DVD Home Theater System

HTS3372D/F7

Service
Service
Service

Service Manual

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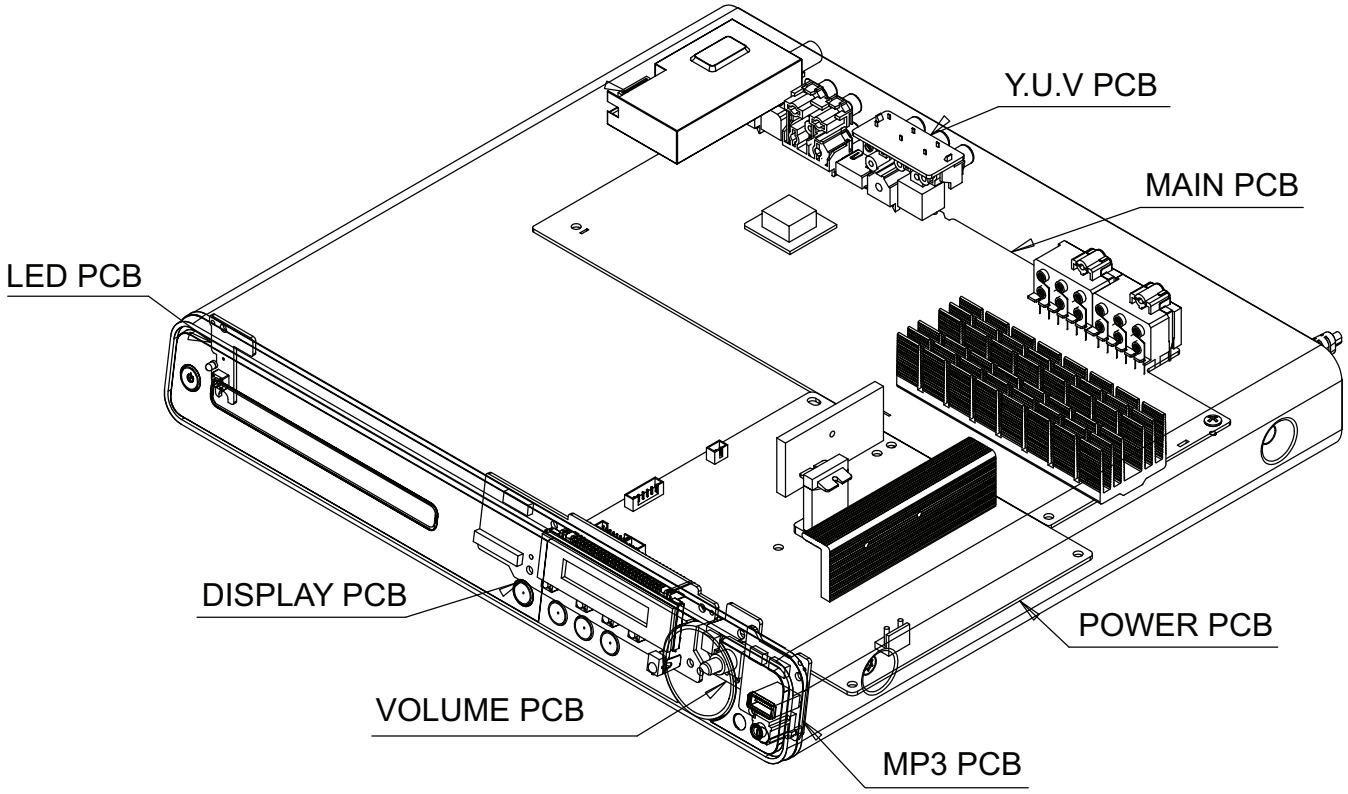
Version 1.0

PHILIPS

LOCATION OF PCB BOARDS



VERSION VARIATION:

Type/Versions / Features	HTS3371D /F7	HTS3372D /F7
Output Power - 1000W	X	X
Voltage (120V)	X	X
MP3 Link	X	X

SERVICE SCNARIO MATRIX:

Type/Versions / Board in used	HTS3371D /F7	HTS3372D /F7
MAIN+Y.U.V Board	C	C
Power Board	C	C
DISP+LED+VOL Board	C	C
MP3 IN Board	C	C

*C = Component Level Repair

SPECIFICATIONS

Playback media

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

Amplifier

Total output power
Home Theater mode..... 1000 W(6 X 167)
FTC mode (1%THD).....520 W
..... * (Main Ch @ 1kHz Sub Ch 60Hzwithin 1% THD)
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 decording.....MPEG1/ MPEG2 / DivX
..... / DivX Ultra
Video DAC..... 12 bits, 108 MHz
Signal system ..... Multi / 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

Radio

Tuning range ..... FM 87.5-108 MHz(100 kHz)
2 6 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

Docking Station

Dimension (H X D).....34.5 X 104 (mm)
Weight ..... 164 g

Main Unit

Power supply.....120V; ~ 60Hz
Power consumption..... 180 W
Standby power consumption ..... < 1 W
Dimensions (WxHxD) .....
..... 360 x 57 x 333 (mm)
Weight .....3.01 kg

Speakers

System..... full range satellite
Speaker impedance..... 4 ohm (center),
.....4 ohm (Front/Rear)
Speaker drivers .....
Center..... 3” woofer
Front/Rear ..... 3” full range
Frequency response.....150 Hz ~ 20 kHz
Dimensions (WxHxD) ..... 100 x 100 x 75(mm)
Weight .....
Front .....0.48 kg
Rear.....0.45 kg
Center.....0.67 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 specifi cation

Type.....Semiconductor laser GaAIAs (CD)
Wave length..... 645 - 665 nm (DVD),
.....770 - 800 nm (CD)
Output power .....6 mW (DVD),
.....7 mW (VCD/CD)
Beam divergence..... 60 degrees.

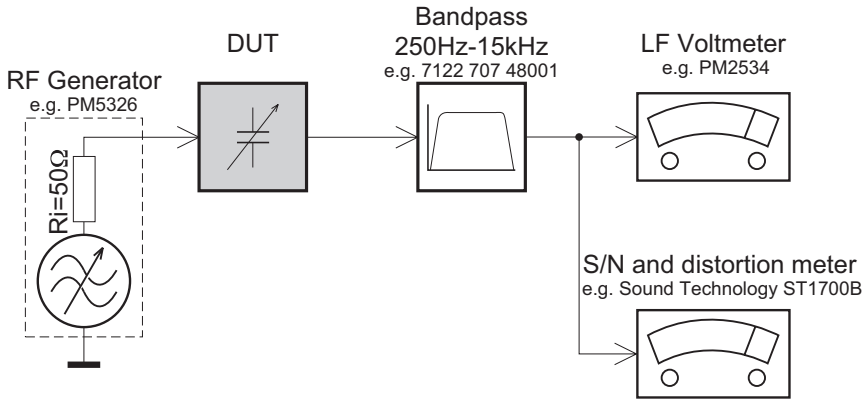
Declaration of conformity

Model number..... HTS3371D/F7,HTS3372D/F7
Trade Name.....Philips
Responsible Party .....
Philips Consumer Lifestyle A Division of Philips Electronics North America Corp.
P. O. Box 671539
Marietta, GA 30006-0026

Specifications subject to change without prior notice.

MEASUREMENT SETUP

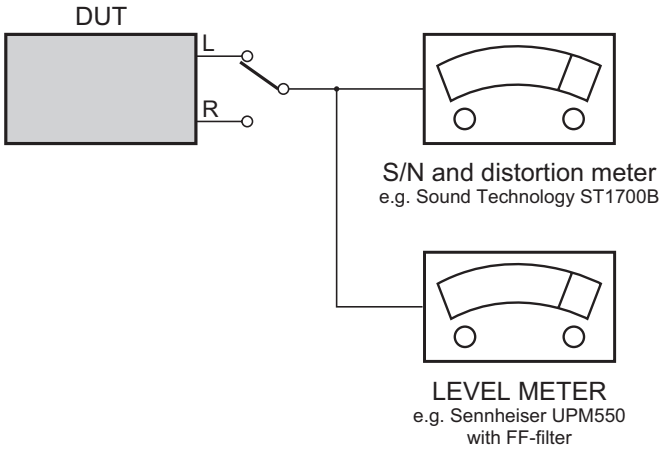
Tuner FM



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

CD

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



SERVICE AIDS

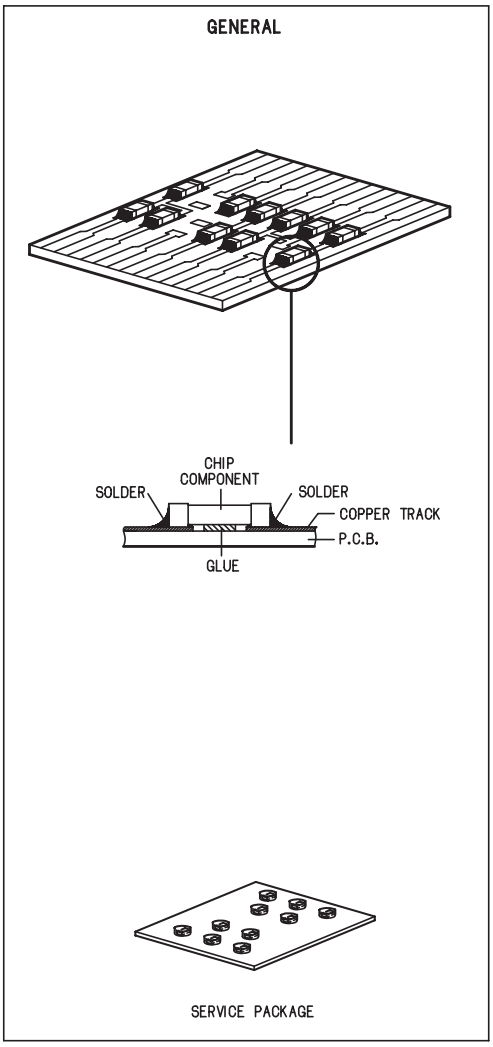
Service Tools:

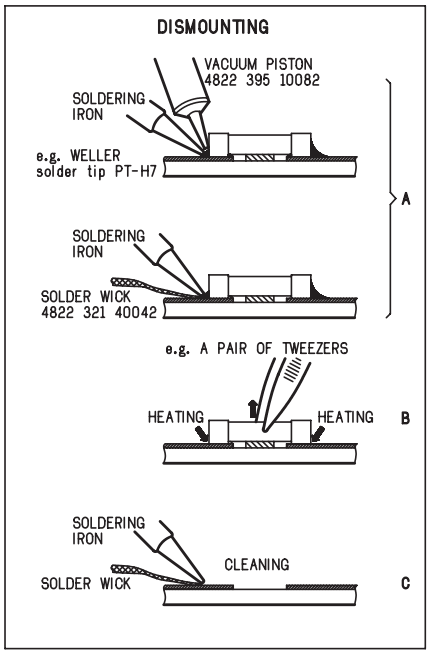
Universal Torx driver holder 4822 395 91019
Torx bit T10 150mm 4822 395 50456
Torx driver set T6-T20 .....4822 395 50145
Torx driver T10 extended 4822 395 50423

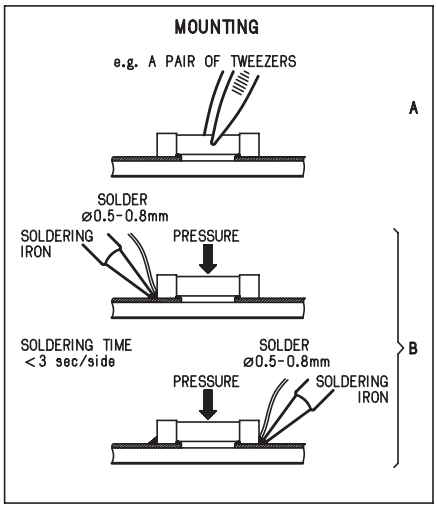
Compact Disc:

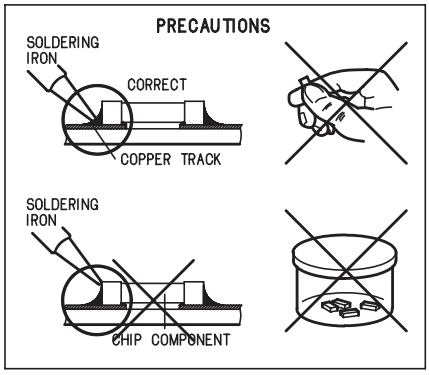
SBC426/426A Test disc 5 + 5A 4822 397 30096
SBC442 Audio Burn-in test disc 1kHz 4822 397 30155
SBC429 Audio Signals disc 4822 397 30184
Dolby Pro-logic Test Disc 4822 395 10216

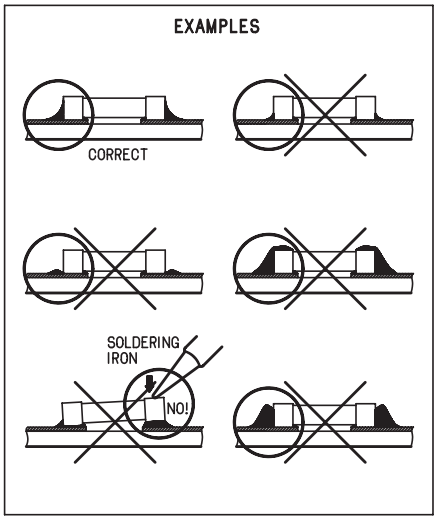
HANDLING CHIP COMPONENTS











ESD

(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.

(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 ditzelfde potentiaal.

(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.

(D) WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD).
Unsorgfältige Behandlung im Reparaturfall kan 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.

(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) ESD PROTECTION EQUIPMENT

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

(GB)

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 ⚠ .

(NL)

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 symbol ⚠ .

(F)

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

Less composants de sécurité sont marqués ⚠ .

(D)

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 ⚠ markiert.

(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.

Componenty di sicurezza sono marcati con ⚠ .

(GB)

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 ohitettaessa olet alttiina näkymättömälle laserisäteilylle. Älä katso säteeseen!

(DK) Advarse !

Usynlig laserstråling ved åbning når sikkerhedsafbrydere er ude af funktion. Undgå udsaettelse for stråling.

(F)

"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.

INDENTIFICATION:
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.

2 - 1

System , Region Code , etc. Setting Produre

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

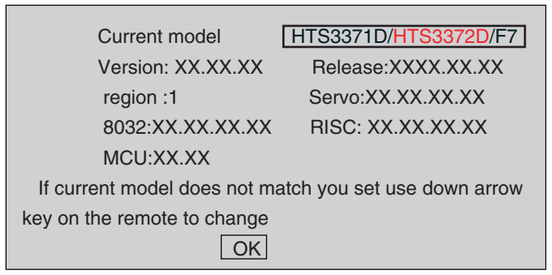
2)Region Code Change

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

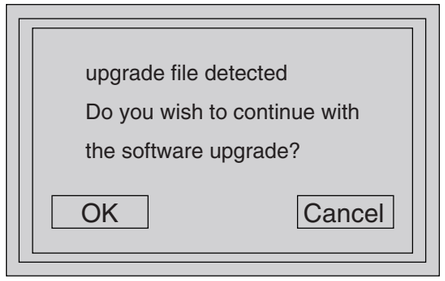
a) Open the CD Door
b) Press “INFO“ button on R/C
c) TV will show the version on screen

6)Trade model

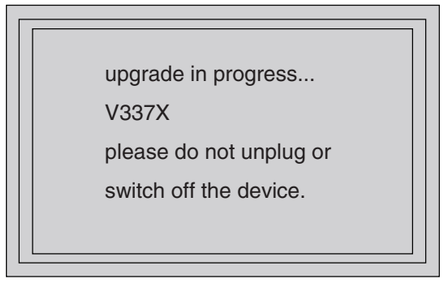
a) Press “Open/Close “ button on R/C
b) Press “2” “5” “9” on R/C,VFD will display “TRA ON “ or “TRA OFF“

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!

