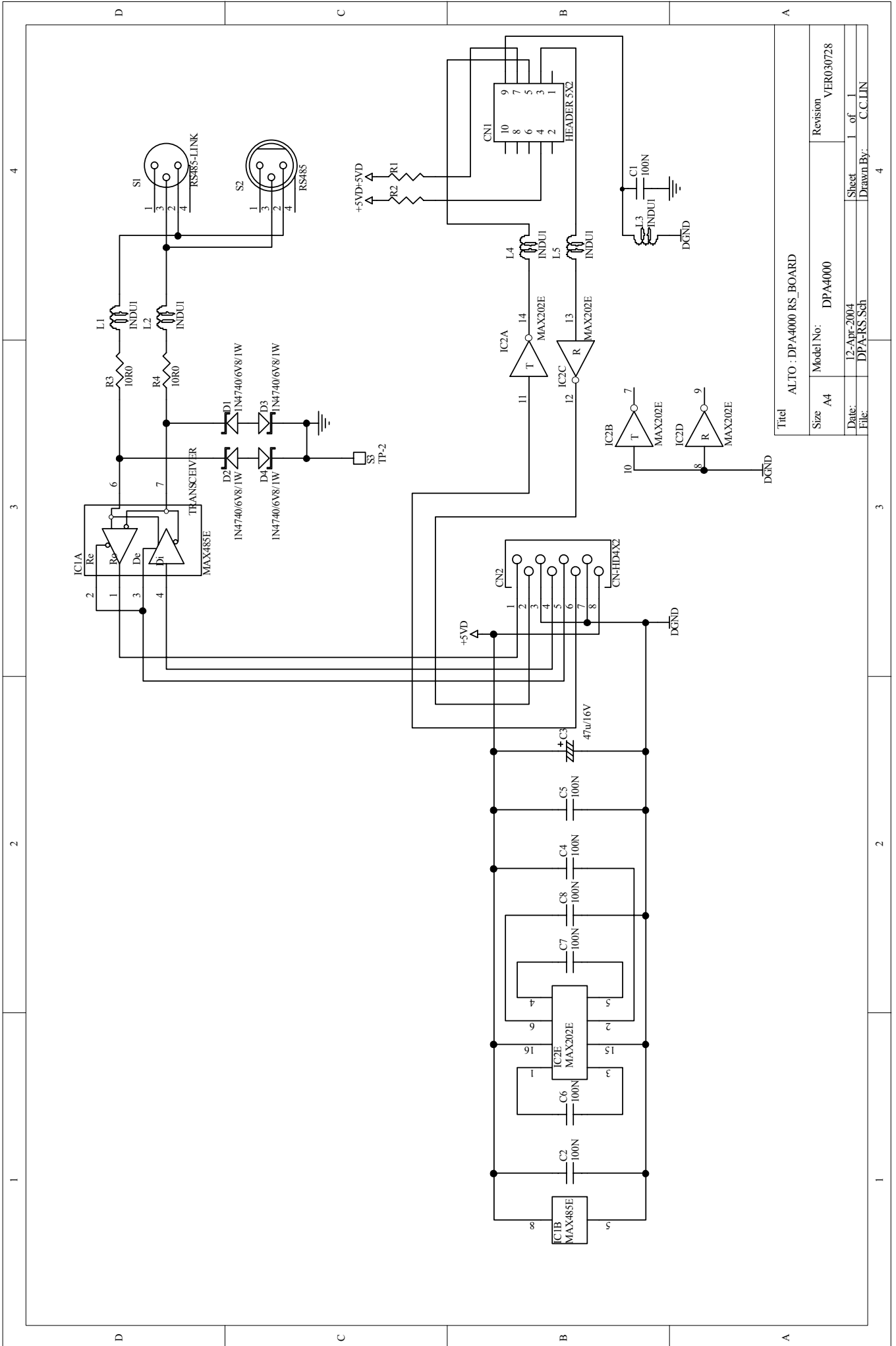
Size	A4	Model No.	DPA4000	Revision	VER030728
Date:	12-Apr-2004	Sheet	of	1	
File:	DPA-DIS.Sch	Drawn By:	C.C.LIN		



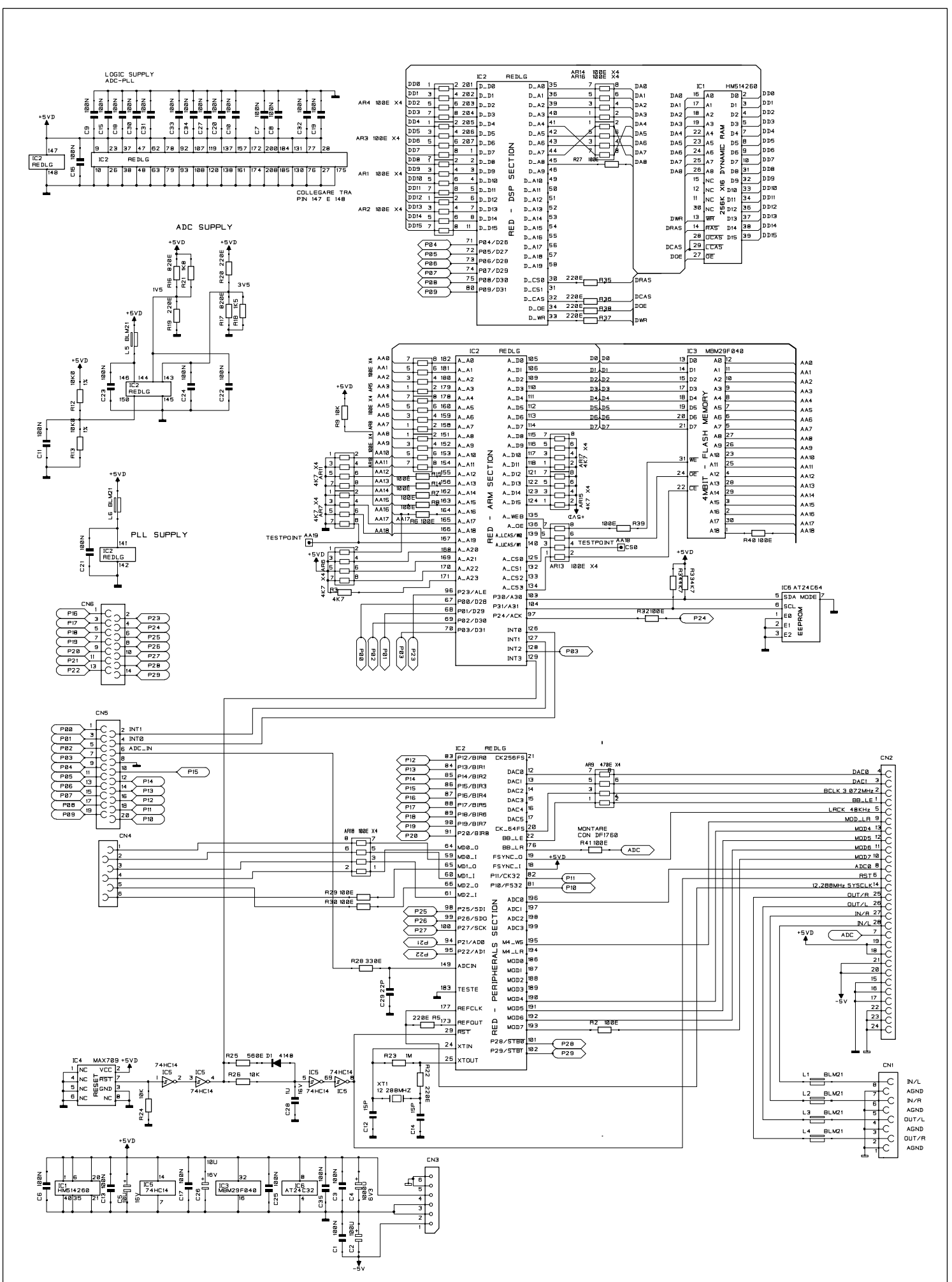
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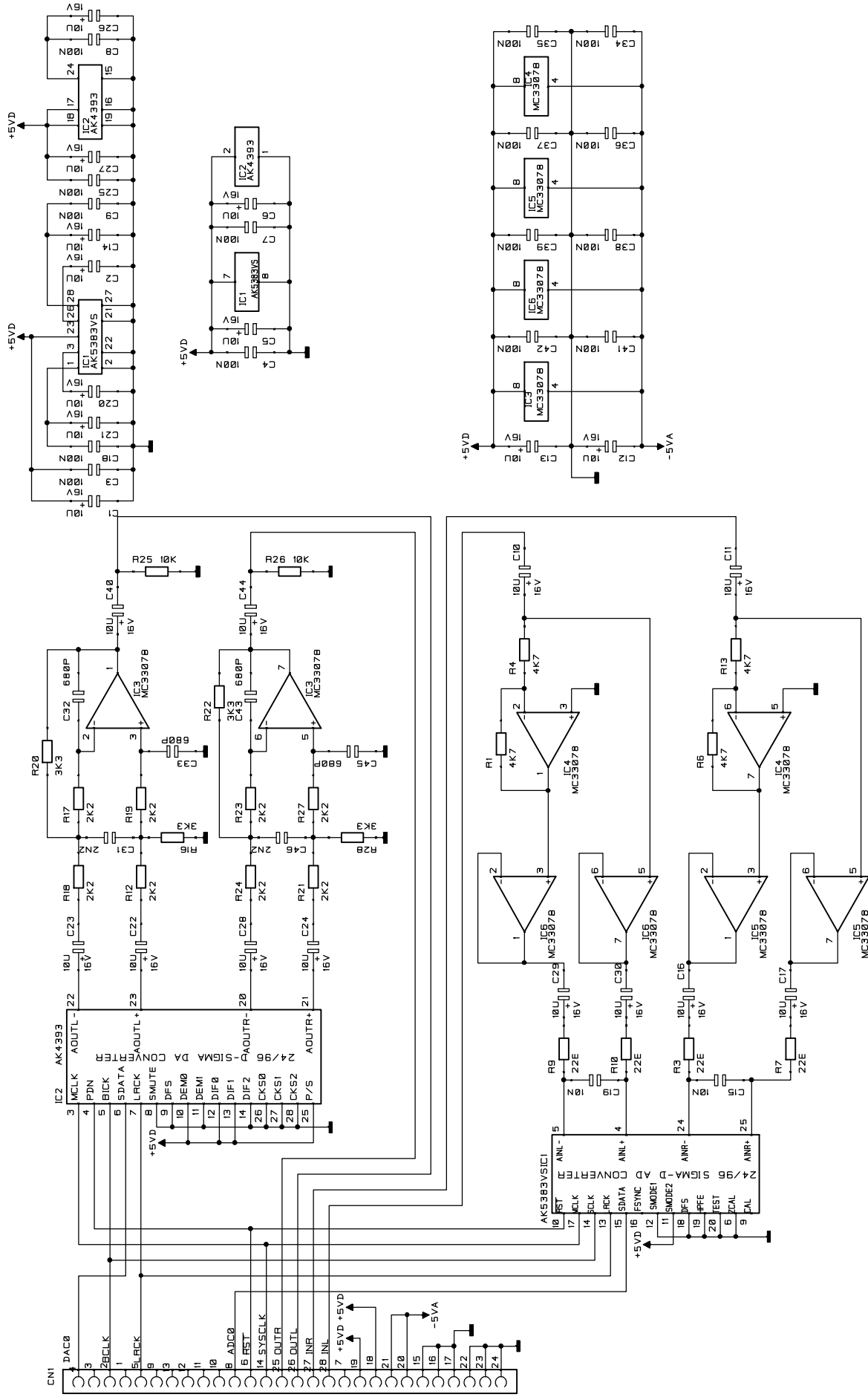
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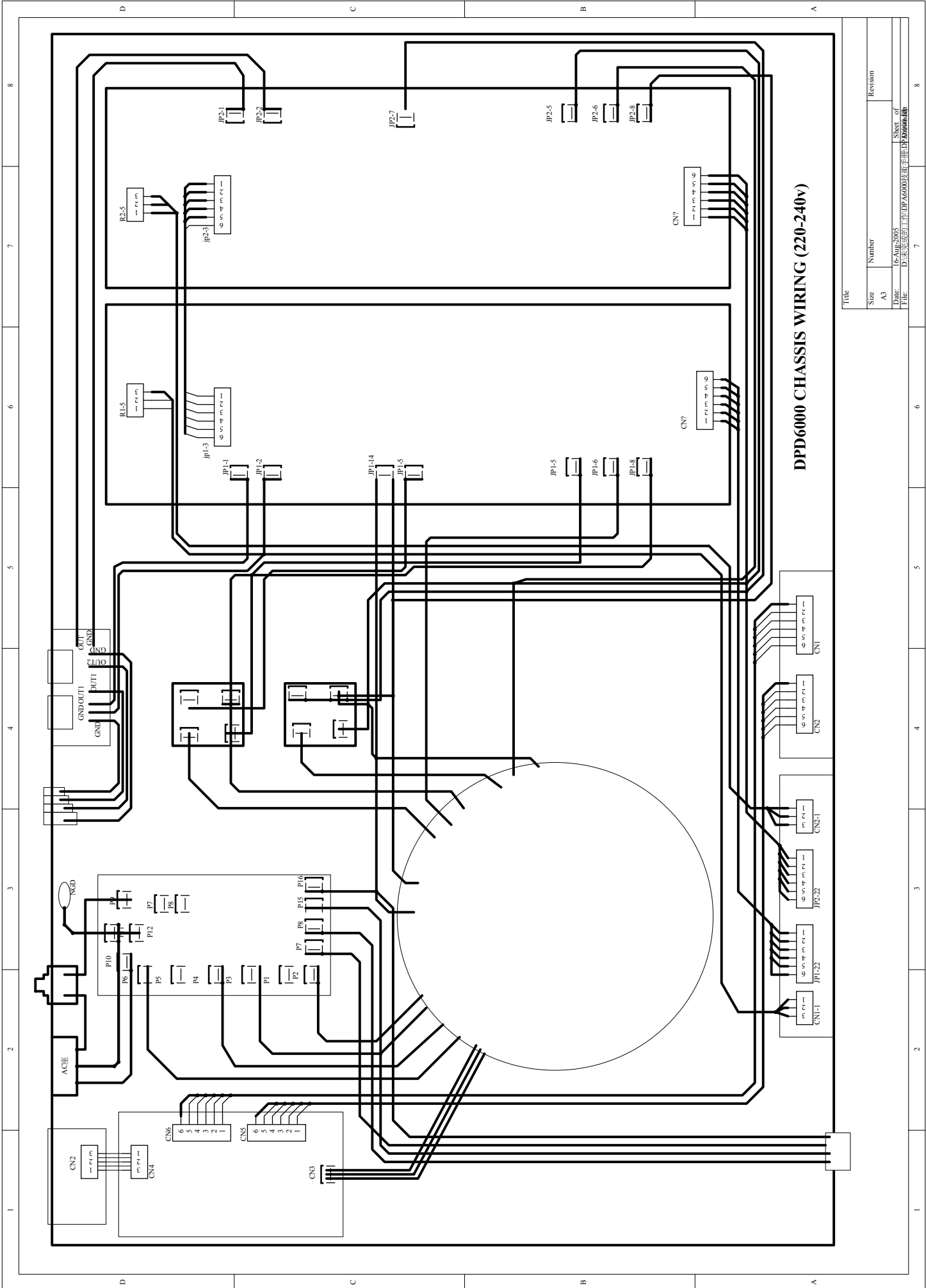
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Size: A4	Model No.: DPA4000
Date: 12-Apr-2004	Revision: VER030728
File: DPA-RS.Sch	Sheet: 1 of 1
	Drawn By: C.C.LIN



DRW G RICCI	DWG# 768263	PCB#	313089	Music Media Soft s.r.l.
CKD L. GIBLIN	DATE 17/09/01	SCHEMATIC DIAGRAM		ALL RIGHTS ARE RESERVED. NO COPIES OR REPRODUCE THIS DOCUMENT WITHOUT WRITTEN CONSENT BY M.M.
APP. F. GAZZILLI	REV. B	PEGASUS/PROMASTER DX BOARD		

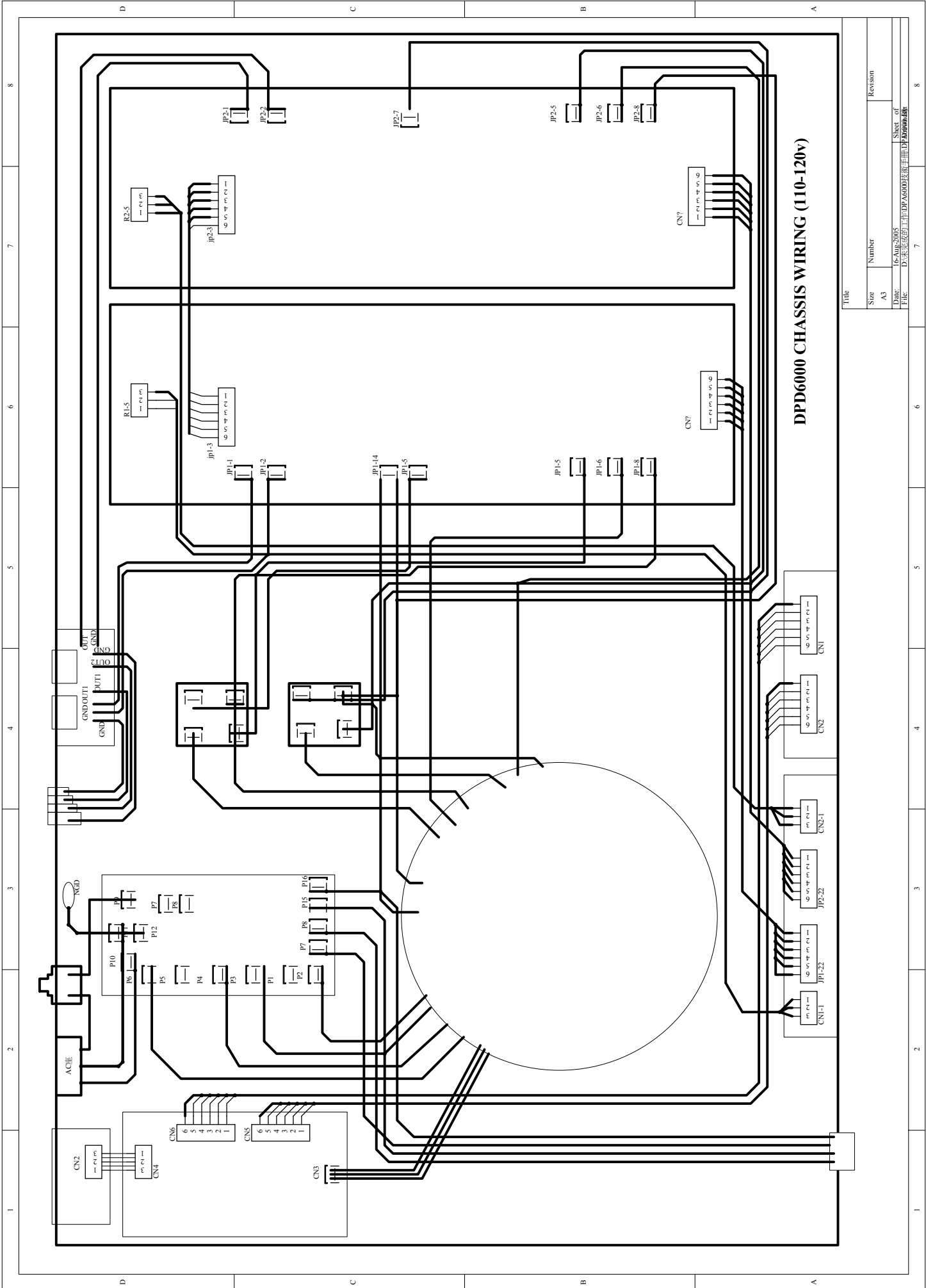


DRW	L.GIBIN	DWG#	768264	PCBR#	313111	Music Media Soft s.r.l.
CKD	L.GIBIN	DATE	03/12/01	SCHEMATIC DIAGRAM		
APP.	B	REV.	B	AD-DA BOARD HIGH CON AKM CONV.		
ALL RIGHTS ARE RESERVED. NO COPIES OR REPRODUCE THIS DOCUMENT WITHOUT WRITTEN CONSENT BY M.M.						



