DVD Home Theater System

HTS3269/12

Service
Service
Service

Service Manual

TABLE OF CONTENTS

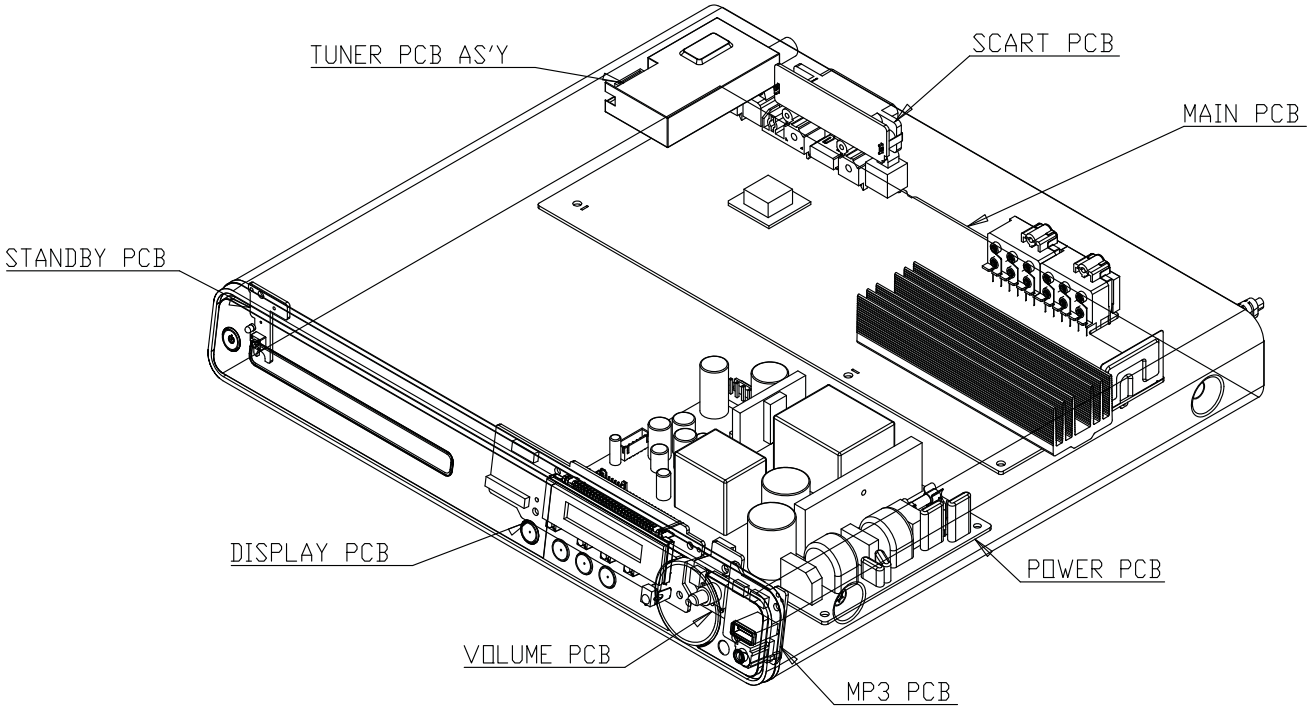
Published by RY0924 Service Audio Printed in The Netherlands Subject to modification

GB 3139 785 34960

Version 1.0

PHILIPS

LOCATION OF PCB BOARDS



VERSION VARIATION:

Type/Versions / Features	HTS3269 /12
Output Power - 420W	X
Voltage (110~240V)	X
MP3 Link	X

SERVICE SCNARIO MATRIX:

Type/Versions / Board in used	HTS3269 /12
MAIN Board	C
Power Board	C
DISP+LED+VOL Board	C
Scart Board	C
MP3 IN Board	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 Theatre mode.....420 W(2 X 100 + 4 X 55)
Frequency response.....40 Hz ~ 20 kHz
Signal-to-noise ratio..... > 60 dB
..... (A-weighted)
Input sensitivity.....
AUX ..... 400 mV
SCART TO TV..... 250 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 .....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 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

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

Main Unit

Power supply.....110–240 V; ~ 50–60 Hz
Power consumption..... 80 W
Standby power consumption ..... < 1 W
Dimensions (WxHxD) ..... 360 x 57 x 331 (mm)
Weight .....2.87 kg

Speakers

System..... full range satellite
Speaker impedance..... 4 ohm (centre),8 ohm (Front/Rear)
Speaker drivers .....
Centre/Front/Rear..... 3” full range
Frequency response.....150 Hz ~ 20 kHz
Dimensions (WxHxD) .....
- Centre/Front/Rear ..... 100 x 100 x 75 (mm)
Weight .....
- Centre.....0.66 kg
- Front.....0.39 kg
- Rear.....0.38 kg

Subwoofer

Impedance..... 4 ohm
Speaker drivers ..... 165 mm (6.5”) woofer
Frequency response.....40 Hz ~ 150 Hz
Dimensions (WxHxD) ..... 123 x 310 x 369 (mm)
Weight .....3.88 Kg

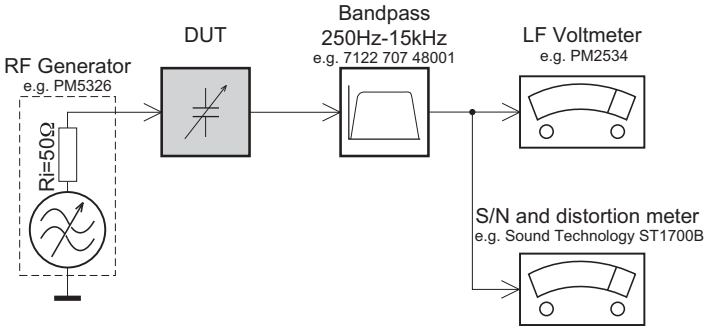
Laser specification

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.

Specifications subject to change without prior notice.

MEASUREMENT SETUP

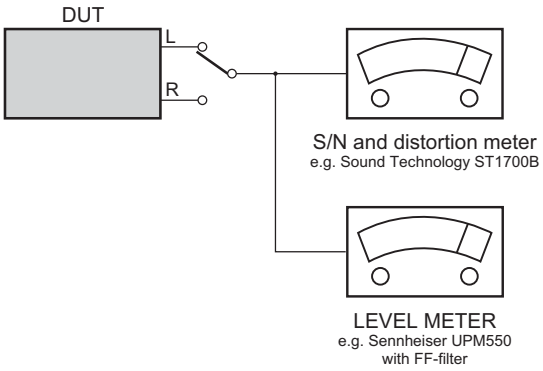
Tuner FM



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

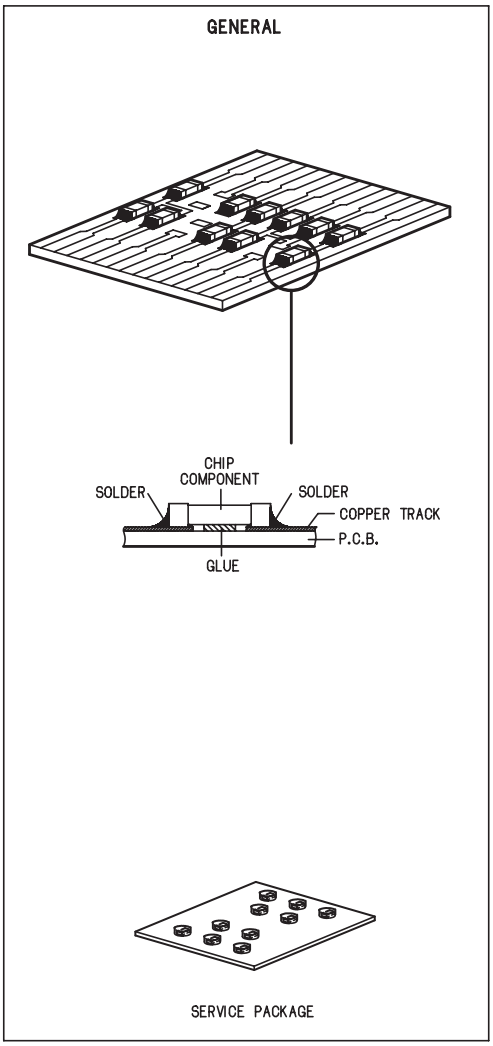
Service Tools:

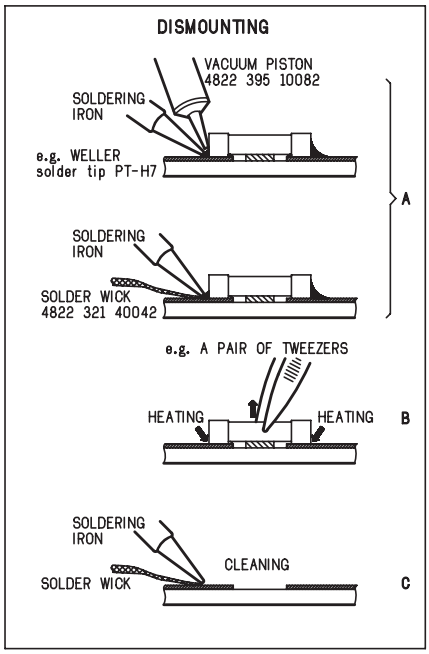
Universal Torx driver holder 4822 395 91019
Torx bit T10 150mm 4822 395 50456
Torx driver set T6-T20 .....4822 395 50145
Torx driver T10 extended 4822 395 50423

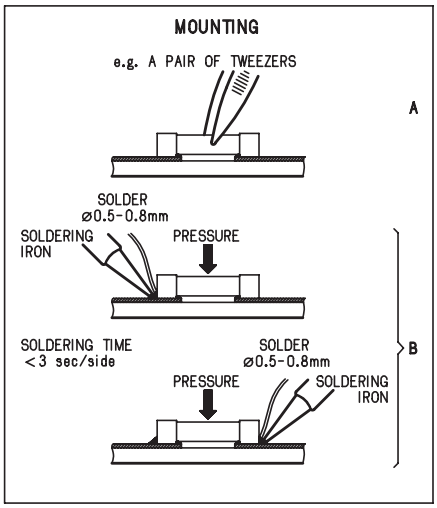
Compact Disc:

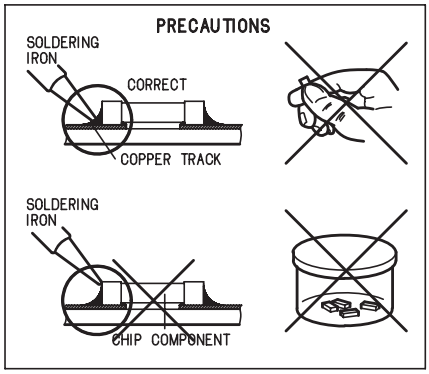
SBC426/426A Test disc 5 + 5A 4822 397 30096
SBC442 Audio Burn-in test disc 1kHz 4822 397 30155
SBC429 Audio Signals disc 4822 397 30184
Dolby Pro-logic Test Disc 4822 395 10216

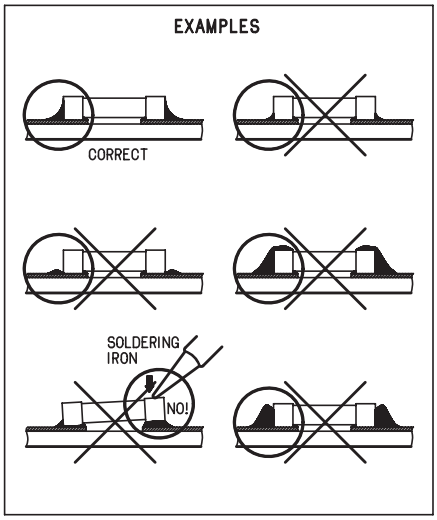
HANDLING CHIP COMPONENTS











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:

Current model HTS3270/3269/12/05
Version: XX.XX.XX Release:XXXX.XX.XX
region :2 Servo:XX.XX.XX.XX
8032:XX.XX.XX.XX RISC: XX.XX.XX.XX
MCU:XX.XX
If current model does not match you set use down arrow key on the remote to change

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

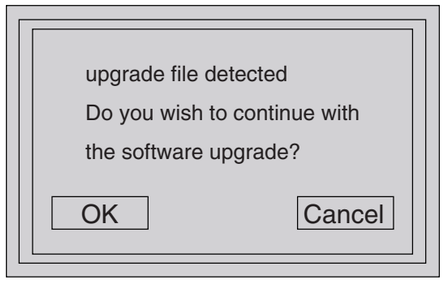
a) Open the CD Door
b) Press “INFO“ button on R/C
c) TV will show the version on screen

6)Trade model

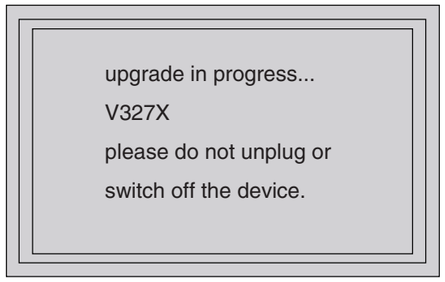
a) Press “Open/Close “ button on R/C
b) Press “2” “5” “9” on R/C,VFD will display “TRA ON “ or “TRA OFF“

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!

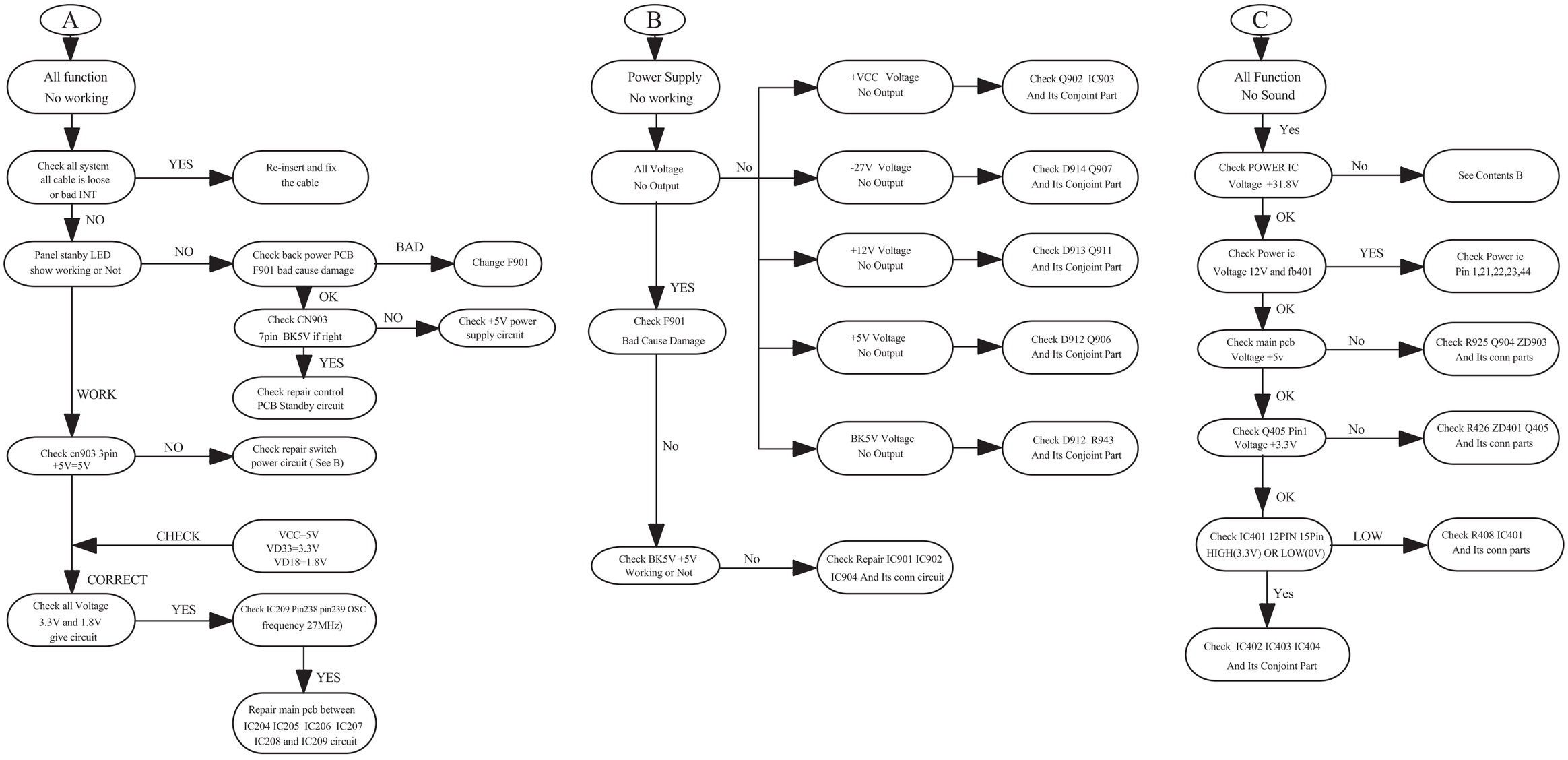
This information is confidential and may not be distributed.Only a qualified service person should reprogram the Region Code.