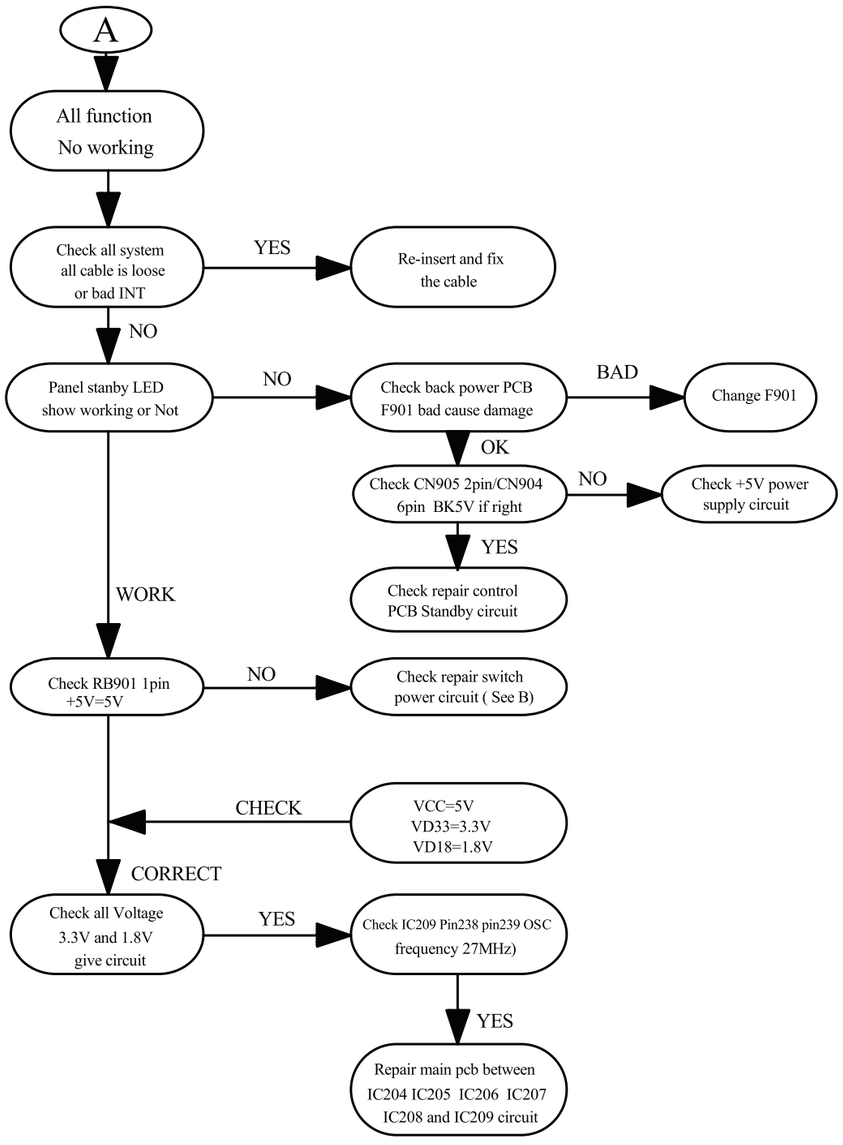
This information is confidential and may not be distributed.Only a qualified service person should reprogram the Region Code.

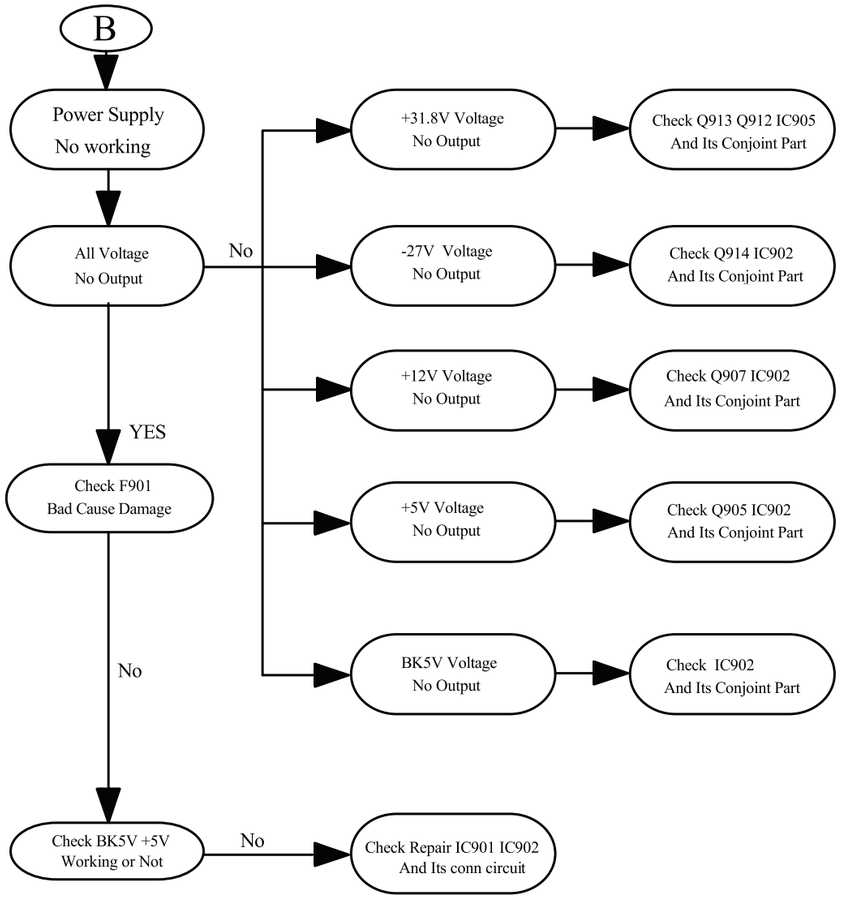
2 - 2

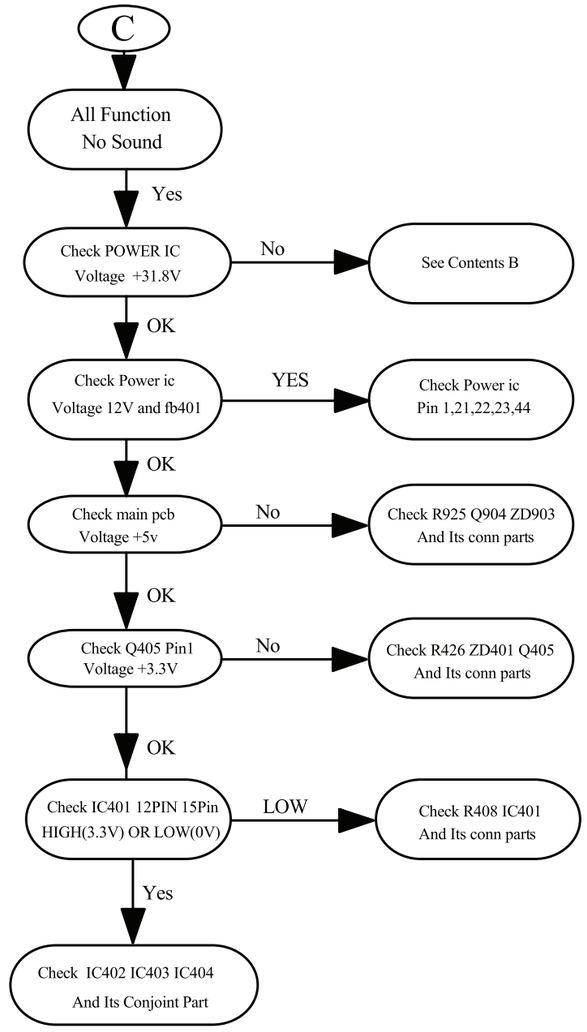
REPAIR INSTRUCTIONS (ONE)

MAIN UNIT REPAIR CHART 1/3

A All Function No Working
B Power Supply No Working
C All Function No Sound
D Ipod input No Sound
E Audio line IN No Output
G DVD Audio No Sound
H MP3 In No Sound
I COAXIAL In No Sound
j Optical In No Sound
L Tuner No Sound
M HDMI No Output
N No CVBS Output
O No Y Pr Pb output



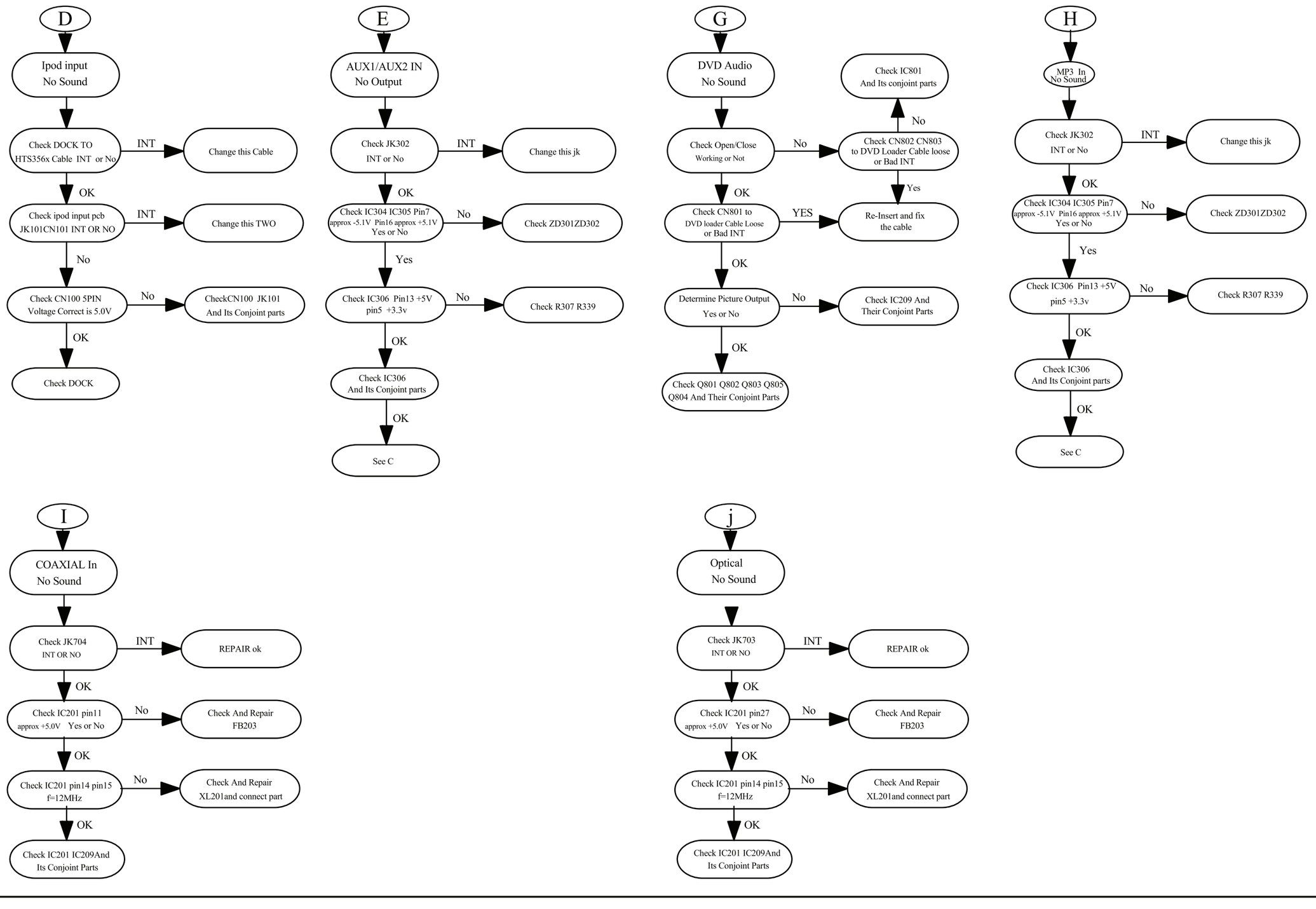




2 - 3

REPAIR INSTRUCTIONS (TWO)

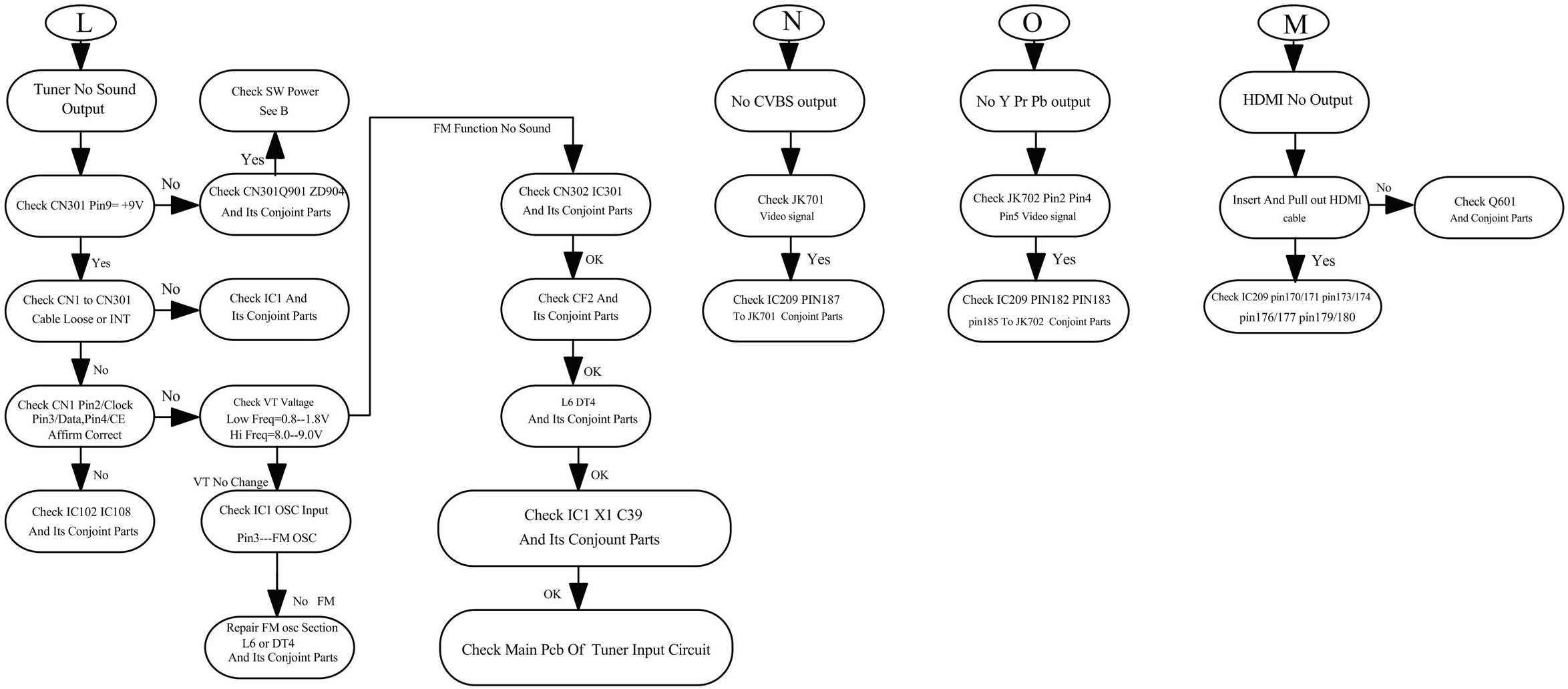
MAIN UNIT REPAIR CHART 2/3



2 - 4

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.

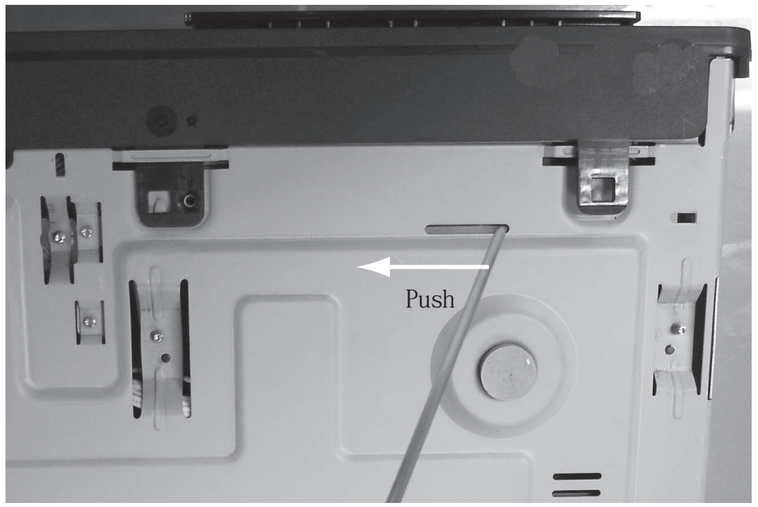


Figure 1

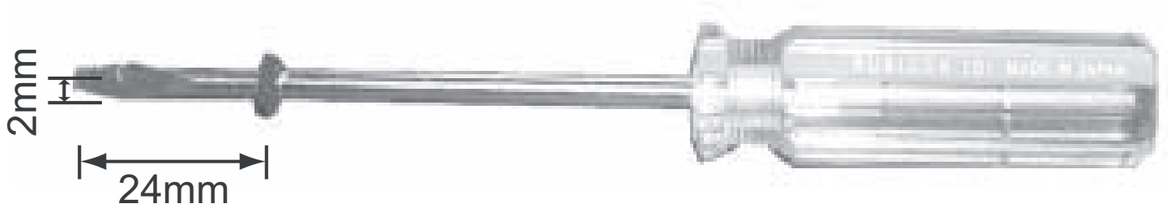


Figure 2

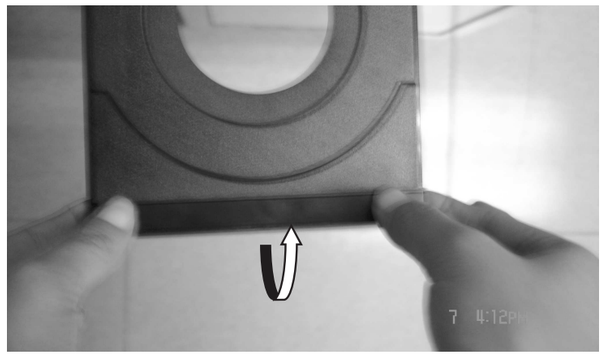


Figure 3

3 - 1

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 6 screws “C“ at the front panel bracket as in figure 6A & figure 6B to remove the front panel.