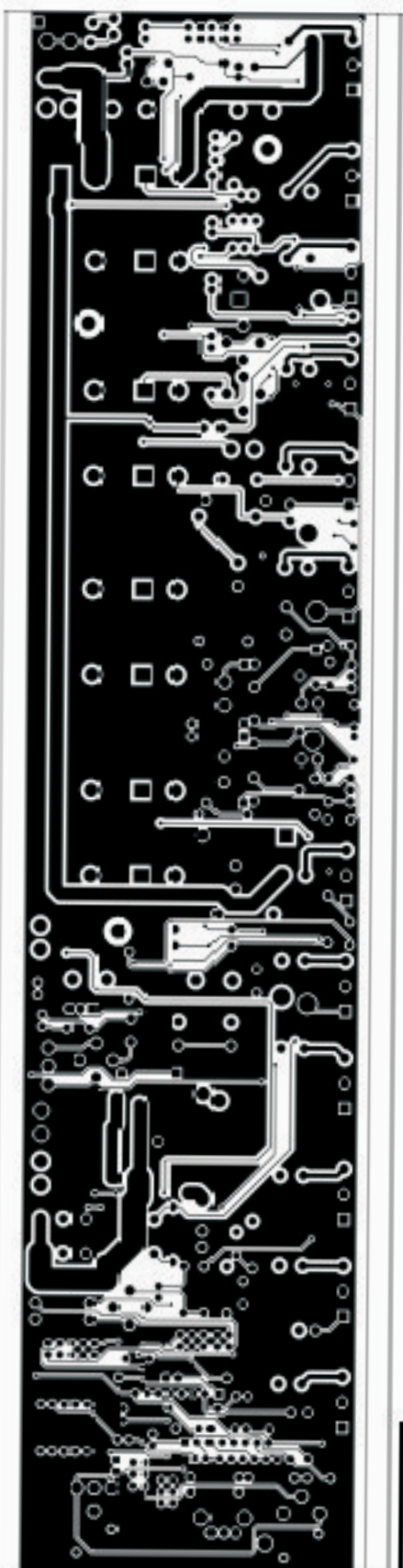
DPD6000 CHASSIS WIRING (220-240V)

Title	
Size	Number
A3	
Date	Revision
File	
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Sheet	of
8	8

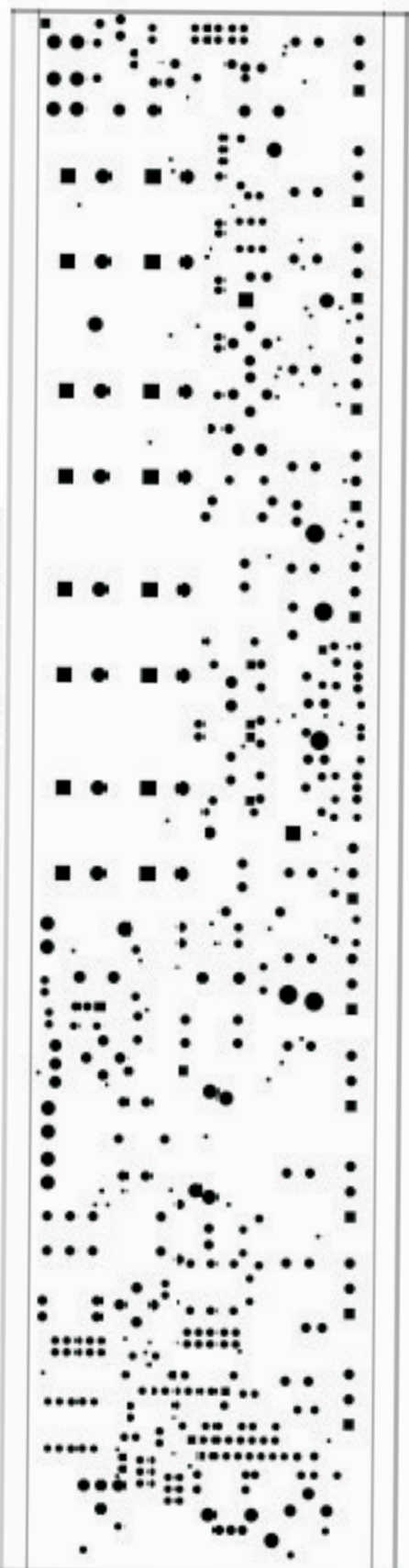


DPD6000 CHASSIS WIRING (110-120v)

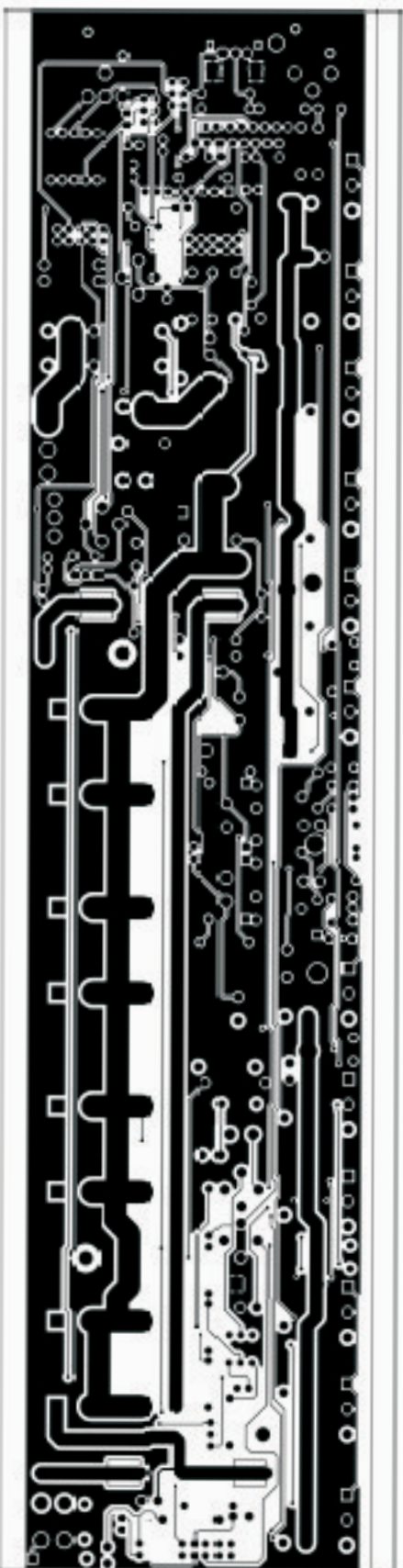
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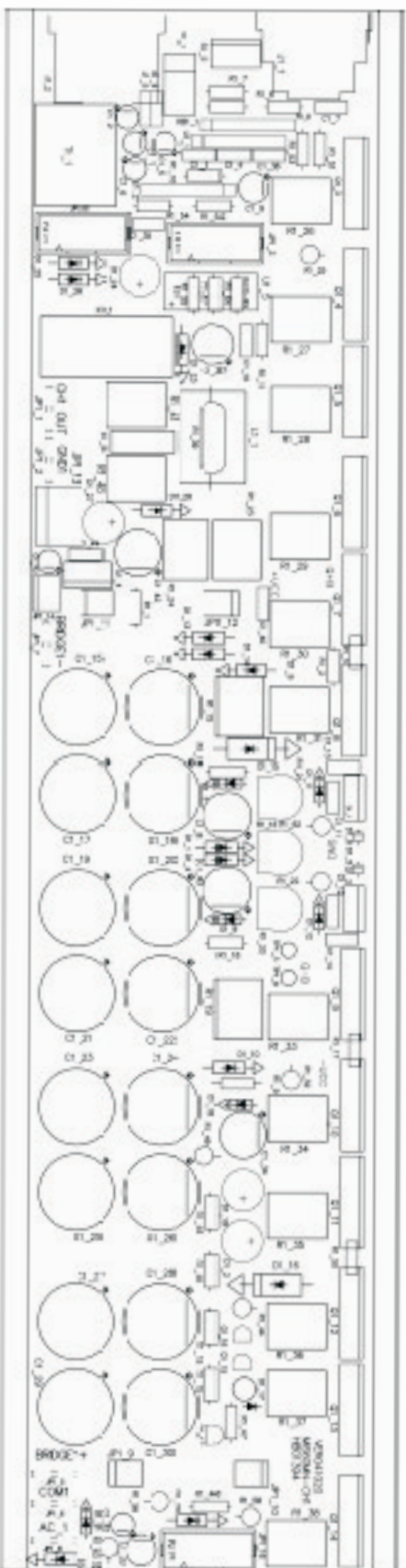
PCB : MIS60MN-CH1 Bottom Layer



PCB : MIS60MN-CH1 Bottom Solder Mask

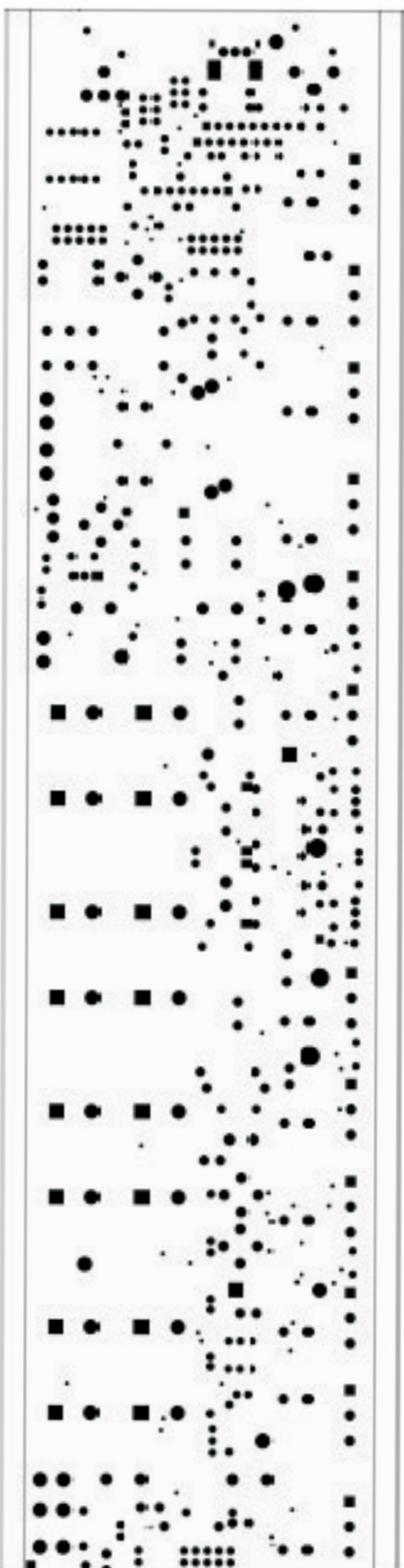


PCB : MIS60MN-CH1 Top Layer

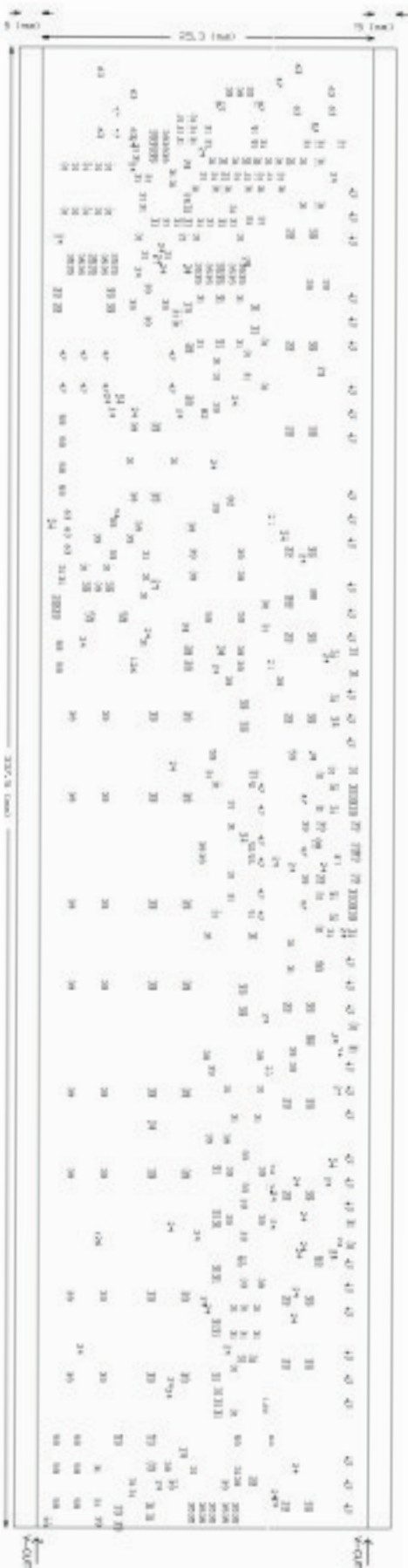


PCB : MIS60MN-CH1 Top Overlay

版次：VER041020

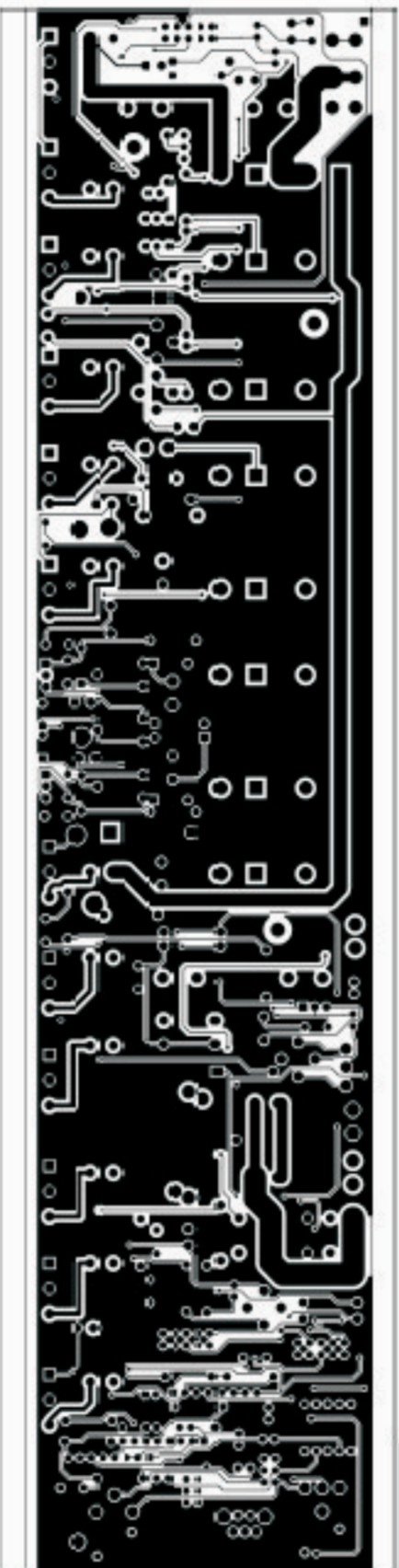


PCB : MIS60MN-CHI Top Solder Mask

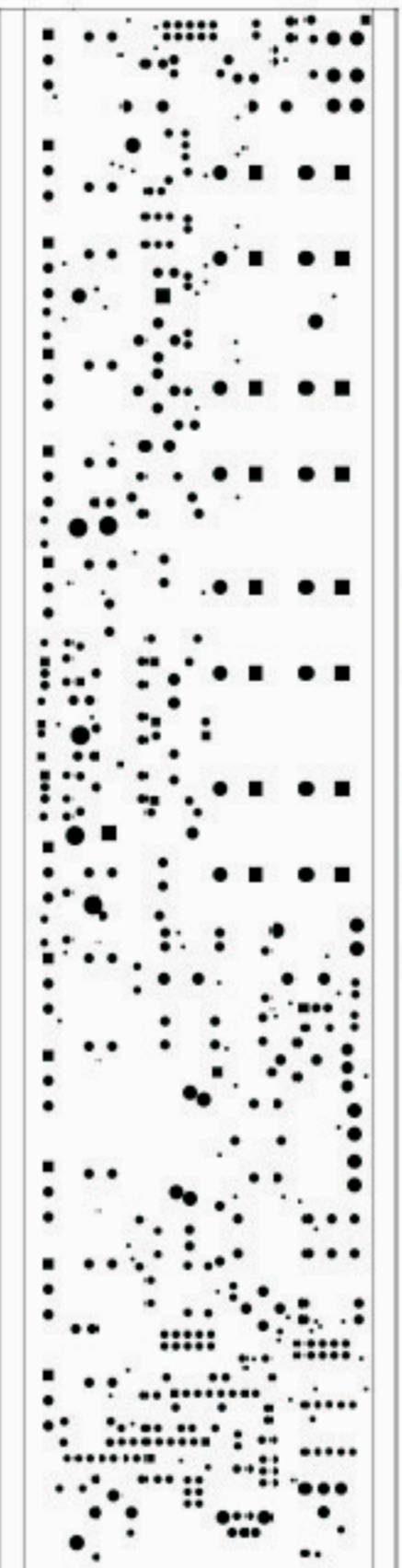


Tool	Hole Size	Hole Count Placed	Tool Travel
T1	24mil (0.6096mm)	76	53.61 inch (1412.47 mm)
T2	31mil (0.7874mm)	171	61.05 inch (1550.63 mm)
T3	35mil (0.889mm)	30	28.63 inch (727.27 mm)
T4	39mil (0.9906mm)	134	73.62 inch (1869.96 mm)
T5	47mil (1.1938mm)	57	31.67 inch (804.29 mm)
T6	59mil (1.4986mm)	24	32.59 inch (827.87 mm)
T7	63mil (1.6002mm)	9	12.40 inch (315.08 mm)
T8	82mil (2.0828mm)	2	6.76 inch (171.66 mm)
T9	87mil (2.2098mm)	2	3.38 inch (85.96 mm)
T10	98mil (2.4892mm)	5	11.19 inch (284.29 mm)
T11	63mil (1.6002mm)	2	2.39 inch (60.62 mm)
T12	126mil (3.2004mm)	3	NP/TH 20.93 inch (531.70 mm)
Totals		534	340.23 inch (8641.80 mm)