2 - 2

REPAIR INSTRUCTIONS (ONE)

MAIN UNIT REPAIR CHART 1/3

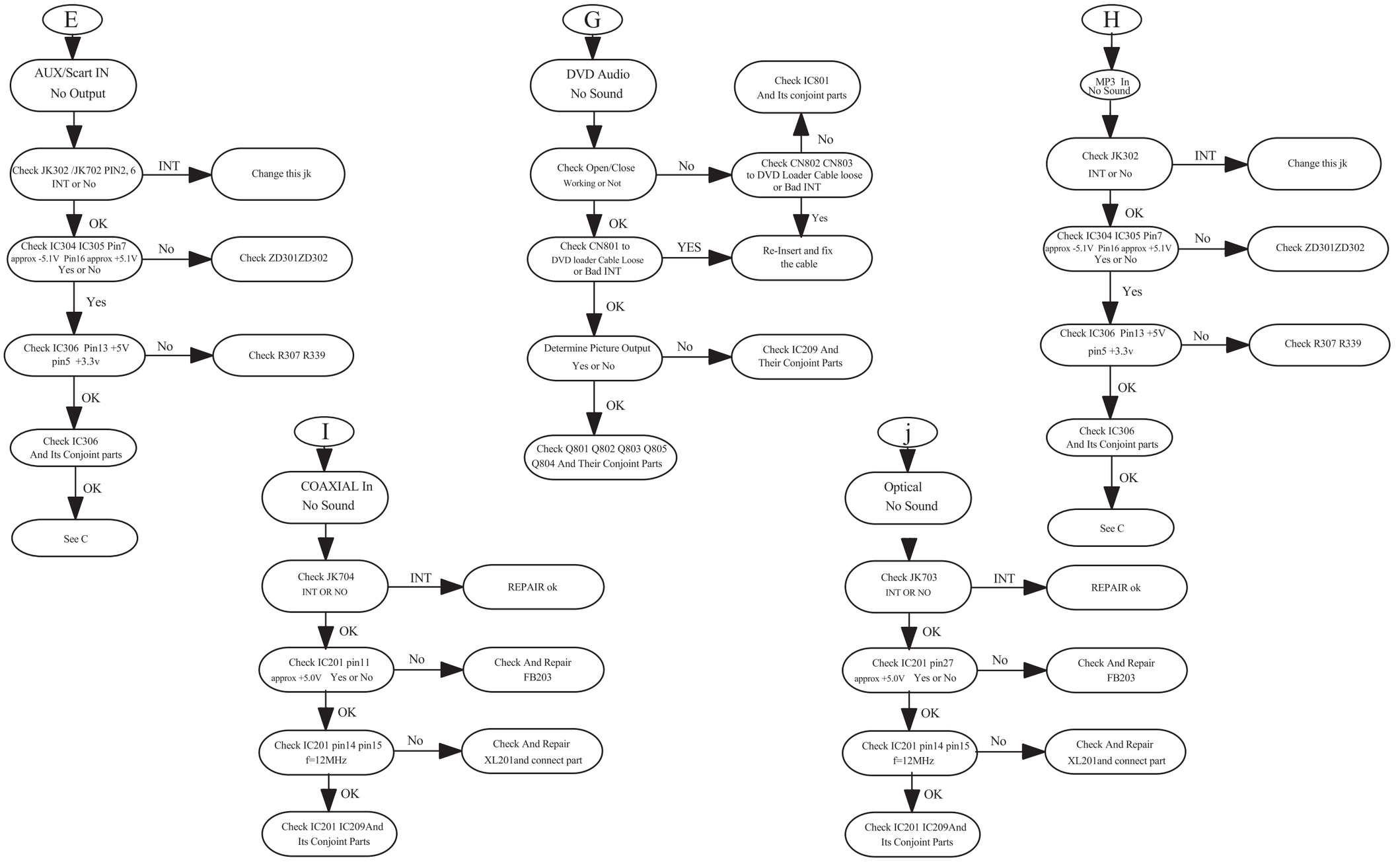
A All Function No Working
B Power Supply No Working
C All Function No Sound
E Audio line IN No Output
G DVD Audio No Sound
H MP3 In No Sound
I COAXIAL In No Sound
L Tuner No Sound
M HDMI No Output
N No CVBS Output
O No SCART output



2 - 3

REPAIR INSTRUCTIONS (TWO)

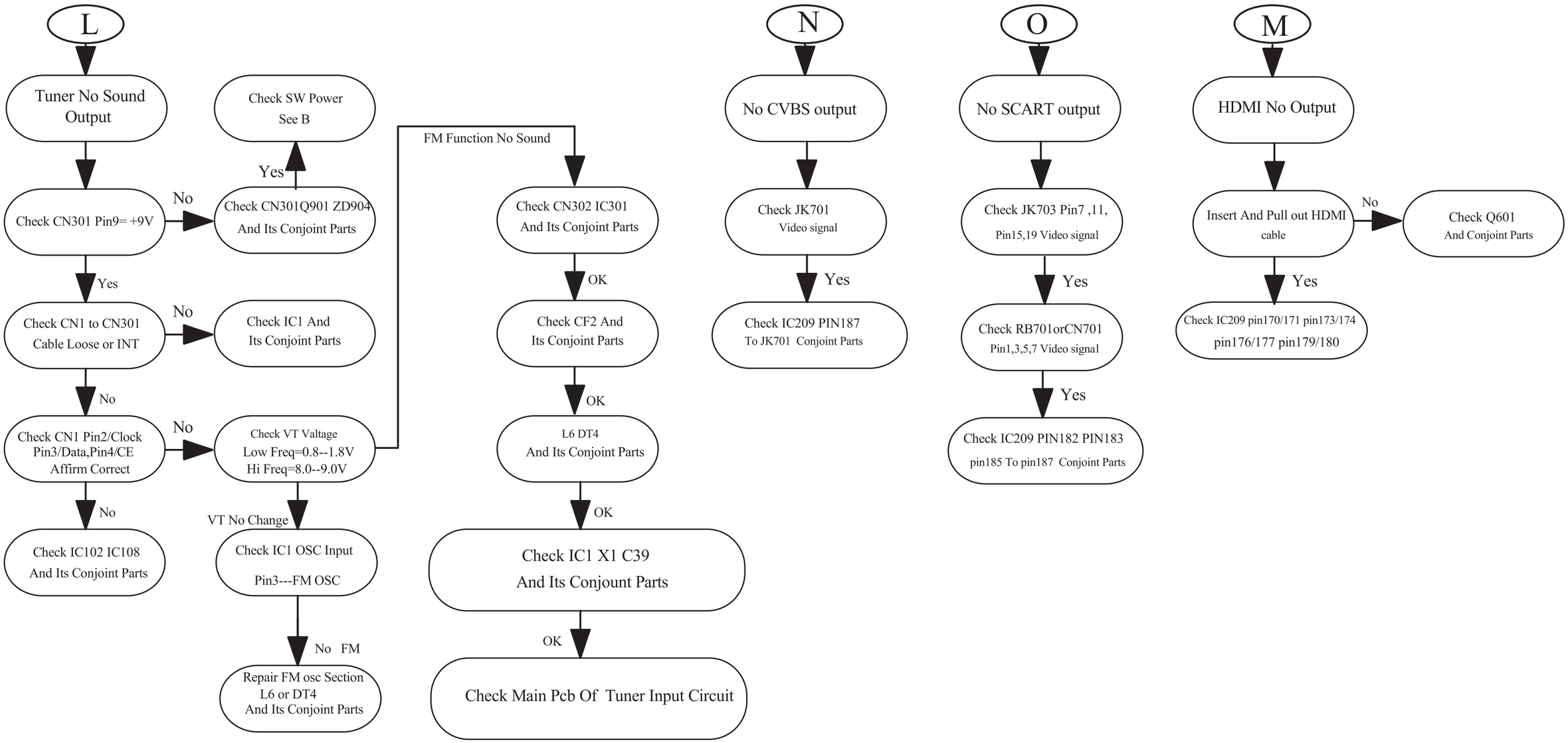
MAIN UNIT REPAIR CHART 2/3



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.

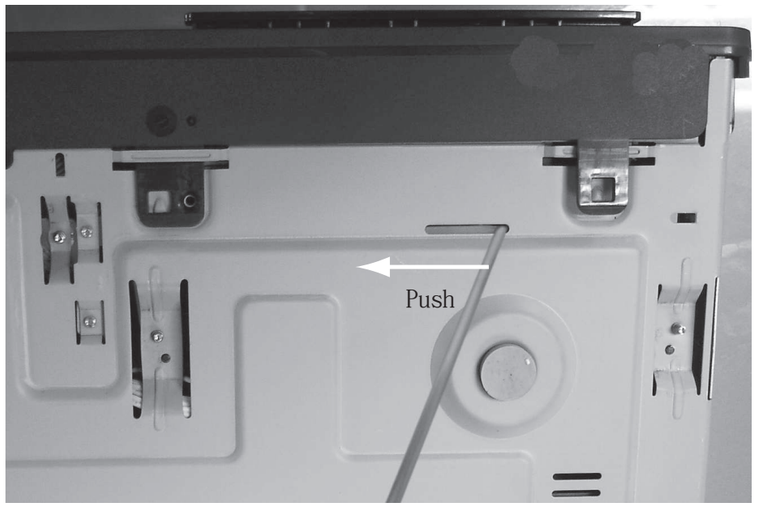


Figure 1

Figure 2

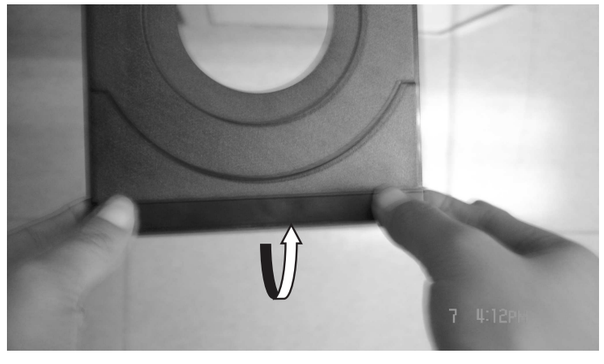


Figure 3

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 5 screws “C“ at the front panel bracket as in figure 6 to remove the front panel.

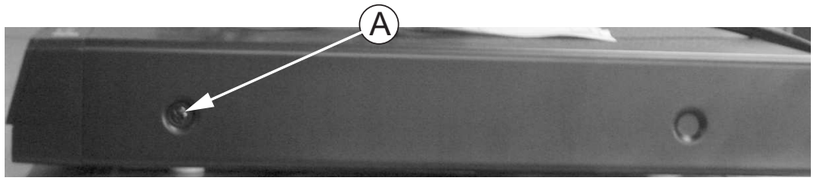


Figure 4

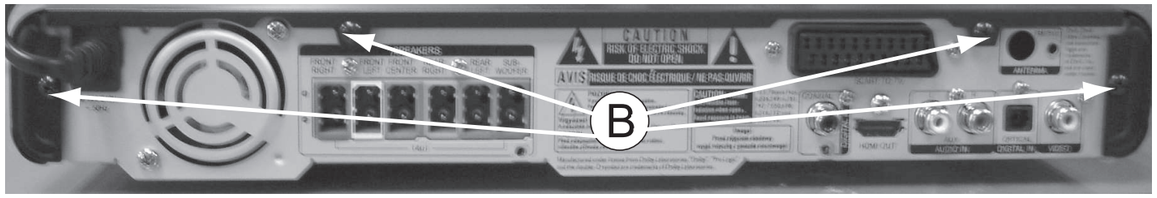


Figure 5

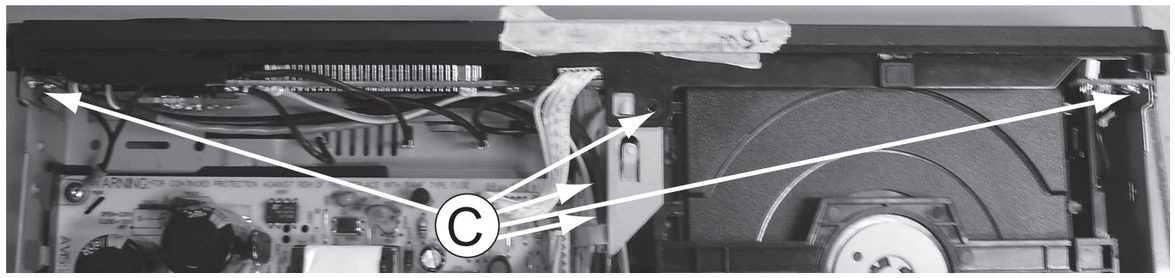


Figure 6

Dismantling of the DVD Module

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

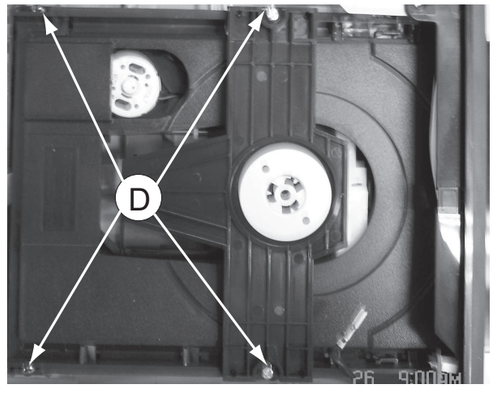


Figure 7

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.

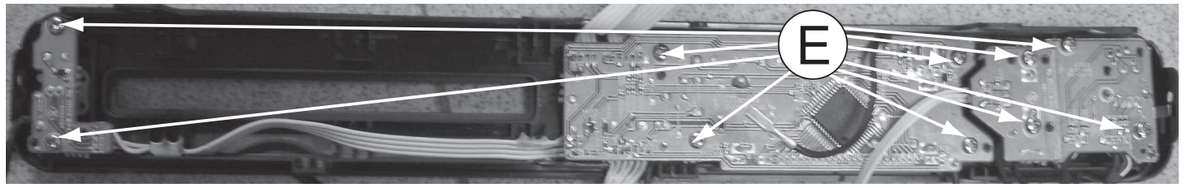


Figure 8

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 figurer 10 and to take up the power board.

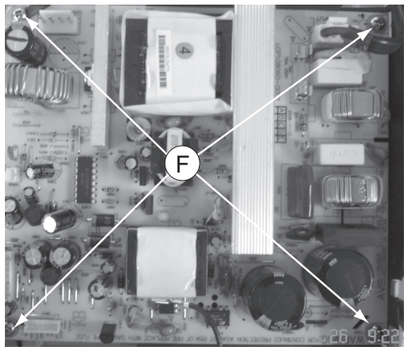


Figure 9

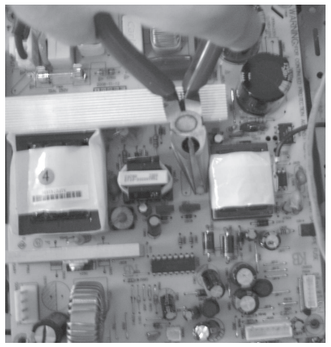


Figure 10

Dismantling of the MAIN+SCART Board

1) Loosen 4 screws “G” on the top of Main Board as shown in figure 11.
2) At the back panel, loosen 9 screws to remove MAIN Board and loosen 2 screw to remove Scart Board as shown in figure 12.

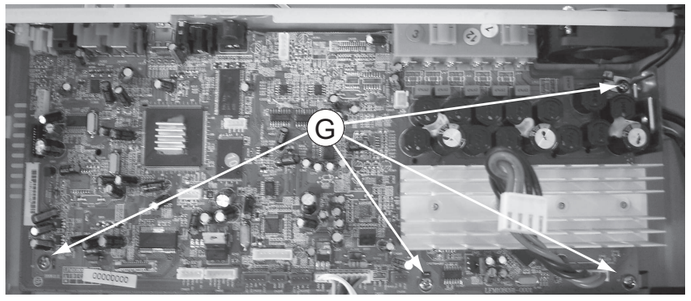


Figure 11

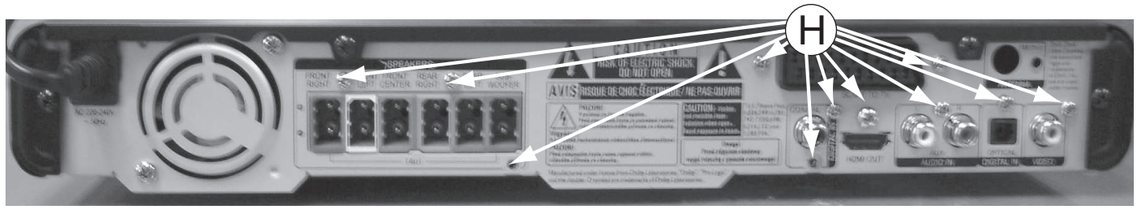
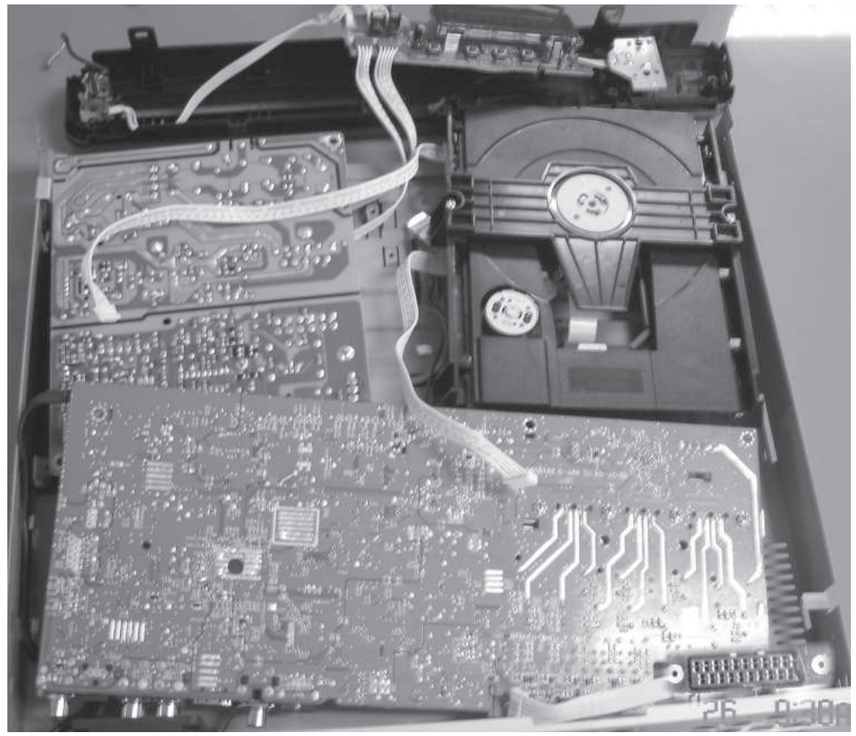


Figure 12

SERVICE POSITIONS

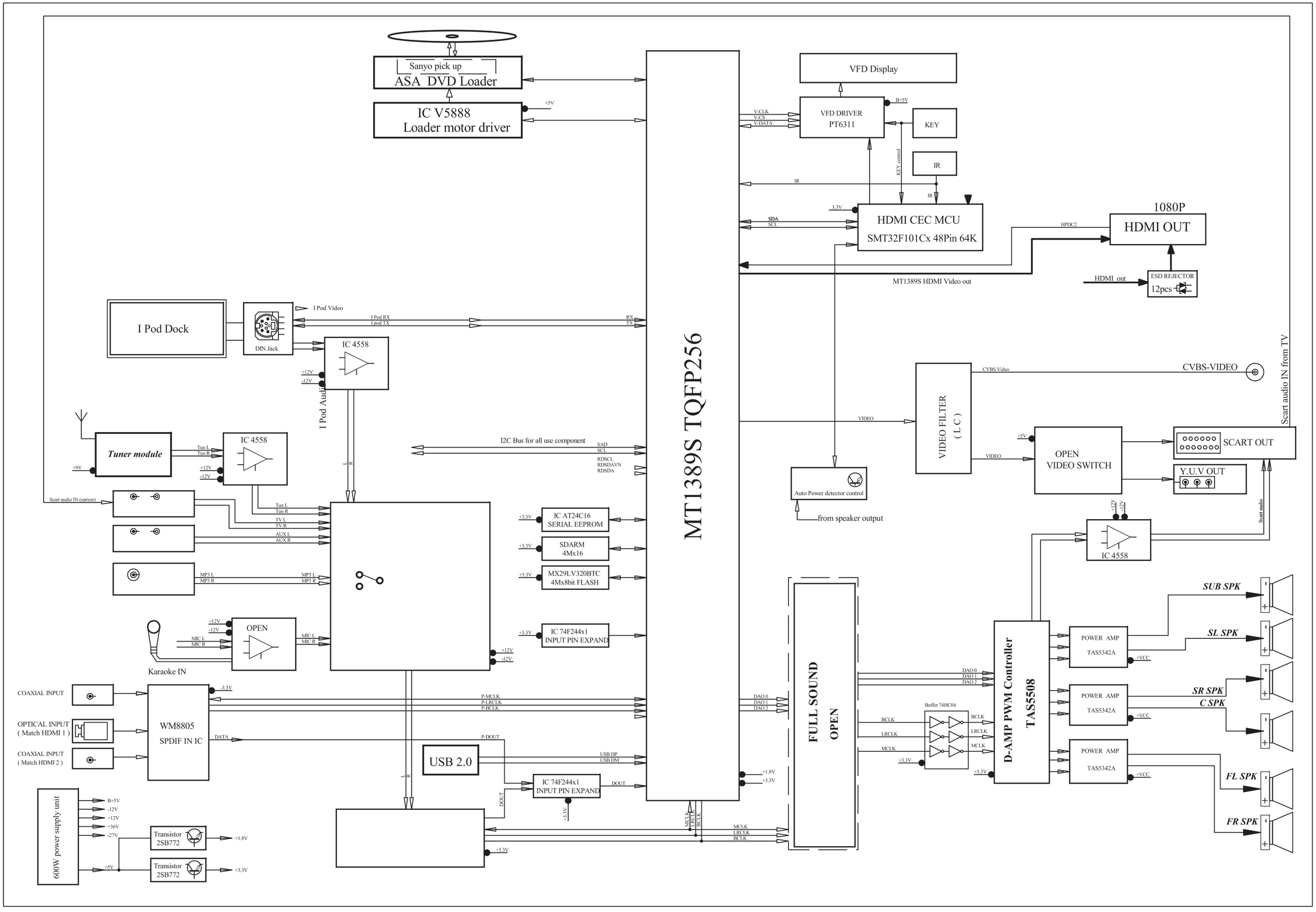
Service position A



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.

