

Service
Service
Service



Service Manual

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Published by KC-ET0232 Service Audio Printed in The Netherlands Subject to modification



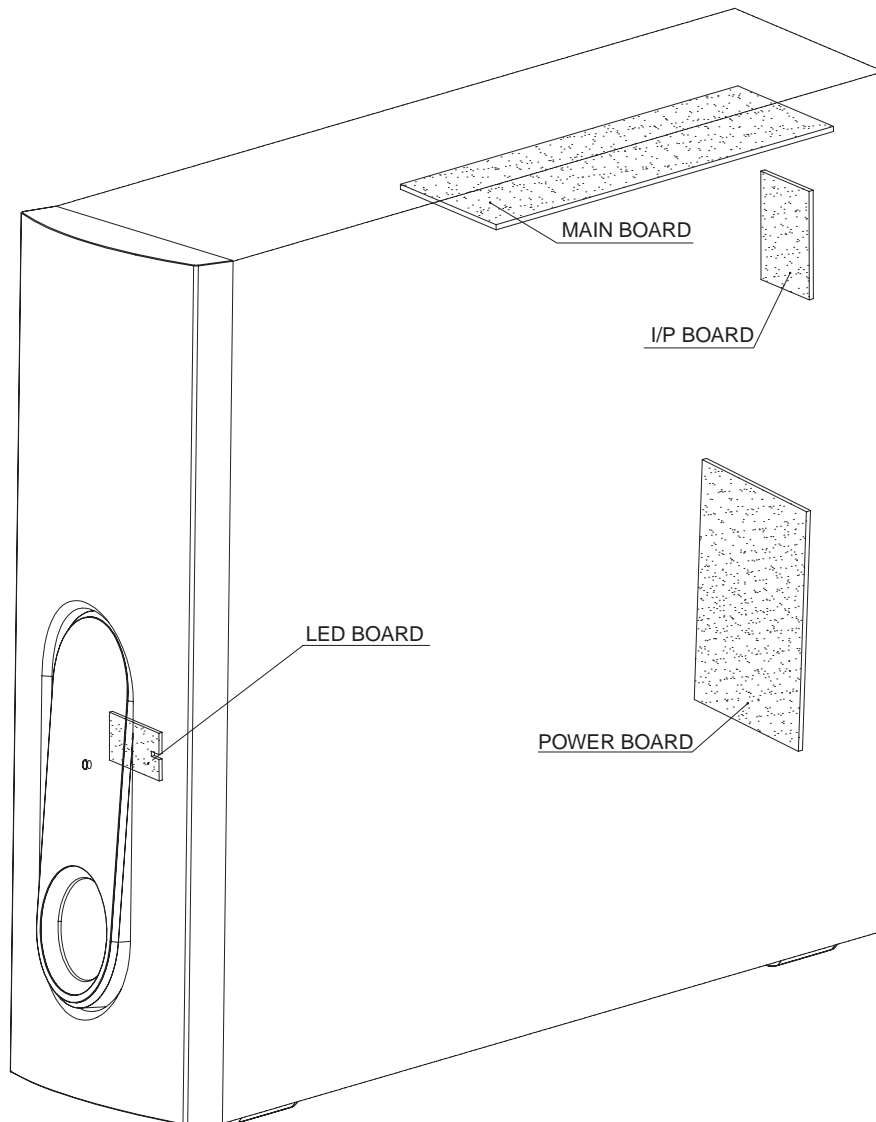
3139 785 30093

Version 1.1



PHILIPS

LOCATION OF PC BOARDS

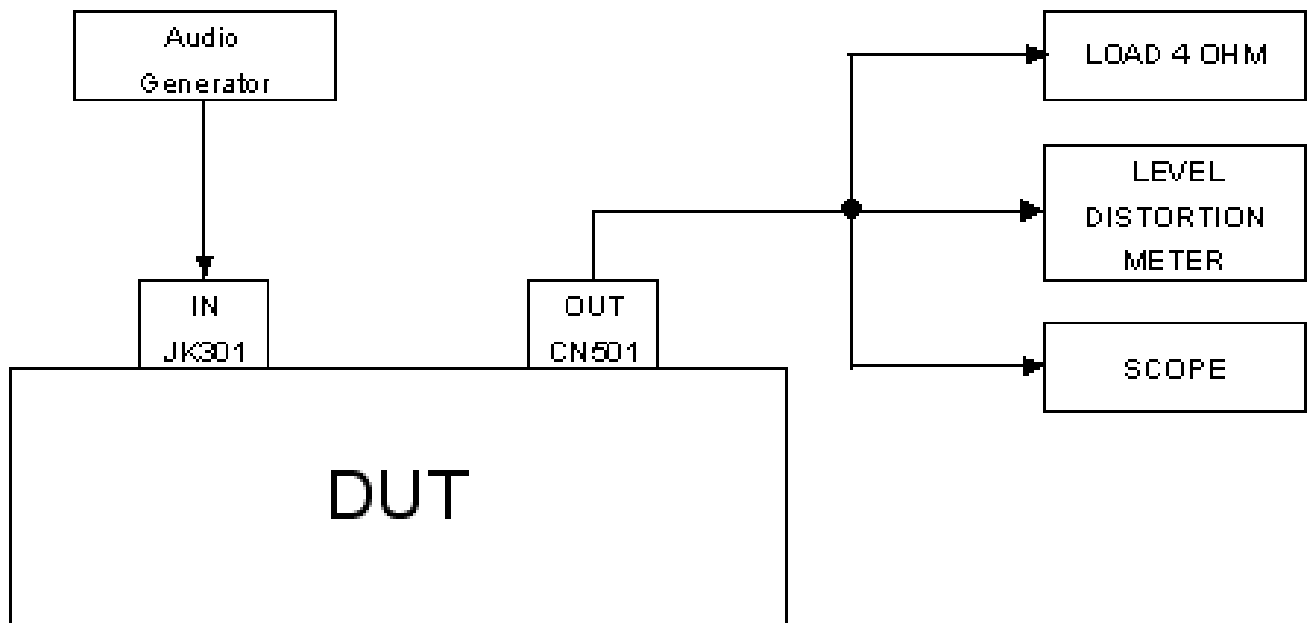


SPECIFICATIONS

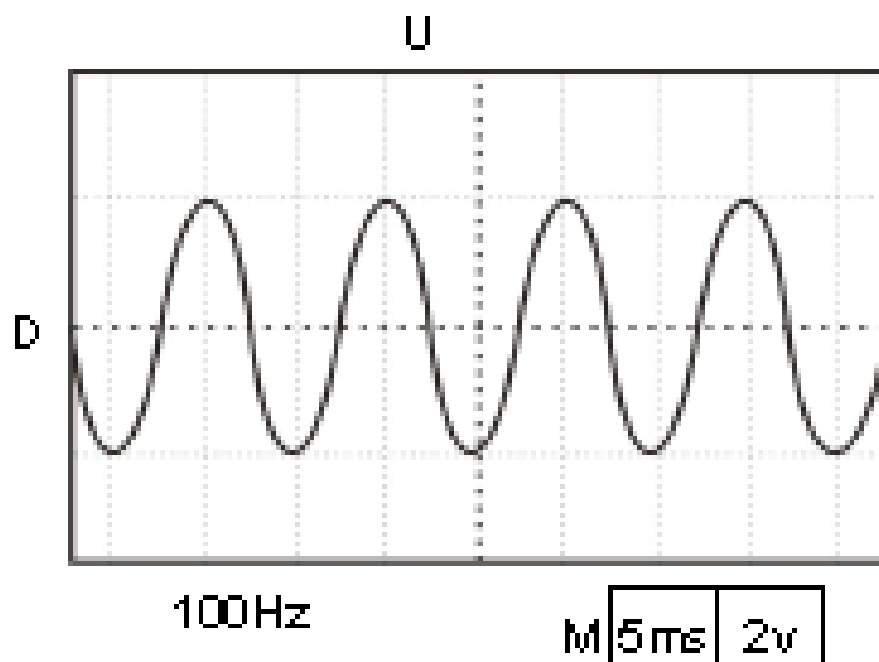
SUBWOOFER

Subwoofer (not magnetically shielded design).....	6.5"
Output Power.....	75W (4Ω,DIN)
THD (Total Harmonic Distortion)	10% at 80 Hz (output power)
Reproduction Frequency Response.....	30 Hz-180 Hz
Phase Switch.....	0°,180°
Input Sensitivity (Subwoofer In).....	200 mVrms
AC Power (for SW200/17/17S)	120V / 60Hz
AC Power (for SW2000/00S/02S/15S).....	220-240V / 50Hz
Power Consumption.....	53 W (at 1/8 Rated Power)
Dimensions (w x h x d).....	135 mm x 337 mm x 375 mm
Weight.....	7.8 Kg

MEASUREMENT SETUP



Audio Test Signal



ESD & SAFETY INSTRUCTION

GB WARNING

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.

When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools also at this potential.

F ATTENTION

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD).

Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation.

Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité.

Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

GB

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified, be used.

NL

Veiligheidsbepalingen vereisen, dat het apparaat bij reparatie in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.

F

Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utilisés les pièces de rechange identiques à celles spécifiées.

D

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Geräts darf nicht verändert werden; für Reparaturen sind Original-Ersatzteile zu verwenden.

I

Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambio identici a quelli specificati.

"After servicing and before returning set to customer perform a leakage current measurement test from all exposed metal parts to earth ground to assure no shock hazard exist. The leakage current must not exceed 0.5mA."

ESD



NL WAARSCHUWING

Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).

Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen. Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.

Houd componenten en hulpmiddelen ook op hetzelfde potentiaal.

I AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).

La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione.

Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza.

Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne".

DISASSEMBLY INSTRUCTIONS

Dismantling the Grill Base & Speaker Driver

1. Place the Subwoofer Box as shown in the Picture 1 and use a screw driver to force open the Grill Base.

Caution: Take care the surface when take out the Grill Base of Subwoofer



Picture 1

2. Place the Subwoofer Box as shown in the Picture 2 and loosen 4 screws A to remove the Speaker Driver.



Picture 2

Dismantling the Front Assembly

1. Place the Subwoofer Box as shown in the Picture 3 (Bottom view) and use a screw driver to force open the front assembly.

Caution: Do not break the bundle of wires to the front. Take care the surface when take out the front panel of subwoofer

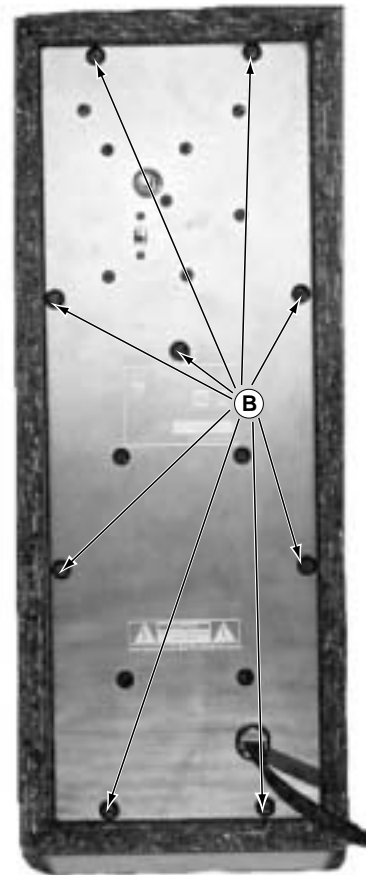


Picture 3

Dismantling the Rear assembly

1. Loosen 9 screws B as shown in the Picture 4 (Rear View) to pull out the Printed Circuit Board assembly.

Caution: Do not break the bundle of wires to the front.