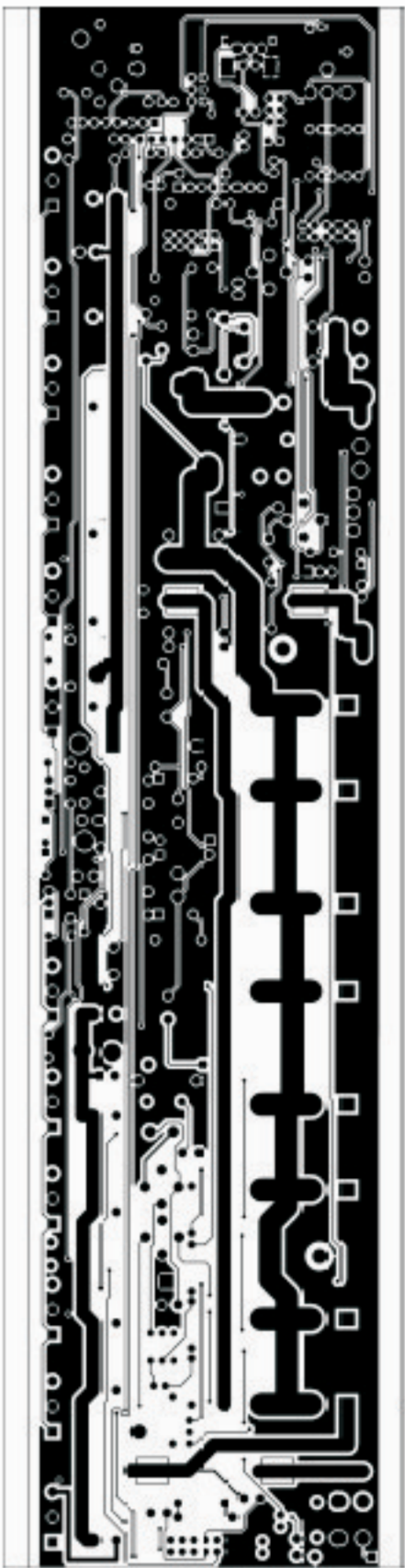
PCB : MIS60MN-CH1 Drill Drawing



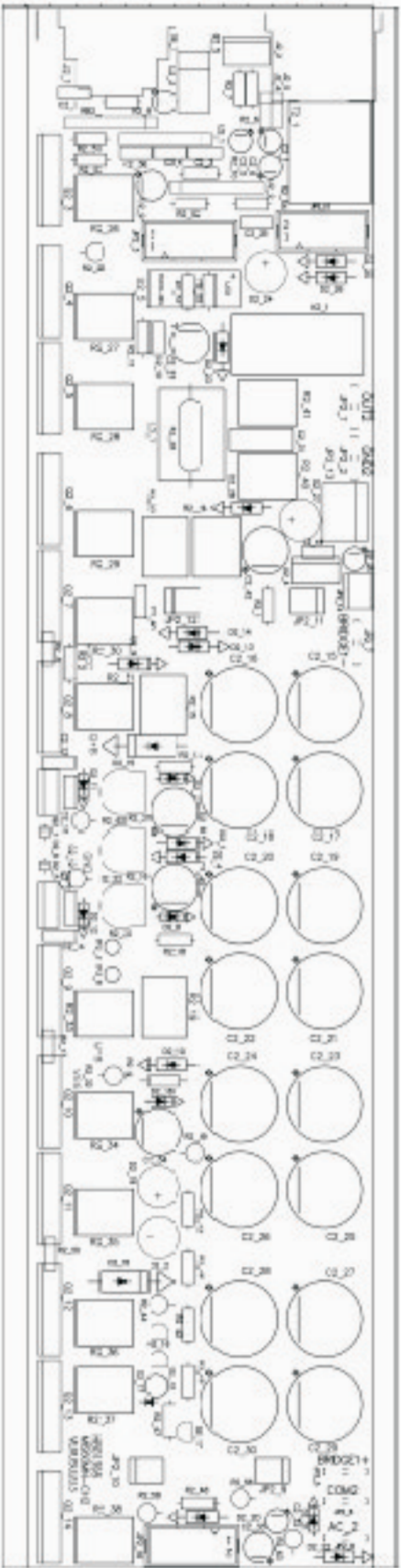
PCB : MIS60MN-CH2 Bottom Lay



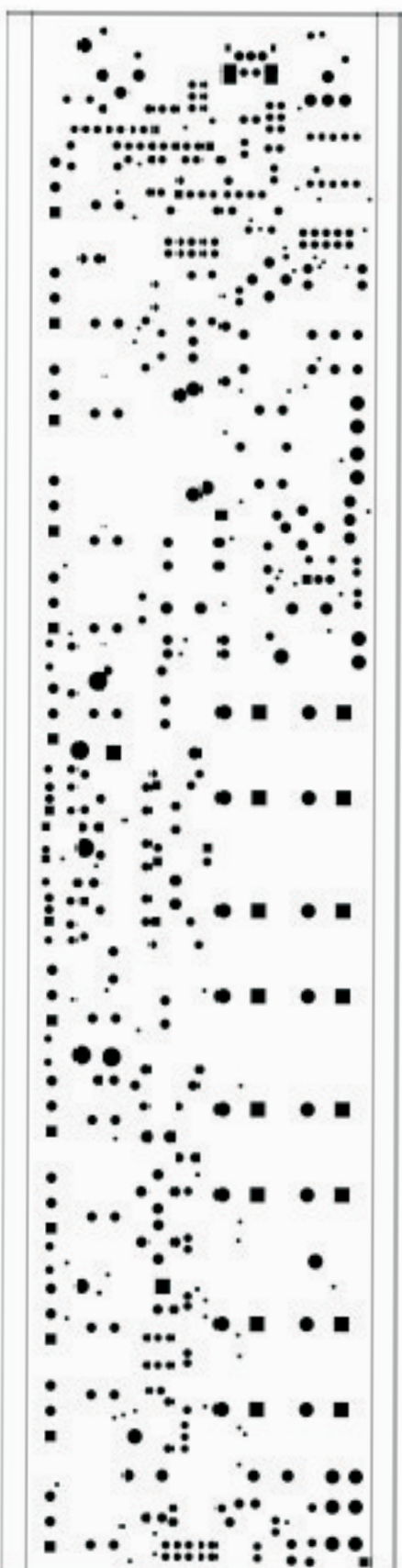
PCB : MIS60MN-CH2 Bottom Solder Mask



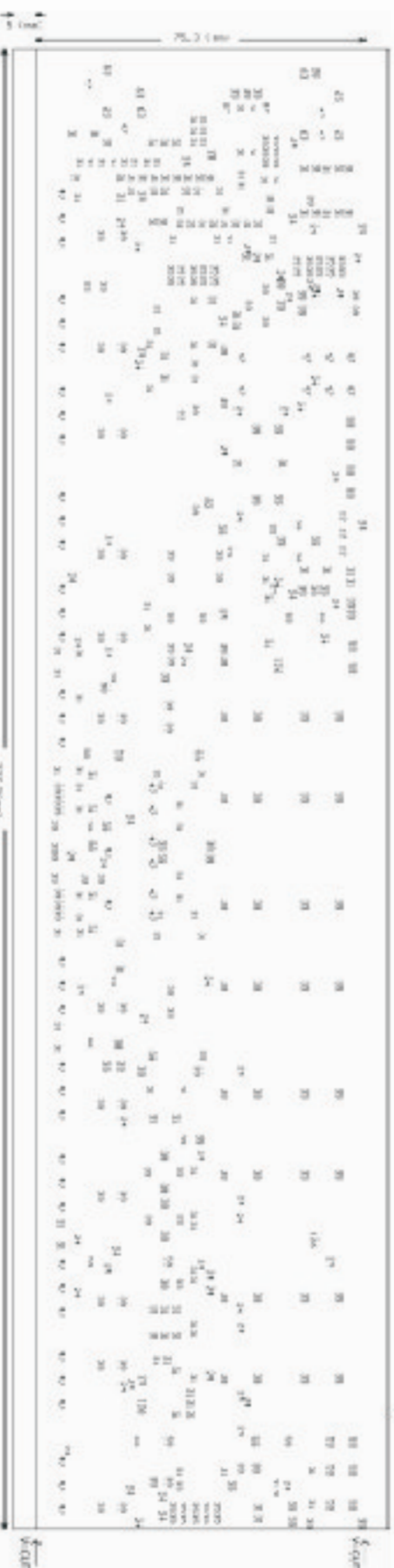
PCB : MIS60MN-CH2 Top Layer



PCB : MIS60MN-CH2 Top Overlay



PCB : MHS60MN-CH2 Top Solder Mask



PCB : M1S60MN-CH2 Drill Drawing

Tool	Hole Size	Hole Count Placed	Tool Travel
T1	24mil (0.6096mm)	77	56.72 Inch (1440.66 mm)
T2	28mil (0.7112mm)	4	10.55 Inch (268.04 mm)
T3	31mil (0.7874mm)	169	69.22 Inch (1758.16 mm)
T4	35mil (0.889mm)	30	30.96 Inch (786.40 mm)
T5	39mil (0.9906mm)	134	71.14 Inch (1806.98 mm)
T6	47mil (1.1938mm)	57	34.76 Inch (882.83 mm)
T7	59mil (1.4986mm)	24	37.87 Inch (961.79 mm)
T8	63mil (1.6002mm)	9	11.10 Inch (282.00 mm)
T9	82mil (2.0828mm)	2	8.40 Inch (213.44 mm)
T10	87mil (2.2098mm)	2	6.16 Inch (156.58 mm)
T11	98mil (2.4892mm)	5	11.76 Inch (298.78 mm)
T12	63mil (1.6002mm)	2	NPTH 6.76 Inch (171.64 mm)
T13	126mil (3.2004mm)	3	NPTH 26.20 Inch (665.59 mm)
Totals		538	381.61 Inch (9692.87 mm)



PCB : MIS60MN2 Bottom Layer



PCB : MIS60MN2 Bottom Solder Mask



PCB : MIS60MN2 Top Layer



PCB : MIS60MN2 Top Overlay

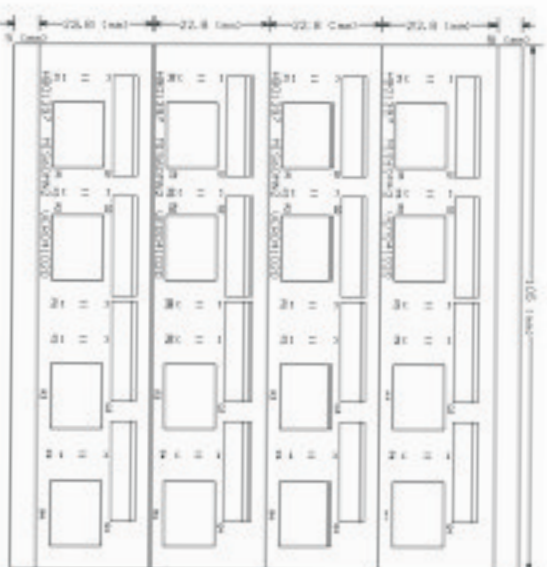


PCB : MIS60MN2 Top Solder Mask



PCB : MIS60MN2 Drill Drawing

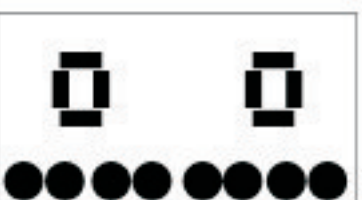
Tool	Hole Size	Hole Count Placed	Tool Travel
T1	39mil (0.9906mm)	8	6.99 Inch (177.42 mm)
T2	47mil (1.1938mm)	12	6.82 Inch (173.19 mm)
T3	63mil (1.6002mm)	10	7.20 Inch (182.95 mm)
Totals		30	21.01 Inch (533.56 mm)



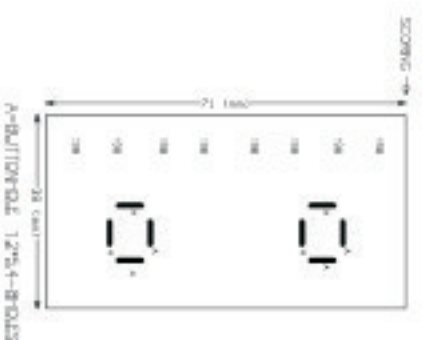
PCB : MIS60MN2 Top Overlay 連片示意图



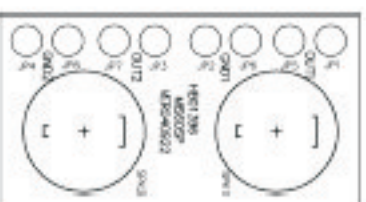
PCB : MIS60SP Bottom Layer



PCB : MIS60SP Bottom Solder Mask

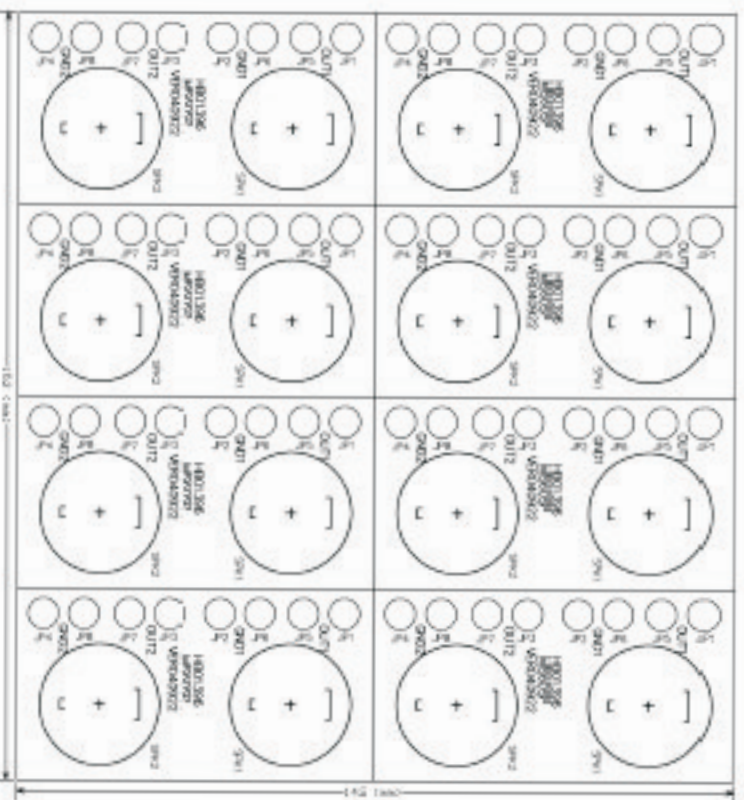


PCB : MIS60SP Drill Drawing

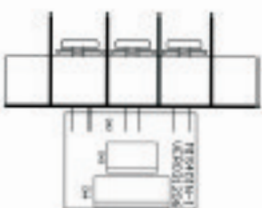


PCB : MIS60SP Top Overlay

Tool	Hole Size	Hole Over Ratio
T1	98mil (2.482mm)	8
Totals		8



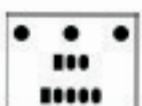
PCB：MIS60SP 連片示意图



PCB : MIS40IN-1 Top Overlay



PCB : MIS40IN-1 Bottom Layer



PCB : MIS40IN-1 Bottom Solder Mask



PCB : MIS40IN-1 Drill Drawing



Tool	Hole Size	Hole Count Placed
T1	30mil (0.9906mm)	8
T2	63mil (1.6002mm)	3
Totals		11



PCB : MIS40IN-2 Top Overlay



PCB : MIS40IN-2 Bottom Layer



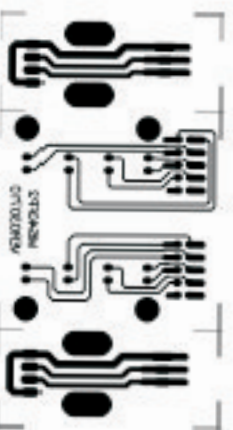
PCB : MIS40IN-2 Bottom Solder Mask



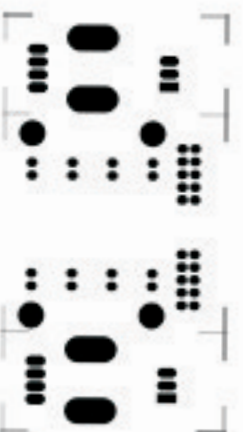
PCB : MIS40IN-2 Drill Drawing



Tool	Hole Size	Hole Count Placed
T1	39mil (0.9906mm)	3
T2	79mil (2.0066mm)	4
Totals		7



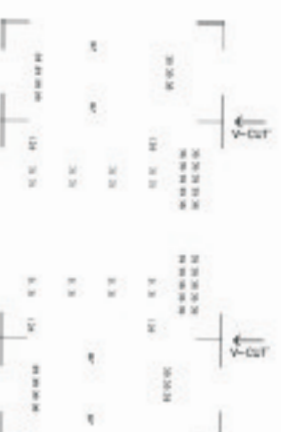
Bottom Layer



Bottom Solder Mask



Top Overlay



Drill Drawing

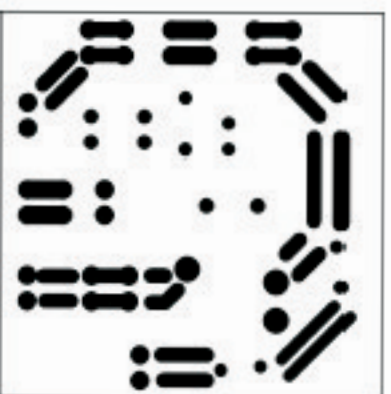
Tool	Hole Size	Hole Count Planned
T1	31mil (0.7874mm)	16
T2	35mil (0.889mm)	20
T3	39mil (0.9906mm)	14
T4	87mil (2.2098mm)	4
T5	126mil (3.204mm)	4
Totals		58