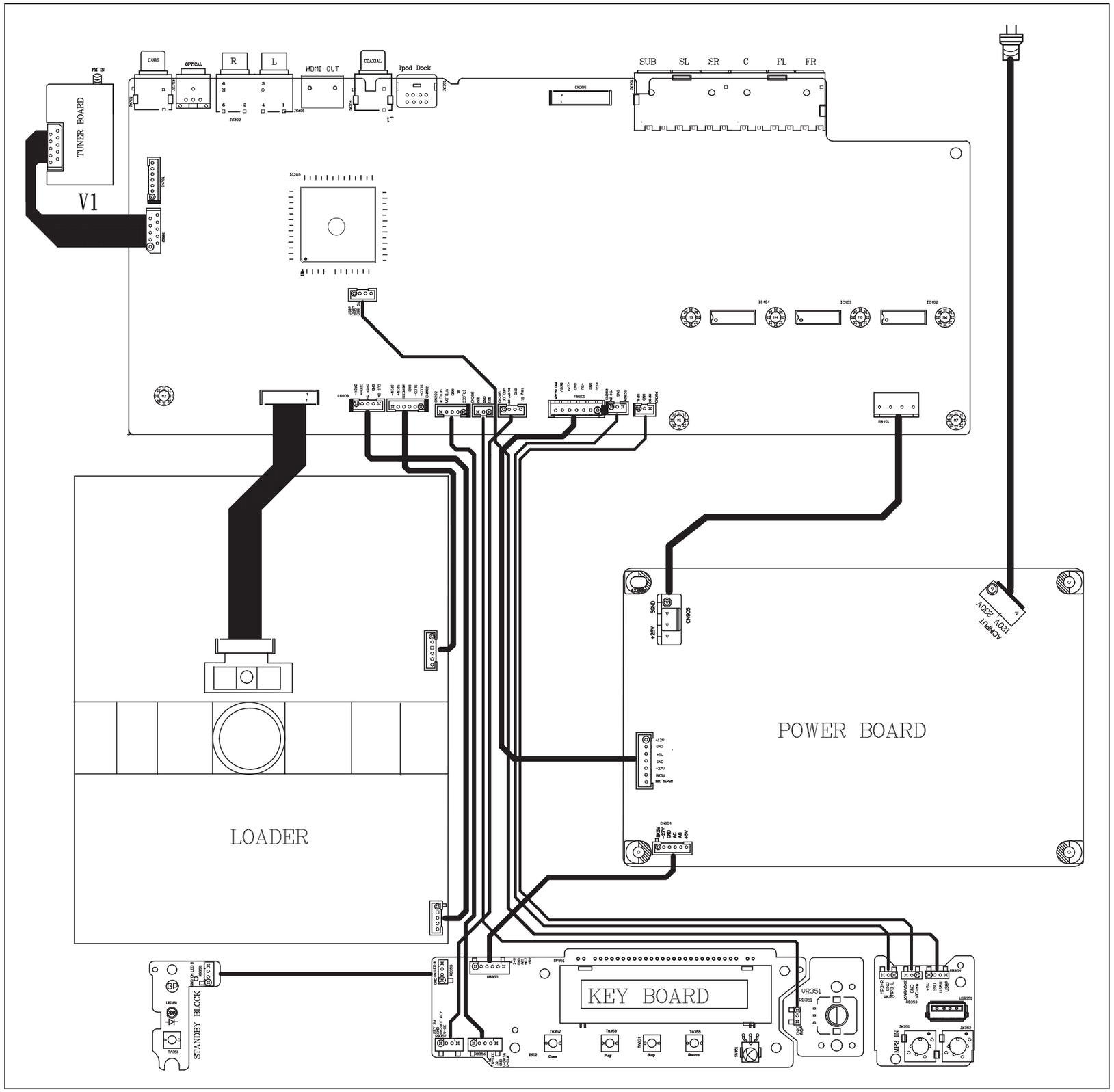
4 - 1

BLOCK DIAGRAM



4 - 2

WIRING DIAGRAM

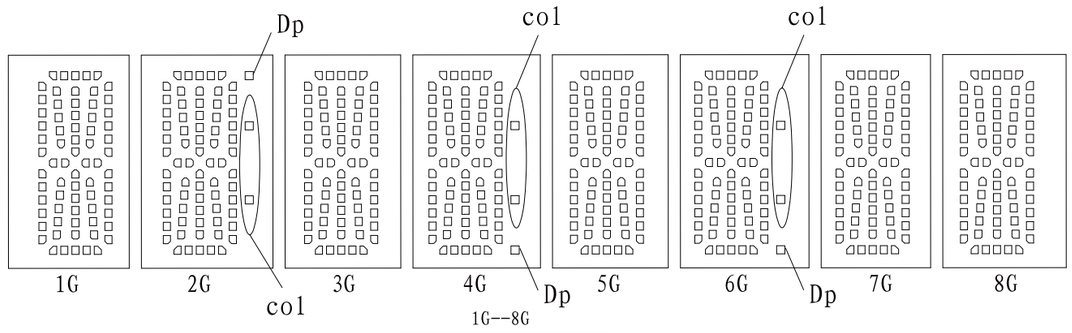


DISP+LED+VOL BOARD

TABLE OF CONTENTS

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

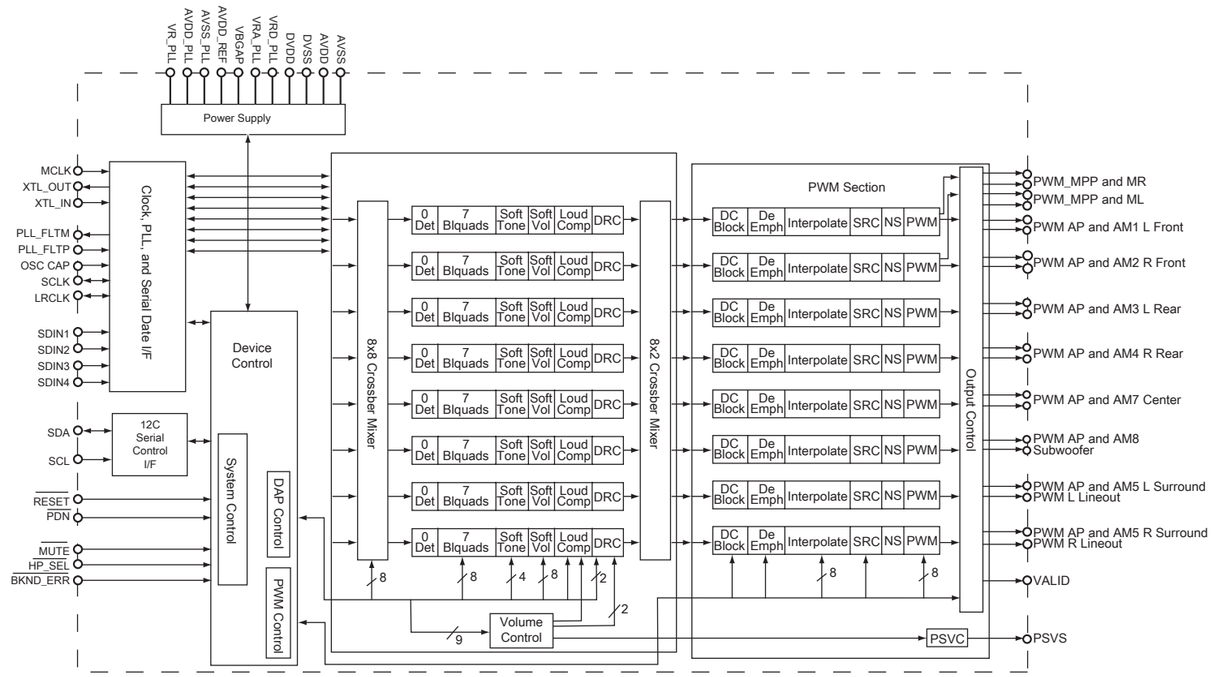
(Pin NO.)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
(Connection)	F1	F1	NP	NC	P15	P14	NC	P13	P12	P11	P10	P9	P8	P7	P6	P5
(Pin NO.)	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
(Connection)	P4	P3	P2	P1	NC	1G	2G	3G	4G	5G	6G	7G	8G	NP	F2	F2

(Notes) : Fn : (Filament Pin) nG : (Grid Pin)
Pn : (Anode Pin) NP : (No Pin)
NC : (No connection

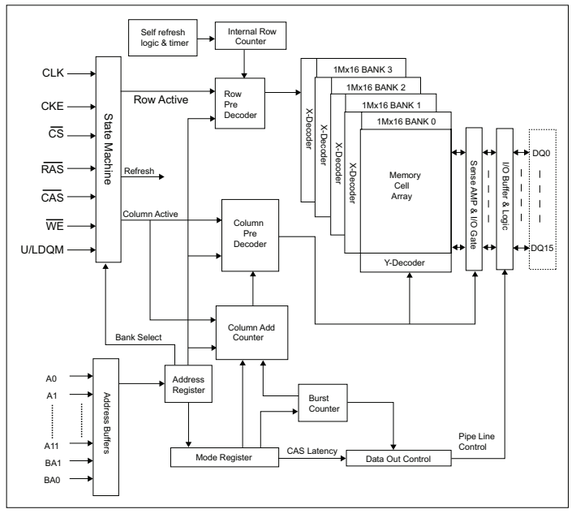
MAIN BOARD

TABLE OF CONTENTS

INTERNAL IC DIAGRAM - TAS5508B



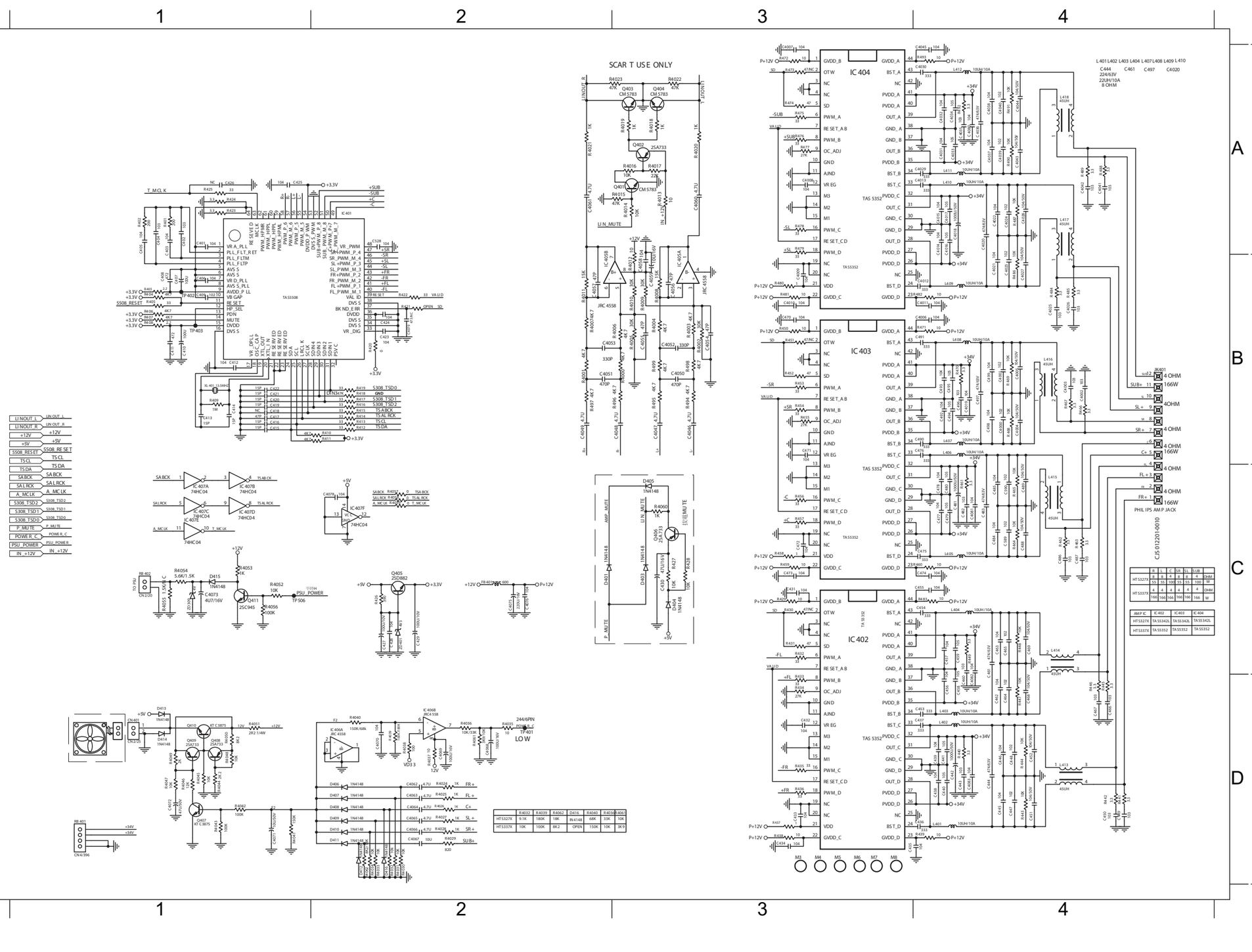
INTERNAL IC DIAGRAM - HY57V641620F



6 - 2

CIRCUIT DIAGRAM - part one

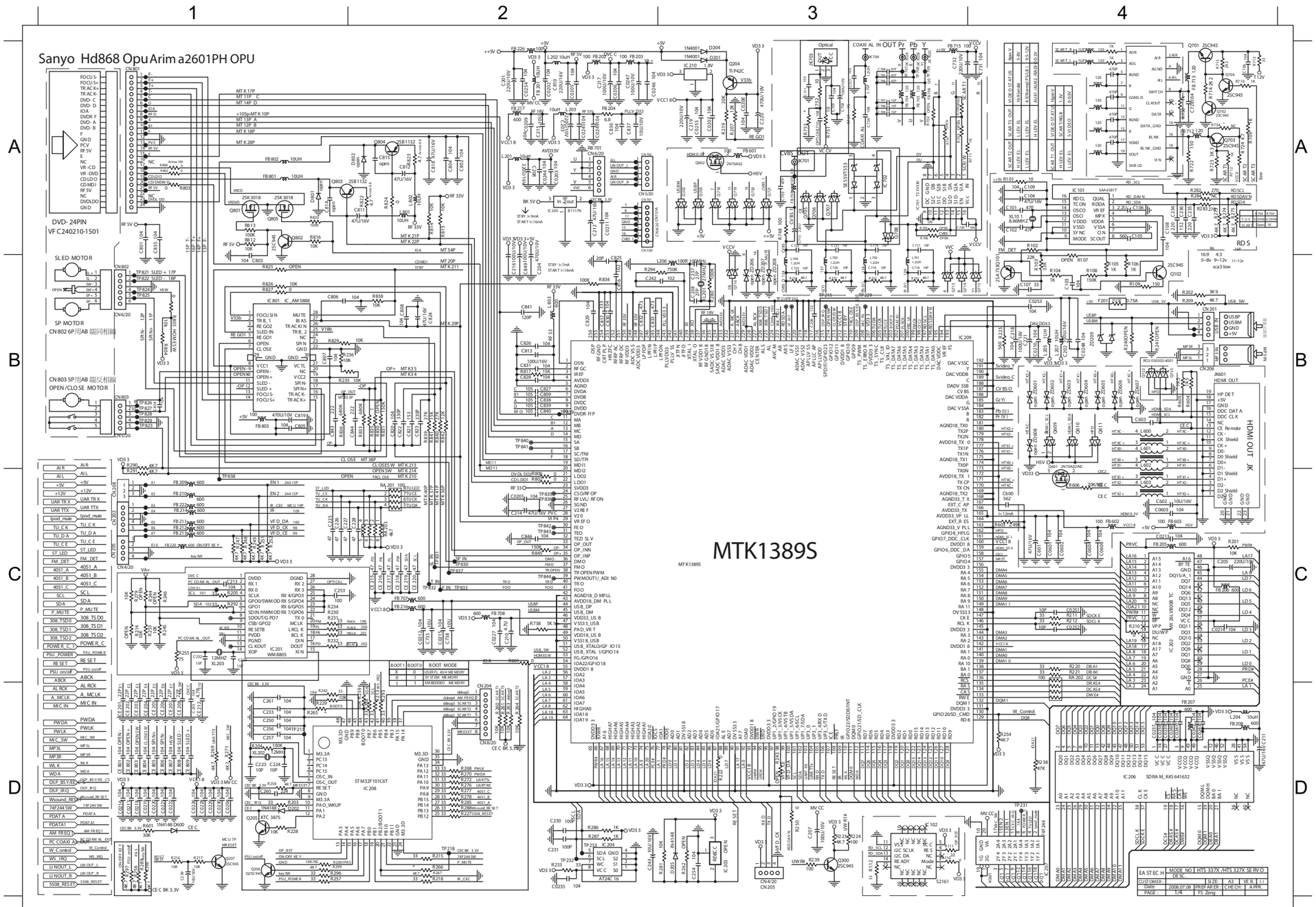
C401 A1 C528 A2 R4014 A3 R476 A3 C4029 A4 C4043 A4 R492 A4 C416 B1 R409 B1 R411 B2 R497 B2 C4059 B3 R4009 B3 R496 B3 C4023 B4 C499 B4 R482 B4 C429 C2 D405 C3 C4081 C4 C478 C4 L404 C4 D413 D1 C4070 D2 R4027 D2 R4039 D2 R438 D3 C448 D4 L401 D4
C402 A1 IC401 A2 R4015 A3 R477 A3 C4030 A4 C4044 A4 R493 A4 C417 B1 XL401 B1 R412 B2 C4009 B3 C470 B3 R4010 B3 R498 B3 C4025 B4 JK401 B4 R484 B4 D401 C2 IC402 C3 C454 C4 C481 C4 L405 C4 D414 D1 D406 D2 R4028 D2 R4040 D2 C435 D4 C449 D4 L402 D4
C403 A1 R4021 A2 R4016 A3 R478 A3 C4031 A4 C4045 A4 C406 B1 C419 B1 C4049 B2 R413 B2 C4010 B3 C471 B3 R4012 B3 R499 B3 C4026 B4 L406 B4 R485 B4 FB401 C2 Q406 C3 C455 C4 C482 C4 R448 C4 R4051 D1 D407 D2 R4029 D2 R4061 D2 C436 D4 C450 D4 L403 D4
C404 A1 C4007 A3 R4017 A3 R479 A3 C4032 A4 C4080 A4 C407 B1 C420 B1 C4051 B2 R414 B2 C4046 B3 IC403 B3 R450 B3 C4001 B4 C4027 B4 L407 B4 R486 B4 Q405 C2 R427 C3 C457 C4 C483 C4 R449 C4 RB401 D1 D408 D2 R4030 D2 R4062 D2 C437 D4 C451 D4 R439 D4
C405 A1 C4008 A3 R4018 A3 C4013 A4 C4035 A4 L410 A4 C408 B1 C421 B1 C4053 B2 R415 B2 C4047 B3 IC405 B3 R452 B3 C4002 B4 C476 B4 L408 B4 D416 C1 R426 C2 R428 C3 C461 C4 C484 C4 R460 C4 C4062 D2 D409 D2 R4031 D2 C432 D3 C438 D4 C452 D4 R440 D4
C425 A1 C4060 A3 R4019 A3 C4014 A4 C4036 A4 L411 A4 C409 B1 C422 B1 C4057 B2 R416 B2 C4048 B3 R4000 B3 R453 B3 C4003 B4 C490 B4 L409 B4 IC407 C1 ZD401 C2 R429 C3 C463 C4 C485 C4 R461 C4 C4063 D2 D410 D2 R4032 D2 C433 D3 C439 D4 C453 D4 R441 D4
R401 A1 IC404 A3 R4020 A3 C4015 A4 C4037 A4 L412 A4 C410 B1 R403 B1 C423 B2 R417 B2 C4050 B3 R4002 B3 R454 B3 C4004 B4 C491 B4 R466 B4 R4060 C1 C430 C3 R431 C3 C464 C4 C486 C4 R462 C4 C4064 D2 D411 D2 R4033 D2 C434 D3 C442 D4 C456 D4 R442 D4
R402 A1 Q401 A3 R4022 A3 C4018 A4 C4038 A4 R487 A4 C411 B1 R404 B1 C424 B2 R418 B2 C4052 B3 R4003 B3 R455 B3 C4005 B4 C492 B4 R467 B4 C4075 C2 C431 C3 R432 C3 C465 C4 C487 C4 R463 C4 C4065 D2 D412 D2 R4034 D2 R433 D3 C443 D4 C460 D4 R443 D4
R423 A1 Q402 A3 R4023 A3 C4020 A4 C4039 A4 R488 A4 C412 B1 R405 B1 R4001 B2 R419 B2 C4054 B3 R4004 B3 R480 B3 C4006 B4 C493 B4 R468 B4 C4076 C2 C472 C3 R456 C3 C469 C4 C488 C4 R464 C4 C4066 D2 IC406 D2 R4035 D2 R434 D3 C444 D4 C462 D4 R444 D4
R424 A1 Q403 A3 R472 A3 C4022 A4 C4040 A4 R489 A4 C413 B1 R406 B1 R4007 B2 R420 B2 C4055 B3 R4005 B3 R481 B3 C4011 B4 C496 B4 R469 B4 C4078 C2 C473 C3 R457 C3 C474 C4 C489 C4 R465 C4 C4067 D2 R4024 D2 R4036 D2 R435 D3 C445 D4 C466 D4 R445 D4
R425 A1 Q404 A3 R474 A3 C4024 A4 C4041 A4 R490 A4 C414 B1 R407 B1 R4011 B2 R421 B2 C4056 B3 R4006 B3 R494 B3 C4012 B4 C497 B4 R470 B4 C427 C2 D403 C3 R458 C3 C475 C4 C589 C4 R483 C4 C4068 D2 R4025 D2 R4037 D2 R436 D3 C446 D4 C467 D4 R446 D4
C4061 A2 R4013 A3 R475 A3 C4028 A4 C4042 A4 R491 A4 C415 B1 R408 B1 R410 B2 R422 B2 C4058 B3 R4008 B3 R495 B3 C4021 B4 C498 B4 R471 B4 C428 C2 D404 C3 R459 C3 C477 C4 C590 C4 C4072 D1 C4069 D2 R4026 D2 R4038 D2 R437 D3 C447 D4 C468 D4 R447 D4