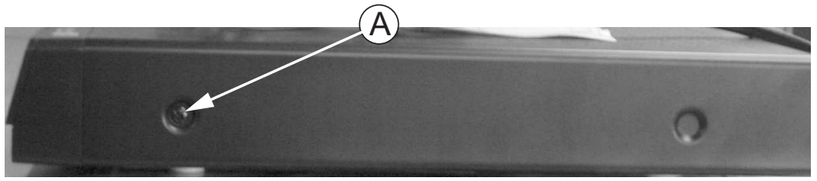


Figure 4

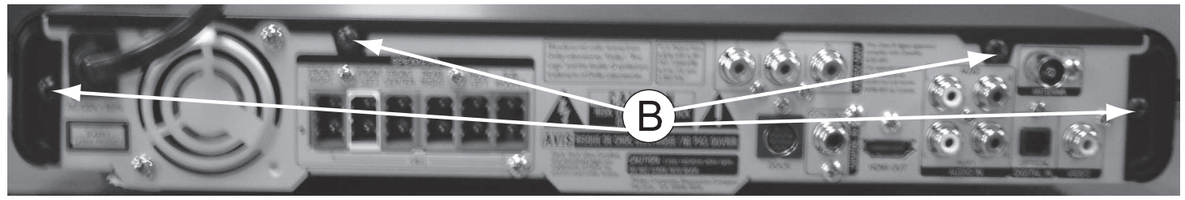


Figure 5

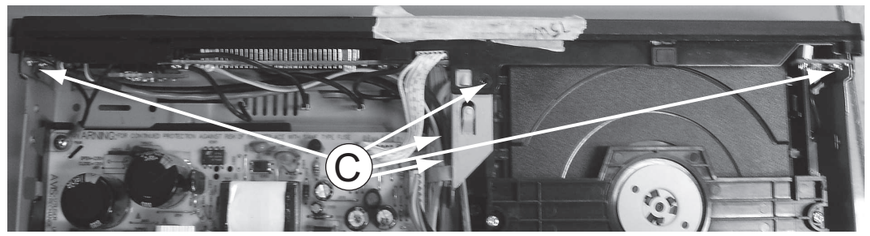


Figure 6A

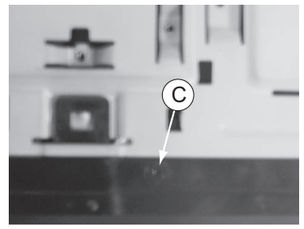


Figure 6B

Dismantling of the DVD Module

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

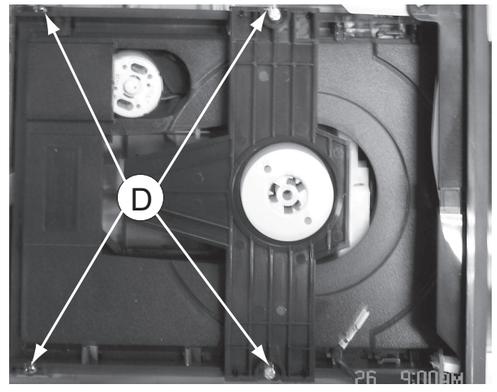


Figure 7

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.

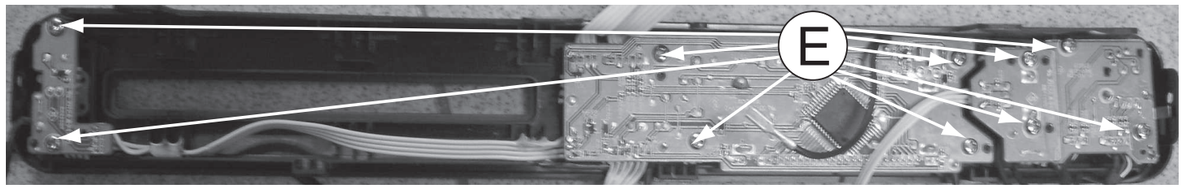


Figure 8

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 figurer 10 and to take up the power board.

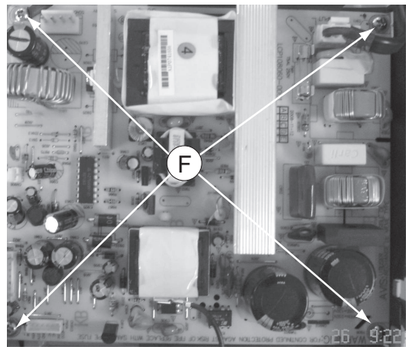


Figure 9

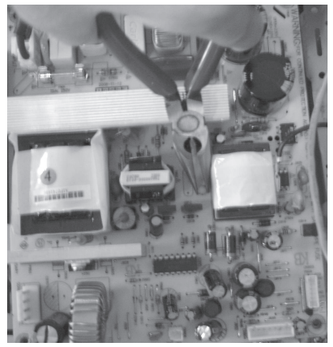


Figure 10

Dismantling of the MAIN+Y.U.V Board

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

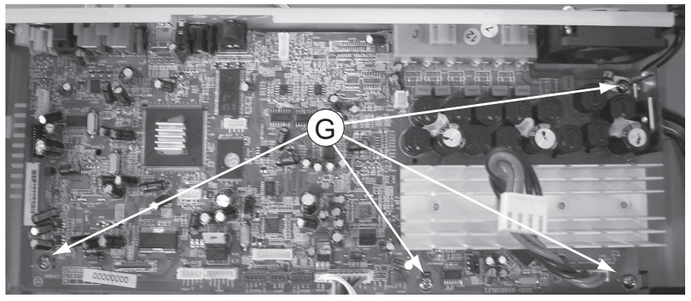
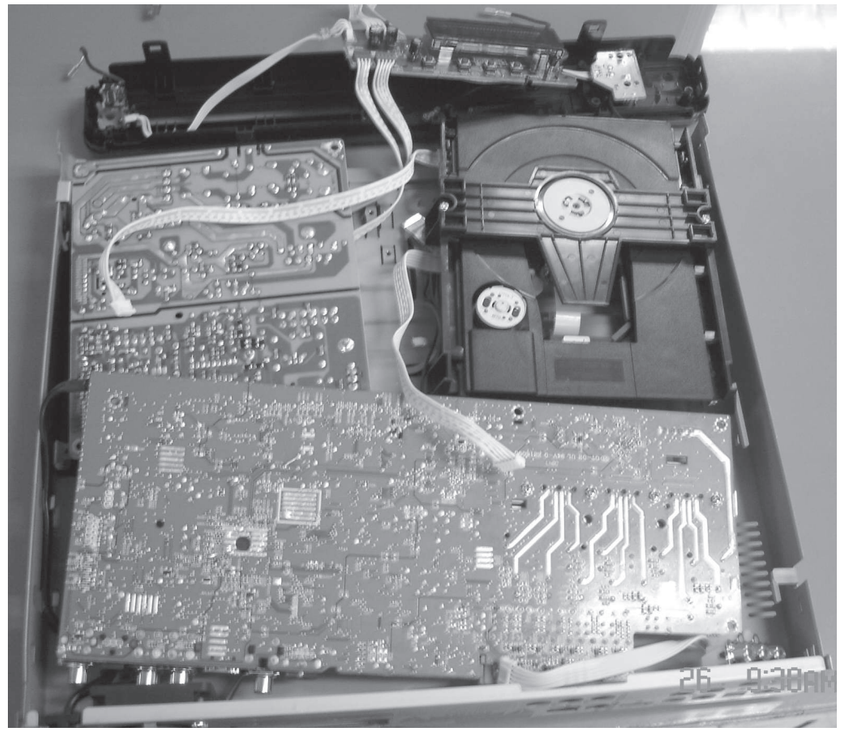


Figure 11

Figure 12

SERVICE POSITIONS

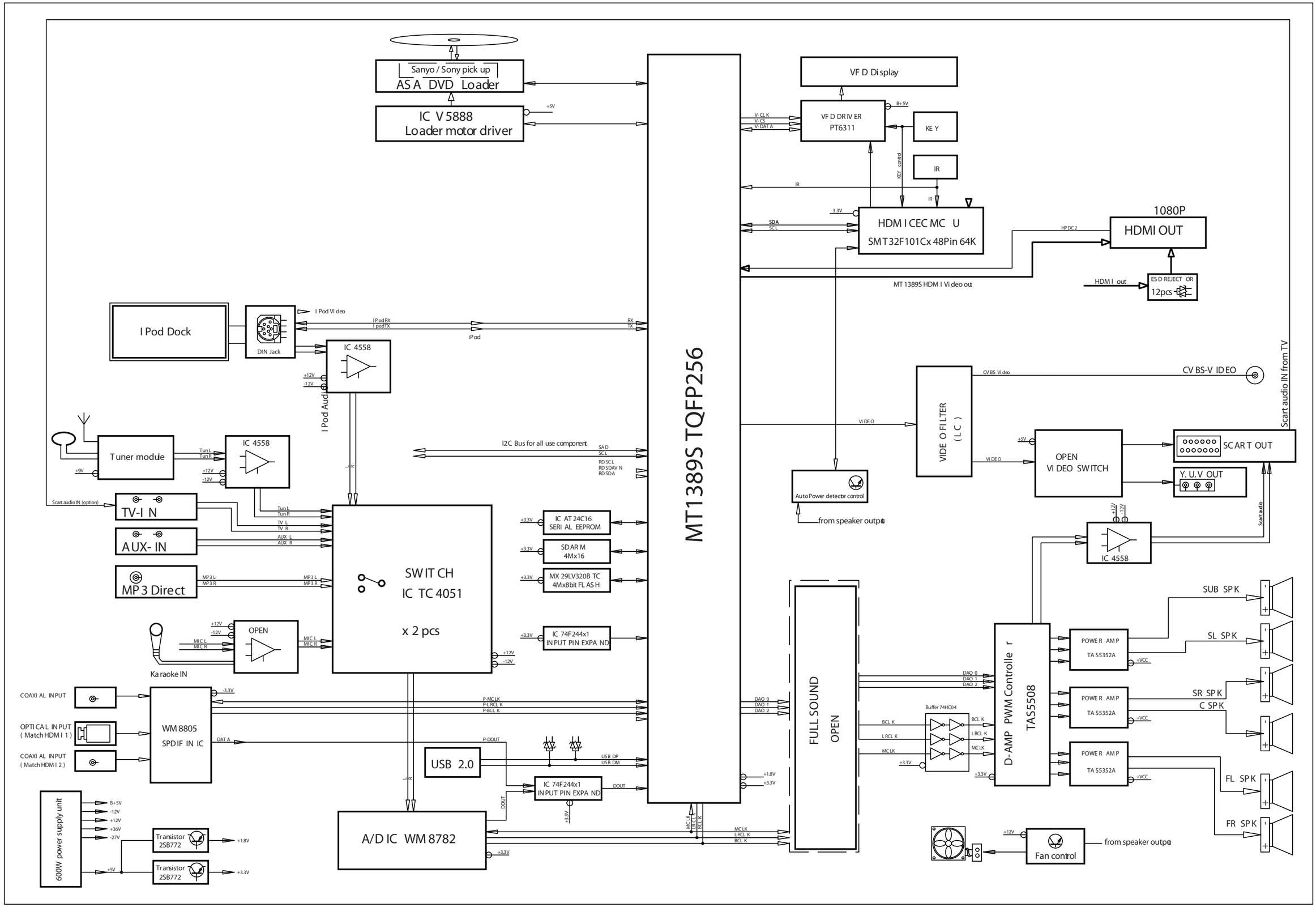
Service position A



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.

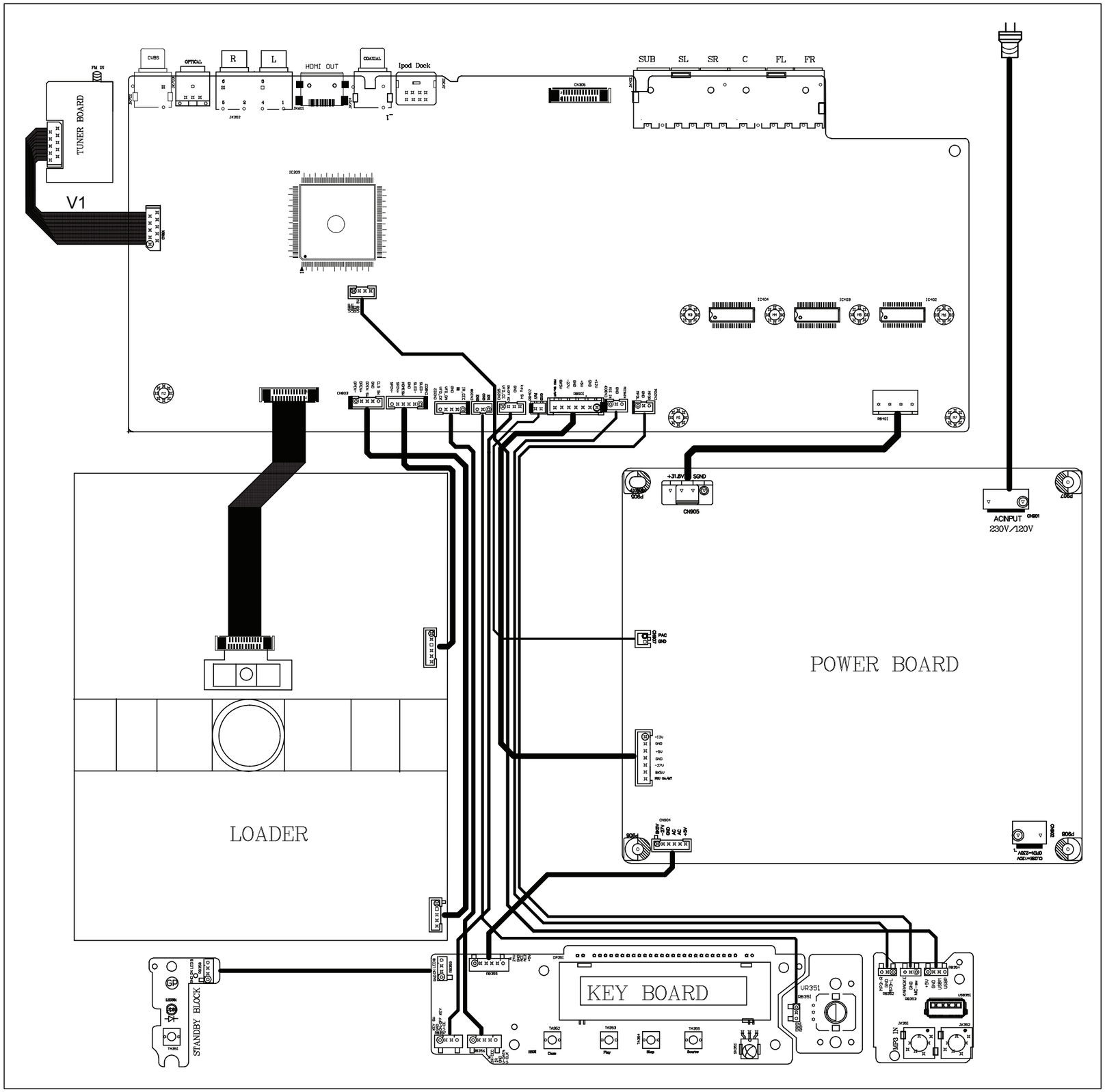
4 - 1

BLOCK DIAGRAM



4 - 2

WIRING DIAGRAM



DISP+LED+VOL BOARD

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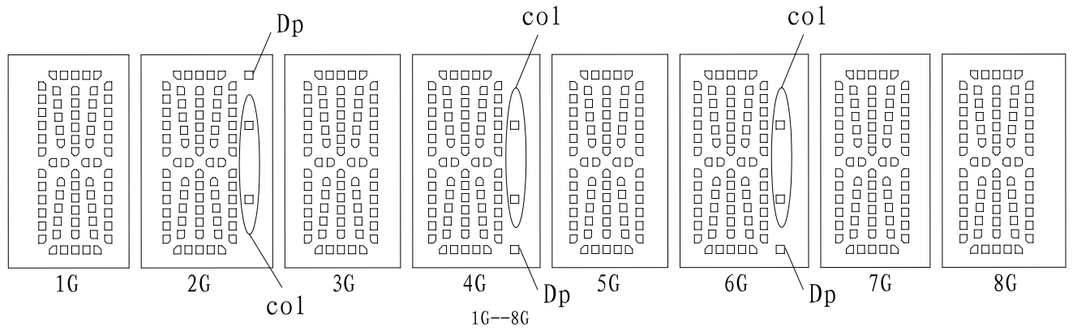
5 - 1

FTD DISPLAY PIN ASSIGNMENT



	1G	2G	3G	4G	5G	6G	7G	8G
P1	a	a	a	a	a	a	a	a
P2	j, p	j, p	j, p	j, p	j, p	j, p	j, p	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