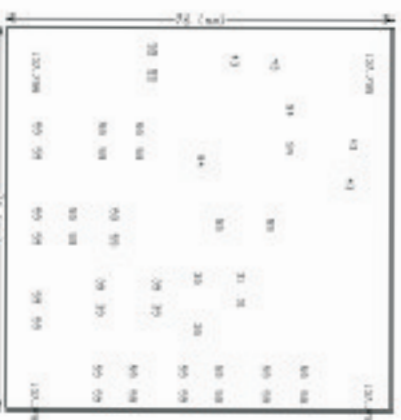
PCB : MIS60PWR Bottom Layer



PCB : MIS60PWR Top Overlay

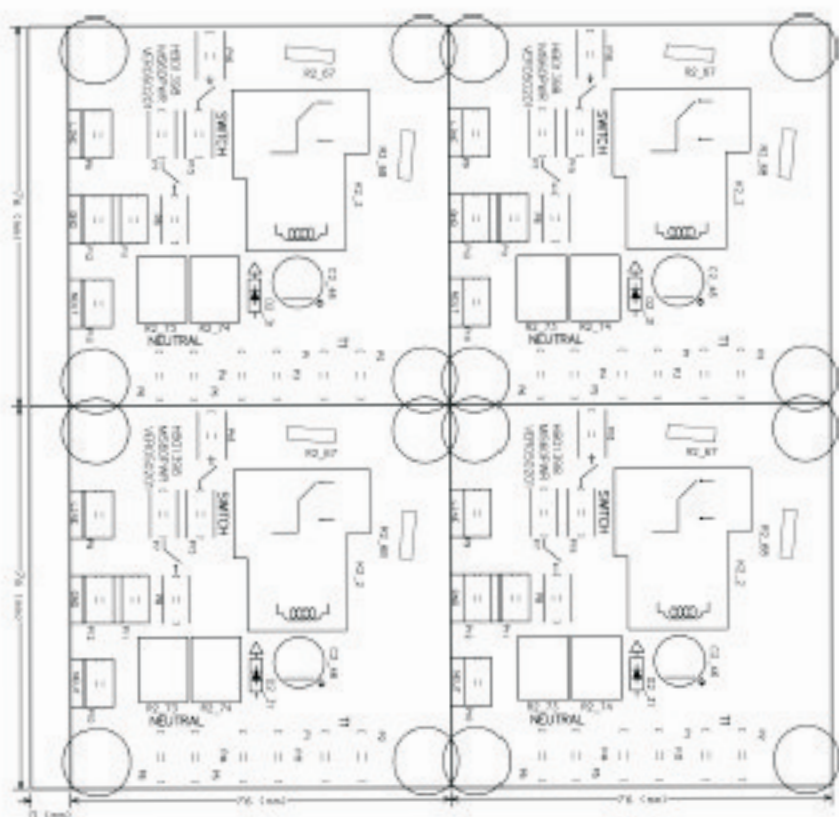


PCB : MIS60PWR Bottom Solder Mask

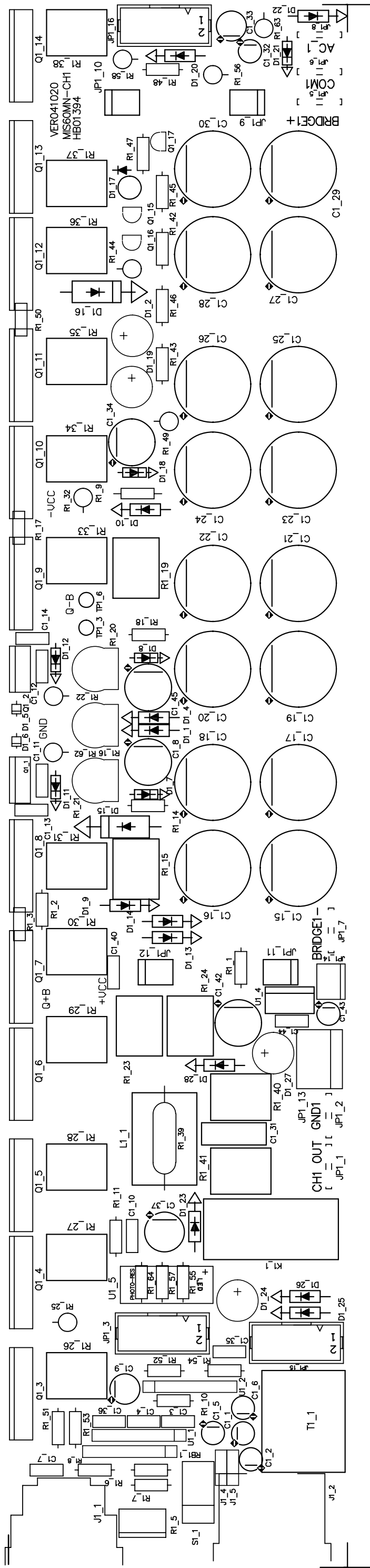


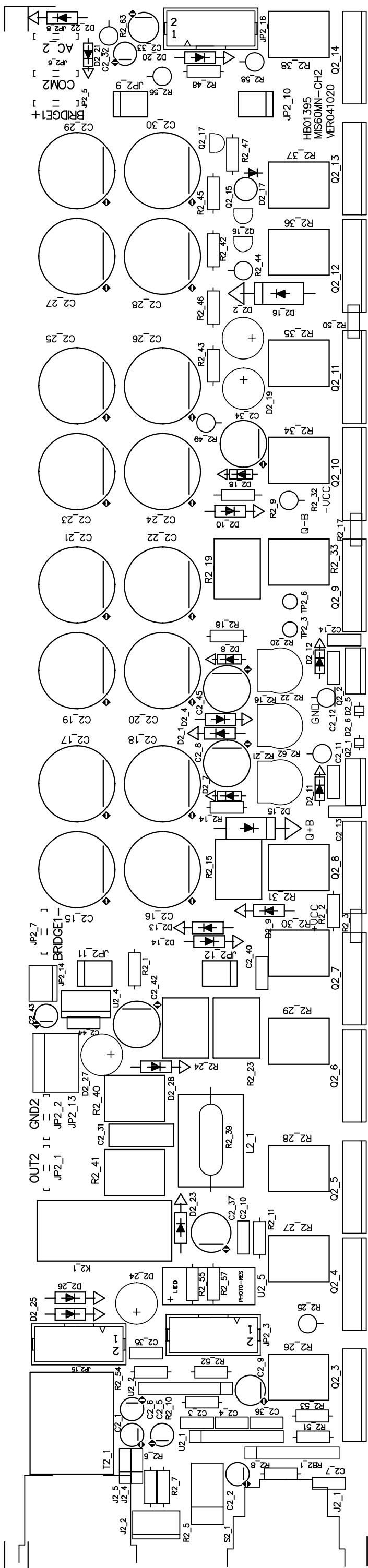
PCB : MIS60PWR Drill Drawing

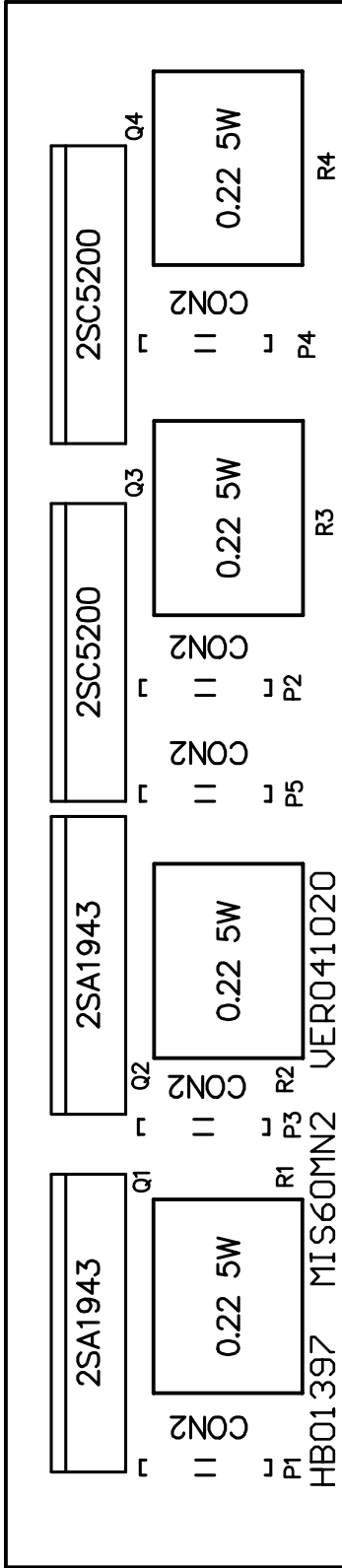
Tool	Bob Size	Bob Over Feed	Tool Travel
T1	3.18 (0.125)	2	6.57 Inch (166.77 mm)
T2	3.91 (0.150)	6	7.41 Inch (188.28 mm)
T3	4.30 (0.169)	4	6.52 Inch (165.96 mm)
T4	5.08 (0.200)	30	17.05 Inch (433.04 mm)
T5	6.35 (0.250)	3	6.44 Inch (163.56 mm)
T6	13.97 (0.550)	4	14.24 Inch (361.62 mm)
Totals			
		49	98.13 Inch (2501.82 mm)

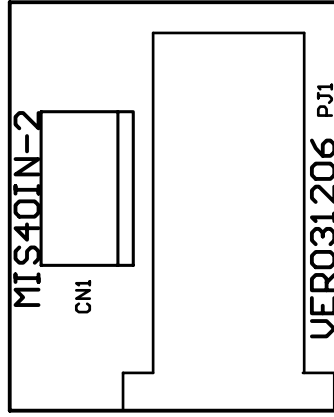
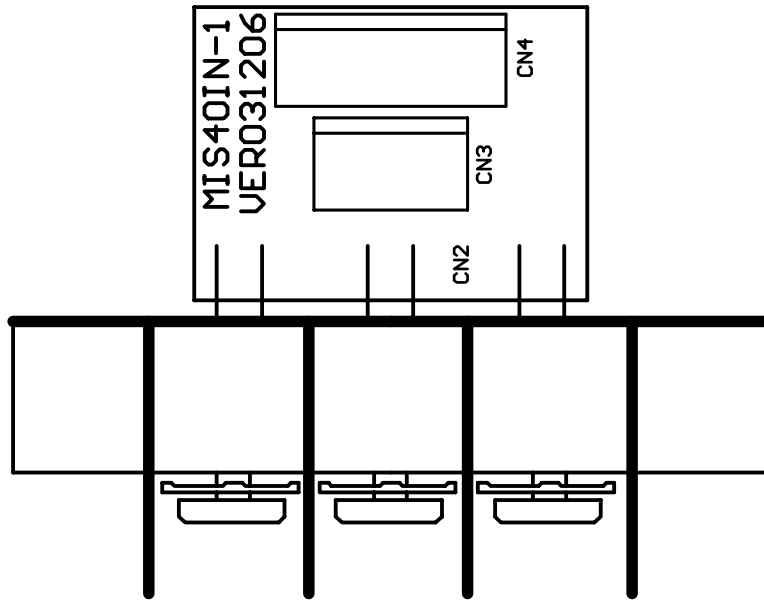


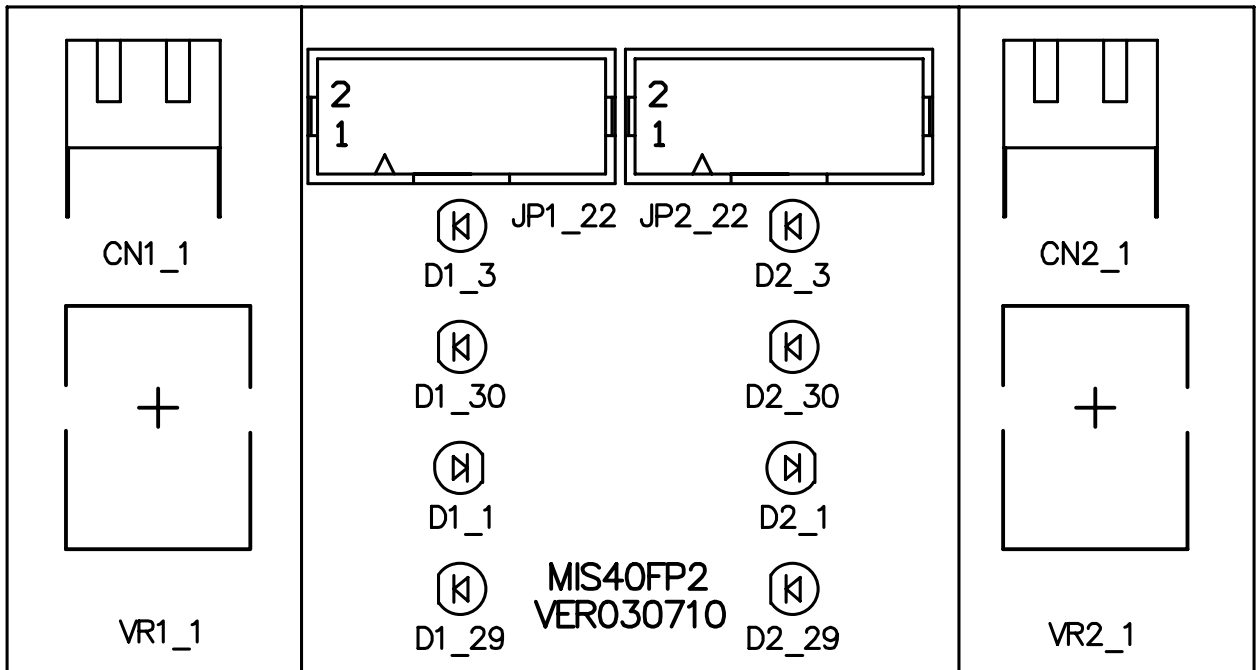
PCB : MIS60PWR 連片示意图

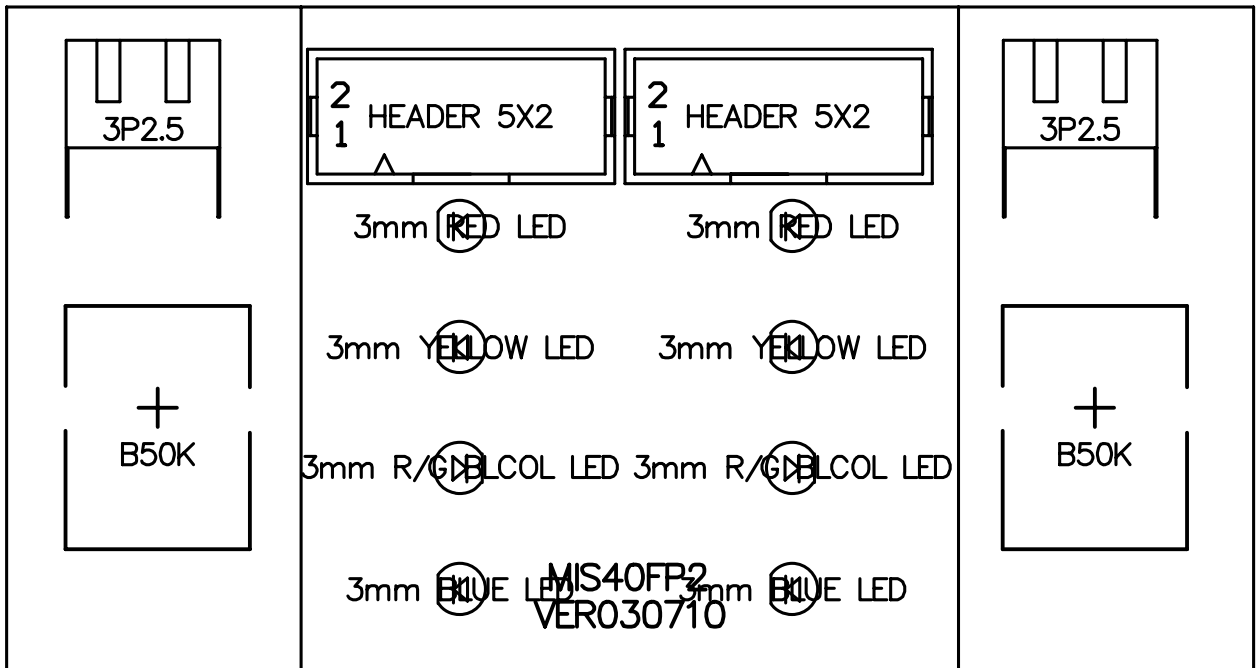


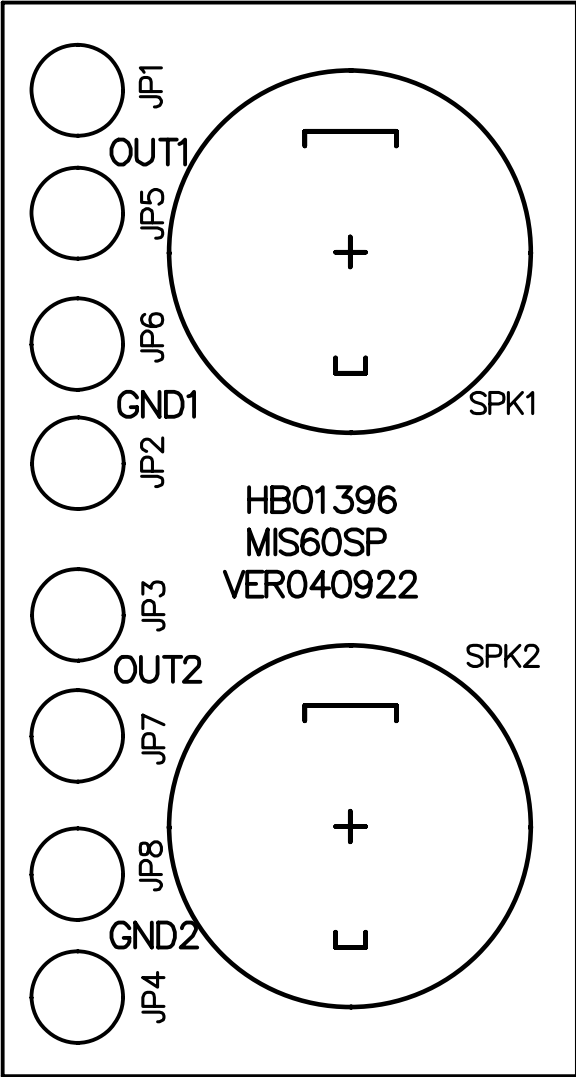


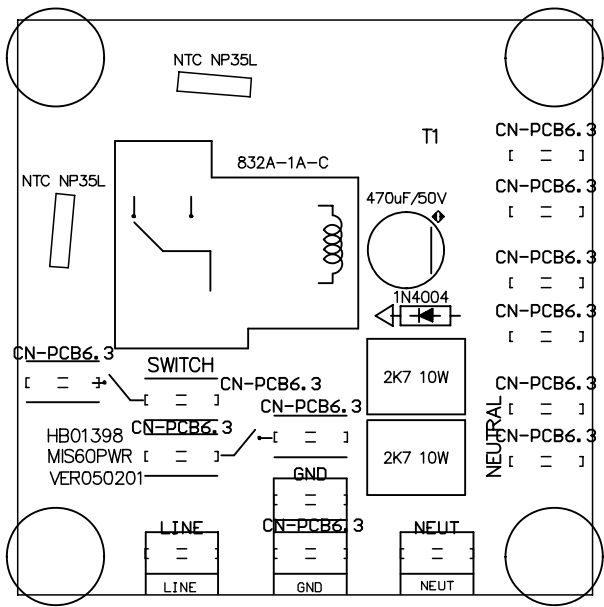
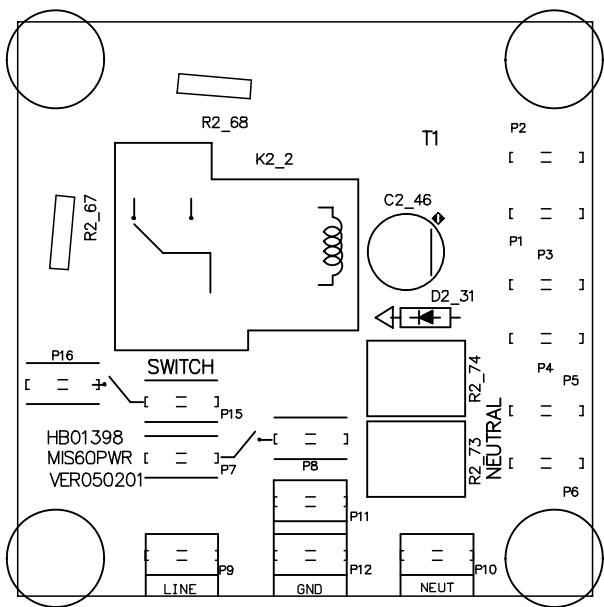


