

# Service Service Service



# Service Manual

PROGRESSIVE SCAN



Digital Surround



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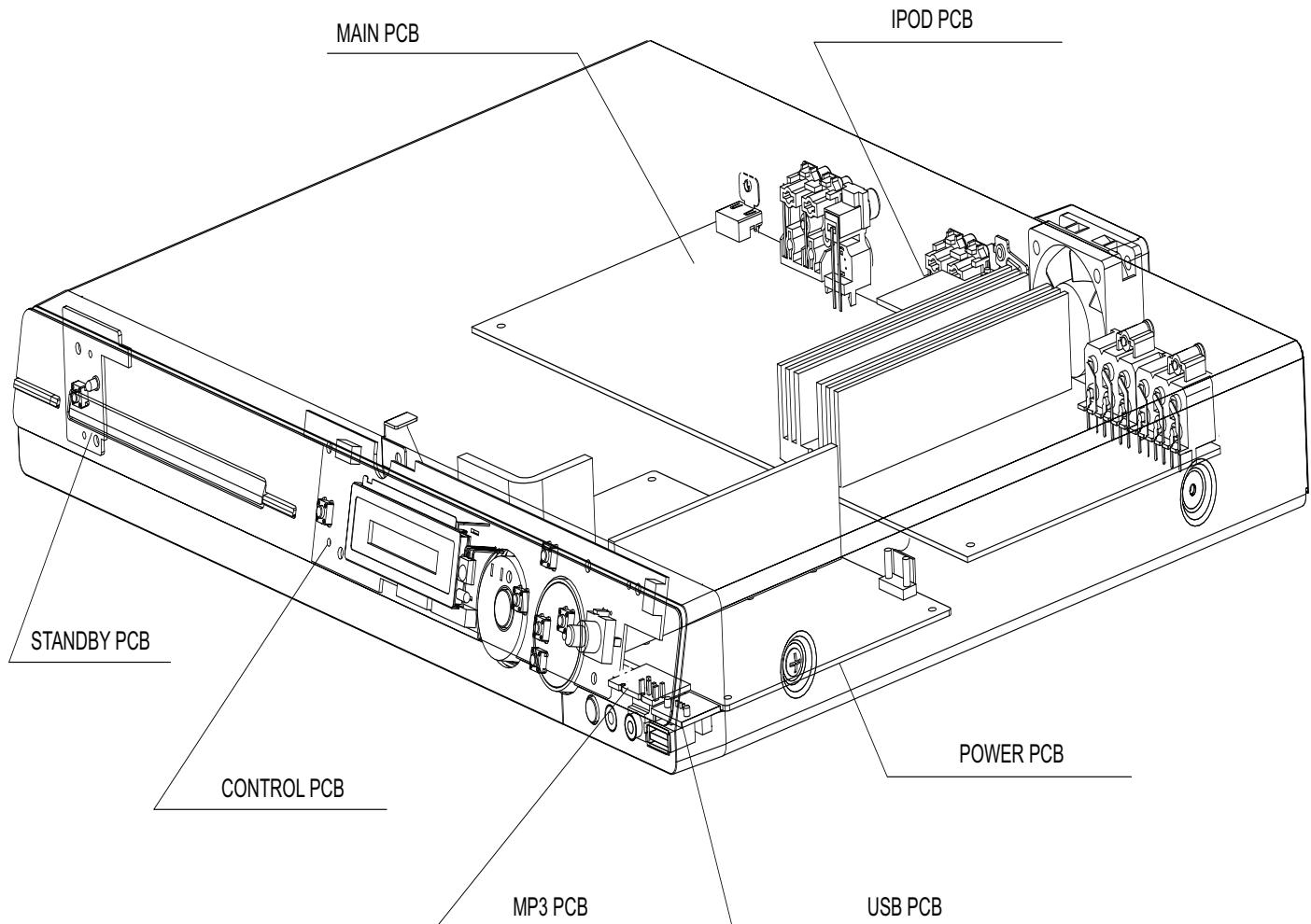
3139 785 32480

Version 1.0



**PHILIPS**

## LOCATION OF PCB BOARDS



## VERSION VARIATION:

Type/Versions	HTS3544
Features & Board in used	/37
Main (Output Power-1000W)	X
Composite Video Out	X
Power Voltage (120V)	X
AC Cord (Fix)	X

# Specifications

## AMPLIFIER

Total output power	
- Home Theater mode	1000 W
- FTC* output power	510 W
Frequency Response	180 Hz – 14 kHz / ±3 dB
Signal-to-Noise Ratio	> 60 dB (A-weighted)
Input Sensitivity	
- AUX In	500 mV
- TV In	250 mV
- MP3 Line-In	500 mV *(1% THD 1kHz)