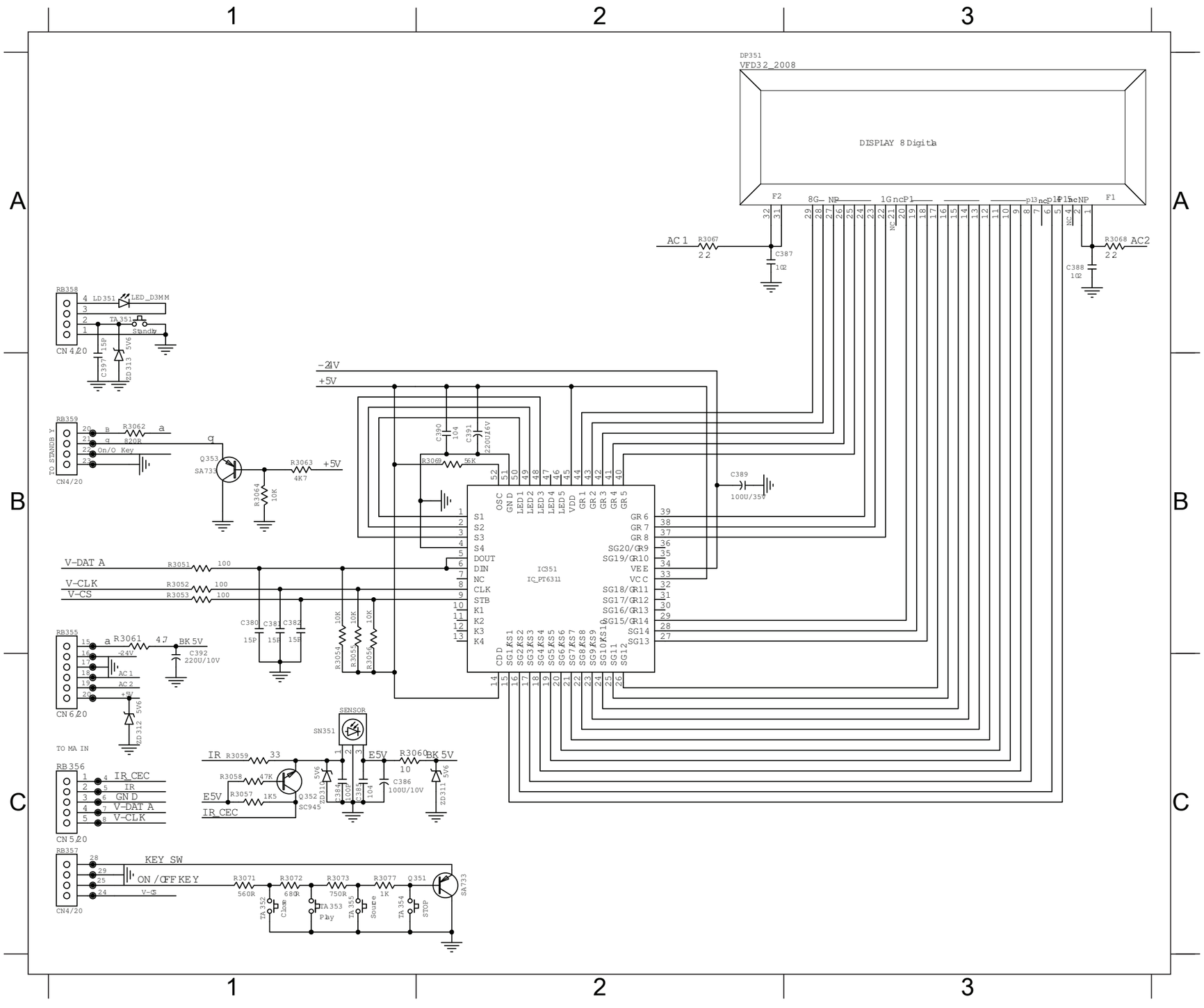
管脚序号(Pin NO.)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
连接(Connection)	F1	F1	NP	NC	P15	P14	NC	P13	P12	P11	P10	P9	P8	P7	P6	P5
管脚序号(Pin NO.)	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
连接(Connection)	P4	P3	P2	P1	NC	1G	2G	3G	4G	5G	6G	7G	8G	NP	F2	F2

注(Notes) : Fn :灯丝(Filament Pin) nG :栅极(Grid Pin)
Pn :阳极(Anode Pin) NP :无引出脚(No Pin)
NC :无功能(No connection Pin)

5 - 2

CIRCUIT DIAGRAM

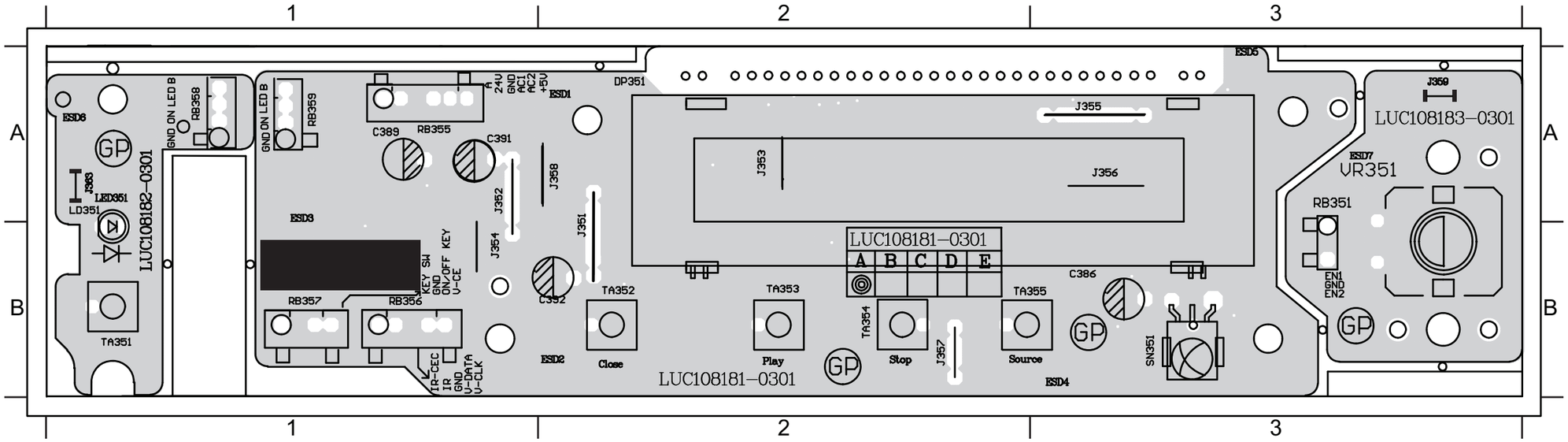
C380 B1 C384 C1 C387 A2 C390 B2 C395 C4 DP351 A2 Q351 C1 R3051 B1 R3054 B1 R3057 C1 R3060 C1 R3063 B1 R3068 A3 R3072 C1 RB351 C4 RB357 C1 TA351 A1 TA354 C1 ZD310 C1 ZD313 B1
C381 B1 C385 C1 C388 A3 C391 B2 C396 C4 IC351 B2 Q352 C1 R3052 B1 R3055 B1 R3058 C1 R3061 B1 R3064 B1 R3069 B2 R3073 C1 RB355 B1 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



5 - 3

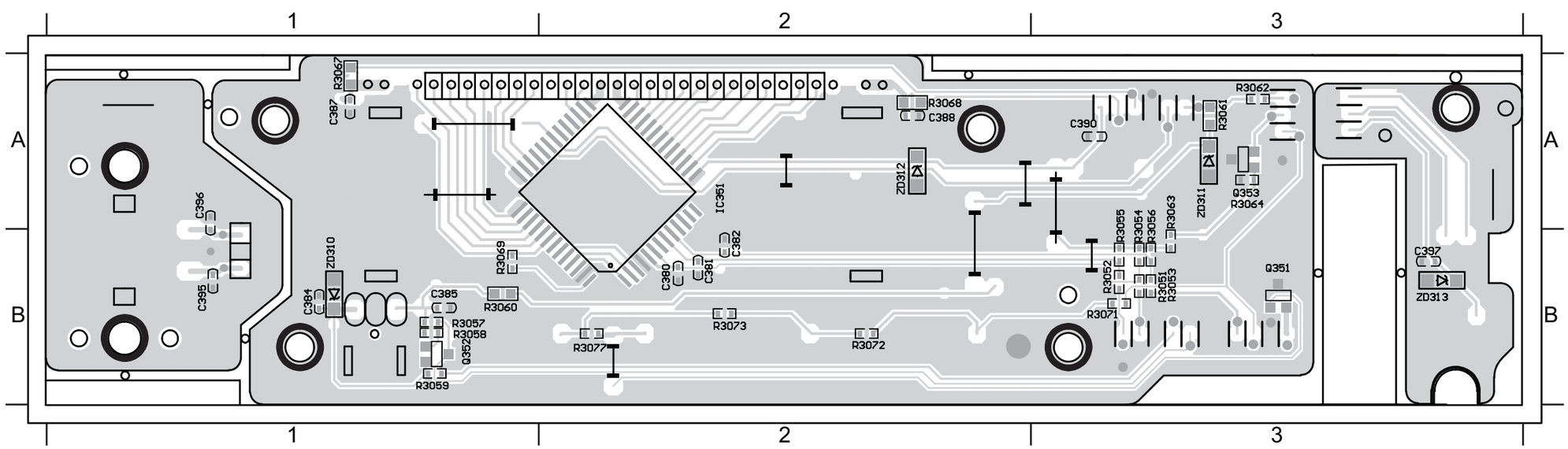
PCB LAYOUT - TOP VIEW

C386 A3 C391 A1 DP351 A2 ESD4 A3 ESD6 A1 J351 A2 J353 A2 J355 A3 J357 B2 J359 A3 LD351 A1 RB355 A1 RB357 B1 SN351 B3 TA352 B2 TA354 B2 VR351 A3
C389 A1 C392 B2 ESD1 A2 ESD5 B3 ESD7 A3 J352 B1 J354 B1 J356 A3 J358 A2 J363 A1 RB351 A3 RB356 B1 RB359 A1 TA351 B1 TA353 B2 TA355 B2



PCB LAYOUT - BOTTOM VIEW

C380 B2 C382 B2 C387 A1 C390 A3 C396 A1 IC351 A2 Q352 B1 R3051 B3 R3053 B3 R3055 A3 R3057 B1 R3059 B1 R3061 A3 R3063 A3 R3067 A1 R3069 B1 R3072 B2 R3077 B2 ZD311 A3 ZD313 B3
C381 B2 C385 B1 C388 A2 C395 B1 C397 B3 Q351 B3 Q353 A3 R3052 B3 R3054 A3 R3056 A3 R3058 B1 R3060 B1 R3062 A3 R3064 A3 R3068 A2 R3071 B3 R3073 B2 ZD310 B1 ZD312 A2



MAIN BOARD

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INTERNAL IC DIAGRAM - TAS5508B

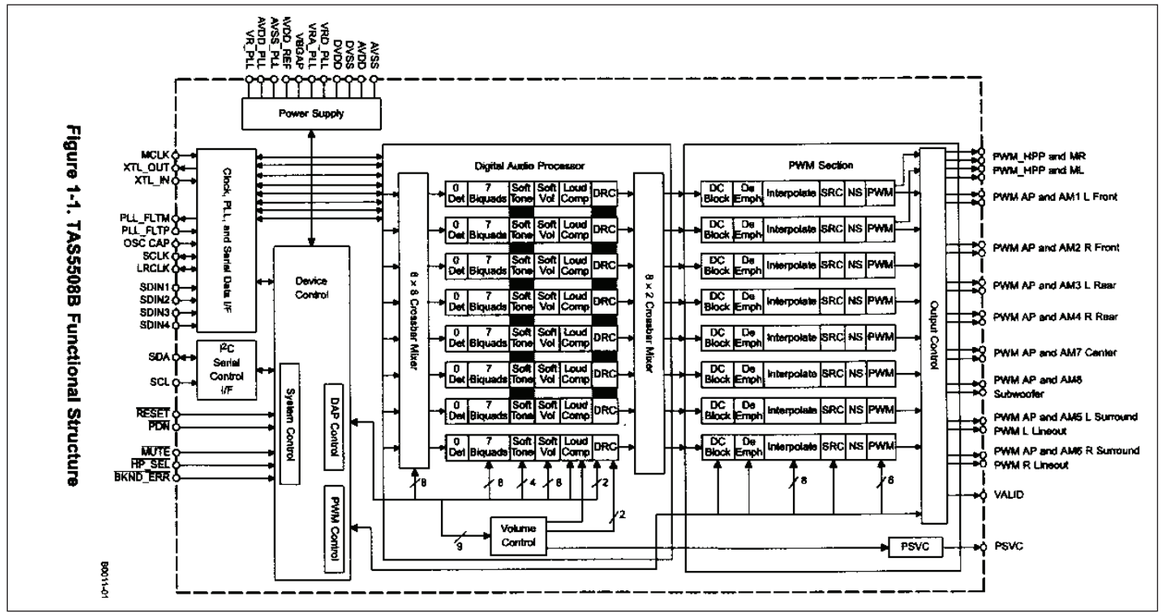
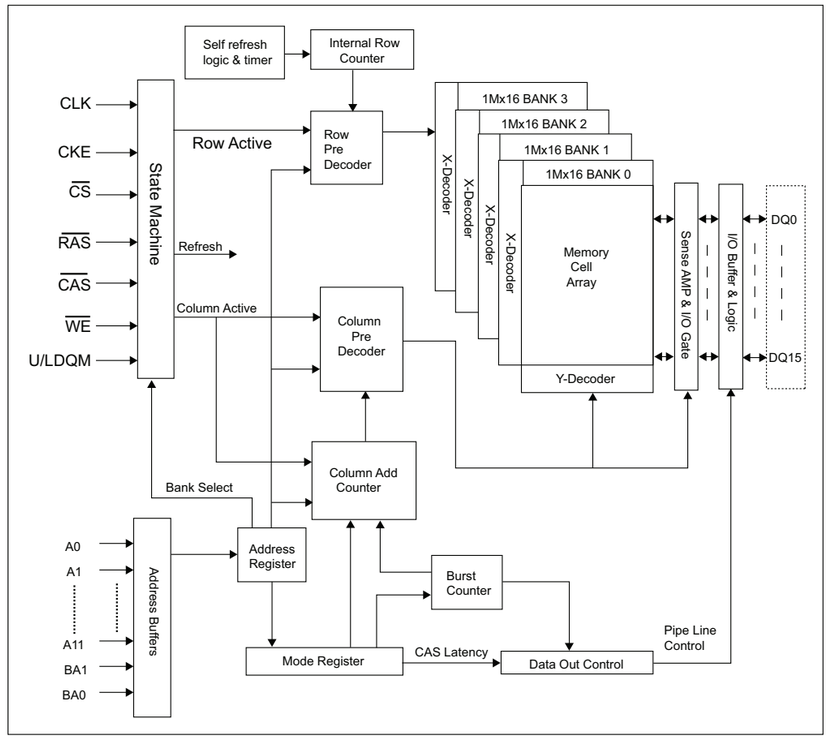


