

Service
Service
Service

Second Generation



Service Manual



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This service manual is for HTS3365/55 Second Generation model, which is different from the previous generation HTS3365/55 models.

For Second Generation model the serial number begin with MF2AXXXXXXXXXX. Refer to the rating label illustration at right.

PHILIPS Model No.: HTS3365/55

AC 110-127V/220-240V ~ 50-60Hz 100W

Model No.: HTS3365/55

Serial No.: MF2A0819000001

Made in China

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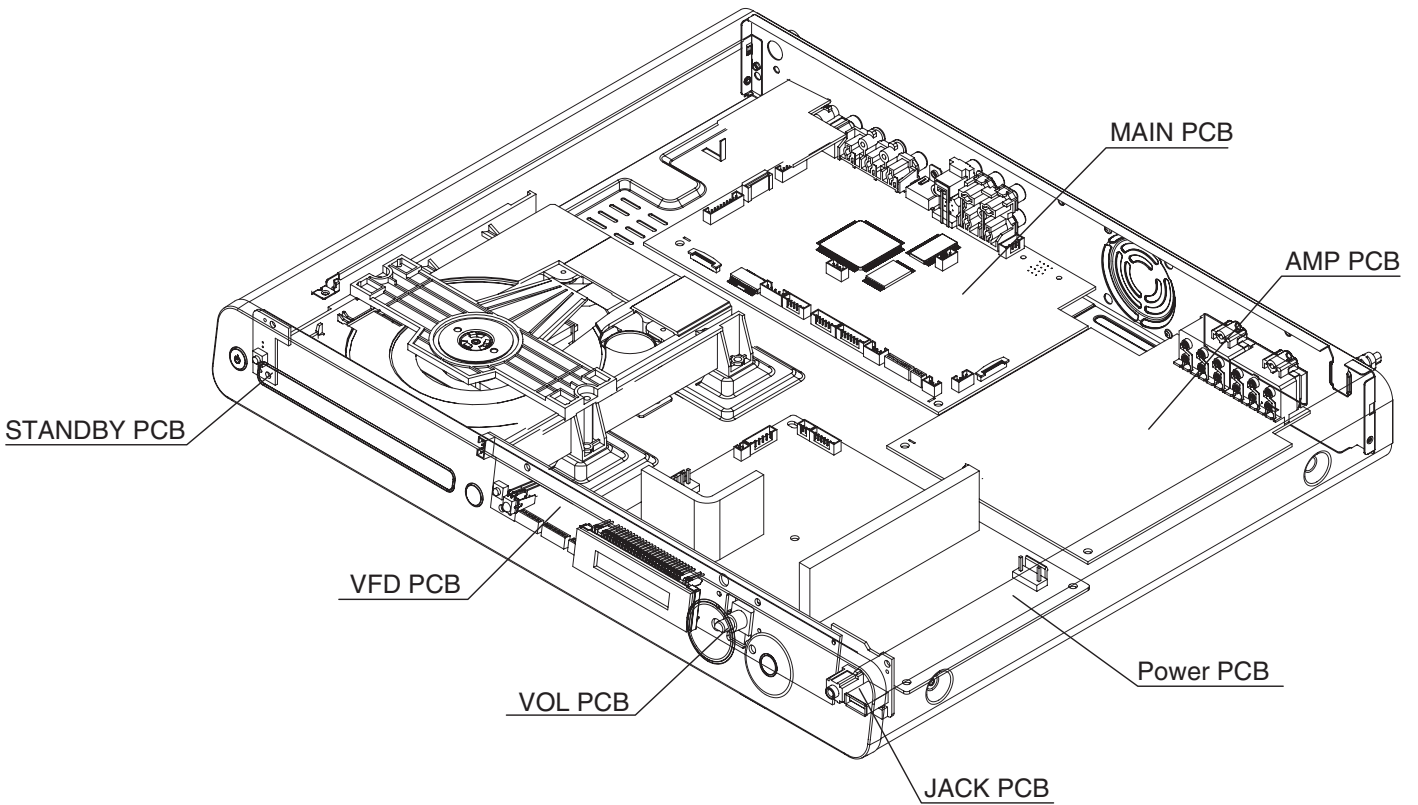
GB 3139 785 34590

Version 1.0



PHILIPS

LOCATION OF PCB BOARDS



VERSION VARIATION:

Features	Type/Versions	HTS3365
		/55
Main(Power Output-600W)		X
S-video out		X
Power Voltage (120V/230V)		X
WMA		X

SERVICE SCENARIO MATRIX:

Boards in used	Type/Versions	HTS3365
		/55
Main Board		C
Power Board		C
AMP Board		C
VFD+JACK+VOL+STANDBY Board		C

* C= Component

SPECIFICATIONS

AMPLIFIER

Total output power	
Home Theatre mode.....	600 W
Frequency Response	180 Hz – 18 kHz / ± 3 dB
Signal-to-Noise Ratio:.....	> 60 dB (A-weighted)
Input Sensitivity	
AUX 1	400 mV
AUX 2	400 mV
MP3 LINK	400 mV

RADIO

Tuning Range	FM 87.5-108 MHz
.....	(50/100 kHz)
.....	AM/MW 530-1700 kHz
.....	(10 kHz)
.....	531-1602 kHz
.....	(9 kHz)
26 dB Quieting	
Sensitivity	FM 22 dBf,
.....	AM/MW 5000 μ V/m
IF Rejection Ratio	FM 60 dB, AM/MW 24 dB
Signal-to-Noise Ratio.....	FM 50 dB, AM/MW 30 dB
AM/MW Suppression Ratio	FM 30 dB
Harmonic Distortion	FM Mono 3%
.....	FM Stereo 3%
.....	AM/MW 5%
Frequency Response ...	FM 180 Hz–10 kHz / ± 6 dB
Stereo Separation	FM 26 dB (1 kHz)
Stereo Threshold	FM 29 dB

DISC

Laser Type	Semiconductor
Disc Diametre	12cm / 8cm
Video Decoding	MPEG-1 / MPEG-2 /
.....	/ DivX 3/4/5/6, Ultra
Video DAC	12 Bits
Signal System	PAL / NTSC
Video Format	4:3 / 16:9
Video S/N	56 dB
Composite Video	
Output	1.0 Vp-p, 75 Ω
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

USB

Compatibility	Hi-Speed USB (2.0)
Class Support.....	UMS (USB MassStorage Class)
MTP	(Media TransferProtocol)

MAIN UNIT

Power Supply Rating	110-127 V / 220-240 V~;
.....	50-60 Hz
Power Consumption	100 W
Dimensions.....	435 x 58 x 360 (mm)
.....	(w x h x d)
Weight	3.75 kg

FRONT AND REAR SPEAKERS

System.....	Full range satellite
Impedance.....	3 Ω
Speaker drivers	3" full range speaker
Frequency response.....	150 Hz – 20 kHz
Dimensions.....	103 x 203 x 71 (mm)
.....	(w x h x d)
Weight	0.54 kg/each

CENTRE SPEAKER

System.....	Full range satellite
Impedance.....	6 Ω
Speaker drivers:	2 x 2.5" full range speaker+
.....	1 x 2" tweeter
Frequency response.....	150 Hz – 20 kHz
Dimensions.....	440 x 105 x 75 (mm)
.....	(w x h x d)
Weight	1.39 kg

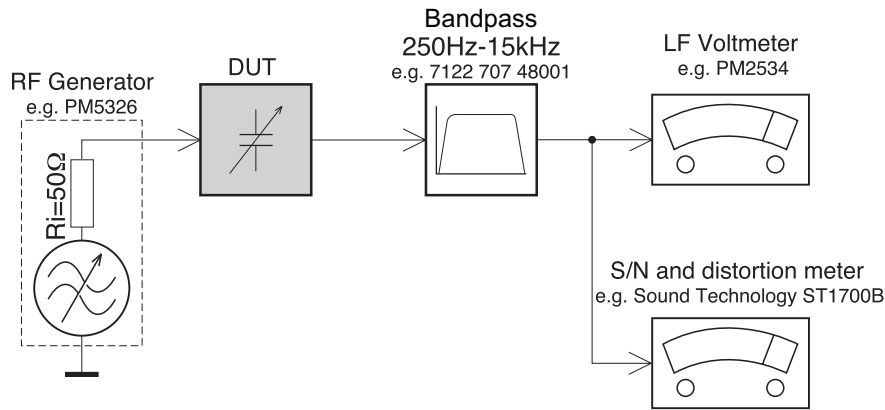
SUBWOOFER

Impedance.....	6 Ω
Speaker drivers	165mm (6.5") woofer
Frequency response.....	40 Hz – 150 Hz
Dimensions.....	163 x 363 x 369 (mm)
.....	(w x h x d)
Weight	5.08 kg

Specifications subject to change without prior notice.

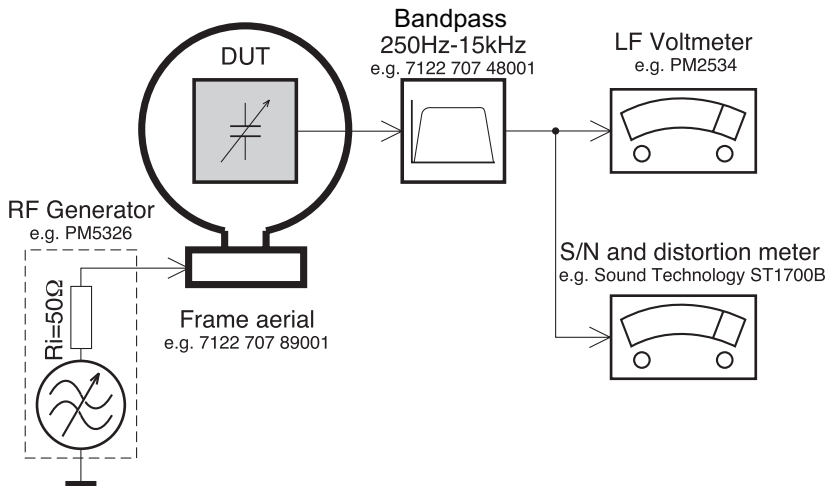
MEASUREMENT SETUP

Tuner FM



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

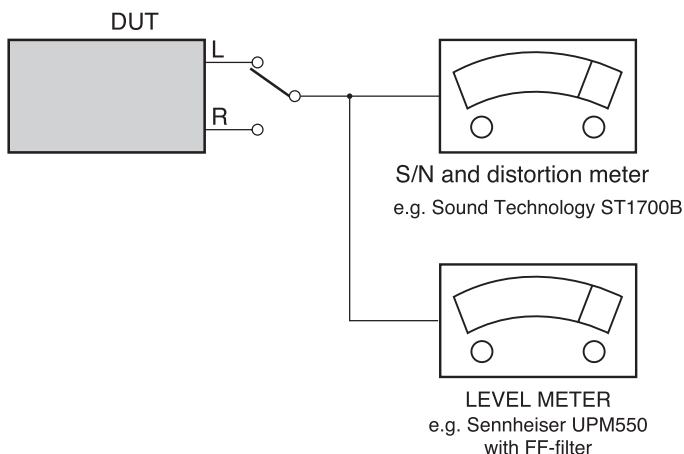
Tuner AM (MW,LW)



To avoid atmospheric interference all AM-measurements have to be carried out in a Faraday's cage. Use a bandpass filter (or at least a high pass filter with 250Hz) to eliminate hum (50Hz, 100Hz).

CD

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



SERVICE AIDS

Service Tools:

- Universal Torx driver holder4822 395 91019
- Torx bit T10 150mm4822 395 50456
- Torx driver set T6-T204822 395 50145
- Torx driver T10 extended4822 395 50423

Compact Disc:

- SBC426/426A Test disc 5 + 5A4822 397 30096
- SBC442 Audio Burn-in test disc 1kHz4822 397 30155
- SBC429 Audio Signals disc4822 397 30184
- Dolby Pro-logic Test Disc4822 395 10216

HANDLING CHIP COMPONENTS

GENERAL

SOLDER CHIP COMPONENT SOLDER
COPPER TRACK P.C.B.
GLUE

SERVICE PACKAGE

DISMOUNTING

VACUUM PISTON
4822 395 10082

SOLDERING IRON
e.g. WELLER solder tip PT-H7

SOLDERING IRON
SOLDER WICK
4822 321 40042

e.g. A PAIR OF TWEEZERS

HEATING HEATING

SOLDERING IRON CLEANING
SOLDER WICK

PRECAUTIONS

SOLDERING IRON CORRECT COPPER TRACK

SOLDERING IRON CHIP COMPONENT

MOUNTING

e.g. A PAIR OF TWEEZERS

SOLDER
ø0.5-0.8mm

SOLDERING IRON PRESSURE

SOLDERING TIME
< 3 sec/side

SOLDER ø0.5-0.8mm
PRESSURE SOLDERING IRON

EXAMPLES

CORRECT

SOLDERING IRON NO!

(GB) WARNING

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

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

(F) ATTENTION

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

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

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

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

(D) WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD).

Unsorgfältige Behandlung im Reparaturfall kann die Lebensdauer drastisch reduzieren. Veranlassen Sie, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand verbunden sind mit dem gleichen Potential wie die Masse des Gerätes.

Bauteile und Hilfsmittel auch auf dieses gleiche Potential halten.

(NL) WAARSCHUWING

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

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

Houd componenten en hulpmiddelen ook op hetzelfde potentiaal.

(I) AVVERTIMENTO

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

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

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

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

(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 Δ .

(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 symbool Δ .

(F)

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

Less composants de sécurité sont marqués Δ .

(D)

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

Sicherheitsbauteile sind durch das Symbol Δ 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 Δ .

(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 suojauslaitteiden ohitettaessa olet alttiina näkymättömälle laserisäteilylle. Älä katso säteeseen!

(DK) Advarsel !

Usynlig laserstrålning ved åbning når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse 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 (lead-free/ lead-free). So best to always use SAC305 and the higher temperatures belong to this.

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

- Use only lead-free solder alloy Philips SAC305 with order code 0622 149 00106. If lead-free solder-paste is required, please contact the manufacturer of your solder-equipment. In general use of solder-paste within workshops should be avoided because paste is not easy to store and to handle.
- Use only adequate solder tools applicable for lead-free solder alloy. The solder tool must be able
 - To reach at least a solder-temperature of 400°C,
 - To stabilize the adjusted temperature at the solder-tip
 - To exchange solder-tips for different applications.
- Adjust your solder tool so that a temperature around 360°C – 380°C is reached and stabilized at the solder joint. Heating-time of the solder-joint should not exceed ~ 4 sec. Avoid temperatures above 400°C otherwise wear-out of tips will rise drastically and flux-fluid will be destroyed. To avoid wear-out of tips switch off unused equipment, or reduce heat.
- Mix of lead-free solder alloy / parts with leaded solder alloy / parts is possible but PHILIPS recommends strongly to avoid mixed solder alloy types (leaded and lead-free).
If one cannot avoid or does not know whether product is lead-free, clean carefully the solder-joint from old solder alloy and re-solder with new solder alloy (SAC305).
- Use only original spare-parts listed in the Service-Manuals. Not listed standard-material (commodities) has to be purchased at external companies.
- Special information for BGA-ICs:
 - Always use the 12nc-recognizable soldering temperature profile of the specific BGA (for de-soldering always use the lead-free temperature profile, in case of doubt)
 - Lead free BGA-ICs will be delivered in so-called 'dry-packaging' (sealed pack including a silica gel pack) to protect the IC against moisture. After opening,

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

Do not re-use BGAs at all.

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

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

For additional questions please contact your local repair-helpdesk.

System , Region Code , etc. Setting Prochure

1)System Reset

- press "OPTIONS" button on R/C,TV will show setup menu
- select the menu using the ▼ and ► on R/C
- go preference page to do ssystem reset

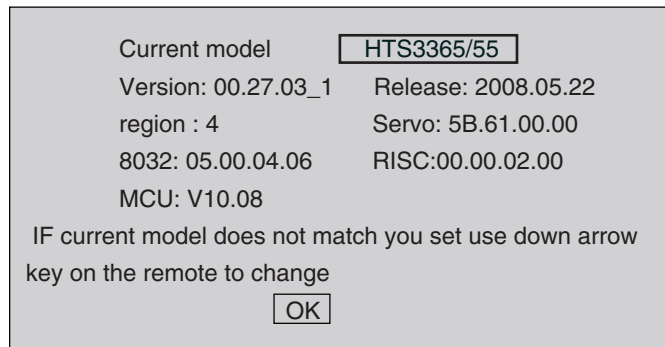
2)Region Code Change

- In open model,press"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

- In open model, press "1" "5" "9" on R/C
- press "ok" button to confirm
- TV will show message as below:



4)Password Change

- press "OPTIONS " button on R/C,TV will show setup menu
 - select the menu using the ▼ and ► on R/C
 - go preference page select "password" to change
- * 000000 is default password supplied.

5)Check on the Sofeware Version

- open the CD Door
- press "INFO" button on R/C
- TV will show the version on screen

6)Trade model

- press "Open/Close " button on R/C
- Press "2" "5" "9" on R/C,VFD will display "TRA ON " or "TRA OFF"

8) Produce to Change Tuner Grid

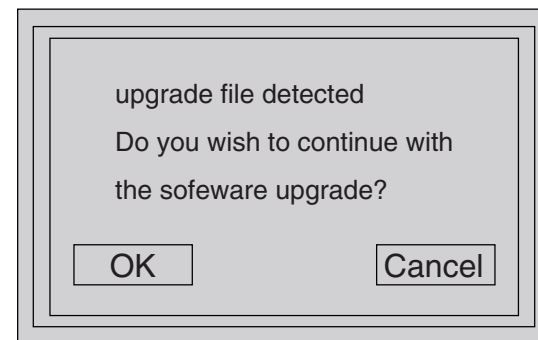
(only applicable for certain regions)

In some countries, the frequency step between adjacent channels in the (AM/MW)/FM band is 9kHz/50kHz(10kHz/100kHz in some areas).

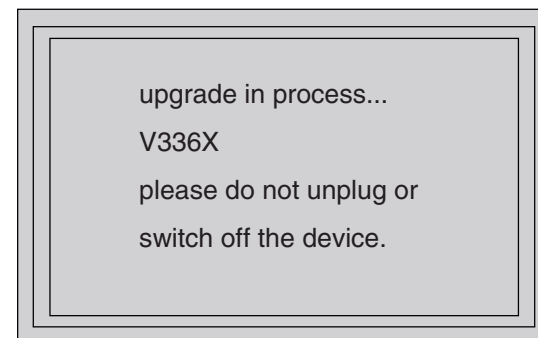
- press "source" to select "FM" or "AM"
 - In "FM" or "AM" playback mode, press & hold "play/pause" button until "Grid 9" or "Grid 10" appears
- Note: repeating the same action will toggle back to it previous tuning grid setting.
- * "Grid 10" is default for/55 version.

8) Upgrading new sofeware

- copy "sofeware files" into a CD-R disc
 - open the CD Door,then insert CD-R program disc
 - close the CD Door
 - VFD will show:
 - "Loading"
 - "Erase" -- erase the flash memory
 - "Writing" about 1 minute
 - "done "
- * the system will switch off and on again automatically.
- OSD will show:



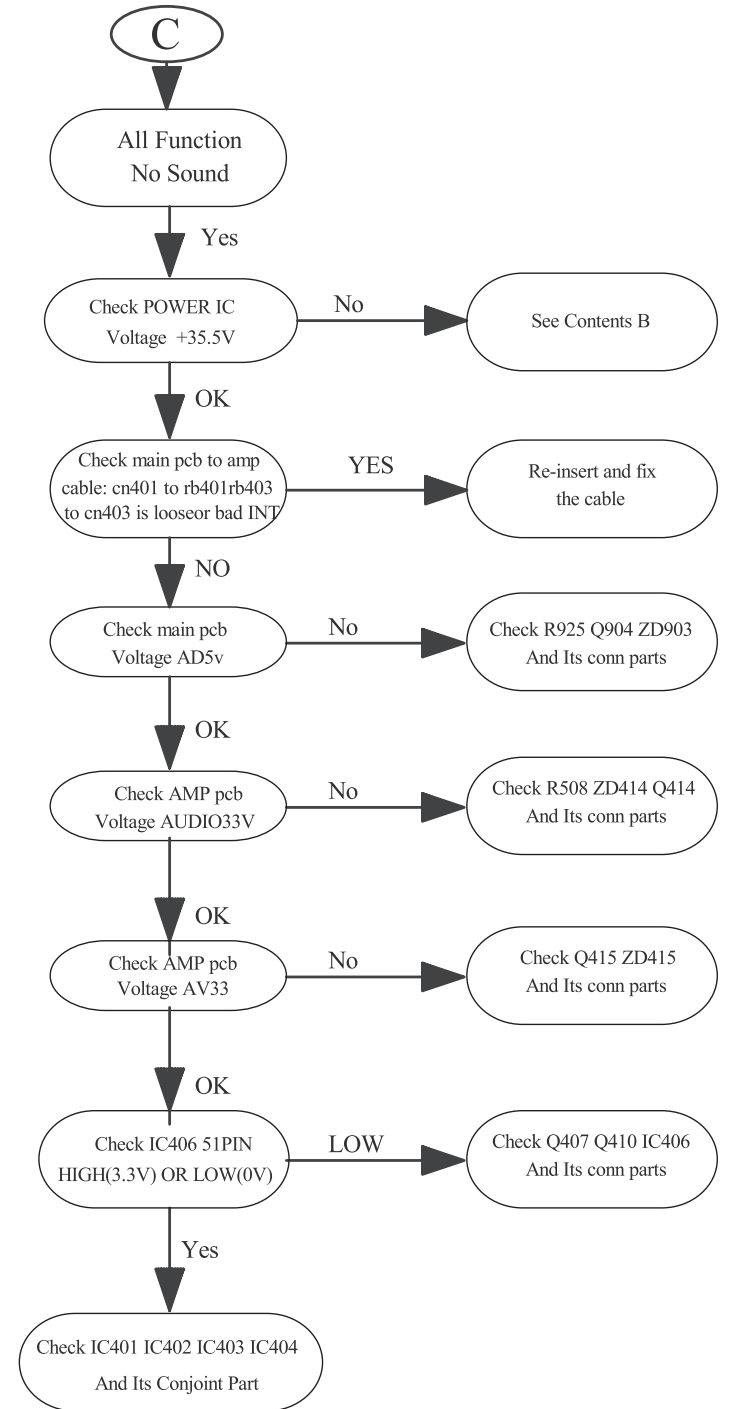
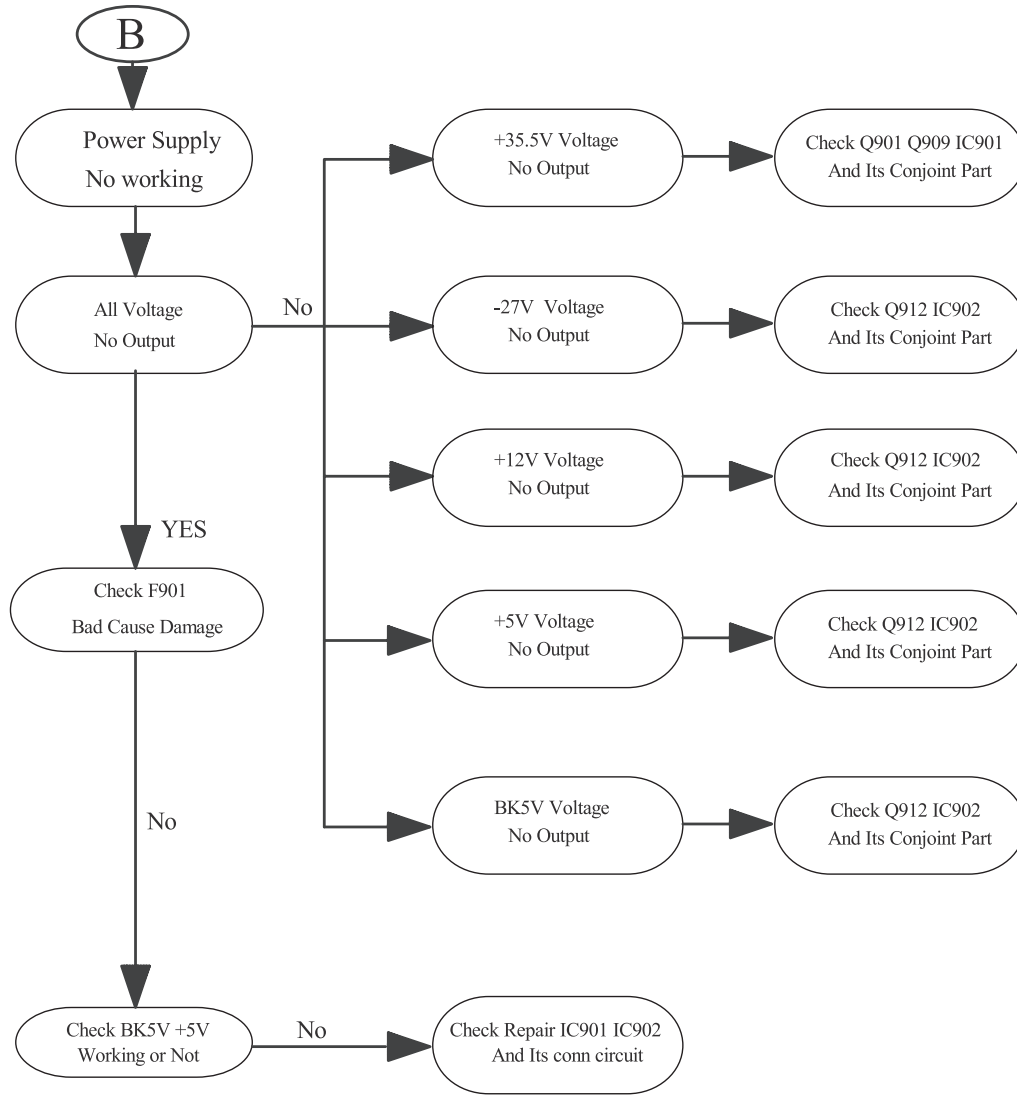
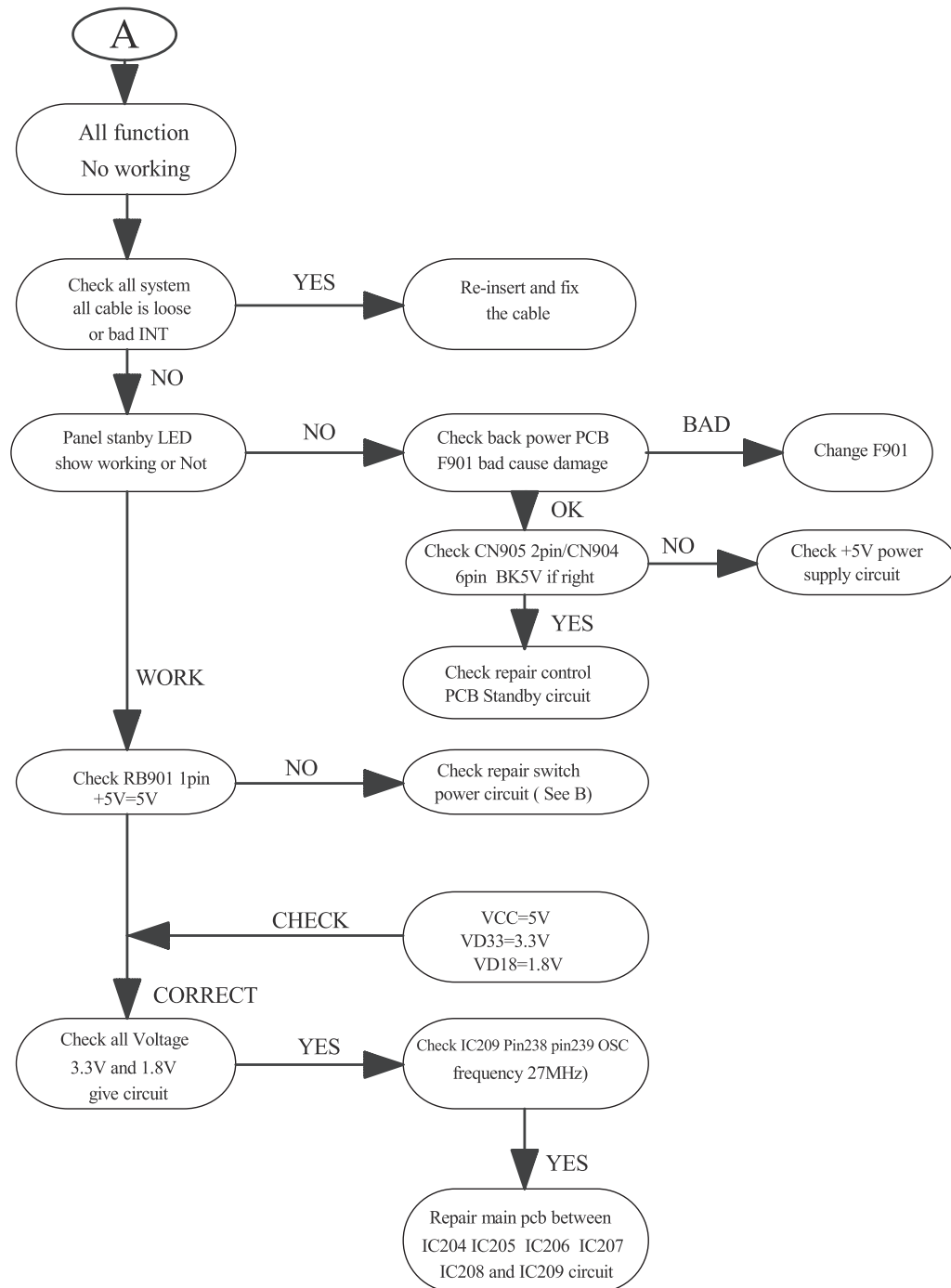
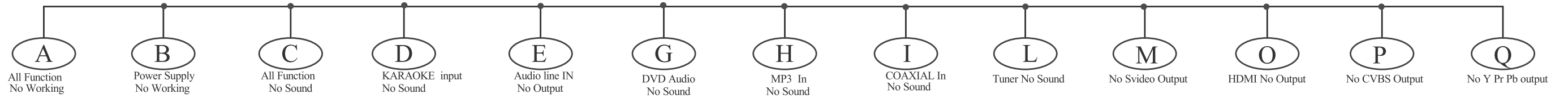
- select "OK", OSD will show:



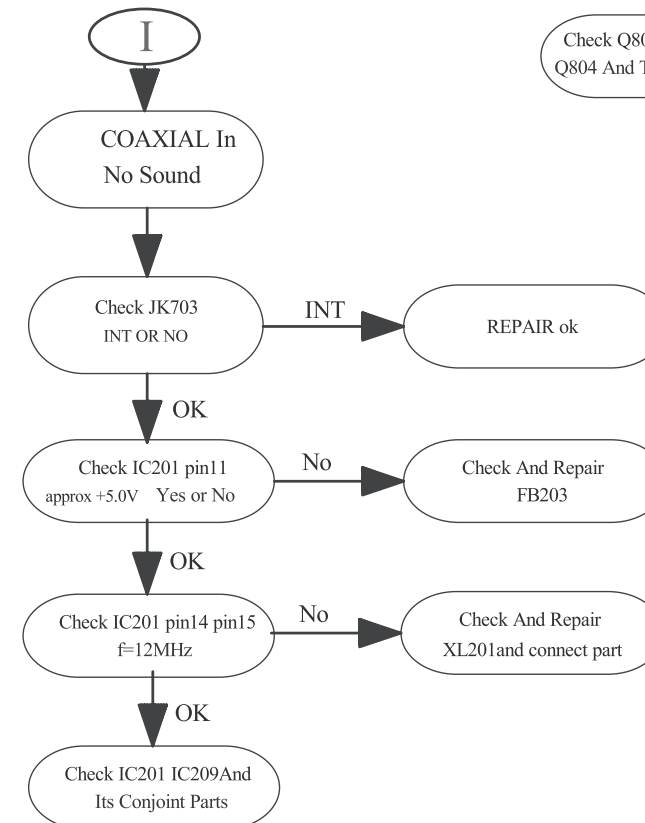
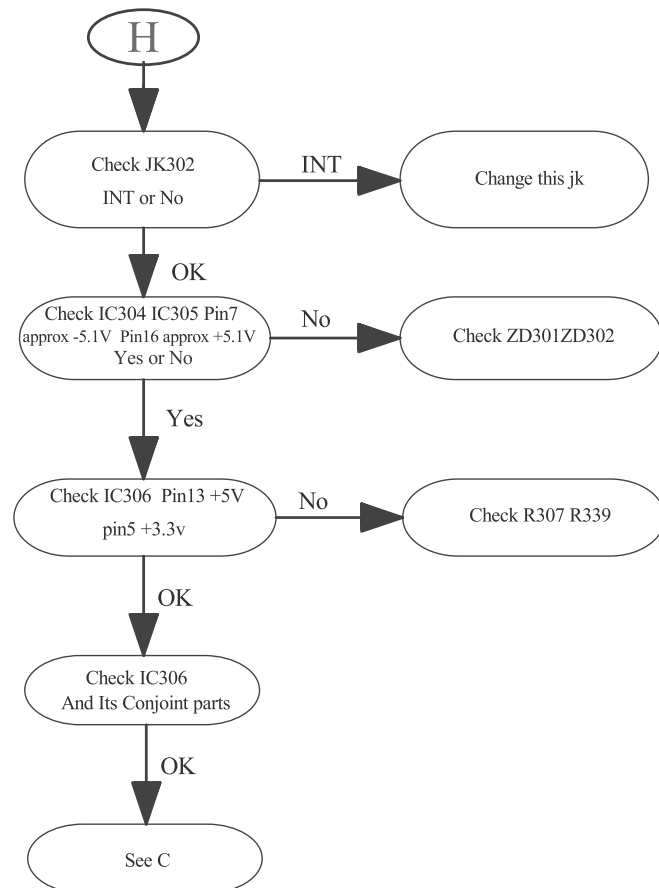
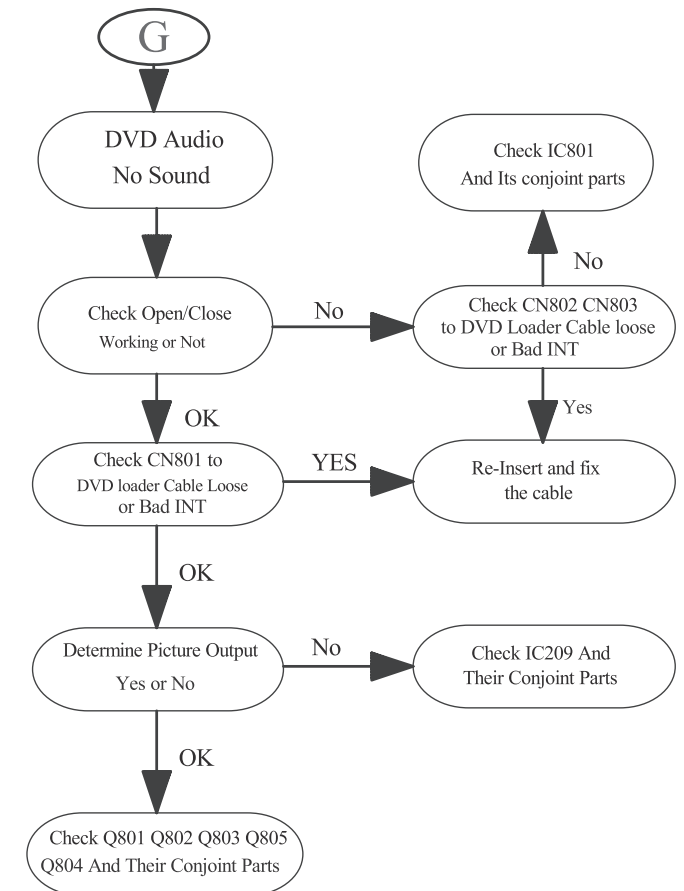
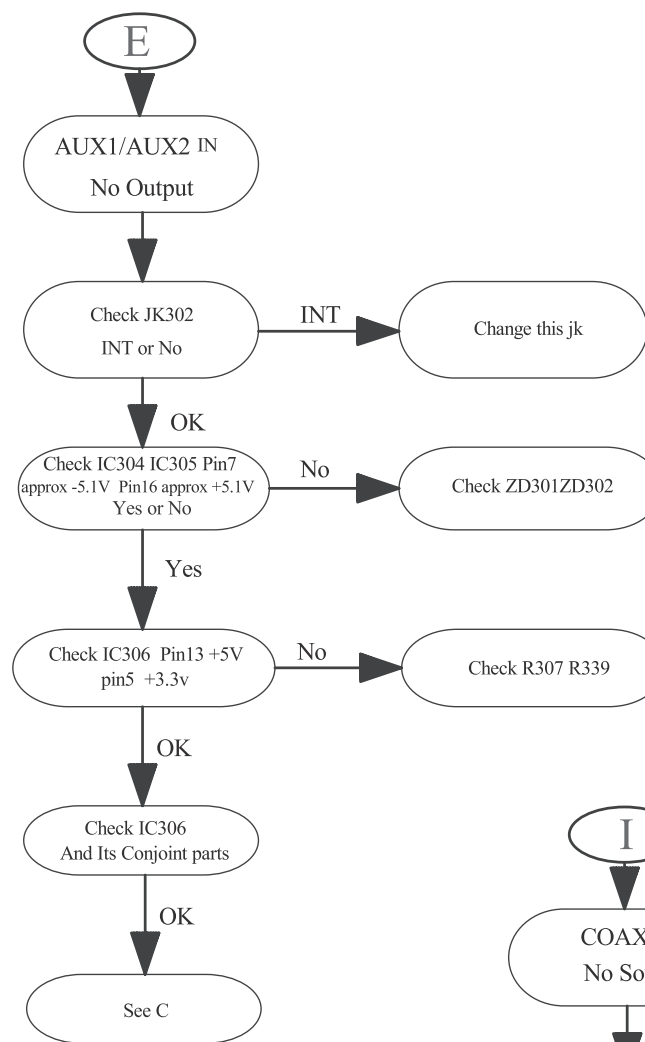
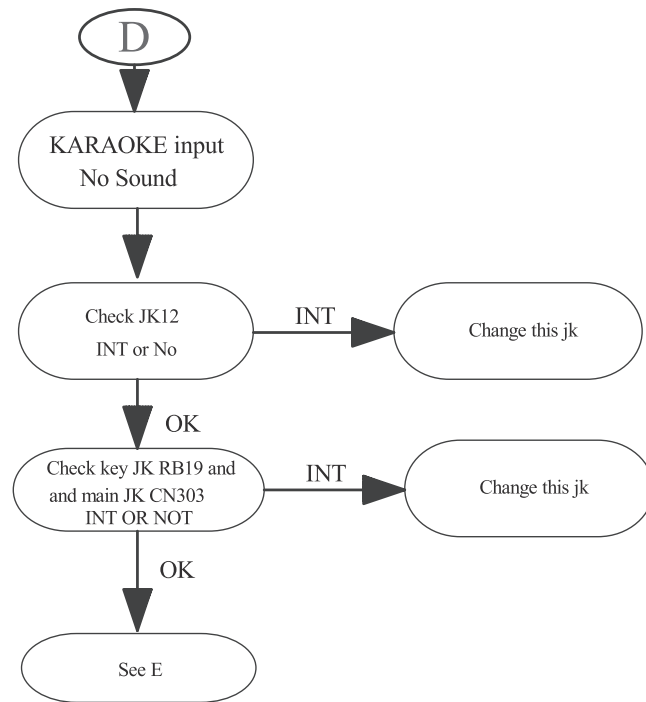
CAUTION!

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

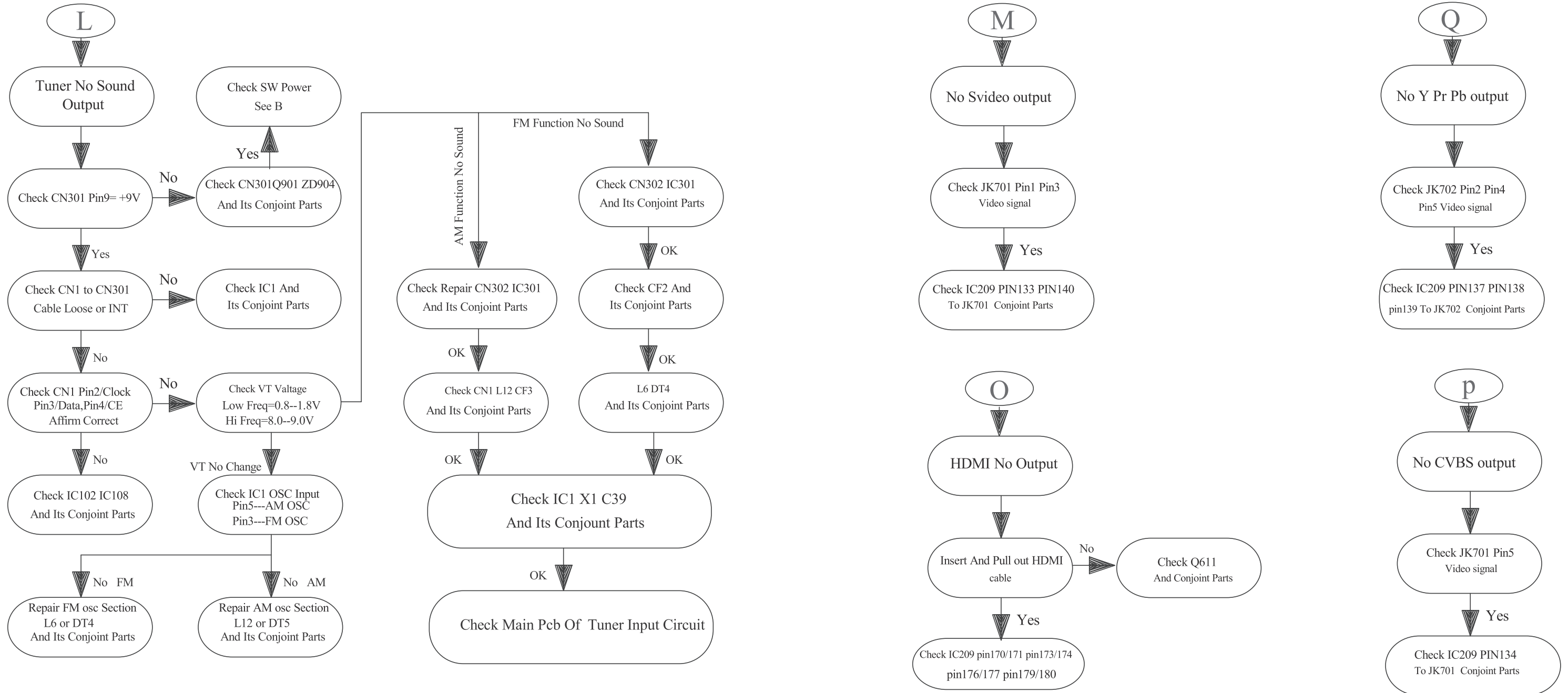
MAIN UNIT REPAIR CHART 1/3



MAIN UNIT REPAIR CHART 2/3



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 right as shown in figure 1 until the Tray moves out of the Front Panel.
- 2) Return the set to its upright position and remove the Tray Cover as shown in Figure 3 and close the tray manually by pushing it back in.

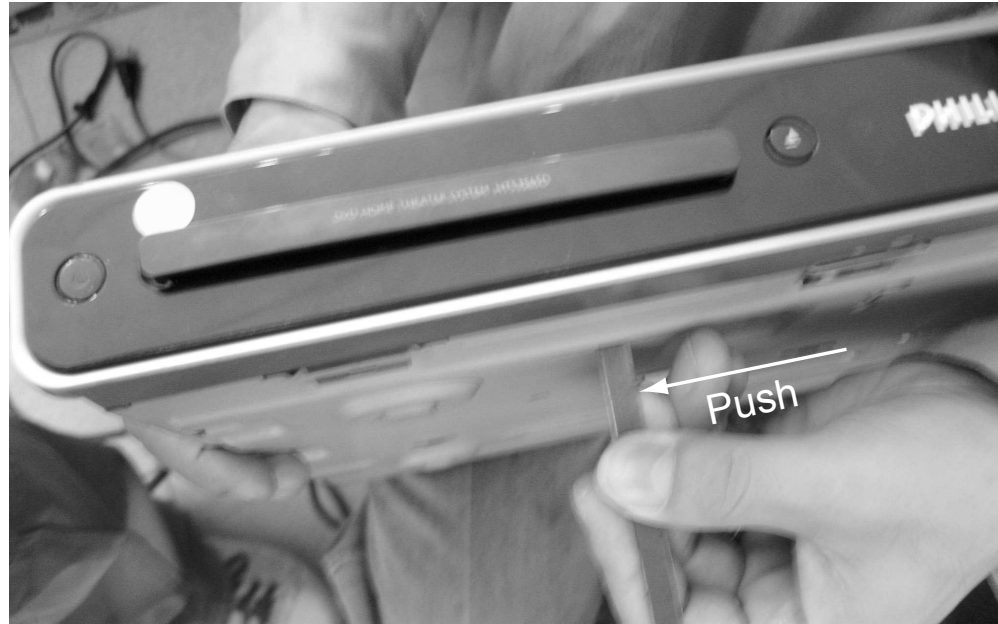


Figure 1

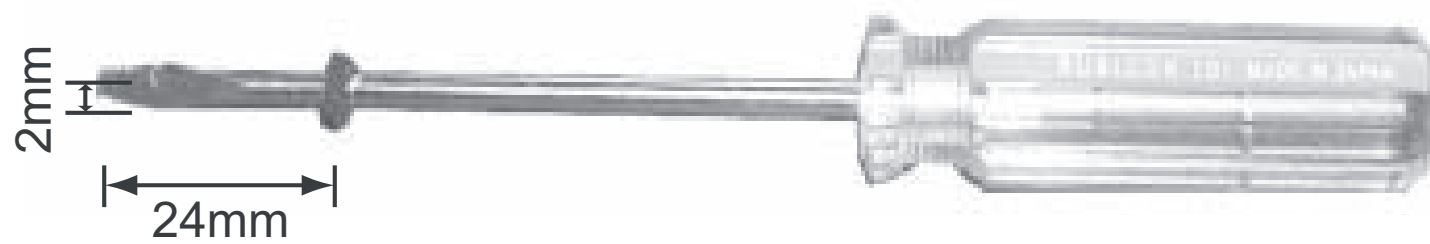


Figure 2

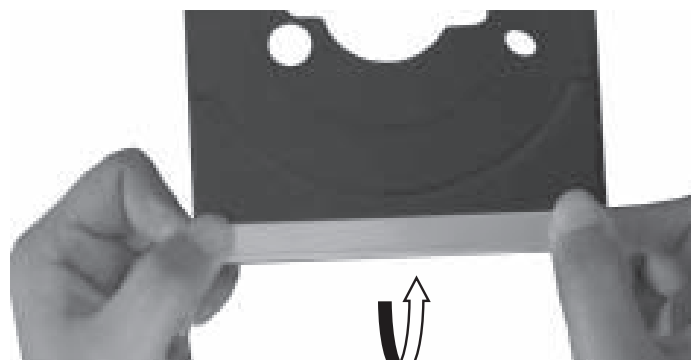


Figure 3

- 3) Loosen 7 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
 - 5 screws "B" at the back panel as shown in figure 5
- 4) Loosen 1 screw "C" each left & right side on the front panel after move the top panel as shown in figure 6.
- 5) Loosen 6 screws "D" at bracket of front panel as shown in figure 7