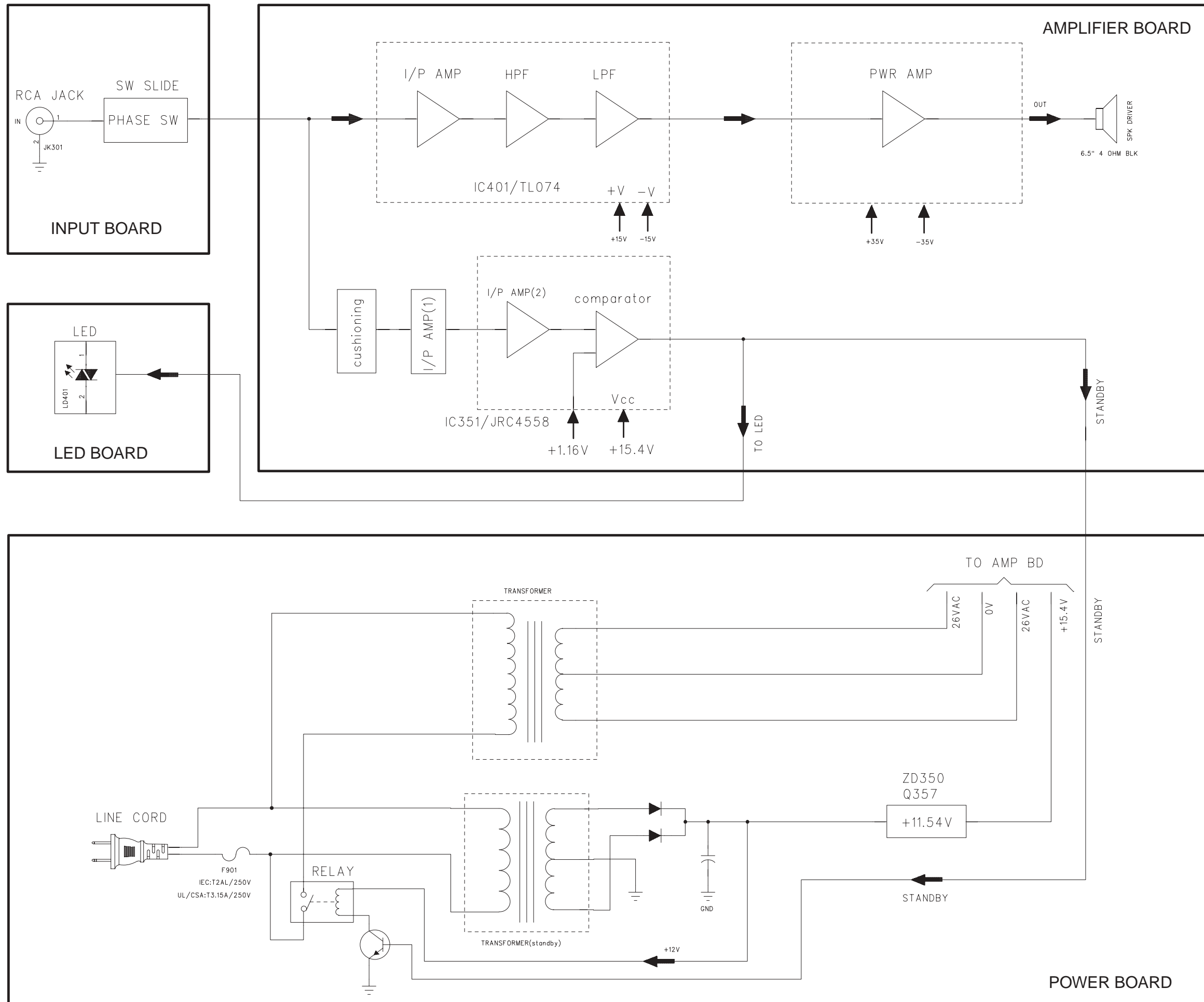
Picture 4

WARNING: THERE IS ONLY A LED BETWEEN FRONT PANEL AND WOOD BOX. IF NOT NECESSARY PLEASE DO NOT TRY TO OPEN TH FRONT PANEL!!!

