

Service
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HTS3378/98/93



Service Manual



TABLE OF CONTENTS

	Chapter
Location of PCB Boards	1-2
Versions Variation	1-2
Specifications	1-3
Measurement Setup	1-4
Service Aids	1-5
ESD & Safety Instruction	1-6
Lead-free soldering Information	1-7
Setting procedure & Repair Instructions.....	2
Disassembly Instructions & Service positions	3
Block & Wiring Diagram	4
DISP+LED+VOL Board.....	5
MAIN+Y.U.V Board	6
Power Board	7
MP3 IN+MIC Board.....	8
Mechanical Exploded View & Part List	9
Revision List	10

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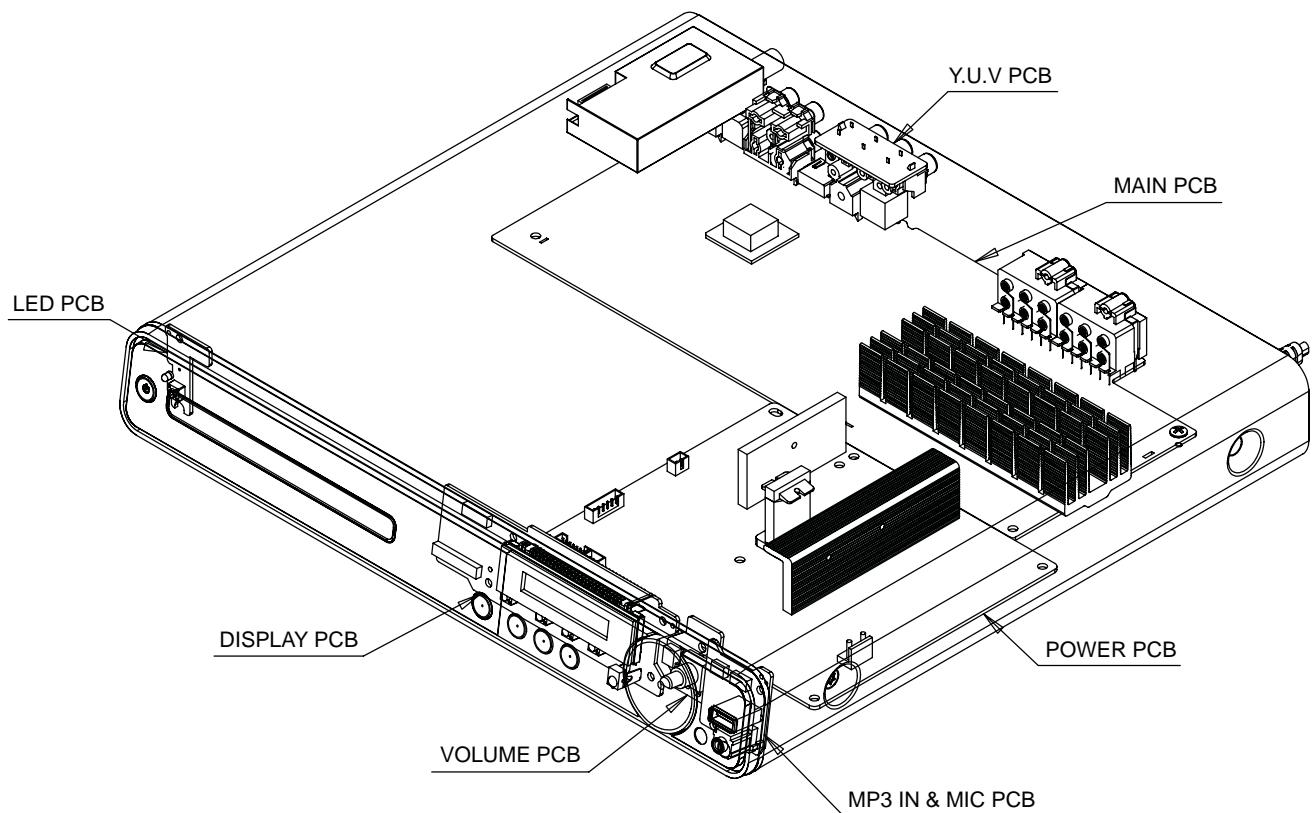
(GB) 3141 785 33482

Version 1.2



PHILIPS

LOCATION OF PCB BOARDS



VERSION VARIATION:

Type/Versions	HTS3371	HTS3378
Features	/98	/93/98
Output Power - 1000W	X	X
Voltage (110~127V)		
Voltage (220~240V)	X	X

SERVICE SCENARIO MATRIX:

Type/Versions	HTS3371	HTS3378
Board in used	/98	/93/98
MAIN+Y.U.V Board	C/M	C/M
Power Board	C/M	C/M
DISP+LED+VOL Board	C/M	C/M
MP3 IN&MIC Board	C	C

*C = Component Level Repair M = Module Level Repair

SPECIFICATIONS

Playback media

DVD-Video, DVD+R/+RW, DVD-R/-RW, DVD+R DL, CD-R/CD-RW, AudioCD, Video CD/SVCD, Picture CD, MP3-CD, WMA-CD, DivX-CD, USB flash drive

Amplifier

Total output power.....	
Home theatre mode.....	1000 W RMS (6 X 167)
Frequency response.....	40 Hz ~ 20 kHz
Signal-to-noise ratio.....	> 60 dB (A-weighted)
Input sensitivity	
.....AUX1: 400 mV	
.....AUX2: 400 mV	
MP3 LINK.....	250 mV

Disc

Laser Type.....	Semiconductor
Disc diameter.....	12cm / 8cm
Video decoding.....	MPEG1/ MPEG2 / DivX / DivX Ultra
Video DAC.....	12 bits, 108 MHz
Signal system	PAL / NTSC
Video S/N	56 dB
Audio DAC.....	24 bits / 96 kHz
Frequency response.....	
.....4 Hz - 20 kHz (44.1 kHz)	
.....4 Hz - 22 kHz (48 kHz)	
.....4 Hz - 44 kHz (96 kHz)	
PCM.....	IEC 60958
Dolby Digital	IEC 60958, IEC 61937
DTS	IEC 60958, IEC 61937

Radio

Tuning range	FM 87.5-108 MHz (50/100 kHz)
26 dB quieting sensitivity	FM 22 dBf
IF rejection ratio.....	FM 60 dB
Signal-to-noise ratio.....	FM 50 dB
Harmonic distortion.....	FM 3%
Frequency response.....	FM 180 Hz~10 kHz / ±6dB
Stereo separation	FM 26 dB (1 kHz)
Stereo Threshold.....	FM 29 dB

USB

Compatibility	Hi-Speed USB (2.0)
Class support.....	
.....UMS (USB Mass Storage Class)	
File system	FAT12, FAT16, FAT32

Main Unit

Power supply	110-127V/220-240V;
.....	~50-60Hz switchable
Power consumption	180 W
Standby power consumption	< 1 W
Dimensions (WxHxD)	360 x 57 x 331 (mm)
Weight	3.01 kg

Speakers

System.....	full range satellite
Speaker impedance.....	4 ohm (centre), 4 ohm (front/rear)
Speaker drivers	
Centre/front/rear	3" full range
Frequency response.....	150 Hz ~ 20 kHz
Dimensions (WxHxD)	
Centre.....	244 x 103 x 74 (mm)
Front/rear.....	103 x 203 x 71 (mm)
Weight	
Centre.....	0.85 kg
Front.....	0.58 kg
Rear.....	0.55 kg

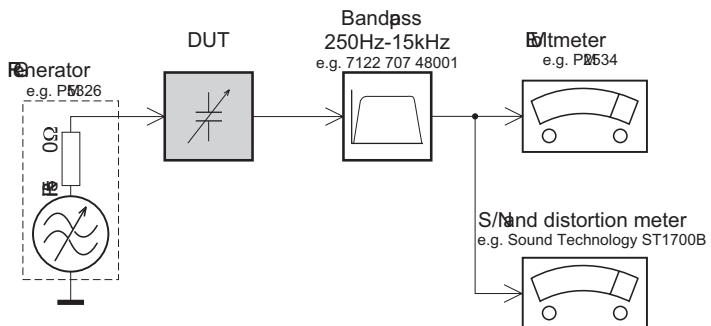
Subwoofer

Impedance.....	4 ohm
Speaker drivers	165 mm (6.5") woofer
Frequency response.....	40 Hz ~ 150 Hz
Dimensions (WxHxD)	163 x 363 x 369 (mm)
Weight	4.7 Kg
Laser specification	
Type.....	Semiconductor laser GaAlAs (CD)
Wave length.....	645 - 665 nm (DVD), 770 - 800 nm (CD)
Output power.....	6 mW (DVD), 7 mW (VCD/CD)
Beam divergence.....	60 degrees.

Specifications subject to change without prior notice.

MEASUREMENT SETUP

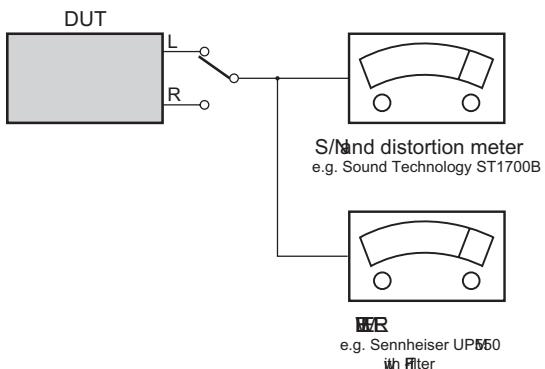
Tuner FM



Use a bandpass filter to eliminate hum (50Hz, 100Hz) and disturbance from the pottonne (19kHz, 38kHz)

CD

Use Audio Signal Disc SBC429 4822 397 30184
(replaces test disc 3)



SERVICE AIDS

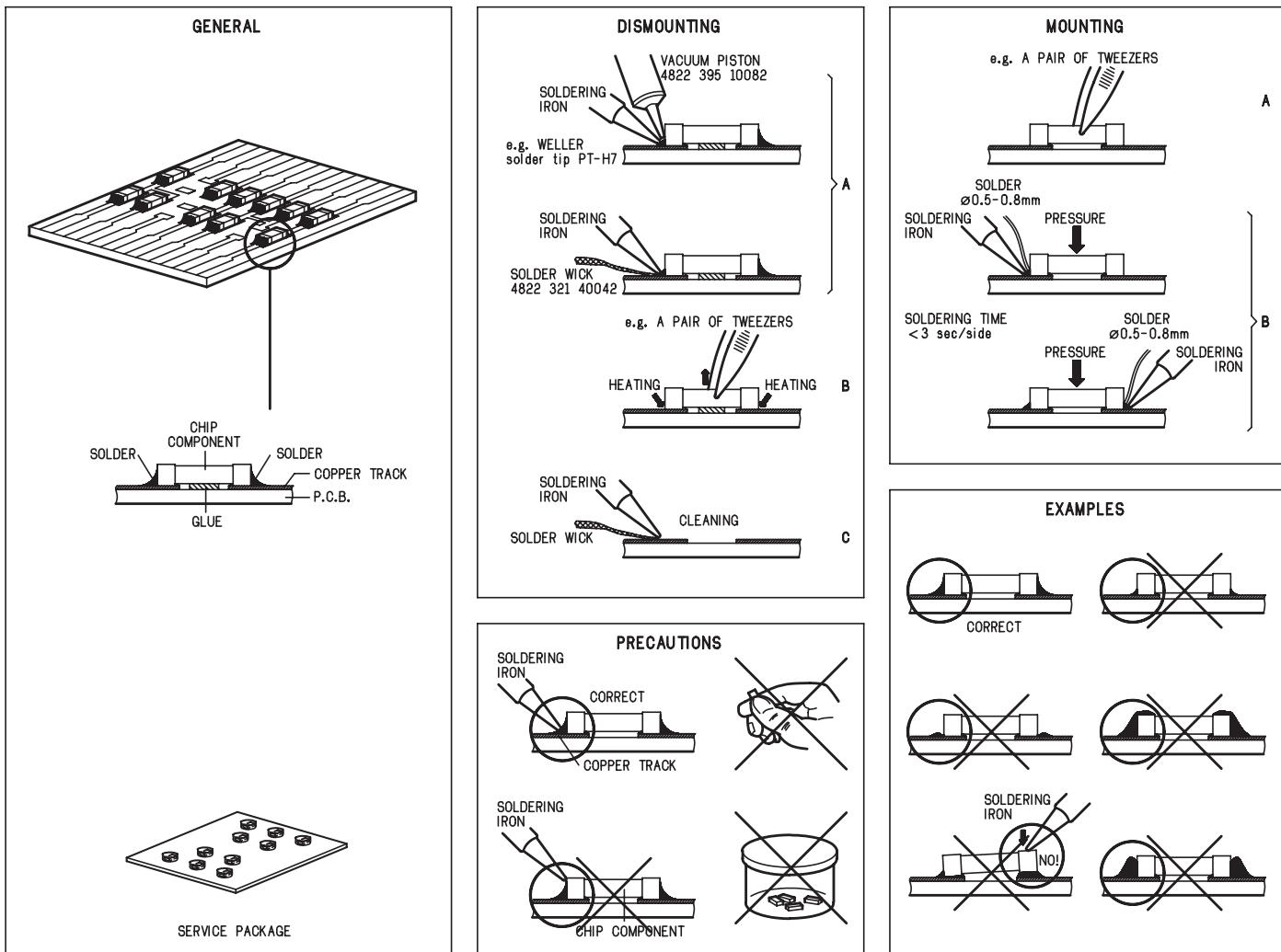
Service Tools:

Universal Torx driver holder	4822 395 91019
Torx bit T10 150mm	4822 395 50456
Torx driver set T6-T20	4822 395 50145
Torx driver T10 extended	4822 395 50423

Compact Disc:

SBC426/426A Test disc 5 + 5A	4822 397 30096
SBC442 Audio Burn-in test disc 1kHz	4822 397 30155
SBC429 Audio Signals disc	4822 397 30184
Dolby Pro-logic Test Disc	4822 395 10216

HANDLING CHIP COMPONENTS





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.



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 ditzelfde potentiaal.



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.



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.



AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD). La loro longevità potrebbe essere fortemente ridotta 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.



ESD PROTECTION EQUIPMENT

Complete Kit ESD3 (small tablemat, wristband, connection box, test cable and earth cable 4822 310 10671
Wristband tester 4822 344 13999



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

Safety components are marked by the symbol \triangle .



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

De Veiligheidsonderdelen zijn aangeduid met het symbool \triangle .



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

Less composants de sécurité sont marqués \triangle .



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

Sicherheitsbauteile sind durch das Symbol \triangle markiert.



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.

Componenti di sicurezza sono marcati con \triangle .



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.

GB Warning !

Invisible laser radiation when open.
Avoid direct exposure to beam.

S Varning !

Osynlig laserstrålning när apparaten är öppnad och spärren är urkopplad. Betrakta ej strålen.

SF Varoitus !

Avatussa laitteessa ja suojalukituksen ohi tullaessa olet alittiina näkymättömälle laserisäteilylle. Älä katso säteeseen!

DK Advarse !

Usynlig laserstrålning ved åbning når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.



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

Pb(Lead) Free Solder

When soldering , be sure to use the pb free solder.

IDENTIFICATION:

Regardless of special logo (not always indicated) 

one must treat all sets from **1 Jan 2005** onwards, according next rules:

Important note: In fact also products of year 2004 must be treated in this way as long as you avoid mixing solder-alloys (leaded/ lead-free). So best to always use SAC305 and the higher temperatures belong to this.