Figure 4

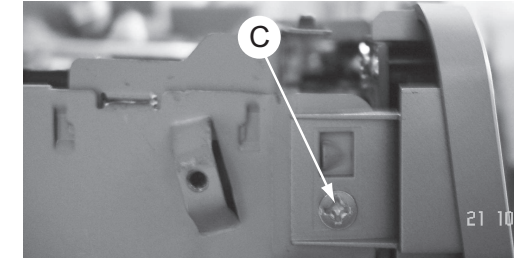


Figure 6

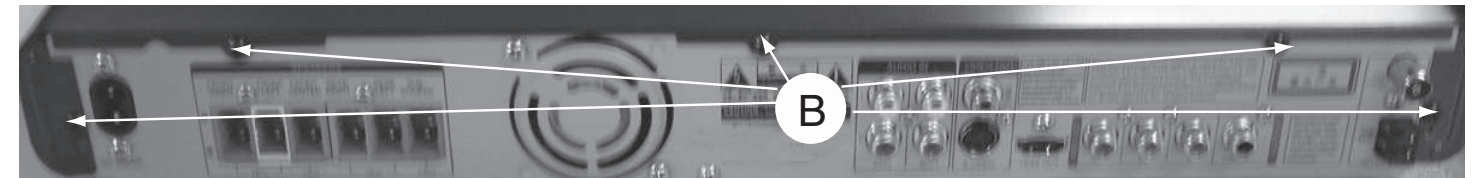


Figure 5

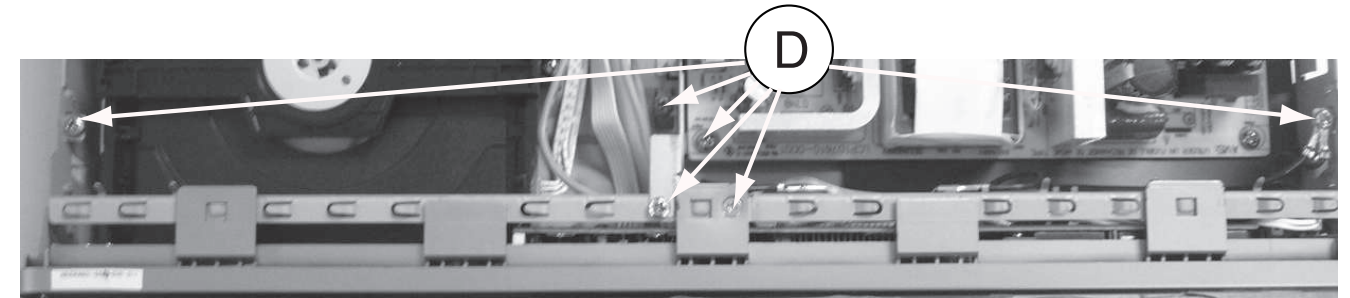


Figure 7

Dismantling of the AMP Board

- 1) Loosen 4 screws to remove the AMP Board.
 - 2 screws "E" on the top of AMP board as shown in figure 8
 - 2 screws "F" at the back panel as shown in figure 9

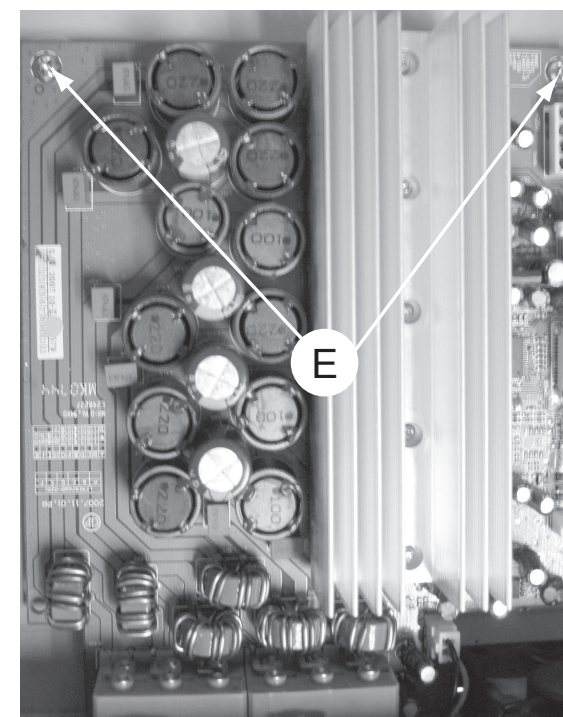


Figure 8



Figure 9

Dismantling of the Main Board

- 1) Loosen 2 screws " G " on the top of main board as shown in figure10
- 2) Loosen 7 screws "H" at the back panel as shown in figure 11

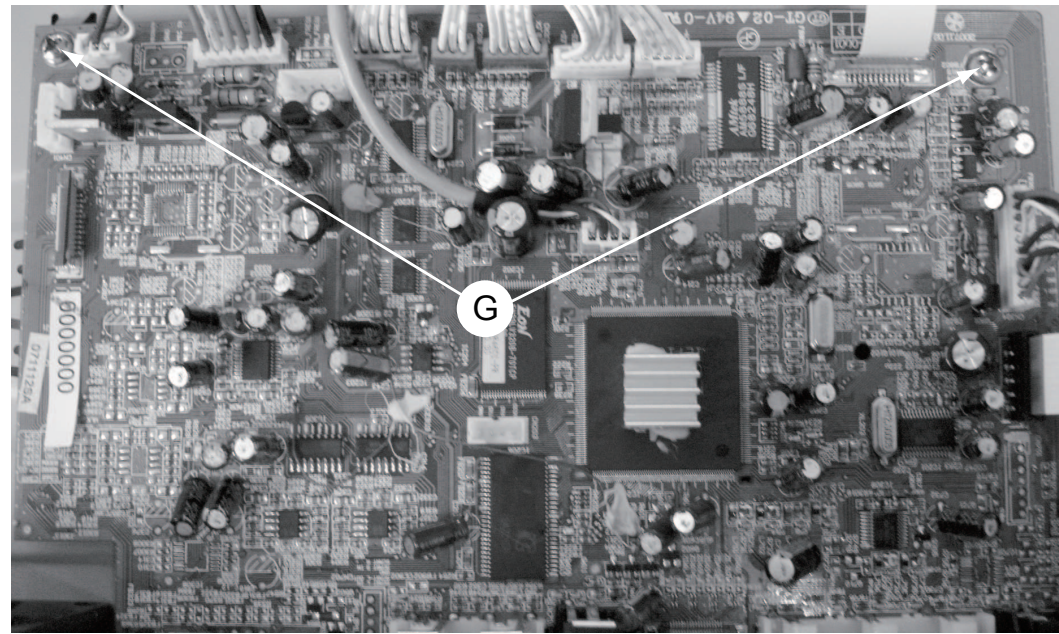


Figure 10

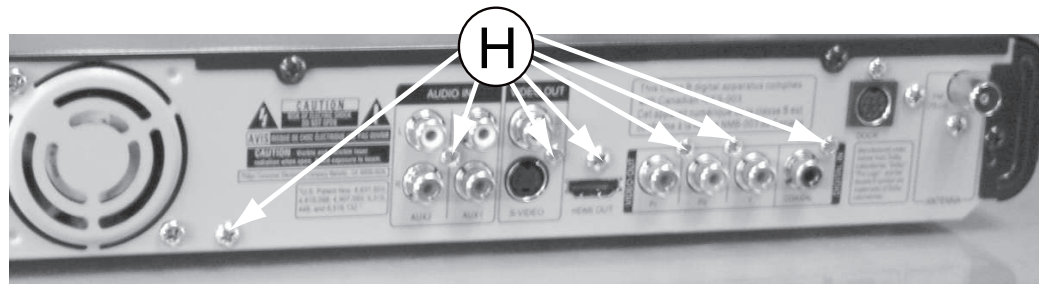


Figure 11

Dismantling of the Power Board

- 1) Loosen 4 screws " I " on the top of power board as shown in figure 12

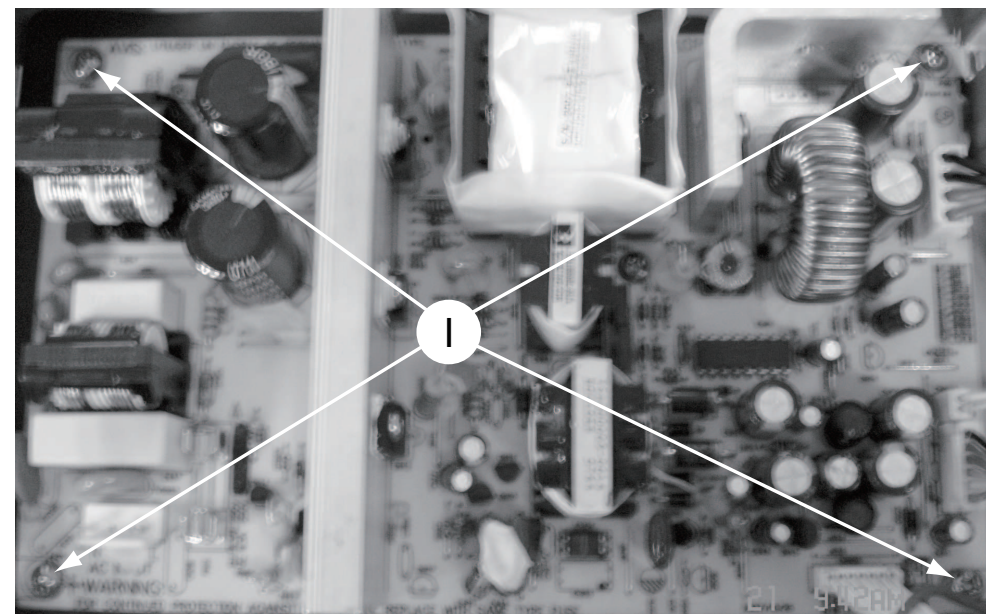


Figure 12

Dismantling of the VFD+JACK+VOL+STANDBY Board

- 1) Loosen 9 screws "J" on the top of control board as shown in 13

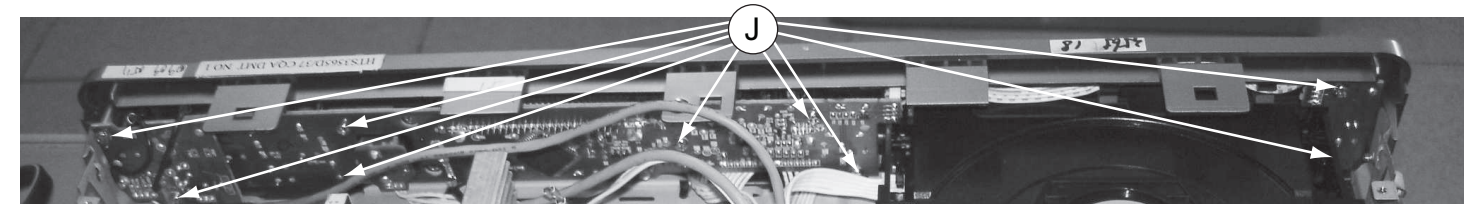


Figure 13

Dismantling of the DVD Module

- 1) Loosen 4 screws "K" as shown in figure 14.

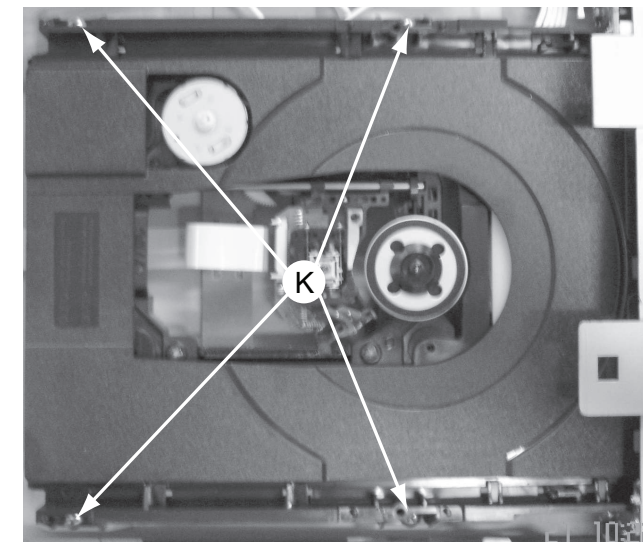
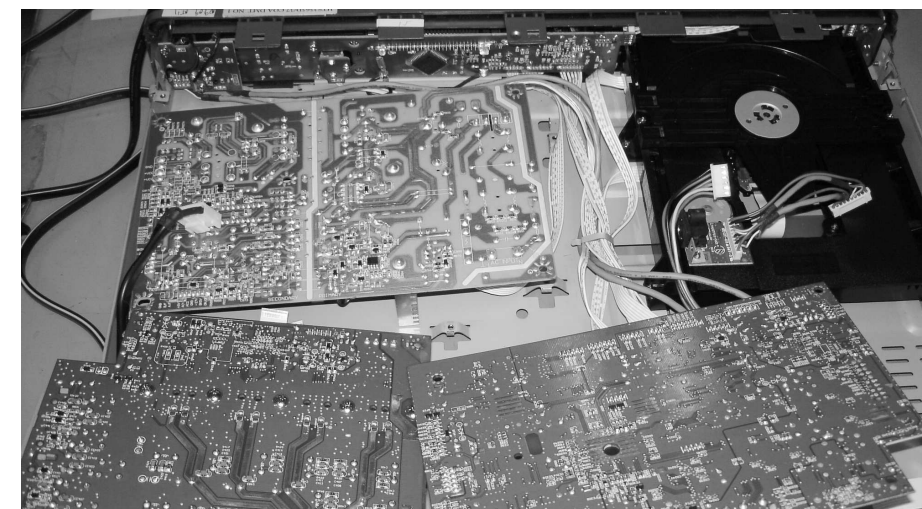


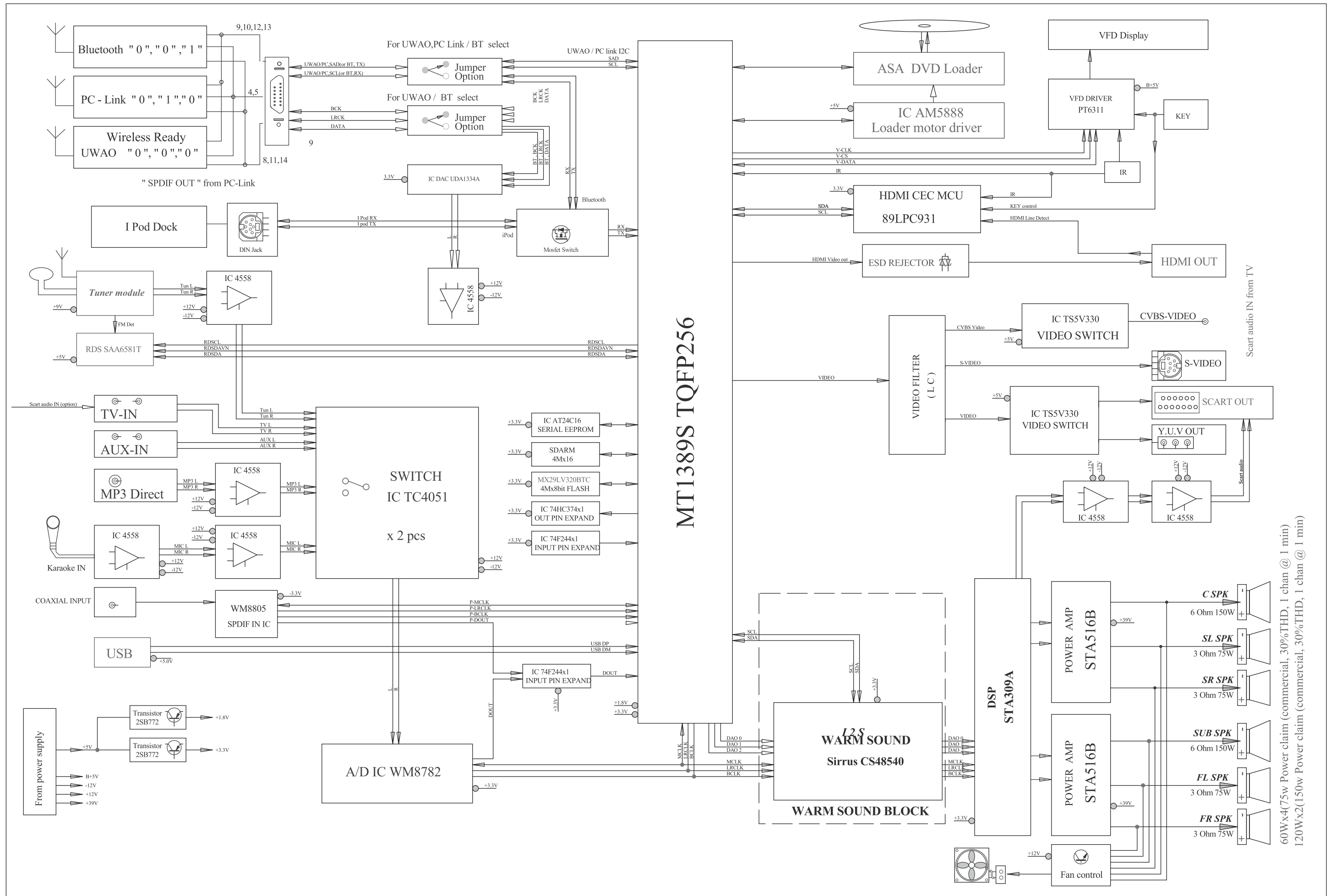
Figure 14

SERVICE POSITIONS

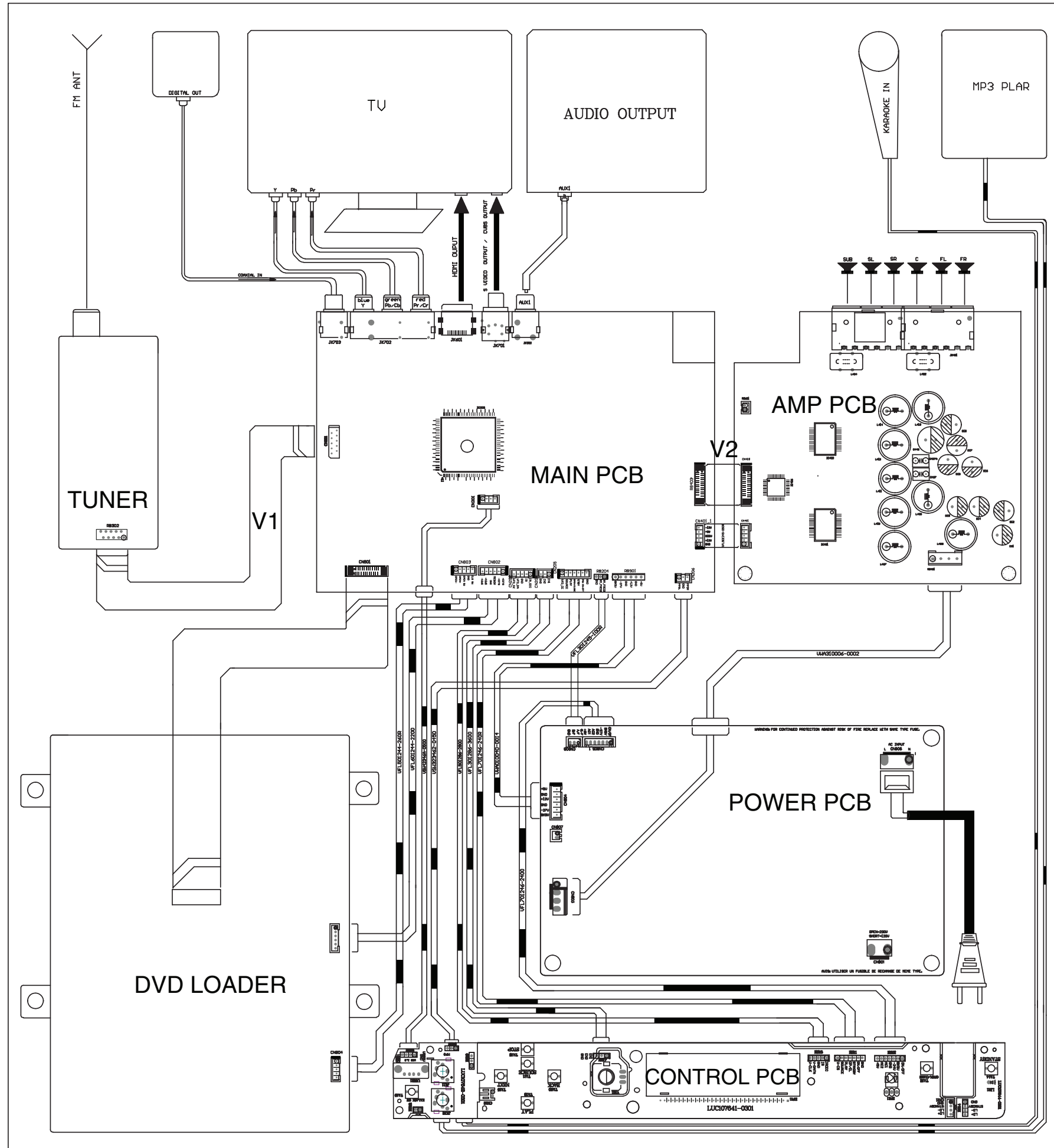
service position A (main unit)



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.



