

Service  
Service  
**Service**



# Service Manual

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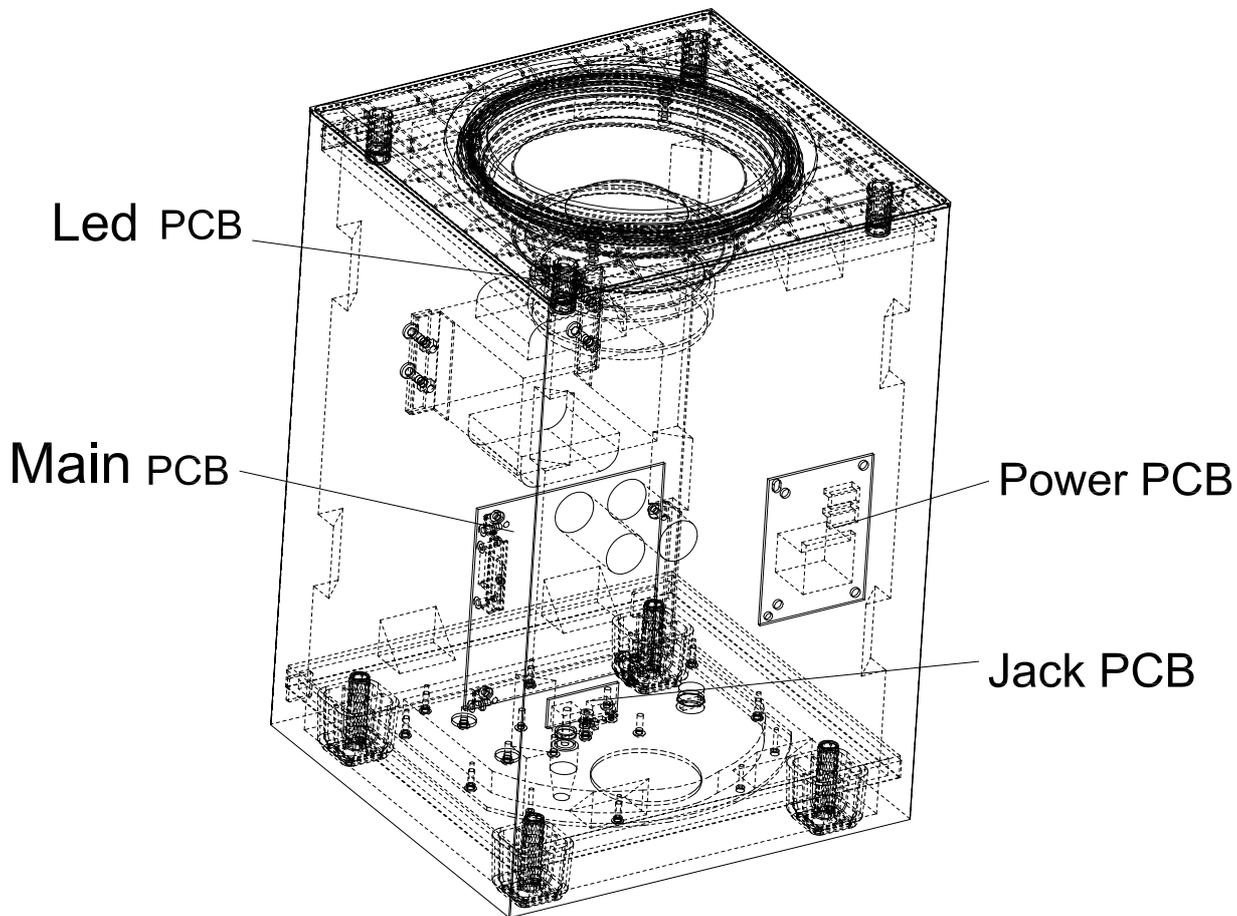
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Version 1.0



# PHILIPS

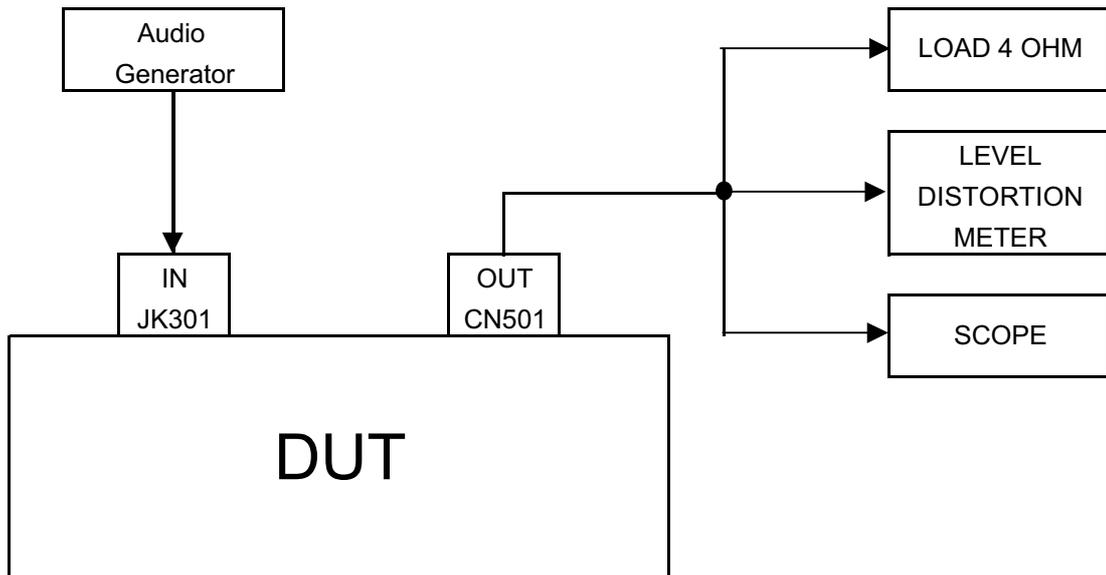
## LOCATION OF PC BOARDS



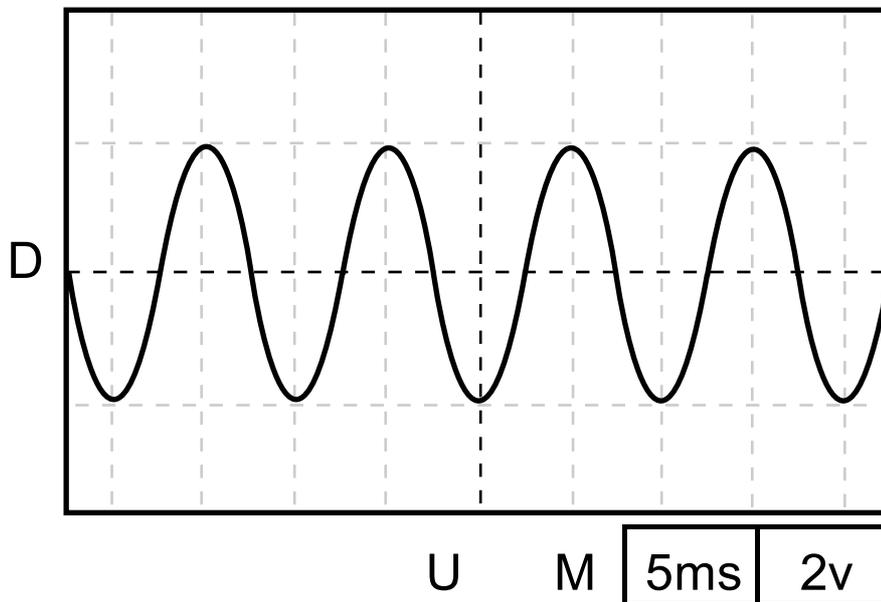
## SPECIFICATIONS

### SUBWOOFER

Subwoofer (not magnetically shielded design).....	6.5"
Output Power.....	55Hz 10% 100W (4Ω,DIN)
THD (Total Harmonic Distortion) .....	100Hz 2V 1%
Reproduction Frequency Response.....	30 Hz-130 Hz
Phase Switch.....	0°,180°
Input Sensitivity (Subwoofer In).....	80 mVrms
AC Power.....	230V/50 Hz
power Consumption.....	165 W (at 1/8 Rated Power)
Dimensions (w x h x d).....	222 mm x 358.5 mm x 230 mm
Weight.....	8.7 Kg