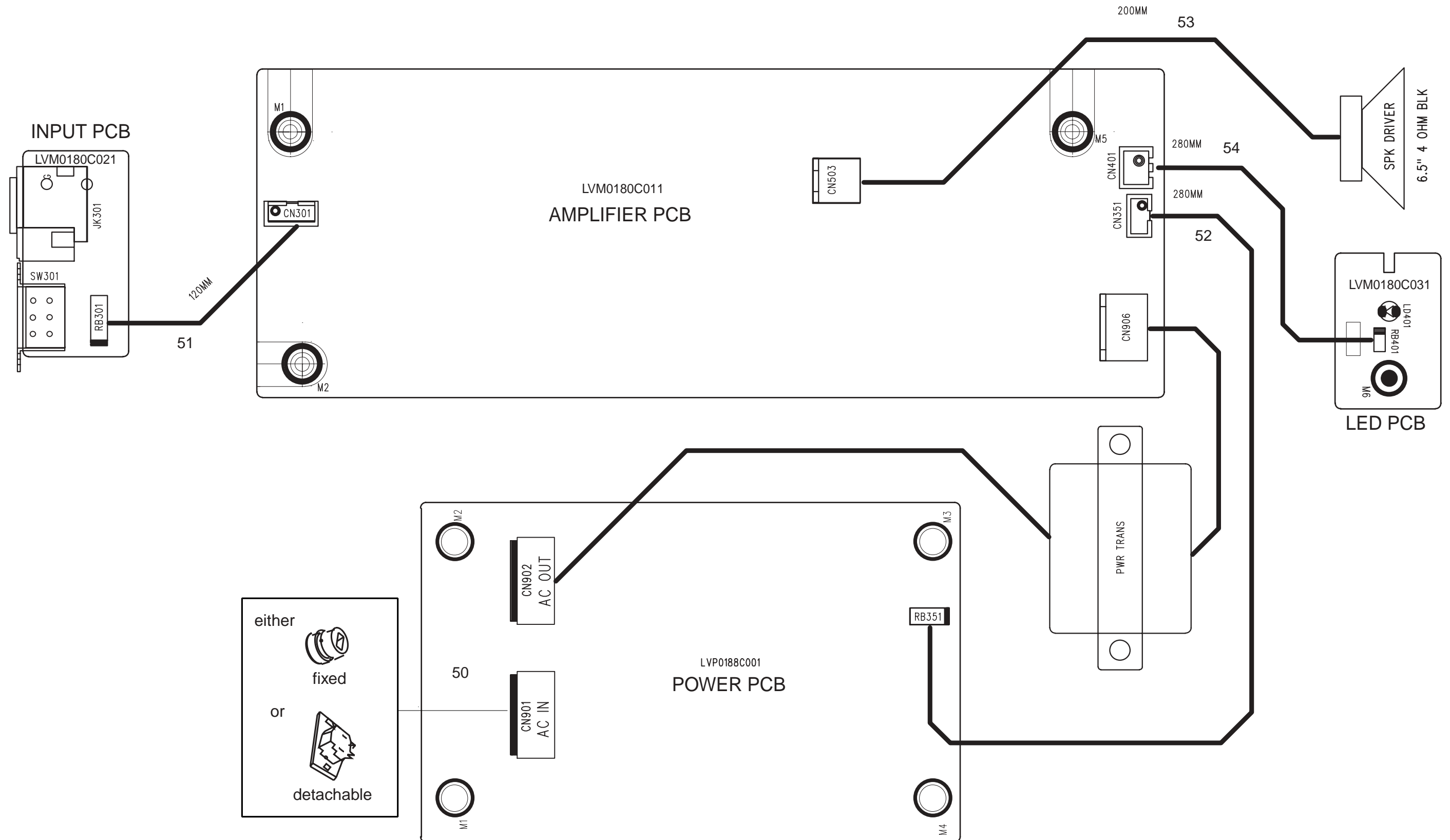
SERVICE POSITION



SET BLOCK DIAGRAM



SET WIRING DIRGRAM

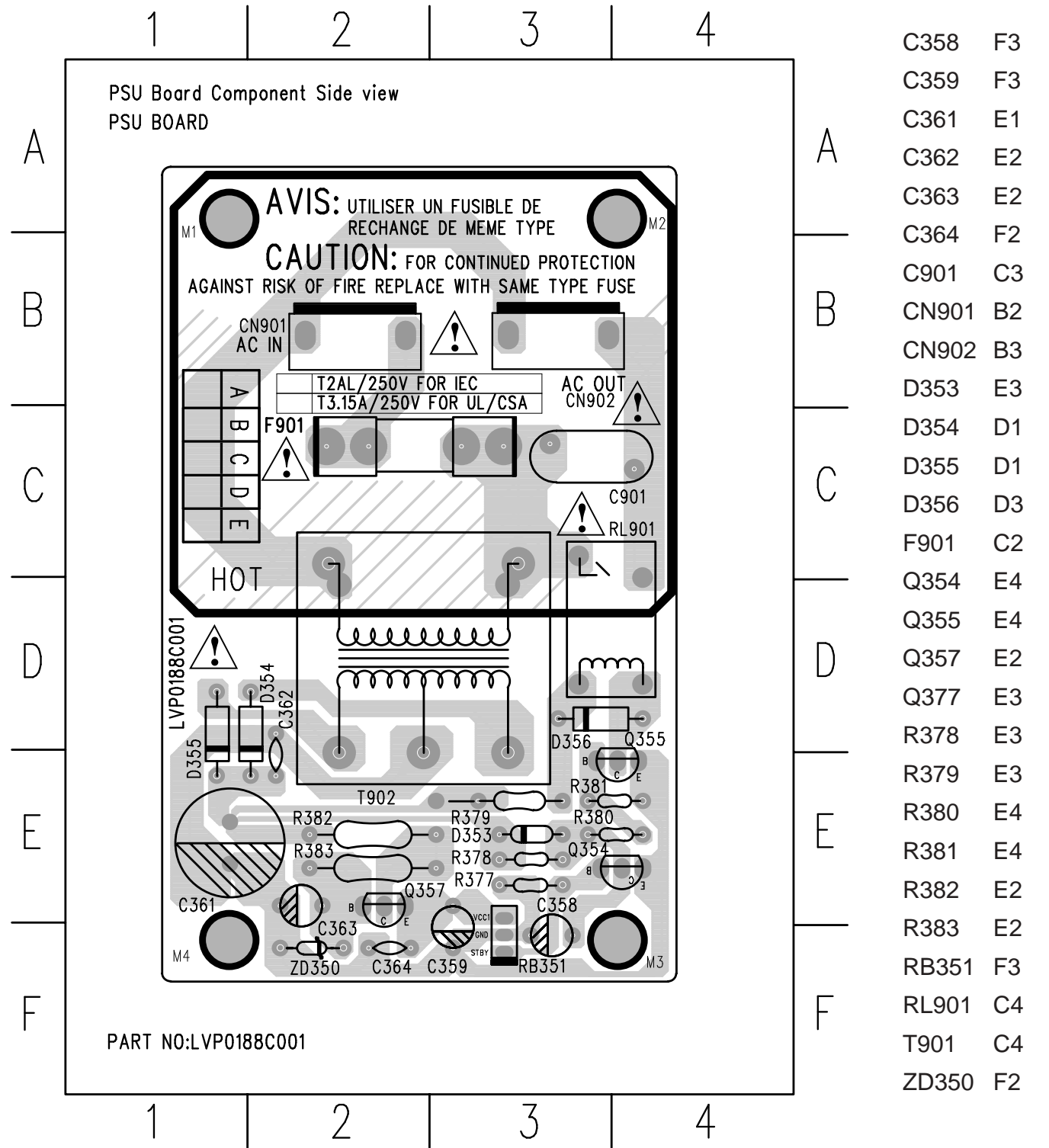


PCB LAYOUT VIEW - POWER BOARD

POWER BOARD