Figure 1-1. TAS5508B Functional Structure

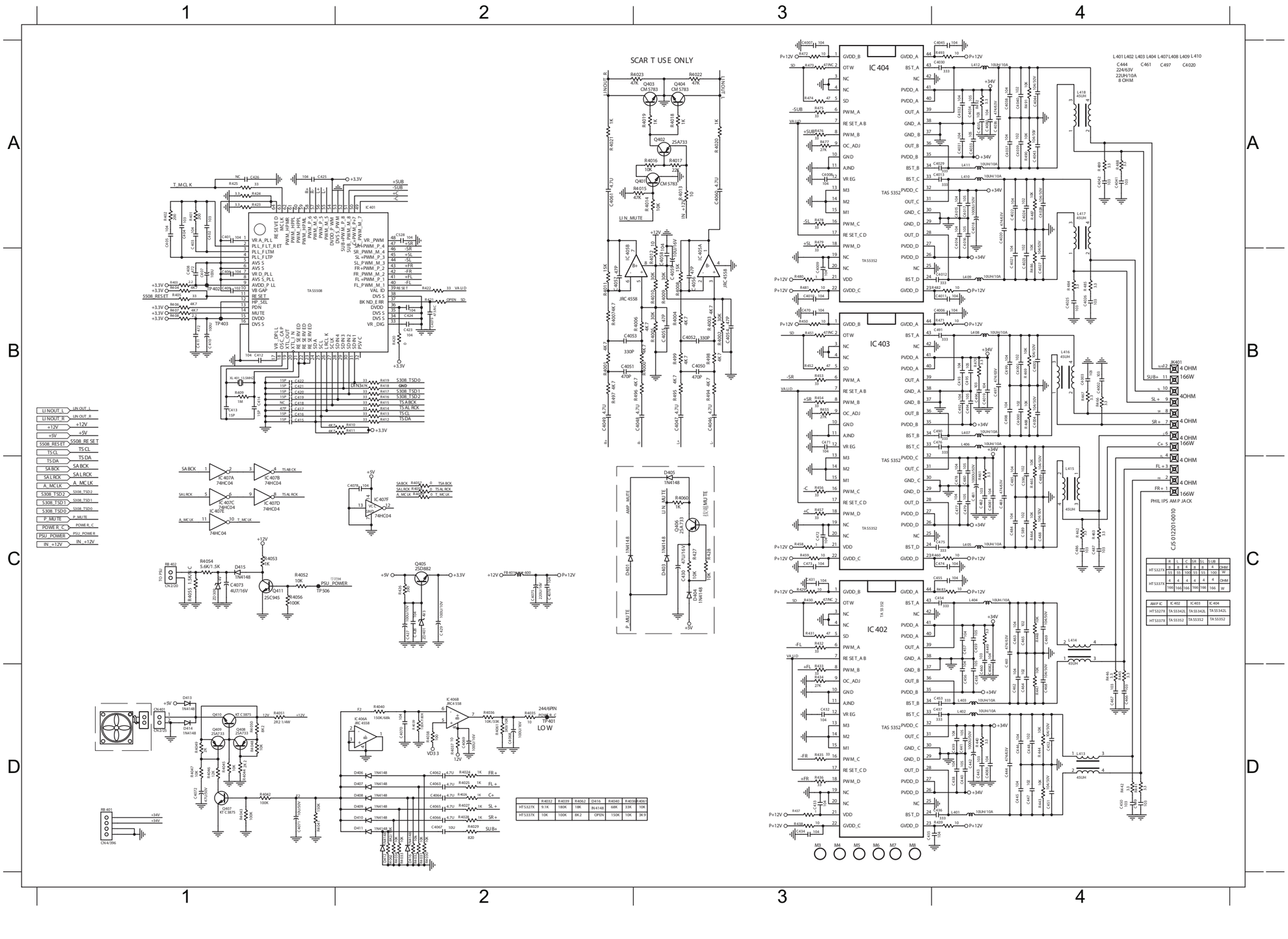
INTERNAL IC DIAGRAM - HY57V641620F



6 - 2

CIRCUIT DIAGRAM - part one

C4000B4 C4010B3 C4023B4 C4035A4 C4045A4 C407 B1 C409 B1 C421 B1 C434 D3 C447 D4 C460 D4 C471 B3 C484 C4 C497 B4 D410 D2 IC406 D2 L409 B4 Q407 D1 R4028D2 R4038D2 R4048D1 R4062D2 R417 B2 R431 C3 R442 D4 R454 B3 R465 C4 R477 A3 R488 A4
C4001B4 C4011B4 C4024A4 C4036A4 C405 A1 C4070D2 C410 B1 C422 B1 C435 D4 C448 D4 C461 C4 C472 C3 C485 C4 C498 B4 D411 D2 IC407 C1 L410 A4 Q408 D1 R4029D2 R4039D2 R4049D1 R407 B1 R418 B2 R432 C3 R443 D4 R455 B3 R466 B4 R478 A3 R489 A4
C4002B4 C4012B4 C4025B4 C4037A4 C406 B1 C4071D1 C411 B1 C423 B2 C436 D4 C449 D4 C462 D4 C473 C3 C486 C4 C499 B4 D412 D2 JK401 B4 L411 A4 Q409 D1 R403 B1 R404 B1 R405 B1 R408 B1 R419 B2 R433 D3 R444 D4 R456 C3 R467 B4 R479 A3 R490 A4
C4003B4 C4013A4 C4026B4 C4038A4 C4062D2 C4072D1 C412 B1 C424 B2 C437 D4 C450 D4 C463 C4 C474 C4 C487 C4 C528 A2 D413 D1 L401 D4 L412 A4 Q410 D1 R4030D2 R4040D2 R4050D1 R409 B1 R420 B2 R434 D3 R445 D4 R457 C3 R468 B4 R480 B3 R491 A4
C4004B4 C4014A4 C4027B4 C4039A4 C4063D2 C4073C1 C413 B1 C425 A1 C438 D4 C451 D4 C464 C4 C475 C4 C488 C4 C589 C4 D414 D1 L402 D4 L413 D4 Q411 C1 R4031D2 R4041D1 R4051D1 R410 B2 R421 B2 R435 D3 R446 D4 R458 C3 R469 B4 R481 B3 R492 A4
C4005B4 C4015A4 C4028A4 C404 A1 C4064D2 C4075C2 C414 B1 C427 C2 C439 D4 C452 D4 C465 C4 C476 B4 C489 C4 C590 C4 D415 C1 L403 D4 L414 C4 R401 A1 R4032D2 R4042D1 R4052C1 R411 B2 R422 B2 R436 D3 R447 D4 R459 C3 R470 B4 R482 B4 R493 A4
C4006B4 C4018A4 C4029A4 C4040A4 C4065D2 C4076C2 C415 B1 C428 C2 C442 D4 C453 D4 C466 D4 C477 C4 C490 B4 CN401D1 FB401C2 L404 C4 L415 C4 R402 A1 R4033D2 R4043D1 R4053C1 R412 B2 R423 A1 R437 D3 R448 C4 R460 C4 R471 B4 R483 C4 RB401D1
C4007A3 C402 A1 C403 A1 C4041A4 C4066D2 C4078C2 C416 B1 C429 C2 C443 D4 C454 C4 C467 D4 C478 C4 C491 B4 D406 D2 IC401 A2 L405 C4 L416 B4 R4024D2 R4034D2 R4044D1 R4054C1 R413 B2 R424 A1 R438 D3 R449 C4 R461 C4 R472 A3 R484 B4 RB402C1
C4008A3 C4020A4 C4030A4 C4042A4 C4067D2 C408 B1 C417 B1 C431 C3 C444 D4 C455 C4 C468 D4 C481 C4 C492 B4 D407 D2 IC402 C3 L406 B4 L417 A4 R4025D2 R4035D2 R4045D1 R4056C1 R414 B2 R425 A1 R439 D4 R450 B3 R462 C4 R474 A3 R485 B4 XL401B1
C4009B3 C4021B4 C4031A4 C4043A4 C4068D2 C4080A4 C419 B1 C432 D3 C445 D4 C456 D4 C469 C4 C482 C4 C493 B4 D408 D2 IC403 B3 L407 B4 L418 A4 R4026D2 R4036D2 R4046D1 R406 B1 R415 B2 R426 C2 R440 D4 R452 B3 R463 C4 R475 A3 R486 B4 ZD309C1
C401 A1 C4022A4 C4032A4 C4044A4 C4069D2 C4081C4 C420 B1 C433 D3 C446 D4 C457 C4 C470 B3 C483 C4 C496 B4 D409 D2 IC404 A3 L408 B4 Q405 C2 R4027D2 R4037D2 R4047D1 R4061D2 R416 B2 R429 C3 R441 D4 R453 B3 R464 C4 R476 A3 R487 A4 ZD401C2



6 - 3

CIRCUIT DIAGRAM - part two

C0201 C2 C0217 D1 C0241 D4 C0606 C4 C211 D4 C229 C1 C260 D1 C711 A3 C737 A3 C817 B2 C833 B2 CE204 D1 CE806 D1 CO254 A2 FB210 C1 FB706 A3 IC209 B3 L703 B3 Q707 A3 R211 C4 R229 D1 R252 C1 R272 D2 R293 D2 R732 B3 R807 C2 R833 B2 XL203 C1
C0202 A2 C0218 D1 C0242 D4 C101 A4 C213 C1 C230 D2 C261 D1 C713 A3 C738 C2 C818 A2 C834 B1 CE205 D1 CE807 D1 D201 A3 FB211 C1 FB707 C2 IC210 A3 L704 B3 Q708 A3 R212 C4 R230 C1 R253 C1 R274 A4 R294 B2 R733 B3 R808 A1 R834 B2 ZD209 B4
C0203 A2 C0219 D1 C0243 D4 C102 A4 C214 C2 C231 D2 C600 C4 C716 B3 C801 A1 C819 B1 C835 A1 CE206 D1 CE808 D1 D202 D1 FB212 C1 FB708 C2 IC801 B1 L707 A3 Q801 A1 R213 D2 R231 C1 R254 D4 R276 D2 R296 D1 R734 B3 R812 A1 R835 B2
C0204 D1 C0220 D1 C0244 A2 C105 A4 C215 A2 C232 C1 C601 C4 C717 A3 C802 A2 C820 B2 C836 A2 CE207 D1 CE809 D1 D204 A3 FB213 C1 FB712 A4 JK601 B4 L801 A2 Q802 A1 R215 D2 R232 C1 R256 D1 R277 D2 R297 D1 R737 A3 R813 A1 R836 B1
C0205 A2 C0221 D1 C0245 A2 C107 B4 C216 B2 C233 D1 C602 C4 C718 B3 C803 B1 C821 B2 C837 A2 CE212 D1 CN201 B4 D205 D3 FB214 C1 FB715 A3 JK701 A3 L802 A2 Q803 A1 R216 D1 R233 D2 R257 D1 R278 D2 R298 D1 R738 C2 R814 A2 R838 B2
C0206 A2 C0222 D1 C0246 A2 C109 A4 C217 A2 C237 B3 C603 B4 C719 A3 C804 A2 C822 B2 C838 B2 CE215 C2 CN202 C1 D600 D1 FB216 C2 FB801 A1 JK702 A3 L803 B2 Q804 A2 R217 D1 R234 C1 R258 D1 R279 C1 R299 D1 R748 A3 R815 A2 R839 B2
C0207 A3 C0226 D1 C0247 A2 C201 A2 C218 B4 C238 B3 C701 A3 C720 B3 C805 B1 C823 B2 C839 B2 CE216 C2 CN203 D3 F201 B4 FB217 A2 FB802 A1 JK704 A3 Q204 A3 Q805 A1 R218 D2 R235 B1 R259 D2 R280 B3 R601 D1 R750 A4 R816 A1 R840 B2
C0208 A3 C0227 C2 C0248 B4 C202 B4 C219 A3 C239 D1 C702 A3 C721 A3 C806 B1 C824 B2 C840 B2 CE217 C2 CN204 D2 FB201 A2 FB220 C1 FB803 B1 L201 A2 Q205 D1 R201 C4 R219 A3 R236 B1 R260 D2 R281 D3 R603 C4 R751 A3 R817 B2 R841 B2
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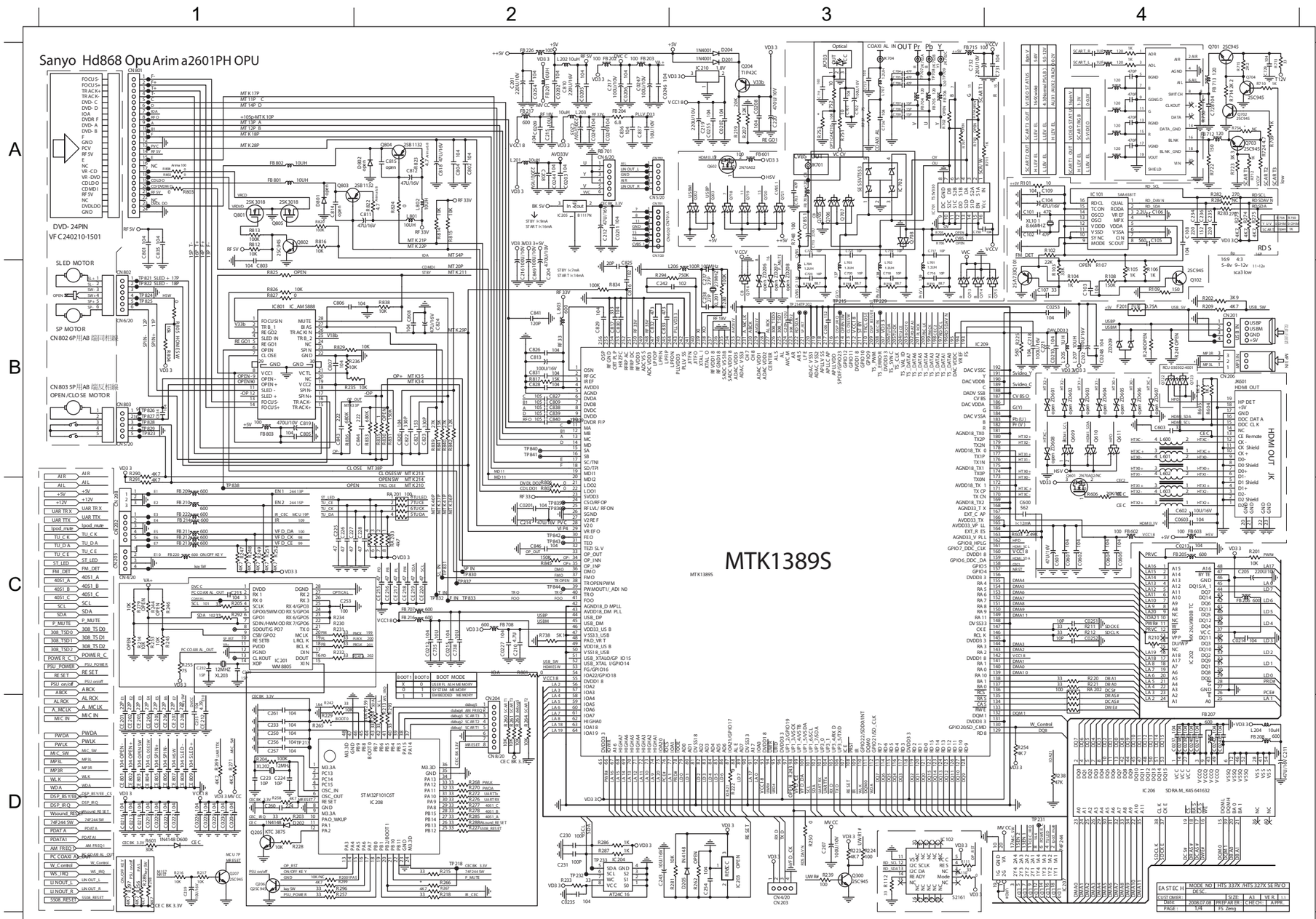
C0213 C4 C0237 D4 C0601 C4 C207 D3 C225 C1 C254 D3 C707 A3 C731 A4 C811 A2 C829 B2 C849 B2 CE802 D1 CN702 A2 FB206 C4 FB603 C4 IC205 A2 L206 B3 Q602 A3 R207 A3 R224 D3 R248 C1 R268 D2 R289 D1 R704 A3 R803 A1 R826 B1 RA203 C2
C0214 C4 C0238 D4 C0602 C4 C208 A2 C226 C1 C255 D1 C708 A3 C732 A3 C812 A2 C830 B2 CE201 D1 CE803 D1 CN801 A1 FB207 D4 FB703 A3 IC206 D4 L207 B4 Q611 B4 R208 D2 R225 B4 R249 C1 R269 D1 R290 B1 R705 A3 R804 B1 R827 B1 RB701 A2
C0215 C2 C0239 D4 C0603 C4 C209 B3 C227 C1 C256 D1 C709 A3 C735 C2 C813 B2 C831 B2 CE202 D1 CE804 D1 CN802 B1 FB208 D4 FB704 A3 IC207 D4 L701 B3 Q705 A3 R209 B4 R227 D2 R250 D3 R270 D2 R291 C1 R724 A4 R805 B1 R829 B1 XL201 B3
C0216 D1 C0240 D4 C0604 C4 C210 C2 C228 C2 C257 D1 C710 A3 C736 A3 C816 B2 C832 B2 CE203 D1 CE805 D1 CN803 B1 FB209 C1 FB705 A3 IC208 D2 L702 B3 Q706 A3 R210 C4 R228 D1 R251 C1 R271 D1 R292 C1 R731 B3 R806 C2 R831 B2 XL202 D1



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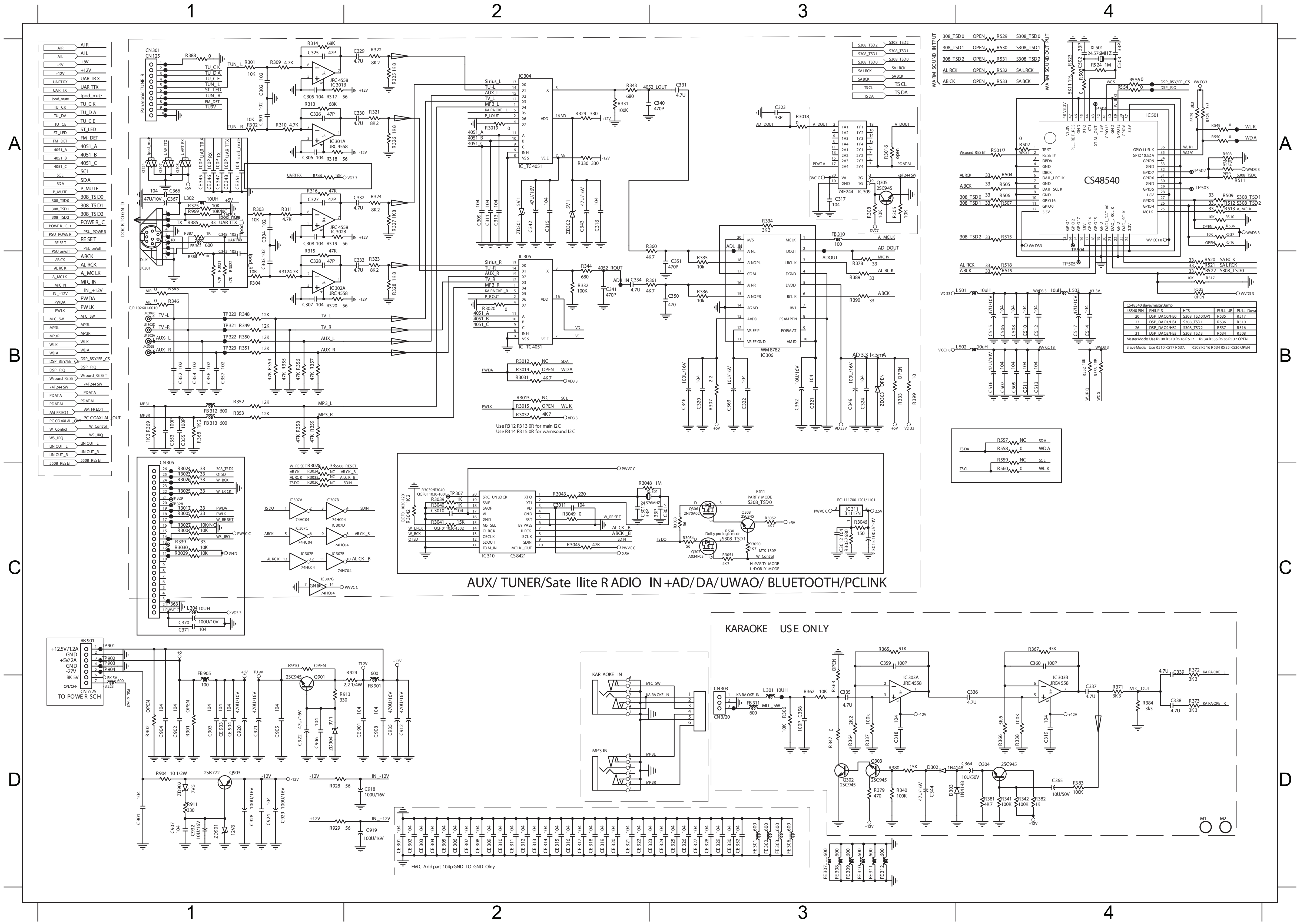
CIRCUIT DIAGRAM - part three