**MEASUREMENT SETUP****Audio Test Signal**

100Hz



## 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.

## ESD



### **D** WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD). Unsorgfältige Behandlung im Reparaturfall kann die Lebensdauer drastisch reduzieren. Veranlassen Sie, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand verbunden sind mit dem gleichen Potential wie die Masse des Gerätes. Bauteile und Hilfsmittel auch auf dieses gleiche Potential halten.

### **NL** WAARSCHUWING

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

### **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."

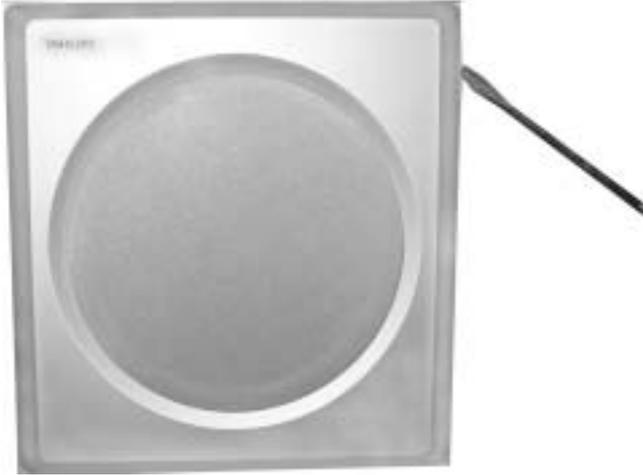
"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne".

## DISASSEMBLY INSTRUCTIONS

### Dismantling the Front Assembly & Speaker Driver

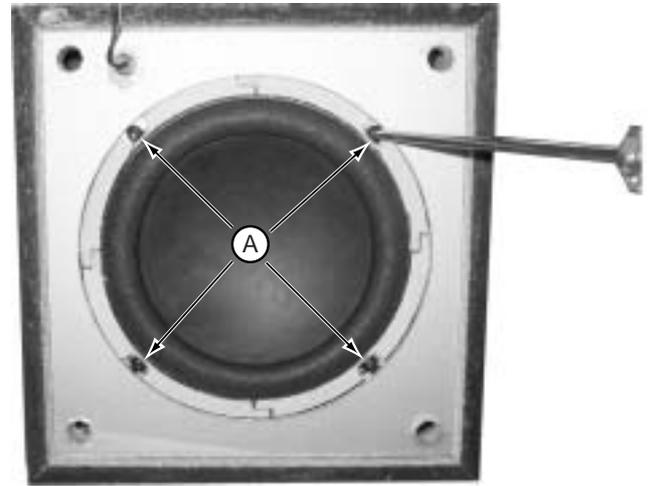
1. Place the Subwoofer Box as shown in the Picture 1 and use a screw driver to force open the Front assembly.

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



Picture 1

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



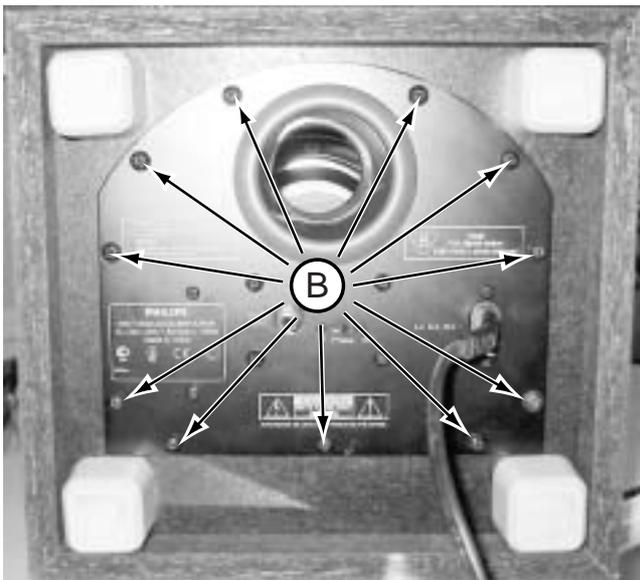
Picture 2

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

### Dismantling the Rear Assembly

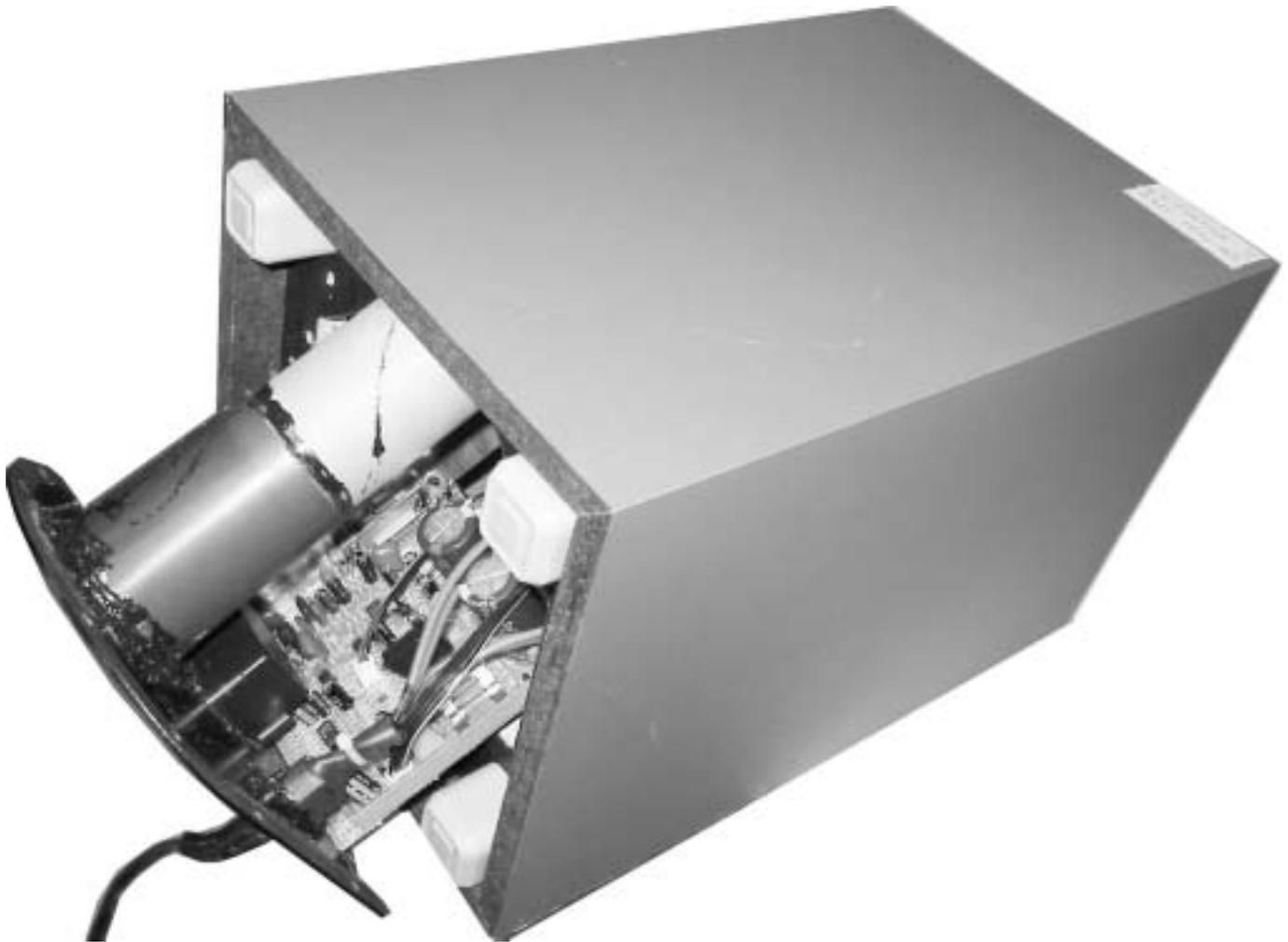
1. Loosen 11 screws B as shown in the Picture 3 (Rear View) to pull out the Printed Circuit Board assembly.