60Wx4(75w Power claim, 30%THD, 1 chan @ 1 min)
 120Wx2(150w Power claim, 30%THD, 1 chan @ 1 min)

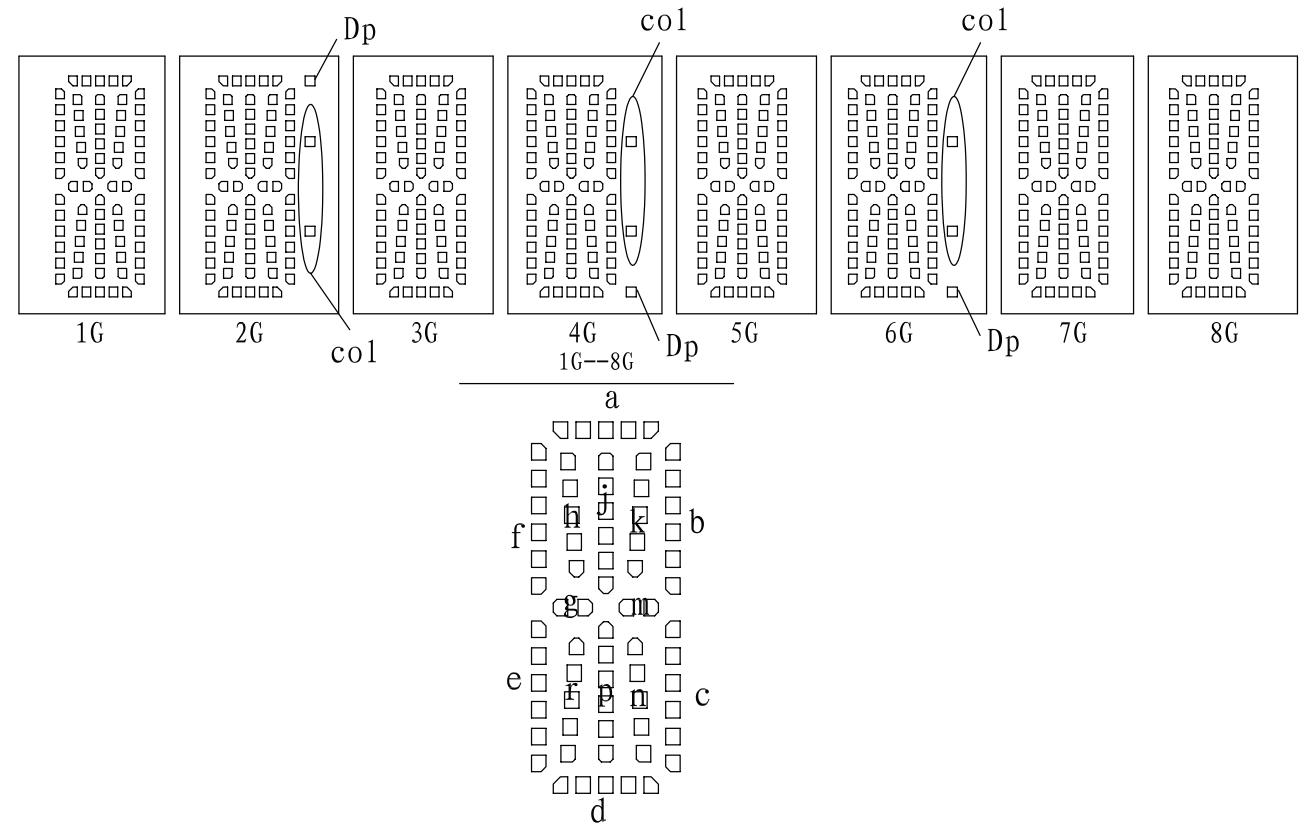


CONTROL BOARD

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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	/	/

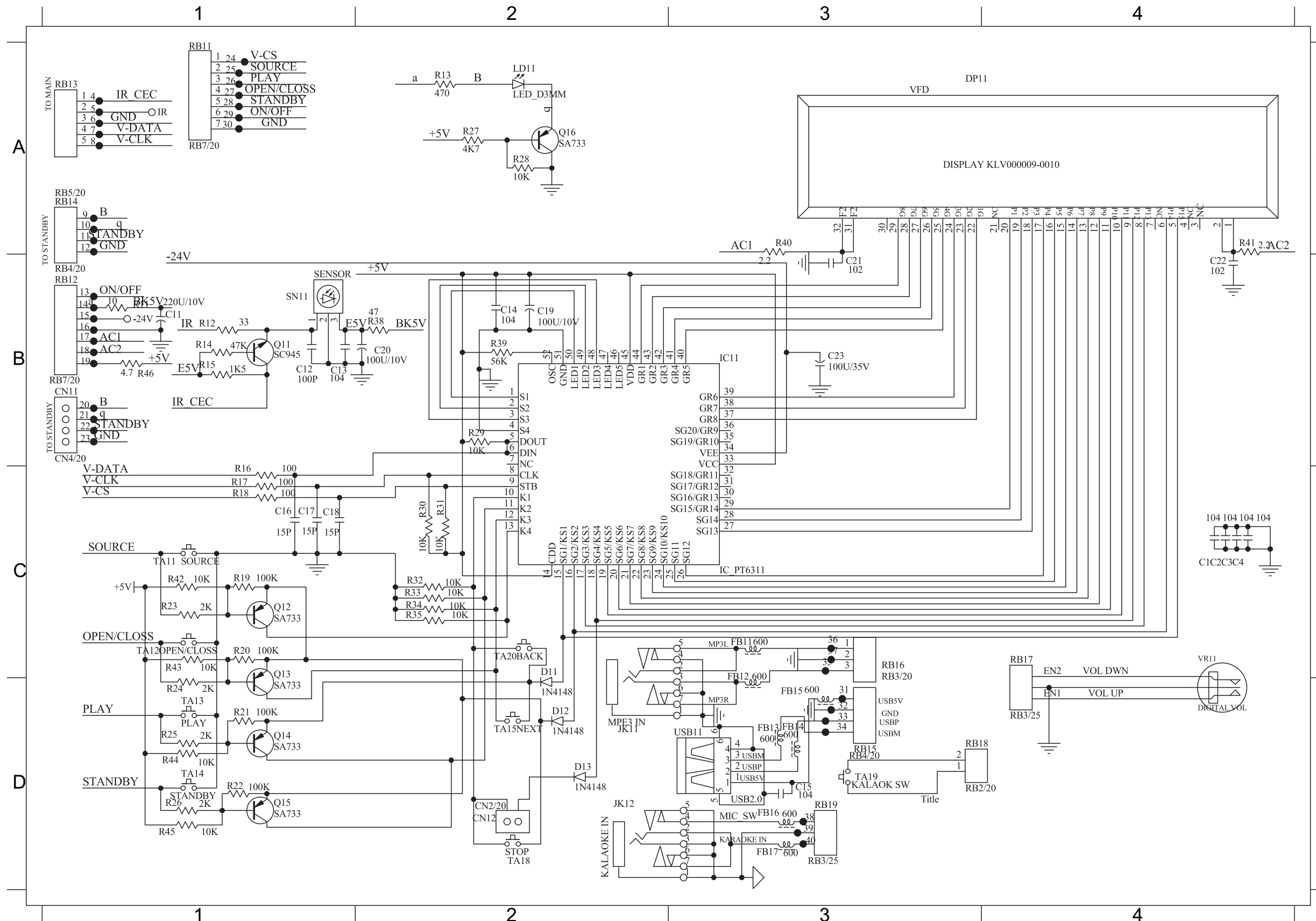
PIN CONNECTION

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)

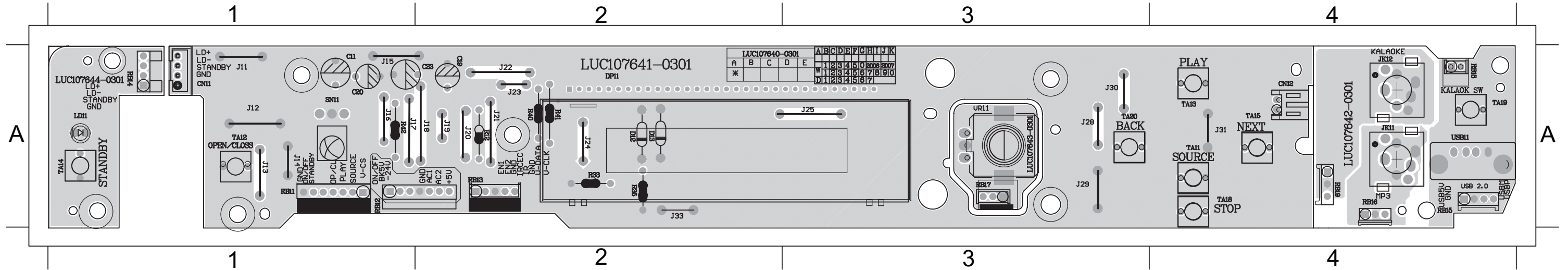
CIRCUIT DIAGRAM

C11	B1	C17	C1	C23	B3	FB11	C3	FB17	D3	Q12	C1	R12	B1	R18	C1	R24	D1	R30	C2	R38	B2	R44	D1	RB14	A1	SN11	B1	TA18	D2
C12	B1	C18	C1	CN12	D2	FB12	D3	IC11	B3	Q13	C1	R13	A2	R19	C1	R25	D1	R31	C2	R39	B2	R45	D1	RB15	D3	TA11	C1	TA19	D3
C13	B1	C19	B2	D11	D2	FB13	D3	JK11	D2	Q14	D1	R14	B1	R20	C1	R26	D1	R32	C2	R40	A3	R46	B1	RB16	C3	TA12	C1	TA20	C2
C14	B2	C20	B2	D12	D2	FB14	D3	JK12	D2	Q15	D1	R15	B1	R21	D1	R27	A2	R33	C2	R41	A4	RB11	A1	RB17	C4	TA13	D1	USB11	D3
C15	D3	C21	B3	D13	D2	FB15	D3	LD11	A2	Q16	A2	R16	C1	R22	D1	R28	A2	R34	C2	R42	C1	RB12	B1	RB18	D3	TA14	D1	VR11	D4
C16	C1	C22	B4	DP11	A3	FB16	D3	Q11	B1	R11	B1	R17	C1	R23	C1	R29	B2	R35	C2	R43	C1	RB13	A1	RB19	D3	TA15	D2		



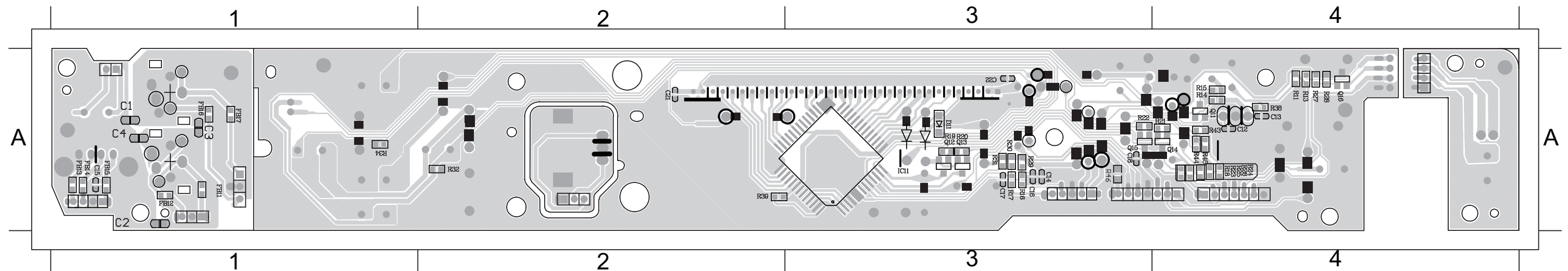
PCB LAYOUT - TOP VIEW

C11	A1	CN12	A2	J11	A1	J15	A1	J19	A2	J23	A2	J29	A3	JK11	A4	R33	A2	R42	A1	RB14	A1	RB18	A4	TA12	A1	TA18	A4	VR11	A3		
C19	A2	D12	A2	J12	A1	J16	A1	J20	A2	J24	A2	J30	A3	JK12	A4	R35	A2	RB11	A1	RB15	A4	RB19	A4	TA13	A4	TA19	A4				
C20	A1	D13	A2	J13	A1	J17	A1	J21	A2	J25	A3	J31	A4	LD11	A1	R40	A2	RB12	A1	RB16	A4	SN11	A1	TA14	A1	TA20	A3				
C23	A1	DP11	A2	J14	A1	J18	A2	J22	A2	J28	A3	J33	A2	R12	A2	R41	A2	RB13	A2	RB17	A3	TA11	A4	TA15	A4	USB11A4					



PCB LAYOUT - BOTTOM VIEW

C12	A4	C16	A3	C22	A3	FB13	A1	FB17	A1	Q13	A3	R11	A4	R16	A3	R20	A3	R24	A4	R28	A4	R32	A2	R43	A4
C13	A4	C17	A3	D11	A3	FB14	A1	IC11	A3	Q14	A4	R13	A4	R17	A3	R21	A4	R25	A4	R29	A3	R34	A1	R44	A4
C14	A3	C18	A3	FB11	A1	FB15	A1	Q11	A4	Q15	A3	R14	A4	R18	A4	R22	A3	R26	A4	R30	A3	R38	A4	R45	A4
C15	A1	C21	A2	FB12	A1	FB16	A1	Q12	A3	Q16	A4	R15	A4	R19	A3	R23	A4	R27	A4	R31	A3	R39	A2	R46	A3

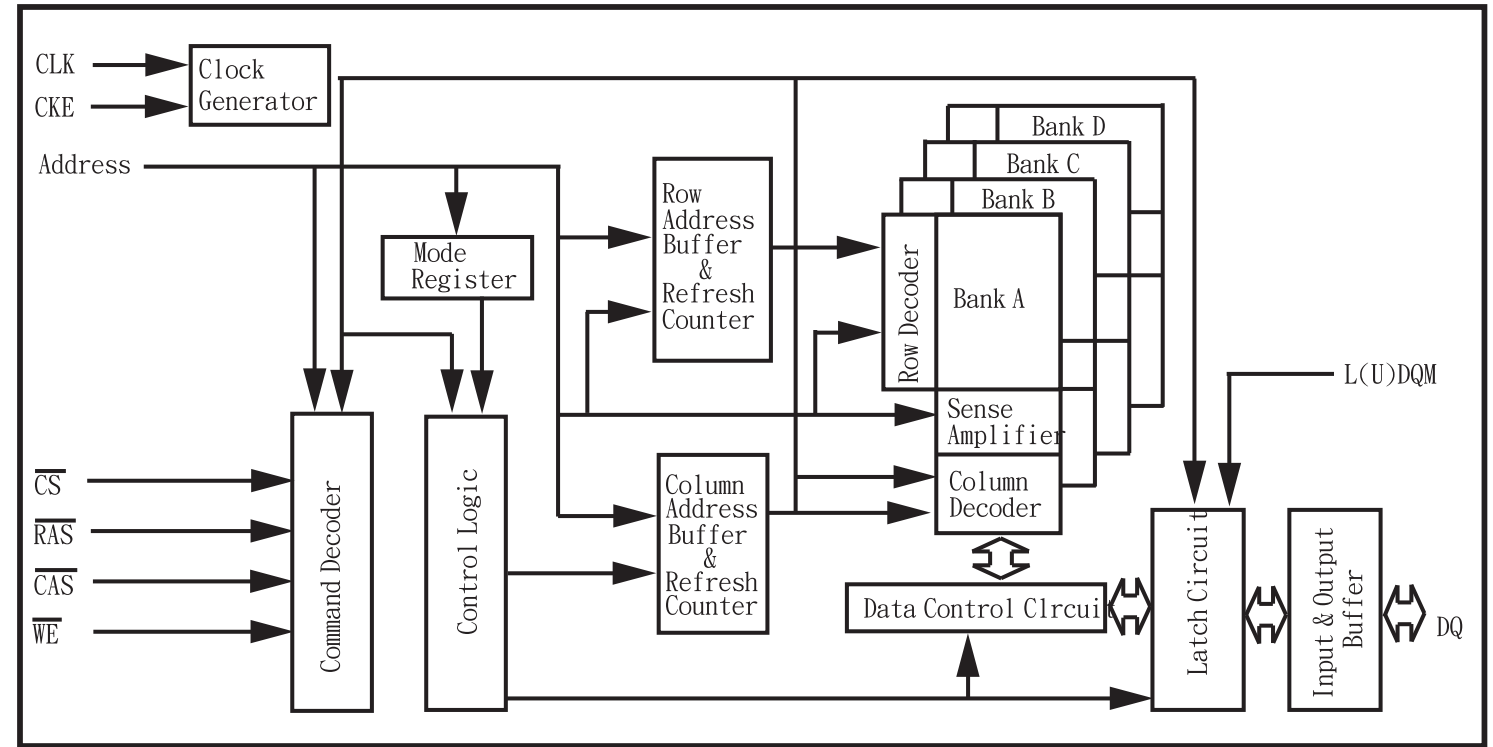


MAIN BOARD

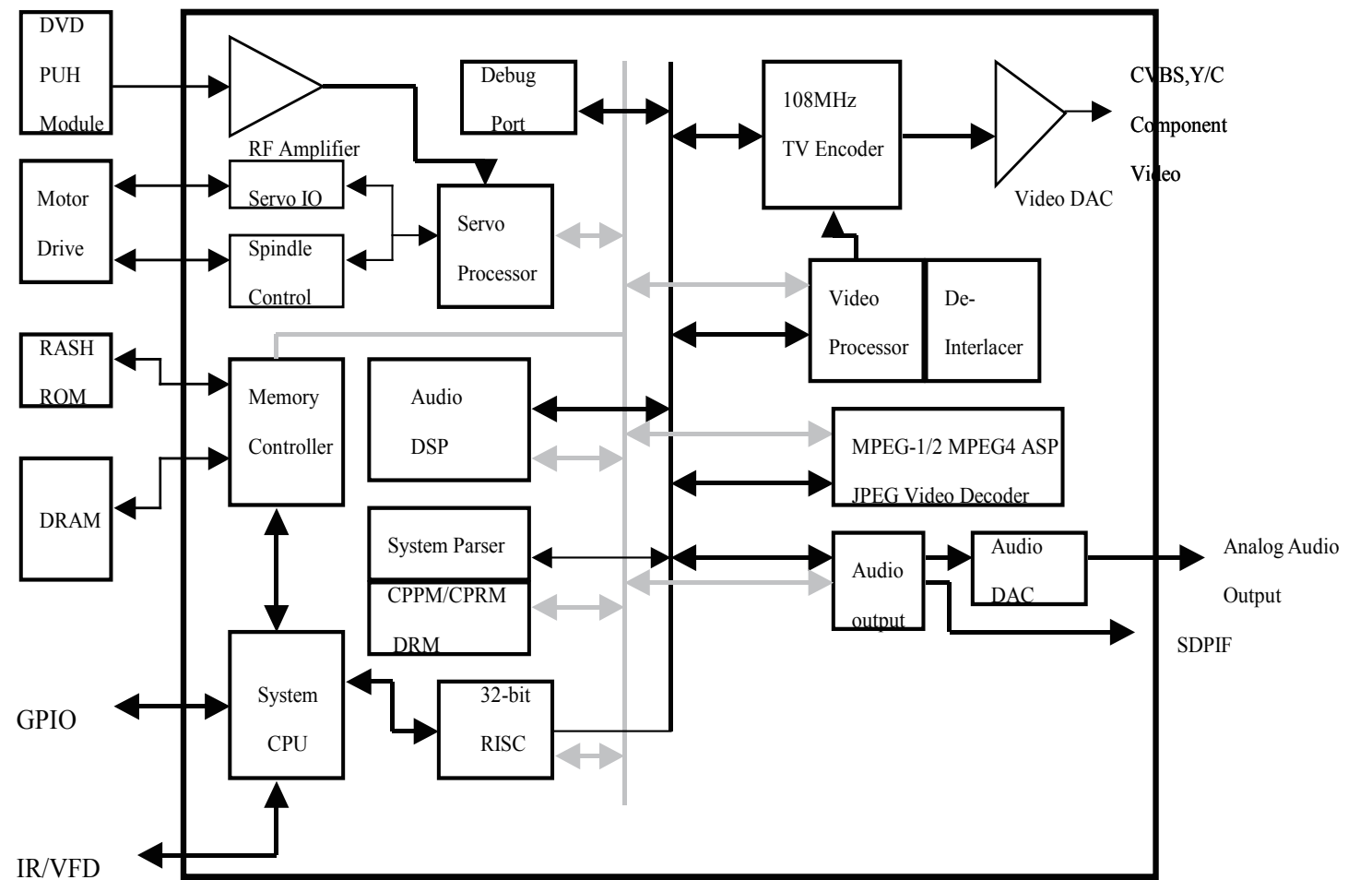
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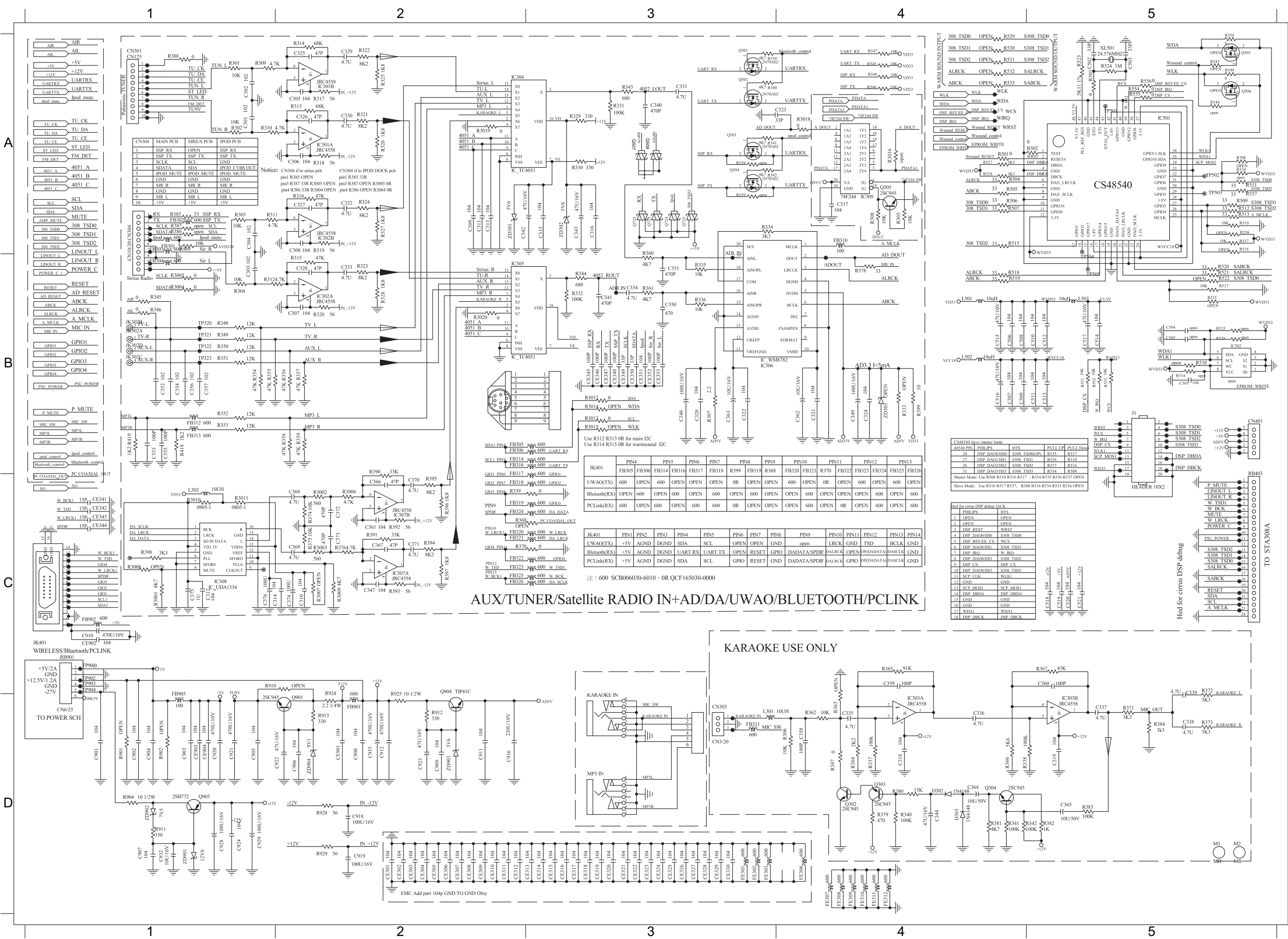
6 - 1
INTERNAL IC DIAGRAM - AS81F641642C