## RADIO

Tuning Range	FM 87.5–108 MHz (100kHz) ..... AM 530–1700 kHz (10kHz)
26 dB Quieting Sensitivity	FM 22 dBf, AM 5000µV/m
IF Rejection Ratio	FM 60 dB, AM 24 dB
Signal-to-Noise Ratio	FM 50 dB, AM 30 dB
AM Suppression Ratio	FM 30 dB
Harmonic Distortion	FM Mono 3% ..... FM Stereo 3% ..... AM 5%
Frequency Response	FM 180 Hz–10 kHz / ±6 dB
Stereo Separation	FM 26 dB (1 kHz)
Stereo Threshold	FM 23.5 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	NTSC / Multi
Video Format	4:3 / 16:9
Video S/N	56 dB
Composite Video	
Output	1.0 Vp-p, 75Ω
S-Video Output	Y - 1.0 Vp-p, 75Ω ..... C - 0.286 Vp-p, 75Ω
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

## MAIN UNIT

Power Supply Rating	120 V; 60 Hz
Power Consumption	180 W
Low Standby power	< 1 W
Dimensions	435 x 55 x 367 (mm)(w x h x d)
Weight	4.04 kg

## FRONT AND REAR SPEAKERS

System	Full range satellite
Impedance	6 Ω
Speaker drivers	3" full range speaker
Frequency response	150 Hz – 20 kHz
Dimensions	95.5 x 198.3 x 75 (mm) (w x h x d)
Weight	0.62 kg/each

## CENTER SPEAKER

System	Full range satellite
Impedance	3 Ω
Speaker drivers	2 x 2.5" full range woofer, 1 x 2" tweeter
Frequency response	150 Hz – 20 kHz
Dimensions	435 x 93.5 x 67 (mm) (w x h x d)
Weight	1.26kg

## SUBWOOFER

Impedance	3 Ω
Speaker drivers	203 mm (8") woofer
Frequency response	40 Hz – 150 Hz
Dimensions	159.5 x 355.5 x 370 (mm) (w x h x d)
Weight	4.78 kg

Specifications subject to change without prior notice.

# SERVICE AIDS

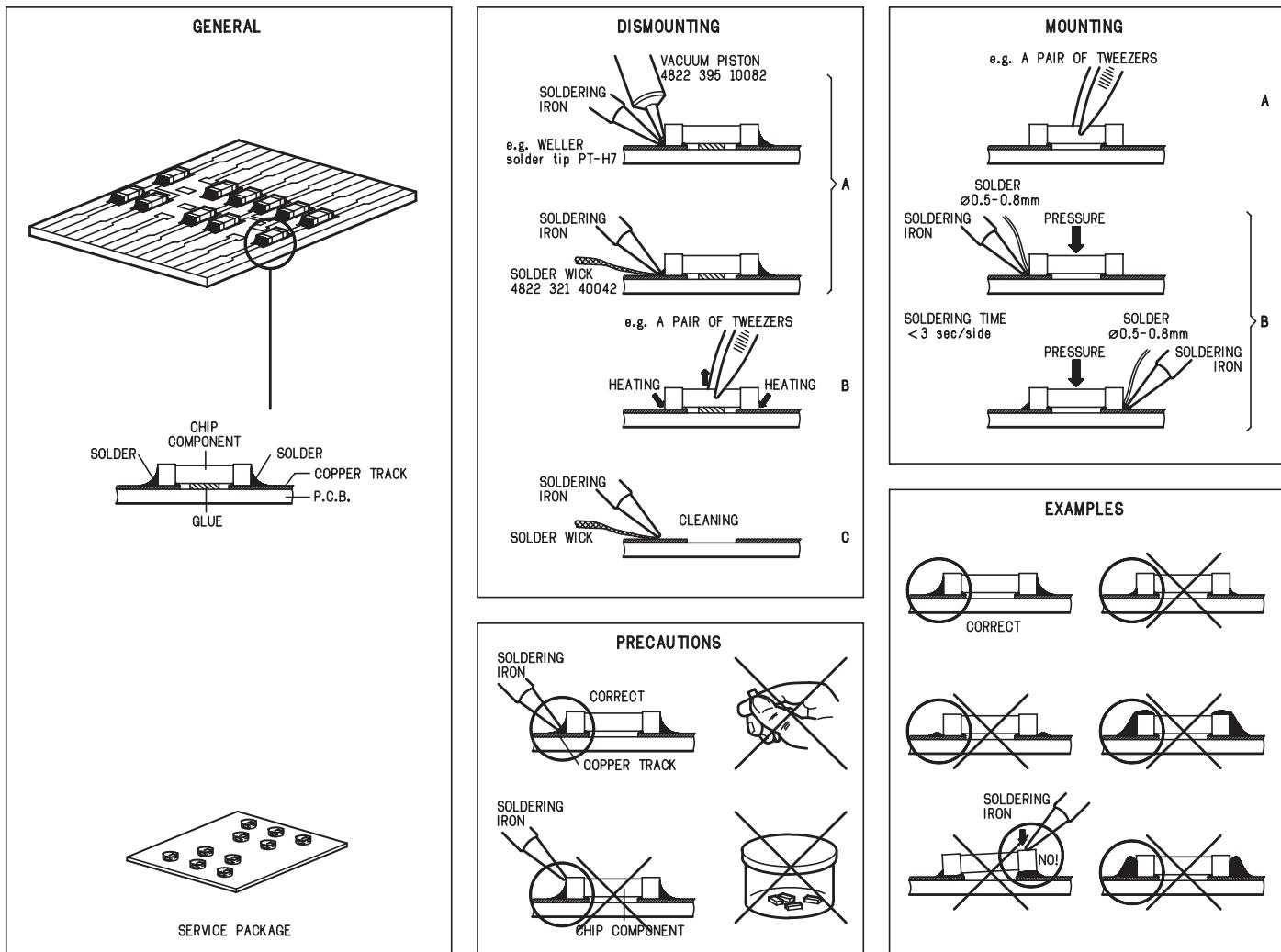
## Service Tools:

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





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 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 ridotta in caso di non osservazione della più grande cauzione alla loro manipolazione. Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza. Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

### (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  $\triangle$ .

### (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  $\triangle$ .

### (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  $\triangle$ .

### (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  $\triangle$  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.

Componenti di sicurezza sono marcati con  $\triangle$ .

### (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 alittiina näkymättömälle laserisäteilylle. Älä katso säteeseen!

### (DK) Advarse !

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.

**IDENTIFICATION:**

Regardless of special logo (not always indicated) 

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

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

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

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

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

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

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

Do not re-use BGAs at all.

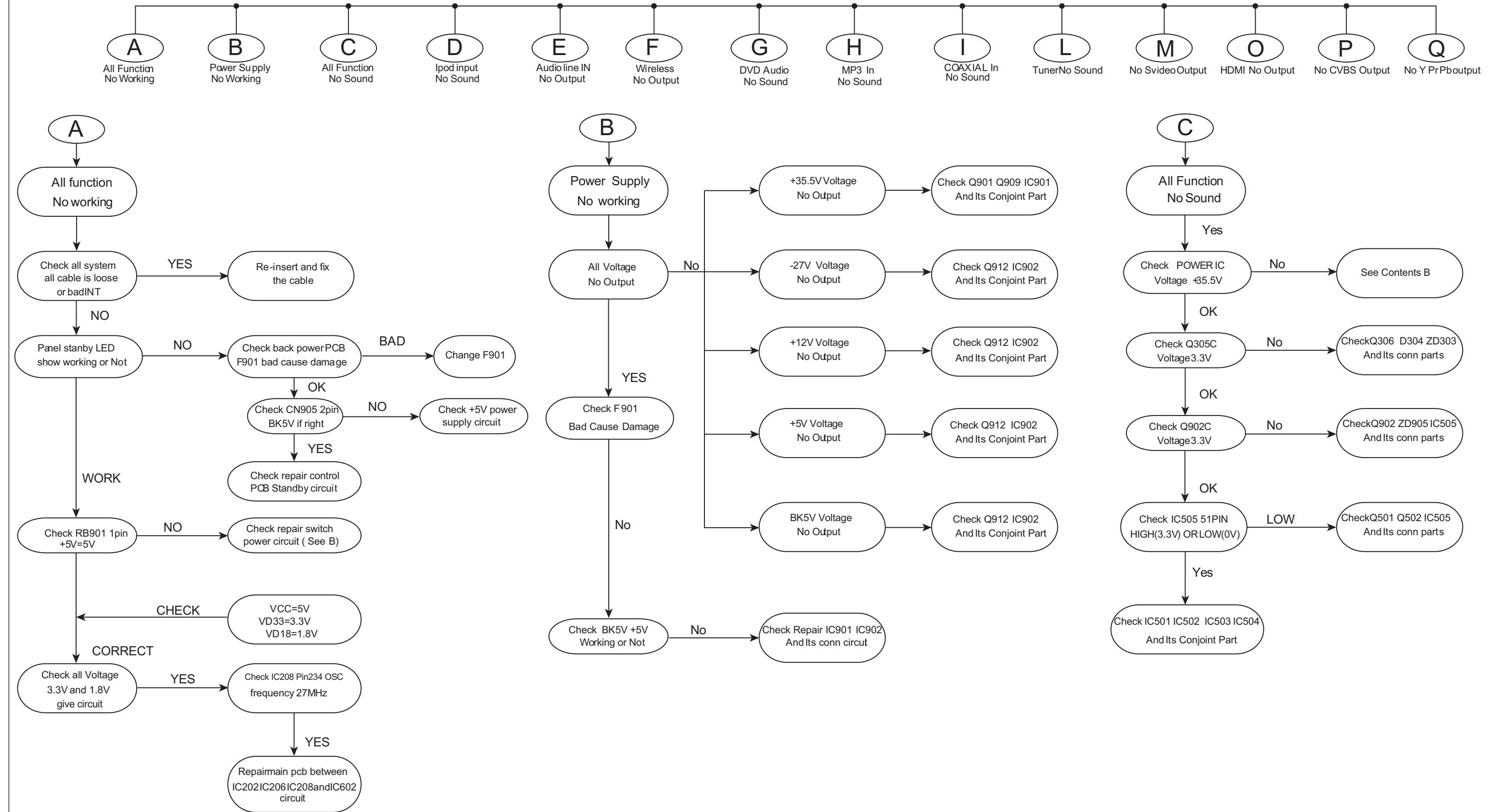
- For sets produced before 1.1.2005 (except products of 2004), containing leaded solder-alloy and components, all needed spare-parts will be available till the end of the service-period. For repair of such sets nothing changes.
- On our website [www.atyourservice.ce.Philips.com](http://www.atyourservice.ce.Philips.com) 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".