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

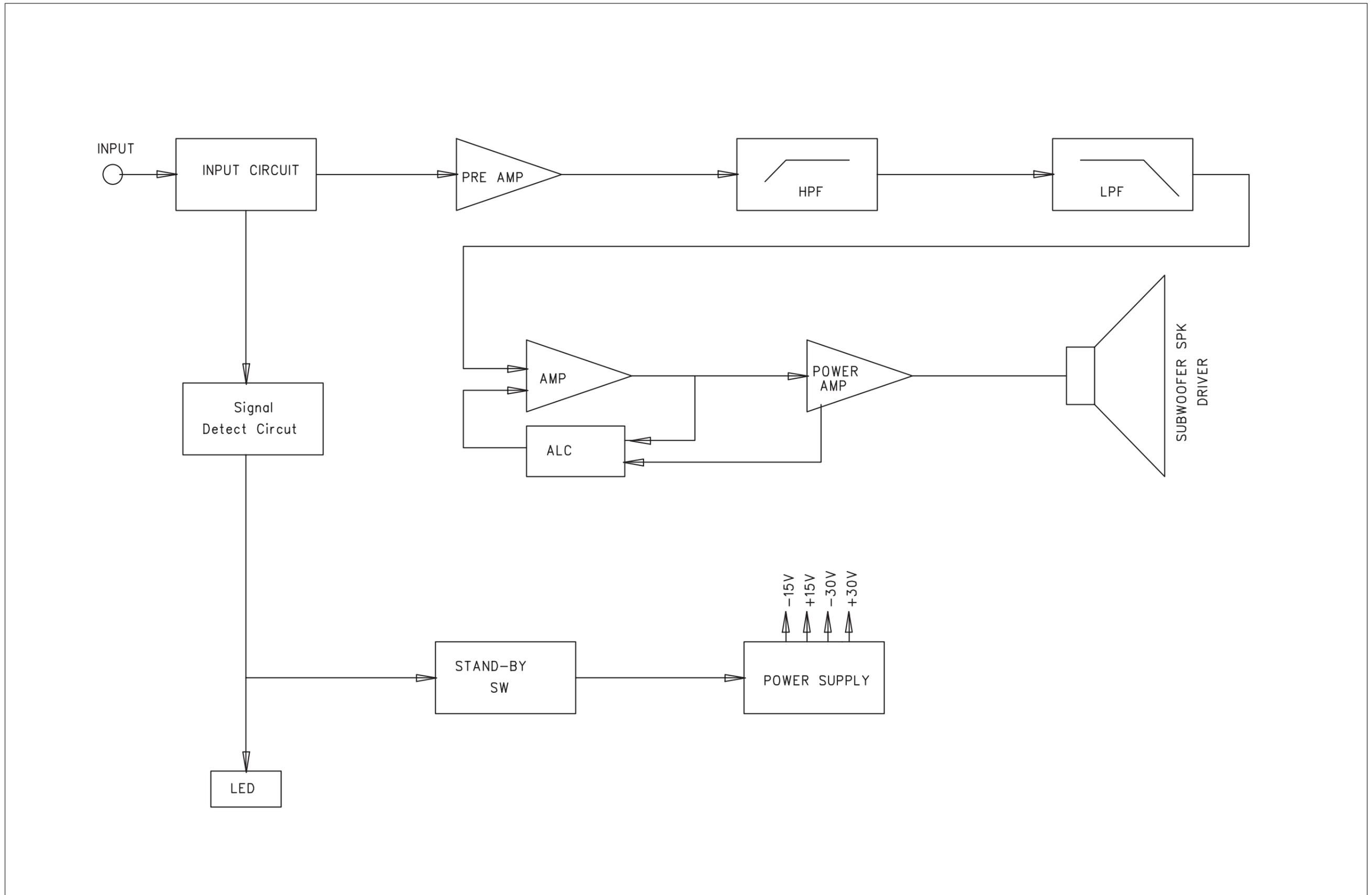


Picture 3

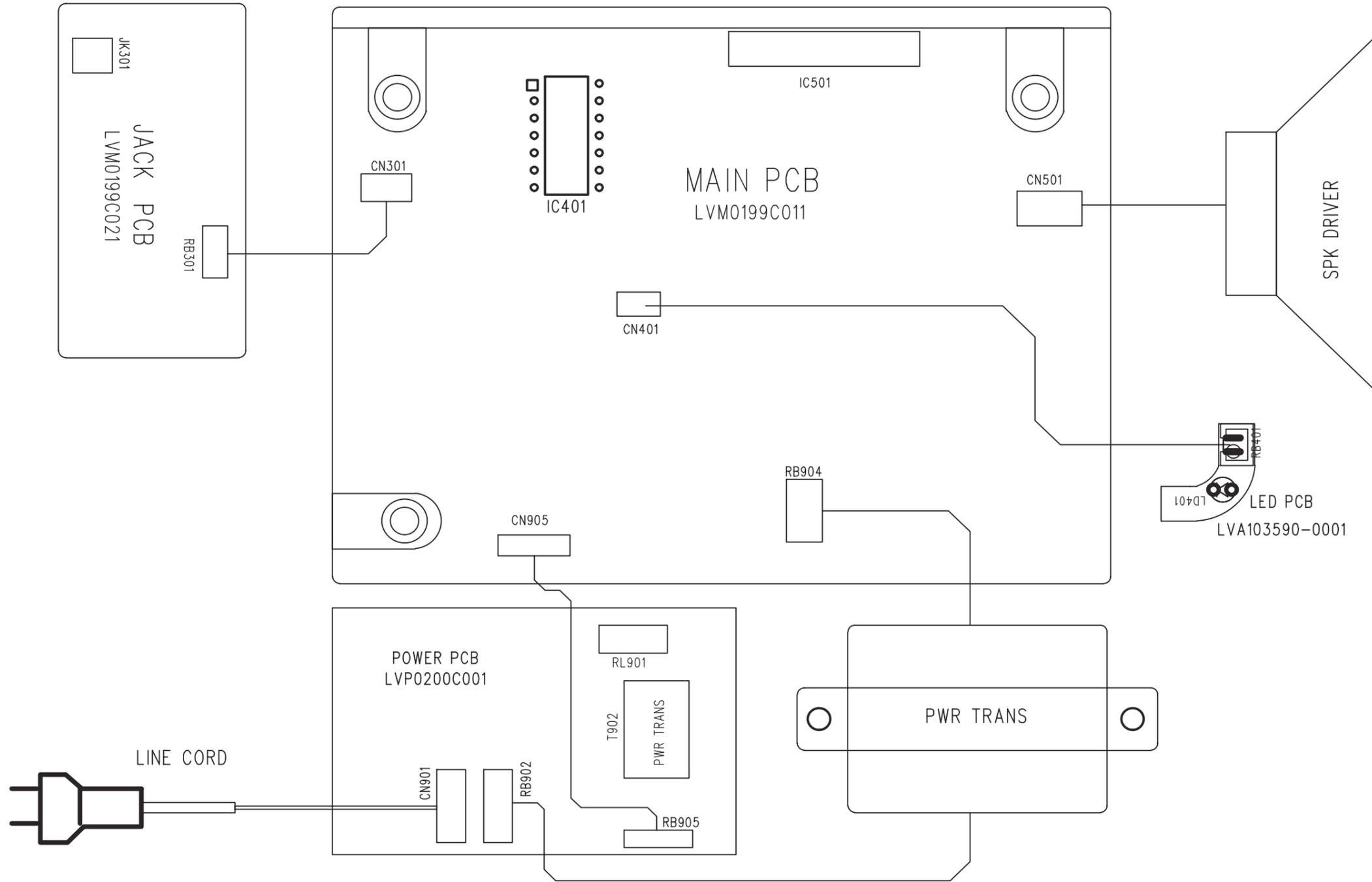
## SERVICE POSITION



# BLOCK DIAGRAM



# WIRING DIAGRAM

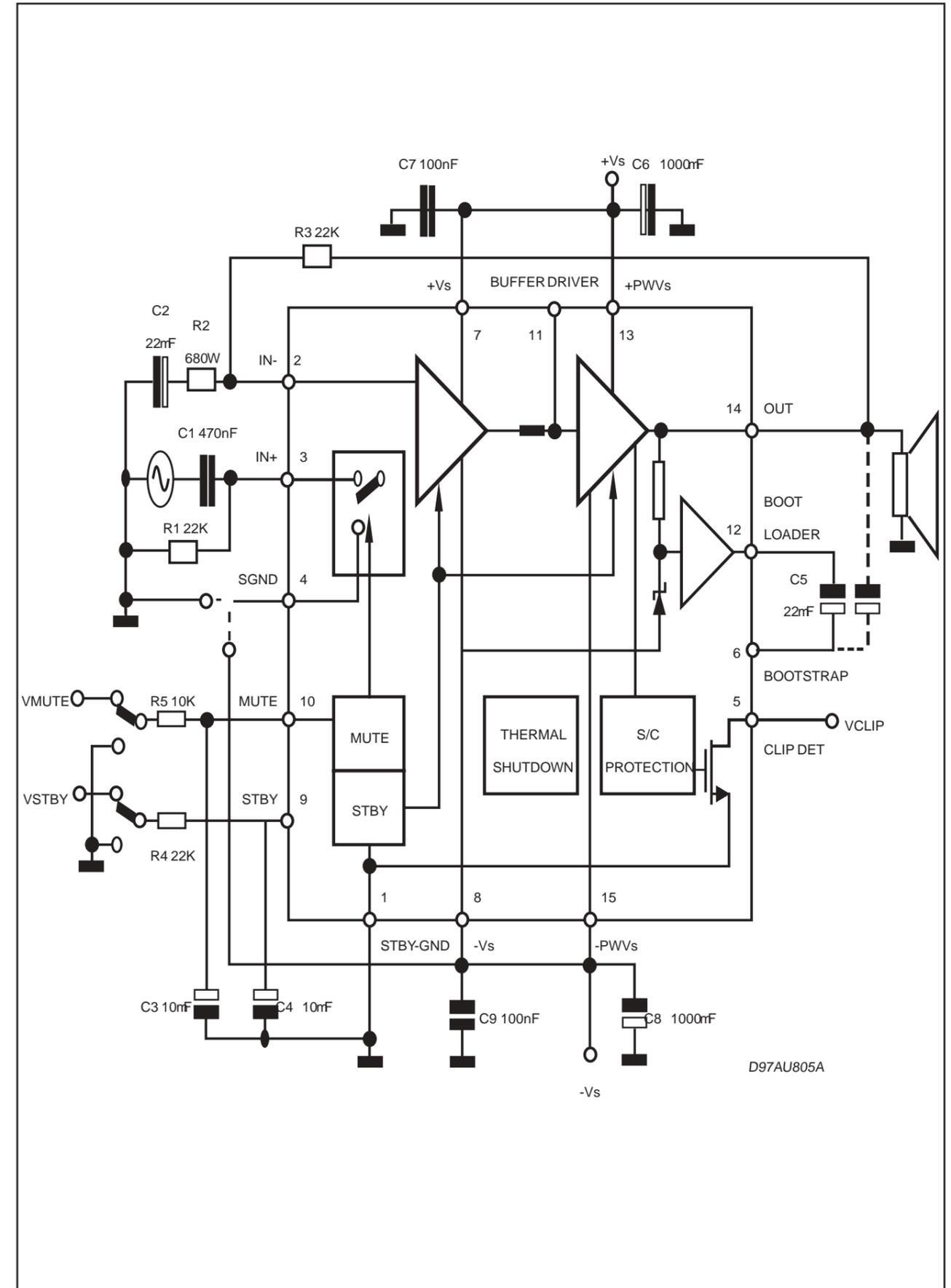


# MAIN & JACK & LED BOARD

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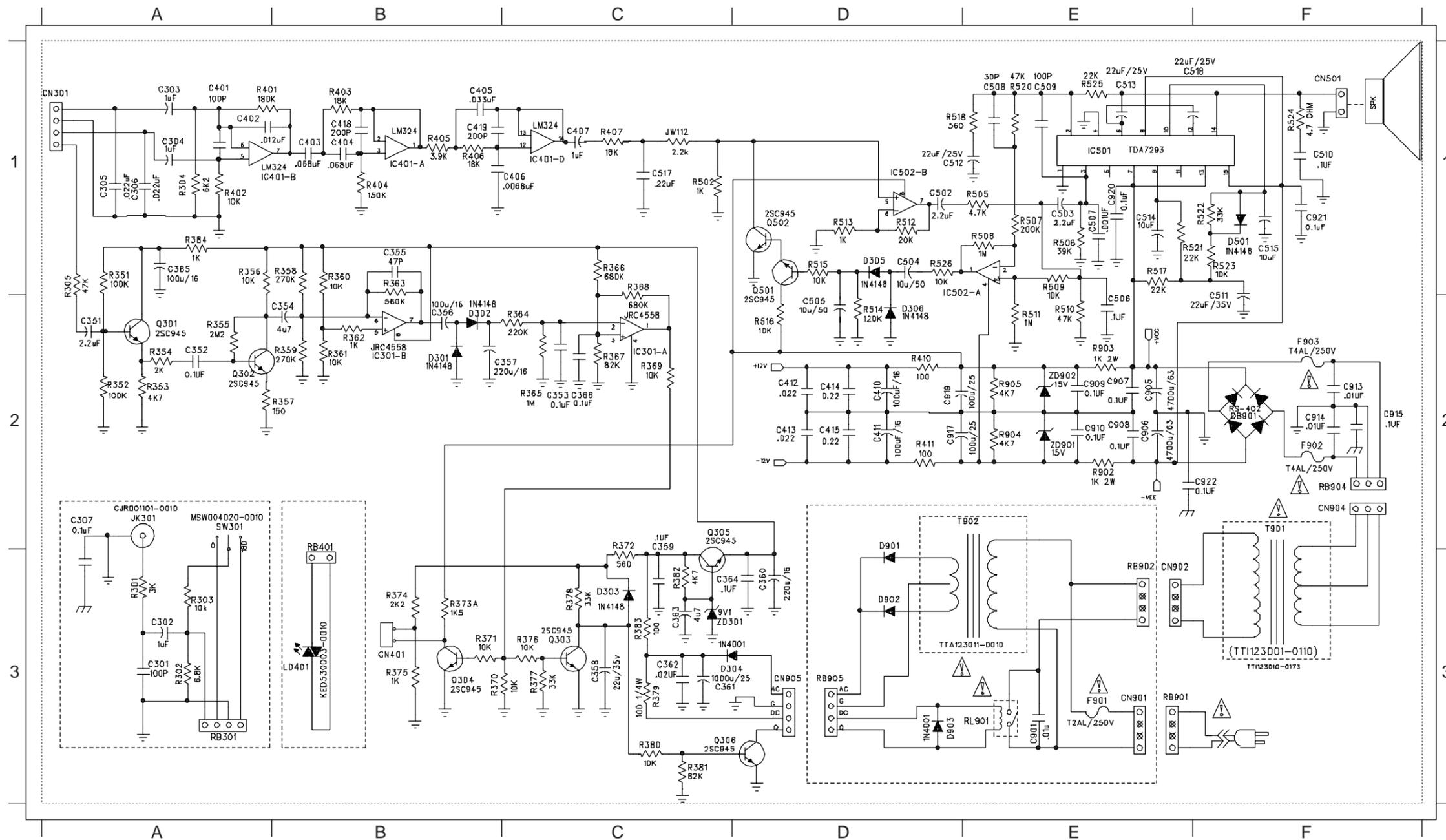
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## TDA7293 INTERNAL IC DIAGRAM



# CIRCUIT DIAGRAM

C301	A3	C358	C3	C406	C1	C505	D2	C905	E2	C922	F2	DB901	F2	LD401	B3	R305	A1	R363	B1	R376	C3	R405	B1	R512	D1	R526	D1	ZD902	E2		
C302	A3	C359	C3	C407	C1	C506	E2	C906	E2	CN301	A1	F901	E3	Q301	A2	R351	A1	R364	C2	R377	C3	R406	B1	R513	D1	R902	E2				
C303	A1	C360	D3	C410	D2	C507	E1	C907	E2	CN401	B3	F902	F2	Q303	C3	R352	A2	R365	C2	R378	C3	R407	C1	R514	D2	R903	E2				
C304	A1	C361	C3	C411	D2	C508	E1	C908	E2	CN501	F1	F903	F2	Q302	A2	R353	A2	R366	C1	R379	C3	R410	D2	R515	D1	R904	E2				
C305	A1	C362	C3	C412	D2	C509	E1	C909	E2	CN904	F2	IC301-A	C2	Q304	B3	R354	A2	R367	C2	R380	C3	R411	D2	R516	D2	R905	E2				
C306	A1	C363	C3	C413	D2	C510	F1	C910	E2	CN905	D3	IC301-B	B2	Q305	C3	R355	A2	R368	C1	R381	C3	R502	C1	R517	E1	RB301	A3				
C351	A2	C364	C3	C414	D2	C511	F1	C913	F2	D301	B2	IC401-A	B1	Q306	C3	R356	A1	R369	C2	R382	C3	R505	E1	R518	D1	RB401	B3				