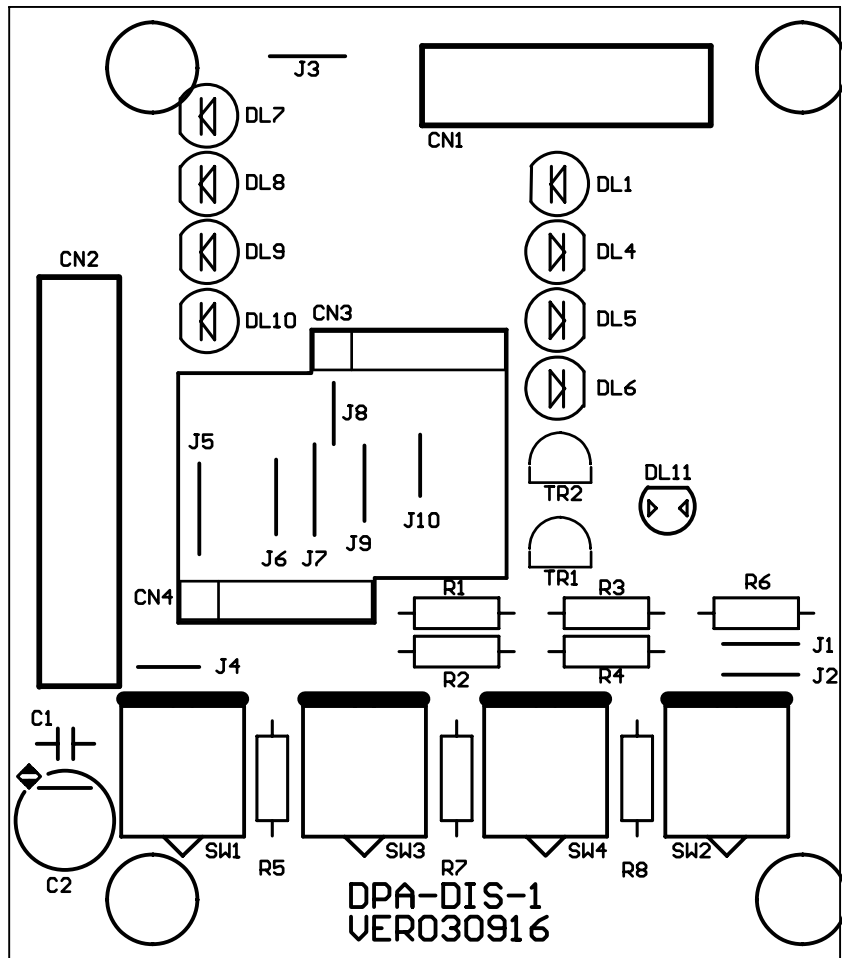


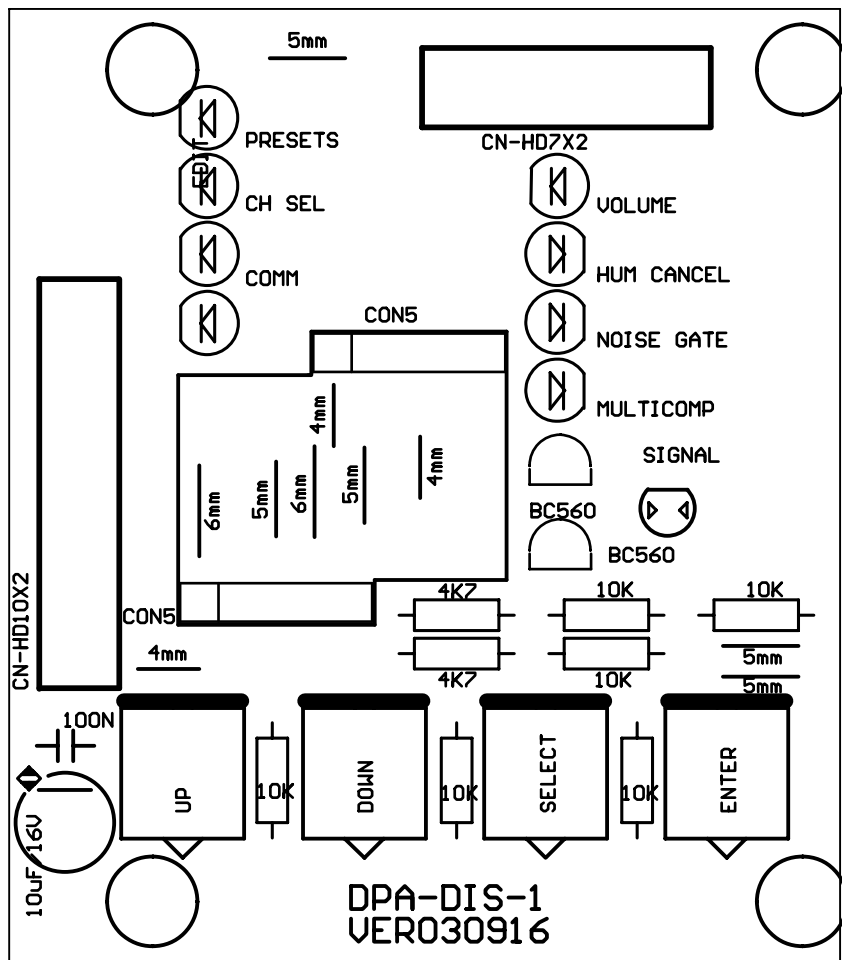


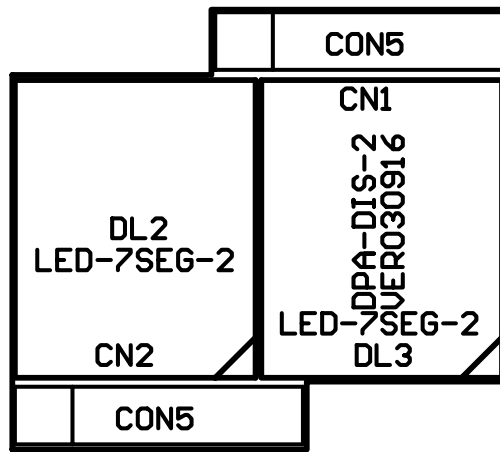


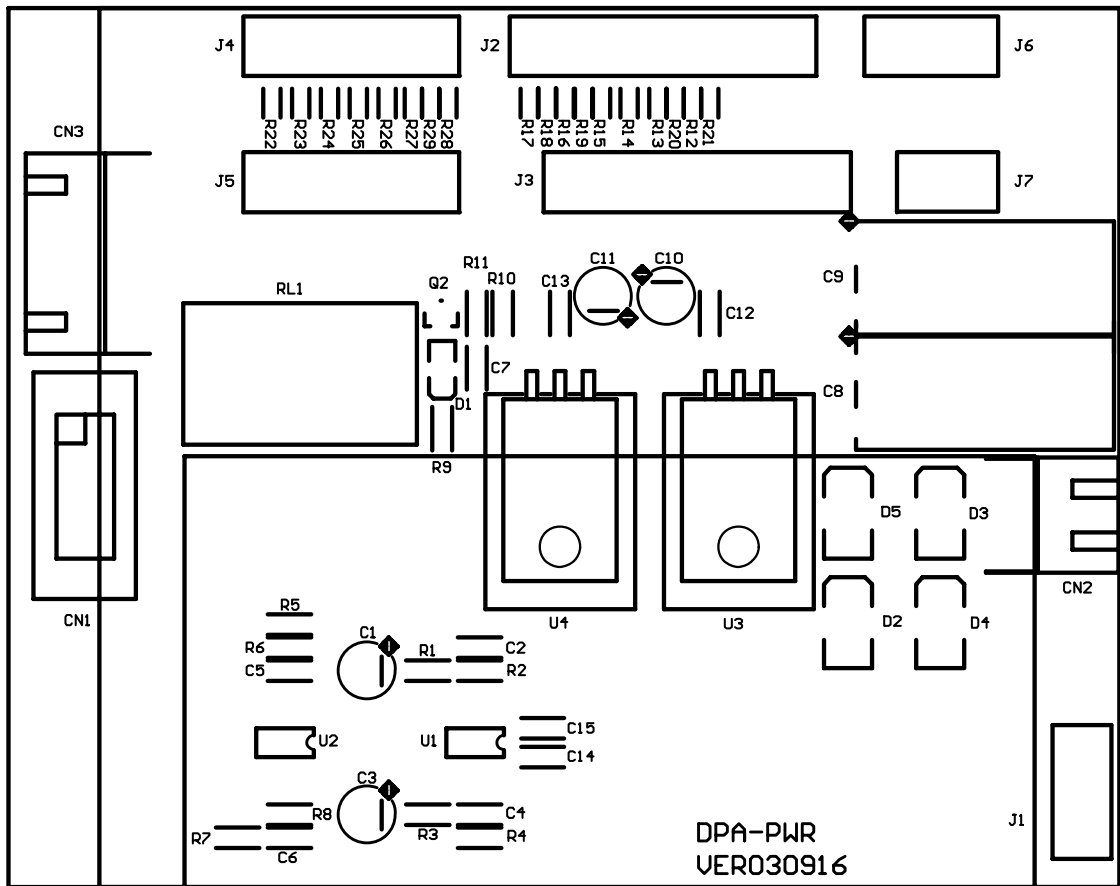


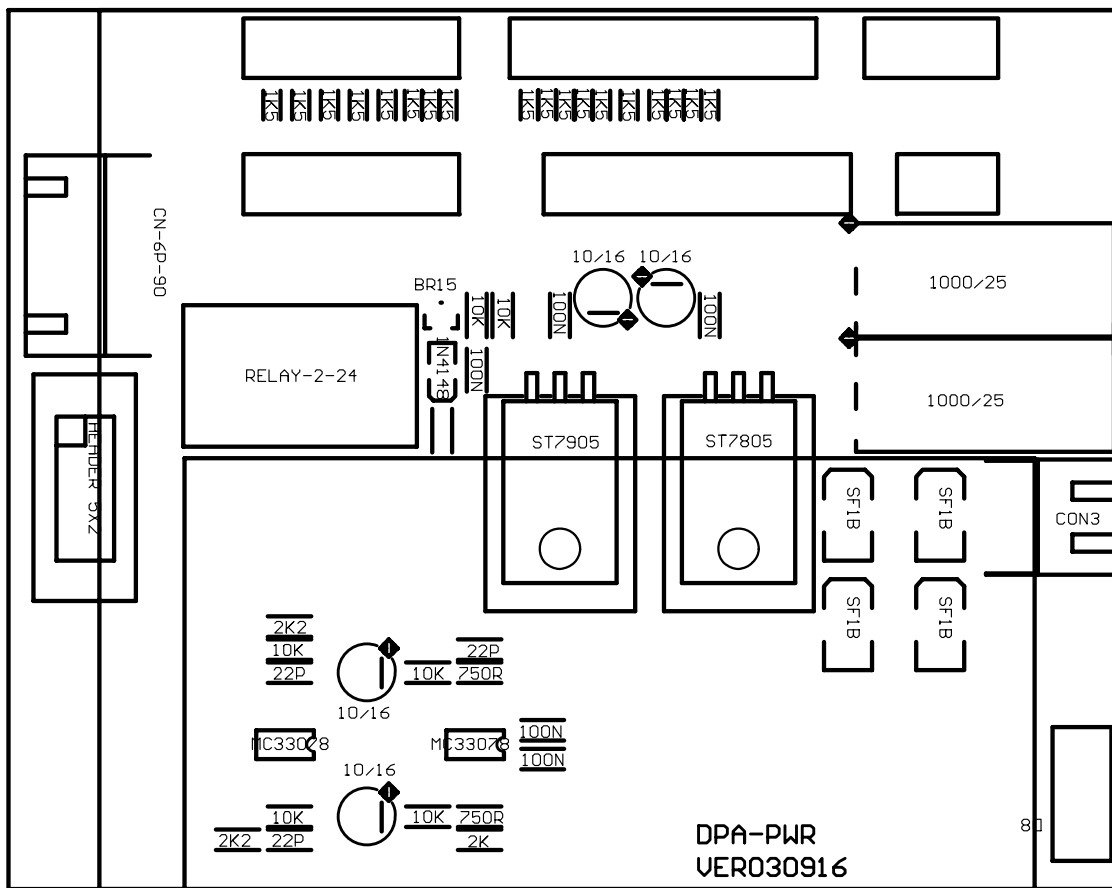


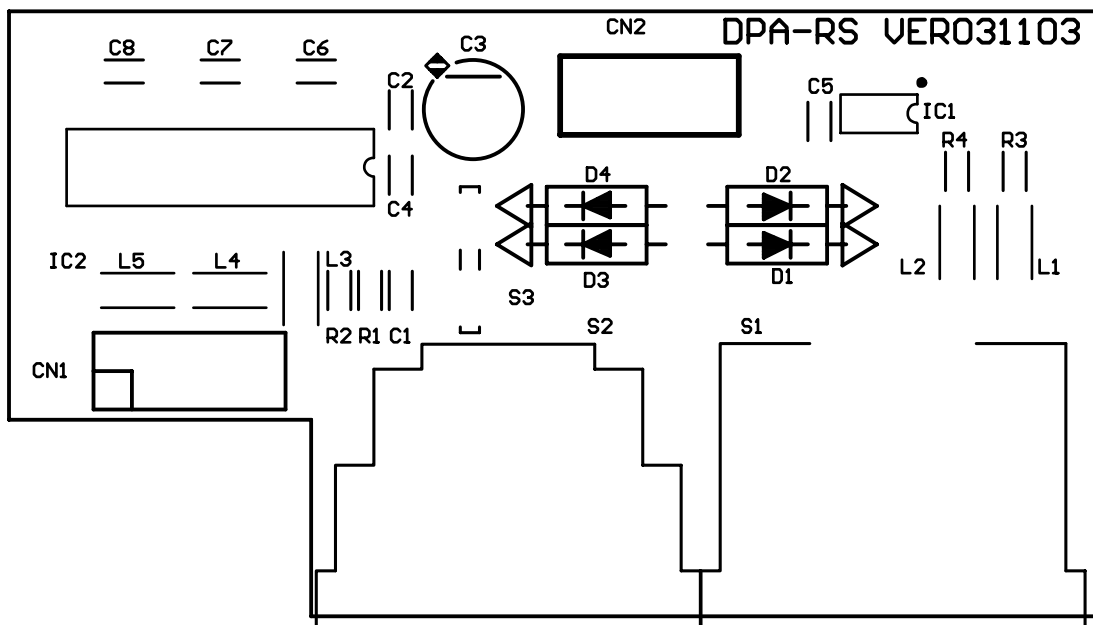


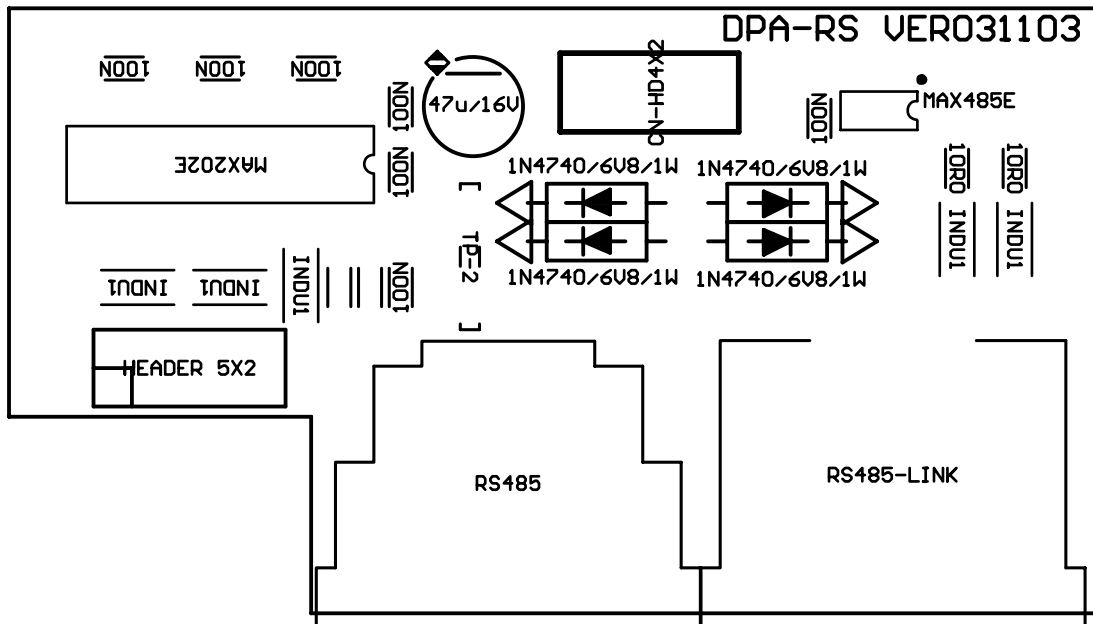


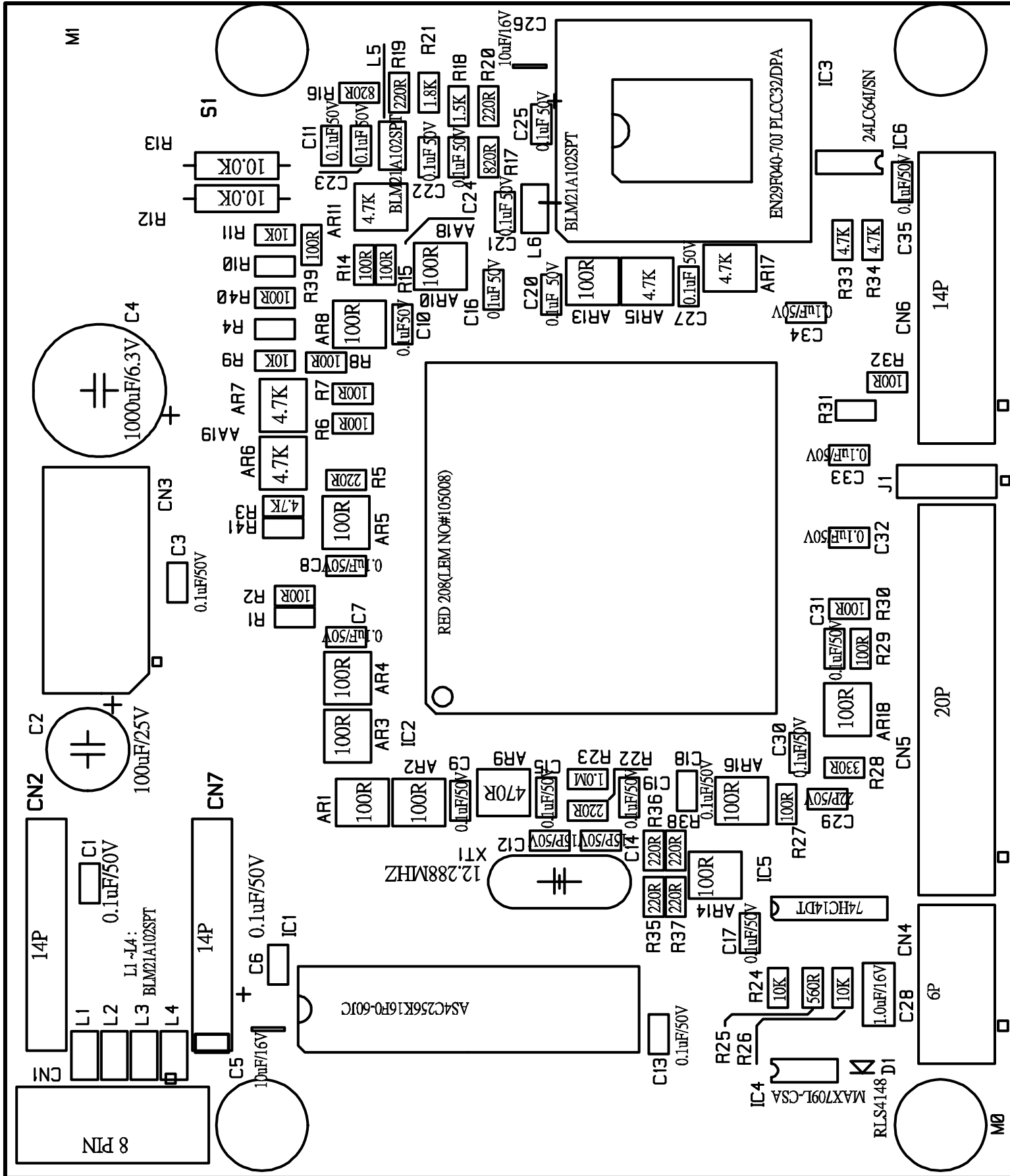




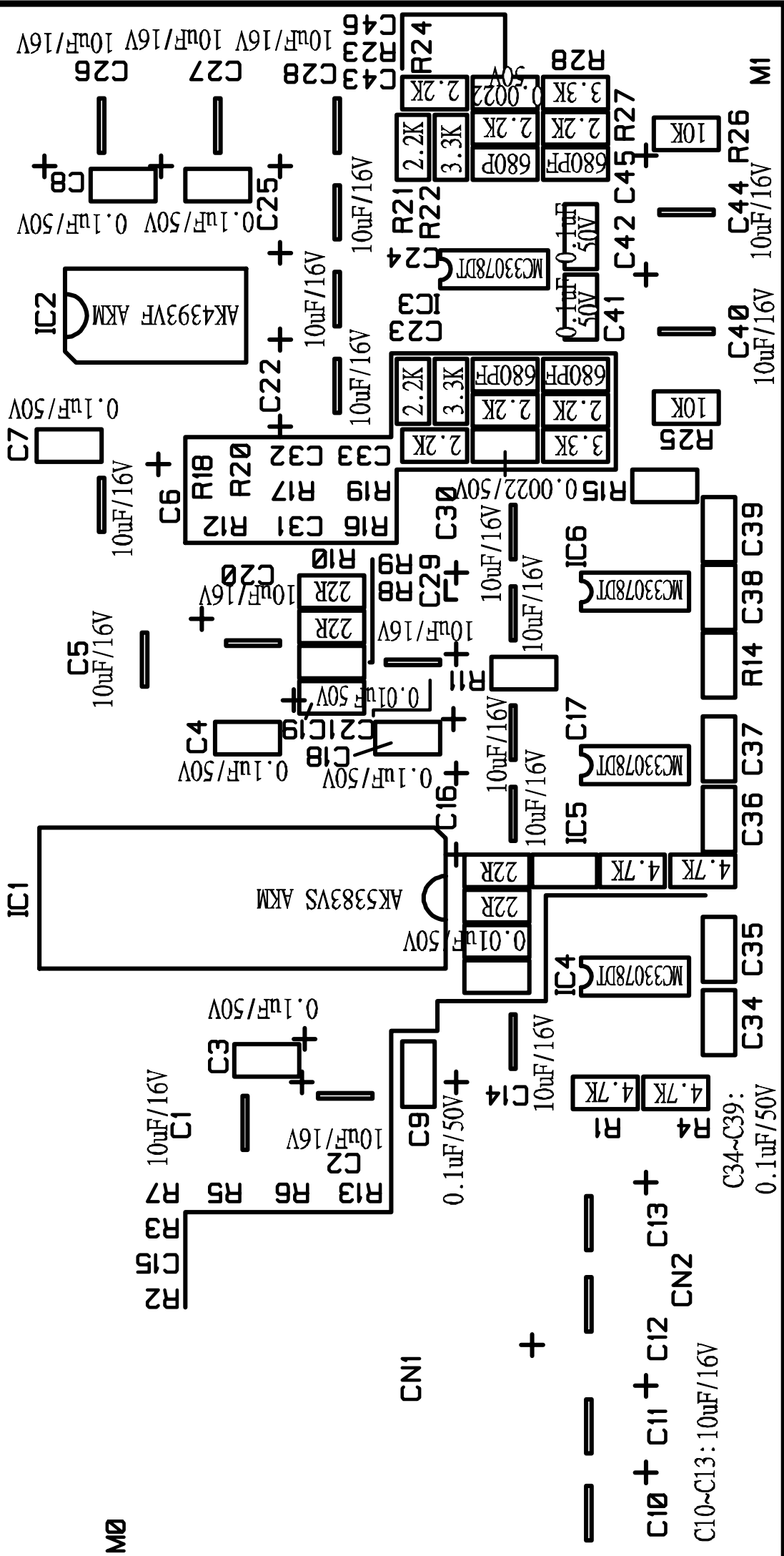








313111 TOP SILK



DPA 6000 TEST PROCEDURES

INSTRUMENTS

1. Multi- purpose meter
2. Audio-precision
3. oscillograph
4. four 4Ω resistor
5. Computer with RS232-PROT

DSP board test procedures

Step 1 : Visual check

Visual check the cosmetic and assembly of amplifier.