Due to lead-free technology some rules have to be respected by the workshop during a repair:

- Use only lead-free solder alloy Philips SAC305 with order code 0622 149 00106. If lead-free solder-paste is required, please contact the manufacturer of your solder-equipment. In general use of solder-paste within workshops should be avoided because paste is not easy to store and to handle.
- Use only adequate solder tools applicable for lead-free solder alloy. The solder tool must be able
 - To reach at least a solder-temperature of 400°C,
 - To stabilize the adjusted temperature at the solder-tip
 - To exchange solder-tips for different applications.
- Adjust your solder tool so that a temperature around 360°C – 380°C is reached and stabilized at the solder joint. Heating-time of the solder-joint should not exceed ~ 4 sec. Avoid temperatures above 400°C otherwise wear-out of tips will rise drastically and flux-fluid will be destroyed. To avoid wear-out of tips switch off unused equipment, or reduce heat.
- Mix of lead-free solder alloy / parts with leaded solder alloy / parts is possible but PHILIPS recommends strongly to avoid mixed solder alloy types (leaded and lead-free).

If one cannot avoid or does not know whether product is lead-free, clean carefully the solder-joint from old solder alloy and re-solder with new solder alloy (SAC305).

- Use only original spare-parts listed in the Service-Manuals. Not listed standard-material (commodities) has to be purchased at external companies.
- Special information for BGA-ICs:
 - Always use the 12nc-recognizable soldering temperature profile of the specific BGA (for de-soldering always use the lead-free temperature profile, in case of doubt)
 - Lead free BGA-ICs will be delivered in so-called 'dry-packaging' (sealed pack including a silica gel pack) to protect the IC against moisture. After opening,

dependent of MSL-level seen on indicator-label in the bag, the BGA-IC possibly still has to be baked dry. (MSL=Moisture Sensitivity Level). This will be communicated via AYS-website.

Do not re-use BGAs at all.

- For sets produced before 1.1.2005 (except products of 2004), containing leaded solder-alloy and components, all needed spare-parts will be available till the end of the service-period. For repair of such sets nothing changes.
- On our website www.atyourservice.ce.Philips.com you find more information to:
 - BGA-de-/soldering (+ baking instructions)
 - Heating-profiles of BGAs and other ICs used in Philips-sets

You will find this and more technical information within the "magazine", chapter "workshop news".

For additional questions please contact your local repair-helpdesk.

System , Region Code , etc. Setting Procedure

1) System Reset

- a) Press “SETUP“ button on R/C, TV will show setup menu
- b) Select the menu using the ▼ and ► on R/C
- c) Go preference page to do system reset

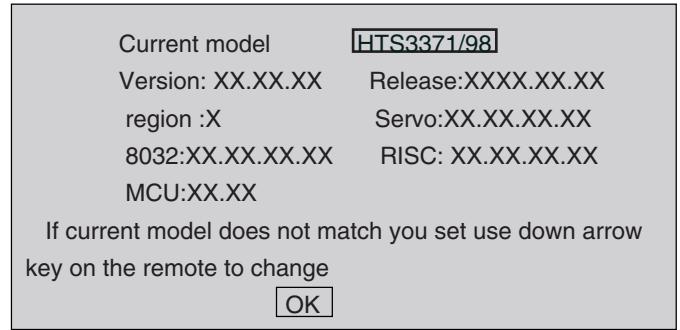
2) Region Code Change

- a) In open mode, press “9” “9” “9” “9” on R/C, then input desired number to change region code :

1	USA
2	EU
3	AP
4	Australia ,NZ , Latam
5	Russia , INDIA
6	CHINA

3) Version Control Change

- a) In open mode, press “1” “5” “9” on R/C
- b) Press “ok” button to confirm
- c) TV will show message as below:



4) Password Change

- a) Press “SETUP“ button on R/C, TV will show setup menu
- b) Select the menu using the ▼ and ► on R/C
- c) Go preference page select “password“ to change
 * 000000 is default password supplied.

5) Check on the Software Version

- a) Open the CD Door
- b) Press “INFO“ button on R/C
- c) TV will show the version on screen

6) Trade model

- a) Press “Open/Close“ button on R/C
- b) Press “2” “5” “9” on R/C, VFD will display “TRA ON“ or “TRA OFF“

7) Upgrading new software

- a) Copy “software files” into a CD-R
- b) Open the CD Door, then insert the CD-R program disc
- c) Close the CD Door
- d) VFD will show:

“Loading“

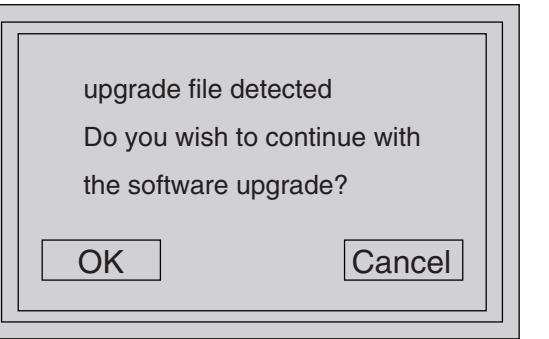
“Erase“ -- erase the flash memory

“Writing“ about 1 minute

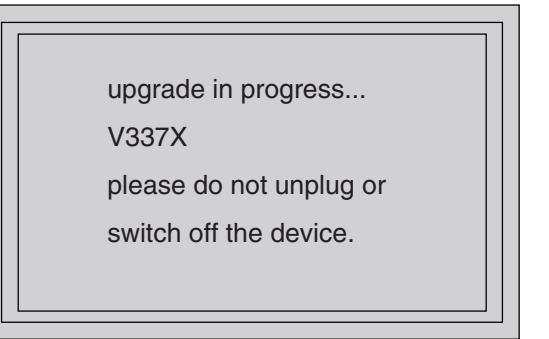
“done“

* the system will switch off and on again automatically.

e) OSD will show:



f) Select “OK”, OSD will show:

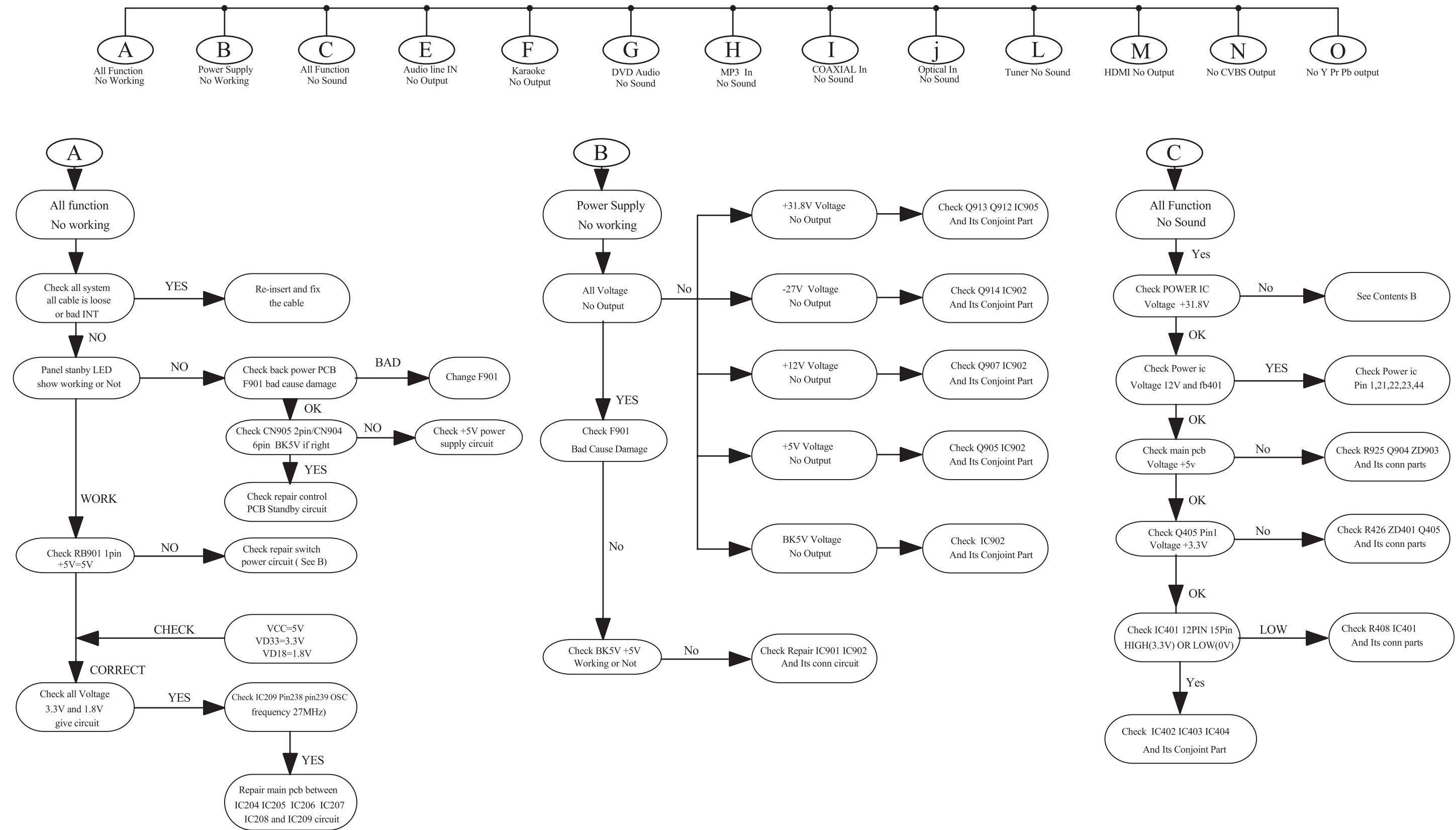


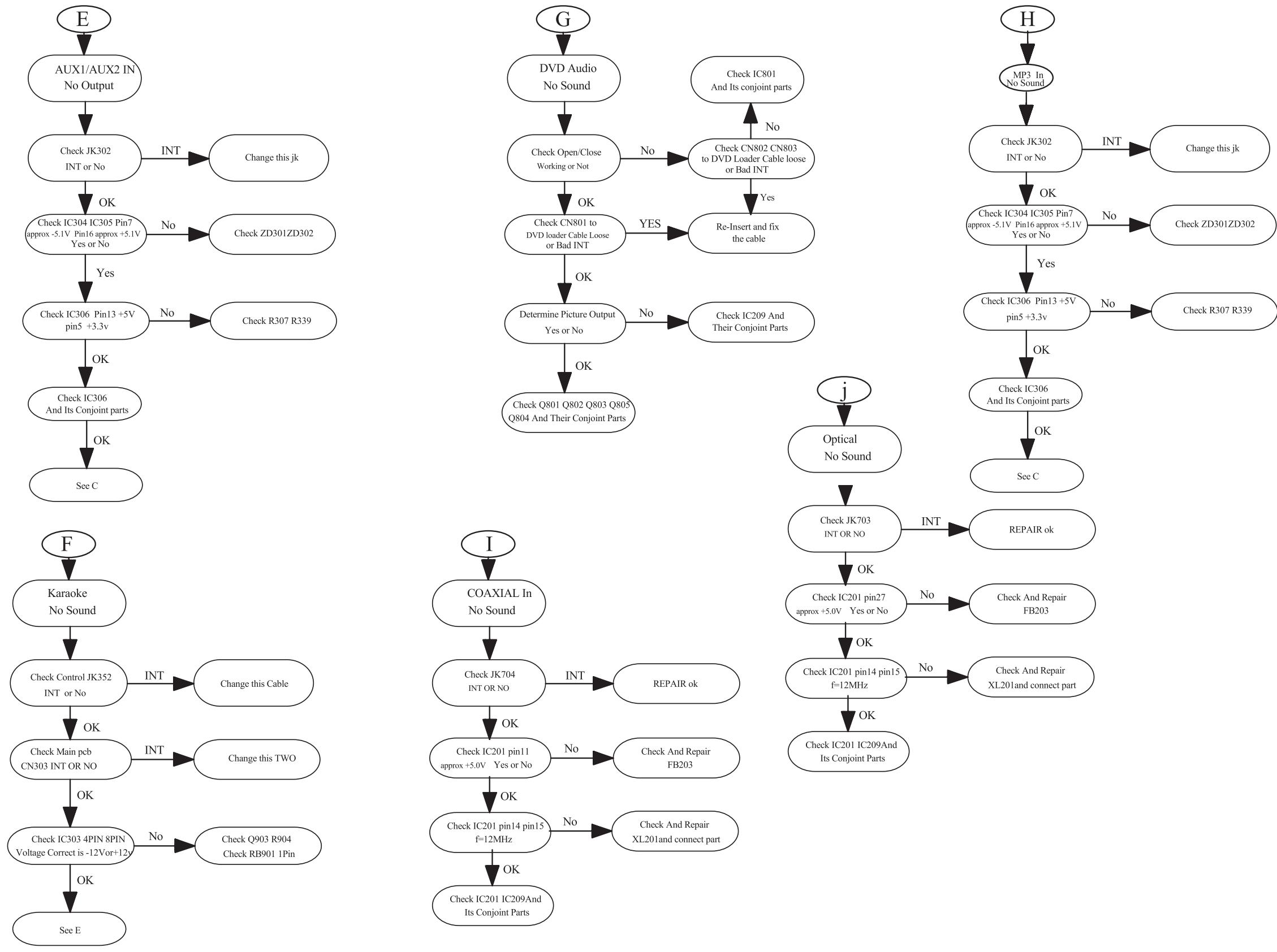
CAUTION!

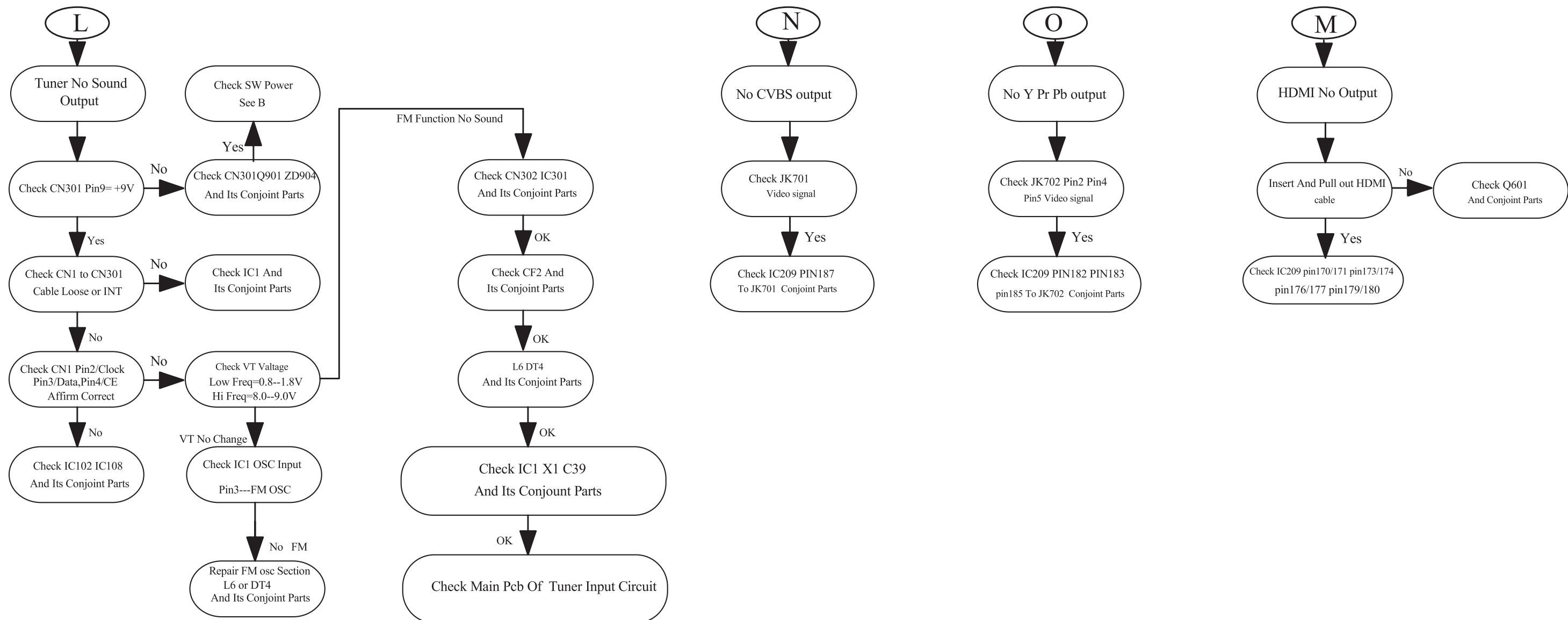
This information is confidential and may not be distributed. Only a qualified service person should reprogram the Region Code.