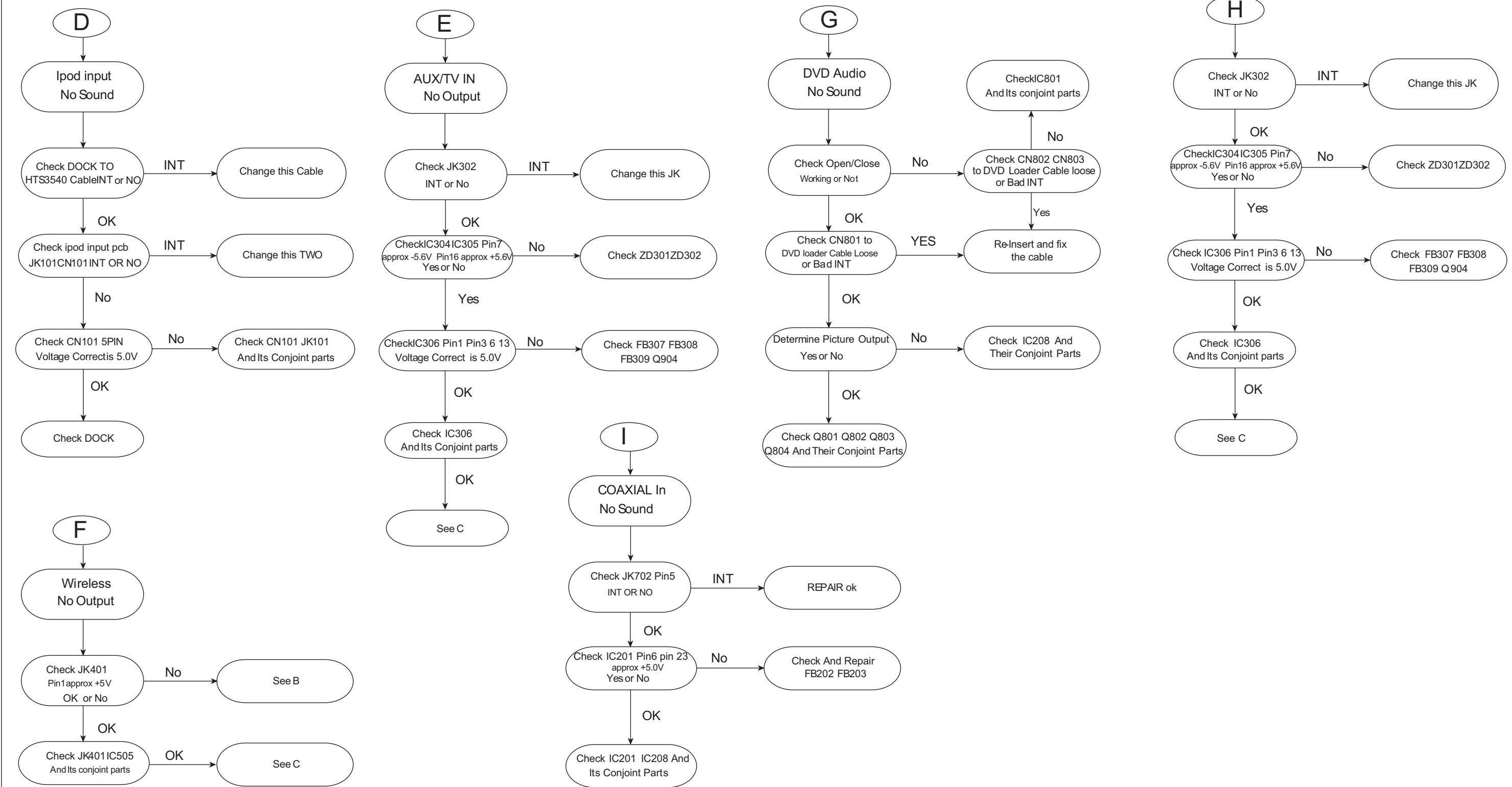
For additional questions please contact your local repair-helpdesk.