INTERNAL IC DIAGRAM - MT1389FXE/S



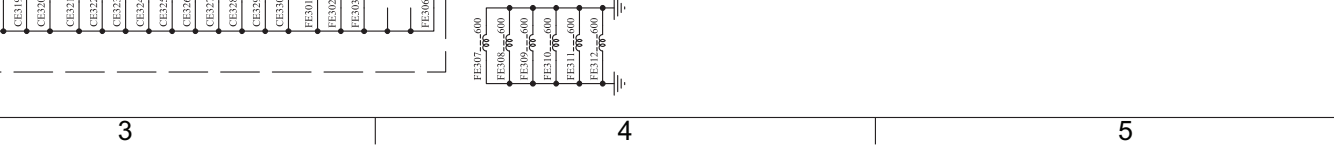
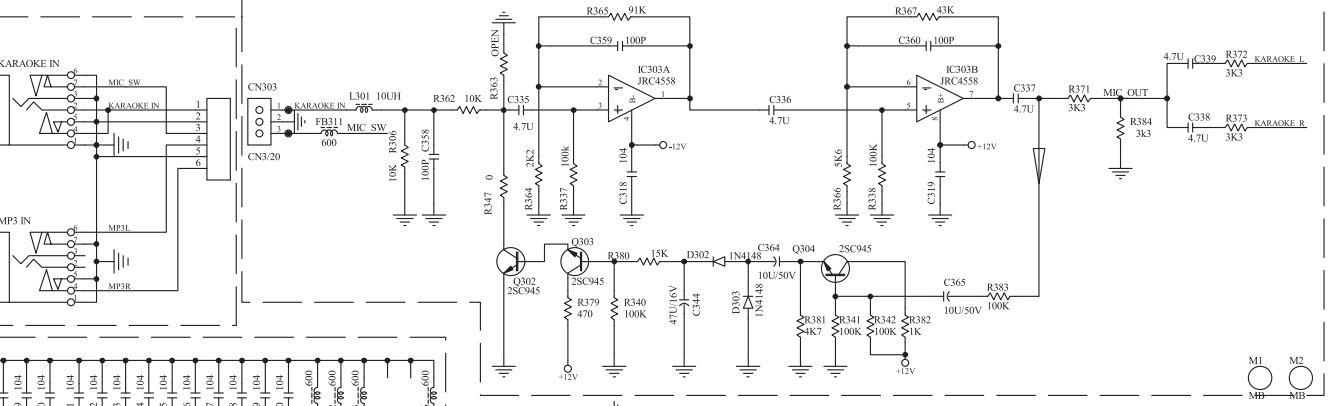
CIRCUIT DIAGRAM - part one



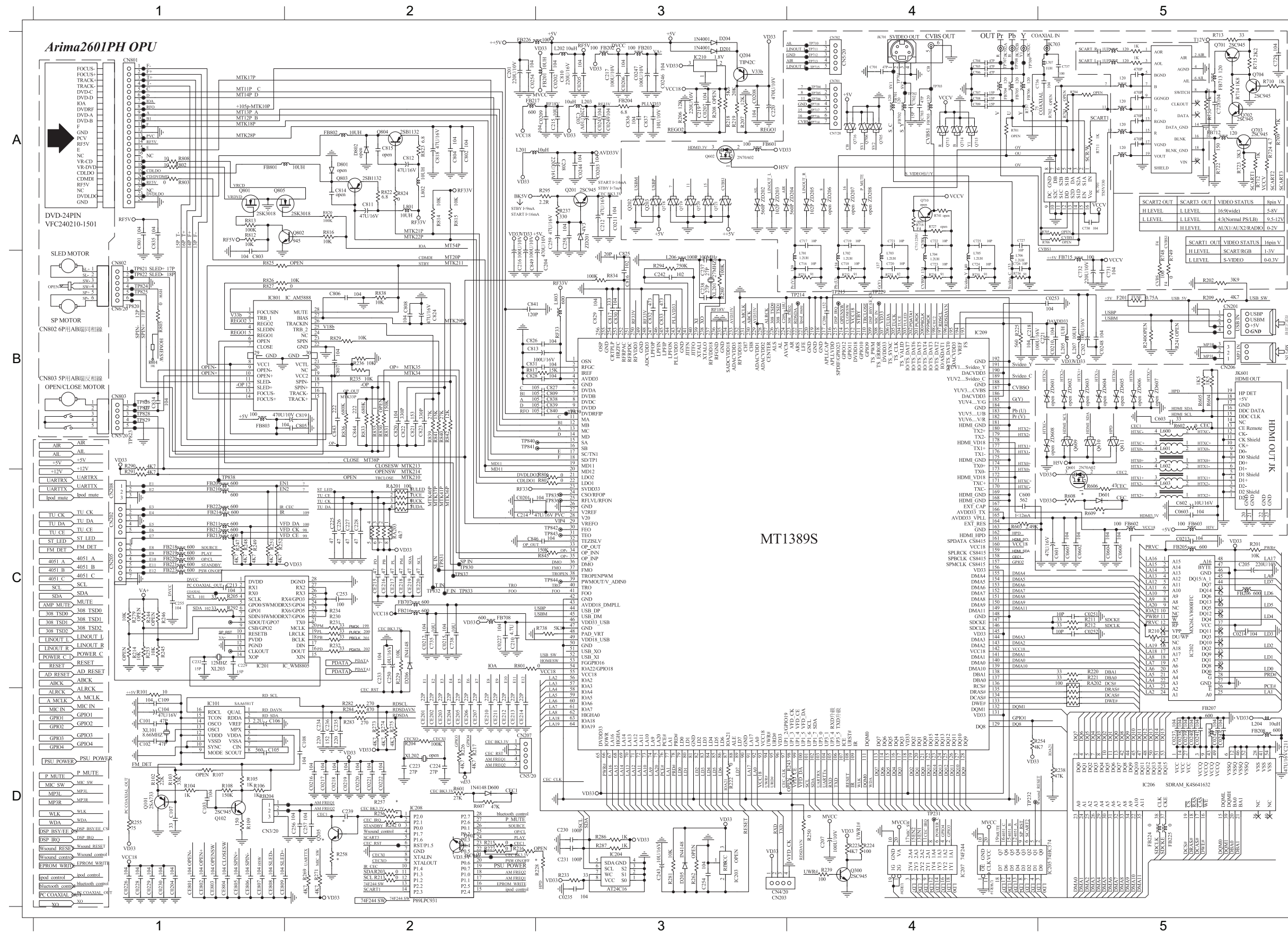
- | | | | | | |
|-------|----|-------|----|-------|----|
| C301 | A1 | CE307 | D2 | R305 | A4 |
| C302 | A1 | CE308 | D2 | R306 | D4 |
| C305 | A2 | CE309 | D2 | R307 | B3 |
| C306 | A1 | CE310 | D2 | R308 | A4 |
| C309 | A2 | CE311 | D2 | R309 | A1 |
| C311 | A2 | CE312 | D2 | R310 | A1 |
| C313 | A2 | CE313 | D3 | R313 | A2 |
| C315 | A3 | CE314 | D3 | R314 | A2 |
| C316 | A3 | CE315 | D3 | R317 | A1 |
| C317 | A4 | CE316 | D3 | R318 | A1 |
| C318 | D4 | CE317 | D3 | R321 | A2 |
| C319 | D5 | CE318 | D3 | R322 | A2 |
| C320 | B3 | CE319 | D3 | R325 | A2 |
| C321 | B4 | CE320 | D3 | R326 | A2 |
| C322 | B3 | CE321 | D3 | R329 | A3 |
| C323 | A3 | CE322 | D3 | R330 | A3 |
| C324 | B4 | CE323 | D3 | R331 | A3 |
| C325 | A2 | CE324 | D3 | R332 | B3 |
| C326 | A2 | CE325 | D3 | R334 | A3 |
| C329 | A2 | CE326 | D3 | R335 | B3 |
| C330 | A2 | CE327 | D3 | R336 | B3 |
| C331 | A3 | CE328 | D3 | R337 | D4 |
| C334 | B3 | CE329 | D3 | R338 | D5 |
| C335 | D4 | CE330 | D3 | R340 | D4 |
| C336 | D4 | CE341 | C1 | R341 | D4 |
| C337 | D5 | CE342 | C1 | R342 | D4 |
| C338 | D5 | CE343 | C1 | R343 | A3 |
| C339 | D5 | CE344 | C1 | R344 | B3 |
| C340 | A3 | CE345 | B3 | R345 | B1 |
| C341 | B3 | CE346 | B3 | R346 | B1 |
| C342 | A3 | CE347 | B3 | R347 | D4 |
| C343 | A3 | CE348 | B3 | R348 | B1 |
| C344 | D4 | CE351 | B3 | R349 | B1 |
| C346 | B3 | CE352 | B3 | R350 | B1 |
| C349 | B4 | CE353 | B3 | R351 | B1 |
| C350 | B3 | CE901 | D2 | R352 | B1 |
| C351 | B3 | CE903 | D1 | R353 | B1 |
| C352 | B1 | CE904 | D1 | R354 | B1 |
| C353 | B1 | CE905 | A1 | R355 | B1 |
| C354 | B1 | CE906 | D3 | R356 | B2 |
| C355 | B1 | CE907 | B5 | R357 | B2 |
| C356 | B1 | CE908 | D4 | R358 | B2 |
| C357 | B1 | D303 | D4 | R359 | B2 |
| C358 | D4 | FB310 | A4 | R360 | B3 |
| C359 | C4 | FB311 | D3 | R361 | B3 |
| C360 | C5 | FB312 | B1 | R362 | D4 |
| C362 | B4 | FB313 | B1 | R364 | D4 |
| C363 | B3 | FB901 | D2 | R365 | C4 |
| C364 | D4 | FB905 | D1 | R366 | D4 |
| C365 | D5 | FE301 | D3 | R367 | C5 |
| C515 | C5 | FE302 | D3 | R368 | C3 |
| C519 | C5 | FE303 | D3 | R371 | D5 |
| C520 | C5 | FE306 | D4 | R372 | D5 |
| C521 | C5 | FE307 | D4 | R373 | D5 |
| C901 | D1 | FE308 | D4 | R378 | B4 |
| C902 | D1 | FE309 | D4 | R379 | D4 |
| C903 | D1 | FE310 | D4 | R380 | D4 |
| C904 | D1 | FE311 | D4 | R381 | D4 |
| C905 | D1 | FE312 | D4 | R382 | D5 |
| C906 | D2 | IC301 | A2 | R383 | D5 |
| C907 | D1 | IC303 | D4 | R384 | D5 |
| C908 | D2 | IC304 | A2 | R388 | A1 |
| C909 | D2 | IC305 | B2 | R399 | B4 |
| C911 | D2 | IC306 | B3 | R418 | B1 |
| C912 | D2 | IC309 | A4 | R419 | B1 |
| C918 | D2 | IC801 | A5 | R904 | D1 |
| C919 | D2 | JK302 | B1 | R911 | D1 |
| C920 | D1 | L301 | D3 | R912 | D2 |
| C921 | D1 | Q302 | D4 | R913 | D2 |
| C922 | D2 | Q303 | D4 | R924 | D2 |
| C923 | D2 | Q304 | D4 | R925 | D2 |
| C924 | D1 | Q305 | A4 | R928 | D2 |
| C928 | D1 | Q722 | A3 | R929 | D1 |
| C929 | D1 | Q723 | A3 | RB204 | D2 |
| C932 | D1 | Q724 | A3 | RB403 | C5 |
| C935 | D2 | Q901 | D2 | RB901 | C1 |
| C936 | D2 | Q903 | D1 | ZD301 | A2 |
| CE301 | D2 | Q904 | D2 | ZD302 | A3 |
| CE302 | D2 | R301 | A1 | ZD901 | D1 |
| CE303 | D2 | R3018 | A4 | ZD902 | D1 |
| CE304 | D2 | R3019 | A2 | ZD903 | D2 |
| CE305 | D2 | R302 | A1 | ZD904 | D2 |
| CE306 | D2 | R3020 | B2 | | |

AUX/TUNER/Satellite RADIO IN+AD/DA/UWAO/BLUETOOTH/PCLINK

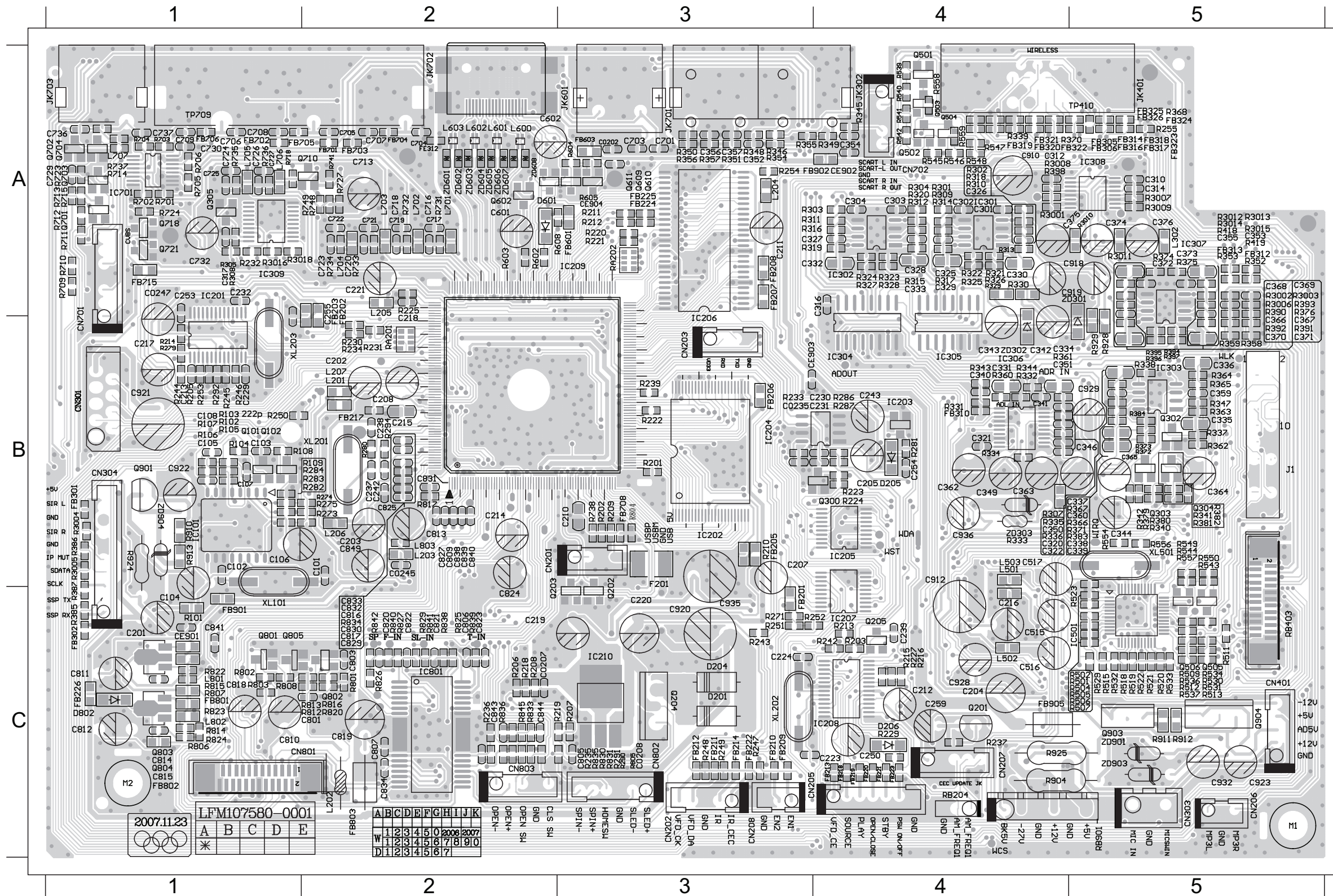
KARAOKE USE ONLY



CIRCUIT DIAGRAM - part two



- C0201 C2 C54 D3 CE206 D2 IC207 D4 R248 C1
- C0202 A3 C255 C1 CE207 D2 IC208 D2 R249 C1
- C0203 A3 C259 A3 CE210 D2 IC209 B4 R250 D4
- C0204 D1 C600 C4 CE211 D2 IC210 A3 R251 C1
- C0205 A3 C601 C5 CE212 D2 IC801 B1 R252 C1
- C0206 A3 C602 C5 CE213 D2 JK601 B5 R253 C1
- C0207 A3 C603 B5 CE214 D2 JK701 A4 R269 D2
- C0208 A3 C701 A4 CE215 C2 JK702 A4 R271 D2
- C0209 A3 C702 A4 CE216 C2 JK703 A5 R274 D2
- C0210 B5 C703 A4 CE217 C2 L201 A2 R279 C1
- C0211 A3 C704 A4 CE218 C2 L202 A3 R280 B3
- C0212 C2 C705 A4 CE219 C2 L203 A3 R281 D3
- C0213 C5 C706 A4 CE220 C2 L204 D5 R286 D3
- C0214 C5 C707 A4 CE801 D1 L205 B5 R287 D3
- C0215 C2 C708 A4 CE802 D1 L206 B3 R290 B1
- C0216 D2 C709 A4 CE803 D1 L207 B5 R291 C1
- C0217 D2 C713 B5 CE804 D1 L701 B4 R292 C1
- C0218 D2 C716 B4 CE805 D1 L702 B4 R294 B3
- C0219 D2 C717 A4 CE806 D1 L703 B4 R295 A3
- C0220 D2 C718 B4 CE807 D1 L704 B4 R748 B5
- C0221 D2 C719 A4 CE808 D1 L705 B4 R749 B5
- C0222 D2 C720 B4 CE809 D1 L706 B4 R801 C2
- C0226 D1 C721 A4 CN201 B5 L707 A5 R802 A1
- C0227 C2 C722 A4 CN202 C1 L801 A2 R803 A1
- C0228 D1 C723 B4 CN205 C1 L802 A2 R804 B1
- C0229 D1 C724 B4 CN206 B5 L803 B3 R805 B1
- C0230 D1 C725 A4 CN208 C1 Q201 A3 R806 C3
- C0235 D3 C726 B4 CN801 A1 Q202 A3 R807 C3
- C0237 D5 C727 A4 CN802 B1 Q203 A3 R808 A1
- C0238 D5 C732 B5 CN803 B1 Q204 A3 R812 A1
- C0239 D5 C735 C2 CO254 A2 Q300 D4 R813 A1
- C0240 D5 C736 A4 D201 A3 Q601 C5 R814 A2
- C0241 D5 C737 A5 D204 A3 Q602 A3 R815 A2
- C0242 D5 C738 C2 D205 D3 Q611 B5 R816 A2
- C0243 D5 C801 A1 D600 D2 Q705 A4 R817 B2
- C0244 A3 C802 A2 F201 B5 Q706 A4 R820 A2
- C0245 A3 C803 B1 FB201 A3 Q713 A4 R822 A2
- C0246 A3 C804 A2 FB202 A3 Q714 A4 R823 A2
- C0247 A3 C805 B2 FB203 A3 Q715 A4 R824 A2
- C0248 B5 C806 B2 FB204 A3 Q716 A4 R826 B1
- C0249 A3 C807 B2 FB205 C5 Q801 A1 R827 B1
- C0251 C5 C808 B2 FB206 C5 Q802 A2 R829 B2
- C0252 C5 C809 B3 FB207 D5 Q803 A2 R831 B2
- C0253 B5 C810 A3 FB208 D5 Q804 A2 R833 B2
- C0601 C5 C811 A2 FB209 C1 Q805 A1 R834 B3
- C0602 C5 C812 A2 FB210 C1 R201 C5 R835 B2
- C0603 C5 C813 B3 FB211 C1 R202 B5 R836 B2
- C0604 C5 C816 B3 FB212 C1 R203 D2 R838 B2
- C0606 C5 C817 B3 FB213 B5 R205 C1 R839 B2
- C201 A2 C818 A2 FB214 C1 R206 A3 R840 B2
- C202 B5 C819 B2 FB216 C2 R207 A3 R841 B2
- C203 A3 C820 B2 FB217 A2 R209 B5 R842 B2
- C204 B3 C821 B2 FB218 C1 R210 C5 R845 C3
- C205 C5 C822 B2 FB219 C1 R211 C5 RA201 C2
- C206 B4 C823 B2 FB220 C1 R212 C5 RA202 C5
- C207 D4 C824 B2 FB221 C1 R213 D2 RA203 C2
- C208 A3 C825 B3 FB222 C1 R215 D2 XL201 B3
- C209 B3 C826 B3 FB223 C1 R217 D2 XL203 C1
- C210 C2 C827 B3 FB224 D5 R218 A3 ZD201 A3
- C211 D5 C828 B3 FB225 D5 R219 A3
- C212 C1 C829 B3 FB226 A2 R220 C5
- C214 C2 C830 B3 FB601 A3 R221 C5
- C215 A3 C831 B3 FB602 C5 R222 D3
- C216 B2 C832 B3 FB603 C5 R223 D4
- C217 A3 C833 B3 FB701 A4 R224 D4
- C218 B4 C834 B1 FB702 A4 R225 B4
- C219 A3 C835 A1 FB703 A4 R226 D2
- C220 A3 C836 A3 FB704 A4 R227 D2
- C221 B5 C837 A3 FB705 A4 R228 D3
- C225 C2 C838 B3 FB706 A4 R230 C2
- C226 C2 C839 B3 FB707 C2 R231 C2
- C227 C2 C840 B3 FB708 C2 R232 C2
- C228 C2 C841 B2 FB715 B5 R233 D3
- C229 C1 C843 B2 FB801 A1 R234 C2
- C230 D3 C844 B2 FB802 A2 R235 B2
- C231 D3 C846 C3 FB803 B1 R236 B2
- C232 C1 C849 B2 IC201 C1 R237 A3
- C237 B3 CE201 D2 IC202 C5 R238 D5
- C238 B3 CE202 D2 IC203 D3 R239 D4
- C242 B3 CE203 D2 IC204 D3 R242 D2
- C243 D3 CE204 D2 IC205 D4 R245 C1
- C253 C2 CE205 D2 IC206 D5 R247 C1