REPAIR INSTRUCTIONS (ONE)

MAIN UNIT REPAIR CHART 1/3



REPAIR INSTRUCTIONS (TWO)**MAIN UNIT REPAIR CHART 2/3**

REPAIR INSTRUCTIONS (THREE)**MAIN UNIT REPAIR CHART 3/3**

DISASSEMBLY INSTRUCTIONS

Dismantling of the Front Panel Assemble

- 1) Open the DVD Tray by using the Open/Close Button while the Set is ON and disconnect the mains supply after removing the Tray Cover.
Note: If this is not possible, the DVD Tray has to be open manually.
Take a mini screw driver about 2mm diameter and make a marking 24mm from the tip as shown in figure 2 . Place the set on its side, insert the mini screw driver till the marking and slide it towards the left as shown in figure 1 until the Tray moves out of the Front Panel.
- 2) Return the set to its upright position and remove the Tray Cover as shown in Figure 3 and close the tray manually by pushing it back in.

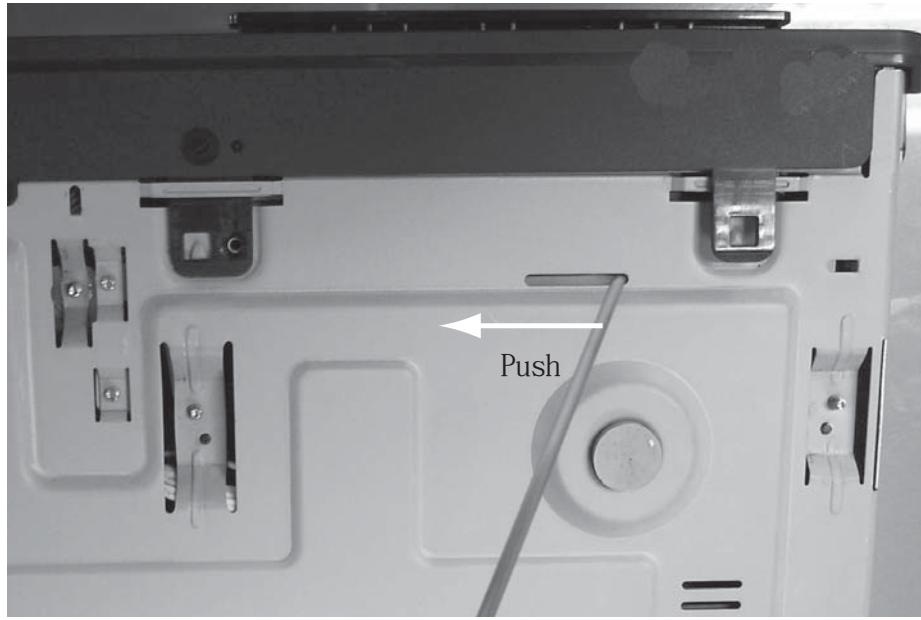


Figure 1



Figure 2

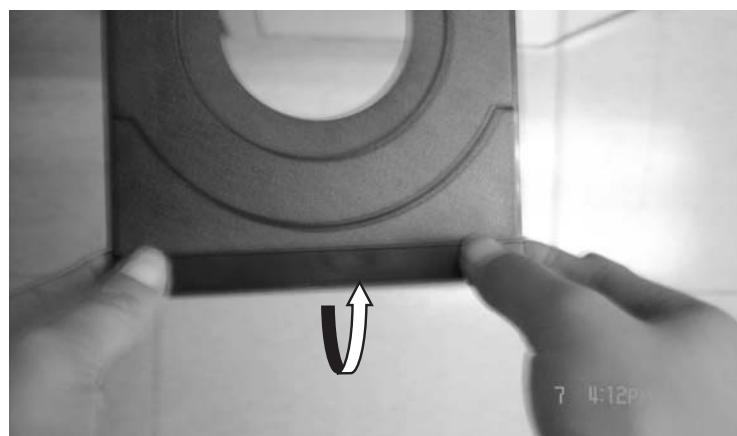


Figure 3

- 3) Loosen 6 screws and remove the Top Cover by lifting the rear portion upwards before sliding it out towards the rear.
 - 1 screw "A" each on the left & right side as shown in figure 4.
 - 4 screws "B" at the back panel as shown in figure 5.
- 4) Loosen 5 screws "C" at the front panel bracket as in figure 6 to remove the front panel.

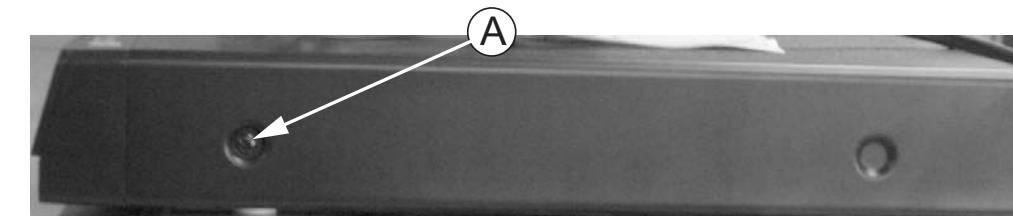


Figure 4

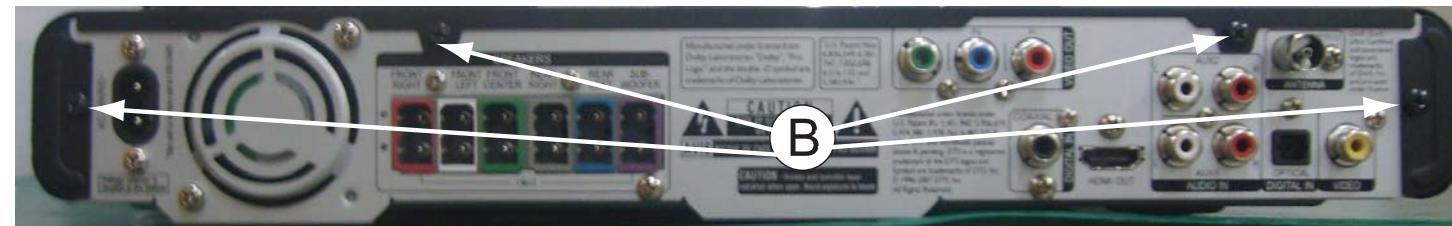


Figure 5

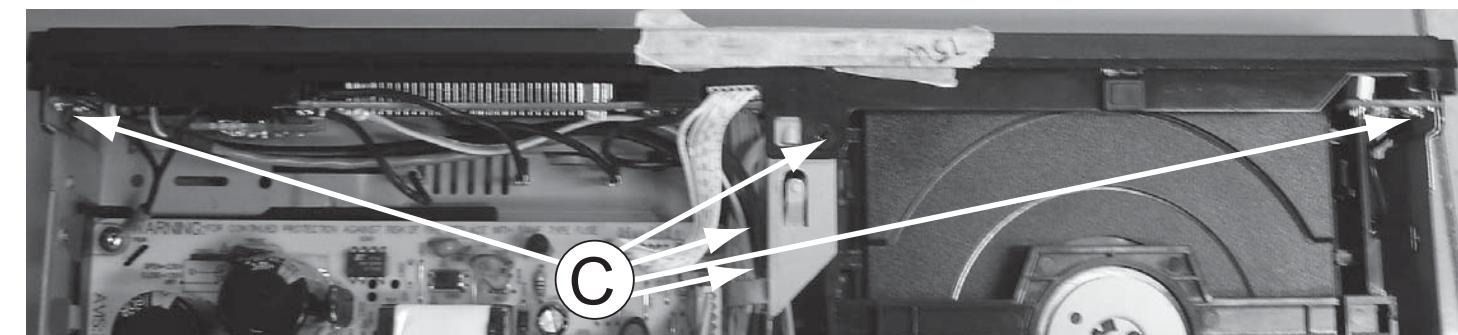


Figure 6

Dismantling of the DVD Module

- 1) Loosen 4 screws "D" at the DVD Module as shown in figure 7.

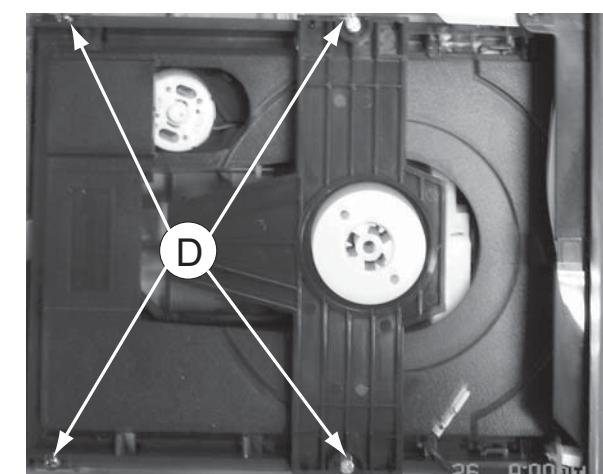


Figure 7

Dismantling of the DISP+LED+VOL&MP3 IN Board

- 1) Loosen 10 screws "E" on the top of DISP+LED+VOL&MP3 IN Board as shown in figure 8.

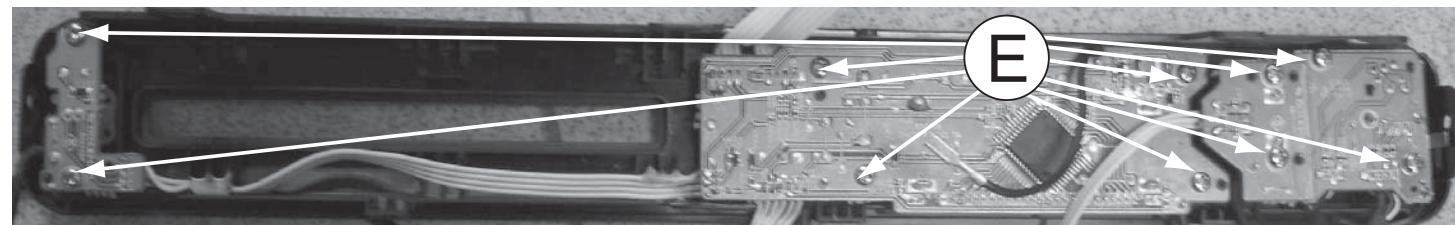


Figure 8

Dismantling of the Power Board

- 1) Loosen 4 screws "F" on the top of Power Board as shown in figure 9.
- 2) With a pincers to nip this space as shown in figure 10 and to take up the power board.

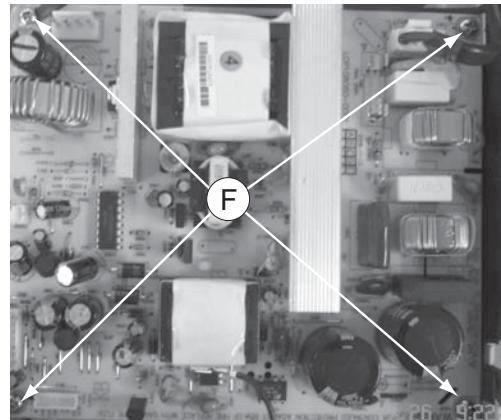


Figure 9

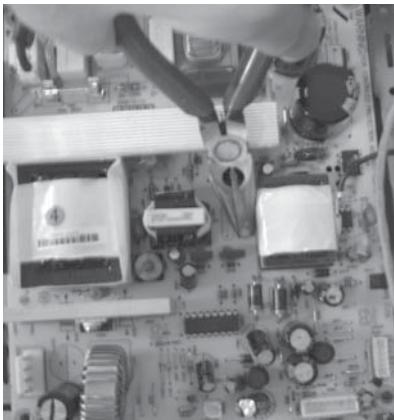


Figure 10

Dismantling of the MAIN+SCART Board

- 1) Loosen 4 screws "G" on the top of Main Board as shown in figure 11.
- 2) Loosen 11 screws at the back panel as shown in figure 12.