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F901
IEC:T2AL/250V
UL/CSA:T3.15A/250V

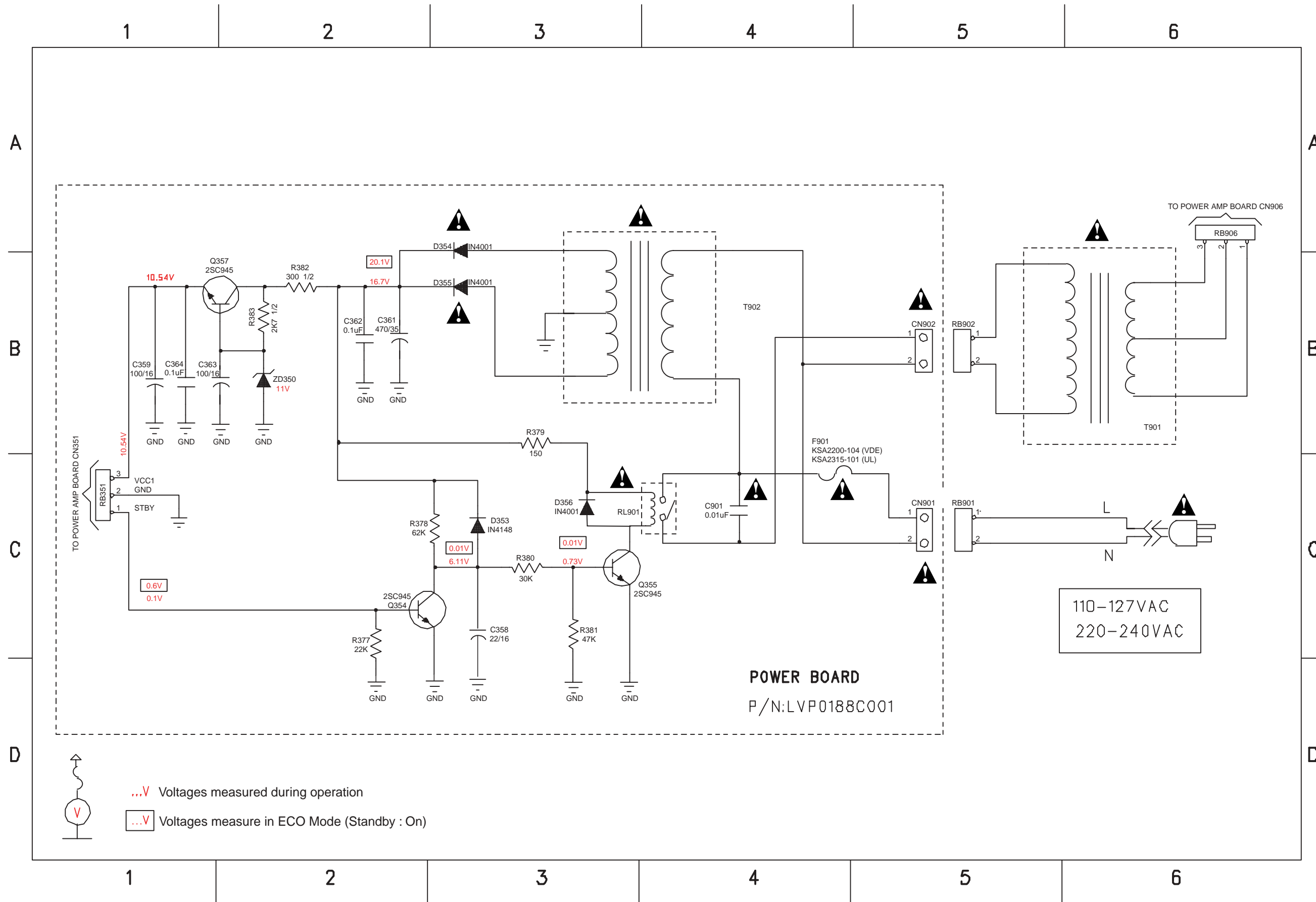
Pin No	Q354	Q355	Q357
B	0.13V	0.73V	11.24V
C	6.11V	0.54V	13.9V
E	0V	0V	10.54V