C301	A1	C313	A2	C324	B3	C334	B2	C351	B3	C366	A1	C515	B4	C908	D2	C932	D1	CE309	D2	CE319	D2	CE329	D3	CE904	D1	FE302	D3	IC304	A2	Q305	A3	R3020	B2	R311	A1	R321	A2	R331	A3	R351	B1	R361	B3	R390	B3	R558	B4	ZD302	A2
C302	A1	C315	A2	C325	A1	C340	A3	C352	B1	C506	B4	C516	B4	C912	D2	C935	D2	CE310	D2	CE320	D2	CE330	D3	CN301	A1	FE306	D3	IC305	B2	Q507	A1	R3021	B1	R312	B1	R322	A2	R332	B2	R352	B1	R368	B1	R399	B3	R560	C4	ZD901	D1
C303	B1	C316	A2	C326	A1	C341	B2	C353	B1	C507	B4	C517	B4	C918	D2	CE301	D2	CE311	D2	CE321	D2	CE345	A1	FB223	D1	FE307	D3	IC306	B3	Q508	A1	R3022	B1	R313	A1	R323	B2	R334	A3	R353	B1	R369	B1	R529	A4	R904	D1	ZD902	D1
C304	A1	C317	A3	C327	A1	C342	A2	C354	B1	C508	B4	C901	D1	C919	D2	CE302	D2	CE312	D2	CE322	D2	CE346	A1	FB302	A1	FE308	D3	IC309	A3	Q724	A1	R303	A1	R314	A1	R324	A2	R335	B3	R354	B1	R375	A1	R530	A4	R911	D1	ZD904	D1
C305	A1	C318	D3	C328	B1	C343	A2	C355	B1	C509	B4	C902	D1	C920	D1	CE303	D2	CE313	D2	CE323	D2	CE347	A1	FB310	A3	FE309	D3	JK301	B1	Q901	D1	R304	B1	R315	A1	R325	A2	R336	B3	R355	B1	R378	B3	R531	A4	R913	D1		
C306	A1	C319	D4	C329	A2	C345	A1	C356	B1	C510	B4	C903	D1	C921	D1	CE304	D2	CE314	D2	CE324	D3	CE348	A1	FB312	B1	FE310	D3	JK302	B1	Q903	D1	R305	A3	R316	A1	R326	A2	R343	A2	R356	B1	R385	A1	R532	A4	R924	C2		
C307	B1	C320	B3	C330	A2	C346	B3	C357	B1	C511	B4	C904	D1	C922	D1	CE305	D2	CE315	D2	CE325	D3	CE351	A1	FB313	B1	FE311	D3	L302	A1	R301	A1	R307	B3	R317	A1	R327	A2	R344	B2	R357	B1	R386	A1	R533	A4	R928	D1		
C308	A1	C321	B3	C331	A3	C348	A1	C360	C4	C512	B4	C905	D1	C924	D1	CE306	D2	CE316	D2	CE326	D3	CE352	D3	FB901	D1	FE312	D3	L501	B4	R3018	A3	R308	A3	R318	A1	R328	B2	R348	B1	R358	B1	R387	A1	R546	A1	R929	D1		
C309	A2	C322	B3	C332	A2	C349	B3	C362	B3	C513	B4	C906	D1	C928	D1	CE307	D2	CE317	D2	CE327	D3	CE901	D2	FB905	C1	IC301	A1	L502	B4	R3019	A2	R309	A1	R319	A1	R329	A2	R349	B1	R359	B1	R388	A1	R552	B4	RB901	C1		
C311	A2	C323	A3	C333	B2	C350	B3	C363	B3	C514	B4	C907	D1	C929	D1	CE308	D2	CE318	D2	CE328	D3	CE903	D1	FE301	D3	IC302	A1	L503	B4	R302	A1	R310	A1	R320	B1	R330	A2	R350	B1	R360	A2	R389	B3	R553	B4	ZD301	A2



6 - 5

PCB LAYOUT - TOP VIEW

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C0208 D2 C215 B1 C301 A2 C343 B2 C4013 C3 C4073 D2 C443 C4 C491 C4 C717 A1 C819 D1 C918 B3 CN301 B1 FB211 D2 FB803 D1 IC403 C4 JK704 A2 L414 A4 Q508 A2 R210 C2 R236 C1 R274 C1 R302 A2 R323 B2 R359 B3 R413 D4 R450 C4 R482 C4 R731 A1 R817 C1 R928 B3
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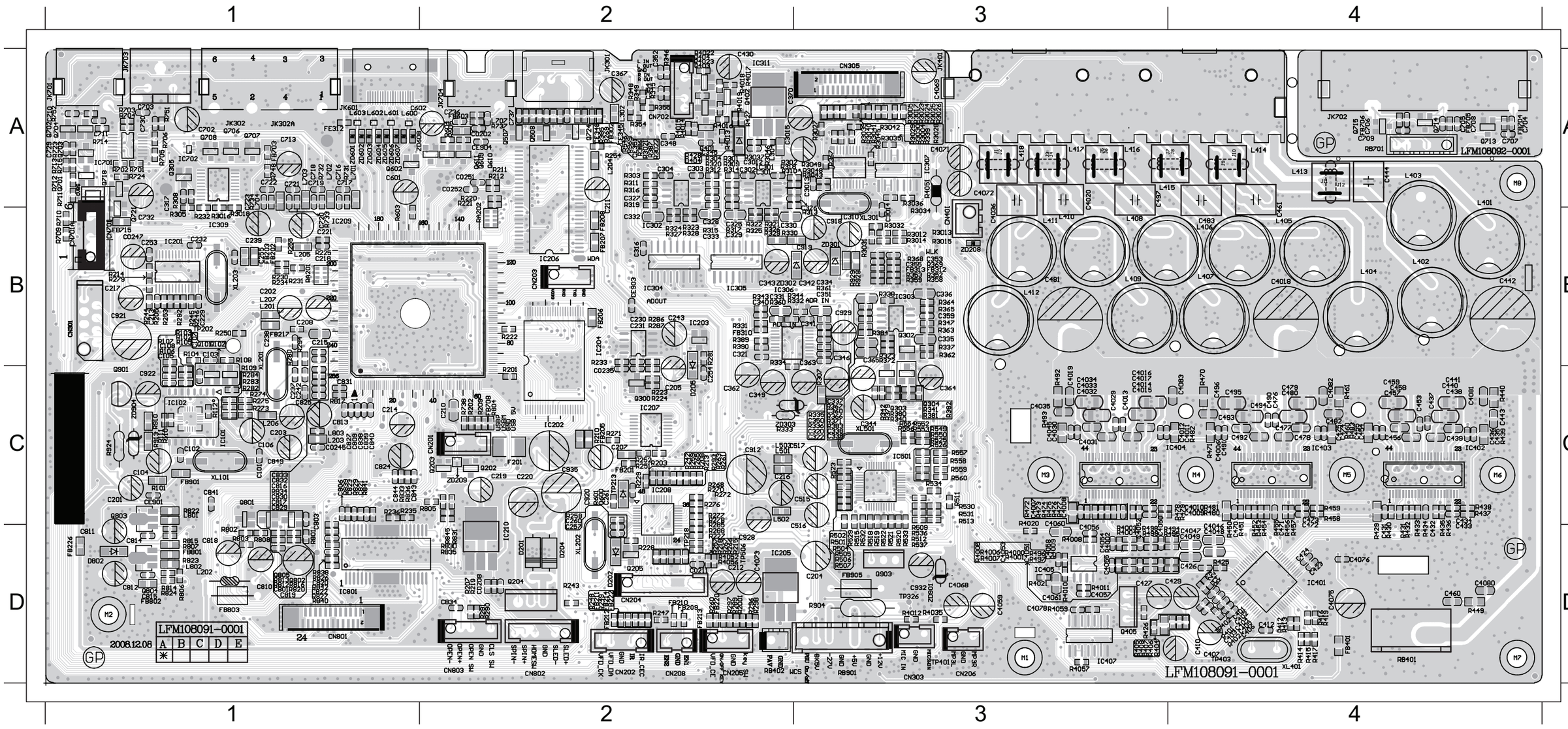

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PCB LAYOUT - BOTTOM VIEW

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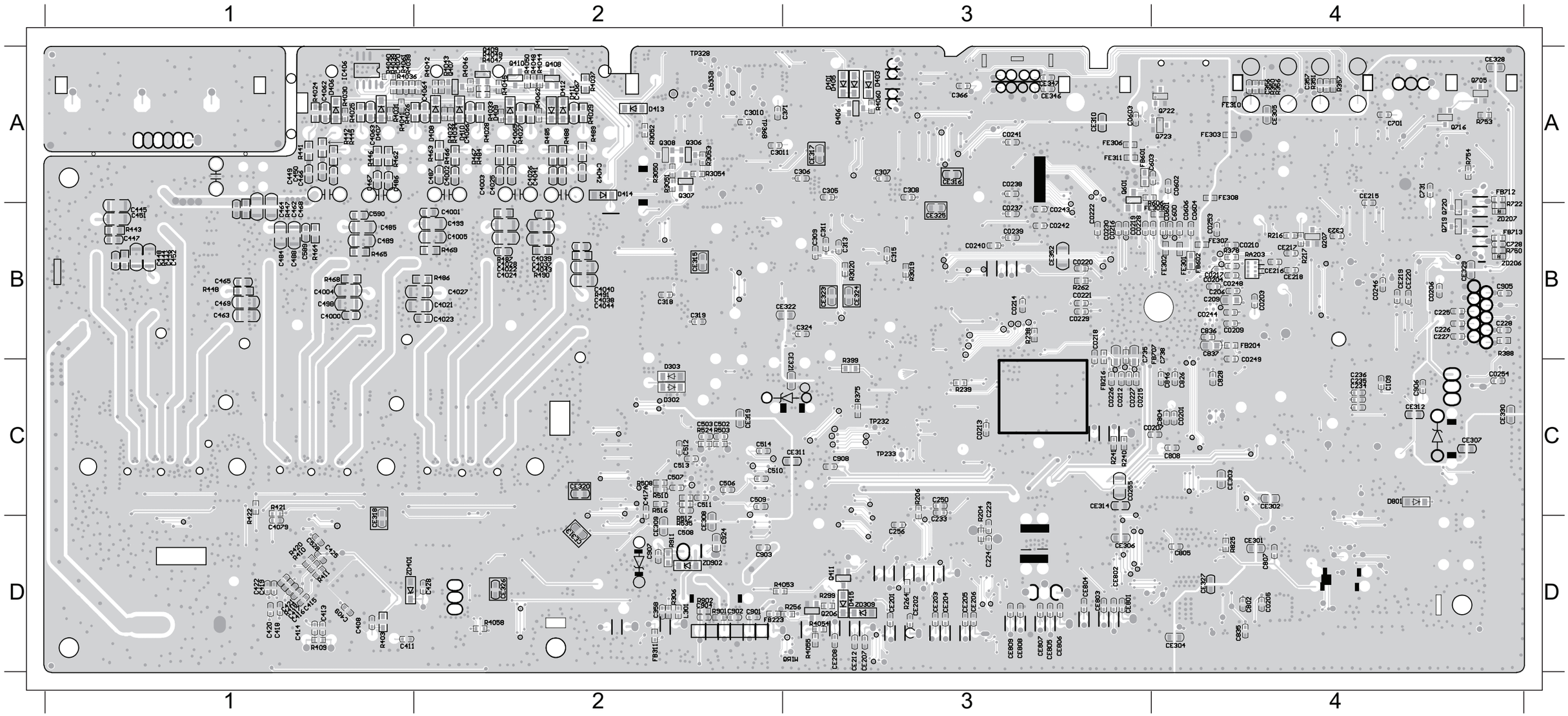

POWER BOARD

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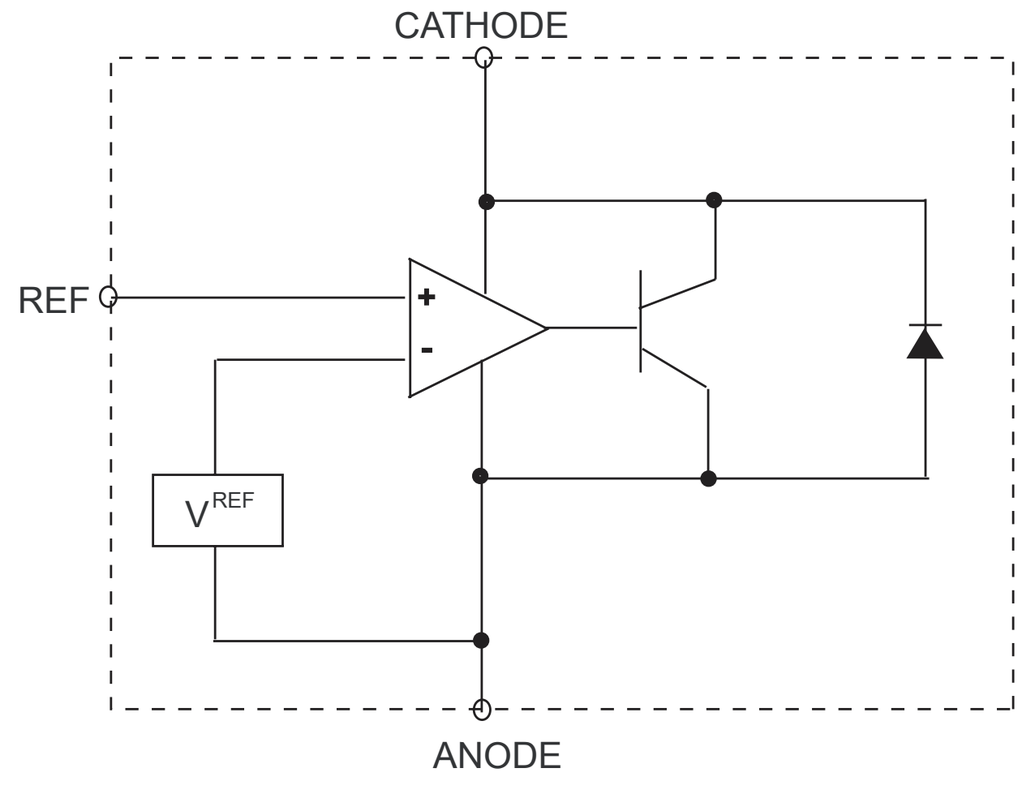

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CIRCUIT DIAGRAM

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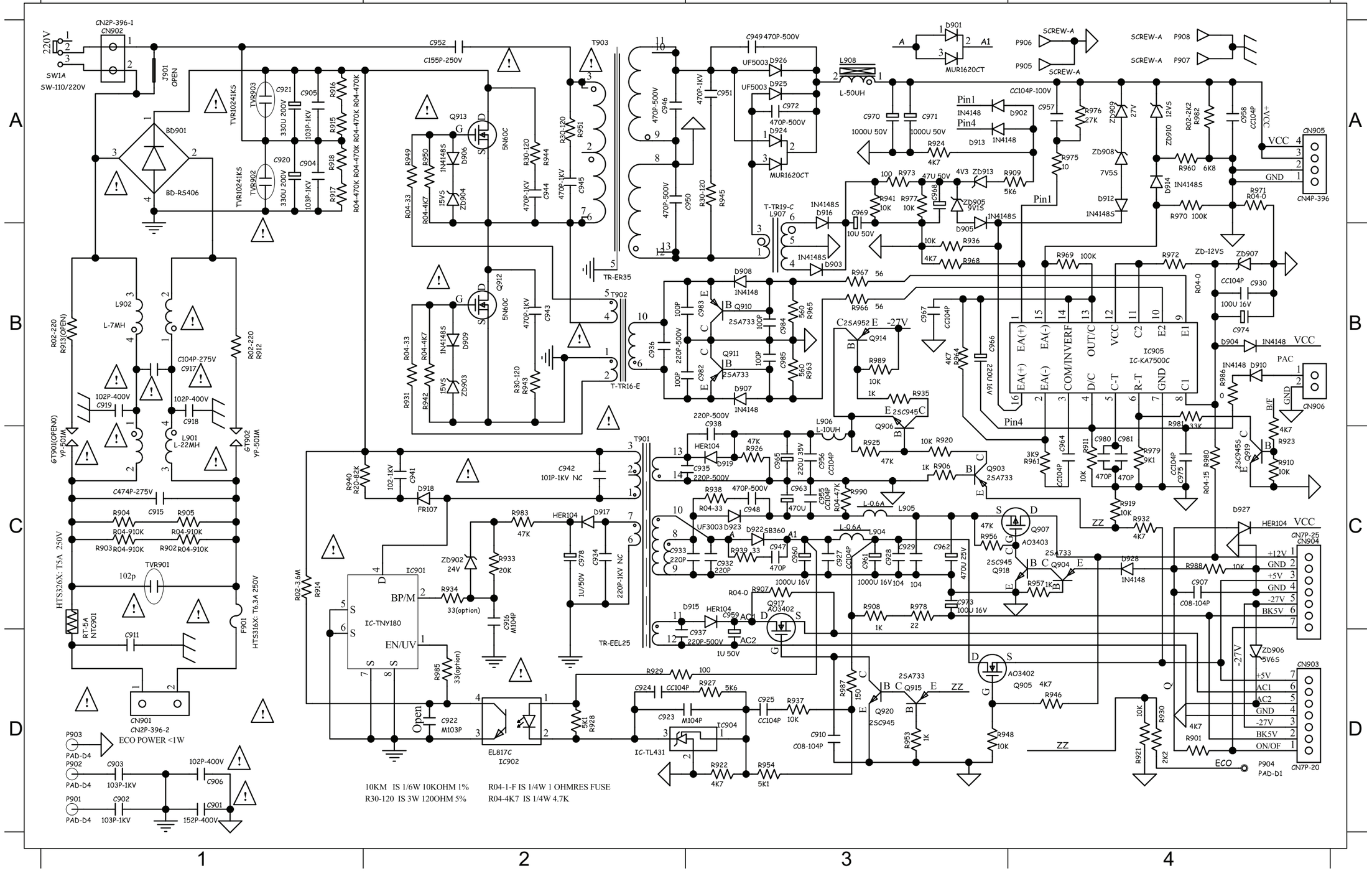