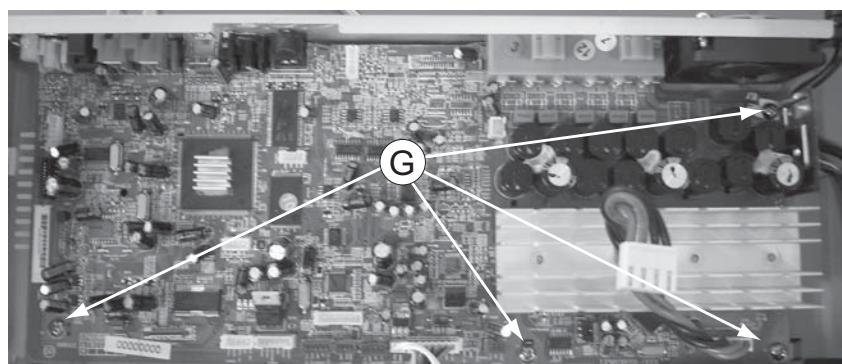


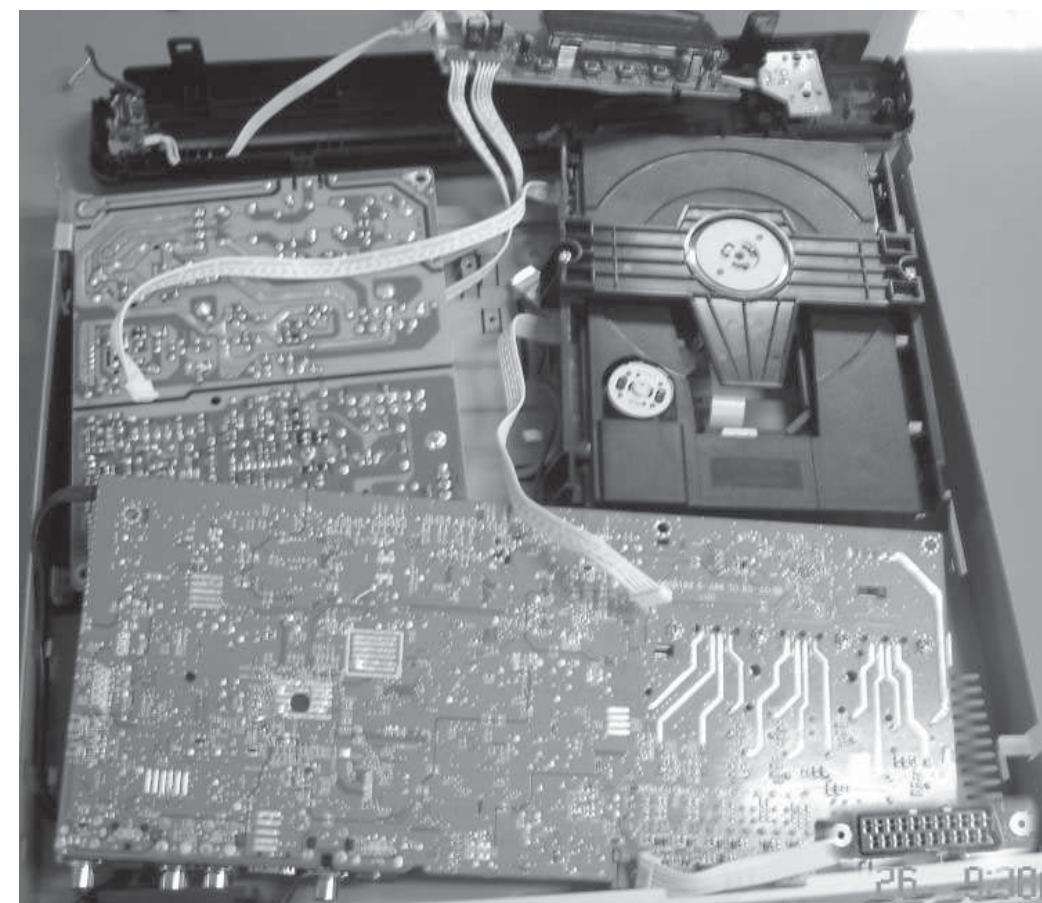
Figure 11



Figure 12

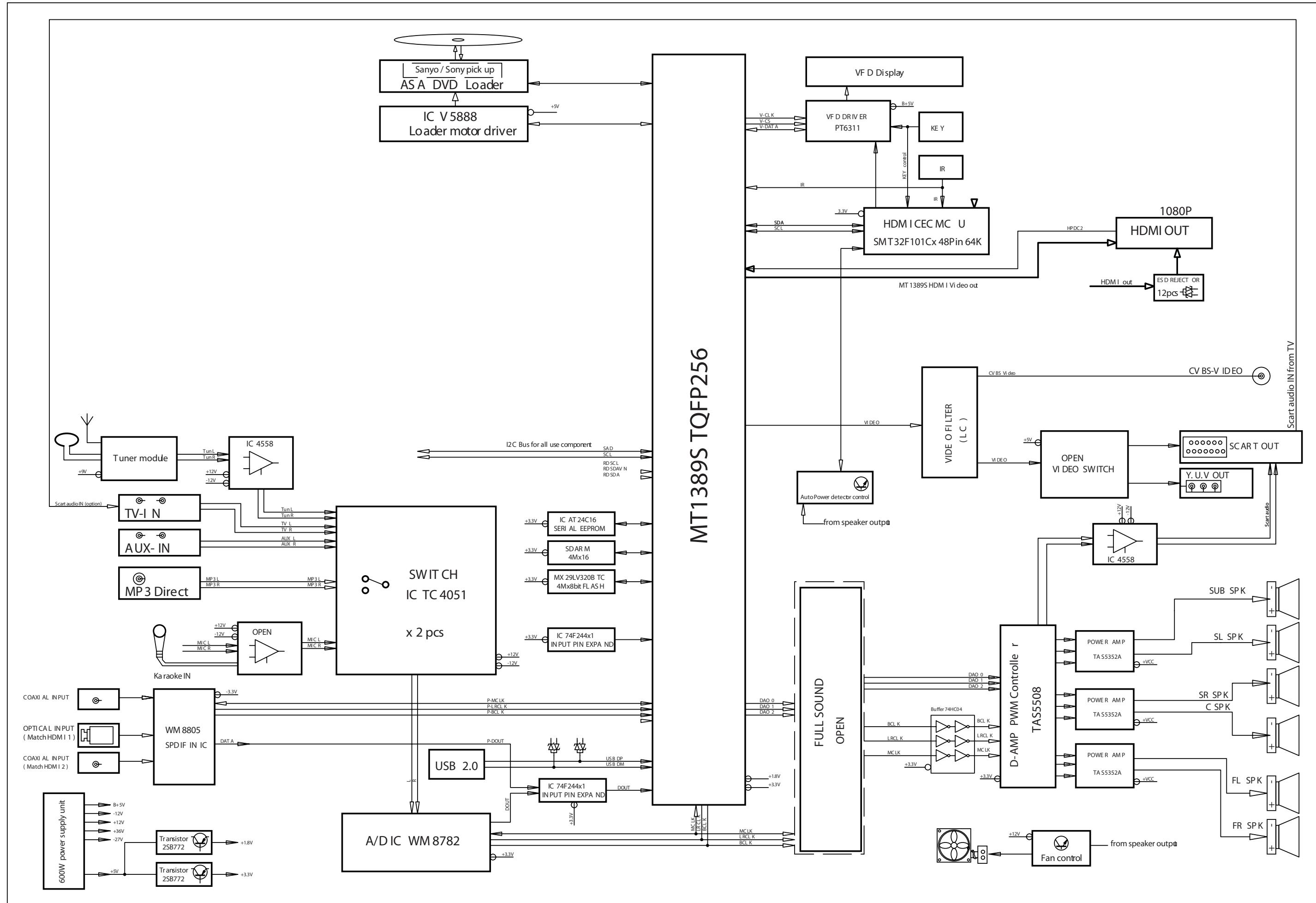
SERVICE POSITIONS

Service position A

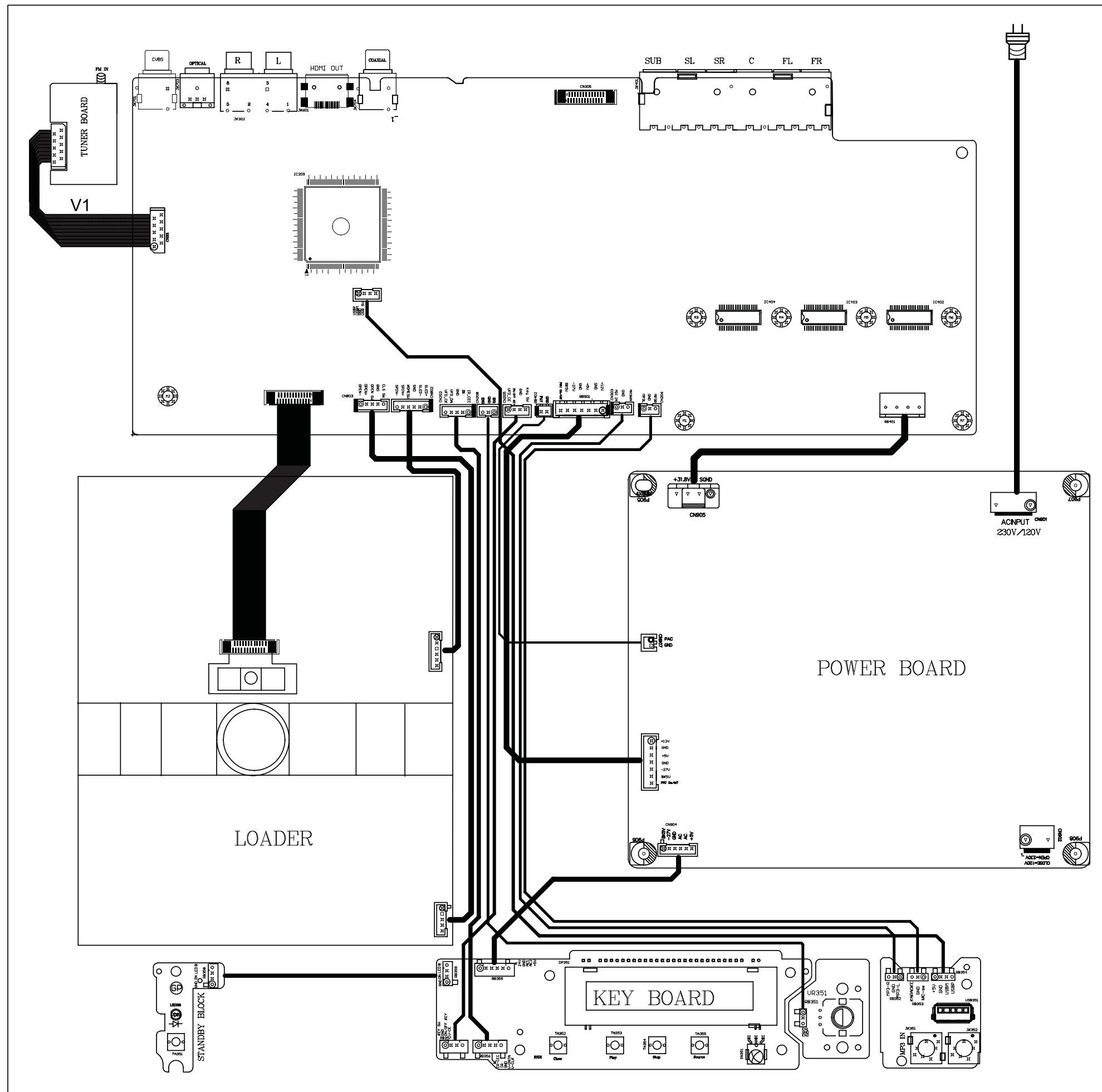


Note: In some service positions the components or copper patterns of one board may risk touching its neighbouring pc boards or metallic parts. To prevent such short-circuit use a piece of hard paper or other insulating material between them.

BLOCK DIAGRAM



WIRING DIAGRAM

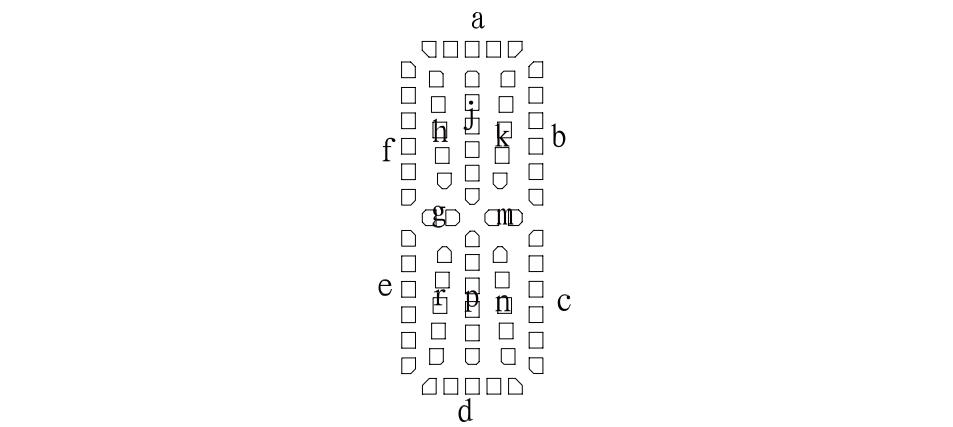
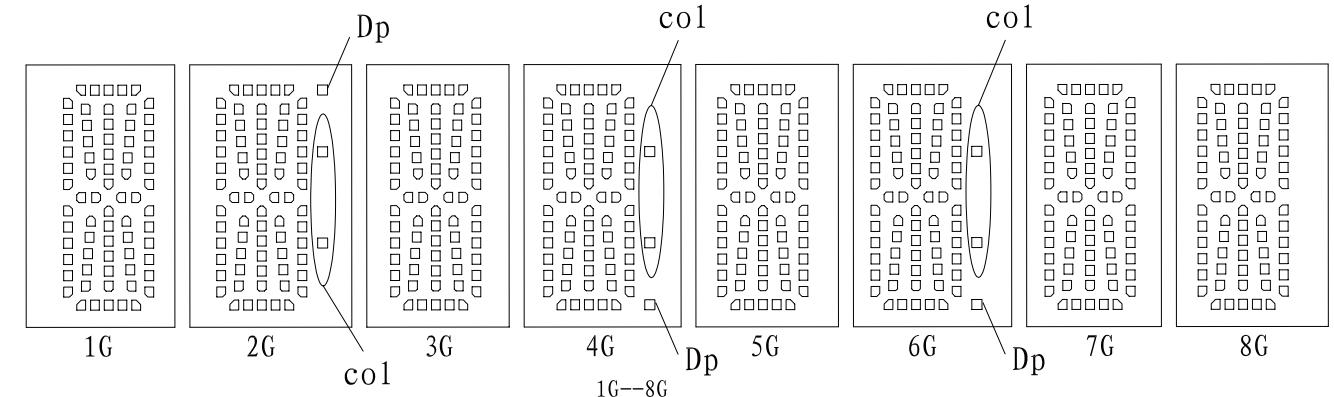


DISP+LED+VOL BOARD

TABLE OF CONTENTS

FTD Display Pin Assignment.....	5-1
Circuit Diagram	5-2
PCB Layout Top & Bottom View.....	5-3

FTD DISPLAY PIN ASSIGNMENT



	1G	2G	3G	4G	5G	6G	7G	8G
P1	a	a	a	a	a	a	a	a
P2	j, p							
P3	h	h	h	h	h	h	h	h
P4	k	k	k	k	k	k	k	k
P5	b	b	b	b	b	b	b	b
P6	f	f	f	f	f	f	f	f
P7	m	m	m	m	m	m	m	m
P8	g	g	g	g	g	g	g	g
P9	c	c	c	c	c	c	c	c
P10	e	e	e	e	e	e	e	e
P11	r	r	r	r	r	r	r	r
P12	n	n	n	n	n	n	n	n
P13	d	d	d	d	d	d	d	d
P14		col		col		col		
P15		Dp		Dp		Dp		

PIN CONNECTION

管脚序号(Pin No.)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
连接(Connection)	F1	F1	NP	NC	P15	P14	NC	P13	P12	P11	P10	P9	P8	P7	P6	P5
管脚序号(Pin No.)	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
连接(Connection)	P4	P3	P2	P1	NC	1G	2G	3G	4G	5G	6G	7G	8G	NP	F2	F2

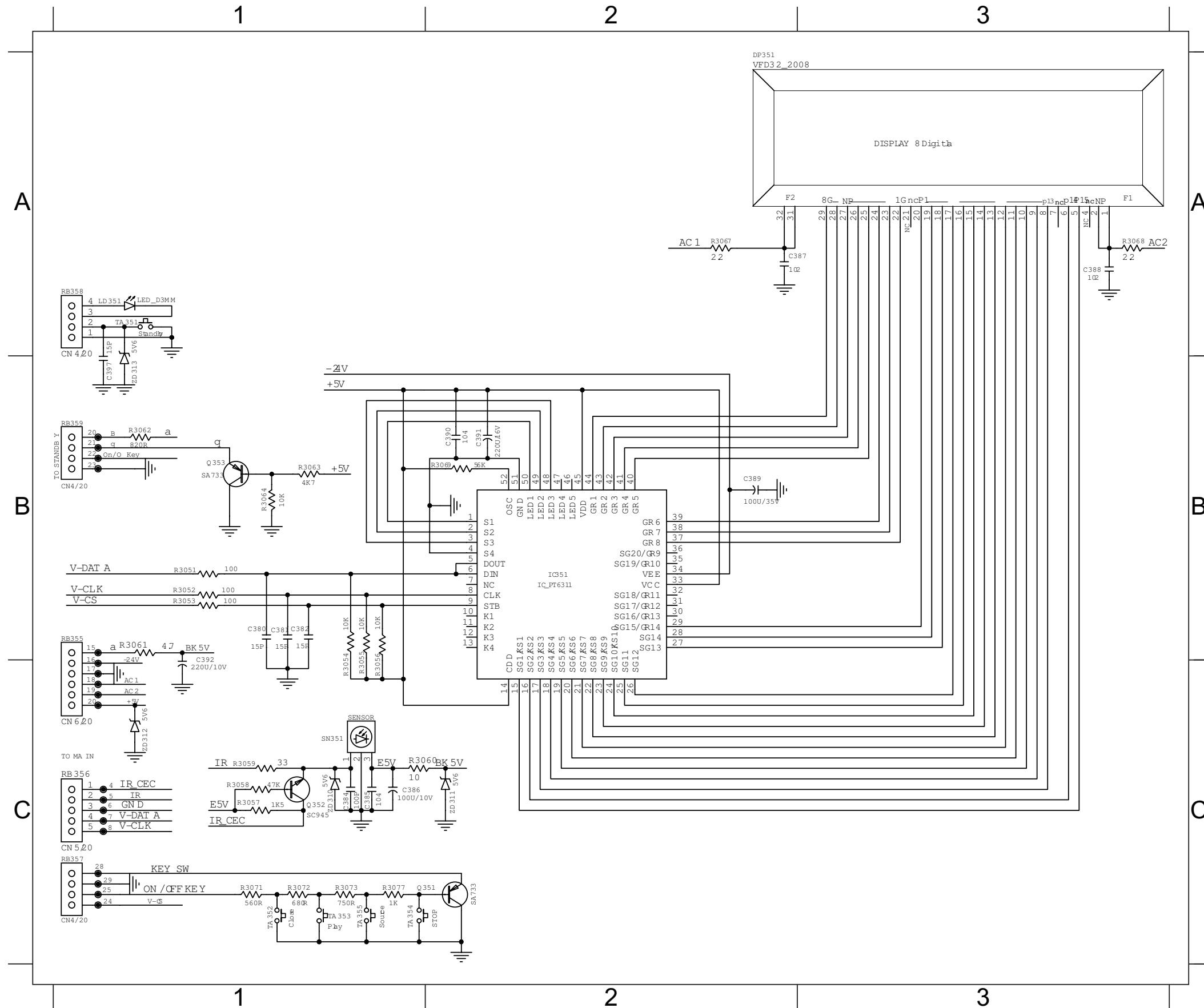
注(Notes) : Fn : 灯丝(Filament Pin) nG : 棚极(Grid Pin)