## **REPAIR INSTRUCTION (Part One)**

# MAIN UNIT REPAIR CHART 1/ 3

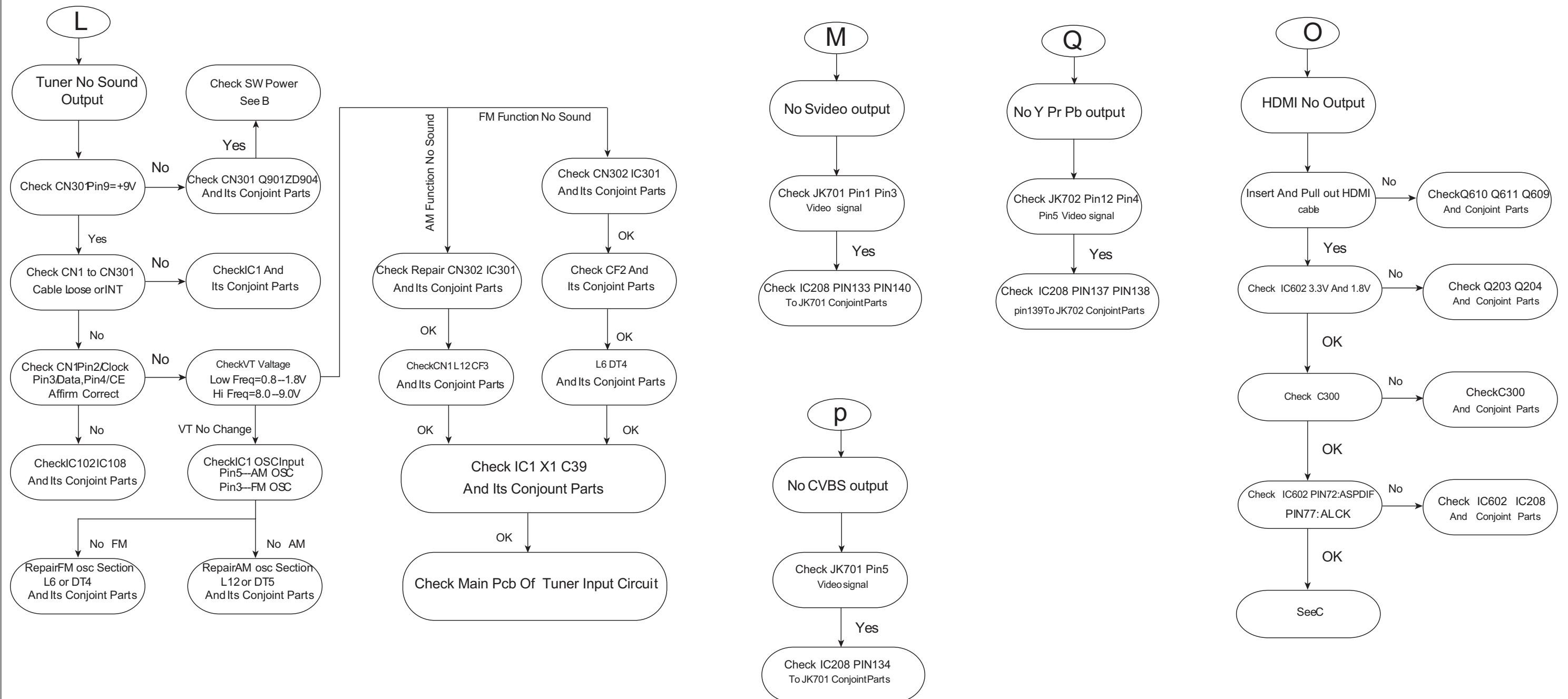


## MAIN UNIT REPAIR CHART 2/3



## **REPAIR INSTRUCTION (Part Three)**

# MAIN UNIT REPAIR CHART 3/3



# DISASSEMBLY INSTRUCTIONS

## Dismantling of the Front Panel Assembly

- 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.