C352	A2	C365	A1	C415	D2	C512	D1	C914	F2	D302	B2	IC401-D	C1	Q501	D1	R357	A2	R370	B3	R383	C3	R506	E1	R520	E1	RB904	F2				
C353	C2	C401	A1	C418	B1	C513	E1	C915	F2	D303	C3	IC502-A	D1	Q502	D1	R358	B1	R371	B3	R384	A1	R507	E1	R521	E1	SW301	A2				
C354	B2	C402	A1	C419	B1	C514	E1	C917	D2	D304	C3	IC502-B	D1	R301	A3	R359	B2	R372	C3	R401	A1	R508	E1	R522	F1	T901	F2				
C355	B1	C403	B1	C502	D1	C515	F1	C919	D2	D305	D1	IC501	E1	R302	A3	R360	B1	R373A	E3	R402	A1	R509	E1	R523	F1	T902	E2				
C356	B2	C404	B1	C503	E1	C517	C1	C920	E1	D306	D2	JK301	A2	R303	A3	R361	B2	R374	B3	R403	B1	R510	E2	R524	F1	ZD301	E3				
C357	B2	C405	B1	C504	D1	C518	E1	C921	F1	D501	F1	JW112	C1	R304	A1	R362	B2	R375	B3	R404	B1	R511	E2	R525	E1	ZD901	E2				





**ELECTRICAL PARTS LIST - MAIN & JACK BOARDS****MISCELLANEOUS**

CN401	9965 000 15862	CONNECTOR B2B-XH-A 2 PIN
CN501	9965 000 16341	CONNECTOR 2 PIN
F902	9965 000 20663	△ FUSE 4A 250V SLOW
F903	9965 000 20663	△ FUSE 4A 250V SLOW
JK301	4822 267 41238	RCA JACK 1P
RB904	9965 000 12617	CONNECTOR3PPITCH=3.96mm
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	4822 124 21913	1uF 20% 63V
C305	9965 000 08286	COND MYLAR 0.022uF 100V 5%
C306	9965 000 08286	COND MYLAR 0.022uF 100V 5%