Pin No	Q354	Q355	Q357
B	0.6V	0.03V	11.26V
C	0.05V	20.2V	16.3V
E	0V	0V	10.59V

Measurement in Stby Off

Measurement in Stby On

CIRCUIT DIAGRAM - POWER BOARD



- C358 C3
- C359 B1
- C361 B2
- C362 B2
- C363 B2
- C364 B1
- C901 C4
- CN901 C5
- CN902 B5
- D353 C3
- D354 A3
- D355 B3
- D356 C3
- F901 C4
- Q354 C2
- Q355 C3
- Q357 B2
- R377 C2
- R378 C3
- R379 B3
- R380 C3
- R381 C3
- R382 B2
- R383 B2
- RB351 C1
- RB901 C5
- RB902 B5
- RB906 A6
- RL901 C4
- T901 B6
- T902 B4
- ZD350 B2

...V Voltages measured during operation
 ...V Voltages measure in ECO Mode (Standby : On)

ELECTRICAL PARTS LIST - POWER BOARD

MISCELLANEOUS

CN901	9965 000 12636	△	CONNECTOR 4 PIN P=3,96MM
CN902	9965 000 12636	△	CONNECTOR 4 PIN P=3,96MM
F901	4822 070 33152	△	FUSE T3,15A 250V SLOW /17/17S
F901	9965 000 16184	△	FUSE T4A 250V SLOW /00S/02S/15S
RL901	9965 000 09708	△	RELAY GJ-SH-112DM 320
T902	9965 000 12602	△	TRANSFORMER 120V 60HZ
T902	9965 000 15975	△	TRANSFORMER 230V 50HZ

CAPACITORS

C358	9965 000 12639		22UF 16V 20%
C359	9965 000 12559		100UF 16V 20%
C361	9965 000 12640		470UF 35V 20%
C362	2038 554 00065		100NF +80/-20% 50V
C363	9965 000 12559		100UF 16V 20%
C364	2038 554 00065		100NF +80/-20% 50V
C901	9965 000 12604	△	0,01UF 20% 250V

RESISTORS

R377	4822 050 22203		22K 1% 0,6W
R378	9965 000 12641		62K 1/6W 5%
R379	4822 116 83868		150R 5% 0,5W
R380	9965 000 12629		30K 1/6W 5%
R381	4822 050 24703		47K 1% 0,6W
R382	4822 116 52218		300R 5% 0,5W
R383	4822 116 52263		2K7 5% 0,5W

DIODES

D353	4822 130 30621		1N4148
D354	4822 130 31438	△	1N4001G
D355	4822 130 31438	△	1N4001G
D356	4822 130 31438	△	1N4001G
ZD350	9965 000 12642		ZENER 11,1-11,6V 0,5W

TRANSISTORS

Q354	4822 130 41198		2SC945P
Q355	4822 130 41198		2SC945P
Q357	4822 130 41198		2SC945P

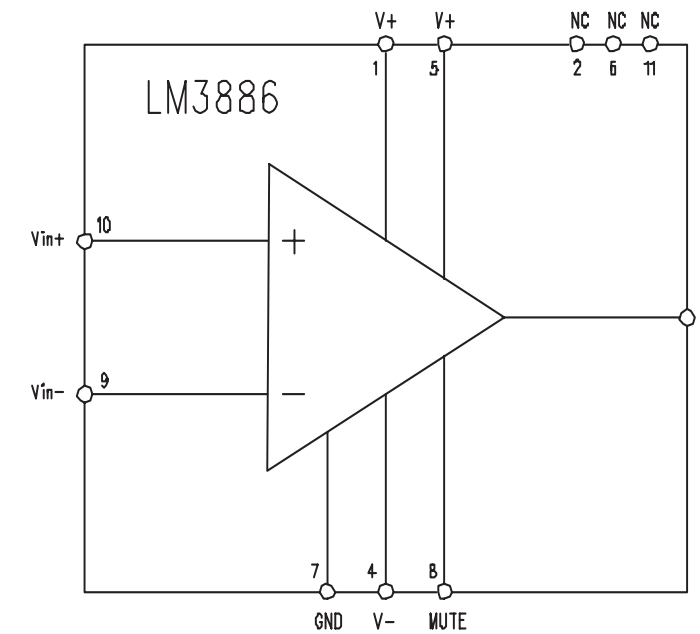
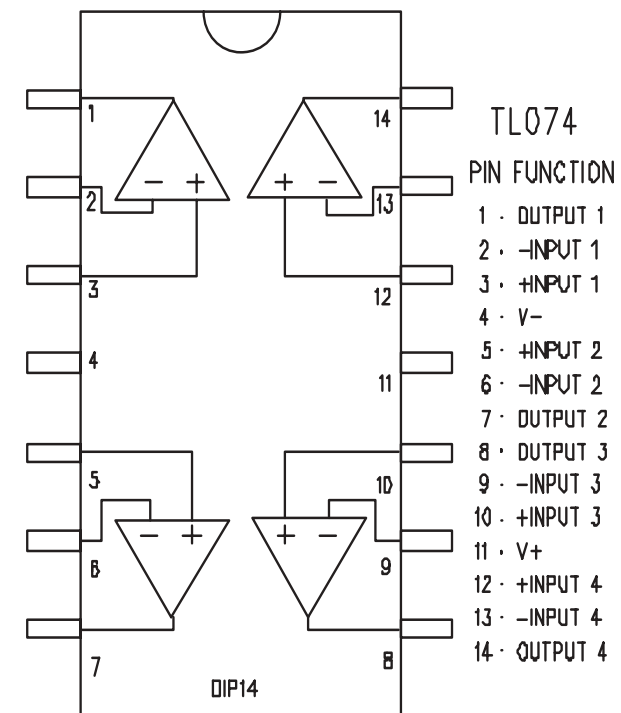
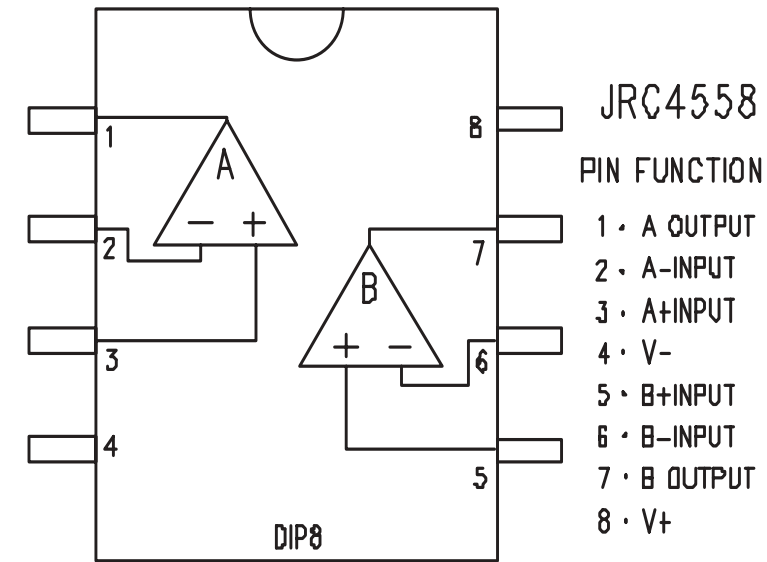
Note: Only the parts mentioned in this list are normal service spare parts.