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PCB LAYOUT - TOP VIEW

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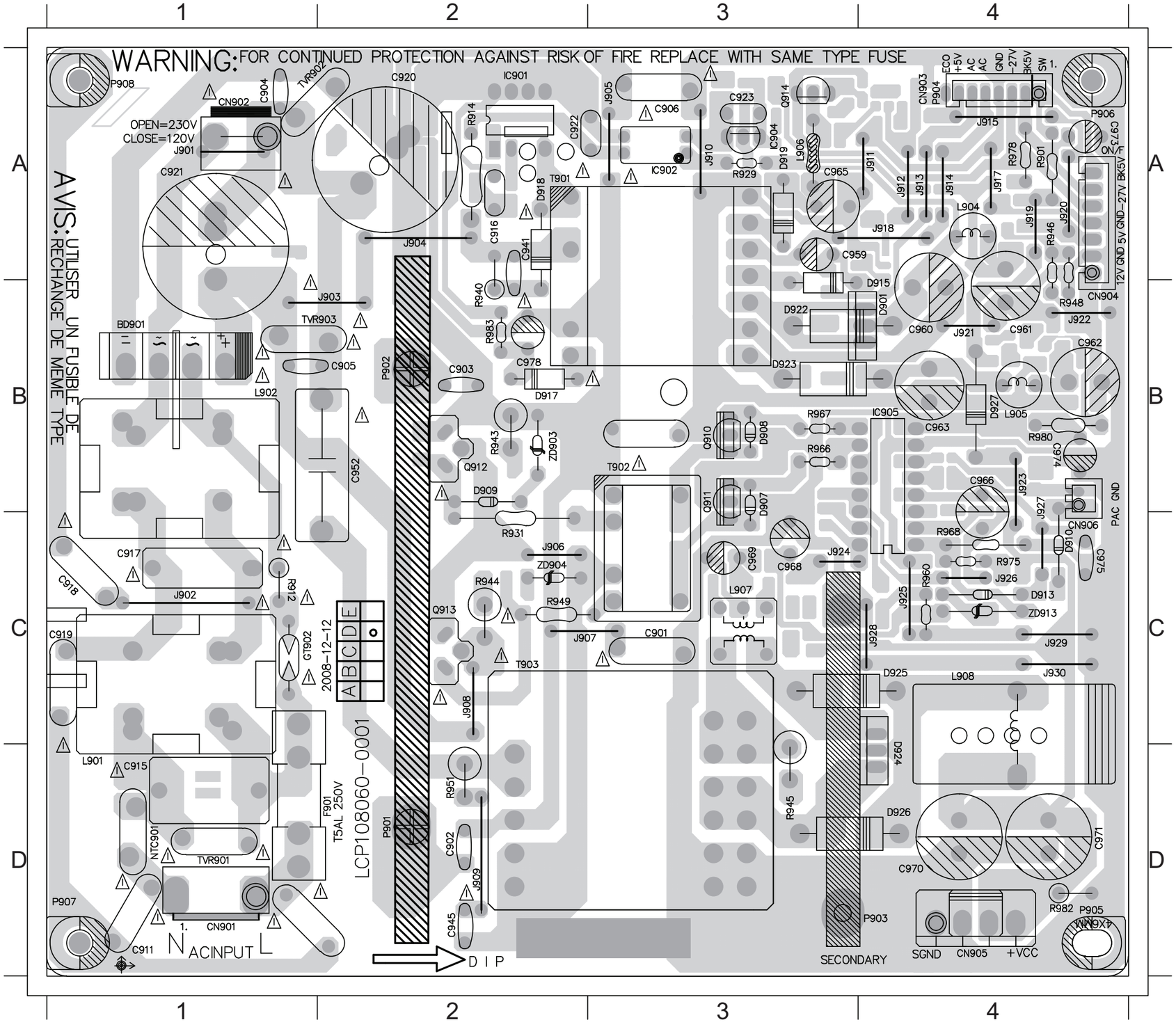
C901	C3	C915	D1	C921	A1	C960	B4	C968	C3	C978	B2	D907	B3	D918	A1	F901	D2	J901	A1	J907	C2	J913	A4	J920	A4	J926	C4	L902	B1	NTC901	D1	R901	A4	R943	B2	R951	D2	R978	A4	T903	C2	ZD913	C4
C902	D2	C916	A2	C923	A3	C961	B4	C969	C3	CN901	D1	D908	B3	D919	A3	GT902	C1	J902	C1	J908	C2	J914	A4	J921	B4	J927	B4	L904	A4	Q910	B3	R912	C1	R944	C2	R960	C4	R980	B4	TVR901	D1		
C903	B2	C917	C1	C941	A2	C962	B4	C971	D4	CN903	A4	D909	B2	D922	B3	IC901	A2	J903	B1	J909	D2	J915	A4	J922	B4	J928	C4	L905	B4	Q911	B3	R914	A2	R945	D3	R966	B3	R982	D4	TVR902	A1		
C904	A1	C918	C1	C945	D2	C963	B4	C973	A4	CN904	B4	D910	C4	D923	B3	IC902	A3	J904	A2	J910	A3	J917	A4	J923	B4	J929	C4	L906	A3	Q912	B2	R929	A3	R946	A4	R967	B3	R983	B2	TVR903	B1		
C905	B2	C919	C1	C952	B2	C965	A3	C974	B4	CN905	D4	D915	B4	D924	D4	IC904	A3	J905	A3	J911	A4	J918	A4	J924	C3	J930	C4	L907	C3	Q913	C2	R931	C2	R948	B4	R968	C4	T901	A1	ZD903	B2		



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PCB LAYOUT - BOTTOM VIEW

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C910 A2 C929 B1 C942 A3 C948 B2 C956 A2 C972 C2 C984 B2 D905 C2 D928 B1 Q907 B1 R905 D4 R911 B1 R919 A1 R926 A2 R934 A3 R939 B2 R956 B1 R965 B2 R973 C2 R986 C1 ZD906 A1
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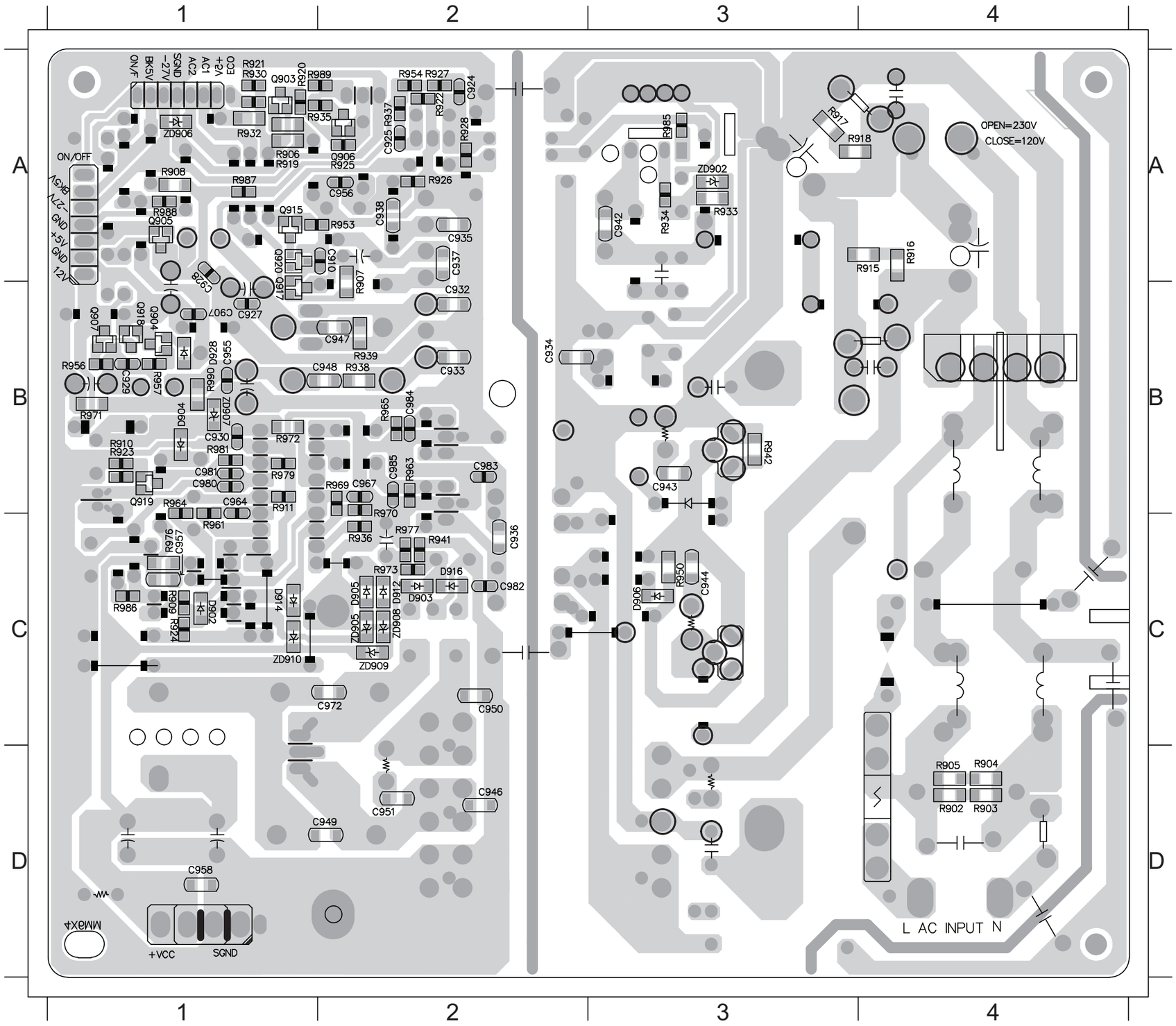

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MP3 IN BOARD

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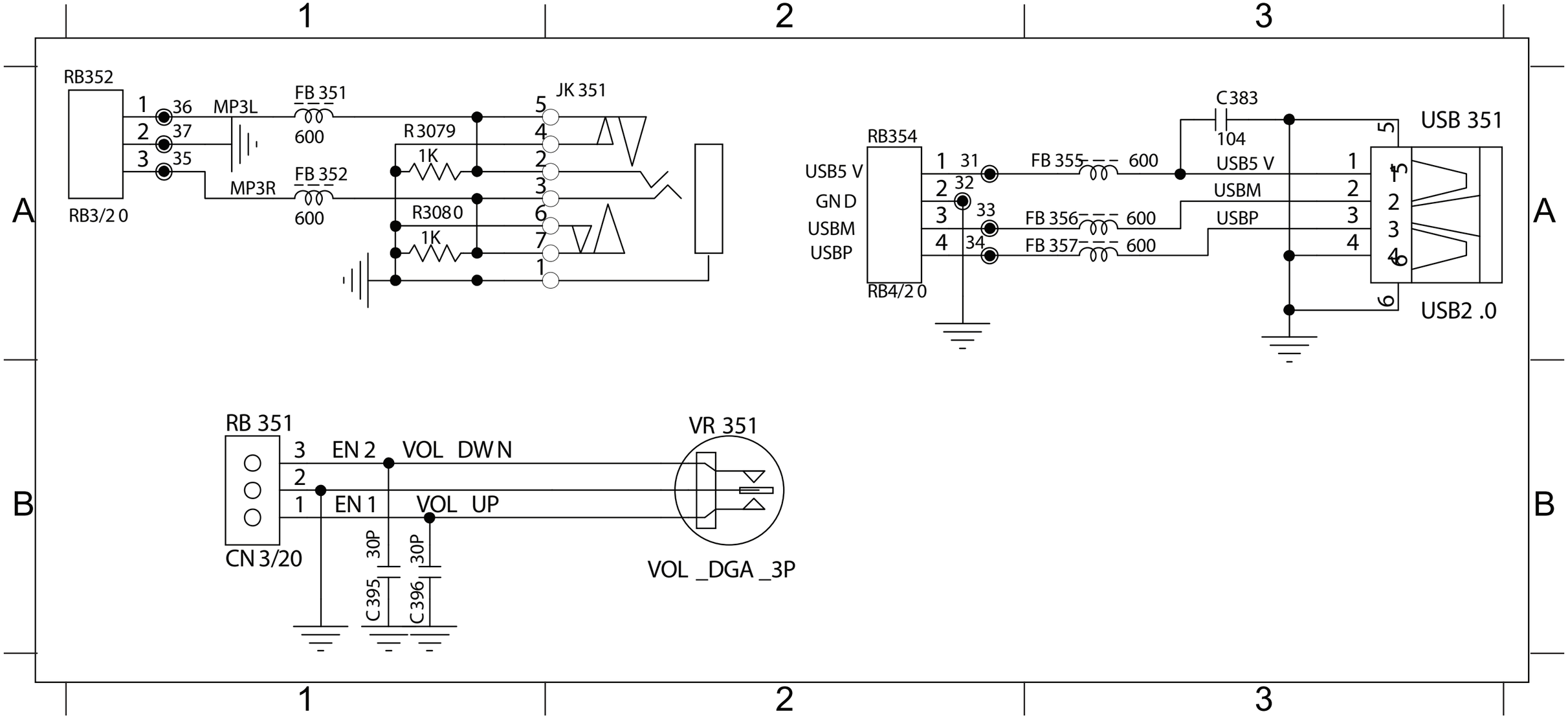

PCB LAYOUT - TOP VIEW

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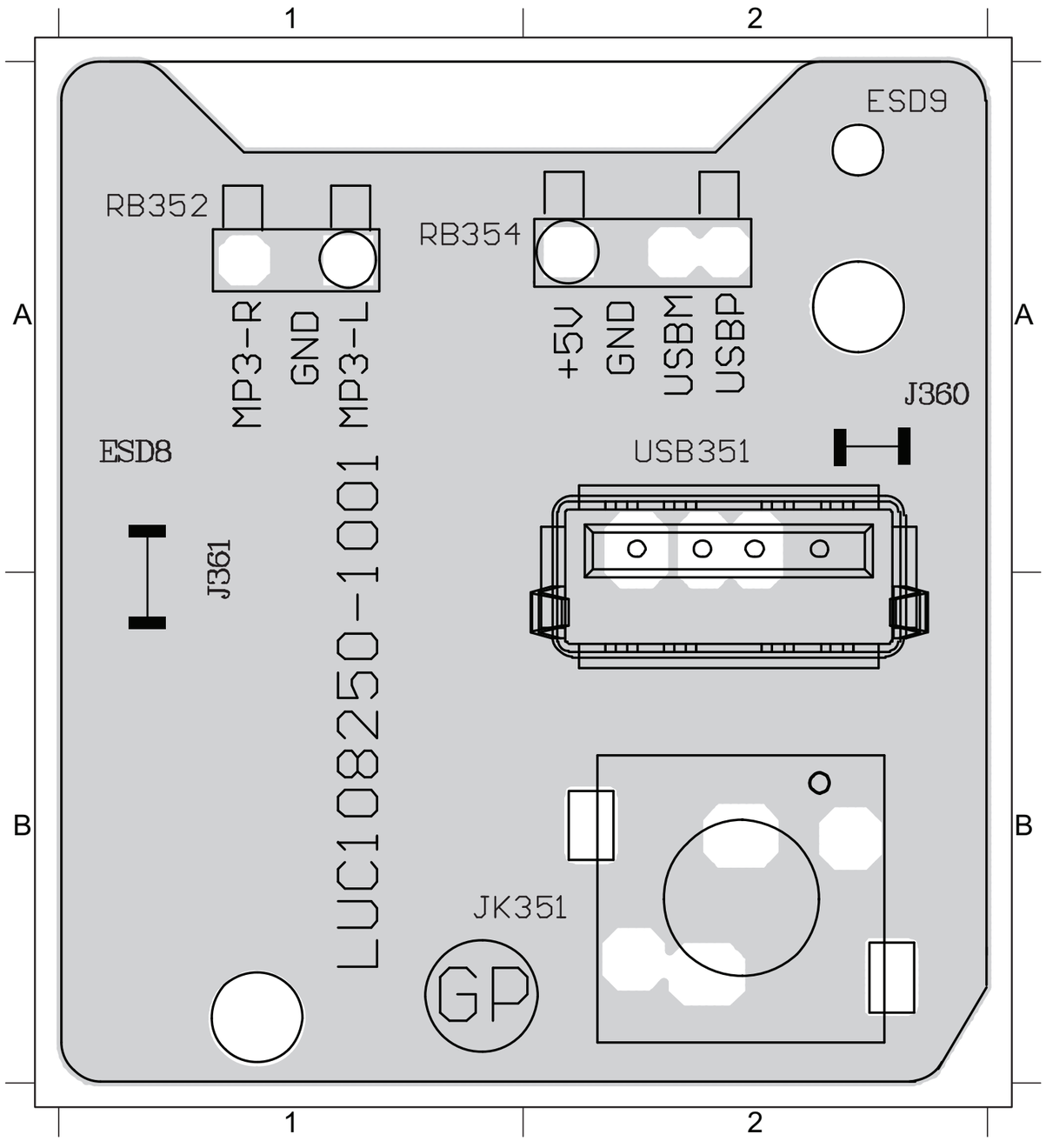