C351	9965 000 16318	COND ELECT 2.2uF 50V 20%
C352	2038 554 00065	100nF Y5V 50V +80/-20%
C353	9965 000 12614	47pF 50V 5%
C354	9965 000 16319	COND ELECT 4.7uF 50V 20%
C355	9965 000 12614	47pF 50V 5%
C356	9965 000 16317	COND ELECT 100uF 16V 20%
C357	9965 000 16320	COND ELECT 220uF 16V 20%
C358	9965 000 16353	COND ELECT 22uF 50V 20%
C359	2038 554 00065	100nF Y5V 50V +80/-20%
C360	9965 000 16320	COND ELECT 220uF 16V 20%
C361	9965 000 16354	COND ELECT 1000uF 25V 20%
C362	4822 122 30103	22nF 80% 63V
C363	9965 000 16319	COND ELECT 4.7uF 50V 20%
C364	2038 554 00065	100nF Y5V 50V +80/-20%
C365	9965 000 16317	COND ELECT 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 21913	1uF 20% 63V
C410	9965 000 16317	COND ELECT 100uF 16V 20%
C411	9965 000 16317	COND ELECT 100uF 16V 20%
C412	4822 122 30103	22nF 80% 63V
C413	4822 122 30103	22nF 80% 63V
C414	9965 000 12613	0,22uF 50V +80/-20%
C415	9965 000 12613	0,22uF 50V +80/-20%
C418	9965 000 16355	COND DISC 200pF 50V 10% Y5P
C419	9965 000 16355	COND DISC 200pF 50V 10% Y5P
C502	9965 000 16318	COND ELECT 2.2uF 50V 20%
C503	9965 000 16318	COND ELECT 2.2uF 50V 20%
C504	9965 000 16356	COND ELECT 10uF 50V 20%
C505	9965 000 16356	COND ELECT 10uF 50V 20%
C506	5322 121 42578	100nF 5% 250V
C507	9965 000 16357	COND MYLAR 0.001uF 100V 5%