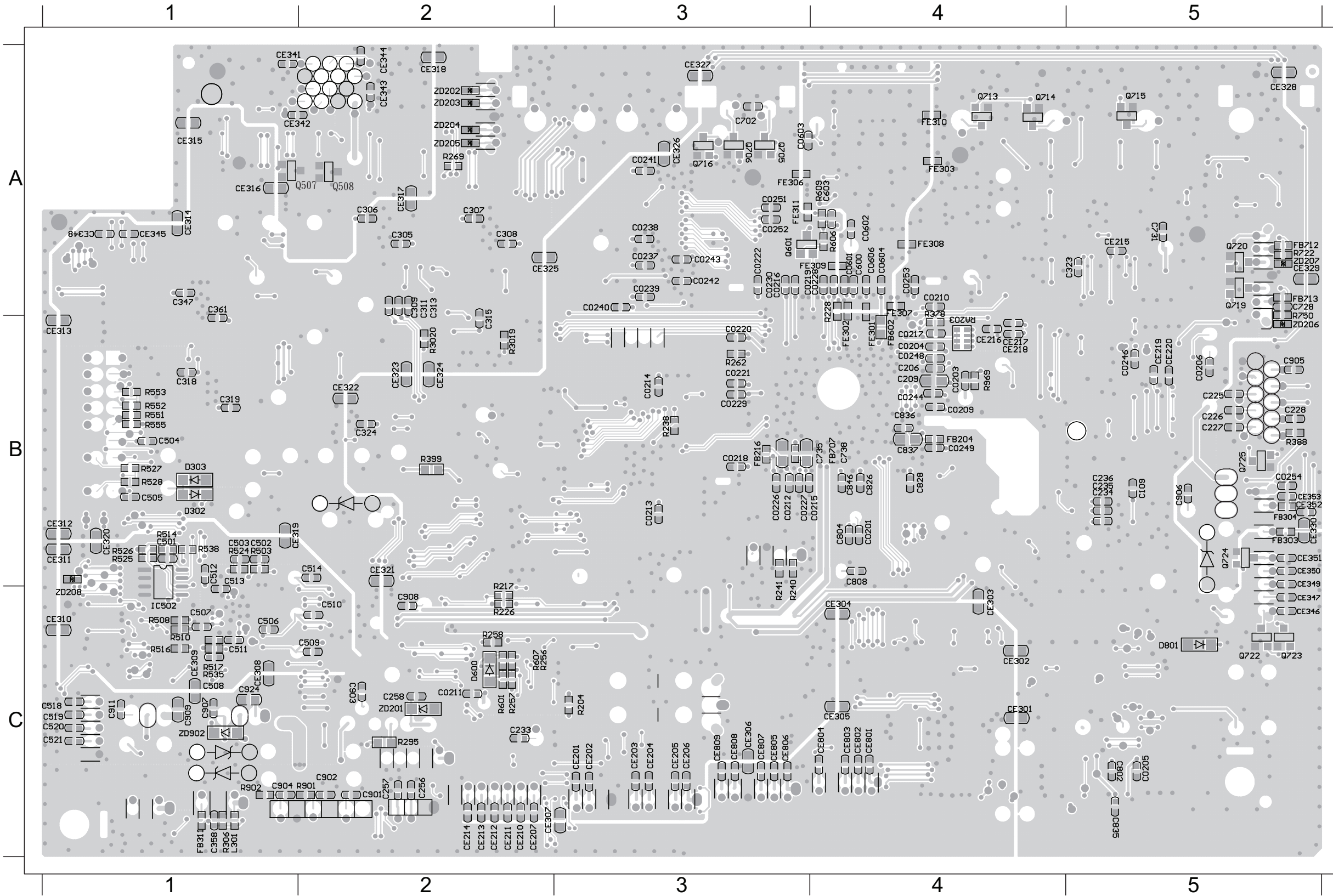


C0202	A3	C602	A2	CN205	C3	JK702	A2	R253	B1	R749	A2
C0207	C2	C701	A3	CN206	C5	JK703	A1	R271	C3	R801	C2
C0208	C3	C703	A3	CN208	C3	L201	B2	R274	B2	R802	C1
C0235	B3	C704	A2	CN301	B1	L202	C2	R279	B1	R803	C1
C0245	B2	C705	A2	CN303	C5	L203	B2	R280	B2	R805	C3
C0247	A1	C706	A1	CN401	C5	L204	A3	R281	B4	R806	C1
C201	C1	C707	A2	CN801	C1	L205	A2	R286	B4	R807	C1
C202	B2	C708	A1	CN802	C2	L206	B2	R287	B4	R808	C1
C203	B2	C709	A1	CN803	C3	L207	B2	R290	C3	R812	C2
C204	C4	C713	A2	D201	C3	L701	A2	R291	C3	R813	C2
C205	B4	C716	A2	D204	C3	L702	A2	R292	B1	R814	C1
C207	B3	C717	A2	D205	B4	L703	A2	R301	A4	R815	C1
C208	B2	C718	A2	F201	B3	L704	A2	R3018	A1	R816	C2
C210	B3	C719	A2	FB201	C3	L705	A1	R302	A4	R817	B2
C211	A3	C720	A2	FB202	A2	L706	A1	R305	A1	R820	C2
C213	B1	C721	A2	FB203	A2	L707	A1	R307	B5	R822	C1
C214	B2	C722	A2	FB205	B3	L801	C1	R308	A1	R823	C1
C215	B2	C723	A2	FB206	B3	L802	C1	R309	A4	R824	C1
C216	C4	C724	A1	FB207	A3	L803	B2	R310	A4	R826	C2
C217	B1	C725	A1	FB208	A3	Q201	C4	R313	A4	R827	C2
C218	A2	C726	A1	FB209	C3	Q202	C3	R314	A4	R829	C2
C219	C2	C727	A1	FB210	C3	Q203	C3	R317	A4	R831	C3
C220	C3	C732	A1	FB211	C3	Q204	C3	R318	A4	R833	C2
C221	A2	C736	A1	FB212	C3	Q300	B5	R321	A4	R834	C2
C229	B1	C737	A1	FB213	C4	Q302	B5	R322	A4	R835	C3
C230	B4	C801	C2	FB214	C3	Q303	B5	R325	A4	R836	C2
C231	B4	C803	C2	FB217	B2	Q304	B5	R326	A4	R838	C2
C232	A1	C805	C3	FB218	C4	Q305	A1	R329	A4	R839	C2
C237	B2	C806	C2	FB219	C4	Q602	A2	R330	A4	R840	C2
C238	B2	C807	C2	FB220	C4	Q611	A3	R331	B4	R841	C2
C242	B2	C809	B2	FB221	C4	Q801	C1	R332	B4	R842	C2
C243	B4	C810	C1	FB222	C3	Q802	C2	R334	B4	R845	C2
C253	A1	C811	C1	FB223	C4	Q803	C1	R335	B4	R904	C4
C254	B4	C812	C1	FB224	A3	Q804	C1	R336	B4	R911	C5
C255	A2	C813	B2	FB225	A3	Q805	C1	R337	B5	R912	C5
C259	C4	C816	C2	FB226	C1	Q901	B1	R338	B5	R913	B1
C301	A4	C817	C2	FB210	B5	Q903	C5	R340	B5	R924	B1
C302	A4	C818	C1	FB312	A5	Q904	C5	R341	B5	R925	C4
C316	A4	C819	C2	FB313	A5	R201	B3	R342	B5	R928	B5
C317	A1	C820	C2	FB601	A3	R202	B3	R343	B4	R929	B5
C320	B5	C821	C2	FB603	A3	R203	C4	R344	B4	RA201	B2
C321	B5	C822	C2	FB701	A2	R205	B1	R345	A4	RA202	A3
C322	B5	C823	C2	FB702	A1	R206	C2	R346	A3	RB204	C4
C325	A4	C824	B2	FB703	A2	R207	C3	R347	B5	RB403	C5
C326	A4	C825	B2	FB704	A2	R209	B3	R348	A3	RB901	C5
C329	A4	C827	B2	FB705	A1	R210	B3	R349	A4	XL201	B2
C330	A4	C829	C2	FB706	A1	R211	A3	R350	A3	XL203	B1
C331	B5	C830	C2	FB708	B3	R212	A3	R351	A3	ZD301	A5
C334	A4	C831	B2	FB715	A1	R213	C4	R352	A5	ZD302	B4
C335	B5	C832	C2	FB801	C1	R215	C4	R353	A5	ZD901	C5
C336	B5	C833	C2	FB802	C1	R218	C2	R354	A3	ZD903	C5
C337	B5	C834	C2	FB803	C2	R219	C2	R355	A3	ZD904	B1
C338	B5	C838	B2	FB901	C1	R220	A3	R356	A3		
C339	B5	C839	B2	FB905	C4	R221	A3	R357	A3		
C340	B5	C840	B2	FE312	A2	R222	B3	R358	B5		
C341	B5	C841	C1	IC201	A1	R223	B4	R359	B5		
C342	B4	C843	C2	IC202	B3	R224	B4	R360	B5		
C343	B4	C844	C2	IC203	B4	R225	A2	R361	B5		
C344	B5	C849	B2	IC204	B3	R227	C4	R362	B5		
C346	B5	C912	C4	IC205	B5	R230	B2	R364	B5		
C349	B5	C918	A5	IC206	A3	R231	B2	R365	B5		
C350	B5	C919	A5	IC207	C4	R232	A1	R366	B5		
C351	B5	C920	C3	IC208	C4	R233	B3	R367	B5		
C352	A3	C921	B1	IC209	B2	R234	B2	R368	A5		
C353	A5	C922	B1	IC210	C3	R235	C3	R371	B5		
C354	A4	C923	C5	IC301	A4	R236	C2	R372	B5		
C355	A5	C928	C4	IC303	B5	R237	C4	R373	B5		
C356	A3	C929	B5	IC304	B4	R239	B3	R379	B5		
C357	A3	C932	C5	IC305	B4	R242	C4	R380	B5		
C359	B5	C935	C3	IC306	B4	R245	B1	R381	B5		
C360	B5	C936	B5	IC309	A1	R247	C3	R382	B5		
C362	B5	CE901	C1	IC801	C2	R248	C3	R383	B5		
C363	B5	CE903	B3	IC801	C5	R249	C3	R384	B5		
C364	B5	CE904	A3	JK302	A4	R250	B1	R418	A5		
C365	B5	CN201	B3	JK601	A3	R251	C3	R419	A5		
C601	A2	CN202	C3	JK701	A3	R252	C3	R748	A2		

PCB LAYOUT - BOTTOM VIEW

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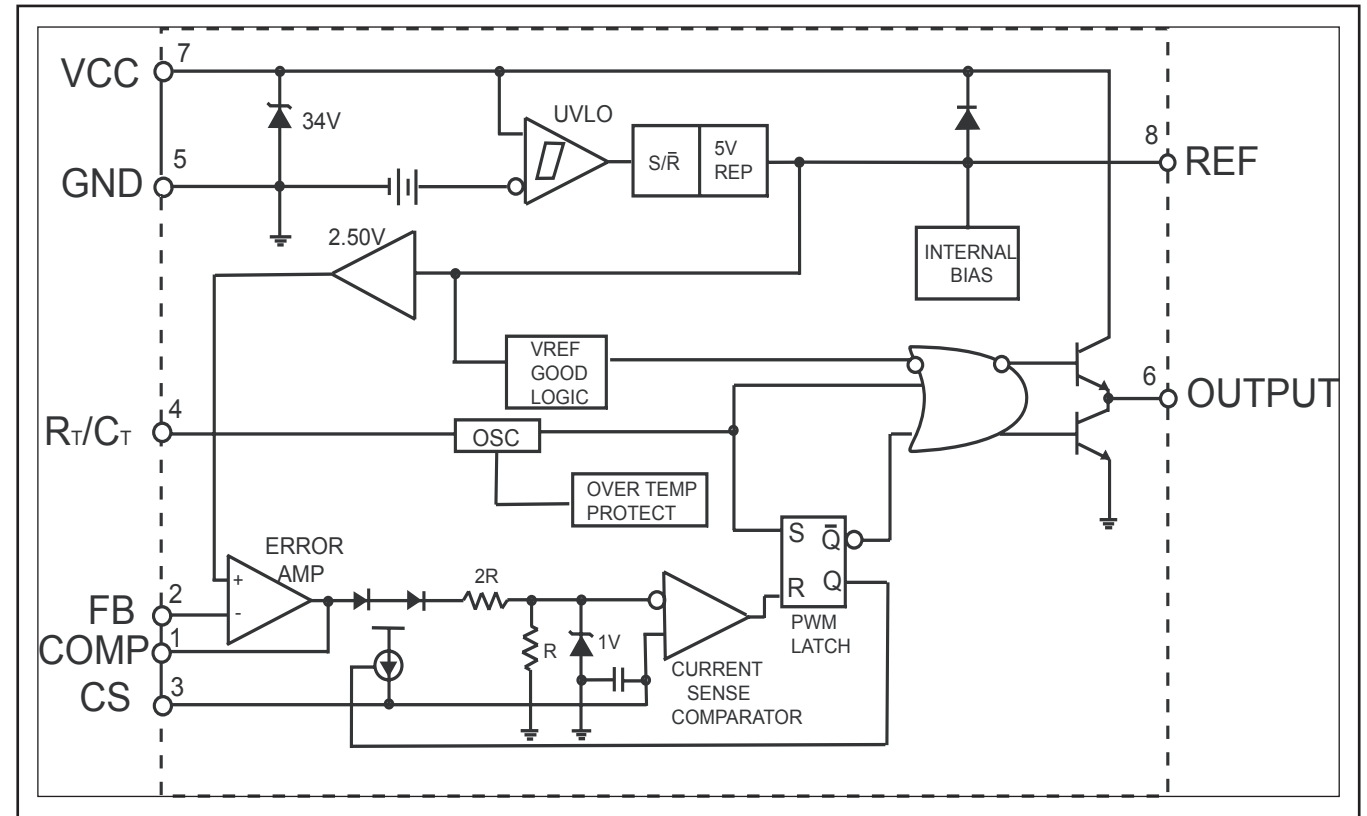
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C0205 C5	C521 C1	CE316 A1	Q715 A5
C0206 B5	C600 A4	CE317 A2	Q716 A3
C0209 B4	C603 A4	CE318 A2	Q722 C5
C0210 A4	C702 A3	CE319 B1	Q723 C5
C0211 C2	C735 B4	CE320 B1	Q724 B5
C0212 B3	C738 B4	CE321 B2	R217 C2
C0213 B3	C802 C5	CE322 B2	R226 C2
C0214 B3	C804 B4	CE323 B2	R228 A4
C0215 B3	C808 B4	CE324 B2	R238 B3
C0216 A3	C826 B4	CE325 A2	R269 A2
C0217 B4	C828 B4	CE326 A3	R295 C2
C0218 B3	C835 C5	CE327 A3	R3019 B2
C0219 A3	C836 B4	CE328 A5	R3020 B2
C0220 B3	C837 B4	CE329 A5	R306 C1
C0221 B3	C846 B4	CE330 B5	R378 B4
C0222 A3	C901 C2	CE341 A1	R388 B5
C0226 B3	C902 C2	CE342 A1	R399 B2
C0227 B3	C903 C2	CE343 A2	R606 A4
C0228 A4	C904 C1	CE344 A2	R804 B3
C0229 B3	C905 B5	CE345 A1	RA203 B4
C0230 A3	C906 B5	CE346 C5	ZD201 C2
C0237 A3	C907 C1	CE347 C5	ZD902 C1
C0238 A3	C908 C2	CE348 A1	
C0239 A3	C909 C1	CE351 B5	
C0240 A3	C911 C1	CE352 B5	
C0241 A3	C924 C1	CE353 B5	
C0242 A3	CE201 C3	CE801 C4	
C0243 A3	CE202 C3	CE802 C4	
C0244 B4	CE203 C3	CE803 C4	
C0246 B5	CE204 C3	CE804 C4	
C0248 B4	CE205 C3	CE805 C3	
C0249 B4	CE206 C3	CE806 C3	
C0251 A3	CE207 C2	CE807 C3	
C0252 A3	CE210 C2	CE808 C3	
C0253 A4	CE211 C2	CE809 C3	
C0601 A4	CE212 C2	CO254 B5	
C0602 A4	CE213 C2	D302 B1	
C0603 A3	CE214 C2	D303 B1	
C0604 A4	CE215 A5	D600 C2	
C0606 A4	CE216 B4	FB204 B4	
C206 B4	CE217 B4	FB216 B3	
C209 B4	CE218 B4	FB311 C1	
C225 B5	CE219 B5	FB602 B4	
C226 B5	CE220 B5	FB707 B4	
C227 B5	CE301 C4	FE301 B4	
C228 B5	CE302 C4	FE302 B4	
C305 A2	CE303 C4	FE303 A4	
C306 A2	CE304 C4	FE306 A3	
C309 A2	CE305 C4	FE307 A4	
C311 A2	CE306 C3	FE308 A4	
C313 A2	CE307 C2	FE309 A4	
C315 A2	CE308 C1	FE310 A4	
C318 B1	CE309 C1	FE311 A3	
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C323 A5	CE311 B1	Q601 A3	
C324 B2	CE312 B1	Q705 A3	

POWER BOARD

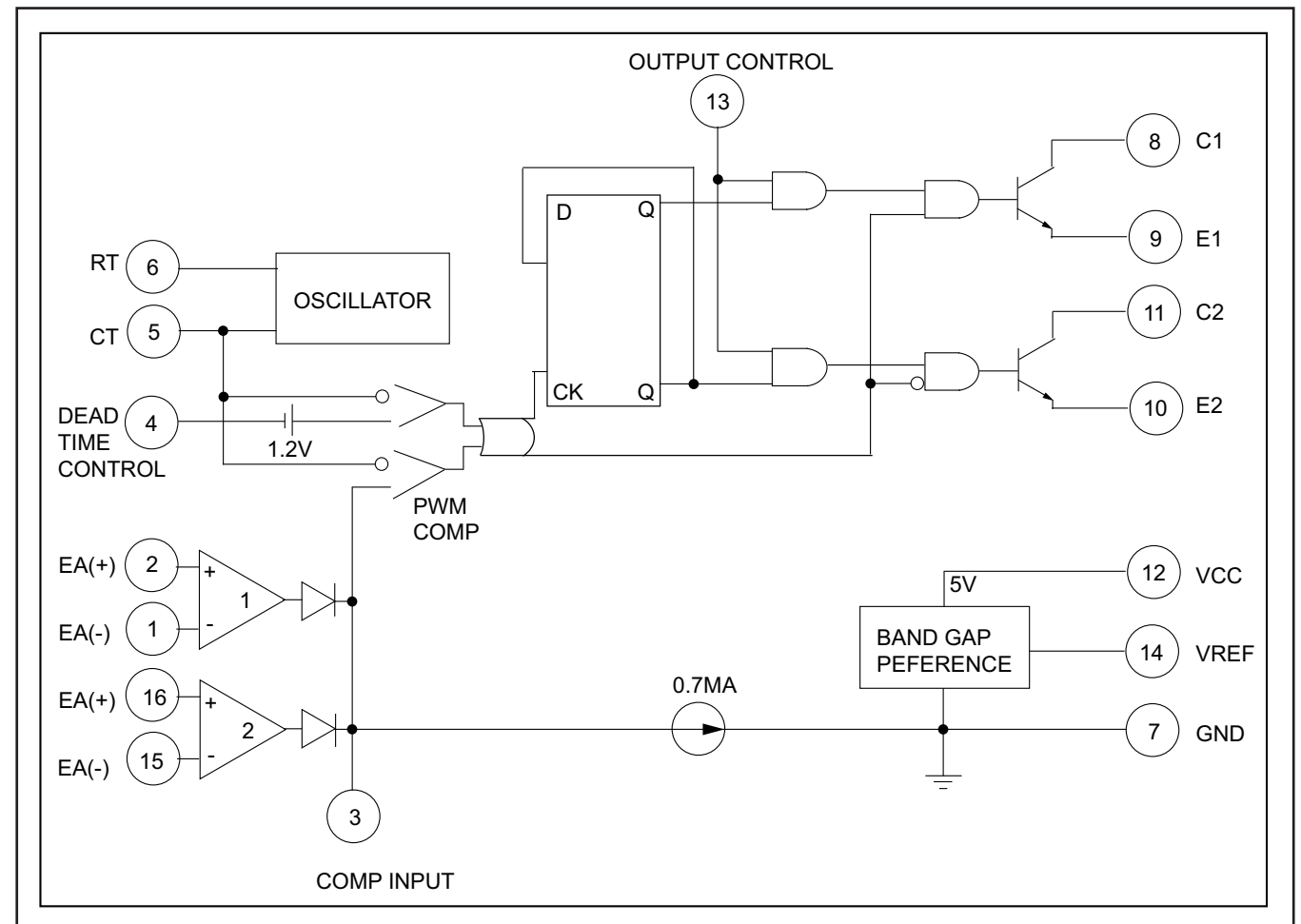
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INTERNAL IC DIAGRAM - AP3843GMTR

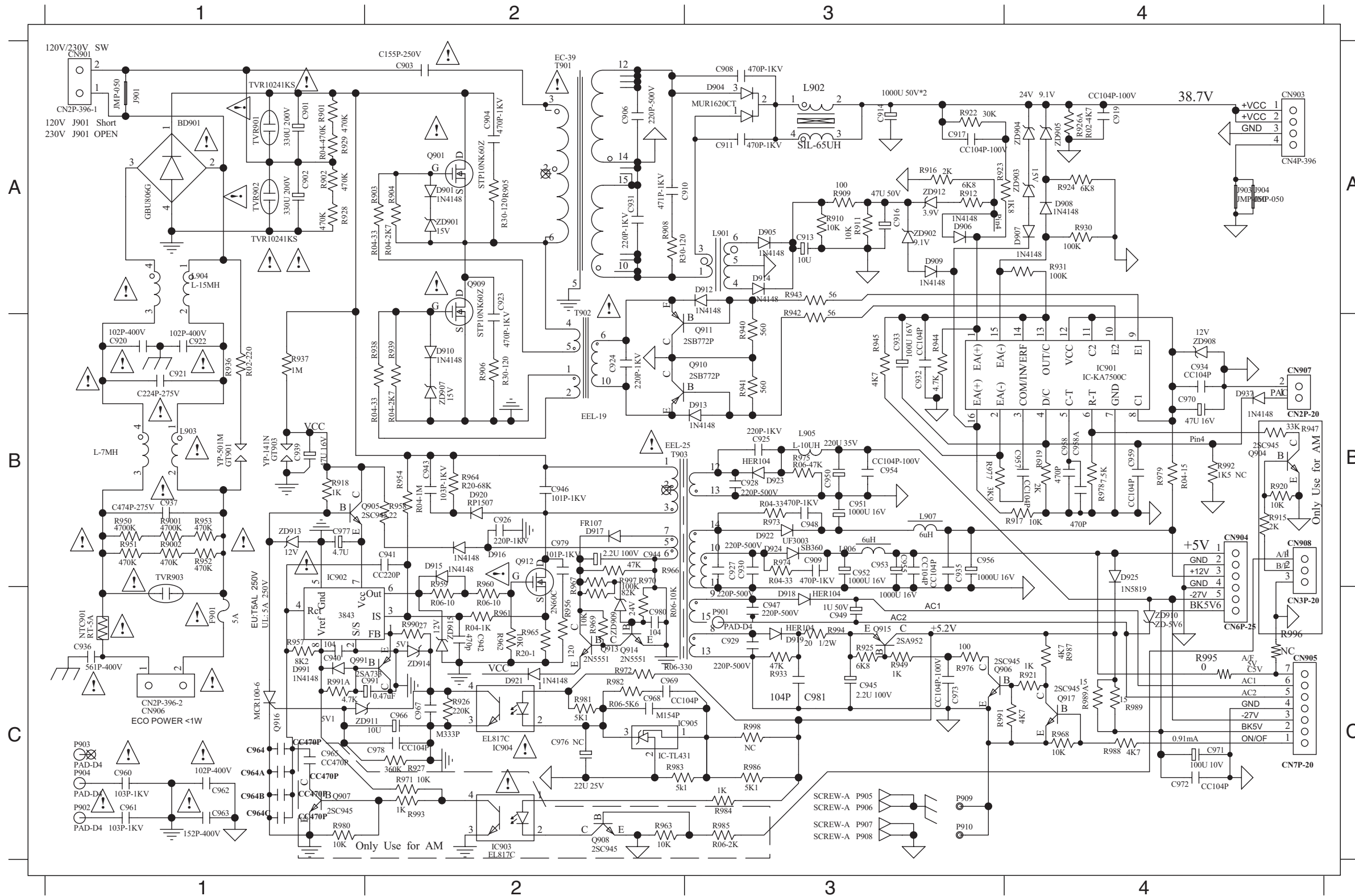


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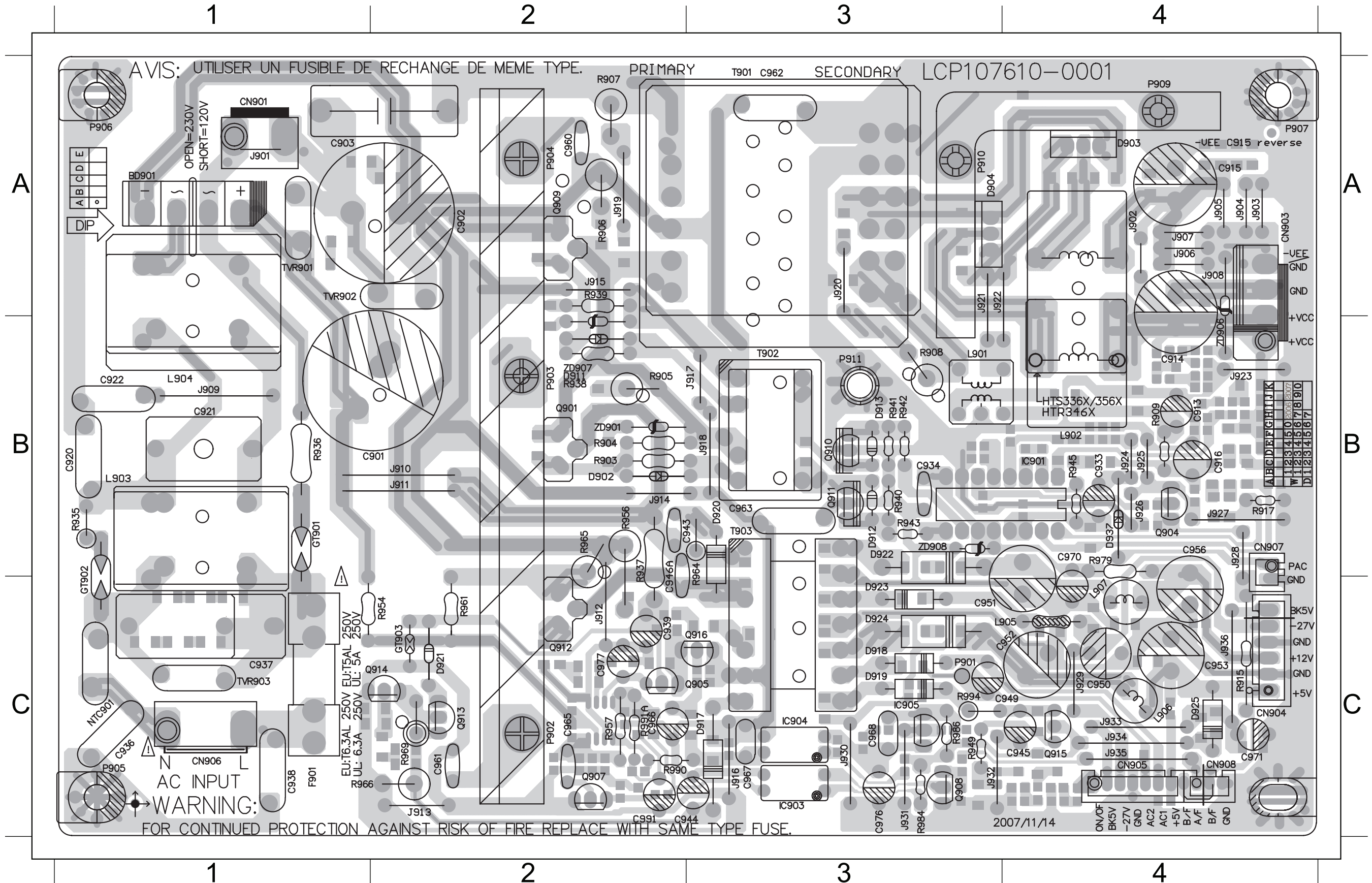
CIRCUIT DIAGRAM