Step 2: Connection

- Check if the power switch is turned off.
- Connect the signal generator and CH1-XLR input terminal of the amplifier. Set the signal generator to 1KHz/0.775V (0dB).
- Connect oscillograph CH1 test pen with amplifier CH1 , and oscillograph CH2 test pen with amplifier Ch2.
- Connect 4Ω load to amplifier CH1.
- Connect 4Ω load to amplifier CH2.
- Turn the gain knob of front panel to MIN.

Step 3: Power supply test

- Supply the amplifier with rated voltage (230VAC).
- Check if all the voltage is correct. If they are right, then turn off the power.

Step 4: DSP controlling board test

1. Press ENTER and SEL buttons at the same time and turn on the power.

a. All LEDs light up in turn.

b. LCD displays number "8.8".

2. Press ENTER and SEL buttons at the same time again. Volume SIG-LED should lights up.

a. Press UP button, LCD displays the number "1".

b. Press DOWN button, LCD displays the number "2".

C. Press ENTER button, LCD displays the number "3".

d. Press SEL button, LCD displays the number "4".

Step 5: EEPROM test

1. Press ENTER and SEL buttons at the same time. (HUM CANCEL) LED should lights up. After about 50 seconds:

a. If LCD displays "01", it means EEPROM passes the inspection.

b. If LCD displays "E1", it means EEPROM fails to pass the inspection, and the module stops operation. The test can only go on after the machine has been repaired.

Step 7: RS232 series terminal test

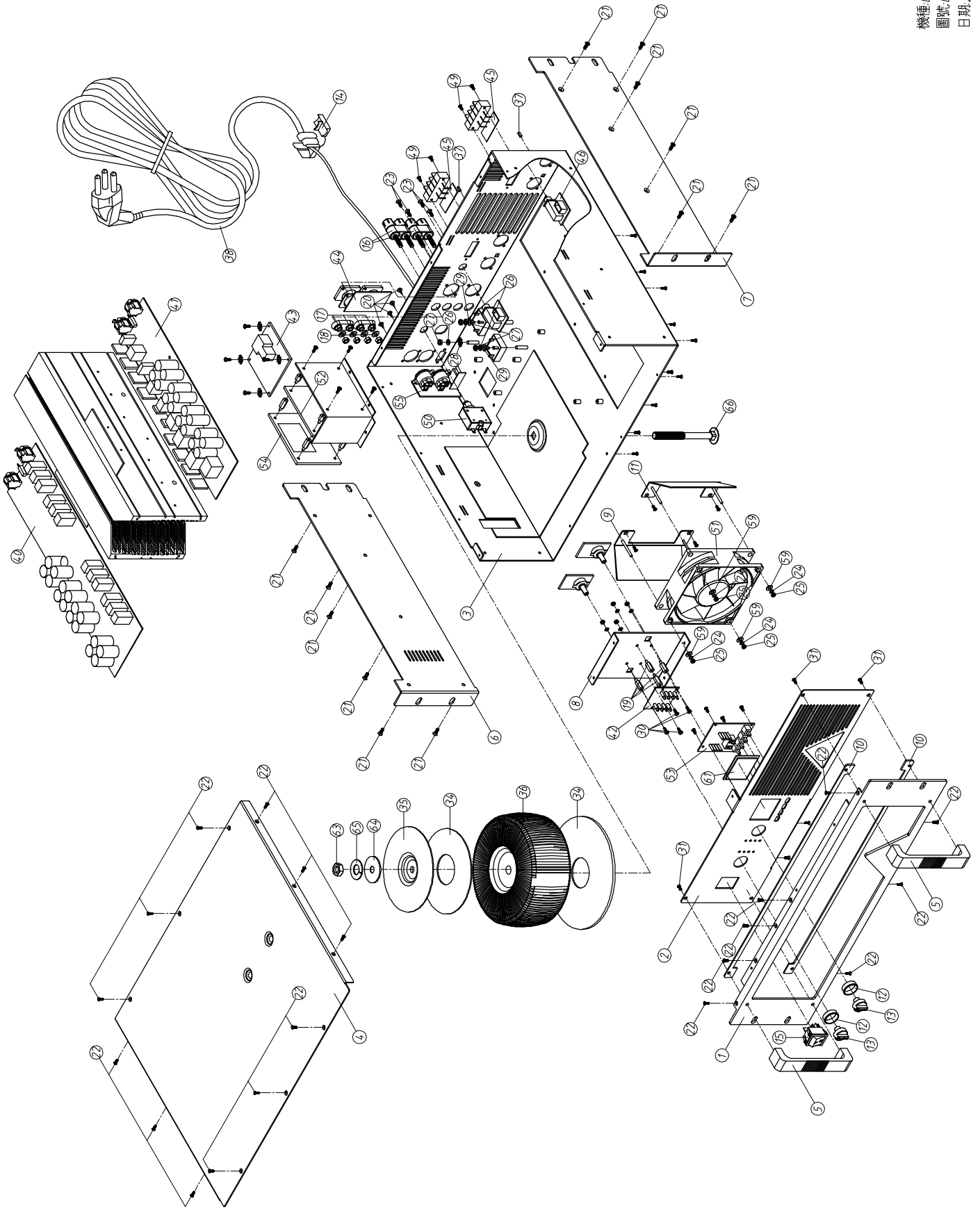
1. Turn off the power and connect computer and amplifier with RS232 wire, and then turn on the power.

2. Check if the software MaxiEditor is connected or offline.

3. If it is connected, the front panel displays number "56".

AMP BOARD TEST PROCEDURE

1. Set the LIMITER switch and BRIDGE switch to the position OFF, and VR of CH1 and CH2 to the position MAX. Turn on the power switch and the blue LED lights up. OPERATING/ PROTECTION LED lights up red. After 2 to 5 seconds, it turns green. The fan works. The sound can be heard while relay is sucked.
2. Input 1KHz/4dB signal to CH1 and CH2 and add 4 Ω load to the output terminal of CH1 CH2. The output should be 69.2V and distortion should be less than 0.5%.
3. DISTORTION (SMPTE-10w): Less than 0.05%
FREQUENCY RESPONSE: 20 to 20kHz +/- 1dB, 10 to 60000Hz +/- 3dB.
SNR: 102~108dB below rated output(full band).
4. Set limiter switch to the position ON. When input 1KHz/+6dB signal, CLIP LED lights up and the output signal keep the same.
5. Press down BRIDGE switch, input 1KHz/3.2dB signal to Ch1, and add 8 Ω load to bridge output terminal. Output is no less than 128V and distortion is no more than 0.7%.
6. Set volume VR to the position MIN and LIMITER switch to the position ON, output should be less than 3mv.
7. Short circuit MAX output, the power consumption should be less than 700W.



PART LIST of DPA 6000

No	Part No	Description	Specification	Pcs
1	MA04305	ZC-front pane-silver paint	MISTRAL6000 ALTO_V1.0	1
2	MA04399	ZC-front panel-5076 black and blue	DPA6000 ALTO_V1.0	1
3	MB00419	ZC-chassis -silver paint	DPA6000 ALTO_V1.0	1
4	MC00636	ZC-top cover-silver paint	MISTRAL6000_V1.1	1
5	MI02404	ZB-handle-silver paint	MISTRAL6000 20*25.5*124_V1.0	2
6	MI02399	ZB-Aluminum front panel fixed rack -paint	MISTRAL6000 left_V1.0	1
7	MI02397	ZB-front panel fixed rack -silver paint	MISTRAL6000 right_V1.0	1
8	MI02401	ZD-iron front panel-MISTRAL6000-08	MISTRAL6000_V1.0	1
9	MI02409	ZB-partition-silver paint	MISTRAL6000 1.2t*50.2*59.3*122.5 left_V1.	1
10	MI02407	ZB-padding board -5076 black and blue	MISTRAL6000 422*14*2.0t_V1.0	2
11	MI02411	ZB-partition-silver paint	MISTRAL6000 1.2t*50.2*59.3*122.5 right_V1.	1
12	NI02650	plastic knob-semicircle handle	ϕ 18*18mm black	2
13	NI02651	knob fixed sleeve-ABS	10* ϕ 22.5 black A600.2	2
14	NI02853	power wire clip	7P-2 SIZE ϕ 11.0 SJT3C#14	1
15	HI00022	power SW	4P black R13-69A	1
16	HC00295	cinquefoil terminal	JS205-110	2
17	MF00020	color washer	ϕ 5* ϕ 12*1t	4
18	MF00039	spring washer	ϕ 5* ϕ 8*1t	4
19	MG00247	copper pole	M3*10*0.5PH single flat length 16	4
20	MG00061	black plated screw-pill-iron board	M3*10	12
21	MG00295	black plated screw-head pan	M4*6	12
22	MG00025	black plated screw-head pan	M3*6	30
23	MG00042	black plated screw-head pan	M3*10	16
24	MF00037	spring washer	ϕ 3.2* ϕ 5.5*1t	28
25	ME00015	color nut	3mm	12
26	MF00038	spring washer	ϕ 4* ϕ 7*1t	7
27	ME00016	color nut	4mm	3
28	MF00048	shake proof	ϕ 4* ϕ 8*0.5t	1
29	MF00018	ZE-washer-color plated	ϕ 4* ϕ 10*1t_V1.0	2
30	MG00041	black plated screw -pill	M3*6	22
31	MG00075	plated screw-head pan	M4*16	4
32	ME00006	nut-for R.S	ϕ 9	2
33	MF00004	color washer-for R.S	ϕ 9* ϕ 14*0.5t	2
34	NI00437	rubber loop	ϕ 20* ϕ 120*2tB	2
35	MH00766	ZB-iron piece-zinc color	ϕ 11* ϕ 90*2_V1.1	1
36	TD00467	loop transformer	PT-DPA6000_115/230V	1
37	NI00312	power SW button	square 5*5*9 hole 2.8*2.8 black	2
38	HA03442	power wire EURO 3P	LT-322+1.5*3C(H05VV-F) 2.27M BK	1
39	NC00059	ZD-fixed board-SA2000-15	1*46*46(Sax-2000)	1
40	HK04603	K-PCB	P-MIS60MN CH1(MISTRAL6000)	1

41	HK04604	K-PCB	P-MIS60MN CH2(MISTRAL6000)	1
42	HK04605	K-PCB	P-MIS60FP2	1
43	HK04607	K-PCB	P-MIS60PWR	1
44	HK04608	K-PCB	P-MIS60SP	1
45	HK00793	K-PCB	P-MIS2500-INPUT(terminal block)	2
46	HK00787	K-PCB	P-MIS2500-INPUT(MIC jack)	2
47	NI01867	adhesive pad	20.5*14*7.6mm(SF-006)	4
48	NI00389	ZD-plastic washer	φ 12* φ 16*0.5 white	2
49	MG00027	black plated screw-head pan	M3*12	4
50	HI00142	manual returning SW	A0701HM-15A	1
51	HE00083	fan-1225M12S-PD1	DC12V/0.6A 120*120*25mm 360mm	1
52	HK03845	K-PCB	P-DPA2500-PWR-DIP	1
53	HK03846	K-PCB	P-DPA2500-DISPLAY	1
54	HK03847	K-PCB	P-DPA2500-RS-DIP	1
55	HK03830	K-PCB	P-313089-4-DIP	1
56	MG00128	color screw-pill	M3*16	1
57	MI00237	heat sink-Aluminum	FX22 4*34.5*16.5*34.5mm	1
58	MI00409	fixed board	FX22	1
59	MF00030	Nickel washer	φ 3.5* φ 8*0.8t	4
60	NI01863	button	φ 5.5*W10*7.5 black	4
61	NI02145	ZC-acrylic-transparent	DPA series ALTO_V1.1	1
62	MG00588	external screw-HA02503 attachment	4.75*11.8mm	2
63	ME00202	zinc nut-external hexagon 17	M10*8*1.5PH	1
64	MF00013	iron washer	φ 10* φ 19*2t	1
65	MF00044	Nickel plated spring washer	φ 10* φ 16*2t	1
66	MG00619	zinc screw -T-square	M10*105*1.5PH	1

BOM of DPA 6000

Part No	Description	Specification	Remarks
MA04305	ZC-front panel-silver paint	MISTRAL6000 ALTO_V1.0	
MA00095	B-front panel-silver paint	MISTRAL600	
MA00072	D-front panel-MISTRAL6000-01	MISTRAL6000_V1.0	
MI02402	N-front panel-Aluminum	3.1*133*25.5*483_V1.0	
MA04399	ZC-front panel-5076 black and blue	DPA6000 ALTO_V1.0	
MA04395	B-front panel-5076 black and blue	DPA4000	
MA04396	D-front panel-dpa4000-01	DPA4000 1.5t*22.4*81.4*422	
MJ00088	R-iron board	1.5t*2135*1220mm 30.67kg	
MB00419	ZC-chassis-silver paint	DPA6000 ALTO_V1.0	
MB00416	B-chassis-silver paint	DPA6000	
MB00341	D-chassis-DPA6000-02	DPA6000 2.0t*129*385*430_V1.0	
MJ01154	R-iron board	2.0t*1850*1220mm 35.4kg	
ME00002	screw bolt	M4*20*0.7PH	
ME00040	iron pole-Nickel plated	hexagon 6.35*M3*10.1	
MI02405	ZD-partition-MISTRAL 6000-11	MISTRAL6000 75*176.5*195_V1.0	
MJ00088	R-iron board	1.5t*2135*1220mm 30.67kg	
MC00636	ZC-top cover -silver paint	MISTRAL6000_V1.1	
MC00635	B-top cover-silver paint	MISTRAL6000 15*375*433.4_V1.0	
MC00634	D-top cover-MISTRAL 6000-15	MISTRAL6000 15*375*433.4_V1.0	
MJ00088	R-iron board	1.5t*2135*1220mm 30.67kg	
MI02404	ZB-handle- silver paint	MISTRAL6000 20*25.5*124_V1.0	
MI02403	handle-Aluminum	MISTRAL6000 20*25.5*124_V1.0	
MI02399	ZB-front panel fixed rack-silver paint	MISTRAL6000 左_V1.0	
MI02398	D-front panel fixed rack-MISTRAL 6000-05	MISTRAL6000 left_V1.0	
MJ01154	R-iron board	2.0t*1850*1220mm 35.4kg	
MI02397	ZB-front panel fixed rack-silver paint	MISTRAL6000 right_V1.0	
MI02396	D-front panel fixed rack-MISTRAL 6000-04	MISTRAL6000 right_V1.0	
MJ01154	R-iron board	2.0t*1850*1220mm 35.4kg	
MI02401	ZD-front panel-MISTRAL6000-08	MISTRAL6000_V1.0	
MJ00069	R-zinc plated board	1.5t*2135*1220mm 30.67kg	
MI02409	ZB-partition-silver paint	MISTRAL6000 1.2t*50.2*59.3*122.5 left_V1.	
MI02408	D-partition-MISTRAL6000-13	MISTRAL6000 1.2t*50.2*59.3*122.5 left_V1.	
MJ00067	R-iron board	0.8t*2135*1220mm 18.69kg	
ME00194	screw bolt	M3*32*0.5PH_V1.0	
MI02407	ZB-padding board-5076 black and blue	MISTRAL6000 422*14*2.0t_V1.0	
MI02406	D-padding board-MISTRAL6000-12	MISTRAL6000 422*14*2.0t_V1.0	
MJ01154	R-board	2.0t*1850*1220mm 35.4kg	
MI02411	ZB-partition-silver paint	MISTRAL6000 1.2t*50.2*59.3*122.5 right_V1.	
MI02410	D-partition-MISTRAL6000-14	MISTRAL6000 1.2t*50.2*59.3*122.5 right_V1.	
MJ00067	R-iron board	0.8t*2135*1220mm 18.69kg	
ME00194	screw bolt	M3*32*0.5PH_V1.0	
NI02650	plastic knob-semicircle	φ 18*18mm black	

NI02651	knob fixed sleeve -ABS	10* ϕ 22.5 black A600.2
NI02853	tie bar for power wire	7P-2 SIZE ϕ 11.0 SJT3C#14
HI00022	power switch	4P black R13-69A
SA00200	bridge rectifier	40A/400V BP40-04
HA01267	2 terminal wire PC 250	380mm UL1015 14AWG orange
HA03431	2terminal wire PC250 round	110mm UL1015 12AWG green and yellow
HC00295	cinquefoil terminal	JS205-110
MF00020	color washer	ϕ 5* ϕ 12*1t
MF00039	spring wahser	ϕ 5* ϕ 8*1t
HA02469	header wire	3P-3P 480mm 28AWG blue
HA02470	header wire	3P-3P 600mm 28AWG blue
HA01394	header wire AF:W134	3P-3P 120
HA02452	header wire 3130(female)-3130(female)	10P female *3 415mm UL2651 28AWG PH1.27mm grey
HA02448	2 terminal wire PC250	530mm UL1015 14AWG red
HA02449	2 terminal wire PC250	700mm UL1015 14AWG black
HA01244	2 terminal wire PC250 terminal	380mm UL1015 14AWG red
HA01198	2 terminal wire PC250 terminal	180mm UL1015 14AWG black
MG00247	copper pole	M3*10*0.5PH single flat total length16
MG00061	black plated screw-pill-iron board	M3*10
MG00295	black plated screw-head pan	M4*6
MG00025	black plated screw-head pan	M3*6
MG00042	black plated screw-head pan	M3*10
MF00037	spring wahser	ϕ 3.2* ϕ 5.5*1t
ME00015	color nut	3mm
MF00038	spring wahser	ϕ 4* ϕ 7*1t
ME00016	color nut	4mm
MF00048	shake proof	ϕ 4* ϕ 8*0.5t
MF00018	ZE-washer- color plated	ϕ 4* ϕ 10*1t_V1.0
MF00105	D-washer	ϕ 4* ϕ 10*1t_V1.0
MJ00058	R-iron board	1.0t*2135*1220mm 20.45kg
MG00041	black plated scrwe-pill	M3*6
MG00075	black plated screw-flat	M4*16
ME00006	nut - for R.S	ϕ 9
MF00004	color washer -for R.S	ϕ 9* ϕ 14*0.5t
NI00437	rubber loop	ϕ 20* ϕ 120*2tB
MH00766	ZB-iron piece-zinc color	ϕ 11* ϕ 90*2_V1.1
MH00768	D-iron piece	ϕ 11* ϕ 90*2_V1.1
MJ01154	R-iron board	2.0t*1850*1220mm 35.4kg
TD00467	loop transformer	PT-DPA6000_115/230V
NI00312	button of power switch	square 5*5*9 hole 2.8*2.8 black
HA03442	power wire EURO 3P	LT-322+1.5*3C(H05VV-F) 2.27M BK
NI00218	tie bar	ALT-102SB
HJ00006	desiccant	30g
NA00280	PE bag	0.05t*820*650mm