C508	9965 000 16358	COND DISC 30pF 50V 5% NP0
C509	4822 122 33293	100pF 5% 50V
C510	5322 121 42578	100nF 5% 250V
C511	9965 000 16359	COND ELECT 22uF 35V 20%
C512	9965 000 16324	COND ELECT 22uF 25V 20%
C513	9965 000 16324	COND ELECT 22uF 25V 20%
C514	9965 000 16356	COND ELECT 10uF 50V 20%
C515	9965 000 16356	COND ELECT 10uF 50V 20%
C517	9965 000 16360	COND MYLAR 0.22uF 100V 5%
C518	9965 000 16324	COND ELECT 22uF 25V 20%
C905	9965 000 16361	COND ELECT 4700uF 63V 20%
C906	9965 000 16361	COND ELECT 4700uF 63V 20%
C907	2038 554 00065	100nF Y5V 50V +80/-20%
C908	2038 554 00065	100nF Y5V 50V +80/-20%
C909	2038 554 00065	100nF Y5V 50V +80/-20%
C910	2038 554 00065	100nF Y5V 50V +80/-20%
C913	9965 000 11041	COND DISC 0.01uF 500V 20%
C914	9965 000 11041	COND DISC 0.01uF 500V 20%
C915	2038 554 00065	100nF Y5V 50V +80/-20%
C917	9965 000 16327	COND ELECT 100uF 25V 20%
C919	9965 000 16327	COND ELECT 100uF 25V 20%

**RESISTORS**

R301	9965 000 14665	3k OHM 1/6W 5% CF
R302	9965 000 12520	6.8k OHM 1/6W 5% CF
R303	4822 050 21003	10k 1% 0,6W
R304	4822 050 26202	6k2 1% 0,6W
R305	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 15057	4.7k OHM 1/6W 5% CF
R354	4822 116 82045	2k 5% 1/6W
R355	9965 000 12622	2.2M OHM 1/6W 5%
R356	4822 050 21003	10k 1% 0,6W
R357	9965 000 12485	150 OHM 1/6W 5% CF
R358	9965 000 12624	270k OHM 1/6W 5%
R359	9965 000 12624	270k OHM 1/6W 5%
R360	4822 050 21003	10k 1% 0,6W
R361	4822 050 21003	10k 1% 0,6W
R362	9965 000 12519	1k OHM 1/6W 5% CF
R363	9965 000 12625	560k OHM 1/6W 5%
R364	9965 000 08284	220k OHM 1/6W 5% CF
R365	9965 000 12626	1M OHM 1/6W 5%
R366	9965 000 12627	680k OHM 1/6W 5%
R367	9965 000 12628	82k OHM 1/6W 5%
R368	9965 000 12627	680k OHM 1/6W 5%
R369	4822 050 21003	10k 1% 0,6W
R370	4822 050 21003	10k 1% 0,6W
R371	4822 050 21003	10k 1% 0,6W
R372	4822 050 25601	560R 1% 0,6W
R373	4822 050 21502	1k5 1% 0,6W

**ELECTRICAL PARTS LIST - MAIN & JACK BOARDS**

R374	9965 000 12515	2.2k OHM 1/6W 5% CF
R375	9965 000 12519	1k OHM 1/6W 5% CF
R376	4822 050 21003	10k 1% 0,6W
R377	4822 050 23303	33k 1% 0,6W
R378	4822 050 23303	33k 1% 0,6W
R379	9965 000 16363	100 OHM 1/4W 5% CF
R380	4822 050 21003	10k 1% 0,6W
R381	9965 000 12628	82k OHM 1/6W 5%
R382	9965 000 15057	4.7k OHM 1/6W 5% CF
R383	4822 050 21001	100R 1% 0,6W
R384	9965 000 12519	1k OHM 1/6W 5% CF
R401	9965 000 12631	180k OHM 1/6W 5%
R402	4822 050 21003	10k 1% 0,6W
R403	9965 000 08285	18k OHM 1/6W 5% CF
R404	4822 050 21504	150k 1% 0,6W
R405	4822 111 31038	3k9 5% 1/6W
R406	9965 000 08285	18k OHM 1/6W 5% CF
R407	9965 000 08285	18k OHM 1/6W 5% CF
R410	4822 050 21001	100R 1% 0,6W
R411	4822 050 21001	100R 1% 0,6W
R502	9965 000 12519	1k OHM 1/6W 5% CF
R505	9965 000 15057	4.7k OHM 1/6W 5% CF
R506	9965 000 14307	39k OHM 1/6W 5% CF
R507	9965 000 12561	200k OHM 1/6W 5% CF
R508	9965 000 12626	1M OHM 1/6W 5%
R509	4822 050 21003	10k 1% 0,6W
R510	4822 050 24703	47k 1% 0,6W
R511	9965 000 12626	1M OHM 1/6W 5%
R512	4822 111 31032	20k 5% 1/6W
R513	9965 000 12519	1k OHM 1/6W 5% CF
R514	9965 000 16364	120k OHM 1/6W 5% CF
R515	4822 050 21003	10k 1% 0,6W
R516	4822 050 21003	10k 1% 0,6W
R517	4822 050 22203	22k 1% 0,6W
R518	4822 050 25601	560R 1% 0,6W
R520	4822 050 24703	47k 1% 0,6W
R521	4822 050 22203	22k 1% 0,6W
R522	4822 050 23303	33k 1% 0,6W

R523	4822 050 21003	10k 1% 0,6W
R524	4822 116 81753	4R7 5% 0,5W
R525	4822 050 22203	22k 1% 0,6W
R526	4822 050 21003	10k 1% 0,6W
R902	9965 000 15961	1k 2W 5% W/KINK
R903	9965 000 15961	1k 2W 5% W/KINK
R904	9965 000 15057	4.7k OHM 1/6W 5% CF
R905	9965 000 15057	4.7k OHM 1/6W 5% CF
JW112	9965 000 12515	2.2k OHM 1/6W 5% CF

**DIODES**

D301	4822 130 30621	1N4148
D302	4822 130 30621	1N4148
D303	4822 130 30621	1N4148
D304	4822 130 31438	1N4001G
D305	4822 130 30621	1N4148
D306	4822 130 30621	1N4148
D501	4822 130 30621	1N4148
DB901	4822 130 70035	△ BRIDGE RS402L
ZD301	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**

Q301	4822 130 41198	2SC945P
Q302	4822 130 41198	2SC945P
Q303	4822 130 41198	2SC945P
Q304	4822 130 41198	2SC945P
Q305	4822 130 41198	2SC945P
Q306	4822 130 41198	2SC945P
Q501	4822 130 41198	2SC945P
Q502	4822 130 41198	2SC945P
IC301	4822 209 83631	IC 8 PIN JRC4558D
IC401	4822 209 80587	IC 14 PIN LM324N
IC501	9965 000 15962	IC 15 PIN TDA7293
IC502	4822 209 83631	IC 8 PIN JRC4558D