6 - 3

CIRCUIT DIAGRAM - part two

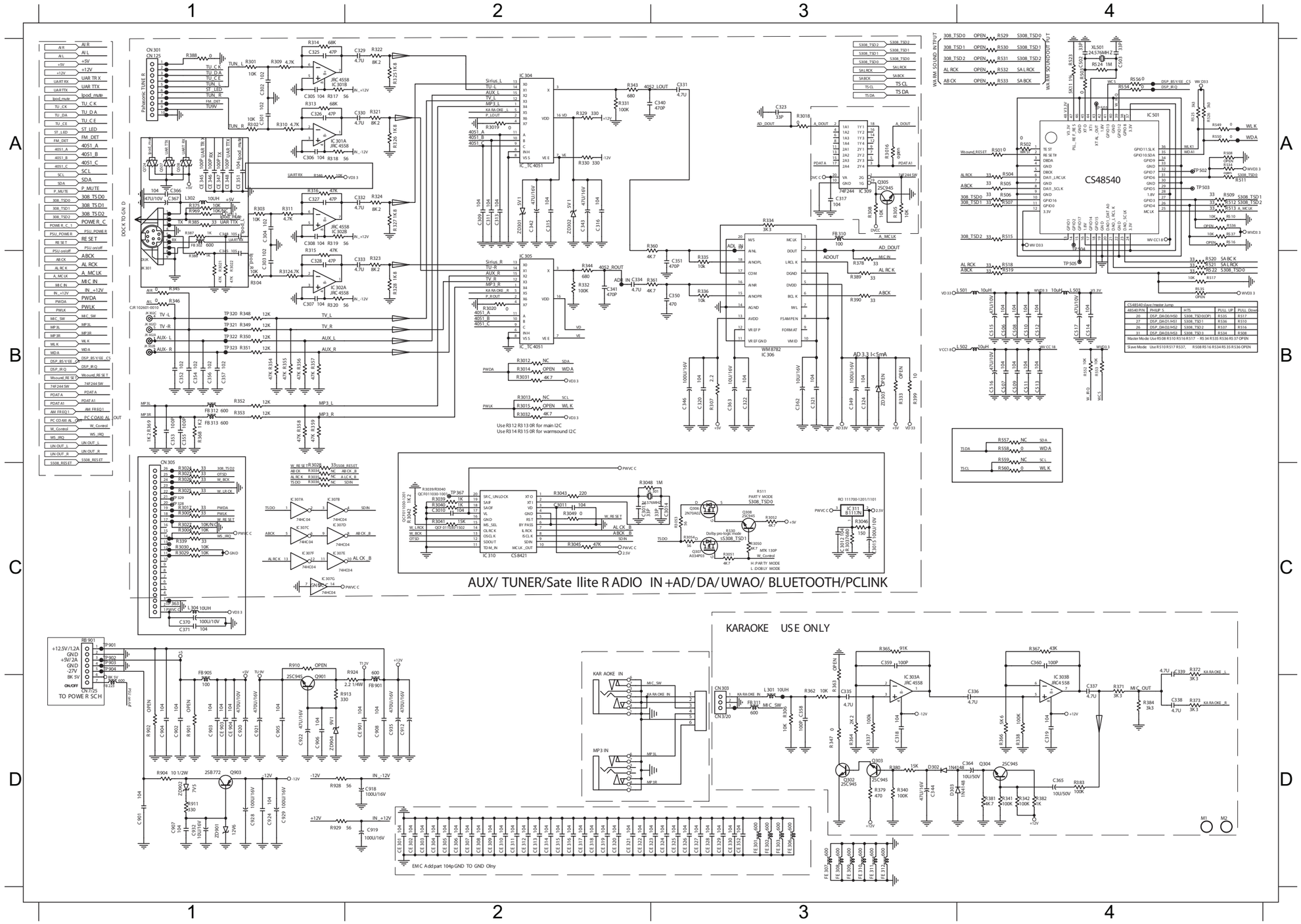
C0201 C2 C0217 D1 C0240 D4 C0603 C4 C204 B2 C220 A3 C236 A4 C601 C4 C722 A3 C805 B1 C822 B2 C837 A2 CE207 D1 CE807 D1 CO254 A2 FB209 C1 FB707 C2 IC206 D4 L206 B3 Q207 D1 Q803 A1 R205 C1 R222 D3 R239 D3 R260 D2 R279 C1 R296 D1 R715 A4 R803 A1 R824 A2 RA201 C2
C0202 A2 C0218 D1 C0241 D4 C0604 C4 C205 C4 C221 B4 C237 B3 C602 C4 C723 B3 C806 B1 C823 B2 C838 B2 CE208 D1 CE808 D1 D201 A3 FB210 C1 FB708 C2 IC207 D4 L207 B4 Q300 D3 Q804 A2 R207 A3 R223 D3 R242 D1 R261 D2 R280 B3 R297 D1 R722 A4 R804 B1 R826 B1 RA202 C4
C0203 A2 C0219 D1 C0242 D4 C0606 C4 C206 B3 C223 D1 C238 B3 C603 B4 C728 A4 C807 B1 C824 B2 C839 B2 CE212 D1 CE809 D1 D202 D1 FB211 C1 FB712 A4 IC208 D2 L701 B3 Q601 B4 Q805 A1 R208 D2 R224 D3 R245 C1 R263 D2 R281 D3 R298 D1 R724 A4 R805 B1 R827 B1 RA203 C2
C0204 D1 C0220 D1 C0243 D4 C101 A4 C207 D3 C224 D1 C239 D1 C701 A3 C729 A4 C808 B2 C825 A2 C840 B2 CE215 C2 CN201 B4 D204 A3 FB212 C1 FB713 A3 IC209 B3 L702 B3 Q602 A3 R101 A4 R209 B4 R225 B4 R247 C1 R267 D2 R282 A4 R299 D1 R731 B3 R806 C2 R829 B1 XL101 A4
C0205 A2 C0221 D1 C0244 A2 C102 A4 C208 A2 C225 C1 C242 B2 C702 A3 C730 A3 C809 B2 C826 B2 C841 B2 CE216 C2 CN202 C1 D205 D3 FB213 C1 FB715 A3 IC210 A3 L703 B3 Q611 B4 R102 A4 R210 C4 R227 D2 R248 C1 R268 D2 R283 A4 R601 D1 R732 B3 R807 C2 R831 B2 XL201 B3
C0206 A2 C0222 D1 C0245 A2 C103 B4 C209 B3 C226 C1 C243 D2 C703 A3 C731 A4 C810 A2 C827 B2 C843 B1 CE217 C2 CN203 D3 D600 D1 FB214 C1 FB801 A1 IC801 B1 L704 B3 Q701 A4 R103 B4 R211 C4 R228 D1 R249 C1 R269 D1 R285 D2 R603 C4 R733 B3 R808 A1 R833 B2 XL202 D1
C0207 A3 C0226 D1 C0246 A2 C104 A4 C210 C2 C227 C1 C250 D1 C710 A3 C732 A3 C811 A2 C828 B2 C844 B2 CE218 C2 CN204 D2 F201 B4 FB216 C2 FB802 A1 JK601 B4 L707 A3 Q702 A4 R104 B4 R212 C4 R229 D1 R250 D3 R270 D2 R286 D2 R604 B4 R734 B3 R812 A1 R834 B2 XL203 C1
C0208 A3 C0227 C2 C0247 A2 C105 A4 C211 D4 C228 C2 C253 C1 C711 A3 C735 C2 C812 A2 C829 B2 C846 C2 CE219 C2 CN205 C1 FB201 A2 FB217 A2 FB803 B1 JK701 A3 L801 A2 Q703 A4 R105 B4 R213 D2 R230 C1 R251 C1 R271 D1 R287 D2 R605 B4 R737 A3 R813 A1 R835 B2 ZD209 B4
C0209 A2 C0228 D1 C0248 B4 C106 A4 C213 C1 C229 C1 C254 D3 C713 A3 C736 A3 C813 B2 C830 B2 C849 B2 CE220 C2 CN206 B4 FB202 A2 FB220 C1 GT01 D3 JK703 A3 L802 A2 Q704 A4 R106 B4 R215 D2 R231 C1 R252 C1 R272 D2 R288 D2 R606 C4 R738 C2 R814 A2 R836 B1
C0210 B4 C0229 D1 C0249 A2 C107 B4 C214 C2 C230 D2 C255 D1 C716 B3 C737 A3 C816 B2 C831 B2 CE201 D1 CE801 D1 CN208 C1 FB203 A2 FB222 C1 IC101 A4 JK704 A3 L803 B2 Q705 A3 R108 B4 R216 D1 R232 C1 R253 C1 R273 A4 R289 D1 R702 A3 R748 A3 R815 A2 R838 B2
C0211 A2 C0230 D1 C0251 C4 C108 A4 C215 A2 C231 D2 C256 D1 C717 A3 C738 C2 C817 B2 C832 B2 CE202 D1 CE802 D1 CN701 A3 FB204 A2 FB226 A2 IC201 D3 L201 A2 Q101 A3 Q706 A3 R109 B4 R217 D1 R233 D2 R254 D4 R274 A4 R290 B1 R704 A3 R750 A4 R816 A1 R839 B2
C0213 C4 C0235 D2 C0252 C4 C109 A4 C216 B2 C232 C1 C257 D1 C718 B3 C801 A1 C818 A2 C833 B2 CE203 D1 CE803 D1 CN702 A2 FB205 C4 FB601 A3 IC202 C4 L202 A2 Q102 B4 Q707 A3 R201 C4 R218 D2 R234 C1 R256 D1 R275 A4 R291 C1 R705 A3 R751 A3 R817 B2 R840 B2
C0214 C4 C0237 D4 C0253 B4 C201 A2 C217 A2 C233 D1 C260 D1 C719 A3 C802 A2 C819 B1 C834 B1 CE204 D1 CE804 D1 CN801 A1 FB206 C4 FB602 C4 IC203 D3 L203 A2 Q204 A3 Q708 A3 R202 B4 R219 A3 R235 B1 R257 D1 R276 D2 R292 C1 R712 A4 R752 A3 R820 A1 R841 B2
C0215 C2 C0238 D4 C0601 C4 C202 B4 C218 B4 C234 A4 C261 D1 C720 B3 C803 B1 C820 B2 C835 A1 CE205 D1 CE805 D1 CN802 B1 FB207 D4 FB603 C4 IC204 D2 L204 D4 Q205 D1 Q801 A1 R203 D1 R220 C4 R236 B1 R258 D1 R277 D2 R293 D2 R713 A4 R801 C2 R822 A2 R842 B2
C0216 D1 C0239 D4 C0602 C4 C203 A2 C219 A3 C235 A4 C600 C4 C721 A3 C804 A2 C821 B2 C836 A2 CE206 D1 CE806 D1 CN803 B1 FB208 D4 FB703 A3 IC205 A2 L205 B4 Q206 D1 Q802 A1 R204 D1 R221 C4 R238 D4 R259 D2 R278 D2 R294 B2 R714 A4 R802 A1 R823 A2 R845 C2



6 - 4

CIRCUIT DIAGRAM - part three

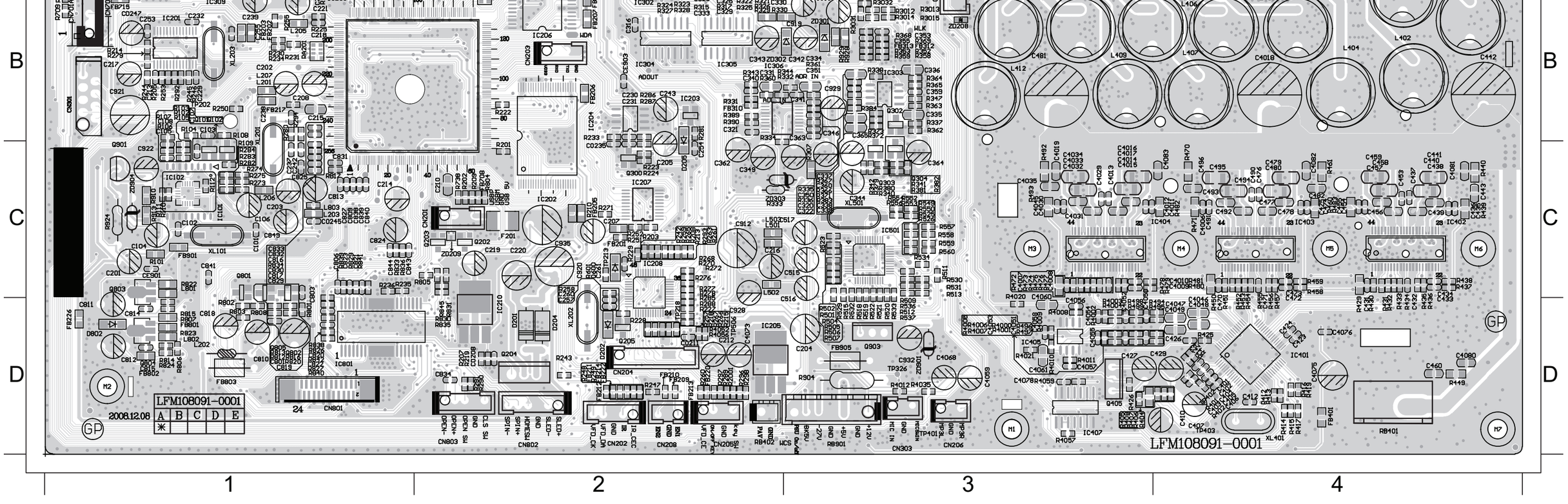
C301 A1 R301 A1 R318 A1 C330 A2 R329 A2 C340 A3 R711 A3 C353 B1 R346 B1 R356 B1 R332 B2 C351 B3 R389 B3 R3032 C1 C906 D1 CE903 D1 R928 D1 C935 D2 CE309 D2 CE318 D2 CE325 D3 FE306 D3
C302 A1 R302 A1 R388 A1 C342 A2 R330 A2 FB310 A3 R529 A4 C354 B1 R348 B1 R357 B1 R344 B2 C362 B3 R390 B3 RB901 C1 C907 D1 CE904 D1 R929 D1 CE301 D2 CE310 D2 CE319 D2 CE326 D3 FE307 D3
C305 A1 R309 A1 R546 A1 C343 A2 R343 A2 IC309 A3 R530 A4 C355 B1 R349 B1 R358 B1 C320 B3 C363 B3 R399 B3 R924 C2 C920 D1 FB223 D1 ZD901 D1 CE302 D2 CE311 D2 CE320 D2 CE327 D3 FE308 D3
C306 A1 R310 A1 C309 A2 IC304 A2 R360 A2 Q305 A3 R531 A4 C356 B1 R350 B1 R359 B1 C321 B3 IC306 B3 R552 B4 R560 C4 C921 D1 FB901 D1 ZD902 D1 CE303 D2 CE312 D2 CE321 D2 CE328 D3 FE309 D3
C325 A1 R313 A1 C311 A2 R3019 A2 ZD301 A2 R3018 A3 R532 A4 C357 B1 R351 B1 C334 B2 C322 B3 R307 B3 R553 B4 C901 D1 C922 D1 Q901 D1 ZD904 D1 CE304 D2 CE313 D2 CE322 D2 CE329 D3 FE310 D3
C326 A1 R314 A1 C313 A2 R321 A2 ZD302 A2 R305 A3 R533 A4 FB312 B1 R352 B1 C341 B2 C324 B3 R335 B3 R558 B4 C902 D1 C924 D1 Q903 D1 C908 D2 CE305 D2 CE314 D2 CE323 D2 CE330 D3 FE312 D3
C4000 A1 R315 A1 C315 A2 R322 A2 C317 A3 R308 A3 R709 A4 FB313 B1 R353 B1 IC305 B2 C346 B3 R336 B3 FB905 C1 C903 D1 C928 D1 R904 D1 C912 D2 CE306 D2 CE315 D2 CE901 D2 CE352 D3 C319 D4
CN301 A1 R316 A1 C316 A2 R325 A2 C323 A3 R331 A3 R710 A4 JK302 B1 R354 B1 R3020 B2 C349 B3 R361 B3 R3028 C1 C904 D1 C929 D1 R911 D1 C918 D2 CE307 D2 CE316 D2 C318 D3 FE301 D3
IC301 A1 R317 A1 C329 A2 R326 A2 C331 A3 R334 A3 C352 B1 R345 B1 R355 B1 R328 B2 C350 B3 R378 B3 R3031 C1 C932 D1 R913 D1 C919 D2 CE308 D2 CE317 D2 CE324 D3 FE302 D3