Pn : 阳极(Anode Pin) NP : 无引出脚(No Pin)

NC : 无功能(No connection Pin)

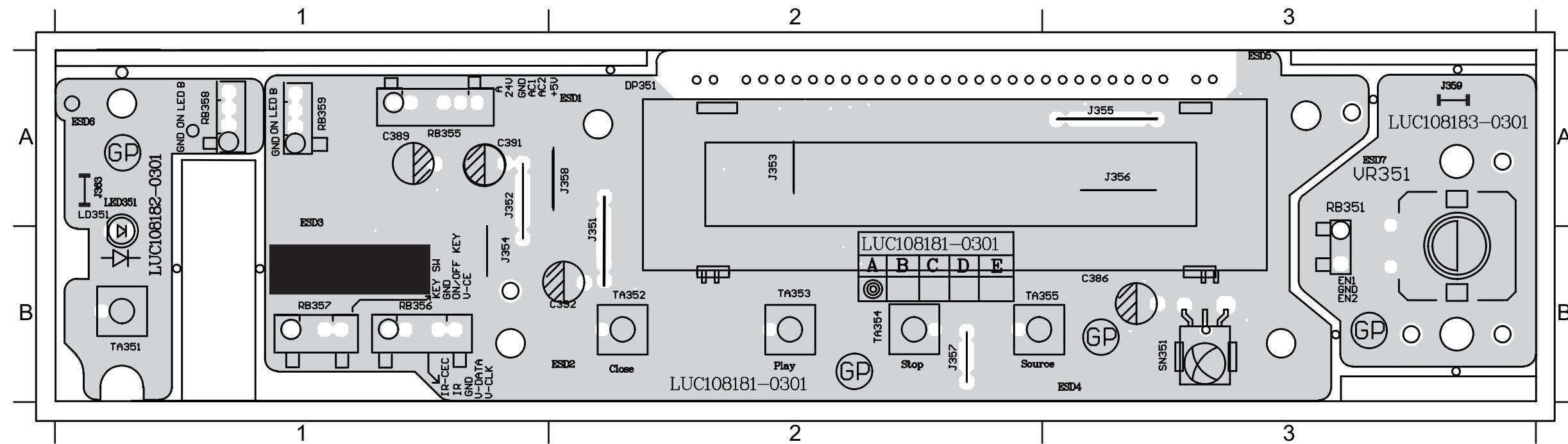
CIRCUIT DIAGRAM

C380 B1 C384 C1 C387 A2 C390 B2 C395 C4 DP351 A2 Q351 C1 R3051 B1 R3054 B1 R3057 C1 R3060 C1 R3063 B1 R3068 A3 R3072 C1 RB351 C4 RB357 C1 TA351 A1 TA354 C1 ZD310 C1 ZD313 B1
 C381 B1 C385 C1 C388 A3 C391 B2 C396 C4 IC351 B2 Q352 C1 R3052 B1 R3055 B1 R3058 C1 R3061 B1 R3064 B1 R3069 B2 R3073 C1 RB355 B1 RB359 B1 TA352 C1 TA355 C1 ZD311 C2
 C382 B1 C386 C1 C389 B2 C392 B1 C397 B1 LD351 A1 Q353 B1 R3053 B1 R3056 B1 R3059 C1 R3062 B1 R3067 A2 R3071 C1 R3077 C1 RB356 C1 SN351 C1 TA353 C1 VR351 C4 ZD312 C1

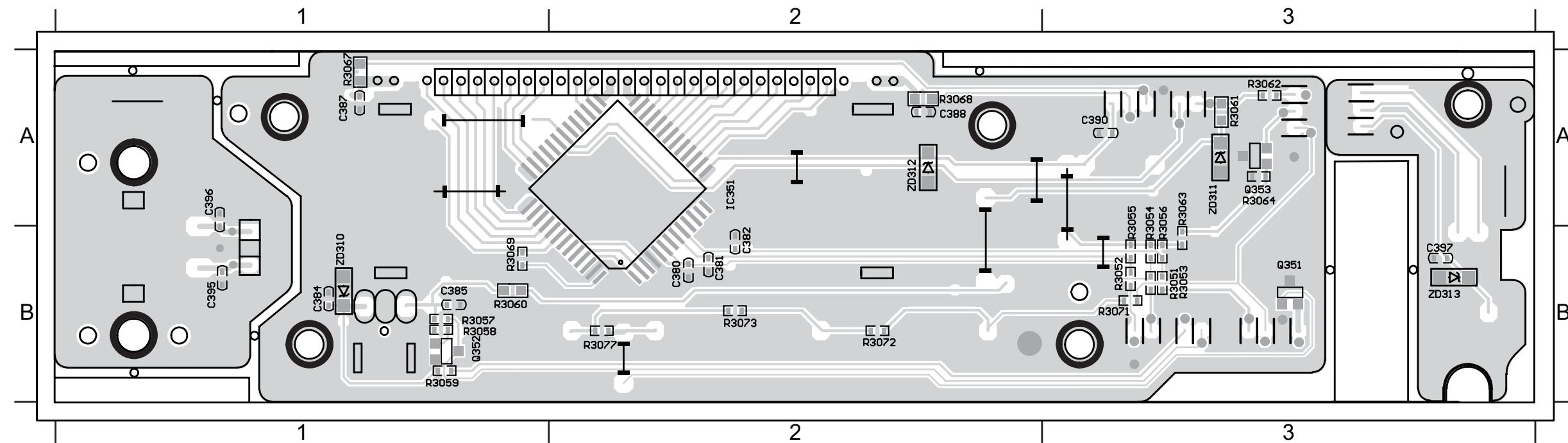


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**PCB LAYOUT - BOTTOM VIEW**

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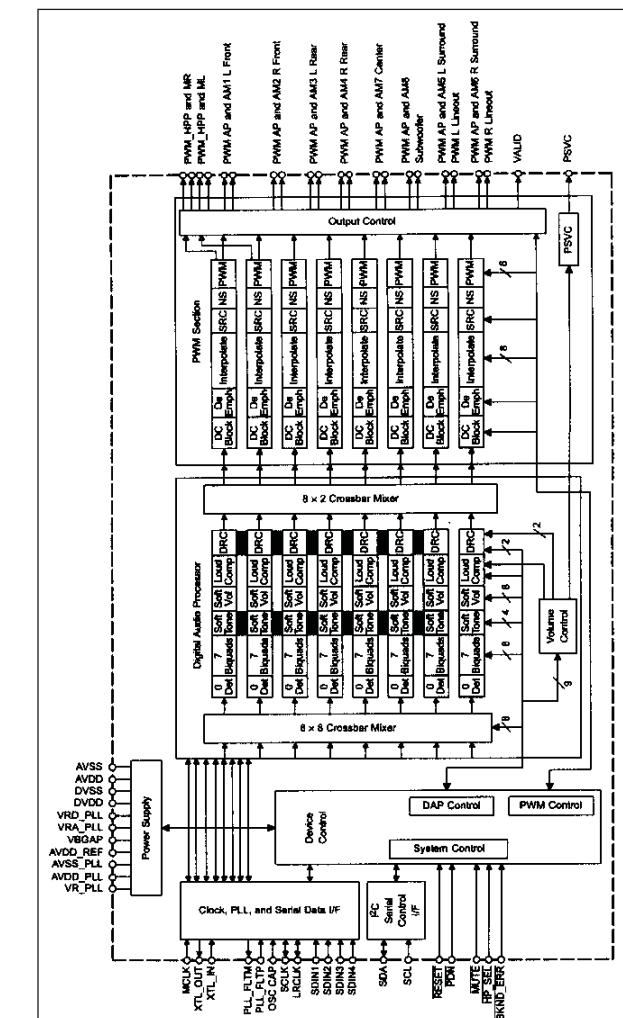


MAIN BOARD

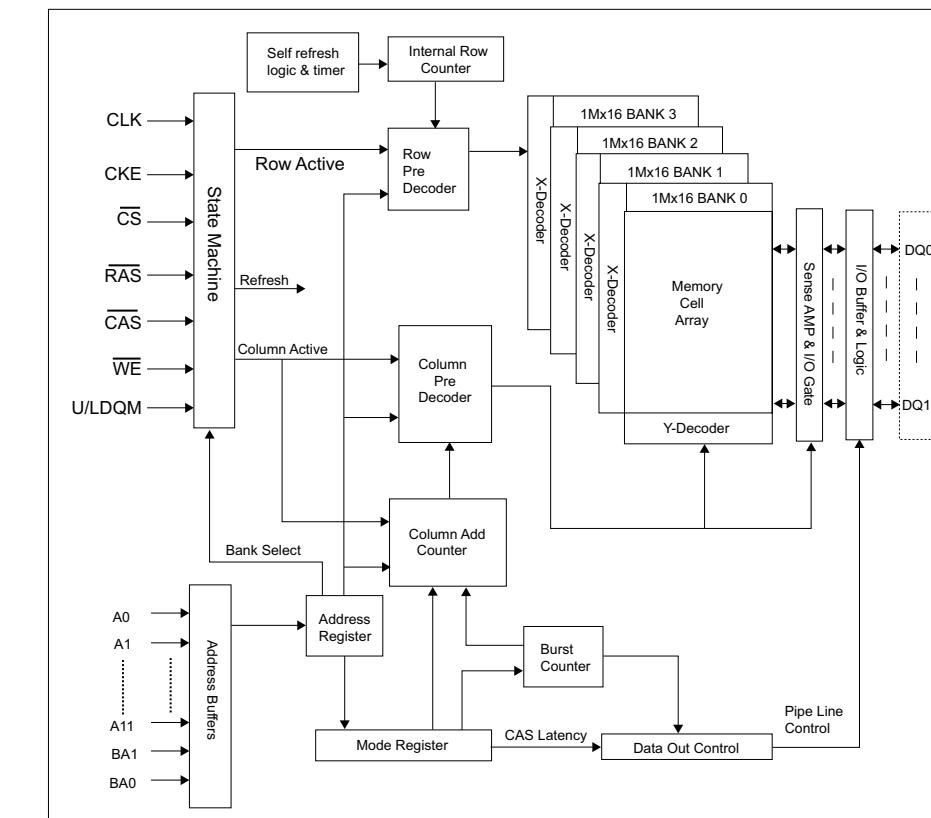
TABLE OF CONTENTS

Internal IC Diagram	6-1
Circuit Diagram(part one)	6-2
Circuit Diagram(part two).....	6-3
Circuit Diagram(part three).....	6-4
PCB Layout Top View	6-5
PCB Layout Bottom View	6-6

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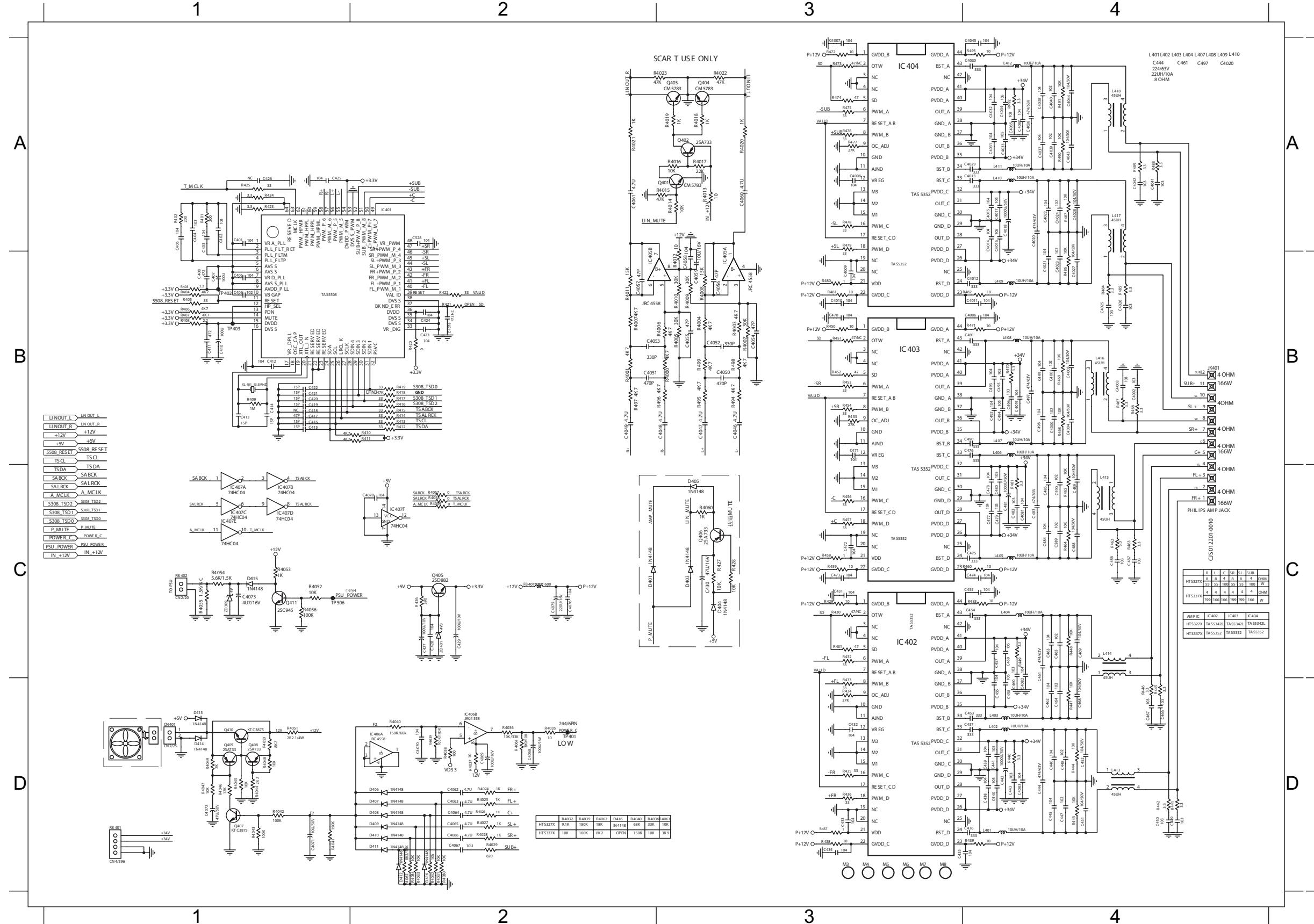