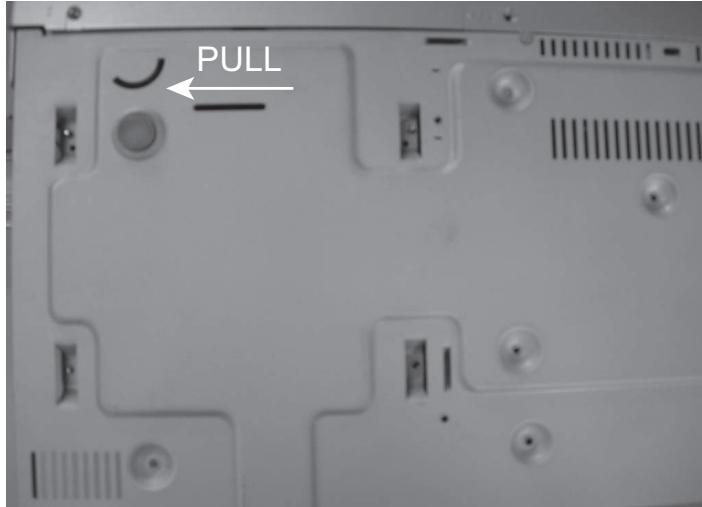


Figure 1



Figure 2

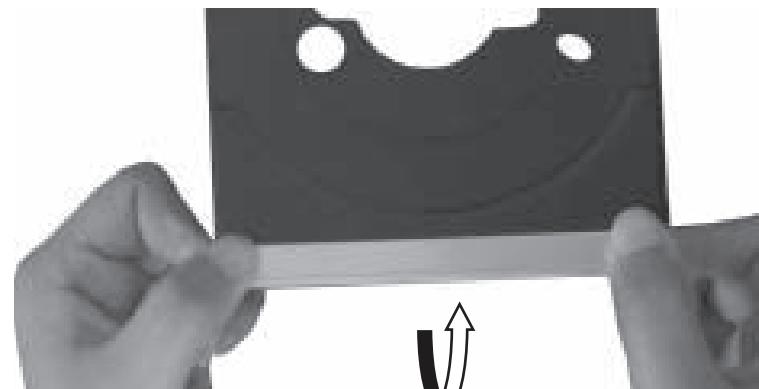


Figure 3

3 - 1

- 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.
- 3) Loosen 5 screws and remove the Top Cover by lifting the rear portion upwards before sliding it out towards the rear.  
- 3 screws on the back  
- 1 screws each on the left & right side
- 4) Loosen 5 screws & lift up the top edge of Front Panel assembly to free some catches before sliding it out towards the front.  
- 3 screws on the bottom  
- 1 screw each on the left & right side

3 - 1

## Dismantling of the Main PCB

- 2) Loosen 3 screw "A" on the top of main board as shown in figure 4.
- 1) Loosen 7 screw "B" at the back panel as shown in figure 5.