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C901	A1	C919	A4	C932	B3	C948	B3	C960	C1	C971	C4	CN908	B4	D917	B2	GT903	B1	L907	B3	Q917	C4	R911	A3	R926C	A4	R942	A3	R959	C2	R974	B3	R989A	C4	TVR902A1	ZD913	B1
C902	A1	C920	B1	C933	B3	C949	C3	C961	C1	C972	C4	D901	A2	D918	C3	IC901	B4	NTC901C1	Q991	C1	R912	A3	R926D	A4	R943	A3	R960	C2	R975	B3	R990	C2	TVR903B1	ZD914	C2	
C903	A2	C921	B1	C934	B4	C950	B3	C962	C1	C973	C3	D904	A3	D919	C3	IC902	B1	Q901	A2	R9001	B1	R916	A3	R927	C2	R944	B3	R961	C2	R976	C3	R991	C4	ZD901	A2	
C904	A2	C922	B1	C935	B3	C951	B3	C963	C1	C977	B1	D905	A3	D920	B2	IC904	C2	Q905	B1	R9002	B1	R917	B4	R928	A1	R945	B3	R962	C2	R977	B4	R991A	C1	ZD902	A3	
C906	A2	C923	A2	C937	B1	C952	B3	C964	C1	C978	C2	D907	A4	D921	C2	IC905	C2	Q906	C3	R901	A1	R918	B1	R929	A1	R949	C3	R964	B2	R978	B4	R993	C2	ZD903	A4	
C908	A3	C924	B2	C939	B1	C953	B3	C964A	C1	C980	C2	D908	A4	D922	B3	J903	A4	Q909	A2	R902	A1	R919	B4	R930	A4	R950	B1	R965	C2	R979	B4	R994	C3	ZD904	A4	
C909	B3	C925	B3	C940	C1	C954	B3	C964B	C1	C991	C1	D909	A3	D923	B3	J904	A4	Q910	B3	R903	A2	R921	C4	R931	A4	R951	B1	R966	B2	R981	C2	R995	C4	ZD905	A4	
C910	A2	C926	B2	C941	B2	C955	B3	C964C	C1	CN901	A1	D910	B2	D924	B3	L901	A3	Q911	B3	R904	A2	R922	A3	R936	B1	R952	B1	R967	B2	R982	C2	R997	B2	ZD907	B2	
C911	A3	C927	B3	C942	C2	C956	B3	C966	C2	CN903	A4	D912	A3	D925	B4	L902	A3	Q912	B2	R905	A2	R923	A4	R937	B1	R953	B1	R968	C4	R983	C2	T901	A2	ZD908	B4	
C913	A3	C928	B3	C943	B2	C957	B4	C967	C2	CN904	B4	D913	B3	D937	B4	L903	B1	Q913	C2	R906	B2	R924	A4	R938	B2	R954	B2	R969	C2	R986	C3	T901	B2	ZD909	C2	
C914	A3	C929	C3	C944	B2	C958	B4	C968	C2	CN905	C4	D914	A3	D991	C1	L904	A1	Q914	C2	R908	A2	R925	C3	R939	B2	R955	C4	R970	C2	R987	C4	T902	B2	ZD910	C4	
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PCB LAYOUT - TOP VIEW

BD901	A1	C921	B1	C945	C4	C960	A2	C971	C4	CN907	B4	D920	B3	GT901	B1	J910	B2	J918	B3	J927	B4	L901	B3	Q901	B2	Q915	C4	R917	B4	R943	B3	R966	C1	T901	B3	ZD908	B3		
C901	B2	C922	B1	C946	B2	C961	C2	C977	C2	CN908	C4	D921	C2	GT903	C2	J911	B2	J920	A3	J929	C4	L902	B4	Q905	C2	Q916	C3	R936	B1	R945	B4	R969	C2	T902	B3				
C902	A2	C933	B4	C949	C3	C962	A3	C991	C2	D904	A3	D922	B3	IC901	B4	J912	C2	J921	A3	J930	C3	L903	B1	Q909	A2	R903	B2	R937	B2	R949	C3	R979	B4	T903	B3				
C903	A1	C934	B3	C950	C4	C963	B3	CN901	A1	D912	B3	D923	C3	IC904	C3	J913	C2	J922	A3	J931	C3	L904	B1	Q910	B3	R904	B2	R938	B2	R954	C1	R986	C3	TVR901	A1				
C913	B4	C937	C1	C951	C4	C966	C2	CN903	A4	D913	B3	D924	C3	IC905	C3	J914	B2	J923	B4	J932	C3	L905	C4	Q911	B3	R905	B2	R939	A2	R957	C2	R990	C2	TVR902	A1				
C914	B4	C939	C2	C952	C4	C967	C3	CN904	C4	D917	C3	D925	C4	J903	A4	J915	A2	J924	B4	J933	C4	L906	C4	Q912	C2	R906	A2	R940	B3	R961	C2	R991A	C2	TVR903	C1				
C916	B4	C943	B2	C953	C4	C968	C3	CN905	C4	D918	C3	D937	B4	J904	A4	J916	C3	J925	B4	J934	C4	L907	C4	Q913	C2	R908	B3	R941	B3	R964	B3	R994	C3	ZD901	B2				
C920	B1	C944	C2	C956	B4	C970	B4	CN906	C1	D919	C3	F901	C1	J909	B1	J917	B3	J926	B4	J936	C4	NTC901	C1	Q914	C2	R909	B4	R942	B3	R965	B2	T901	A3	ZD907	B2				

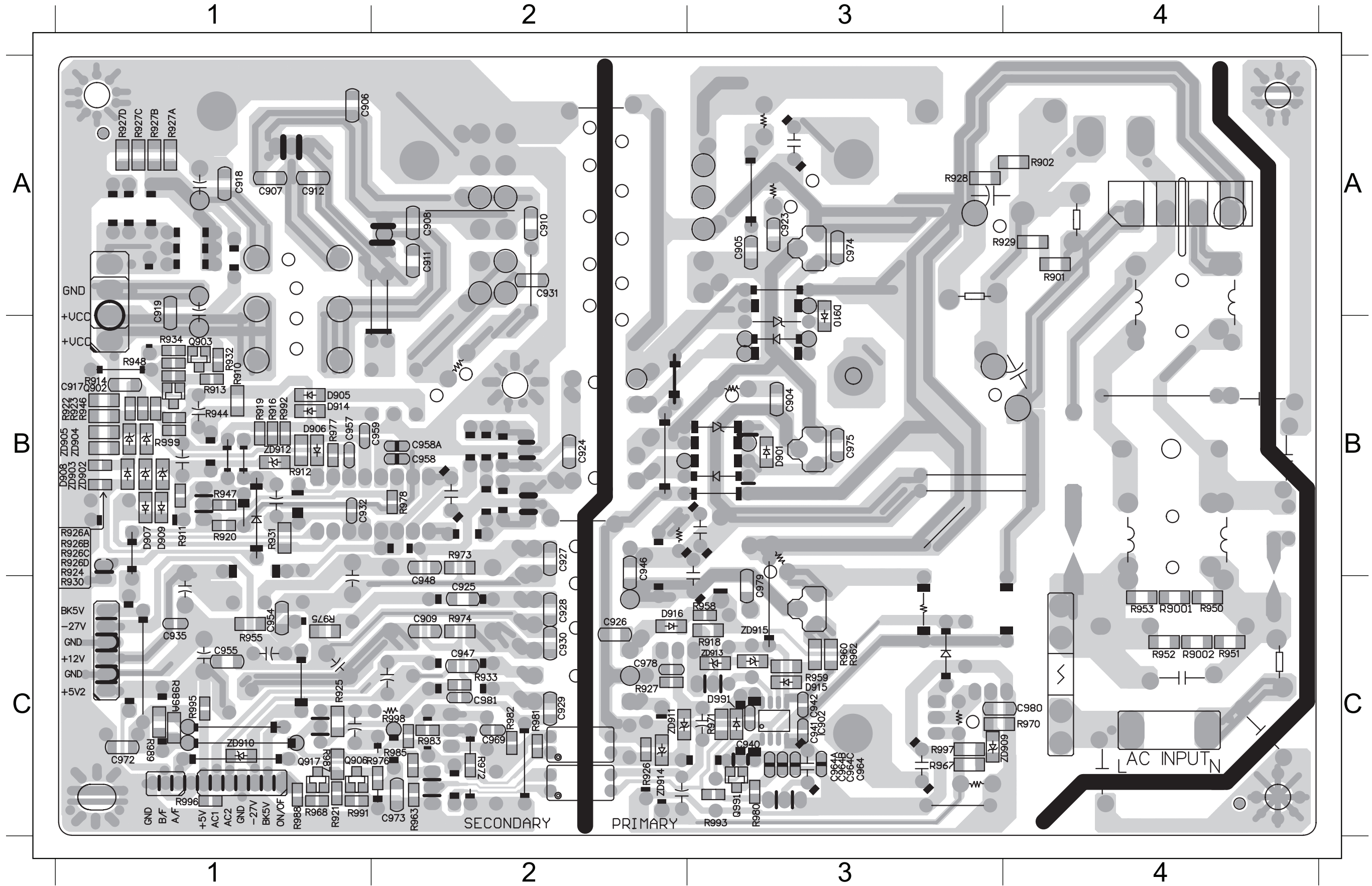


PCB LAYOUT - BOTTOM VIEW

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C906	A1	C923	A3	C917	B1	D909	B1	R919	B1	R926CB1	ZD902	B1	C927	B2	R973	B2	C955	C1	R955	C1	R989AC1	C926	C2	C978	C2	R981	C2	C941	C3	D915	C3	R959	C3	ZD909	C3	R951	C4		
C919	A1	D910	A3	C932	B1	D914	B1	R922	B1	R926DB1	ZD903	B1	C946	B2	R978	B2	C972	C1	R968	C1	R991	C1	C928	C2	D916	C2	R982	C2	C942	C3	D991	C3	R960	C3	ZD913	C3	R952	C4	
C908	A2	R928	A3	C957	B1	R910	B1	R923	B1	R930	B1	ZD904	B1	C948	B2	C904	B3	Q906	C1	R975	C1	R995	C1	C929	C2	R927	C2	R983	C2	C964	C3	IC902	C3	R962	C3	C980	C4	R953	C4
C910	A2	R901	A4	D905	B1	R911	B1	R924	B1	R931	B1	ZD905	B1	C958	B2	D901	B3	Q917	C1	R987	C1	ZD910	C1	C930	C2	R972	C2	ZD911	C2	C964AC3	Q991	C3	R967	C3	R9001	C4	R970	C4	
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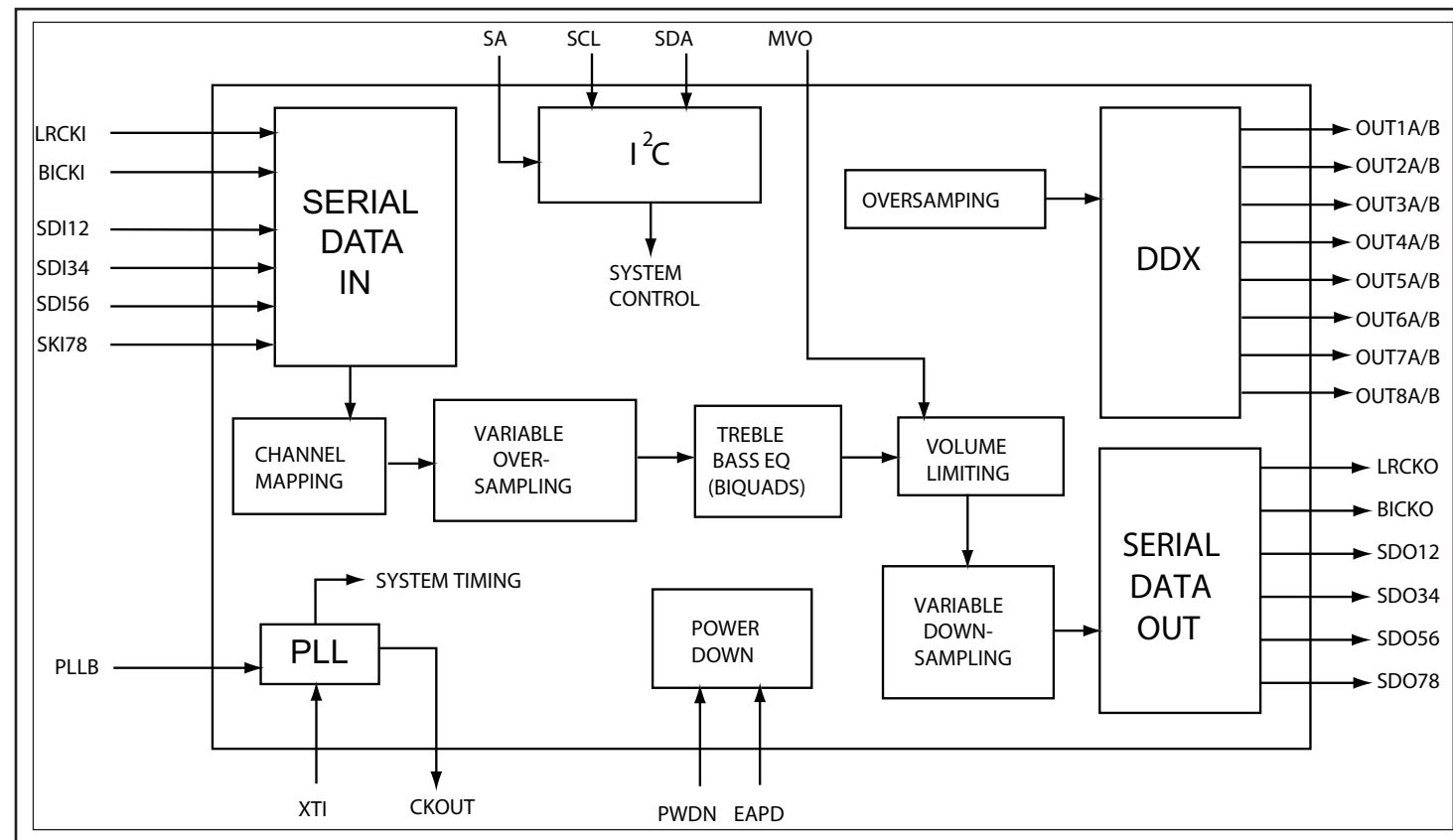


AMP BOARD

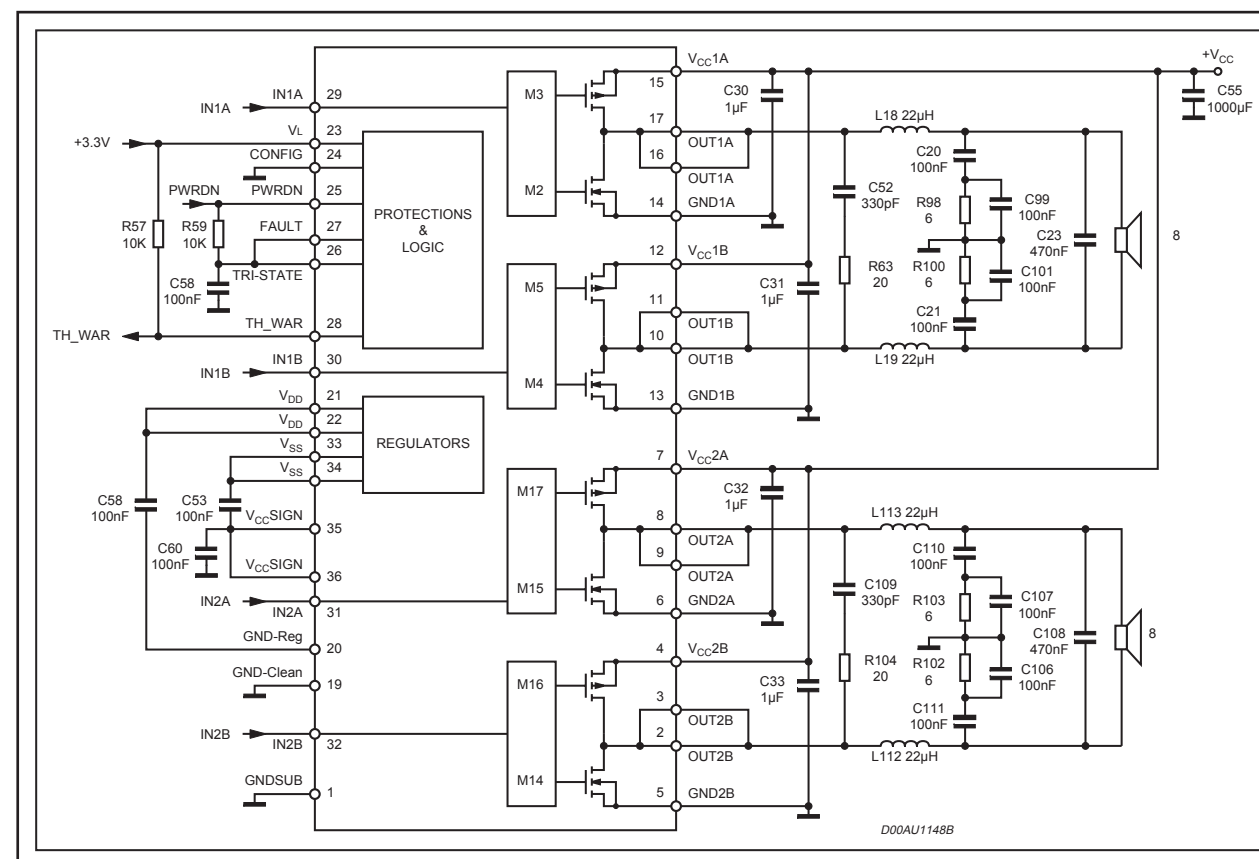
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INTERNAL IC DIAGRAM - STA309A