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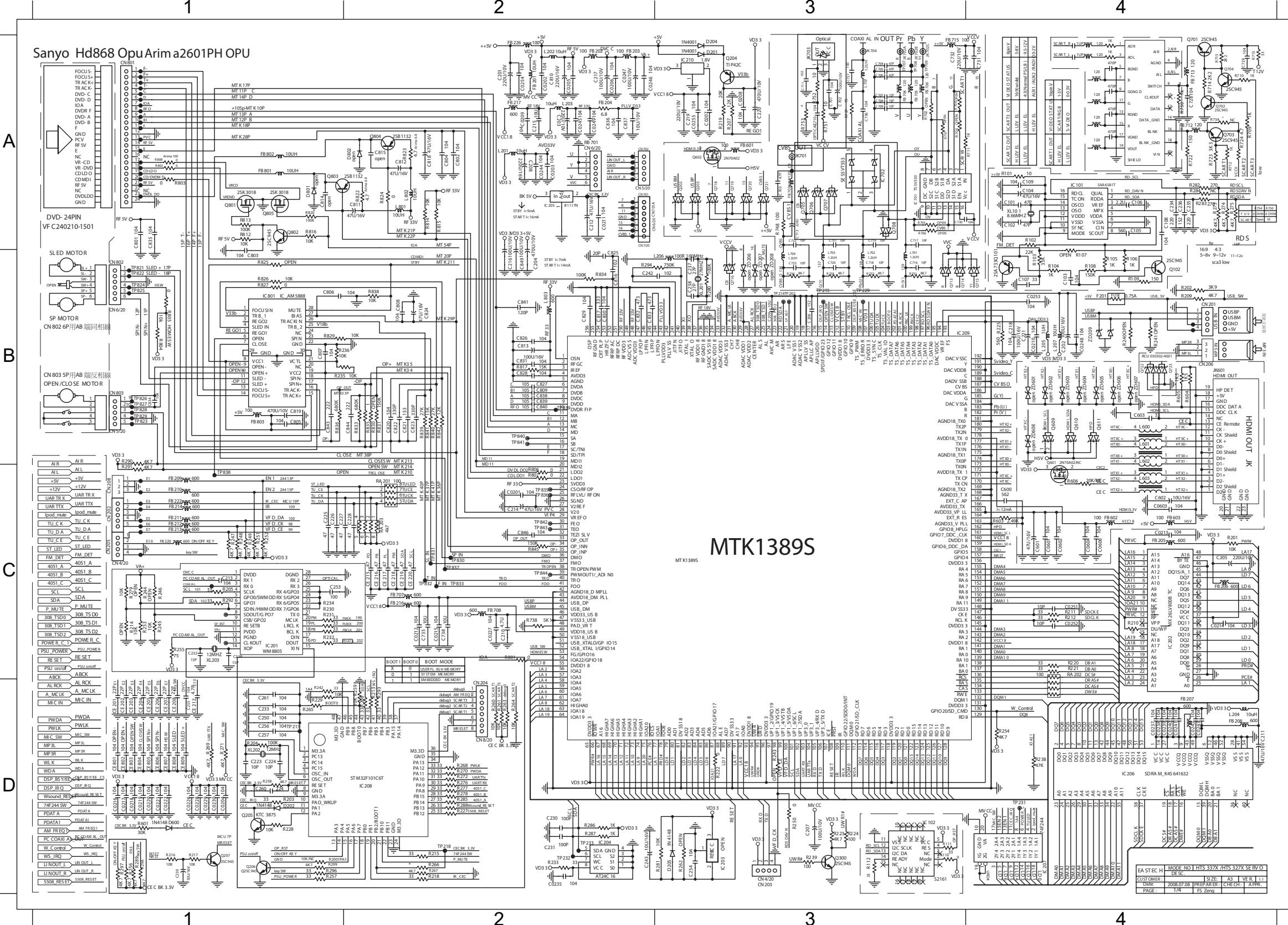
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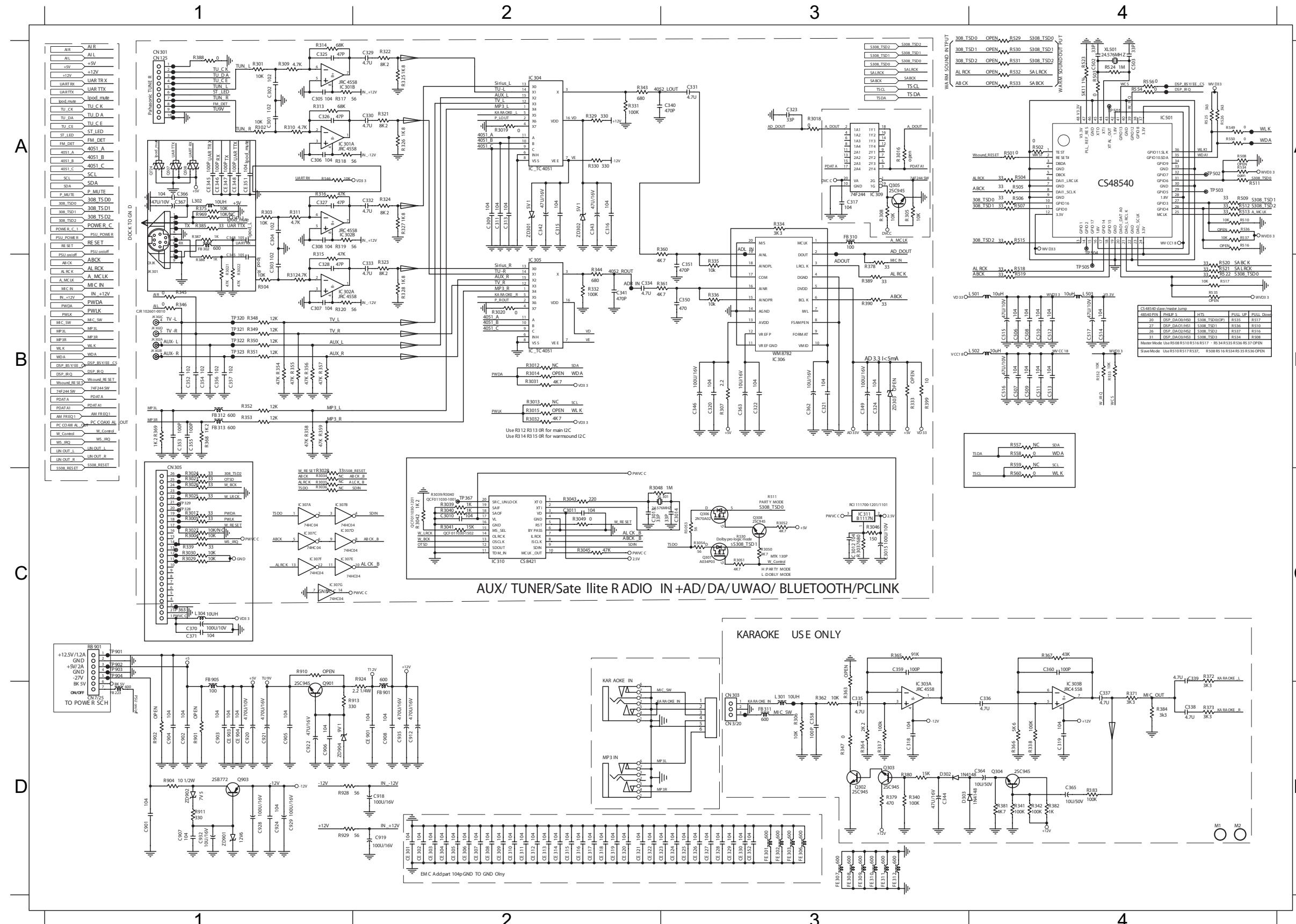
CIRCUIT DIAGRAM - part two

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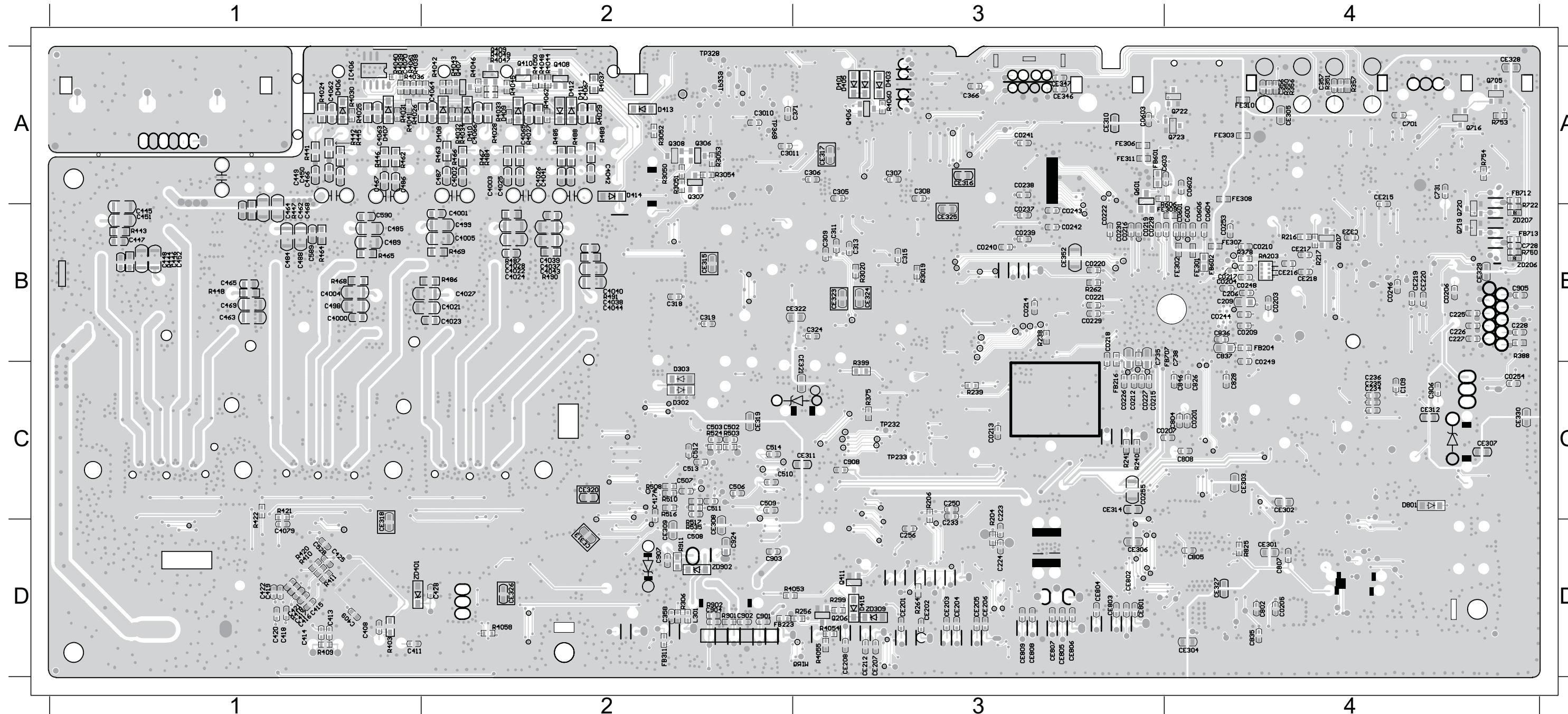
CIRCUIT DIAGRAM - part three

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PCB LAYOUT - BOTTOM VIEW

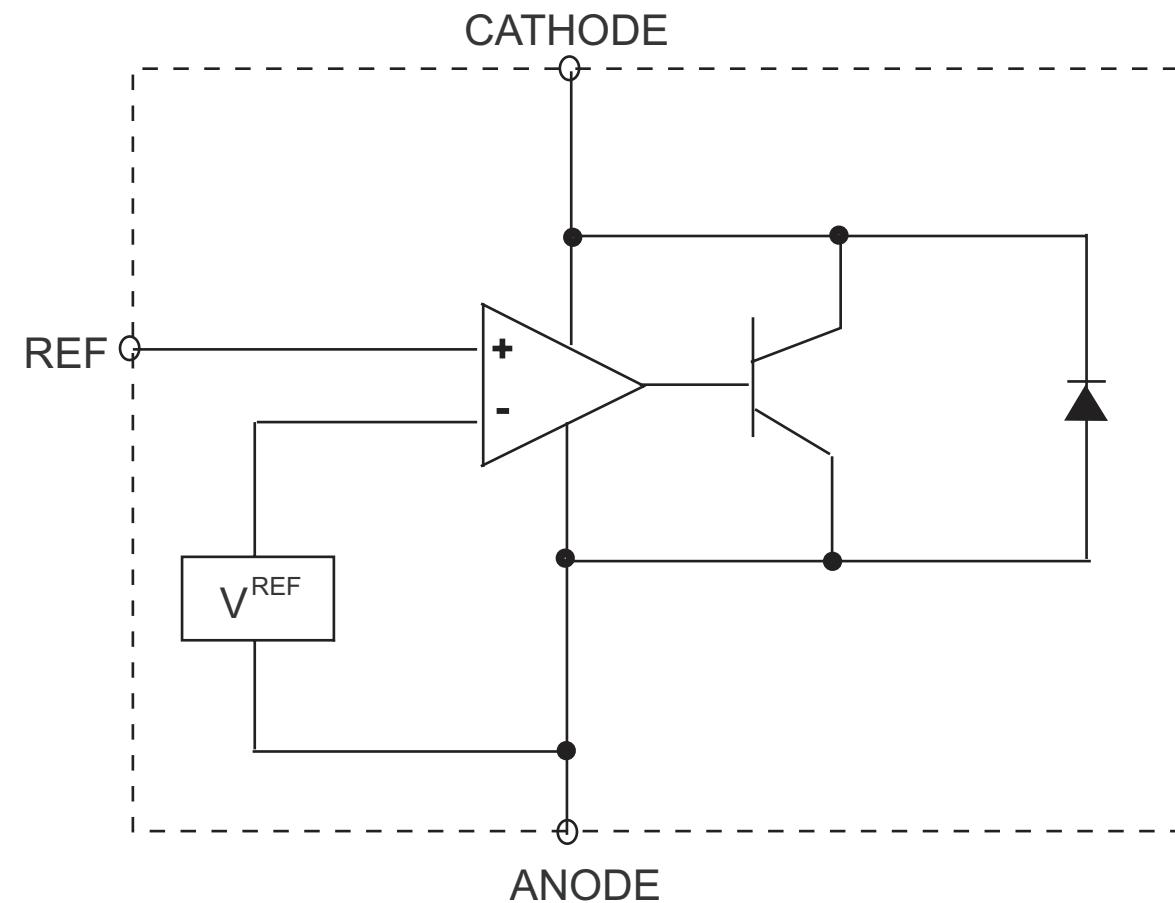
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POWER BOARD

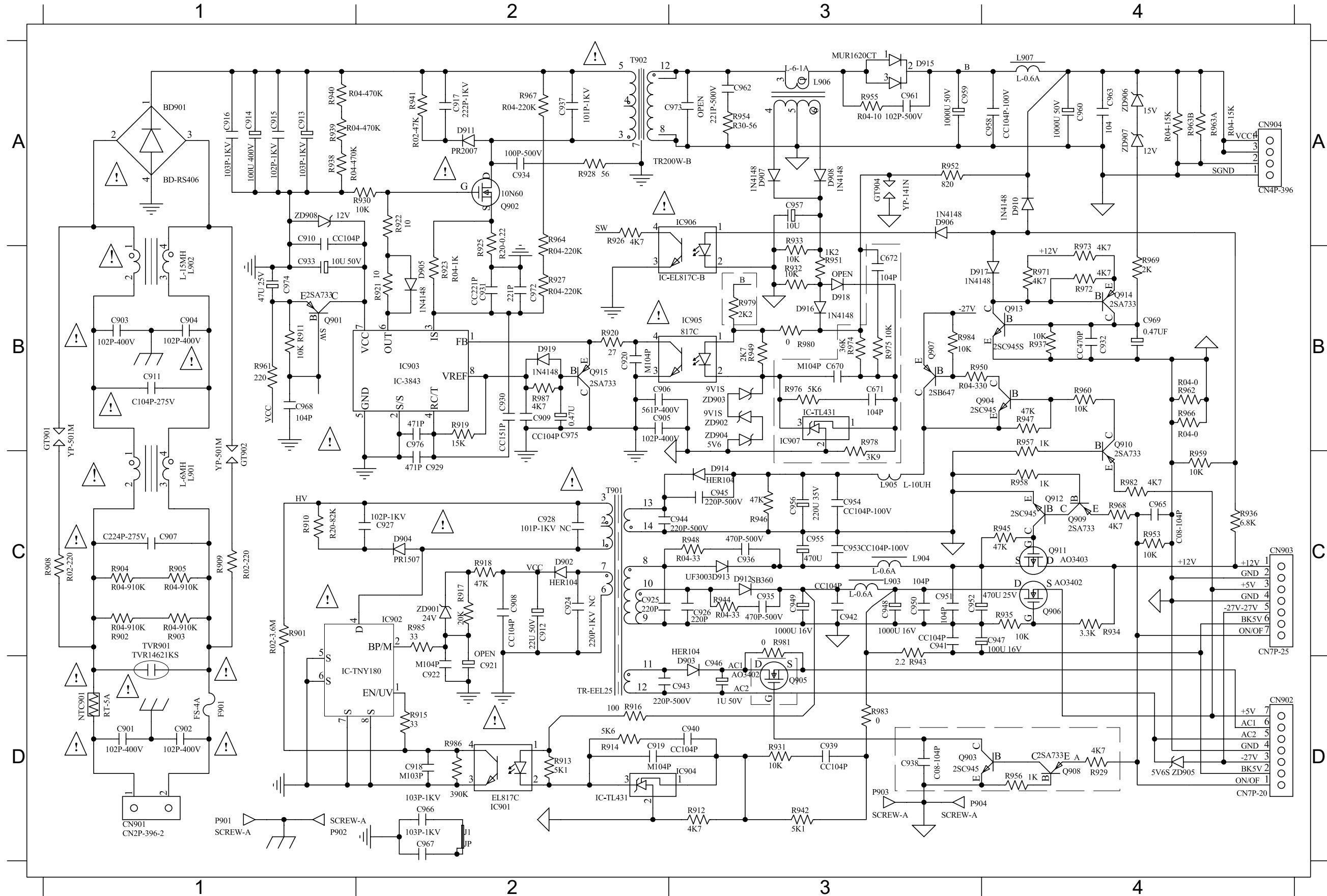
TABLE OF CONTENTS

Internal IC Diagram	7-1
Circuit Diagram.....	7-2
PCB Layout Top View	7-3
PCB Layout Bottom View	7-4