COMBI BOARD

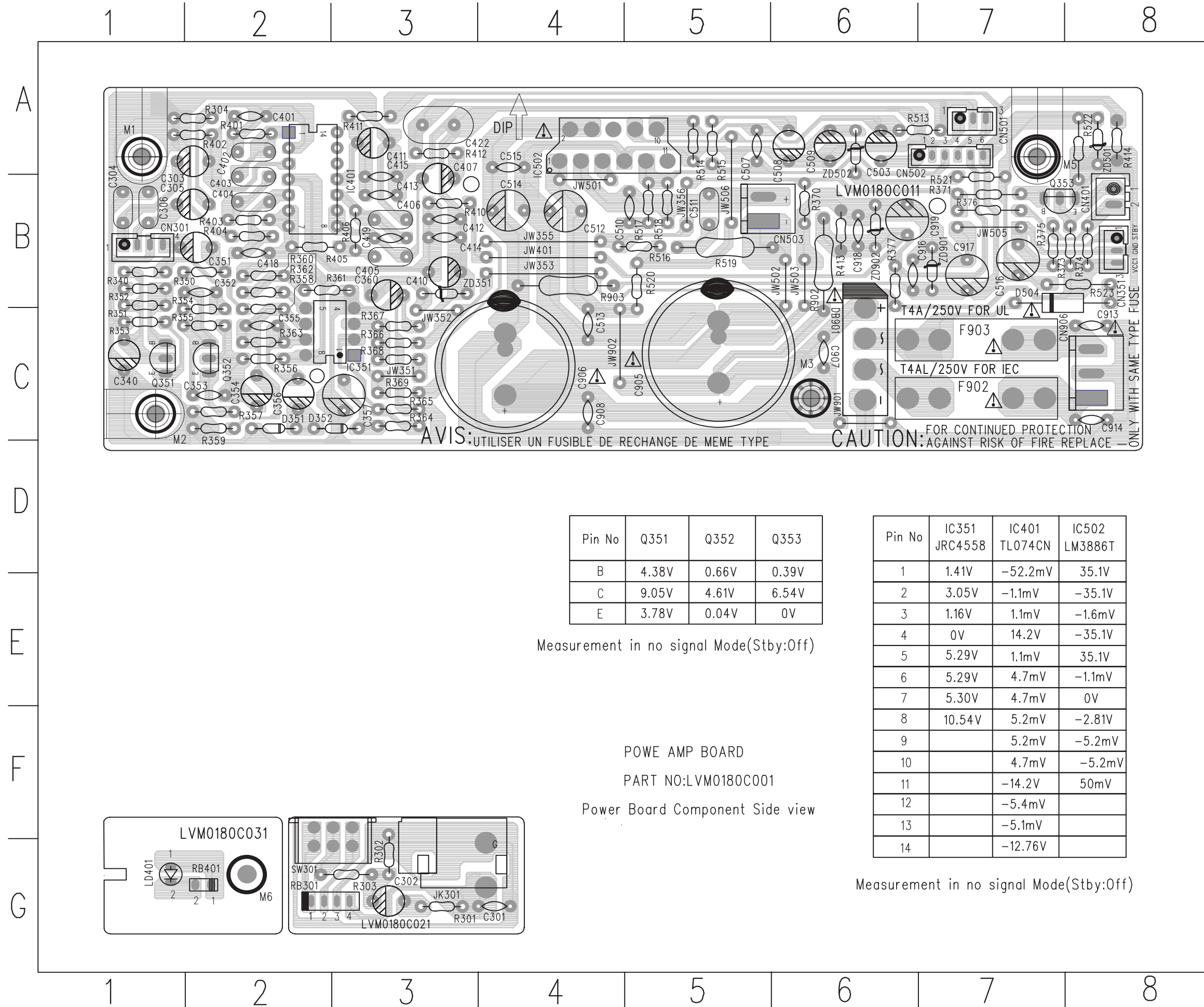
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INTERNAL IC DIAGRAM



PCB LAYOUT VIEW - COMBI BOARD



C301	G4	C918	B6	R359	C2
C302	G3	C919	B6	R360	B2
C303	B1	CN301	B1	R361	B2
C304	A1	CN351	B8	R362	B2
C305	B1	CN401	B8	R363	C2
C306	B1	CN503	B6	R364	C3
C340	C1	CN906	C8	R365	C3
C351	B2	D351	C2	R366	C3
C352	B2	D352	C2	R367	C3
C353	C2	D504	B7	R368	C3
C354	C2	DB901	C6	R369	C3
C355	C2	F902	C7	R370	B7
C356	C2	F903	C7	R373	B7
C357	C3	IC351	C3	R374	B8
C360	B3	IC401	B3	R375	B7
C401	A2	IC502	A4	R376	B7
C402	A2	JK301	G3	R401	A2
C403	B2	JW351	C3	R402	A2
C404	B2	JW352	C3	R403	B2
C405	B3	JW353	B4	R404	B2
C406	B3	JW355	B4	R405	B2
C407	A3	JW356	B4	R406	B3
C410	B3	JW401	B4	R410	B3
C411	A3	JW501	B4	R411	A3
C412	B3	JW502	B6	R412	A3
C413	B3	JW503	B6	R413	B6
C414	B3	JW505	B7	R414	A8
C415	A3	JW506	B5	R513	A6
C422	A3	JW901	C6	R514	A5
C507	A5	JW902	C4	R515	A5
C508	A6	LD401	G1	R517	B5
C509	A6	Q351	C1	R518	B5
C510	B5	Q352	C2	R519	B5
C511	B5	Q353	B7	R520	B5
C512	B4	R301	G3	R521	B7
C513	C4	R302	G3	R522	A8
C514	B4	R303	G3	R523	B8
C515	A4	R304	A2	R902	B6
C516	B7	R350	B2	R903	B4
C905	C5	R351	C1	RB301	G3
C906	C4	R352	B1	RB401	G2
C907	C6	R353	C1	SW301	G2
C908	C4	R354	C2	ZD351	B3
C913	C8	R355	C2	ZD501	A8
C914	C8	R356	C2	ZD502	A6
C916	B6	R357	C2	ZD901	B7
C917	B7	R358	B2	ZD902	B6

AVIS: UTILISER UN FUSIBLE DE RECHANGE DE MEME TYPE

CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE REPLACE ONLY WITH SAME TYPE FUSE

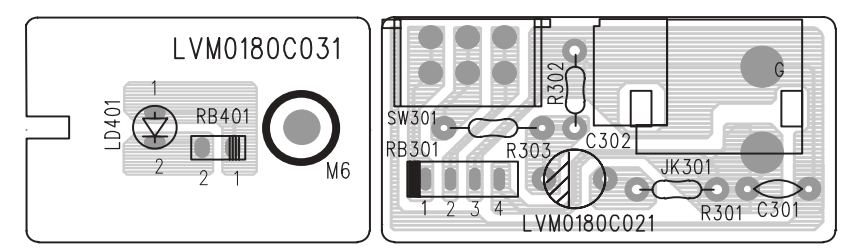
Pin No	Q351	Q352	Q353
B	4.38V	0.66V	0.39V
C	9.05V	4.61V	6.54V
E	3.78V	0.04V	0V