6 - 5

PCB LAYOUT - TOP VIEW

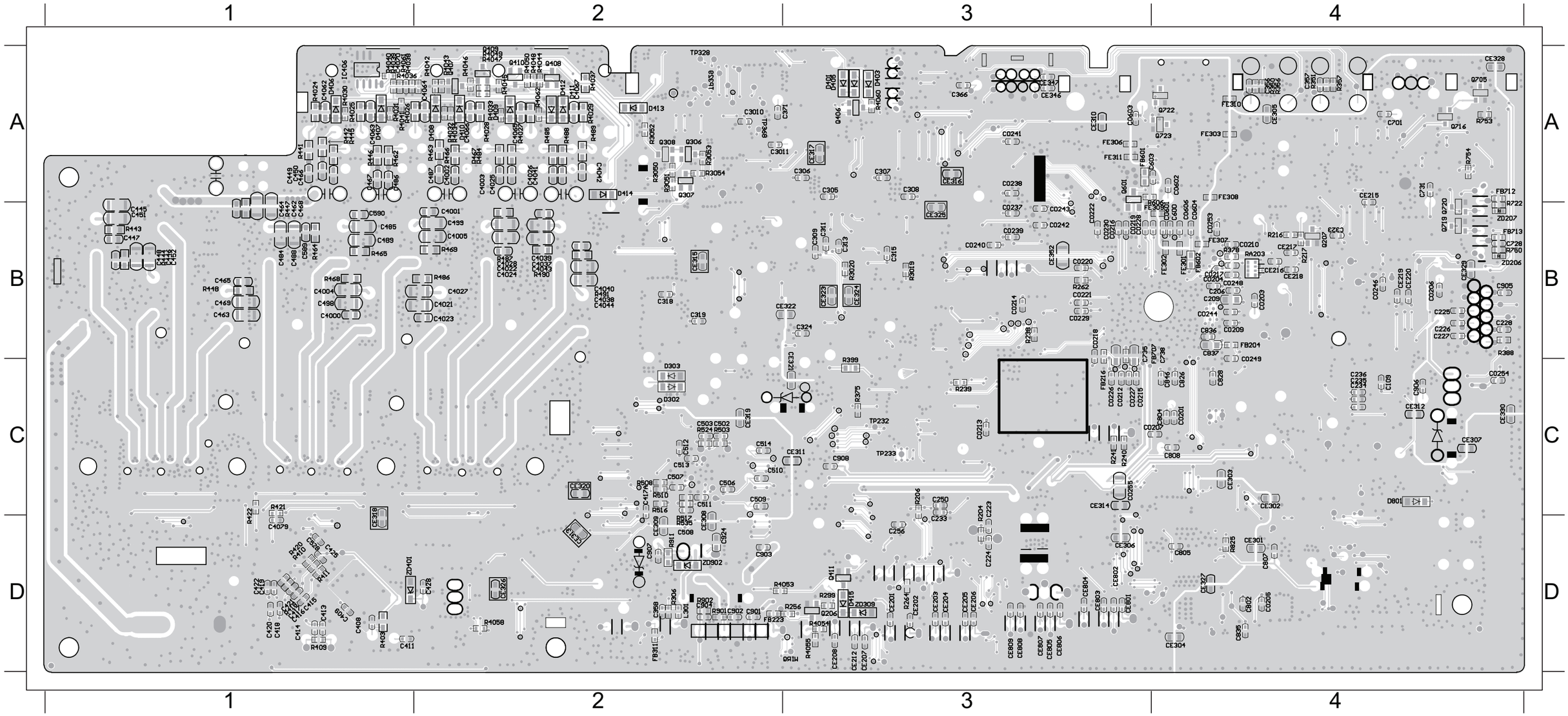
C0202 A2 C210 C2 C257 D2 C351 B3 C4030 C3 C4060 D3 C436 C4 C481 B3 C723 A1 C825 C1 C932 D3 D600 C2 FB603 A2 IC301 A2 J9 A4 L410 B3 Q611 A2 R109 C1 R229 C2 R263 C2 R290 D2 R317 B2 R355 A2 R4015 A2 R419 D4 R455 C4 R495 D3 R710 B1 R807 D1 R841 C1
C0208 D2 C211 A2 C260 C2 C352 A2 C4031 C3 C4061 D3 C437 C4 C482 C4 C729 A1 C827 C1 C935 C2 F201 C2 FB703 A1 IC304 B2 JK302A A1 L411 B3 Q701 A1 R201 C2 R230 B2 R267 D2 R291 D2 R318 A2 R358 B3 R4016 A2 R423 D4 R456 C4 R496 D3 R711 A1 R808 D1 R842 D1
C0211 D2 C213 B1 C261 C2 C353 B3 C4032 C3 C4068 D3 C438 C4 C483 B4 C730 A1 C829 C1 CE901 C1 FB201 C2 FB708 C2 IC305 B2 JK401 A3 L412 B3 Q702 A1 R202 C2 R231 B1 R268 C3 R292 B1 R321 B2 R359 B3 R4017 A2 R424 D4 R457 C4 R497 D3 R712 A1 R812 D1 R845 D2
C0235 C2 C214 C1 C301 A2 C354 A2 C4035 C3 C4069 A3 C439 C4 C490 C4 C732 B1 C830 C1 CE903 B2 FB202 B1 FB713 B1 IC306 B2 JK601 A1 L701 A1 Q703 A1 R203 C2 R232 B1 R269 A2 R293 C2 R322 B2 R360 B2 R4018 A2 R425 D4 R458 C4 R498 D3 R713 B1 R813 D1 R904 D3
C0245 C1 C215 B1 C302 A2 C355 B3 C4036 A3 C407 D4 C442 B4 C491 C4 C736 A2 C831 C1 CE904 A2 FB203 B1 FB715 B1 IC309 B1 JK701 A1 L702 A1 Q704 A1 R205 B1 R233 B2 R270 C2 R294 B1 R325 B2 R361 B3 R4019 A2 R426 D4 R459 C4 R499 D3 R714 A1 R814 D1 R913 C1
C0247 B1 C216 C2 C316 B2 C362 C2 C404 D4 C4072 A3 C443 C4 C492 C4 C737 A2 C832 C1 CN201 C2 FB205 C2 FB801 D1 IC401 D4 JK703 A4 L703 A1 Q705 A4 R207 D2 R234 B2 R271 C2 R296 D2 R326 B2 R389 B2 R402 D4 R427 A2 R460 C4 R529 D3 R715 B1 R815 D1 R924 C1
C0251 A2 C217 B1 C317 A1 C363 B3 C4045 C3 C4075 D4 C444 A4 C493 C4 C801 D1 C833 C1 CN202 D2 FB206 B2 FB802 D1 IC402 C4 JK704 A2 L704 A1 Q706 A1 R208 C2 R235 C1 R272 C2 R297 D2 R328 B2 R390 B2 R4020 D3 R428 A2 R461 C4 R530 C3 R722 B4 R816 D1 R928 B3
C0252 A2 C218 B1 C320 C3 C4006 C4 C4046 D4 C4076 D4 C453 C4 C496 C4 C803 C1 C834 D2 CN203 B2 FB207 B2 FB803 D1 IC403 C4 L201 B1 L707 A2 Q707 A1 R209 C2 R236 C1 R273 C1 R298 D2 R329 B2 R4000 D3 R4021 D3 R429 C4 R470 C4 R531 C3 R724 A1 R817 C1 R929 B3
C101 C1 C219 C2 C321 B2 C4007 C3 C4047 D4 C4078 D3 C454 C4 C497 A3 C806 C1 C838 C1 CN204 D2 FB208 B2 FB901 C1 IC404 C3 L202 D1 L801 C1 Q708 A1 R210 C2 R242 C2 R274 C1 R301 A2 R330 B2 R4001 D3 R4022 A2 R431 C4 R471 C4 R532 D3 R731 A1 R820 D1 RA201 B1
C102 C1 C220 C2 C322 C3 C4008 C3 C4048 D4 C4080 D4 C455 C4 C601 A1 C809 C1 C839 C1 CN205 D2 FB209 D2 FB905 D3 IC405 D3 L203 C1 L802 D1 Q801 C1 R211 A2 R245 B1 R275 C1 R3018 B1 R331 B2 R4002 D3 R4023 A2 R432 C4 R472 C3 R533 D3 R732 A1 R822 C1 RA202 A2
C103 B1 C221 B1 C325 B2 C4009 C4 C4049 D4 C4081 C4 C456 C4 C602 A1 C810 D1 C840 C1 CN206 D3 FB210 D2 FE312 A1 IC407 D3 L204 A2 L803 C1 Q802 D1 R212 A2 R247 D2 R276 C2 R302 A2 R332 B3 R4003 D3 R4035 D3 R433 C4 R474 C3 R546 A2 R733 B1 R823 D1 RB401 D4
C104 C1 C229 B1 C326 A2 C401 D4 C405 D4 C410 D4 C457 C4 C702 A1 C811 D1 C841 C1 CN208 D2 FB211 D2 GT01 B1 IC801 D1 L205 B1 Q101 D2 Q803 C1 R213 C2 R248 D2 R277 C2 R3028 A3 R334 B2 R4004 D3 R404 D3 R434 C4 R475 C3 R552 C3 R734 A1 R824 D1 RB901 D3
C105 B1 C230 B2 C329 B2 C4010 C4 C4050 D3 C412 D4 C460 D4 C703 A1 C812 D1 C843 C1 CN301 B1 FB212 D2 IC101 C1 J1 A3 L206 C1 Q102 B1 Q804 D1 R215 D2 R249 D2 R278 C2 R3031 B3 R335 C3 R4005 D3 R405 D3 R435 C4 R476 C3 R553 C3 R737 A2 R826 D1 XL101 C1
C106 C1 C231 B2 C330 B2 C4011 C4 C4051 D3 C423 D4 C461 A3 C710 A1 C813 C1 C844 C1 CN701 B1 FB213 D2 IC201 B1 J10 A4 L207 B1 Q204 D2 Q805 D1 R218 D2 R250 B1 R279 B1 R3032 B3 R336 C3 R4006 D3 R4051 A3 R436 C4 R477 C3 R558 C3 R738 C2 R827 D1 XL201 B1
C107 B1 C232 B1 C331 B2 C4012 C4 C4052 D3 C424 D4 C470 C4 C711 A1 C816 C1 C849 C1 CN702 A2 FB214 D2 IC202 C2 J11 A4 L401 A4 Q205 D2 Q901 C1 R219 D2 R251 C2 R280 B1 R305 B1 R343 B2 R4007 D3 R406 D3 R437 C4 R478 C4 R560 C3 R748 A1 R829 C1 XL202 D2
C108 B1 C237 C1 C334 B3 C4013 C3 C4053 D3 C427 D3 C471 C4 C713 A1 C817 C1 C912 C2 CN801 D1 FB217 B1 IC203 B2 J12 A4 L402 B4 Q300 C2 Q903 D3 R220 A2 R252 C2 R281 B2 R307 C3 R344 B3 R4008 D3 R407 D3 R438 C4 R479 C4 R601 C2 R751 A1 R831 D2 XL203 B1
C201 C1 C238 B1 C340 B2 C4014 B4 C4054 D3 C429 D3 C472 C4 C716 A1 C818 D1 C918 B3 CN802 D2 FB220 D2 IC204 B2 J2 A3 L403 A4 Q305 A1 R101 C1 R221 A2 R253 B1 R282 C1 R308 A1 R345 A2 R4009 D3 R408 D3 R439 C4 R480 C4 R603 A1 R752 A1 R833 C1 XL401 D4
C202 B1 C239 B1 C341 B3 C4015 B4 C4055 D3 C430 A2 C473 C4 C717 A1 C819 D1 C919 B3 CN803 D2 FB222 D2 IC205 D2 J3 A3 L404 B4 Q401 A2 R102 B1 R222 B2 R254 A2 R283 C1 R309 A2 R346 A2 R401 D4 R412 D4 R440 C4 R481 C4 R604 A2 R801 D1 R834 C1 ZD209 C2
C203 C1 C242 C1 C342 B3 C4018 B4 C4056 D3 C431 C4 C474 C4 C718 A1 C820 D1 C920 C2 D201 D2 FB226 D1 IC206 B2 J4 A3 L405 B4 Q402 A2 R103 B1 R223 C2 R257 D2 R285 D2 R310 A2 R348 A2 R4010 D3 R413 D4 R449 D4 R482 C4 R605 A2 R802 D1 R835 D2 ZD301 B3
C204 D3 C243 B2 C343 B2 C402 D4 C4057 D3 C432 C4 C475 C4 C719 A1 C821 C1 C921 B1 D202 D2 FB310 B2 IC207 C2 J5 A3 L406 B4 Q403 A2 R104 B1 R224 C2 R258 C2 R286 B2 R313 B3 R349 A2 R4011 D3 R414 D4 R450 C4 R483 C4 R702 A1 R803 D1 R836 C1 ZD302 B2
C205 C2 C253 B1 C346 B3 C4020 A3 C4058 D3 C433 D4 C476 C4 C720 B1 C822 D1 C922 C1 D204 D2 FB312 B3 IC208 C2 J6 A3 L407 B4 Q404 A2 R105 B1 R225 B1 R259 C2 R287 B2 R314 A2 R352 B3 R4012 D3 R415 D4 R452 C4 R492 C3 R704 A1 R804 C2 R838 D1 ZD901 D3
C207 C2 C254 C2 C349 C2 C4029 C3 C4059 D3 C434 C4 C477 C4 C721 A1 C823 C1 C928 D2 D205 C2 FB313 B3 IC209 B1 J7 A4 L408 B3 Q405 D3 R106 B1 R227 D2 R260 D2 R288 D2 R315 B2 R353 B3 R4013 A2 R416 D4 R453 C4 R493 C3 R705 A1 R805 C2 R839 C1 ZD904 C1
C208 B1 C255 B1 C350 C3 C403 D4 C406 D4 C435 C4 C478 C4 C722 A1 C824 C1 C929 B3 D404 A2 FB401 D4 IC210 D2 J8 A4 L409 B3 Q602 A1 R108 B1 R228 D2 R261 C2 R289 D2 R316 A2 R354 A2 R4014 A2 R417 D4 R454 C4 R494 D3 R709 B1 R806 D1 R840 D1



6 - 6

PCB LAYOUT - BOTTOM VIEW

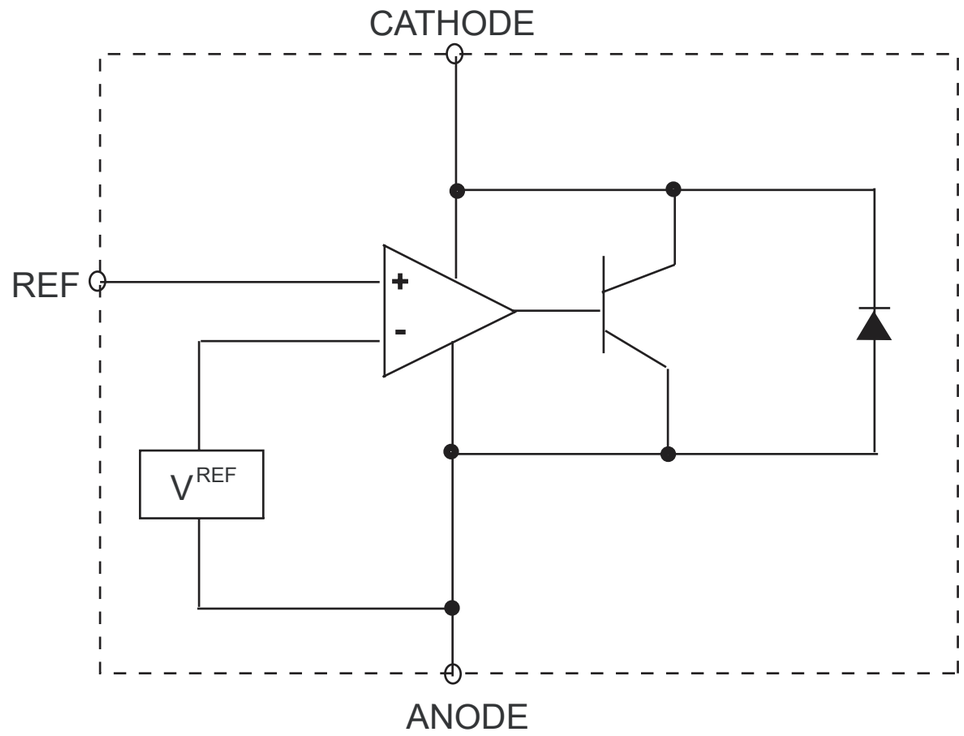
C0241	A1	R4030	A1	C4026	A2	R4027	A2	C0602	A3	Q601	A3	R357	A4	C485	B1	C4001	B2	CE315	B2	C0230	B3	CE323	B3	C0246	B4	C728	B4	FE302	B4	CE311	C2	C0201	C4	CE330	C4	C528	D1	CE309	D2	CE207	D3	R256	D3
C4062	A1	R4031	A1	C4041	A2	R4028	A2	C0603	A3	R4060	A3	C4004	B1	C488	B1	C4005	B2	R469	B2	C0237	B3	CE324	B3	C0248	B4	C738	B4	FE307	B4	CE319	C2	C109	C4	CO254	C4	R403	D1	CE313	D2	CE208	D3	R299	D3
C4063	A1	R4036	A1	C4042	A2	R4029	A2	C305	A3	C356	A4	C445	B1	C489	B1	C4021	B2	R486	B2	C0238	B3	CE325	B3	C0249	B4	C836	B4	FE309	B4	CE320	C2	C234	C4	C408	D1	R409	D1	CE326	D2	CE212	D3	C0205	D4
C4070	A1	R4038	A1	C4064	A2	R4032	A2	C306	A3	C357	A4	C446	B1	C498	B1	C4022	B2	R487	B2	C0239	B3	CE352	B3	C0253	B4	C837	B4	Q207	B4	C0207	C3	C235	C4	C409	D1	R410	D1	FB223	D2	CE306	D3	C802	D4
C449	A1	R4039	A1	C4065	A2	R4033	A2	C4000	A3	C701	A4	C447	B1	C589	B1	C4023	B2	R490	B2	C0240	B3	R238	B3	C0601	B4	C905	B4	R216	B4	C0213	C3	C236	C4	C411	D1	R411	D1	R911	D2	CE801	D3	C805	D4
C450	A1	R4040	A1	C4066	A2	R4034	A2	C603	A3	C731	A4	C448	B1	C590	B1	C4024	B2	R491	B2	C0242	B3	R3019	B3	C0604	B4	CE216	B4	R217	B4	C0215	C3	C804	C4	C413	D1	R418	D1	ZD902	D2	CE802	D3	C807	D4
C466	A1	R4061	A1	C4067	A2	R4037	A2	CE310	A3	CE215	A4	C451	B1	R443	B1	C4027	B2	C0214	B3	C0243	B3	R3020	B3	C0606	B4	CE217	B4	R378	B4	C0226	C3	C808	C4	C414	D1	R420	D1	C224	D3	CE803	D3	C835	D4
C467	A1	R441	A1	C487	A2	R4062	A2	CE316	A3	CE305	A4	C452	B1	R444	B1	C4028	B2	C0216	B3	C309	B3	R399	B3	C206	B4	CE218	B4	R388	B4	C0227	C3	C826	C4	C415	D1	ZD401	D1	C233	D3	CE804	D3	CE301	D4
C486	A1	R442	A1	D408	A2	R463	A2	CE317	A3	CE328	A4	C462	B1	R447	B1	C4037	B2	C0218	B3	C311	B3	C0203	B4	C209	B4	CE219	B4	R606	B4	C223	C3	C828	C4	C416	D1	C428	D2	C256	D3	CE805	D3	CE304	D4
D406	A1	R445	A1	D409	A2	R466	A2	D401	A3	FB712	A4	C463	B1	R448	B1	C4038	B2	C0219	B3	C313	B3	C0204	B4	C225	B4	CE220	B4	R750	B4	C250	C3	C846	C4	C417	D1	C901	D2	CE201	D3	CE806	D3	CE327	D4
D407	A1	R446	A1	D410	A2	R467	A2	D403	A3	FE308	A4	C464	B1	R464	B1	C4039	B2	C0220	B3	C315	B3	C0206	B4	C226	B4	CE329	B4	RA203	B4	C908	C3	C906	C4	C419	D1	C902	D2	CE202	D3	CE807	D3		
IC406	A1	R462	A1	D411	A2	R484	A2	D405	A3	FE310	A4	C465	B1	R465	B1	C4040	B2	C0221	B3	C324	B3	C0209	B4	C227	B4	FB204	B4	CE318	C1	CE314	C3	CE302	C4	C420	D1	C903	D2	CE203	D3	CE808	D3		
R4024	A1	C4002	A2	D412	A2	R485	A2	FB601	A3	R350	A4	C468	B1	R468	B1	C4043	B2	C0222	B3	C735	B3	C0210	B4	C228	B4	FB602	B4	R421	C1	FB216	C3	CE303	C4	C421	D1	C904	D2	CE204	D3	CE809	D3		
R4025	A1	C4003	A2	D413	A2	R488	A2	FE306	A3	R351	A4	C469	B1	C318	B2	C4044	B2	C0228	B3	CE321	B3	C0217	B4	C323	B4	FB707	B4	R422	C1	R204	C3	CE307	C4	C422	D1	C907	D2	CE205	D3	D416	D3		
R4026	A1	C4025	A2	D414	A2	R489	A2	Q406	A3	R356	A4	C484	B1	C319	B2	C499	B2	C0229	B3	CE322	B3	C0244	B4	C600	B4	FE301	B4	CE308	C2	R239	C3	CE312	C4	C425	D1	C924	D2	CE206	D3	Q206	D3		