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

**ELECTRICAL PARTS LIST - LED BOARD****MISCELLANEOUS**

	9965 000 21092	LED PCB ASSEMBLY
LD401	9965 000 14305	LED 3 DIA GREEN/ORANGE 2P

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

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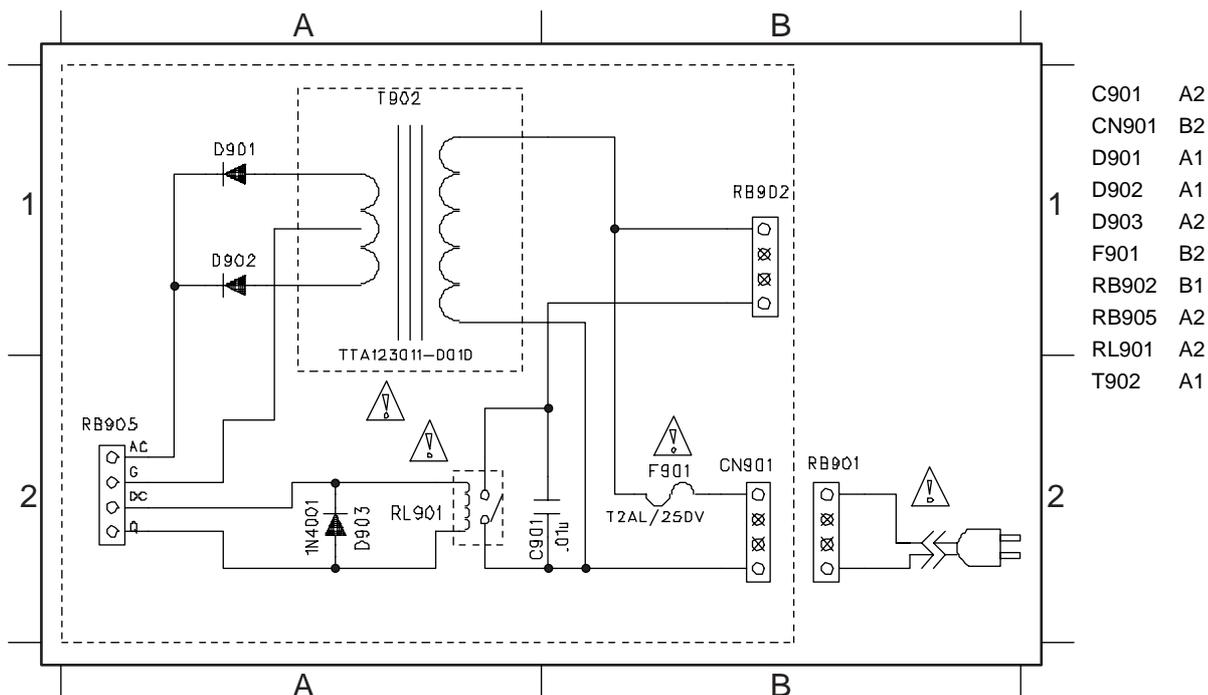
# POWER BOARD

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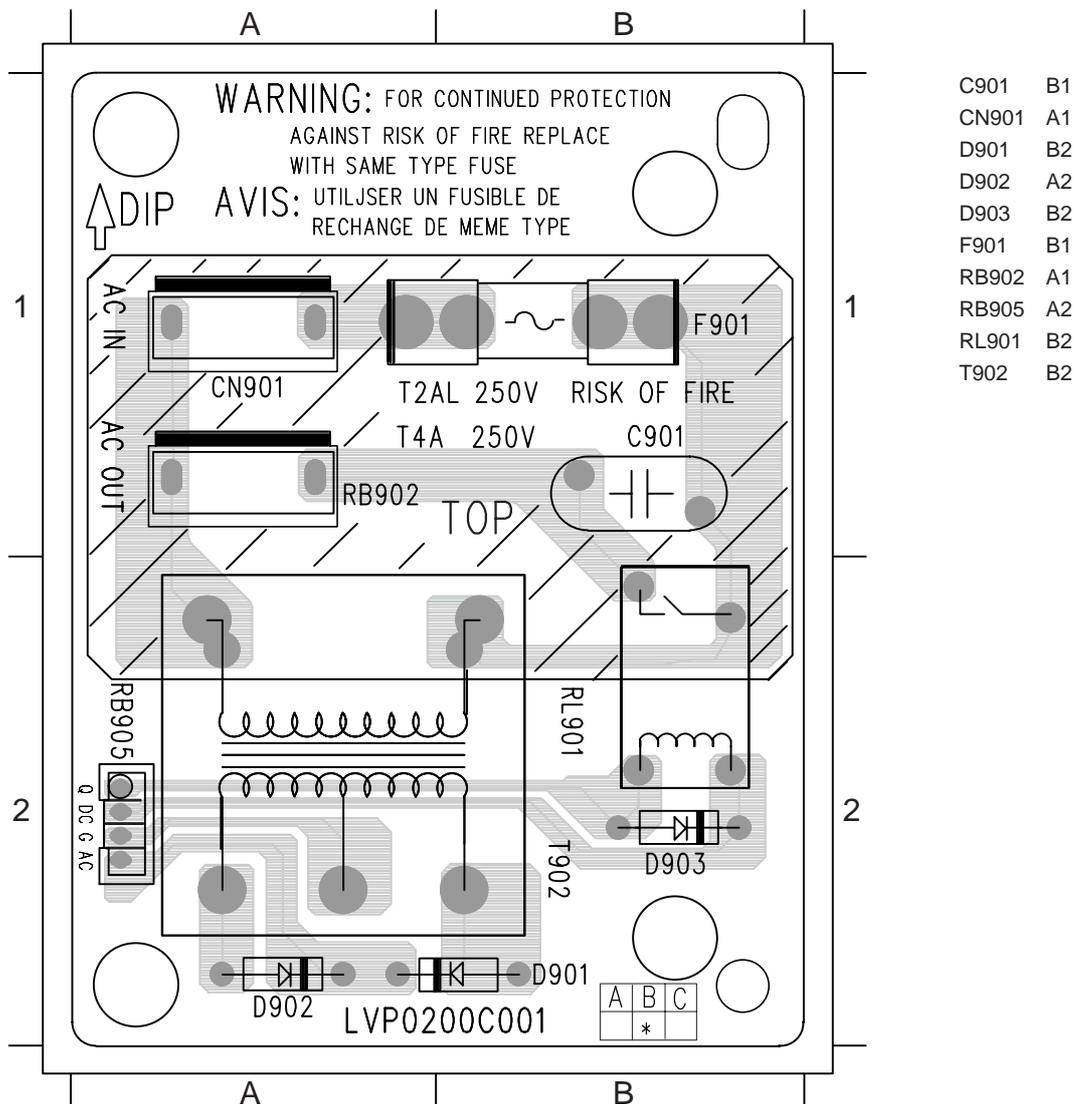
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# POWER SCHEMATIC DIAGRAM



# POWER PCB LAYOUT VIEW



**ELECTRICAL PARTS LIST - POWER BOARD**

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**MISCELLANEOUS**

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CN901	9965 000 15936	CONNECTOR 4 PIN P=3.96mm
F901	4822 070 32002 Δ	FUSE 2A 250V SLOW BLOW 5x20mm
RB902	9965 000 15936	CONNECTOR 4 PIN P=3.96mm
RL901	9965 000 16331 Δ	RELAY GJ-SH-112DM
T902	9965 000 15975 Δ	PWR TRANS 230V 50Hz EI28 AXIAL