Measurement in no signal Mode(Stby:Off)

Pin No	IC351 JRC4558	IC401 TL074CN	IC502 LM3886T
1	1.41V	-52.2mV	35.1V
2	3.05V	-1.1mV	-35.1V
3	1.16V	1.1mV	-1.6mV
4	0V	14.2V	-35.1V
5	5.29V	1.1mV	35.1V
6	5.29V	4.7mV	-1.1mV
7	5.30V	4.7mV	0V
8	10.54V	5.2mV	-2.81V
9		5.2mV	-5.2mV
10		4.7mV	-5.2mV
11		-14.2V	50mV
12		-5.4mV	
13		-5.1mV	
14		-12.76V	

Measurement in no signal Mode(Stby:Off)

POWE AMP BOARD
PART NO:LVM0180C001
Power Board Component Side view



ELECTRICAL PARTS LIST - COMBI BOARD (AMPLIFIER, INPUT, LED & EARPHONE PARTS)

MISCELLANEOUS

CN906	9965 000 12617	△	CONNECTOR 3PIN PITCH=3,96MM
F902	9965 000 14288	△	FUSE T4A 250V SLOW /17/17S
F902	9965 000 16184	△	FUSE T4A 250V SLOW /00S/02S/15S
F903	9965 000 14288	△	FUSE T4A 250V SLOW /17/17S
F903	9965 000 16184	△	FUSE T4A 250V SLOW /00S/02S/15S
JK301	4822 267 41238		JACK 1T GREEN
SW301	4822 277 11821		SLIDE SWITCH

CAPACITORS

C301	4822 122 33293		100PF 5% 50V
C302	4822 124 21913		1UF 20% 63V
C303	4822 124 21913		1UF 20% 63V
C304	9965 000 08286		0,022UF 100V 5%
C305	4822 124 21913		1UF 20% 63V
C306	9965 000 08286		0,022UF 100V 5%
C340	9965 000 12559		100UF 16V 20%
C351	4822 124 22652		2,2UF 20% 50V
C352	2038 554 00065		100NF +80/-20% 50V
C353	9965 000 12614		47PF 50V 5%
C354	9965 000 12522		4,7UF 50V 20%
C355	9965 000 12614		47PF 50V 5%
C356	9965 000 12559		100UF 16V 20%
C357	9965 000 12558		220UF 16V 20%
C360	9965 000 12559		100UF 16V 20%
C401	4822 122 33293		100PF 5% 50V
C402	4822 121 41935		12NF 5% 250V
C403	5322 121 42662		68NF 5% 250V
C404	5322 121 42662		68NF 5% 250V
C405	5322 121 42489		33NF 5% 250V
C406	4822 121 42077		6,8NF 10% 400V
C407	4822 124 22652		2,2UF 20% 50V
C410	4822 124 40433		47UF 20% 25V
C411	4822 124 40433		47UF 20% 25V
C412	4822 122 30103		22NF 80% 63V
C413	9965 000 12613		0,22UF 50V +80/-20%
C414	9965 000 12613		0,22UF 50V +80/-20%
C415	4822 122 30103		22NF 80% 63V
C422	5322 121 42662		68NF 5% 250V
C507	4822 122 33293		100PF 5% 50V
C508	5322 124 41945		22UF 20% 35V
C509	4822 124 40433		47UF 20% 25V
C510	9965 000 12614		47PF 50V 5%
C511	5322 121 42578		100NF 5% 250V
C512	9965 000 12536		100UF 50V 20%
C513	2038 554 00065		100NF +80/-20% 50V
C514	9965 000 12536		100UF 50V 20%
C515	2038 554 00065		100NF +80/-20% 50V
C516	4822 124 40433		47UF 20% 25V
C530	9965 000 11041		0,01UF 500V 20%
C905	9965 000 12619	△	6800UF 50V 20%
C906	9965 000 12619	△	6800UF 50V 20%
C907	2038 554 00065		100NF +80/-20% 50V

RESISTORS

R301	4822 050 21503		15K 1% 0,6W
R302	4822 050 25602		5K6 1% 0,6W
R303	4822 050 21003		10K 1% 0,6W
R304	4822 050 26202		6K2 1% 0,6W
R340	9965 000 12620		1K8 1/6W 5%
R350	4822 050 24703		47K 1% 0,6W
R351	4822 050 21004		100K 1% 0,6W
R352	4822 050 21004		100K 1% 0,6W
R353	9965 000 09725		4K7 1/6W 5%
R354	9965 000 12621		2K 1/6W 5%
R355	9965 000 12622		2M2 1/6W 5%
R356	4822 050 21003		10K 1% 0,6W
R357	9965 000 12623		82 1/6W 5%
R358	9965 000 12624		270K 1/6W 5%
R359	9965 000 12624		270K 1/6W 5%
R360	4822 050 21003		10K 1% 0,6W
R361	4822 050 21003		10K 1% 0,6W
R362	9965 000 12519		1K 1/6W 5%
R363	9965 000 12625		560K 1/6W 5%
R364	9965 000 08284		220K 1/6W 5%
R365	9965 000 12626		1M 1/6W 5%
R366	9965 000 12627		680K 1/6W 5%
R367	9965 000 12628		82K 1/6W 5%
R368	9965 000 12627		680K 1/6W 5%
R369	4822 050 22203		22K 1% 0,6W
R370	4822 050 21003		10K 1% 0,6W
R371	9965 000 12629		30K 1/6W 5%
R373	9965 000 12620		1K8 1/6W 5%
R374	4822 050 22702		2K7 1% 0,6W
R375	9965 000 13450		910R 5% 1/6W
R376	4822 050 24703		47K 1% 0,6W
R401	9965 000 12631		180K 1/6W 5%
R402	4822 050 21003		10K 1% 0,6W
R403	9965 000 08285		18K 1/6W 5%
R404	4822 050 21504		150K 1% 0,6W
R405	9965 000 09724		3K9 1/6W 5%
R406	9965 000 08285		18K 1/6W 5%
R410	4822 050 21001		100R 1% 0,6W
R411	4822 050 21001		100R 1% 0,6W
R412	9965 000 08285		18K 1/6W 5%
R413	9965 000 09725		4K7 1/6W 5%
R414	9965 000 09725		4K7 1/6W 5%
R513	9965 000 12519		1K 1/6W 5%

ELECTRICAL PARTS LIST - COMBI BOARD (AMPLIFIER, INPUT, LED & EARPHONE PARTS)