1
2
3
4
A
B
C
D
TP328
D413
C3010
C371
Q308
Q306
R3052
R3050
R3053
R3054
C3011
CE347
C306
C307
C308
C305
CE316
CE326
C309
C311
C313
C316
R3019
R3020
CE315
CE323
CE324
C318
C319
CE322
C324
C323
D303
D302
R399
R375
TP232
TP233
C503
C502
R524
R503
C512
C513
C514
CE311
C510
C908
CE319
CE320
CE313
C507
C506
C509
C511
C508
C324
C303
ZD902
R4053
R299
D415
ZD309
Q206
R4054
R4055
R4056
C901
C902
R901
F8223
C304
D902
C301
L301
C388
FB311
CE208
CE212
CE207
CE201
R264
CE202
CE203
CE204
CE205
CE206
C411
C414
C415
C416
C417
C418
C419
C420
C421
C422
C423
C424
C425
C426
C427
C428
C408
C409
C410
R403
R409
R410
R411
R418
R420
R421
R422
C4078
ZD401
CE318
R4058
R4059
R4060
D403
D404
D405
D406
D407
D408
D410
D411
D412
D414
R4036
R4037
R4038
R4039
R4040
R4041
R4042
R4043
R4044
R4045
R4046
R4047
R4048
R4049
R4050
R4051
R4052
R4061
R4062
R4063
R4064
R4065
R4066
R4067
R4068
R4069
R4070
R4071
R4072
R4073
R4074
R4075
R4076
R4077
R4079
R4080
R4081
R4082
R4083
R4084
R4085
R4086
R4087
R4088
R4089
R4090
R4091
R4092
R4093
R4094
R4095
R4096
R4097
R4098
R4099
R4100
R4101
R4102
R4103
R4104
R4105
R4106
R4107
R4108
R4109
R4110
R4111
R4112
R4113
R4114
R4115
R4116
R4117
R4118

POWER BOARD

TABLE OF CONTENTS

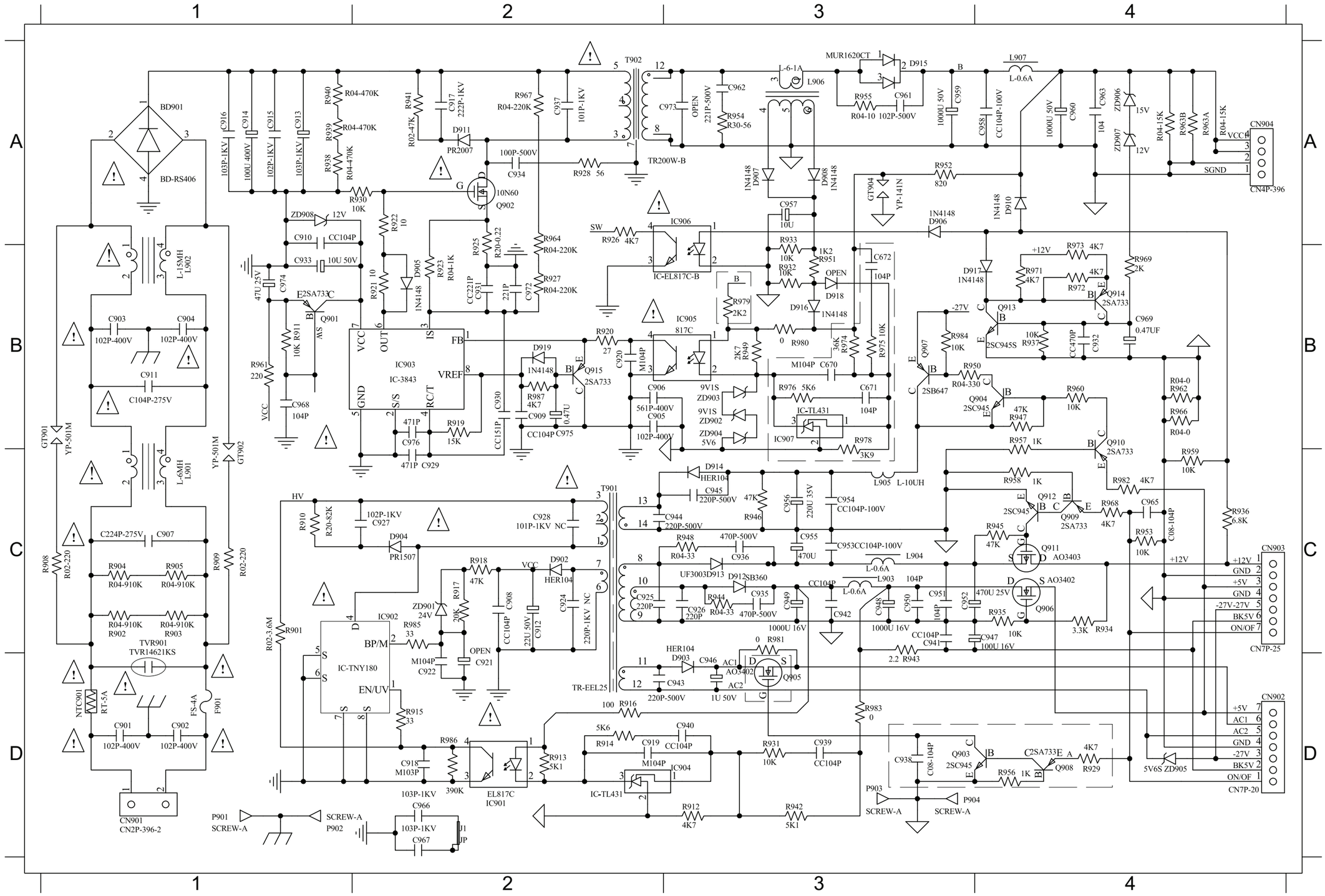
INTERNAL IC DIAGRAM - AZ431



7 - 2

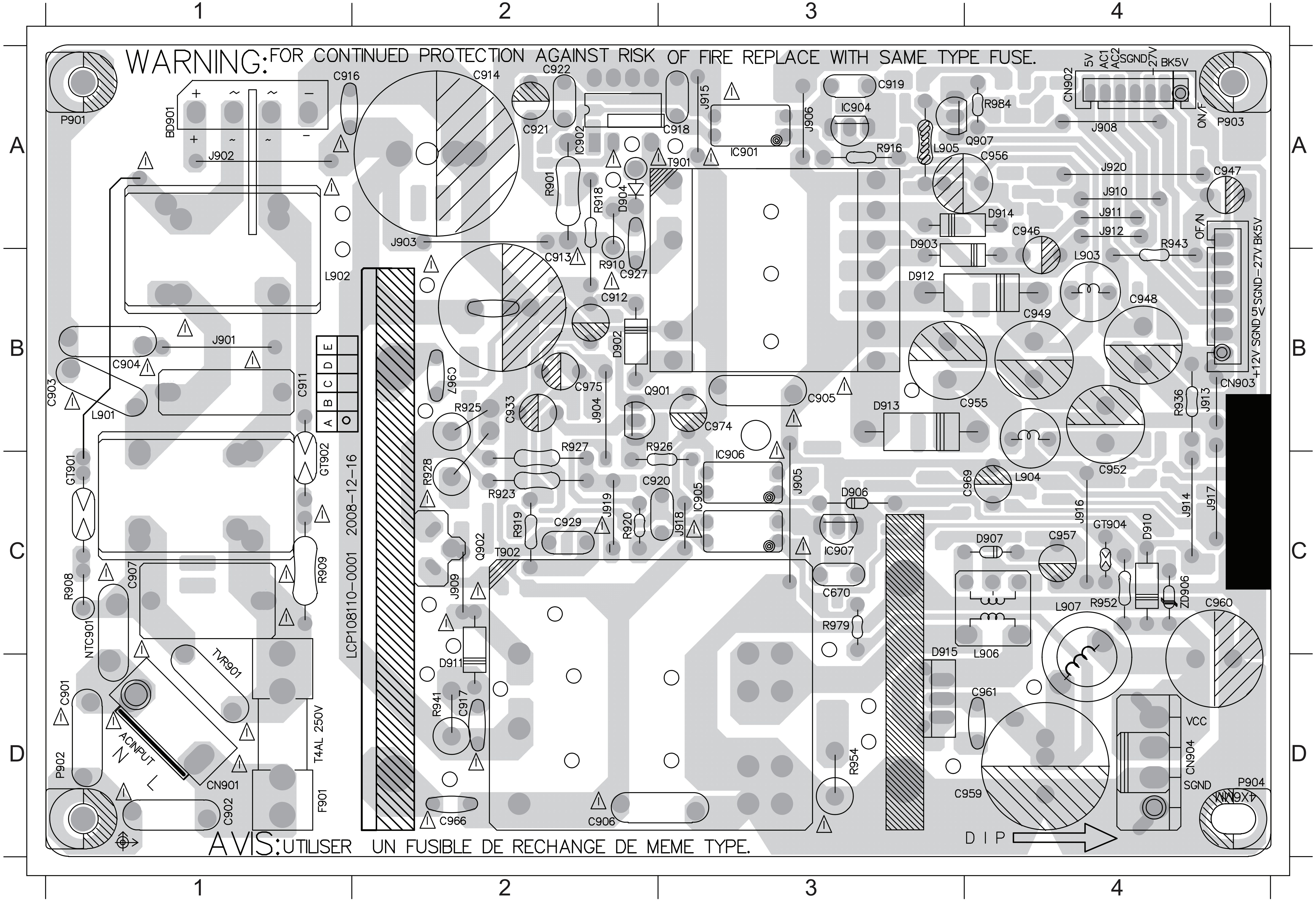
CIRCUIT DIAGRAM

BD901A1 C910 A1 C918 D2 C930 B2 C939 C3 C949 C3 C957 A3 C967 D2 CN903C4 D908 A3 D917 B3 IC905 B3 L907 A4 Q910 B4 R903 C1 R914 D2 R922 A2 R932 B3 R940 A1 R948 C3 R957 B4 R964 A2 R980 B3 T901 C2 ZD906A4
C903 B1 C911 B1 C919 D2 C931 B2 C940 D3 C950 C3 C958 A3 C968 B1 CN904A4 D910 A4 D919 B2 IC906 A3 NTC901D1 Q911 C4 R904 C1 R915 D2 R923 B2 R933 A3 R941 A2 R949 B3 R958 C4 R966 B4 R981 C3 T902 A2 ZD907A4
C904 B1 C912 C2 C920 B2 c932 B4 C941 C3 C951 C3 C959 A3 C969 B4 D902 C2 D911 A2 F901 D1 L901 C1 Q901 B1 Q912 C4 R905 C1 R916 D2 R925 A2 R934 C4 R942 D3 R950 B3 R959 B4 R967 A2 R982 C4 TVR901C1 ZD908A1
c905 B2 C913 A1 C921 D2 C933 B1 C942 C3 C952 C3 c960 A4 C972 B2 D903 D3 D912 C3 GT902B1 L902 B1 Q902 A2 Q913 B4 R909 C1 R917 C2 R926 A2 R935 C4 R943 D3 R951 B3 R960 B4 R968 C4 R983 D3 ZD901C2
C906 B2 C914 A1 C922 D2 C934 A2 C945 C4 C953 C3 C961 A3 C974 B1 D904 C2 D913 C3 IC901 D2 L903 C3 Q904 B3 Q914 B4 R910 C1 R918 C2 R927 B2 R936 C4 R944 C3 R952 A2 R961 B1 R969 B4 R984 B3 ZD902B3
C907 C1 C915 A1 C927 C2 C935 C3 C946 D3 C954 C3 C962 A3 C975 B2 D905 B2 D914 C3 IC902 C2 L904 C3 Q906 C4 Q915 B2 R911 B1 R919 B2 R928 A2 R937 B4 R945 C4 R953 C4 R962 B4 R971 B4 R985 C2 ZD903B3
C908 C2 C916 A1 C928 C2 C936 C3 C947 C4 C955 C3 C963 D4 CN901D1 D906 A3 D915 A3 IC903 B2 L905 C3 Q907 B3 R901 C1 R912 D3 R920 B2 R930 A1 R938 A1 R946 C3 R954 A3 R963AA4 R972 B4 R986 D2 ZD904B3
C909 B2 C917 A2 C929 C2 C937 A2 C948 C3 C956 C3 C965 C4 CN902D4 D907 A3 D916 B3 IC904 D3 L906 A3 Q909 C4 R902 C1 R913 D2 R921 B2 R931 D3 R939 D2 R947 B4 R955 A3 R963BA4 R973 B4 R987 B2 ZD905D4



PCB LAYOUT - TOP VIEW

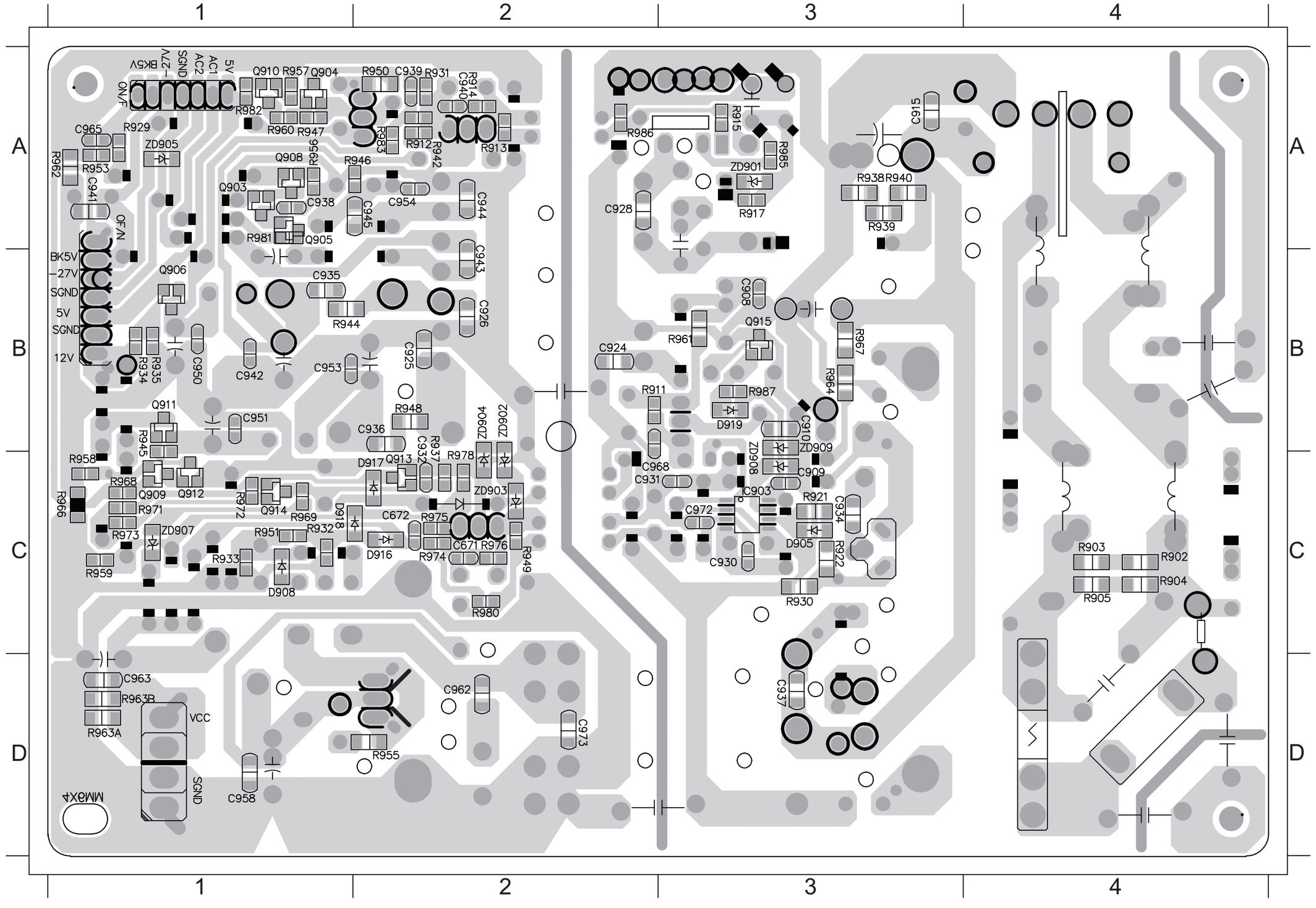
BD901	A1	C907	C1	C916	A1	C921	A2	C946	A4	C955	B4	C961	D4	CN901	D1	D903	A3	D911	D2	F901	D1	IC905	B3	J904	B2	J910	A4	J915	A3	L901	B1	L906	C4	Q907	A4	R918	A2	R926	B2	R943	A4	T902	C2
C903	B1	C911	B1	C917	D2	C922	A2	C947	A4	C956	A4	C967	B2	CN902	A4	D904	A2	D912	B4	GT902	C1	IC906	C3	J905	C3	J911	A4	J916	C4	L902	B1	L907	C4	R901	A2	R919	C2	R927	B2	R952	C4	TVR901	C1
C904	B1	C912	B2	C918	A3	C927	B2	C948	B4	C957	C4	C969	C4	CN903	B4	D906	C3	D913	B3	IC901	A3	J901	B1	J906	A3	J912	A4	J917	C4	L903	B4	NTC901	C1	R909	C1	R920	C2	R928	C2	R954	D3	ZD906	C4
c905	B4	C913	B2	C919	A3	C929	C2	C949	B4	C959	D4	C974	B3	CN904	D4	D907	C4	D914	A4	IC902	A2	J902	A1	J908	A4	J913	B4	J918	C3	L904	C4	Q901	B2	R910	B2	R923	C2	R936	B4	R984	A4		
C906	D2	C914	A2	C920	C2	C933	B2	C952	C4	c960	C4	C975	B2	D902	B2	D910	C4	D915	C3	IC904	A3	J903	A2	J909	C2	J914	C4	J919	C2	L905	A3	Q902	C2	R916	A3	R925	B2	R941	D2	T901	A3		