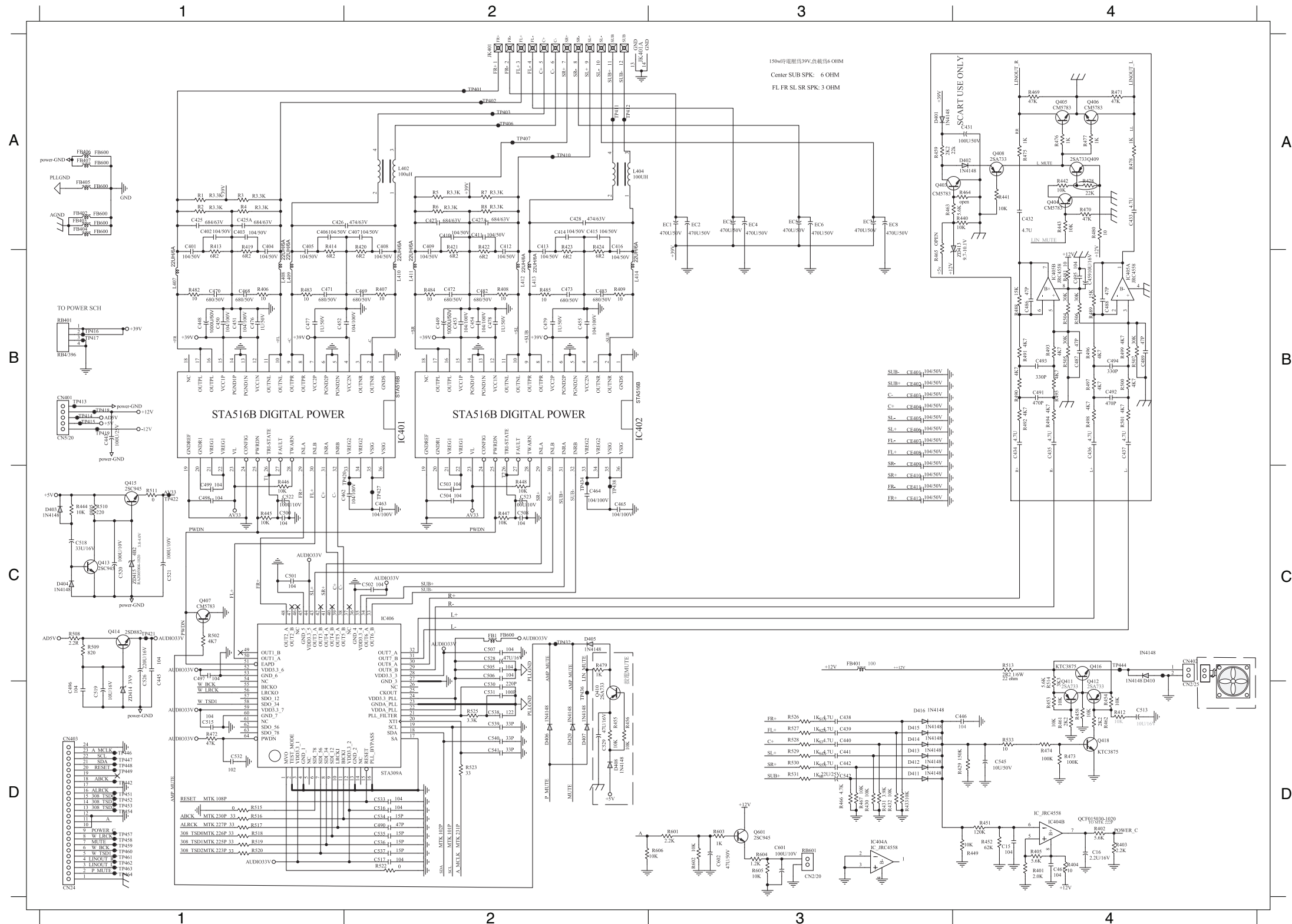


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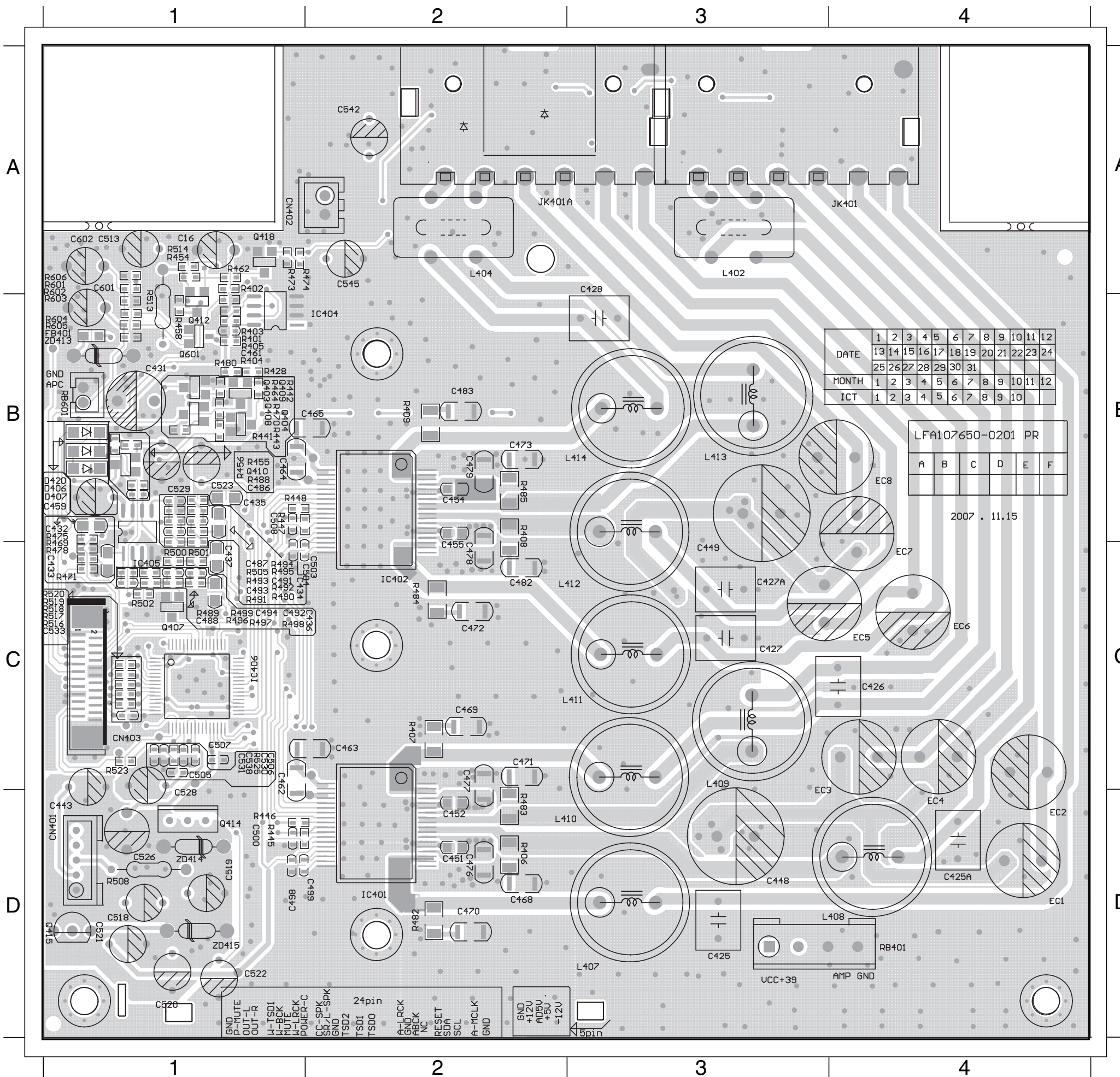


CIRCUIT DIAGRAM

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C16	D4	C413	B2	C441	D3	C461	D4	C478	B2	C504	C2	C522	C1	C539	D2	CE407	B3	D405	C2	EC2	A3	FB406	A1	L410	B2	Q418	D4	R408	B2	R431	D3	R456	D2	R485	B2	R515	D1	R530	D3	ZD414	D1
C401	B1	C414	A2	C442	D3	C462	C2	C479	B2	C505	C2	C523	C2	C540	D2	CE408	B3	D406	D2	EC3	A3	FB407	A1	L411	B2	Q601	D3	R409	B2	R432	D3	R458	D4	R490	B4	R516	D1	R531	D3	ZD415	C1
C402	A1	C415	A2	C443	B1	C463	C2	C482	B2	C506	C2	C526	C1	C541	D2	CE409	C3	D407	D2	EC4	A3	IC401	B1	L412	B2	R1	A1	R412	D4	R433	D3	R461	D4	R495	B4	R517	D1	R533	D4		
C403	A1	C416	B2	C445	C1	C464	C2	C483	B2	C507	C2	C528	C2	C542	D3	CE410	C3	D408	D2	EC5	A3	IC402	B2	L413	B2	R2	A1	R413	B1	R444	C1	R462	D4	R497	B4	R518	D1	R6	A2		
C404	B1	C425	A1	C446	D4	C465	C2	C490	D2	C508	C2	C529	D2	C545	D4	CE411	C3	D410	C4	EC6	A3	IC404	D3	L414	B2	R3	A1	R414	B1	R445	C1	R466	D3	R5	A2	R519	D1	R601	D3		
C405	B1	C425A	A1	C448	B1	C468	B1	C496	D1	C513	D4	C530	D2	C601	D3	CE412	C3	D411	D3	EC7	A3	IC406	C2	Q407	C1	R4	A1	R419	B1	R446	C1	R467	D3	R501	B4	R520	D1	R602	D3		
C406	A1	C426	A1	C449	B2	C469	B2	C497	C1	C515	D1	C531	D2	C602	D3	CN401	B1	D412	D3	EC8	A3	JK401	A2	Q410	D2	R401	D4	R420	B2	R447	C2	R472	D1	R502	C1	R522	D2	R603	D3		
C407	A2	C427	A2	C450	B1	C470	B1	C498	C1	C516	D2	C533	D2	CE401	B3	CN402	C4	D413	D3	FB1	C2	JK401AA2	Q411	D4	R402	D4	R421	B2	R448	C2	R473	D4	R508	C1	R523	D2	R604	D3			
C408	B2	C427A	A2	C451	B1	C471	B1	C499	C1	C517	D2	C534	D2	CE402	B3	CN403	D1	D414	D3	FB401	C3	L402	A2	Q412	D4	R403	D4	R422	B2	R451	D4	R474	D4	R509	C1	R525	D2	R605	D3		
C409	B2	C428	A2	C452	B1	C472	B2	C500	C1	C518	C1	C535	D2	CE403	B3	D403	A3	D415	D3	FB402	A1	L404	A2	Q413	C1	R404	D4	R423	B2	R452	D4	R479	C2	R510	C1	R526	D3	R7	A2		
C410	A2	C438	D3	C453	B2	C473	B2	C501	C1	C519	D1	C536	D2	CE404	B3	D403	A4	D416	D3	FB403	A1	L407	B1	Q414	C1	R405	D4	R424	B2	R453	D4	R482	B1	R511	C1	R527	D3	R8	A2		
C411	A2	C439	D3	C454	B2	C476	B1	C502	C2	C520	C1	C537	D2	CE405	B3	D404	C1	D420	D2	FB404	A1	L408	B1	Q415	C1	R406	B1	R429	D4	R454	D4	R483	B1	R513	C4	R528	D3	RB401	B1		



PCB LAYOUT - TOP VIEW

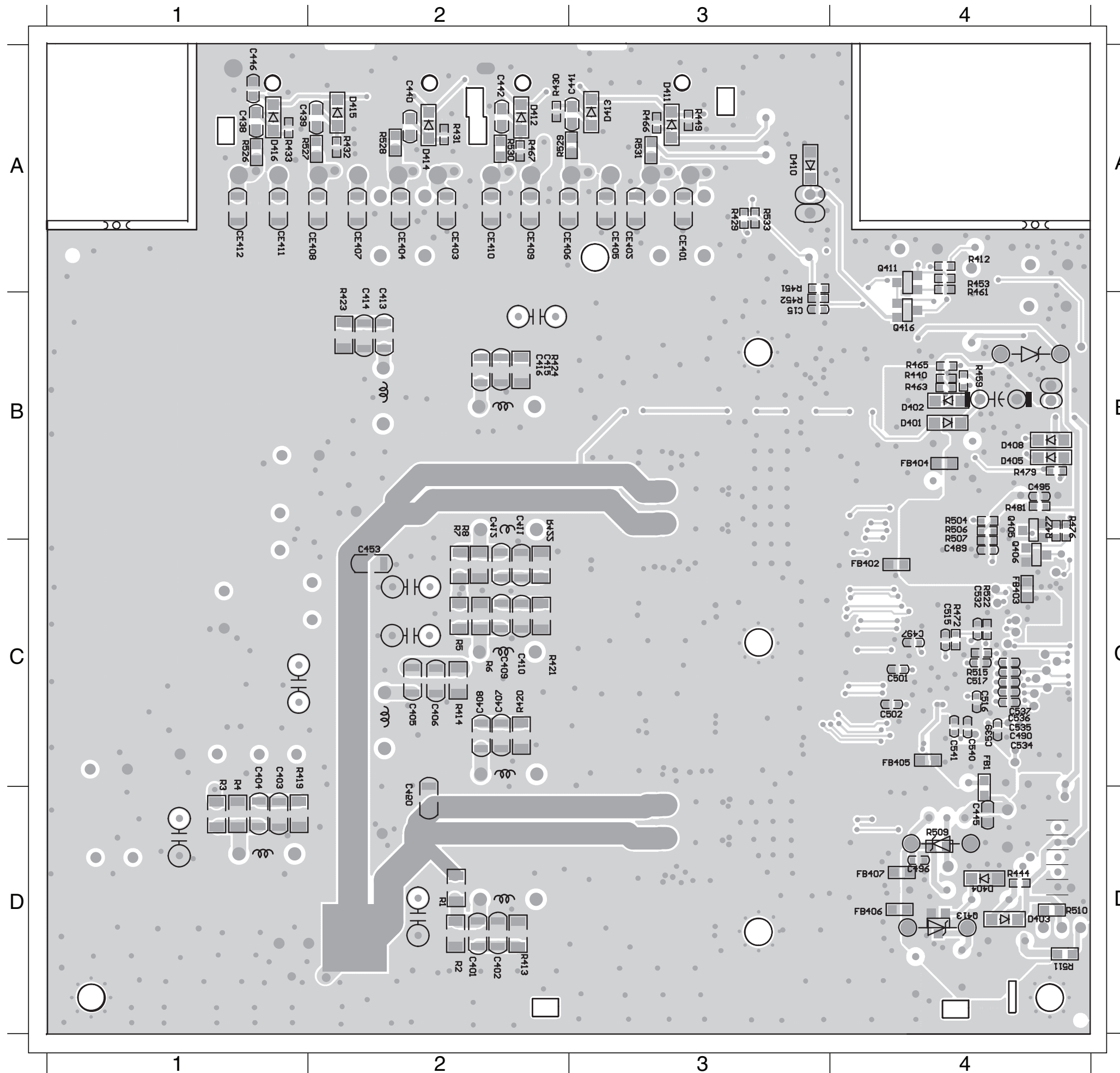


C16	A1	C545	A2	R455	B1
C425	D3	C601	A1	R456	B1
C425A	D4	C602	A1	R458	B1
C426	C4	CN401	D1	R462	A1
C427	C3	CN402	A1	R473	A1
C427A	C3	CN403	C1	R474	A1
C428	B3	D406	B1	R482	D2
C443	D1	D407	B1	R483	D2
C448	D3	D420	B1	R484	C2
C449	C3	EC1	D4	R485	B2
C451	D2	EC2	C4	R490	B1
C452	D2	EC3	C4	R495	B1
C454	B2	EC4	C4	R497	C1
C455	B2	EC5	C4	R501	C1
C461	B1	EC6	C4	R502	C1
C462	C1	EC7	C4	R508	D1
C463	C2	EC8	B4	R513	B1
C464	B1	FB401	B1	R514	A1
C465	B1	IC401	D2	R516	C1
C468	D2	IC402	C2	R517	C1
C469	C2	IC404	B1	R518	C1
C470	D2	IC406	C1	R519	C1
C471	C2	JK401	A4	R520	C1
C472	C2	JK401A	A2	R523	C1
C473	B2	L402	A3	R525	C1
C476	D2	L404	A2	R601	A1
C477	C2	L407	D3	R602	B1
C478	C2	L408	D4	R603	B1
C479	B2	L409	D3	R604	B1
C482	C2	L410	D3	R605	B1
C483	B2	L411	C3	RB401	D4
C498	D1	L412	C3	RB601	B1
C499	D1	L413	B3	ZD414	D1
C500	D1	L414	B3	ZD415	D1
C503	C1	Q407	C1		
C504	C1	Q410	B1		
C505	C1	Q412	B1		
C506	C1	Q414	D1		
C507	C1	Q415	D1		
C508	B1	Q418	A1		
C513	A1	Q601	B1		
C518	D1	R401	B1		
C519	D1	R402	A1		
C520	D1	R403	B1		
C521	D1	R404	B1		
C522	D1	R405	B1		
C523	B1	R406	D2		
C526	D1	R407	C2		
C528	C1	R408	B2		
C529	B1	R409	B2		
C530	C1	R445	D1		
C531	C1	R446	D1		
C533	C1	R447	B1		
C538	C1	R448	B1		
C542	A2	R454	A1		

PCB LAYOUT - BOTTOM VIEW

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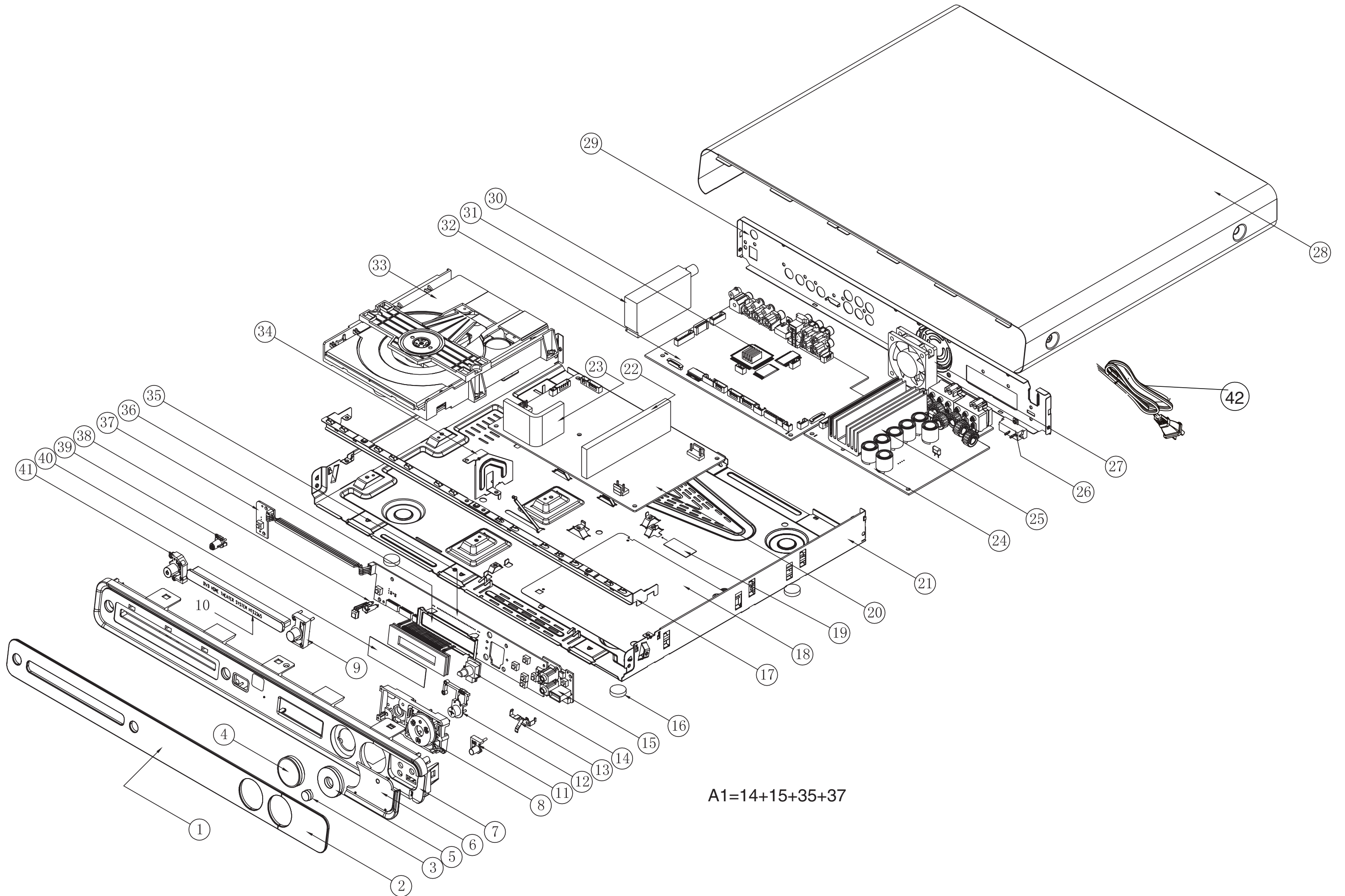


C15	B3	D405	B4	R531	A3
C401	D2	D408	B4	R533	A3
C402	D2	D410	A3	R6	C2
C403	D1	D411	A3	R7	C2
C404	D1	D412	A2	R8	C2
C405	C2	D413	A3		
C406	C2	D414	A2		
C407	C2	D415	A2		
C408	C2	D416	A1		
C409	C2	FB1	C4		
C410	C2	FB402	C4		
C411	C2	FB403	C4		
C412	C2	FB404	B4		
C413	B2	FB405	C4		
C414	B2	FB406	D4		
C415	B2	FB407	D4		
C416	B2	Q411	A4		
C438	A1	Q413	D4		
C439	A2	Q416	B4		
C440	A2	R1	D2		
C441	A3	R2	D2		
C442	A2	R3	D1		
C445	D4	R4	D1		
C446	A1	R412	A4		
C450	D2	R413	D2		
C453	C2	R414	C2		
C490	C4	R419	D1		
C496	D4	R420	C2		
C497	C4	R421	C2		
C501	C4	R422	C2		
C502	C4	R423	B2		
C515	C4	R424	B2		
C516	C4	R429	A3		
C517	C4	R430	A2		
C534	C4	R431	A2		
C535	C4	R432	A2		
C536	C4	R433	A1		
C537	C4	R444	D4		
C539	C4	R451	A3		
C540	C4	R452	B3		
C541	C4	R453	A4		
CE401	A3	R461	A4		
CE402	A3	R466	A3		
CE403	A2	R467	A2		
CE404	A2	R472	C4		
CE405	A3	R479	B4		
CE406	A2	R5	C2		
CE407	A2	R509	D4		
CE408	A2	R510	D4		
CE409	A2	R511	D4		
CE410	A2	R515	C4		
CE411	A1	R522	C4		
CE412	A1	R526	A1		
D403	B4	R527	A2		
D403	B4	R528	A2		
D404	D4	R529	A2		
D404	D4	R530	A2		

MECHANICAL EXPLODED VIEW

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Q903	996500026946	XISTR PNP 2SB772P/Q NEC PB<10
Q904	994000005335	XISTR NPN TIP41C
ZD901	994000005204	DIODE ZENR 12.6-13.1V 0.5W
ZD903	996510010364	DIODE ZENER 5.32-5.88V 0.5W
ZD904	996500028741	DIODE ZENR 9.1-9.5V 0.5W PB<10

AMP PCB

CN401	996510012526	C/W 5P 50mm 2468 26 RAINBOW
CN402	996500015862	CONNECTOR B2B-XH-A 2 PIN
CN403	996510012498	CHIP HOUSING 24P
IC401	996510008280	IC 36P STA516B
IC402	996510008280	IC 36P STA516B
IC404	996500029611	IC 8P CO4558A SO8 CERAMATE LF
IC404	996500041286	IC 8P 4558
IC406	996510012527	IC 64P STA309A TQFP ST
JK401	996510012528	SPKJACK6PRED-WHT-GRNSD-0103-01
JK401&401A	996510013837	GPSPK JAC12P RD-WT-GRN-GRY-BLU
JK401A	996510012529	SPKJACK 6PGY-BLU-PURPLESD-0103
L402	996510011371	COIL 4P 100UH 30% 1KHZ 0.25V
L402	996510012530	TOROIDCOIL4P110uH+/-25uH1KHz
L404	996510011371	COIL 4P 100UH 30% 1KHZ 0.25V
L404	996510012530	TOROIDCOIL4P110uH+/-25uH1KHz
Q407	996510000578	XISTR NPN KTC3875-Y
Q410	994000000921	XISTR PNP 2SA812 HFE:200-400
Q411	994000000921	XISTR PNP 2SA812 HFE:200-400
Q412	994000000921	XISTR PNP 2SA812 HFE:200-400
Q413	994000000915	XISTR NPN 2SC1623
Q414	996500028742	XISTR NPN 2SD882P PB<1000PPM
Q415	996510000615	XISTR NPN 2SC945P
Q416	996510000578	XISTR NPN KTC3875-Y
Q418	996510000578	XISTR NPN KTC3875-Y
Q601	994000000915	XISTR NPN 2SC1623
ZD414	996500027138	DIODE ZENR 3.8-4.0V 0.5W
ZD415	996500027138	DIODE ZENR 3.8-4.0V 0.5W

VFD+JACK+VOL+STANDBY PCB

JK11	996510004129	KARAOKE JACK D3.6MM 7P
JK12	996510004129	KARAOKE JACK D3.6MM 7P
USB11	996510013742	USB JACK 4P
CN12	996500018030	CONNECTOR 2P
D12	996500026949	DIODE SW 1N4148 PB<1000PPM
D13	996500026949	DIODE SW 1N4148 PB<1000PPM
DP11	996510012856	VFD 32P
IC11	996500029614	IC 52 PIN PT6311(PTC)
Q11	994000000915	XISTR NPN 2SC1623
Q12	994000000921	XISTR PNP 2SA812 HFE:200-400
Q13	994000000921	XISTR PNP 2SA812 HFE:200-400
Q14	994000000921	XISTR PNP 2SA812 HFE:200-400
Q15	994000000921	XISTR PNP 2SA812 HFE:200-400
Q16	994000000921	XISTR PNP 2SA812 HFE:200-400
SN11	994000005472	IRT RECEIVER IRM-2638AF4
LD11	996510004102	LED 3 DIA RED ROUND

REVISION LIST

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Version 1.0
*Initial release