NB03888	color box	DPA6000 ALTO_V1.0	
NB03193	inner cardboard	MISTRAL6000_V1.0	
NB03245	carton	MISTRAL6000 ALTO_V1.0	
NE02227	ZC-voltage mark 40*17mm	PSA-31500 220-240V	
NI00037	R-25# silver sticker	0.05*1M	
NI00034	R-light PP	0.045*1M	
NF00061	warranty card	for ALTO products	
NE09384	ZC-bar code sticker 30*11mm	DPA6000 model bar code _V1.0	
NH00334	art paper	0.040*1m	
NE11347	serial bar code 30*11mm	for ALTO PI products of special function	
NH00334	art paper	0.040*1m	
NC00059	ZD-fixed board -SA2000-15	1*46*46(Sax-2000)	
NC00175	R-red board	1.0t*51mm*100M	
HK04603	K-PCB	P-MIS60MN CH1(MISTRAL6000)	
HA02759	header wire 2.5	5P-5P 120mm UL1007 24AWG red yellow black	
MI01954	ZD-fixed rack-MISTRAL4000-09	MISTRAL4000 1.5t*136*16mm right	
MJ00069	R-zinc plated board	1.5t*2135*1220mm 30.67kg	
NC00181	ZD-insulation piece-MISTRAL4000-11	MISTRAL4000 1.6t*136*16mm	
NC00041	R-red board	1.6t*0.65M*70M	
ND00182	N-silicone sleeve	φ 1*30mm	
ND00171	R-silicone sleeve	φ 1*1000mm	
ND00521	N-silicone sleeve	φ 4*90mm	
ND00196	R-silicone sleeve	φ 4*1000mm	
ND00520	N-silicone sleeve	φ 3*90mm	
ND00190	R-silicone sleeve	φ 3*1000mm	
MG00171	Nickel screw-flat	M3*14	
NC00005	silicone insulation piece	TO-220 square	
NI00279	N-heat shrink sleeve	φ 15*20mm	U1-4
NI00278	R-heat shrink sleeve	φ 15*1000mm	
MF00037	spring wahser	φ 3.2* φ 5.5*1t	
MF00030	Nickel washer	φ 3.5* φ 8*0.8t	
MJ01200	ZE-spacer- nickel plated	MISTRAL4000 14.5*30.5*2t	
MJ01201	D-spacer-MISTRAL 4000-06	MISTRAL4000 14.5*30.5*2t	
MJ01154	R-iron board	2.0t*1850*1220mm 35.4kg	
MI02676	ZD-heat sink-aluminum-MISTRAL6000-3	MISTRAL6000 127.5*40*325 1.87kg right_V1.0	
MI02415	R-heat sink-Aluminum	127.5*40*4395 ±5 31.555kg_V1.0	
HD00029	ceramic tube fuse-slow	15A 250V φ 6*32mm UL	
HC00034	short circuit terminal MINI JUMP	NO.2700 2.54mm/6mm OPEN	
HA01933	jumper	2.5mm	J1-4,J1-5
HC00076	male header	2P 2.5mm 180°	JP1-14
HC00077	male header	3P 2.5mm 180°	R1-5
HC00172	male header	3P 3.96mm 180°	JP1-13
HC00504	male header	10P 2.54mm 180°	JP1-15,JP1-16,JP1-3
HC00111	balanced MIC socket	99M-108SP1	J1-2

HC00112	balanced MIC socket	99M-107SP-1-2 female 90° with PUSH	J1-1
HC00056	FUSE holder PCB	8*10.6*1.5 JEF-505	JP1-10,JP1-11,JP1-12,JP1-9
HK02231	photoelectric coupler	P-photosensitive resistor+ \varnothing 5LLED	U1-5
RH00020	photo sensitive resistor	VT90N1	
SA00201	LED	\varnothing 5 round red (LI3330/A)	
NI02779	N-heat shrink sleeve	\varnothing 9*30mm	
NI00274	R-heat shrink sleeve	\varnothing 9*1000mm	
HI00039	pushing SW	SP70300-0202-11F1-N	S1-1
HI00211	relay SONG CHUAN	8P 24VDC/16A 881H-1CC-C	K1-1
RC00348	semi-fixed resistor	B1K Ω PT1030-V1B102-C1-H10	R1-20,R1-21
RC00319	semi-fixed resistor	B100 Ω PT1030-V1B101-C1-H10	R1-16
RH00025	P.T.C	100 Ω (PAS7101ZF)	R1-50
RH00017	PTC NTC	50 Ω (TDC05A050J)	R1-17
RH00021	PTC NTC	500 Ω (TDC5C150L)	R1-3
CN00060	fixed inductance	2uH 10A(CSAF-302824)(\varnothing 1.5mm*12 1/2T)	L1-1
SD00173	IC	NJM4580L(JRC)	U1-1,U1-2
SD00032	IC	LM317T	U1-4
SB00021	power transistor	2SC5200	Q1-10,Q1-11,Q1-12,Q1-13, Q1-9,Q1-14
SB00023	power transistor	2SA1943-O	Q1-6,Q1-7,Q1-8,Q1-5,Q1-4,Q1-3
SB00129	transistor	MPSA92(TO92)/(PHI)	Q1-15,Q1-16
SB00130	transistor	MPSA42(PHILIPS)	Q1-17
SB00044	transistor	MJE15033	Q1-2
SB00042	transistor	MJE15032	Q1-1
SA00026	LED	\varnothing 5 round red (B1115)	D1-17
SA00188	zener diode	1/2W 7.5V	D1-18
SA00117	zener diode	1/2W 5.6V 6B1	D1-7,D1-8
SA00197	zener diode	1W 36V 1N4753	D1-21
SA00107	zener diode	1W 15V 1N4744	D1-1,D1-4
SA00002	fast diode	1A/600V 1N4937	D1-5,D1-6
SA00187	rectifying diode	1N5404 strip type	D1-15,D1-16
SA00098	rectifying diode	1A/400V 1N4004 strip type	D1-10,D1-13,D1-14,D1-20,D1-22, D1-23,D1-25,D1-26,D1-28,D1-9
SA00093	rectifying diode	1N4148 0.5A strip type	D1-11,D1-12
SA00167	bridge rectifier	2A W2-08	D1-19,D1-24,D1-27,D1-2
CB00180	electrolysis capacitor	470uF/160V \varnothing 18*45mm	C1-15,C1-16,C1-17,C1-18,C1-19, C1-20,C1-21,C1-22,C1-23,C1-24, C1-25,C1-26,C1-27,C1-28,C1-29, C1-30
CB00067	electrolysis capacitor	470uF/35V \varnothing 10*20mm	C1-42
CB00057	electrolysis capacitor	220uF/25V \varnothing 8*11mm pin distance 5mm	C1-8,C1-45
CB00171	electrolysis capacitor	220uF/16V NP \varnothing 10*12.5mm	C1-34
CB00055	electrolysis capacitor	220uF/16V \varnothing 8*11mm	C1-37
CB00149	electrolysis capacitor	47uF/63V \varnothing 6*11mm pin distance 5mm	C1-33

CB00039	electrolysis capacitor	47uF/25V φ 5*11mm	C1-5
CB00169	electrolysis capacitor	47uF/16V NP φ 6.3*11mm	C1-9
CB00177	electrolysis capacitor	22uF/50V φ 5*11mm	C1-2,C1-1,R1-43
CB00185	electrolysis capacitor	10uF/63V φ 5*11mm pin distance 2mm	C1-32,C1-43
CF00013	metal film capacitor MEF	0.068uF/250V	C1-31
CF00022	metal film capacitor MSC	0.022uF/100V 5% CASE01	C1-40
CA00053	ceramic capacitor	0.1uF SL pin distance 5mm	C1-44
CA00047	ceramic capacitor	0.033uF	C1-12
CA00070	ceramic capacitor	0.022uF/50V \pm 20% Y5U pin distance 5mm	C1-11
CA00043	ceramic capacitor	0.0033uF pin distance 5mm	C1-13,C1-14
CA00024	ceramic capacitor	100PF SL pin distance 5mm	C1-3,C1-4
CA00018	ceramic capacitor	56PF NPO	C1-36,C1-35,C1-7
CA00010	ceramic capacitor	27PF NPO pin distance 5mm	C1-10
RA01016	cement resistor 5W	2.2K Ω SQM type	R1-23,R1-24
RA00870	cement resistor 5W	12 Ω SQM type	R1-40,R1-41
RA00880	cement resistor 5W	0.22 Ω SQM type	R1-27,R1-28,R1-29,R1-30,R1-31, R1-33,R1-34,R1-36,R1-37,R1-26, R1-35,R1-38
RA00063	metal oxide film resistor 3W	1.5K Ω RSS P type	R1-63
RA01332	metal oxide film resistor 3W	15K Ω P type	R1-49
RA00051	metal oxide film resistor 2W	5.6 Ω P type	R1-39
RA00020	metal oxide film resistor 1W	6.8K Ω P type	R1-44
RA00007	metal oxide film resistor 1W	22 Ω P type	R1-25,R1-32
RA00027	metal oxide film resistor 1W	5.6 Ω P type	R1-22,R1-62
RB00010	integrated resistor 1/8W	10K Ω 8P C Type	RB1-1
RA00713	fixed resistor 1/4W	1.0K Ω F type	C1-6
RA00909	fixed resistor 1/2W	82K Ω P type	R1-56
RA00908	fixed resistor 1/2W	68K Ω P type	R1-58
RA00242	fixed resistor 1/4W	10K Ω M type	R1-54,R1-8
RA00184	fixed resistor 1/4W	100 Ω M type	R1-57
RA00282	fixed resistor 1/4W	100K Ω M type	R1-43,R1-46,R1-51
RA00219	fixed resistor 1/4W	1.8K Ω M type	R1-1
RA00246	fixed resistor 1/4W	15K Ω M type	R1-11,R1-64
RA00158	fixed resistor 1/4W	0.0 Ω M type	R1-2
RA00217	fixed resistor 1/4W	1.5K Ω M type	R1-45
RA00616	fixed resistor 1/4W	470 Ω M type pin distance 12.5mm	R1-9
RA00200	fixed resistor 1/4W	330 Ω M type	R1-10,R1-55
RA00299	fixed resistor 1/4W	330K Ω M type	R1-42,R1-48
RA00174	fixed resistor 1/4W	47 Ω M type	R1-52
RA00266	fixed resistor 1/4W	47K Ω M type	R1-47
RA00239	fixed resistor 1/4W	8.2K Ω M type	R1-53
RA00211	fixed resistor 1/4W	820 Ω M type	R1-14,R1-18
HB01394	PCB-FR4/2L 2oz	MIS60MNCH1_VER041020	
CA00088	ceramic capacitor	100PF/1000V pin distance 5mm	

HA03434	single terminal wire PC187	120mm UL1015 20AWG yellow	
HA03435	single terminal wire PC187	120mm UL1015 20AWG green	
HA03436	single terminal wire PC187	120mm UL1015 14AWG red	
HA03437	single terminal wire PC187	120mm UL1015 14AWG white	
HA03438	single terminal wire PC187	120mm UL1015 14AWG black	
HK04631	K-PCB	P-MIS60 MN2(CH1) MIS6000	
SB00021	power transistor	2SC5200	Q1,Q2
SB00023	power transistor	2SA1943-O	Q3,Q4
HC00217	PCB soldering terminal	PC187(0.8)	P1,P2,P3,P4,P5
RA00880	cement resistor 5W	0.22Ω SQM type	R1,R2,R3,R4,R5
HB01397	PCB-FR4/2L	MIS60MN2(1*4)_VER041020	
RA01496	cement resistor 10W	5.4KΩ SQM type	R1-15,R1-19
HK04604	K-PCB	P-MIS60MN CH2(MISTRAL6000)	
HB01395	PCB-FR4/2L 2oz	MIS60MNCH2_VER050203	
RA00211	fixed resistor 1/4W	820Ω M type	R2_14,R2_18
RA00239	fixed resistor 1/4W	8.2KΩ M type	R2_53
RA00266	fixed resistor 1/4W	47KΩ M type	R2_47
RA00174	fixed resistor 1/4W	47Ω M type	R2_52
RA00299	fixed resistor 1/4W	330KΩ M type	R2_42,R2_48
RA00200	fixed resistor 1/4W	330Ω M type	R2_10,R2_55
RA00616	fixed resistor 1/4W	470Ω M type pin distance 12.5mm	R2_9
RA00217	fixed resistor 1/4W	1.5KΩ M type	R2_45
RA00158	fixed resistor 1/4W	0.0Ω M type	R2_2
RA00246	fixed resistor 1/4W	15KΩ M type	R2_11
RA00219	fixed resistor 1/4W	1.8KΩ M type	R2_1
RA00282	fixed resistor 1/4W	100KΩ M type	R2_43,R2_46,R2_51
RA00184	fixed resistor 1/4W	100Ω M type	R2_57
RA00242	fixed resistor 1/4W	10KΩ M type	R2_54,R2_8
RA00908	fixed resistor 1/2W	68KΩ P type	R2_58
RA00909	fixed resistor 1/2W	82KΩ P type	R2_56
RB00010	integral resistor 1/8W	10KΩ 8P C Type	RB2_1
RA00027	metal oxide film resistor 1W	5.6Ω P type	R2_22,R2_62
RA00007	metal oxide film resistor 1W	22Ω P type	R2_25,R2_32
RA00020	metal oxide film resistor 1W	6.8KΩ P type	R2_44
RA00051	metal oxide film resistor 2W	5.6Ω P type	R2_39
RA01332	metal oxide film resistor 3W	15KΩ P type	R1_49
RA00063	metal oxide film resistor 3W	1.5KΩ RSS P type	R1_63
RA00880	cement resistor 5W	0.22Ω SQM type	R2_27,R2_28,R2_29,R2_30, R2_31,R2_33,R2_34,R2-37, R2_36,R2-26,R2-35,R2-38
RA00713	fixed resistor 1/4W	1.0KΩ F type	C2-6
RA00870	cement resistor 5W	12Ω SQM type	R2_41,R2_40
RA01016	cement resistor 5W	2.2KΩ SQM type	R2_23,R2_24
CA00010	ceramic capacitor	27PF NPO pin distance 5mm	C2_10

CA00018	ceramic capacitor	56PF NPO	C2_35,C2_36,C2_7
CA00024	ceramic capacitor	100PF SL pin distance 5mm	C2_3,C2_4
CA00043	ceramic capacitor	0.0033uF pin distance 5mm	C2_13,C2_14
CA00070	ceramic capacitor	0.022uF/50V±20% Y5U pin distance 5mm	C2_11
CA00047	ceramic capacitor	0.033uF	C2_12
CA00053	ceramic capacitor	0.1uF SL pin distance 5mm	C2_44
CF00022	metal film capacitor MSC	0.022uF/100V 5% CASE01	C2_40
CF00013	metal film capacitor MEF	0.068uF/250V	C2_31
CB00185	electrolysis capacitor	10uF/63V φ 5*11mm pin distance 2mm	C2_32,C2_43
CB00177	electrolysis capacitor	22uF/50V φ 5*11mm	C2_1,C2_2,R2-43
CB00169	electrolysis capacitor	47uF/16V NP φ 6.3*11mm	C2_9
CB00039	electrolysis capacitor	47uF/25V φ 5*11mm	C2_5
CB00149	electrolysis capacitor	47uF/63V φ 6*11mm pin distance 5mm	C2_33
CB00055	electrolysis capacitor	220uF/16V φ 8*11mm	C2_37
CB00171	electrolysis capacitor	220uF/16V NP φ 10*12.5mm	C2_34
CB00057	electrolysis capacitor	220uF/25V φ 8*11mm pin distance 5mm	C2_8,C2_45
CB00067	electrolysis capacitor	470uF/35V φ 10*20mm	C2_42
CB00180	electrolysis capacitor	470uF/160V φ 18*45mm	C2_15,C2_16,C2_17,C2_18, C2_19,C2_20,C2_21,C2_22,C2_23 C2_24,C2_25,C2_26,C2_27 ,C2_28,C2_29,C2_30
SA00167	bridge rectifier	2A W2-08	D2_2,D2_19,D2_24,D2_27
SA00093	rectifying diode	1N4148 0.5A strip	D2_11,D2_12
SA00098	rectifying diode	1A/400V 1N4004 strip	D2_10,D2_13,D2_14, D2_20,D2_22,D2_23, D2_25,D2_26,D2_28,D2_9
SA00187	rectifying diode	1N5404 strip	D2_15,D2_16
SA00002	fast diode	1A/600V 1N4937	D2_5,D2_6
SA00107	zener diode	1W 15V 1N4744	D2_1,D2_4
SA00197	zener diode	1W 36V 1N4753	D2_21
SA00117	zener diode	1/2W 5.6V 6B1	D2_7,D2_8
SA00188	zener diode	1/2W 7.5V	D2_18
SA00026	LED	φ 5 round red (B1115)	D2_17
SB00042	transistor	MJE15032	Q2_1
SB00044	transistor	MJE15033	Q2_2
SB00130	transistor	MPSA42/(PHILIPS)	Q2_17
SB00129	transistor	MPSA92(TO92)/(PHI)	Q2_15,Q2_16
SB00023	power transistor	2SA1943-O	Q2_5,Q2_6,Q2_7,Q2_8, Q2_4,Q2_3
SB00021	power transistor	2SC5200	Q2_9,Q2_10,Q2_11,Q2_12, Q2_13,Q2_14
SD00032	IC	LM317T	U2_4
SD00173	IC	NJM4580L(JRC)	U2_1,U2_2
CN00060	fixed inductor	2uH 10A(CSAF-302824) (φ 1.5mm*12 1/2T)	L2_1

RH00021	PTC NTC	500Ω(TDC5C150L)	R2_3
RH00017	PTC NTC	50Ω(TDC05A050J)	R2_17
RH00025	PTC	100Ω(PAS7101ZF)	R2_50
RC00319	semi-fixed resistor	B100Ω PT1030-V1B101-C1-H10	R2_16
RC00348	semi-fixed resistor	B1KΩ PT1030-V1B102-C1-H10	R2_20,R2_21
HI00211	relay SONG CHUAN	8P 24VDC/16A 881H-1CC-C	K2_1
HI00039	pushing SW	SP70300-0202-11F1-N	S2_1
HK02231	K-photoelectric coupler	P-photosensitive resistor+ φ 5LLED	U2_5
RH00020	photosensitive	VT90N1	
SA00201	LED	φ 5 round red (LI3330/A)	
NI02779	N-heat shrink sleeve	φ 9*30mm	
NI00274	R-heat shrink sleeve	φ 9*1000mm	
HC00324	connecting terminal	6.5mm (PC250)	JP2_1,JP2_2,JP2_5, JP2_6,JP2_7,JP2_8
HC00056	FUSE holder PCB	8*10.6*1.5 JEF-505	JP2_9,JP2_10,JP2_11,JP2_12
HC00112	balanced MIC socket	99M-107SP-1-2 female 90° with PUSH	J2_1
HC00111	balanced MIC socket	99M-108SP1 male	J2_2
HC00504	male header	10P 2.54mm 180°	JP2_15,JP2_16,JP2_3
HC00172	male header	3P 3.96mm 180°	JP2_13
HC00077	male header	3P 2.5mm 180°	R2_5
HC00076	male header	2P 2.5mm 180°	JP2_14
HA01933	jumper	2.5mm	J2_4,J2_5
HC00034	short circuit terminal MINI JUMP	NO.2700 2.54mm/6mm OPEN	
HD00029	ceramic tube fuse -slow	15A 250V φ 6*32mm UL	
MI02400	ZD-heat sink-Aluminum	127.5*40*305 MISTRAL6000 left_V1.0	
MI02415	R-heat sink-Aluminum	127.5*40*4395 ±5 31.555kg_V1.0	
MJ01200	ZE-spacer -Nickel plated	MISTRAL4000 14.5*30.5*2t	
MJ01201	D-spacer-MISTRAL4000-06	MISTRAL4000 14.5*30.5*2t	
MJ01154	R-iron board	2.0t*1850*1220mm 35.4kg	
MF00030	Nickel washer	φ 3.5* φ 8*0.8t	
MF00037	spring wahser	φ 3.2* φ 5.5*1t	
NC00005	silicone insulation piece	TO-220 square	
MG00171	Nickel screw-flat	M3*14	
ND00520	N-silicone sleeve	φ 3*90mm	
ND00190	R-silicone sleeve	φ 3*1000mm	
ND00521	N-silicone sleeve	φ 4*90mm	
ND00196	R-silicone sleeve	φ 4*1000mm	
ND00182	N-silicone sleeve	φ 1*30mm	
ND00171	R-silicone sleeve	φ 1*1000mm	
NC00181	ZD-insulation piece -MISTRAL4000-11	MISTRAL4000 1.6t*136*16mm	
NC00041	R-red board	1.6t*0.65M*70M	
MI01954	ZD-fixed rack-MISTRAL4000-09	MISTRAL4000 1.5t*136*16mm right	
MJ00069	R-zinc plated board	1.5t*2135*1220mm 30.67kg	
HA02759	header wire 2.5	5P-5P 120mm UL1007 24AWG red yellow black	