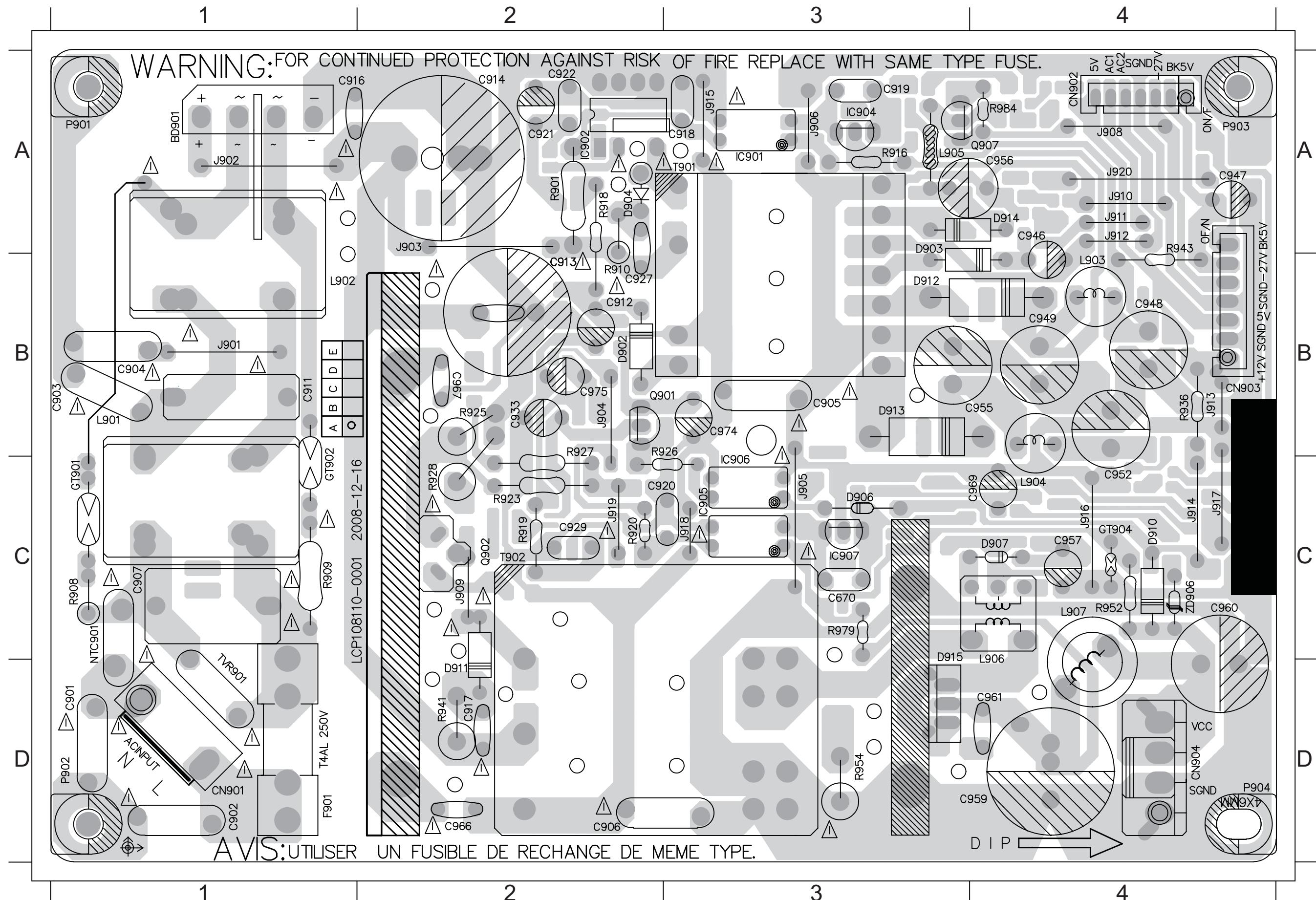
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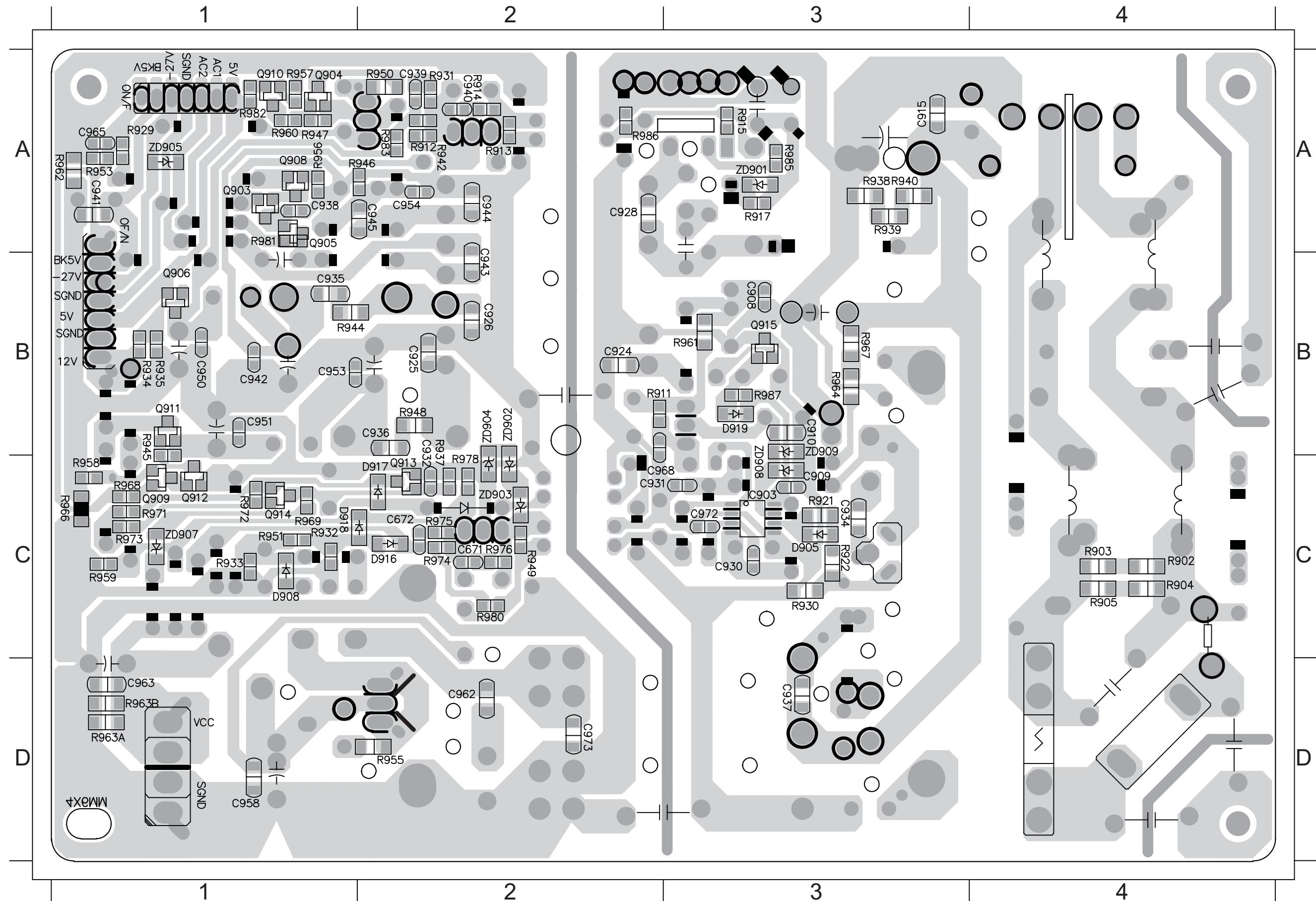
PCB LAYOUT - TOP VIEW

BD901B1 C905 B2 C918 C1 C941 A2 C961 B4 C968 C3 C975 C4 CN904B4 D909 B2 D919 A3 F901 D2 IC905 B4 J906 C2 J911 A4 J917 B4 J922 B4 J927 B4 L902 B1 L908 C4 Q913 C2 R929 A3 R945 D3 R960 C4 R978 A4 T902 B3 ZD903B2
 C901 C3 C906 A3 C919 C1 C945 D2 C962 B4 C969 C3 C978 B2 CN905D4 D910 C4 D922 B3 GT902C1 J902 C1 J907 C2 J912 A4 J918 A4 J923 B4 J928 C4 L904 A4 NTC901D1 Q914 A3 R931 C2 R946 A4 R966 B3 R980 B4 T903 C2 ZD904C2
 C902 D2 C915 D1 C920 A2 C952 B2 C963 B4 C971 D4 CN901D1 CN906C4 D915 B4 D923 B3 IC901 A2 J903 B1 J908 C2 J913 A4 J919 A4 J924 C3 J929 C4 L905 B4 Q910 B3 R901 A4 R940 B2 R948 B4 R967 B3 R982 D4 TVR901D1 ZD913C4
 C903 B2 C916 A2 C921 A1 C959 A3 C965 A3 C973 A4 CN902A1 D907 B3 D917 B2 D924 D4 IC902 A3 J904 A2 J909 D2 J914 A4 J920 A4 J925 C4 J930 C4 L906 A3 Q911 B3 R912 C1 R943 B2 R949 C2 R968 C4 R983 B2 TVR902A1
 C904 A1 C917 C1 C923 A3 C960 B4 C966 B4 C974 B4 CN903A4 D908 B3 D918 A1 D927 B4 IC904 A3 J905 A3 J910 A3 J915 A4 J921 B4 J926 C4 L901 D4 L907 C3 Q912 B2 R914 A2 R944 C2 R951 D2 R975 C4 T901 A1 TVR903B1



PCB LAYOUT - BOTTOM VIEW

C907	B1	C928	A1	C938	A2	C947	B2	C955	B1	C967	B2	C983	B2	D904	B1	D928	B1	Q907	B1	R905	D4	R911	B1	R919	A1	R926	A2	R934	A3	R939	B2	R956	B1	R965	B2	R973	C2	R986	C1	ZD907	B1
C910	A2	C929	B1	C942	A3	C948	B2	C956	A2	C972	C2	C984	B2	D906	C3	Q903	A1	Q918	B1	R906	A1	R915	A3	R920	A1	R927	A2	R935	A1	R941	C2	R957	B1	R969	B2	R976	C1	R987	A1	ZD908	C2
C924	A2	C930	B1	C943	B3	C949	D2	C957	C1	C980	B1	C985	B2	D912	C2	Q904	B1	R902	D4	R907	A2	R916	A4	R922	A2	R928	A2	R936	C2	R942	B3	R961	C1	R970	B2	R977	C2	R989	A1	ZD909	C2
C925	A2	C934	B2	C944	C3	C950	C2	C958	D1	C981	B1	D902	C1	D914	C1	Q905	A1	R903	D4	R908	A1	R917	A3	R924	C1	R932	A1	R937	A2	R950	C3	R963	B2	R971	B1	R979	B1	ZD902	A3	ZD910	C1
C927	B1	C936	C2	C946	D2	C951	D2	C964	B1	C982	C2	D903	C2	D916	C2	Q906	A2	R904	D4	R909	C1	R918	A3	R925	A2	R933	A3	R938	B2	R954	A2	R964	B1	R972	B1	R985	A3	ZD906	A1		