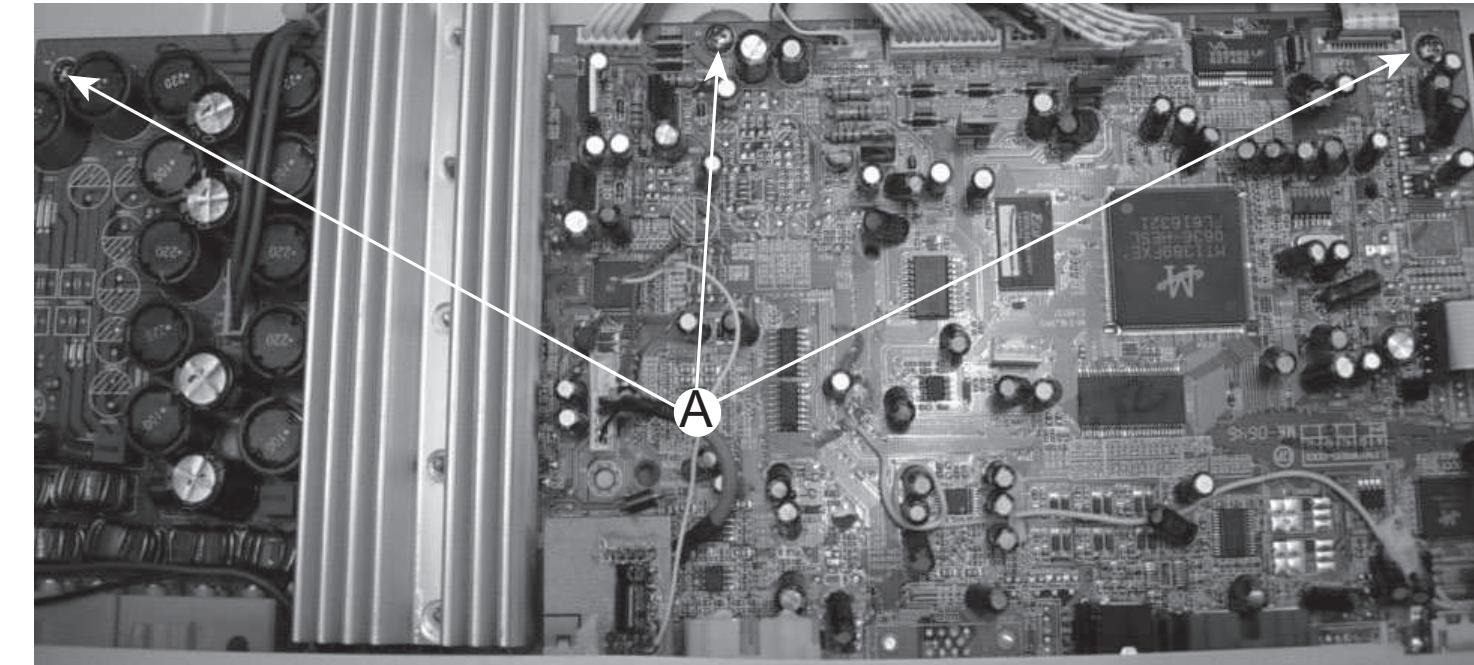


Figure 4

## Dismantling of the iPod Board

- 1) Loosen 1 screws "C" at the back pance as shown in figure5

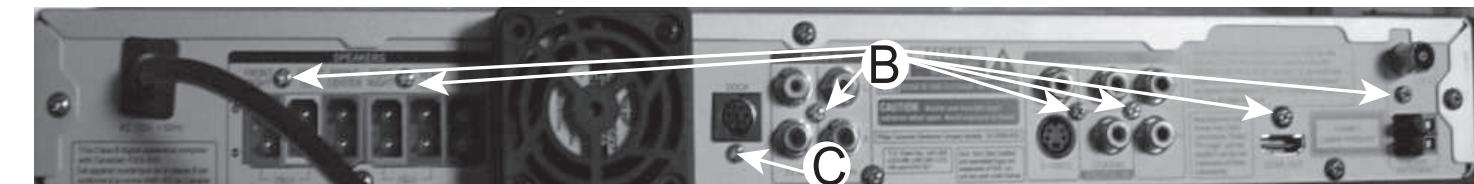


Figure 5

**Dismantling of the Control Board**

- 1) Loosen 10 screws "E" at the back pance as shown in figure 6

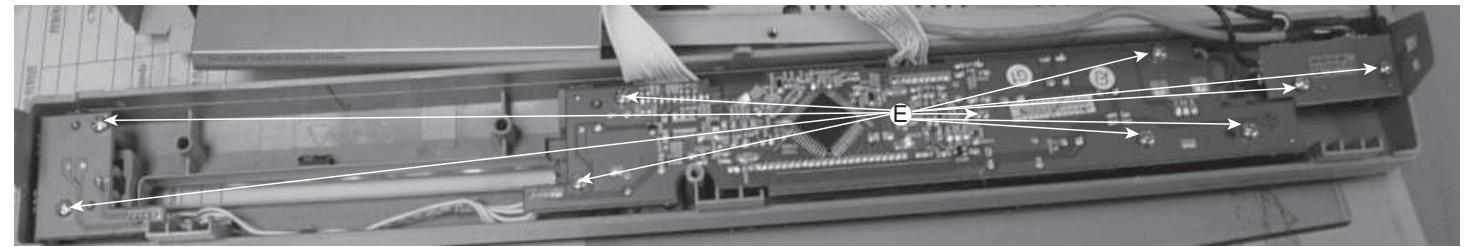


Figure 6

**Dismantling of the Power Board**

- 1) Loosen 5 screws "D" at the top of the Power Board as shown in figure 7

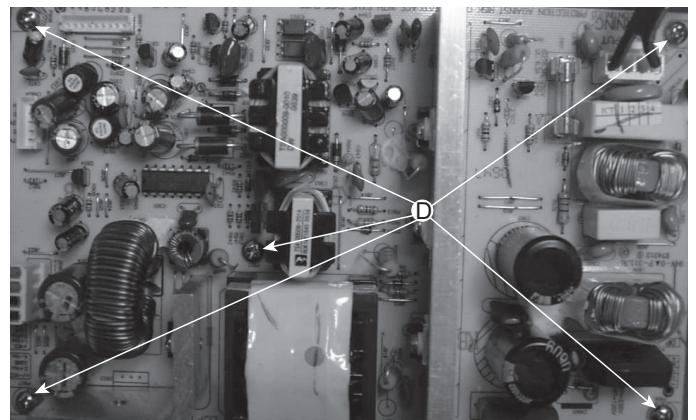


Figure 7

**Dismantling of the DVD Module**

- 1) Loosen 4 screws "F" to remove the DVD Module as shown in figure 8.