CA00088	ceramic capacitor	100PF/1000V pin distance 5mm	Q2-1,Q2-2
HA03434	single terminal wire PC187	120mm UL1015 20AWG yellow	
HA03435	single terminal wire PC187	120mm UL1015 20AWG green	
HA03436	single terminal wire PC187	120mm UL1015 14AWG red	
HA03437	single terminal wire PC187	120mm UL1015 14AWG white	
HA03438	single terminal wire PC187	120mm UL1015 14AWG black	
HK04606	K-PCB	P-MIS60 MN2 MIS6000	
SB00021	power transistor	2SC5200	Q3,Q4
SB00023	power transistor	2SA1943-O	Q1,Q2
HC00217	PCB soldering terminal	PC187(0.8)	P1,P2,P3,P4,P5
RA00880	cement resistor 5W	0.22 Ω SQM type	R1,R2,R3,R4,R5
HB01397	PCB-FR4/2L	MIS60MN2(1*4)_VER041020	
RA01496	cement resistor 10W	5.4K Ω SQM type	R2_15,R2_19
HK04605	K-PCB	P-MIS60FP2	
HA03444	header wire 3100(male)-3130(female)	10P10P 450mm UL2651 28AWG PH1.27mm	JP2-22
NI01765	LED spacer	LEDS-10 10mm	
SA00194	LED	φ 3 round blue LDBK2040	D1-29,D2-29
RC00209	potentiometer	A10K Ω RV110-40E1-225A-A14	VR1-1,VR2-1
HC00066	male header	3P 2.5mm 90°	CN1-1,CN2-1
SA00054	LED	φ 3 round yellow light long pin 26mm	D1-30,D2-30
SA00053	LED	φ 3 round red light long pin 26mm	D1-3,D2-3
SA00191	LED	φ 3 orange green (LEG2062)	D1-1,D2-1
HB00947	PCB-CEM-1	MIS40FP2_VER030710	
HA02451	header wire 3100(male)-3130(female)	10P-10P 250mm UL2651 28AWG PH1.27mm	JP1-22
HK04607	K-PCB	P-MIS60PWR	
HB01398	PCB-CEM-1	MIS60PWR(2*2)_VER050201	
CG00044	NTC	NP35L-Y2	R2-67,R2-68
RA00954	cement 10W	2.7K Ω SQM type	R2-73,R2-74
SA00098	rectifying diode	1A/400V 1N4004 strip	D2-31
HC00324	connecting terminal	6.5mm (PC250)	P1,P2,P3,P4,P5,P6,P7,P8, P9,P10,P11,P12,P15,P16
HI00159	relay SONG CHUAN	4P DC-48V 832A-1A-C	K2-2
CB00021	electrolysis capacitor	10uF/16V φ 4*5mm	C2-46
HK04608	K-PCB	P-MIS60SP	
HC00442	speaker output jack	NL4MP female (NEUTRIK)	SPK1,SPK2
MJ00942	ZD-fixed rack-CS12-29	CS12/600	
MJ00061	R-zinc plated board	1.0t*2135*1220mm 20.447kg	
HA01239	single terminal wire PC250 terminal	180mm UL1015 14AWG white	JP5
HA01237	single terminal wire PC250 terminal	200mm UL1015 14AWG grey	JP2
HA02471	single terminal wire PC250	360mm UL1015 14AWG white	JP7
HA01258	single terminal PC250 terminal	380mm UL1015 14AWG grey	JP8
HA03432	single terminal wire round	100mm UL1015 14AWG white	JP1,JP3
HA03433	single terminal wire round	100mm UL1015 14AWG grey	JP6,JP4
HB01396	PCB-CEM-1	MIS60SP(2*4)_VER040922	

AC00002	Tin strip	63/37%	
HK00793	K-PCB	P-MIS2500-INPUT(terminal block)	
HB01105	PCB-FR-1	MIS40IN-1_VER031206	
HC00297	terminal block	DT-55-A14W-03(3PH)	CN1
HC00077	male header	3P 2.5mm 180°	CN3
HC00079	male header	5P 2.5mm 180°	CN4
AC00002	Tin strip	63/37%	
HK00787	K-PCB	P-MIS2500-INPUT(MIC socket)	
HB01104	PCB-FR-1	MIS40IN-2_VER031206	
HC00077	male header	3P 2.5mm 180°	CN1
HC00110	MIC socket	JY-6314-02-340	JP1
AC00002	Tin strip	63/37%	
NA00116	PE bag	0.04t*170*100mm	
NI01867	adhesive pad	20.5*14*7.6mm(SF-006)	
NI00389	ZD- plastic washer	φ 12* φ 16*0.5 white	
NI00375	R-white PVC-20#	450*605*0.5mm(for plastic washer)	
MG00027	black plated screw-flat	M3*12	
NA00279	plastic bag	0.04t*100*150mm_V1.0	
AD00012	two side sticker	90*120mm_V1.0	
HA03256	2 terminal wire PC250*2	150mm UL1015 14AWG brown	
HI00142	manual returning SW	A0701HM-15A	
ND00149	N-silicone sleeve	φ 12*130mm	
ND00026	R-silicone sleeve	φ 12*1000mm	
HE00083	fan-1225M12S-PD1	DC12V/0.6A 120*120*25mm 360mm	
HK03845	K-PCB	P-DPA2500-PWR-DIP	
CB00024	electrolysis capacitor	10uF/16V φ 4*7mm	C1,C3,C10,C11
CB00072	electrolysis capacitor	1000uF/25V φ 10*20mm	C9,C8
SD00074	IC	L7805CV(TO-220)(ST)	U3
SD00169	IC	L7905CV(TO-220)(ST)	U4
HC00066	male header	3P 2.5mm 90°	CN2
HC00560	row pin (two rows) #2200	2.54 180° 2*5P (gilt) 6/11.6mm	CN1
HC00070	male header	6P 2.5mm 90°	CN3
HI00161	relay	RY-5W-K,5V, dual switch	REL1
HC00047	female header	6PIN A28b-6B.T.6	J7
HC00048	female header	8PIN A28b-8B.T.6	J1,J6
HC00051	female header	20PIN A28b-20B.T.6	J2,J3
HC00050	female header	14PIN A28b-14B.T.6	J5,J4
NC00005	silicone insulation piece	TO-220 square	
NI00863	plastic bush	TO220B	
MG00270	Nickel screw-flat	M3*10	
MI01820	ZD-fixed rack-DPA4000-03	DPA4000 2.5t*42.5*83.8*102.5	
MJ01212	R-Aluminum board-#1050H24	2.5t*2000*1000mm 13.6KG plating material	
MG00252	copper pole	M3*6.2*0.5PH single flat length12	
MG00363	copper pole	M3*14*0.5PH single flat length 20	

MG00269	Nickel screw-flat	M3*6	
HK00602	K-PCB	P-DPA2500-PWR-SMD	
HB01072	PCB-FR4/2L	DPA-PWR_VER030916	
CI00075	SMD ceramic capacitor 0603	0.1uF/50V Y5V +80 -20%	C7,C12,C13,C14,C15
CI00051	SMD ceramic capacitor 0603	22PF/50V NPO ±5%(TDK)	C2,C4,C5,C6
RD00101	SMD fixed resistor 1/10W	10KΩ ±5% 0603	R1,R3,R6,R8,R10,R11
RD00081	SMD fixed resistor 1/10W	750Ω ±5% 0603	R2,R4
RD00085	SMD fixed resistor 1/10W	1.5KΩ ±5% 0603	R12,R13,R14,R15,R16,R17,R18, R19,R20,R21,R22,R23,R24, R25,R26,R27,R28,R29
RD00059	SMD fixed resistor 1/10W	0.0Ω ±5% 0603	R30,R9
SE00011	SMD rectifying diode	0.5A RLS4148 LL-34	D1
SF00056	SMD transistor	MMBT3904(SOT-23)/(PHI)	Q2
SG00040	SMD IC	MC33078DT(ST)MC33078D(ON)	U1,U2
SE00030	SMD rectifying diode	SFS1B	D2,D3,D4,D5
RD00088	SMD fixed resistor 1/10W	2.2KΩ ±5% 0603	R5,R7
AE00221	retinol	SJ-617	
AC00002	Tin strip	63/37%	
HK03846	K-PCB	P-DPA2500-DISPLAY	
HB01071	PCB-FR-1	DPA-DIS-1(2*2)_VER050120	
CH00017	laminated capacitor	0.1uF/50V Y5V vertical PH5mm pin length 5mm	C1
CB00026	electrolytic capacitor	10uF/50V φ 6*7mm pin distance 5mm	C2
RA00647	fixed resistor 1/8W	4.7KΩ M type pin distance 6mm	R1,R2
RA00651	fixed resistor 1/8W	10KΩ M type pin distance 6mm	R3,R4,R5,R6,R7,R8
HB01070	PCB-FR4/2L	DPA-DIS-2_VER030916	
HH00005	LED 7 section indicator	LSD3561-10	DL2,DL3
HC00435	row pin (one row) #1100	2.54 180° 5P(gild)6/11.6mm	CN3,CN4
SA00051	LED	φ 3 orange green (BOG303b)	DL11
SA00072	LED	φ 3 red light (LI2340/A)	DL1,DL4,DL5,DL6, DL7,DL8,DL9,DL10
SB00072	transistor	BC559C,126(strip)	TR1,TR2
HI00238	pushing SW	2 section 6P PS-9226A(NON-LOCK)	SW1,SW2,SW3,SW4
HC00050	female header	14PIN A28b-14B.T.6	CN1
HC00051	female header	20PIN A28b-20B.T.6	CN2
HA01919	jumper	5mm	J1,J2,J3,J6,J9
HA02249	bare wire	φ 0.6	
HA01917	jumper	3mm	J4,J8,J10
HA01920	jumper	6mm	J5,J7,J3
HA02249	bare wire	φ 0.6	
NI01771	LED spacer	LED-5 5mm	DL1,DL10,DL11,DL4,DL5 ,DL6,DL7,DL8,DL9
MG00269	Nickel screw-flat	M3*6	
NI01876	LED spacer	7.6*4.5*184 (one row 41 hole)	
AC00002	Tin strip	63/37%	

HK03847	K-PCB	P-DPA2500-RS-DIP	
HK00603	K-PCB	P-DPA2500-RS-SMD	
HB01073	PCB-FR4/2L	DPA-RS_VER031103	
CI00075	SMD ceramic capacitor 0603	0.1uF/50V Y5V +80 -20%	C1,C2,C4,C5,C6,C7,C8
RD00372	SMD precise resistor 1/8W	10.7Ω ±1% 0805	R3,R4
SG00047	SMD IC	MAX485EESA	IC1
CO00006	SMD chip inductor 0805	BLM21A102SPT/(MURATA)	L1,L2,L3,L4,L5
AE00221	retinol	SJ-617	
HC00324	connecting terminal	6.5mm (PC250)	
CB00040	electrolytic capacitor	47uF/25V φ 5*11mm pin distance 5mm	C3
SA00101	zener diode	1W 6.8V 1N4736	D1,D2
SA00104	zener diode	1W 10V 1N4740	D3,D4
SD00019	IC	MAX202ECPE	IC2
HA02503	header wire 7602(male)-3100(male)	9P-10P 50mm UL2651 28AWG PH1.27mm	CN1
HC00048	female header	8PIN A28b-8B.T.6	CN2
HC00111	balanced MIC socket	99M-108SP1 male	S1
HC00112	balanced MIC socket	99M-107SP-1-2 female 90° with PUSH	S2
AC00002	Tin strip	63/37%	
HK03830	K-PCB	P-313089-4-DIP	
CB00048	electrolytic capacitor	100uF/25V φ 6*11mm pin distance 5mm	C2
CB00069	electrolytic capacitor	1000uF/6.3V φ 8*11mm	C4
RA00515	precise resistor 1/4W	10.0KΩ M type	R12,R13
HC00080	male header	6P 2.5mm 180°	
HC00047	female header	6PIN A28b-6B.T.6	CN4
HC00048	female header	8PIN A28b-8B.T.6	CN1
HC00050	female header	14PIN A28b-14B.T.6	CN6
HC00051	female header	20PIN A28b-20B.T.6	CN5
SC00319	quartz transistor HC-49/US ±20PPM	12.288MHZ	XT1
HC00162	row pin (one row) #6100	1.27 180°14P(gild) 6.0/11.54mm	CN2,CN7
ND00098	EV foam-two side adhesive	40*14*5 black	
HK03831	K-PCB	P-313089-4-SMD	
HB00400	PCB-FR4/4L	313089 (90*77.5)_VER020507	
CI00046	SMD ceramic capacitor 1206	1.0uF/16V Y5V-1206(3216)	C28
CI00049	SMD ceramic capacitor 0603	15PF/50V NPO ±5%(TDK)	C12,C14
CI00051	SMD ceramic capacitor 0603	22PF/50V NPO ±5%(TDK)	C29
CI00075	SMD ceramic capacitor 0603	0.1uF/50V Y5V +80 -20%	C1,C10,C11,C13,C15,C17,C16, C18,C19,C20,C21,C22,C23, C24,C25,C27,C3,C30,C31,C32, C33,C34,C35,C6,C7,C8,C9
CL00006	SMD tantalum capacitor	10uF/16V case B2	C26,C5
RD00068	SMD fixed capacitor 1/10W	100Ω ±5% 0603	R14,R15,R2,R27,R29,R30, R32,R39,R40,R6,R7,R8
RD00073	SMD fixed resistor 1/10W	220Ω ±5% 0603	R19,R20,R22,R35, R36,R37,R38,R5

RD00076	SMD fixed resistor 1/10W	330Ω ±5% 0603	R28
RD00079	SMD fixed resistor 1/10W	560Ω ±5% 0603	R25
RD00082	SMD fixed resistor 1/10W	820Ω ±5% 0603	R16,R17
RD00085	SMD fixed resistor 1/10W	1.5KΩ ±5% 0603	R18
RD00086	SMD fixed resistor 1/10W	1.8KΩ ±5% 0603	R21
RD00093	SMD fixed resistor 1/10W	4.7KΩ ±5% 0603	R3,R33,R34
RD00101	SMD fixed resistor 1/10W	10KΩ ±5% 0603	R11,R24,R26,R9
RD00125	SMD fixed resistor 1/10W	1.0MΩ ±5% 0603	R23
RE00006	SMD ingrated resistor 1/16W	100Ω*4 ±5% 8P 0603	AR1,AR10,AR13,AR14,AR16, AR18,AR2,AR3,AR4,AR5,AR8
RE00008	SMD ingrated resistor 1/16W	4.7KΩ*4 ±5% 8P 0603	AR11,AR15,AR17,AR6,AR7
RE00007	SMD ingrated resistor 1/16W	470Ω*4 ±5% 8P 0603	AR9
SE00011	SMD rectifying diode	0.5A RLS4148 LL-34	D1
SG00068	SMD IC	74HC14DT(SO-14)/(PHI)	IC5
SG00049	SMD IC DRAM(FP)256K*16	AS4C256K16F0-60JC	IC1
SG00025	SMD IC EEPROM8K*8(64Kb)	24LC64I/SN	IC6
SG00184	W-SMD IC	EN29F040A-70JC/DPA	IC3
SG00217	SMD IC	EN29F040A-70JC(PL032)/(E-ON)	
SG00335	ZC-SMD IC	TY-1 ALTO(LEM NO#105008)_V1.1	IC2
SG00128	SMD IC	RED 208(LEM NO#105008)	
SG00069	SMD IC	MAX709L-CSA	IC4
CO00006	SMD chip inductor 0805	BLM21A102SPT/(MURATA)	L1,L2,L3,L4,L5,L6
HC00233	IC socket-SMD	PLCC32 (D03-32T.A.4)	IC3
AE00221	retinol	SJ-617	
HK01289	K-PCB	P-313111-SMD	
HB00401	PCB-FR4/2L	313111 (37*75)_VER020507	
CI00064	SMD ceramic capacitor 0603	680PF/50V NPO ±5%	C32,C33,C43,C45
CI00067	SMD ceramic capacitor 0603	0.0022uF/50V X7R ±10%	C31,C46
CI00071	SMD ceramic capacitor 0603	0.01uF/50V X7R ±10%	C15,C19
CI00075	SMD ceramic capacitor 0603	0.1uF/50V Y5V +80 -20%	C18,C25,C3,C34,C35,C36,C37, C38,C39,C4,C41,C42,C7,C8,C9
CL00006	SMD tantalum capacitor	10uF/16V case B2	C1,C10,C11,C12,C13,C14,C16, C17,C2,C20,C21,C22,C23,C24, C26,C27,C28,C29,C30,C40, C44,C5,C6
RD00063	SMD fixed resistor 1/10W	22Ω ±5% 0603	R10,R3,R7,R9
RD00088	SMD fixed resistor 1/10W	2.2KΩ ±5% 0603	R12,R17,R18,R19,R21 ,R23,R24,R27
RD00091	SMD fixed resistor 1/10W	3.3KΩ ±5% 0603	R16,R20,R22,R28
RD00093	SMD fixed resistor 1/10W	4.7KΩ ±5% 0603	R1,R13,R4,R6
RD00101	SMD fixed resistor 1/10W	10KΩ ±5% 0603	R25,R26
SG00054	SMD IC	AK4393VF AKM	IC2
SG00061	SMD IC	AK5383VS AKM	IC1
SG00040	SMD IC	MC33078DT(ST)MC33078D(ON)	IC3,IC4,IC5,IC6

AE00221	retinol	SJ-617
AC00002	Tin strip	63/37%
HA02659	header wire (A28-BT6)	8P-8P 160mm UL2651 28AWG PH1.27mm grey and red
HA02660	header wire (A28-BT6)	14P-14P 460mm UL2651 28AWG PH1.27mm grey
HA02661	header wire (A28-BT6)	20P-20P 460mm UL2651 28AWG PH1.27mm grey
HA03964	header wire 3130(female)	10P-10P-10P 650mm UL2651 28AWG grey and red
HA01661	header wire (A28-BT6)	20P-20P PH1.27 65
HA01660	header wire (A28-BT6)	14P-14P PH1.27 65
HA01659	header wire (A28-BT6)	8P-8P PH1.27 75
HA01658	header wire (A28-BT6)	6P-6P PH1.27 65
MG00128	color screw -pill	M3*16
MI00237	heat sink-Aluminum	FX22 4*34.5*16.5*34.5mm
MI00409	fixed piece	FX22
NI02245	insulation plastic piece-2 side adhesive	25*25*0.25 white (3M #9890)
HA02621	computer connecting wire 7300-09FG	9P(female)-9P(female) UL2464 28AWG 5000mm grey
MF00030	Nickel washer	φ 3.5* φ 8*0.8t
NI01863	button	φ 5.5*W10*7.5 black
NI02145	ZC-acrylic- transparent	DPA series ALTO_V1.1
NI02146	N-acylic-transparent	DPA4000 (3t*40*47mm)
NA00137	plastic bag	5*7
MG00588	hexagon screw-HA02503 attachment	4.75*11.8mm
ME00202	zinc screw-external hexagon 17	M10*8*1.5PH
MF00013	iron washer	φ 10* φ 19*2t
MF00044	nickel plated spring washer	φ 10* φ 16*2t
MG00619	zinc screw-T-square	M10*105*1.5PH
NF02199	user's manual-English	DPA6000 ALTO_V1.0
NH00149	R-2 side art paper-105g	889*640mm