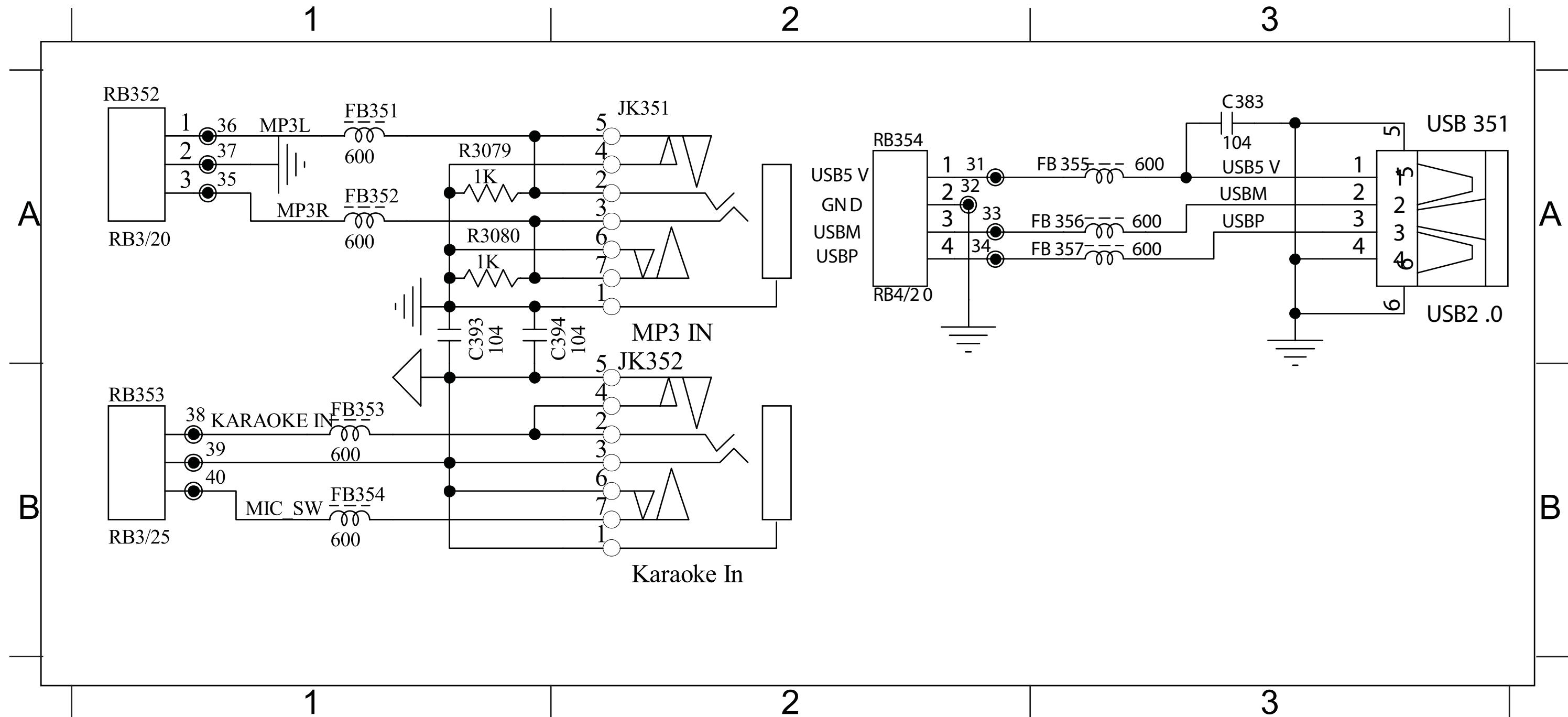
MP3 IN+MIC BOARD

TABLE OF CONTENTS

Circuit Diagram.....	8-1
PCB Layout Top & Bottom View.....	8-2

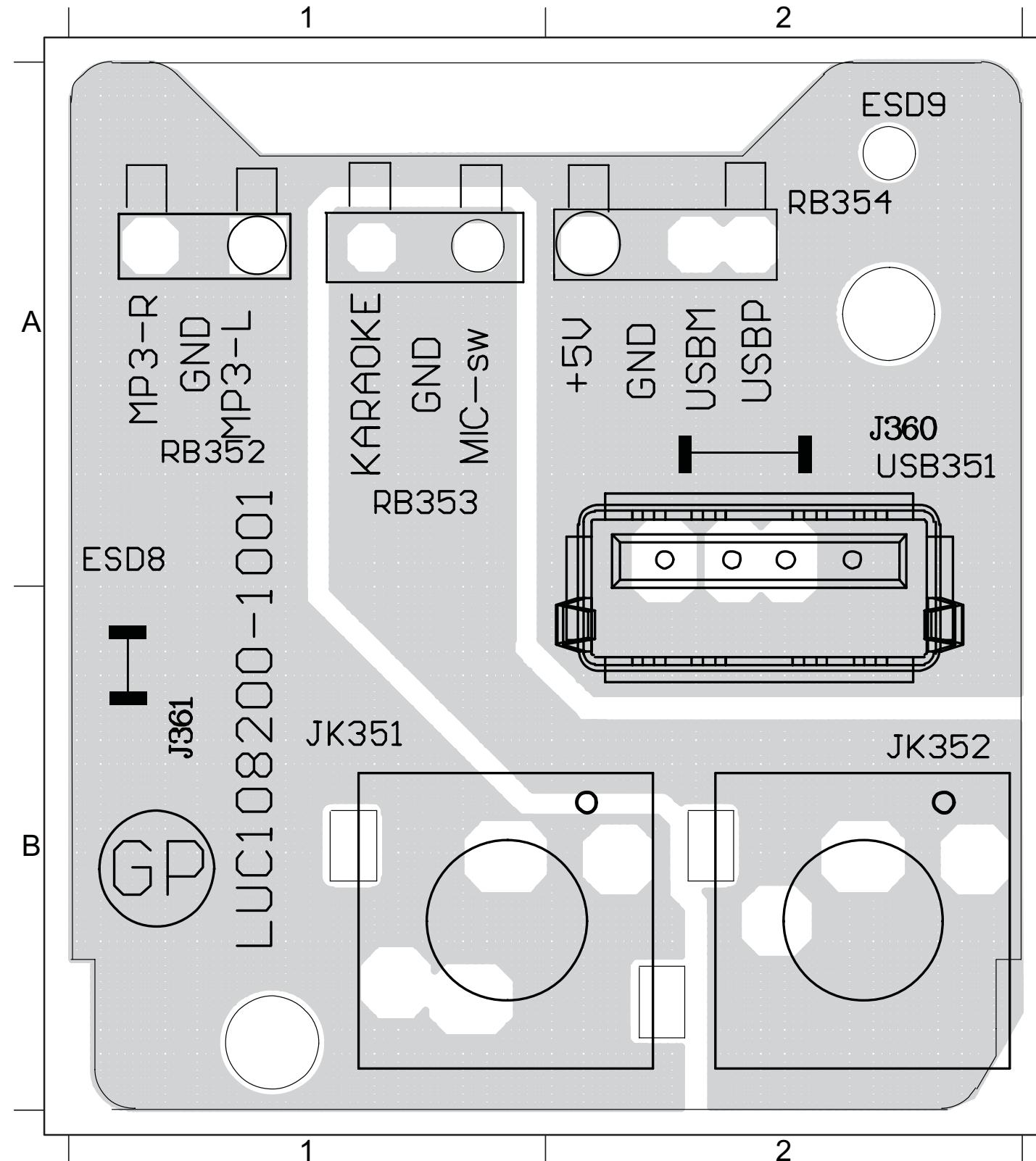
CIRCUIT DIAGRAM

J360 A2 J361 B1 JK351 B1 JK352 B2 RB352 A1 RB353 A1 RB354 A2 USB351 A2

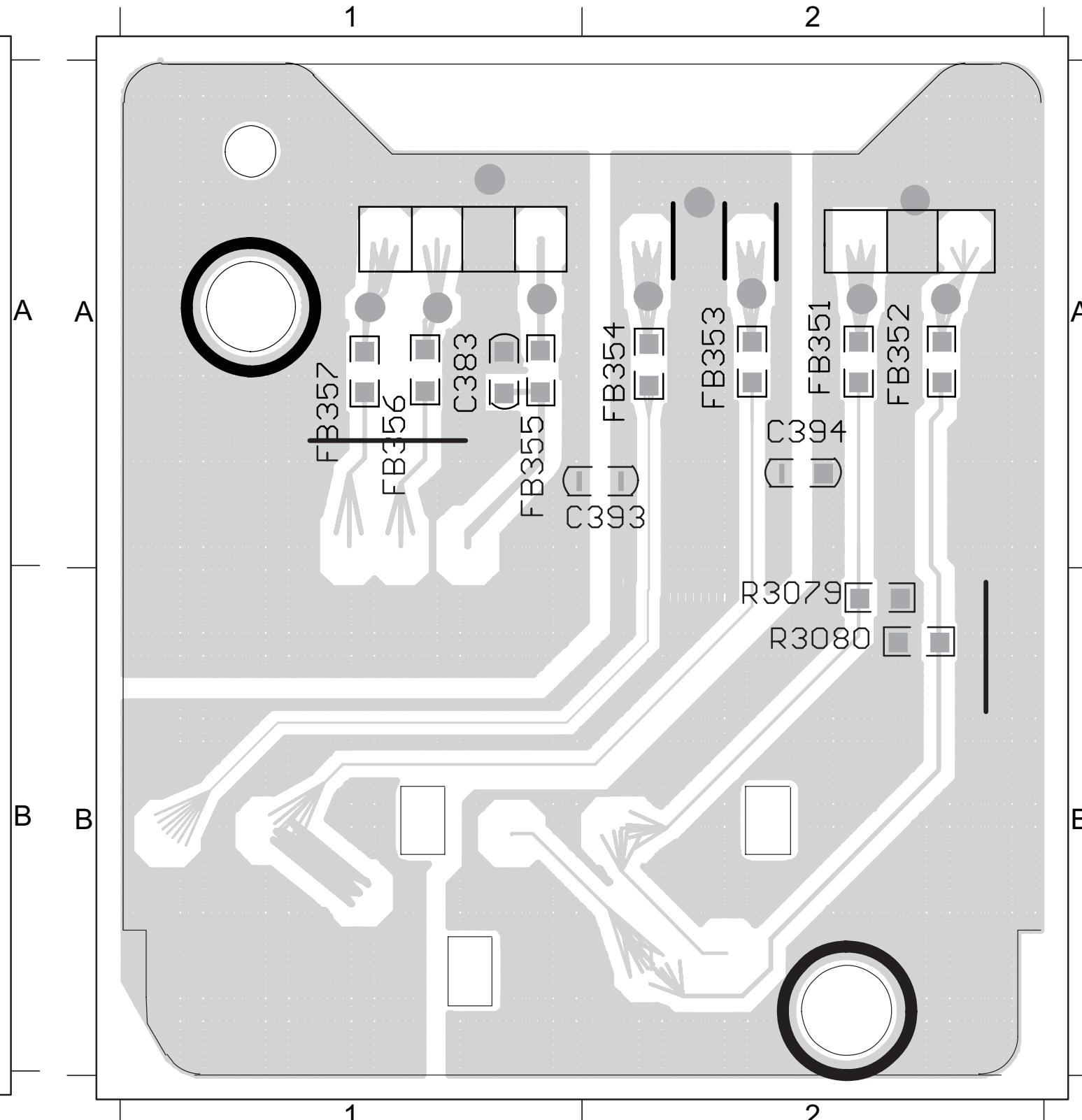


PCB LAYOUT - TOP VIEW

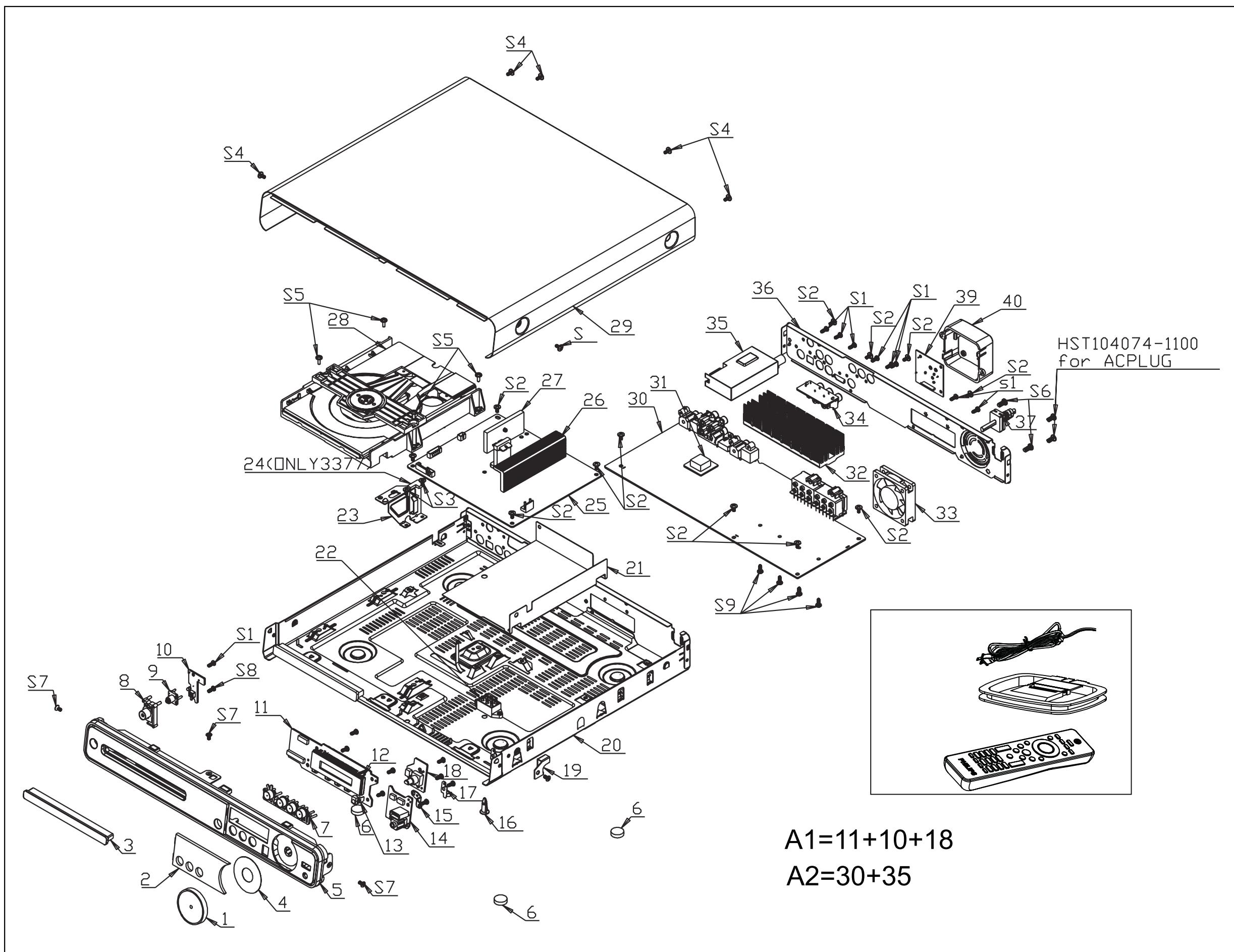
J360 A2 J361 B1 JK351 B1 JK352 B2 RB352 A1 RB353 A1 RB354 A2 USB351 A2

**PCB LAYOUT - BOTTOM VIEW**

C383 A1 C393 A2 C394 A2 FB351 A2 FB352 A2 FB353 A2 FB354 A2 FB355 A1 FB356 A1 FB357 A1 R3079 B2 R3080 B2



Mechanical Exploded View



R944	996510012519	RES. 120 OHM 3W 5% MOF
R945	996510012519	RES. 120 OHM 3W 5% MOF
R951	996510012519	RES. 120 OHM 3W 5% MOF
T901	996510021236	TRASFO. EEL-25 7+7P 40W
T902	996510021088	TRASFO EEL19 5+5P 100KHZ 20W
T903	996510012478	SW TRANS ERL-35 7+7P
ZD903	994000002067	DIODE ZENR 14.5-15.1V 0.5W
ZD904	994000002067	DIODE ZENR 14.5-15.1V 0.5W

ONLY FOR HTS3371/98 &
HTS3378/98

DISP+LED+VOL PCB

IC351	996500029614	IC 52 PIN PT6311(PTC)
LD351	996510020167	LED 3 DIA ULTRA RED TINT CLEAR
Q351	994000000921	XISTR PNP 2SA812 HFE:200-400
Q352	994000000915	XISTR NPN 2SC1623
SN351	994000005472	IRT RECEIVER IRM-2638AF4

MP3 IN+MIC PCB

JK351	996510004129	KARAOKE JACK D3.6MM 7P
JK352	996510004129	KARAOKE JACK D3.6MM 7P
USB351	996510013742	USB JACK 4P

L907	996500027102	TOROID COIL S1=1TS D0.65MMX2 P
L908	996510012474	COMMON COIL75uH10%1KHz/0.25VD1
Q903	994000000921	XISTR PNP 2SA812 HFE:200-400
Q904	994000000921	XISTR PNP 2SA812 HFE:200-400
Q905	996510008289	FET AO3402 SOT23 30V/4A
Q906	996510004282	XISTR NPN SMT (2SC945)
Q907	996510018395	FET AO3401 SOT23 -30V/-4.2A
Q910	996500026946	XISTR PNP 2SB772P/Q NEC PB<10
Q911	996500026946	XISTR PNP 2SB772P/Q NEC PB<10
Q912	996510021085	MOSFET STK1060F TO220F AUK600V
Q913	996510021085	MOSFET STK1060F TO220F AUK600V
Q914	996510010356	XISTR PNP 2SB647 TO-92MOD
Q918	996510004282	XISTR NPN SMT (2SC945)
R943	996510012519	RES. 120 OHM 3W 5% MOF
R944	996510012519	RES. 120 OHM 3W 5% MOF
R945	996510012519	RES. 120 OHM 3W 5% MOF
R951	996510012519	RES. 120 OHM 3W 5% MOF
T901	996510021236	TRASFO. EEL-25 7+7P 40W
T902	996510021088	TRASFO EEL19 5+5P 100KHz 20W
T903	996510012478	SW TRANS ERL-35 7+7P
ZD903	994000002067	DIODE ZENR 14.5-15.1V 0.5W
ZD904	994000002067	DIODE ZENR 14.5-15.1V 0.5W

ONLY FOR HTS3378/93

DISP+LED+VOL PCB

IC351	996500029614	IC 52 PIN PT6311(PTC)
LD351	996510020167	LED 3 DIA ULTRA RED TINT CLEAR
Q351	994000000921	XISTR PNP 2SA812 HFE:200-400
Q352	994000000915	XISTR NPN 2SC1623
SN351	994000005472	IRT RECEIVER IRM-2638AF4

REVISION LIST

Version 1.0
*Initial release

Version 1.1
*In this version, CTN HTS3378/98 added and P9-2 Parts List updated accordingly.

Version 1.2
*In this version, CTN HTS3378/93 added and P9-2B & P9-3B Parts List added.