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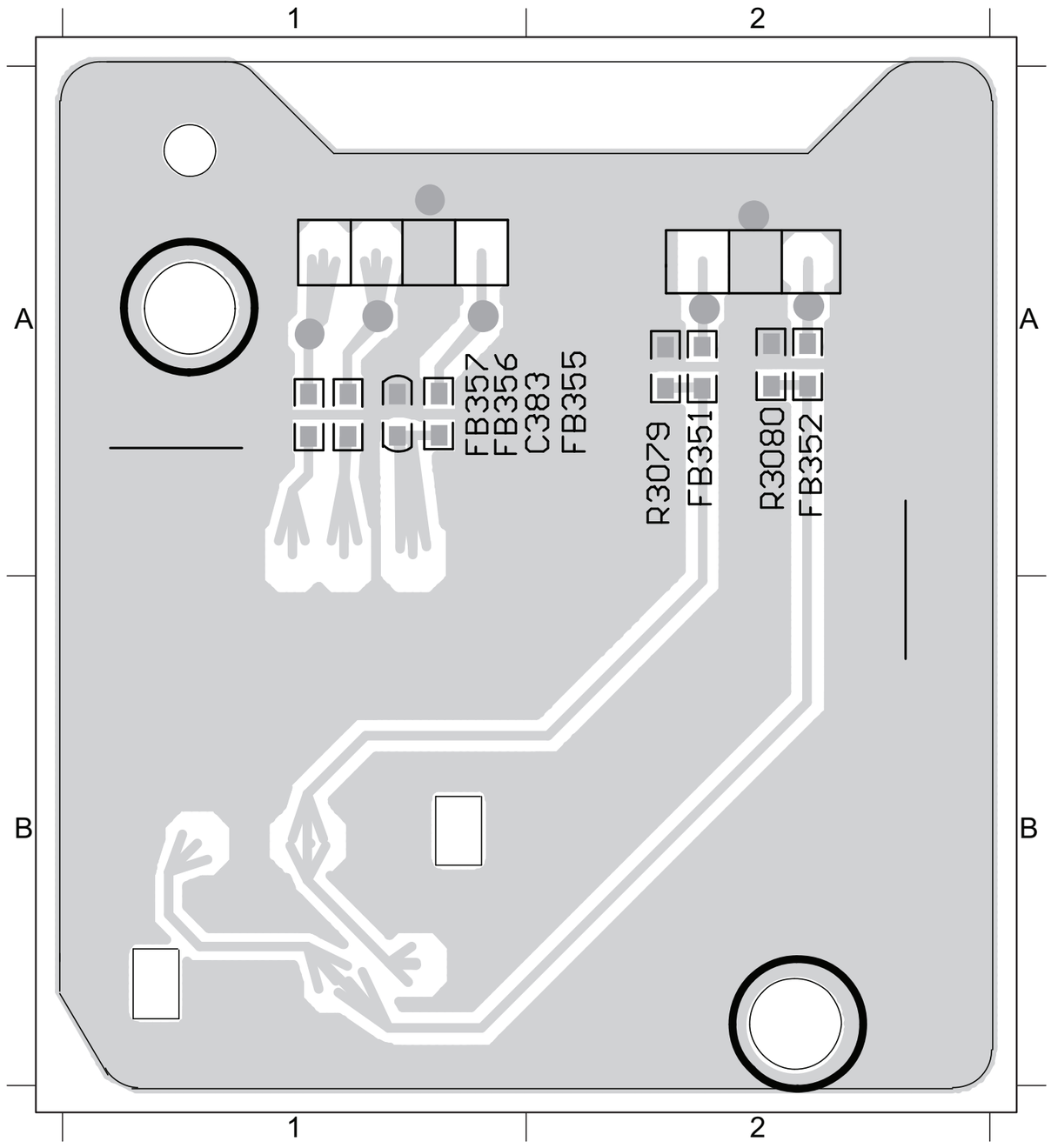

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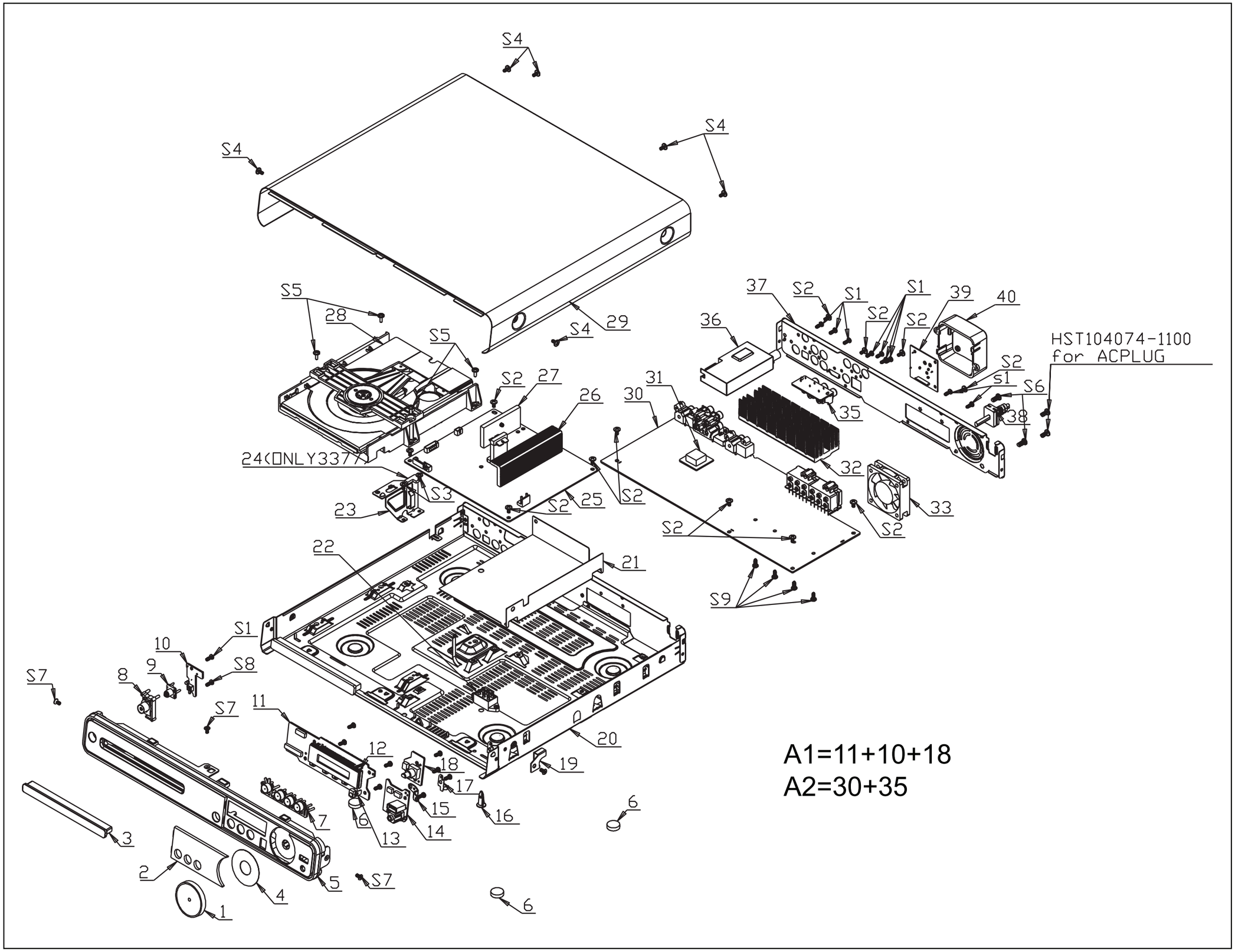
Mechanical Exploded View



MECHANICAL & ACCESSORIES PARTS LIST

Loc.	12NC	Description
MAIN UNIT		
1	996510021087	VOLUME KNOB
2	996510021093	DISPLAY LENS
3	996510021506	DVD DOOR
5	996510021534	FRONT PANEL
7	996510021068	FUNCTION KNOB
8	996510021069	STANDBY KNOB
9	996510021064	STANDBY LENS
14	996510021066	MP3 IN PCB ASSY
25	996510021128	POWER PCB ASS'Y
28	996510021248	DVD LOADER
29	996510021505	TOP COVER
33	996510021076	FAN DC12V 0.55A
36	996510017572	TUNER PACK KST-MT001FS0-6BK
38	⚠ 996510001252	POWER CORD
A1	996510021089	DISP+LED+VOL PCB ASSY
A2	996510021119	MAIN+YUV PCB ASS'Y
FM	996510008251	FM ANT
IPOK	996510021131	SIMPLE IPOD DOCK MODULE
MAINUT	996510022413	MAIN UNIT 120V 60HZ 1000W US
RC	996510021121	REMOTE CONTROL 39 KEYS
V1	996510007429	FFC CABLE 10P100mm UL20798 P1
VIDEO	996500013058	RCA CABLE 2P 1.2M
LOUDSPEAKER SYSTEM		
SPKC	996510021124	SPEAKER BOX-CENTER
SPKFL	996510021123	SPEAKER BOX-FRONT LEFT
SPKFR	996510021125	SPEAKER BOX-FRONT RIGHT
SPKRL	996510021126	SPEAKER BOX-REAR LEFT
SPKRR	996510021127	SPEAKER BOX-REAR RIGHT
SUBW	996510021118	SUBWOOFER
SPKCC	996510021504	SPK WIRE L3M GREEN
SPKFLC	996510021501	SPK WIRE L4000 WHITE
SPKFRC	996510021498	SPK WIRE L4000 RED
SPKRLC	996510021499	SPK WIRE L8M BLUE
SPKRRC	996510021502	SPK WIRE L8M GREY
SPKSC	996510021503	SPK WIRE L4000 PURPLE

ELECTRICAL PARTS LIST

Loc.	12NC	Description
DISP+LED+VOL PCB ASSY		
IC351	996500029614	IC 52P PT6311
LD351	996510020167	LED 3DIA ULTRA RED TINT CLEAR
Q351	994000000921	XISTR PNP 2SA812 HFE:200-400
Q352	994000000915	XISTR NPN 2SC1623
Q353	994000000921	XISTR PNP 2SA812 HFE:200-400
SN351	994000005472	IRT RECEIVER IRM-2638AF4

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ELECTRICAL PARTS LIST

Loc.	12NC	Description
POWER PCB ASS'Y		
BD901	996510011372	BRIDGE KBU808 8A 800V
C901	996500027115	CAP.SAFTY Y1 102PF 250V 20% Y5
C902	996500018042	COND DISC 0.01UF 1KV 20%
C906	994000005344	CAP.SAFETY Y1 560PF 400V 10%
C915	996510012548	GOND SAFETY 0.47uF 275V 10% X2
C917	994000005343	COND SAFETY 0.22UF 275V 20%
C920	996510012472	COND ELEC 330uF 200V 20%
C941	996510021078	COND DISC 1000 pF 1KV 10%
C945	996500020264	COND DISC 470PF 1KV 10%
C952	996510018266	COND METAL 1.5uF 250V DC 10%
CN901	996510018268	CONNECTOR 4P P=3.96mm180' NICK
CN903	996500015901	CONNECTOR 6P P=2.0MM
CN904	996510021055	CONNECTOR B7B-XH-A 7P
CN905	996510016729	CONNEC 4P P=3.96mm 180' NICKEL
CN906	996500015898	CONNECTOR 2P PITCH=2.0MM
D907	996500026949	DIODE SW 1N4148 PB<1000PPM
D915	996510012516	DIODEHER105 DO-411A400V50nSFMS
D918	994000001571	DIODE FR107 1A 1000V
D922	994000005249	DIODE SB360 3A 60V DO-201AD
D923	994000000943	DIODE UF3003 3A 200V
D924	994000005346	RECTIFIER UF1602CT TO-220AB 3P
F901	⚠ 996500042572	FUSE 5A 250V SLOW
IC901	996510021079	IC 8P(P3=N.C) TNY180PN DIP-8C
IC902	994000000946	OPTICAL SENSOR 4P
IC904	994000000952	IC 3PIN TL431
IC905	996510008293	IC 16P AZ7500BP-E1
L901	996510021083	COMMON COIL 6mH 21.5Ts D0.6mm
L902	996510021053	COMMON COIL 15mH 37.5Ts D0.6mm
L904	996500016694	6UH 13.5TS 2UEW
L907	996500027102	TOROID COIL S1=1TS D0.65MMX2 P
L908	996510012474	COMMON COIL75uH10%1KHz/0.25VD1
Q903	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
Q912	996510021085	MOSFET STK1060F TO220F AUK600V
Q914	996510010356	XISTR PNP 2SB647 TO-92MOD
R943	996510012519	RES. 120 OHM 3W 5% MOF
T901	⚠ 996510021071	TRASFO EEL25 7+7P 40W 100KHz
T902	⚠ 996510021088	TRASFO EEL19 5+5P 100KHz 20W
T903	⚠ 996510021086	TRASFO ERL35 7+7P 150W 100KHz
ZD903	994000002067	DIODE ZENR 14.5-15.1V 0.5W
MP3 IN PCB ASSY		
JK351	996510004129	KARAOKE JACK D3.6MM 7P
JK352	996510004129	KARAOKE JACK D3.6MM 7P
USB351	996510013742	USB JACK 4P

Note: **Only these parts mentioned in the list are normal service parts.**

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ELECTRICAL PARTS LIST

Loc.	12NC	Description
MAIN+YUV PCB ASS'Y		
CN201	996500015859	CONNECTOR 4PIN P2.0MM
CN202	996510012494	CONNECTOR 5P RED
CN204	996500017367	CONNECTOR 8P
CN205	996510012495	CONNECTOR 4P
CN206	996500015897	CONNECTOR 3P RED P2.0MM
CN301	996510012497	FPC/FFC CONN. 10P
CN401	996500015862	CONNECTOR B2B-XH-A 2P
CN701A	996500015901	CONNECTOR 6P P=2.0MM
CN702	996500015895	CONNECTOR 5P P=2.0MM
D201	996510010358	DIODE 1N4007
IC201	996510012499	IC 28P
IC202	996510021129	IC 48P KH29LV320DBTC-70G
IC203	994000005209	IC 3P AZ809NSTR-E1 SOT23
IC204	996510004289	IC 8P TU24C16CS2 SOIC TURBO
IC205	996510021062	IC 3P LD1117ADJ SOT223 3.3VST1A
IC206	996510016601	IC 54P HY57V641620F(L/S)TP-6
IC207	996510012500	IC 20P SN74HC244PWR TSSOPTI
IC208	996510021132	IC 48P STM32F101C6A LQFP ST
IC209	996510021133	IC 256P MT1389DXE/SN LQFP
IC210	996500027090	IC 3P AP1117E18LA 1.8V SOT2
IC301	996510020341	IC 8P D4558 SOP SILICORE
IC304	996510012503	IC 16P CD4051BM SOIC TI ANALOG
IC306	996510021056	IC 20P WM8781GEDS SSOP WOLFSON
IC401	996510021092	IC 64P TAS5508APAG TQFP TI
IC402	996510021081	IC 44P TAS5352ADDV HTSSOP TI
IC407	996500023948	IC 14P 74HCU04D PHILIPS TSOP
IC801	996510010380	MOTOR DRIVE IC
JK301	994000005447	DIN JACK 8P BLK
JK302	996510021122	JACK 4P WHT-RED/WHT-RED
JK401	996510013837	SPK JAC12P RD-WT-GRN-GRY-BLU
JK601	996510012507	HDMI JACK 19P PDVBT8-19 FLBS4N
JK701	996510012481	RCA JACK 1P YELLOW W/GND
JK702	996500012609	RCA JACK R/G/B
JK703	996510015645	TOSL JACK PLR131/T2 RECEIVER
JK704	996500017363	RCA JACK 1P W/GND P
L401	996510021061	INDUCTOR 10uH 20% 10A
Q204	996510012508	XISTR PNP TIP42C
Q205	996510000578	XISTR NPN KTC3875-Y
Q206	994000000915	XISTR NPN 2SC1623
Q405	996500028742	XISTR NPN 2SD882P PB<1000PPM
Q408	994000000921	XISTR PNP 2SA812 HFE:200-400
Q601	996510008289	FET AO3402 SOT23 30V/4A
Q602	996500041281	FET 2N7002 60V/115MA
Q801	996510004117	FET 2SK3018 30V/0.1A SC-70
Q803	996500026927	XISTR PNP 2SB1132RT100 ROHM HF
Q901	996510000615	XISTR NPN 2SC945P
Q903	996500026946	XISTR PNP 2SB772P/Q NEC PB<10
XL401	996510021091	CRYST 13.5MHz HC-49US 20ppm20pF
ZD901	994000005204	DIODE ZENR 12.6-13.1V 0.5W
ZD904	996500028741	DIODE ZENR 9.1-9.5V 0.5W PB<10

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REVISION LIST

Version 1.0
*Initial release