**CAPACITORS**

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C901	9965 000 15941 Δ	COND SAFETY 0.01uF 250V 20%
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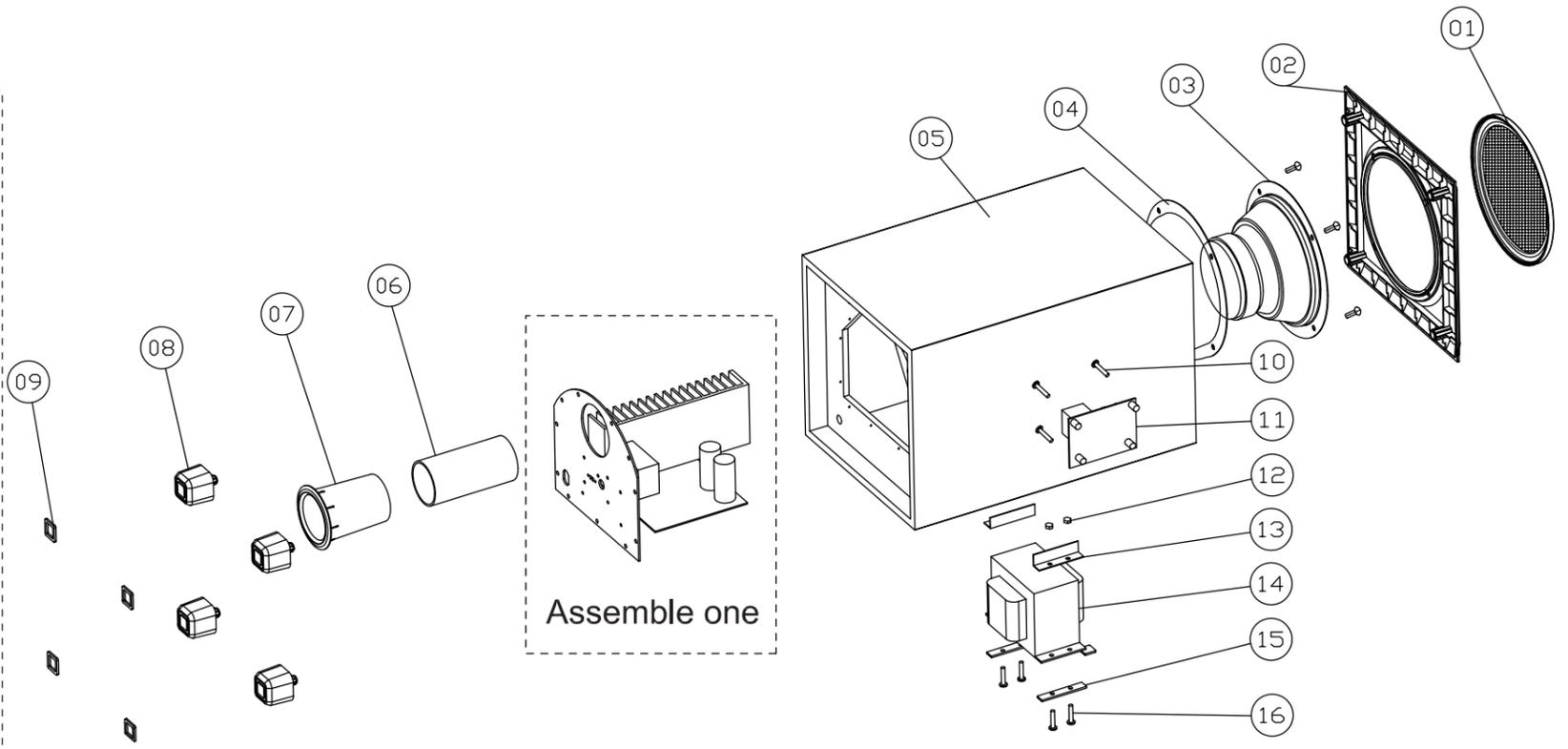
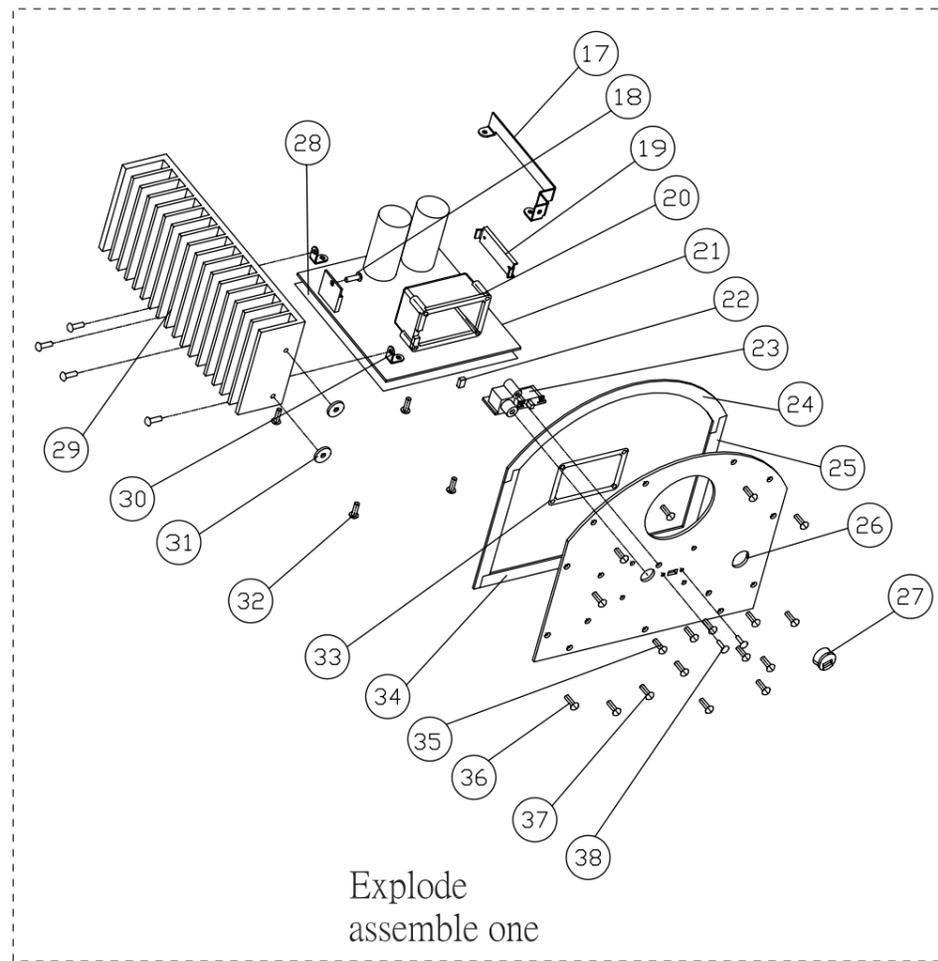
**DIODES**

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D901	4822 130 31438	1N4001G
D902	4822 130 31438	1N4001G
D903	4822 130 31438	1N4001G

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

# Exploded Drawing



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

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1	9965 000 21080	CLOTH FRAME ASSEMBLY
2	9965 000 21081	FRONT PANEL
3	9965 000 21082	SPEAKER DRIVER
4	4822 532 13065	SPEAKER SPONGE
6	9965 000 21084	PAPER TUBE
7	9965 000 21085	PLASTIC PORT
8	9965 000 21086	PLASTIC FOOT
9	9965 000 21087	RUBBER FOOT WASHER
14	9965 000 21088	△ POWER TRANSFORMER 230V/50Hz 100W EI-76
20	9965 000 21089	REAR COVER
27	9965 000 07092	BUSHING
	9965 000 21090	RCA CABLE 3m BLACK
	9965 000 21091	△ LINE CORD 2P 1980mm BLK VDE

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

**SCREW LISTS - MAIN UNIT**

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10	D3 x 22
16	M4 x 25
18	D3 x 10
32	M3 x 8
35	D3 x 12
36	D3.5 x 14
37	M3 x 8
38	M2 x 6