R514	4822 050 24703		47K 1% 0,6W
R515	9965 000 12519		1K 1/6W 5%
R517	4822 050 23303		33K 1% 0,6W
R518	4822 050 23303		33K 1% 0,6W
R519	4822 116 81753		4R7 5% 0,5W
R520	4822 050 23303		33K 1% 0,6W
R521	4822 050 21502		1K5 1% 0,6W
R522	4822 116 52291		56K 5% 0,5W
R523	4822 116 52228		680R 5% 0,5W
R902	9965 000 12632		1K 1W 5%
R903	9965 000 12632		1K 1W 5%

DIODES

D351	4822 130 30621		1N4148
D352	4822 130 30621		1N4148
D504	4822 130 31438	△	1N4001G
DB901	4822 130 70035	△	RS402L
LD401	9965 000 14305		3 BDIA GREEN/ORANGE
ZD501	4822 130 34281		BZX79-B15
ZD502	9965 000 12635		ZENER 9,1-9,5V 0,5W
ZD901	4822 130 34281		BZX79-B15
ZD902	4822 130 34281		BZX79-B15

TRANSISTORS & INTEGRATED CIRCUITS

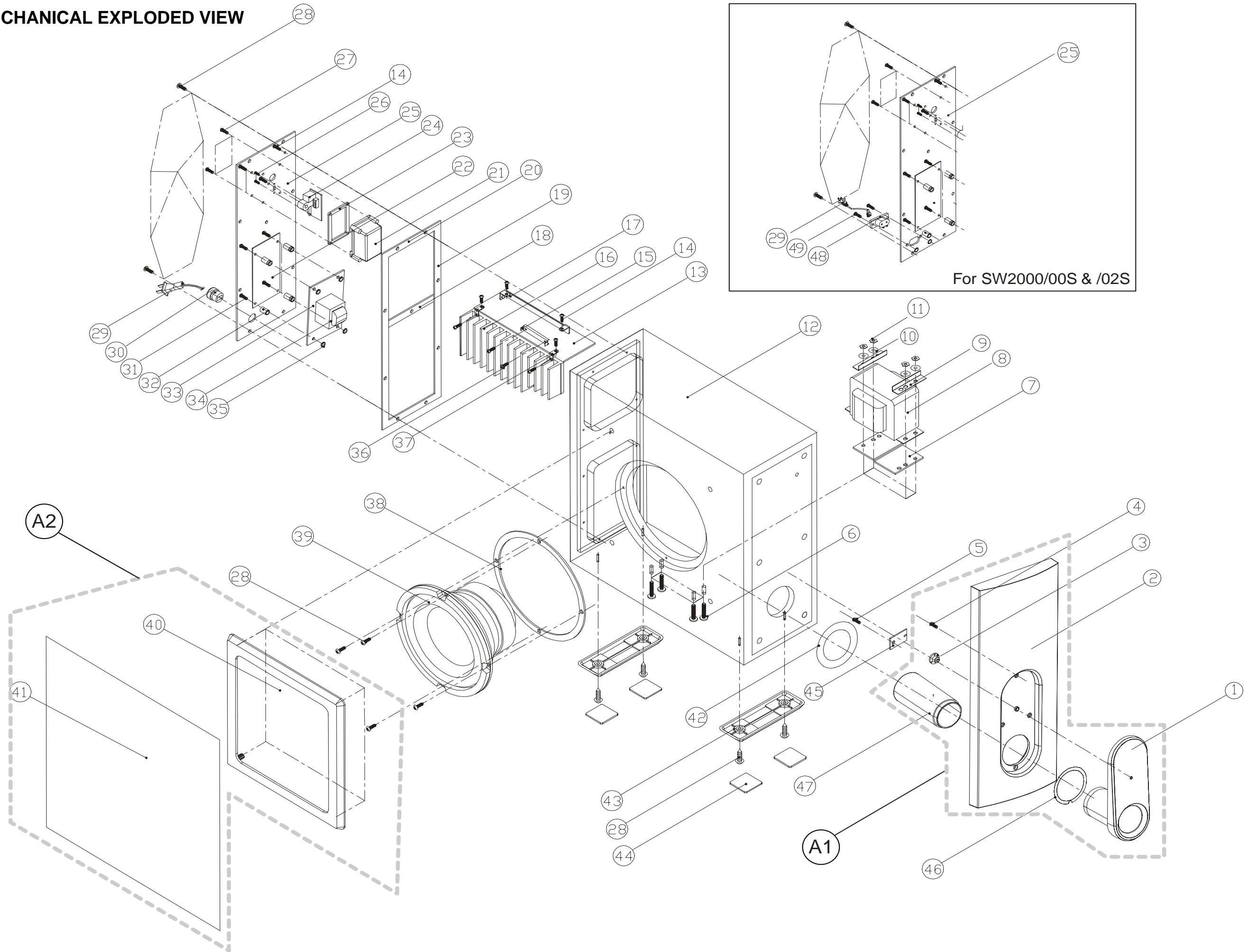
IC351	4822 209 83631		NJM4558DD
IC401	4822 209 32742		TL074IN
IC502	9965 000 12633	△	LM3886T POWER IC
Q351	4822 130 41198		2SC945P
Q352	4822 130 41198		2SC945P
Q353	4822 130 41198		2SC945P

Note: Only the parts mentioned in this list are normal service spare parts.

MECHANICAL EXPLODED VIEW

6-1

6-1



MECHANICAL & ACCESSORIES PARTS LIST - MAIN UNIT**SCREW LIST - MAIN UNIT**

A1	9965 000 15982	FRONT PANEL ASSY	/00S/02S/15S	4	D3 x 10
A1	9965 000 14650	FRONT PANEL ASSY	/17	5	D3 x 6
A1	9965 000 14648	FRONT PANEL ASSY	/17S	6	M4 x 25
A2	9965 000 14651	CLOTH FRAME ASSY	/00S/02S/17	14	M3 x 8
A2	9965 000 14649	CLOTH FRAME ASSY	/15S/17S	26	M2 x 6
8	9965 000 12979	△ MAINS TRANSFO 120V	/17/17S	27	D3 x 10
8	9965 000 15970	△ MAINS TRANSFO 230V	/00S/02S/15S	28	D3,5 x 14
29	9965 000 12818	△ MAINS CORD FIXED	/17/17S	31	M3 x 22
29	9965 000 15980	△ MAINS CORD DETACHABLE AUST.	/00S	36	M3 x 14
29	9965 000 15983	△ MAINS CORD DETACHABLE	/02S	49	M3 x 12
30	9965 000 07092	BUSHING, FIXED CORD	/15S/17/17S		
38	4822 532 13065	WASHER			
39	9965 000 08278	SPEAKER DRIVER 100W 6,5" 4OHM			
44	9965 000 12981	RUBBER FOOT			
48	9965 000 12443	Mains Socket	/00S/02S		

Note: Only the parts mentioned in this list are normal service spare parts.

DOCUMENT HISTORY

Version 1.0

- * Initial release

Version 1.1

- * New type/version SW2000/00S/02S has been added
- * Correction of Service Manual pages
 - Page 1-2 : Correction Type version in the Specification SW200/17/17S (was SW3500/37S)
 - Page 6-2 : Correction of part code for pos A1 and A2.