7 - 4

PCB LAYOUT - BOTTOM VIEW

C941	A1	R953	A1	ZD905	A1	R912	A2	R983	A2	R939	A3	C950	B1	R944	B1	R937	B2	D919	B3	ZD908	B3	R933	C1	R969	C1	D916	C2	C909	C3	R922	C3	C958	D1	C937	D3
C965	A1	R957	A1	C928	A2	R913	A2	R986	A2	R940	A3	C951	B1	R945	B1	R948	B2	Q915	B3	D908	C1	R951	C1	R971	C1	D917	C2	C934	C3	R930	C3	C963	D1		
Q904	A1	R960	A1	C939	A2	R914	A2	C915	A3	R985	A3	C953	B1	c932	B2	ZD902	B2	R961	B3	Q909	C1	R958	C1	R972	C1	Q913	C2	C972	C3	R902	C4	C931	D2		
Q910	A1	R962	A1	C940	A2	R931	A2	R915	A3	ZD901	A3	Q906	B1	C936	B2	ZD904	B2	R964	B3	Q912	C1	R959	C1	R973	C1	R949	C2	D905	C3	R903	C4	C962	D2		
R946	A1	R981	A1	C945	A2	R942	A2	R917	A3	C935	B1	Q911	B1	R911	B2	C908	B3	R967	B3	Q914	C1	R966	C1	ZD907	C1	R980	C2	IC903	C3	R904	C4	R955	D2		
R947	A1	R982	A1	C954	A2	R950	A2	R938	A3	C942	B1	R934	B1	R935	B2	C910	B3	R987	B3	R932	C1	R968	C1	C968	C2	ZD903	C2	R921	C3	R905	C4	C930	D3		



8 - 1

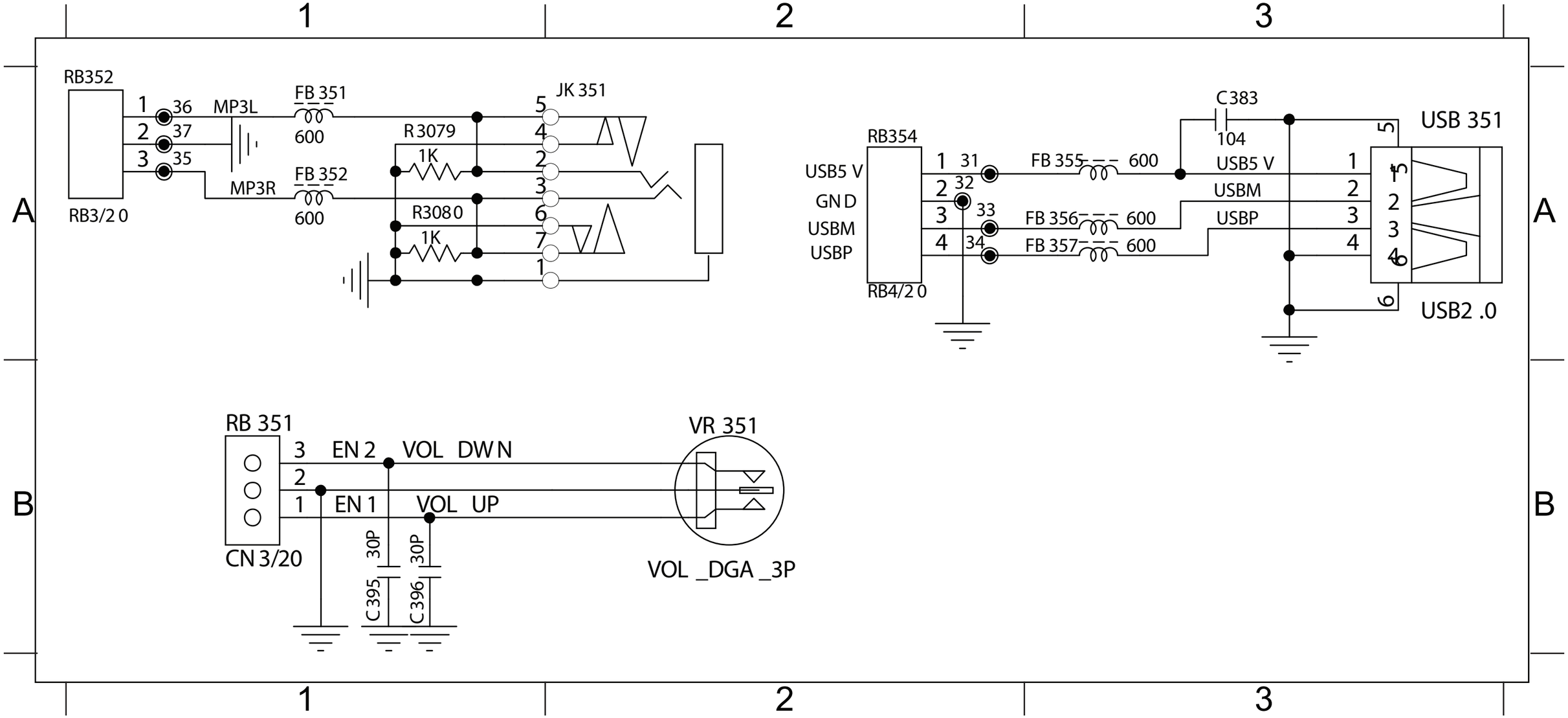
MP3 IN BOARD

TABLE OF CONTENTS

8 - 2

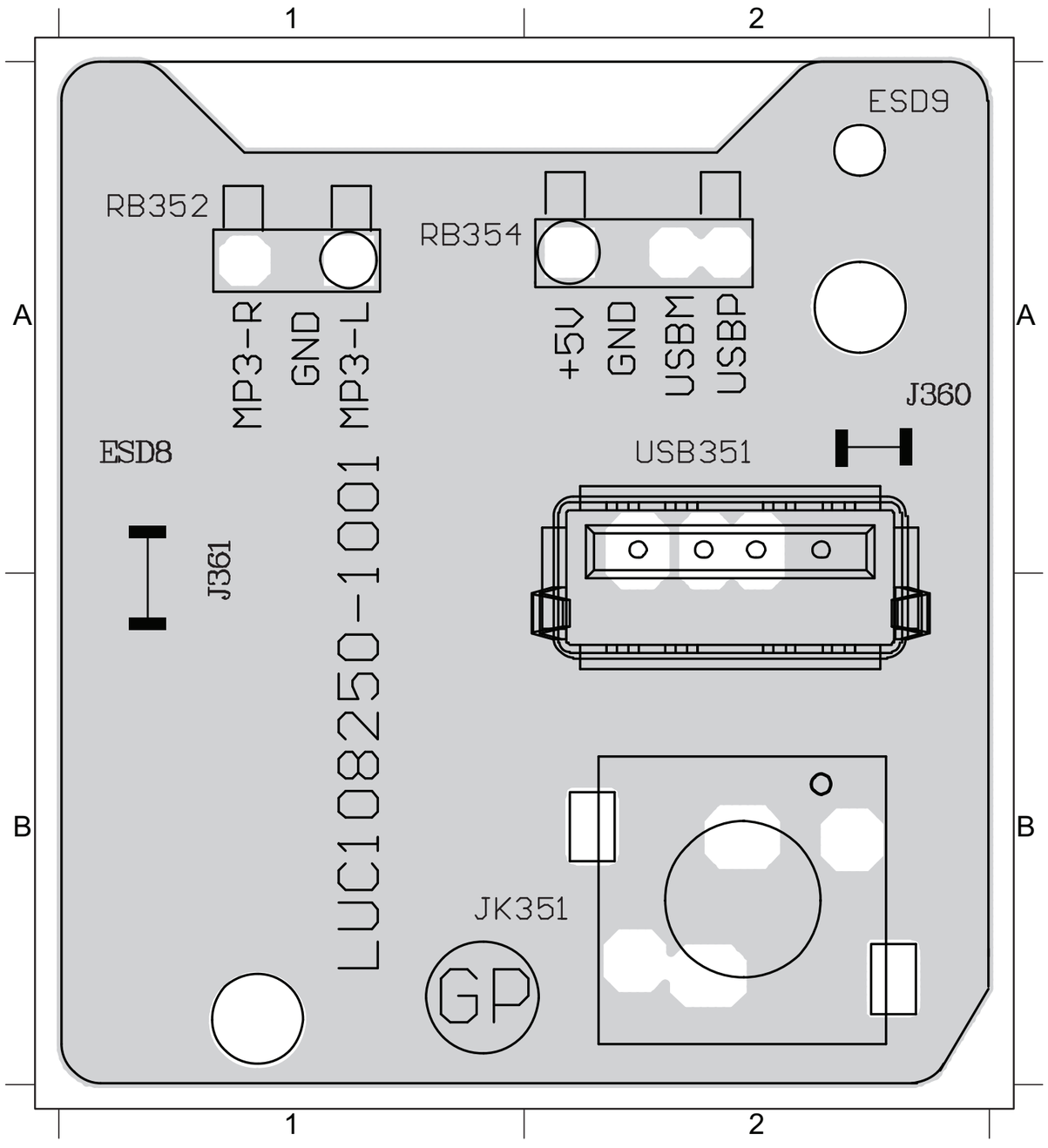
CIRCUIT DIAGRAM

C383 A3 FB351 A1 FB352 A1 FB355 A3 FB356 A3 FB357 A3 JK351 A2 R3079 A1 R3080 A1 RB352 A1 RB354 A2 USB351 A3



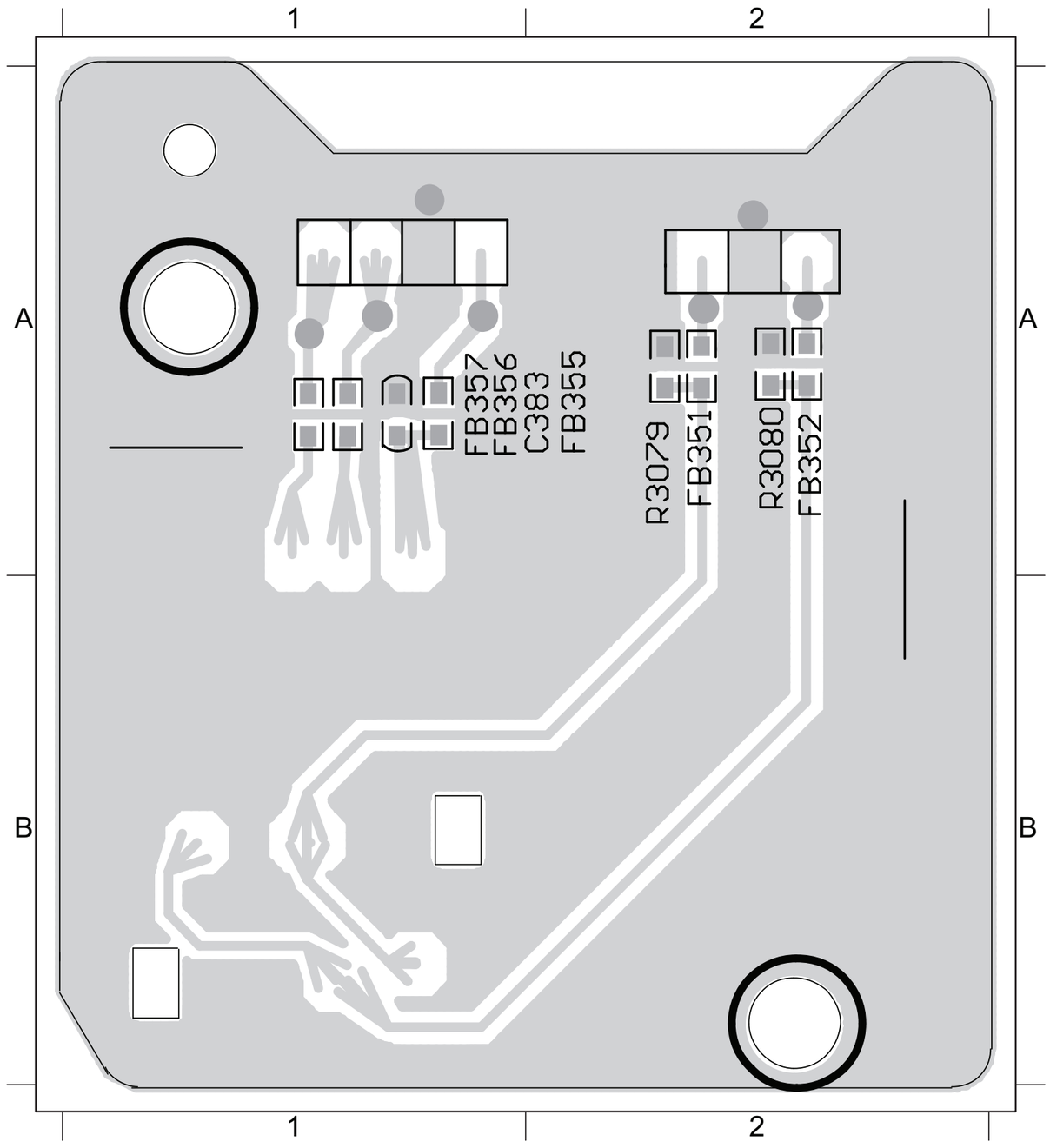
PCB LAYOUT - TOP VIEW

J360 A2 J361 A1 JK351 B1 RB352 A1 RB354 A1 USB351 A2



PCB LAYOUT - BOTTOM VIEW

C383 A2 FB351 A2 FB352 A2 FB355 A2 FB356 A1 FB357 A1 R3079 A2 R3080 A2



9 - 1

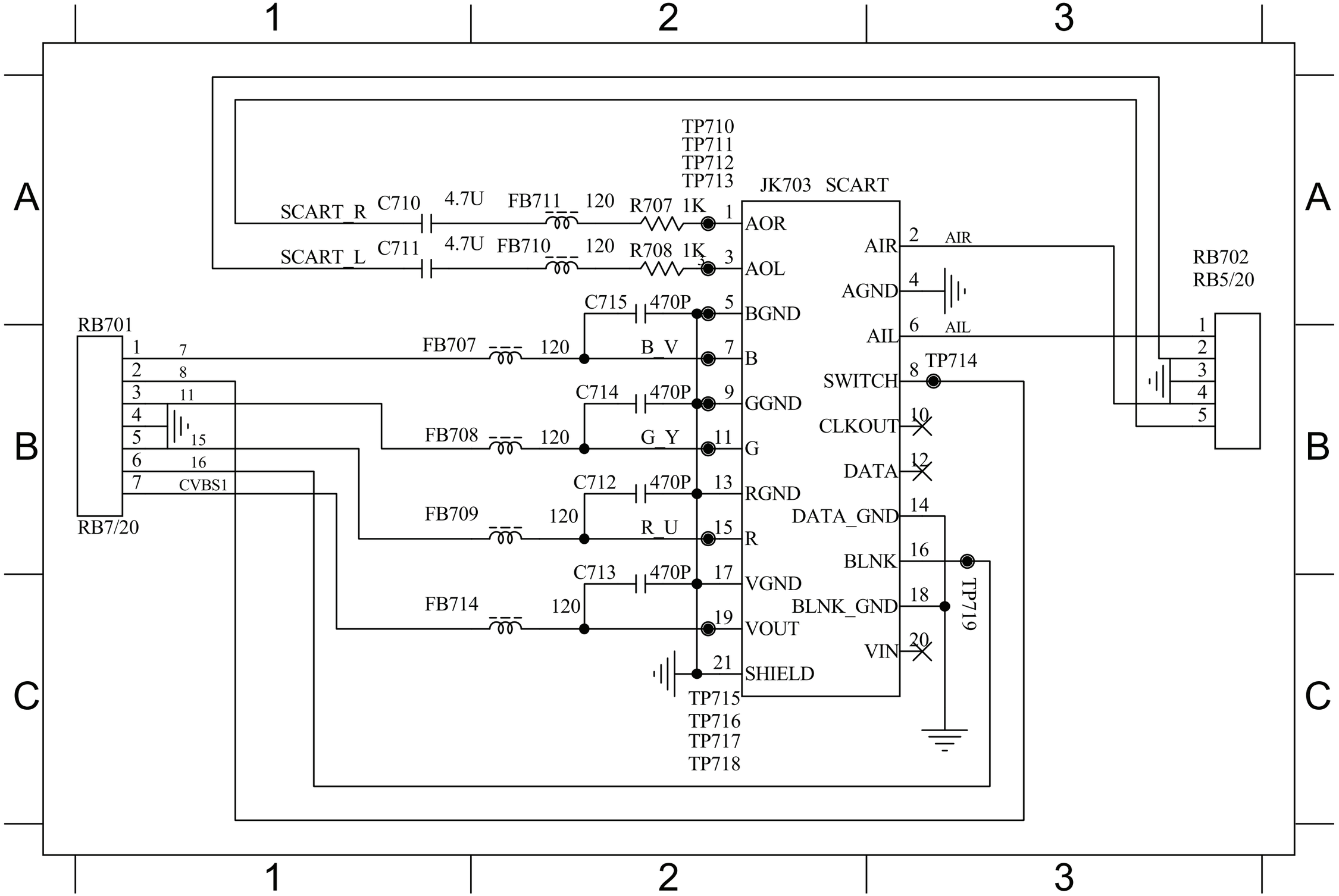
SCART BOARD

TABLE OF CONTENTS

9 - 2

CIRCUIT DIAGRAM

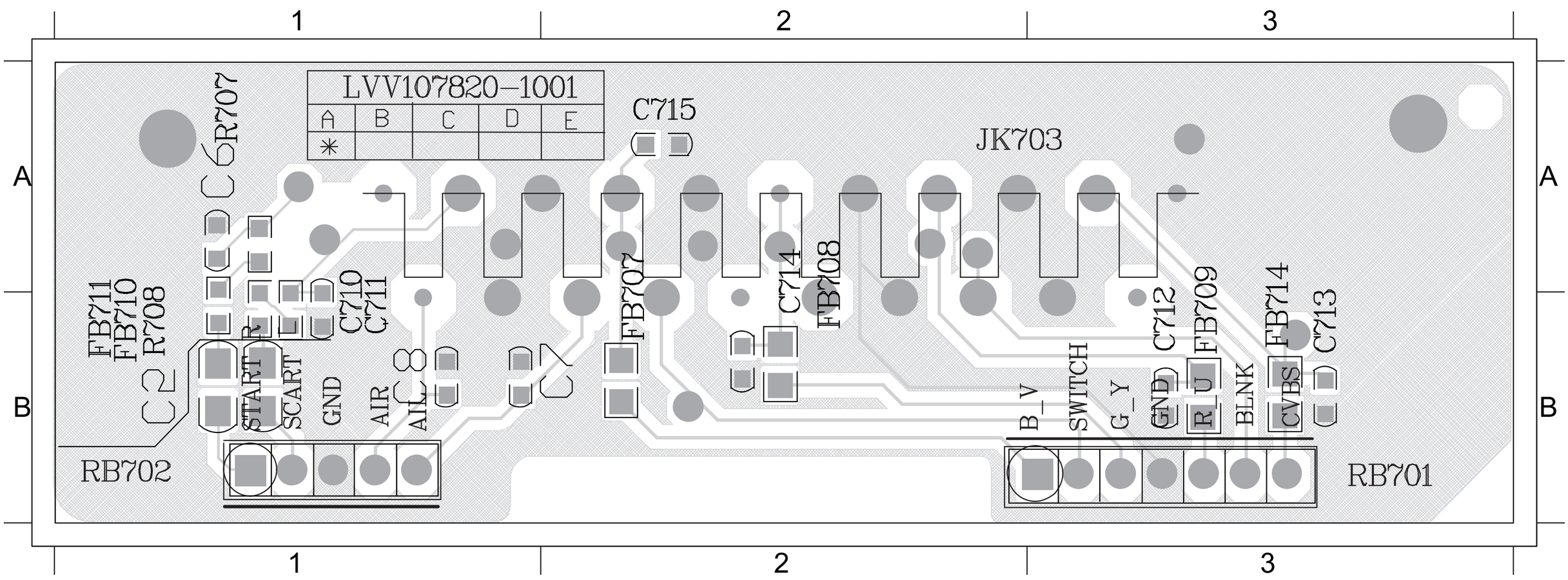
C710	A1	C712	B2	C714	B2	FB707	B1	FB709	B1	FB711	A2	JK703	A2	R708	A2	RB702	A1		
C711	A1	C713	B2	C715	A2	FB708	B1	FB710	A2	FB714	C2	R707	A2	RB701	B1				



9 - 3

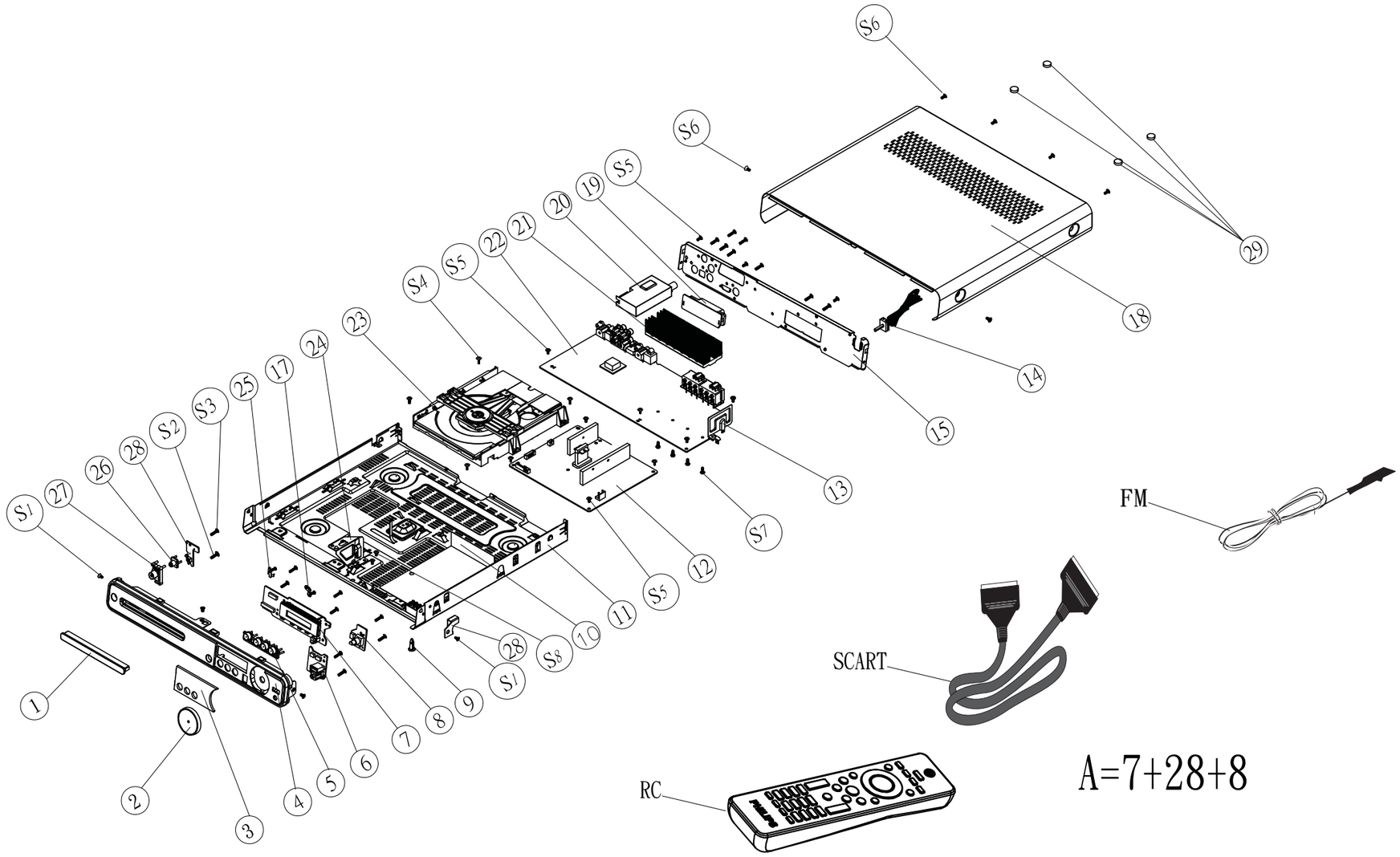
PCB LAYOUT - SCART PCB VIEW

C710	A1	C712	B3	C714	A2	FB707	A2	FB709	B3	FB711	A1	JK703	A2	R708	A1	RB702	B1		
C711	A1	C713	B3	C715	A2	FB708	A1	FB710	A1	FB714	A1	R707	A1	RB701	B3				



10 - 1

Mechanical Exploded View



PART LIST

Loc.	Alt	Part No.	safety	Description
MAIN UNIT				
1		996510027041		DVD DOOR ABS BLK
2		996510021087		VOLUME KNOB
3		996510021093		DISPLAY LENS
4		996510021057	⚠	FRONT PANEL
5		996510021068		FUNCTION KNOB
6		996510021066		MP3 IN PCB ASSY
11		996510022387		BTM CAB
12		996510021228	⚠	POWER PCB ASSY 420W
14		996510001638	⚠	POWER CORD
15		996510027068	⚠	REAR PANEL SECC
17		996510027029		VOLUME BKT SECC T=1.0mm
18		996510027032		TOP COVER SECC
19		996510021058		SCART PCB ASSY
20	#	996510011275		TUNER PACK
20	#	996510018486		TUNER PACK KST-MT004F
22		996510021237		MAIN PCB ASSY
23		996510021248		DVD LOADER
24		996510027035		TOP SUPPORT SECC
26		996510021064		STANDBY LENS
27		996510021069		STANDBY KNOB
29		996510021942		RUBBER FOOT D14xH4.2
30		996510027031		SAFETY BKT SECC T=0.8mm
A		996510021089		DISP+LED+VOL PCB ASSY
FM		996510008251		FM ANT
RC		996510021067		REMOTE CONTROL 39 KEYS
SCART		996510001650		SCART CABL
V1		996510007429		GP FFCCBLE
SPEAKER				
ML		996510027033		SPEAKER BOX
MR		996510027051		SPEAKER BOX
SL		996510027046		SPEAKER BOX
SPKC		996510027027		SPEAKER BOX
SR		996510027043		SPEAKER BOX
SUBW		996510027038		SPEAKER BOX
FRMS		996510027049		RUBBER FOOT
FRSUBW		996510013306		RUBBER FOOT -SUB
SCREW				
S1		--		SCREW M3xP0.5xL6mm
S2		--		SCREW T3.0x1.06PxL8mm
S3		--		SCREW T3.0x1.06PxL8mm
S4		--		SCREW M3.0x0.5PxL8mm
S5		--		SCREW M3.0x0.5PxL6mm
S6		--		SCREW M3x6x0.5P
S7		--		SCREW T3.0x1.06PxL10mm
S8		--		SCREW M3.0x0.5PxL4mm
S9		--		L10xP2.12xT5.0mm
MAIN PCB				
CN201		996500015859		CONNECTOR 4PIN P2.0MM
CN202		996510012494		CONNECTOR 5 PIN RED
CN203		996500015859		CONNECTOR 4PIN P2.0MM
CN204		996500017367		CONNECTOR 8P
CN205		996510012495		CONNECTOR 4P
CN206		996500015897		CONNECTOR 3 PIN RED
CN208		996500015897		CONNECTOR 3 PIN RED
CN301		996510012497		FPC/FFC CONN. 10P
CN701		996500017358		CONNECTOR 7P
CN702		996500015895		CONNECTOR 5 PIN P=2.0MM
CN802		996500015901		CONNECTOR 6 PIN P=2.0MM
CN803		996500015895		CONNECTOR 5 PIN P=2.0MM
D201		996510010358		DIODE 1N4007
D204		996510010358		DIODE 1N4007
IC101		996510021063		IC 16P SAA6581T SO16 PHILIPS
IC201		996510012499		IC 28P
IC202		996510021075		IC48P KH29LV320DBTC-70G
IC203		996500041284		IC 3P STM809SWX6F 3.0V
IC204		996510004289		IC 8P TU24C16CS2 SOIC
IC205		996510021062		IC3P LD1117ADJ SOT223
IC206		996510016601		IC 54P HY57V641620F(L/S)TP-6
IC207		996510012500		IC 20 PIN SN74HC244PWR
IC208		996510021074		IC 48P STM32F101C6A LQFP
IC209		996510021082		IC 256P MT1389FXE/SN LQFP
IC210		996500027090		IC 3 PIN AP1117E18LA 1.8V
IC301		996510020341		IC 8P D4558 SOP SILICORE
IC304		996510012503		IC 16P CD4051BM SOIC
IC305		996510012503		IC 16P CD4051BM SOIC
IC306		996510021056		IC 20P WM8781GEDS
IC309		996510012500		IC 20 PIN SN74HC244PWR
IC401		996510021092		IC 64P TAS5508APAG TQFP TI
IC402		996510021229		IC 44P TAS5342ADDV
IC403		996510021229		IC 44P TAS5342ADDV
IC404		996510021229		IC 44P TAS5342ADDV
IC405		996510020341		IC 8P D4558 SOP SILICORE
IC406		996510020341		IC 8P D4558 SOP SILICORE
IC407		996500023948		IC 14PIN 74HCU04D PHILIPS
IC801		996510010380		Motor Drive IC
JK302A		996510016616		RCA JACK2PWHT-RED
JK401		996510013837		GPSPK JAC12P
JK601		996510012507		HDMI JACK 19P PDVBT8-19
JK701		996510012481		RCA JACK 1P YELLOW W/GND
JK703		996510015645		TOSL JA PLR131/T2 RECEIVER
JK704		996500017363		RCA JACK 1P W/GND P
L401		996510021242		INDUCTOR 22uH 20% 10A
L402		996510021242		INDUCTOR 22uH 20% 10A
L403		996510021242		INDUCTOR 22uH 20% 10A
L404		996510021242		INDUCTOR 22uH 20% 10A
L405		996510021061		INDUCTOR 10uH 20% 10A
L406		996510021061		INDUCTOR 10uH 20% 10A
L407		996510021242		INDUCTOR 22uH 20% 10A
L408		996510021242		INDUCTOR 22uH 20% 10A
L409		996510021242		INDUCTOR 22uH 20% 10A
L410		996510021242		INDUCTOR 22uH 20% 10A
L411		996510021061		INDUCTOR 10uH 20% 10A
L412		996510021061		INDUCTOR 10uH 20% 10A
Q101		994000000921		XISTR PNP 2SA812 HFE
Q102		994000000915		XISTR NPN 2SC1623
Q204		996510012508		XISTR PNP TIP42C
Q205		996510000578		XISTR NPN KTC3875-Y
Q206		994000000915		XISTR NPN 2SC1623
Q207		994000000915		XISTR NPN 2SC1623
Q300		994000000915		XISTR NPN 2SC1623
Q305		994000000915		XISTR NPN 2SC1623
Q401		996510000578		XISTR NPN KTC3875-Y
Q402		994000000921		XISTR PNP 2SA812 HFE
Q403		996510000578		XISTR NPN KTC3875-Y
Q404		996510000578		XISTR NPN KTC3875-Y
Q405		996500028742		XISTR NPN 2SD882P
Q406		994000000921		XISTR PNP 2SA812 HFE
Q601		996510008289		FET AO3402 SOT23 30V/4A
Q602		996500041281		FET 2N7002 60V/115MA
Q701		994000000915		XISTR NPN 2SC1623
Q702		994000000915		XISTR NPN 2SC1623
Q703		994000000915		XISTR NPN 2SC1623
Q704		994000000915		XISTR NPN 2SC1623
Q801		996510004117		FET 2SK3018 30V/0.1A SC-70
Q802		994000000915		XISTR NPN 2SC1623
Q803		996500026927		XISTR PNP 2SB1132RT100
Q804		996500026927		XISTR PNP 2SB1132RT100
Q805		996510004117		FET 2SK3018 30V/0.1A SC-70
Q901		996510000615		XISTR NPN 2SC945P
Q903		996500026946		XISTR PNP 2SB772P/Q NEC

Loc.	Alt Part No.	safety	Description
XL401	996510021233		X'TAL 13.5MHz 15ppm 20pF
ZD901	994000005204		DIODE ZENR 12.6-13.1V 0.5W
ZD904	996500028741		DIODE ZENR 9.1-9.5V 0.5W

POWER PCB

C903	996500027115		CAP.SAFTY Y1 102PF 250V
C904	996500027115		CAP.SAFTY Y1 102PF 250V
C905	996500027115		CAP.SAFTY Y1 102PF 250V
C906	994000005344	⚠	CAP.SAFETY Y1 560PF
C907	994000005343	⚠	COND SAFETY 0.22UF 275V
C911	994000005343	⚠	COND SAFETY 0.22UF 275V
C913	996500018042		COND DISC 0.01UF 1KV 20%
C914	996510018518		COND ELECT 100uF 400V 20%
C916	996500018042		COND DISC 0.01UF 1KV 20%
C917	996510012473	⚠	COND DISC 2200 pF 1KV 10%
C918	996500032755	⚠	COND MYLAR 0.01 UF 100V 5%
C919	996510004633	⚠	COND MYLAR 0.1 uF 100V 5%
C920	996510004633		COND MYLAR 0.1 uF 100V 5%
C922	996510004633		COND MYLAR 0.1 uF 100V 5%
C929	996510010365		COND MYLAR 0.0018uF
CN901	996500015936	⚠	CONNECTOR 4PIN P=3.96MM
CN902	996500015901		CONNECTOR 6 PIN P=2.0MM
CN903	996510021055		CONNECTOR B7B-XH-A 7 PIN
CN904	996500017360		CONNECTOR 4P CL3962WVO
D902	996510012516		DIODEHER105 DO
D903	996510012516		DIODEHER105
D904	994000001571		DIODE FR107 1A 1000V
D910	996510012516		DIODEHER105
D911	996510021223		DIODE PR2007 2A 1000V
D912	994000005249		DIODE SB360 3A 60V DO-201AD
D913	994000000943		DIODE UF3003 3A 200V
D914	996510012516		DIODEHER105
D915	994000005459		DIODE STPR1020CT
F901	994000001567	⚠	FUSE 4A 250V
GT902	996510021084		SURGE PROTECTOR
IC901	994000000946	⚠	OPTICAL SENSOR 4P
IC902	996510021079	⚠	IC 8P(P3=N.C) TNY180PN
IC903	996510004113		IC 8P AP3843GMTR-E1
IC904	994000000952		IC 3PIN TL431
IC905	994000000946		OPTICAL SENSOR 4P
IC906	994000000946		OPTICAL SENSOR 4P
L901	996510021225		LINE FILTER ET-24 7mH 2VEW
L902	996510013922	⚠	LINE FILTER ET24
L903	996500016694		6UH 13.5TS 2UEW
L904	996500016694		6UH 13.5TS 2UEW
L906	996500027102		TOROID COIL S1=1TS
L907	996500027104		INDUCTOR 6UH /-15%
NTC901	994000005232	⚠	THERMIST. NTC 5R 5A
Q901	996510010367		XISTR PNP 2SA733Q
Q902	996510021085		MOSFET STK1060F TO220F
Q904	994000000915		XISTR NPN 2SC1623
Q906	996510008289		FET AO3402 SOT23 30V/4A
Q907	996510010356		XISTR PNP 2SB647 TO-92MOD
Q909	994000000921		XISTR PNP 2SA812 HFE
Q910	994000000921		XISTR PNP 2SA812 HFE
Q911	996510018395		FET AO3401 SOT23 -30V/-4.2A
Q912	994000000915		XISTR NPN 2SC1623
Q913	994000000915		XISTR NPN 2SC1623
Q914	994000000921		XISTR PNP 2SA812 HFE
Q915	994000000921		XISTR PNP 2SA812 HFE
R925	996510021241		RESISTOR 0.22R 3W 5% MO
R928	996510021232		RES. 56R 3W +/-5% MOF
R954	996510021232		RES. 56R 3W +/-5% MOF
T901	996510021236	⚠	TRASFO. EEL-25 7+7P 40W
T902	996510021238	⚠	TRASFO. ERL-35 7+7P 150W
L902	996510013922		LINE FILTER ET24
L903	996500016694		6UH 13.5TS 2UEW
L904	996500016694		6UH 13.5TS 2UEW
L906	996500027102		TOROID COIL S1=1TS
L907	996500027104		INDUCTOR 6UH /-15% D=1.

Loc.	Alt Part No.	safety	Description
NTC901	994000005232	⚠	THERMIST. NTC 5R 5A
Q901	996510010367		XISTR PNP 2SA733Q
Q902	996510021085		MOSFET STK1060F
Q904	994000000915		XISTR NPN 2SC1623
Q906	996510008289		FET AO3402 SOT23 30V/4A
Q907	996510010356		XISTR PNP 2SB647 TO-92MOD
Q909	994000000921		XISTR PNP 2SA812
Q910	994000000921		XISTR PNP 2SA812
Q911	996510018395		FET AO3401 SOT23 -30V/-4.2A
Q912	994000000915	⚠	XISTR NPN 2SC1623
Q913	994000000915	⚠	XISTR NPN 2SC1623
Q914	994000000921		XISTR PNP 2SA812
Q915	994000000921		XISTR PNP 2SA812
R925	996510021241		RESISTOR 0.22R 3W 5% MO
R928	996510021232		RES. 56R 3W +/-5% MOF
R954	996510021232		RES. 56R 3W +/-5% MOF
T901	996510021236	⚠	TRASFO. EEL-25 7+7P 40W
T902	996510021238	⚠	TRASFO. ERL-35 7+7P 150W

DISP+LED+VOL PCB

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

MP3 IN PCB

JK351	996510004129	KARAOKE JACK D3.6MM 7P

SCART PCB PCB

JK703	996510021054	SCART SOCKET 21P P3.81mm

REVISION LIST

Version 1.0
*Initial release
#=Alternative Codes
⚠=Safety Symbol