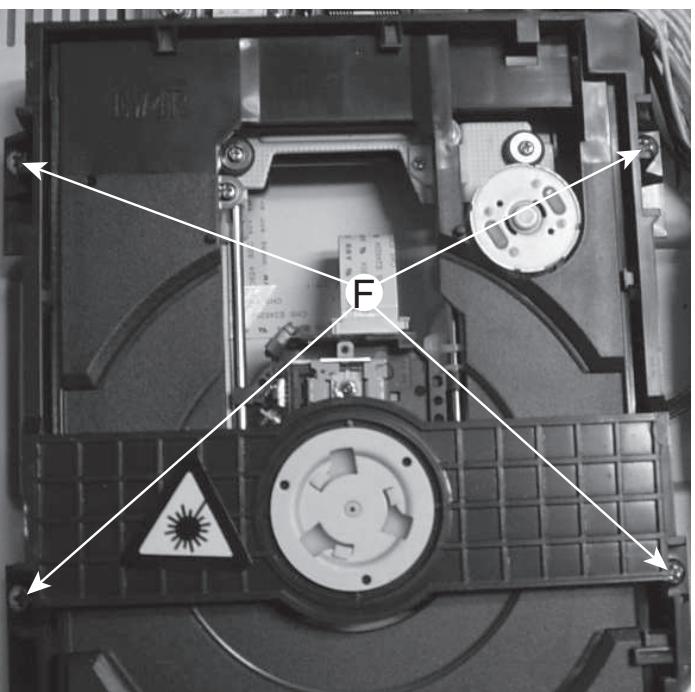
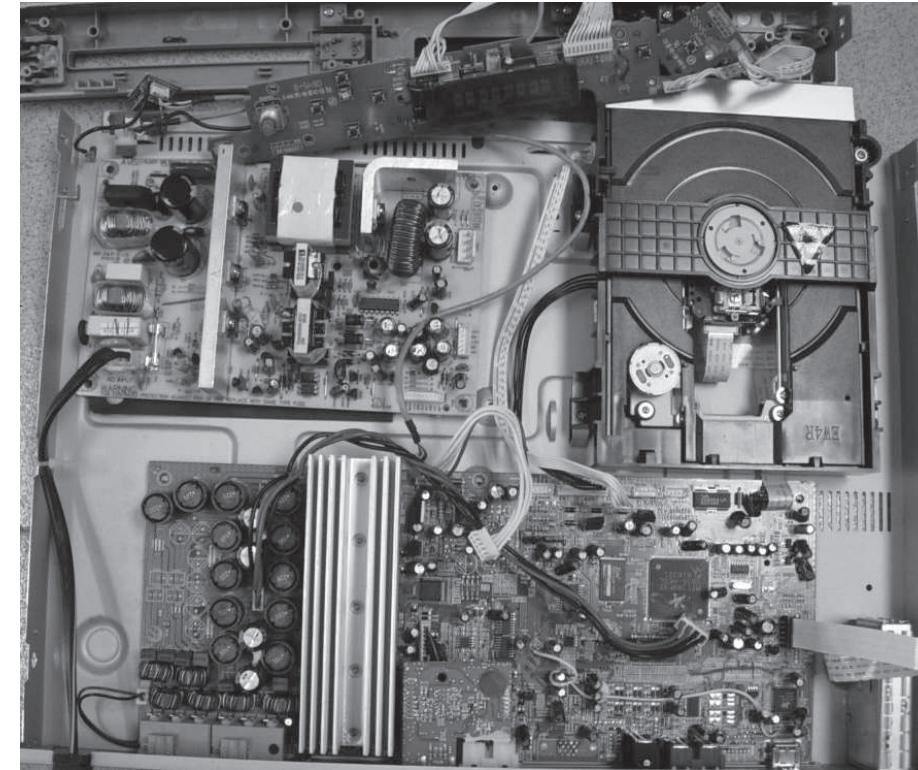


Figure 8

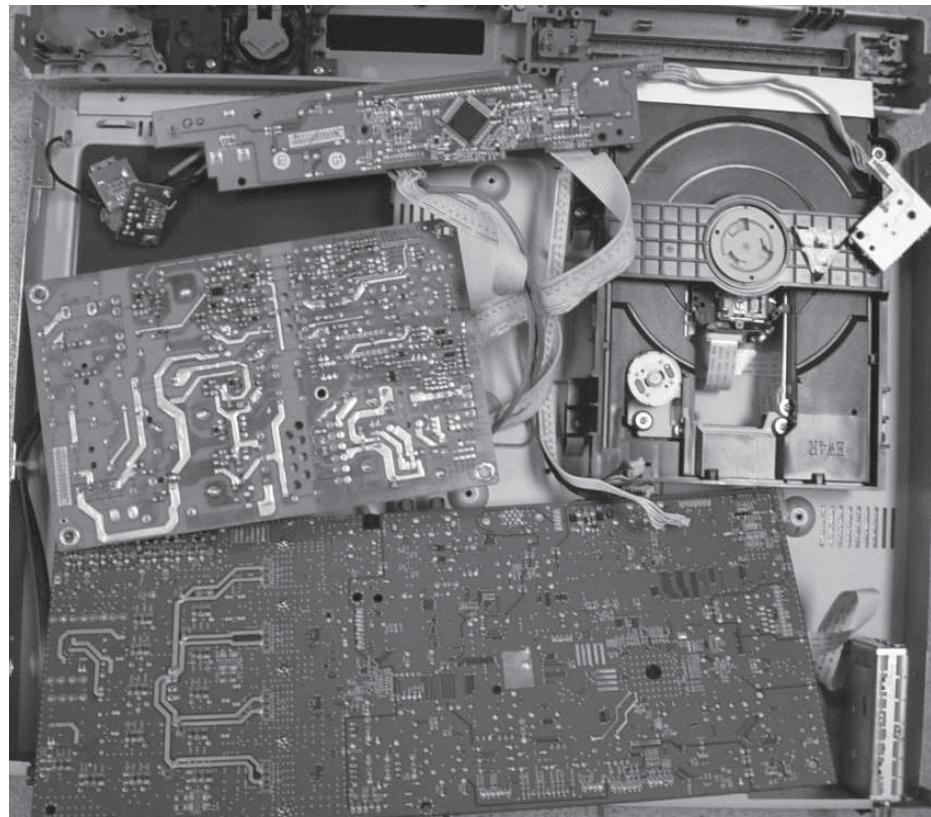
**SERVICE POSITIONS**

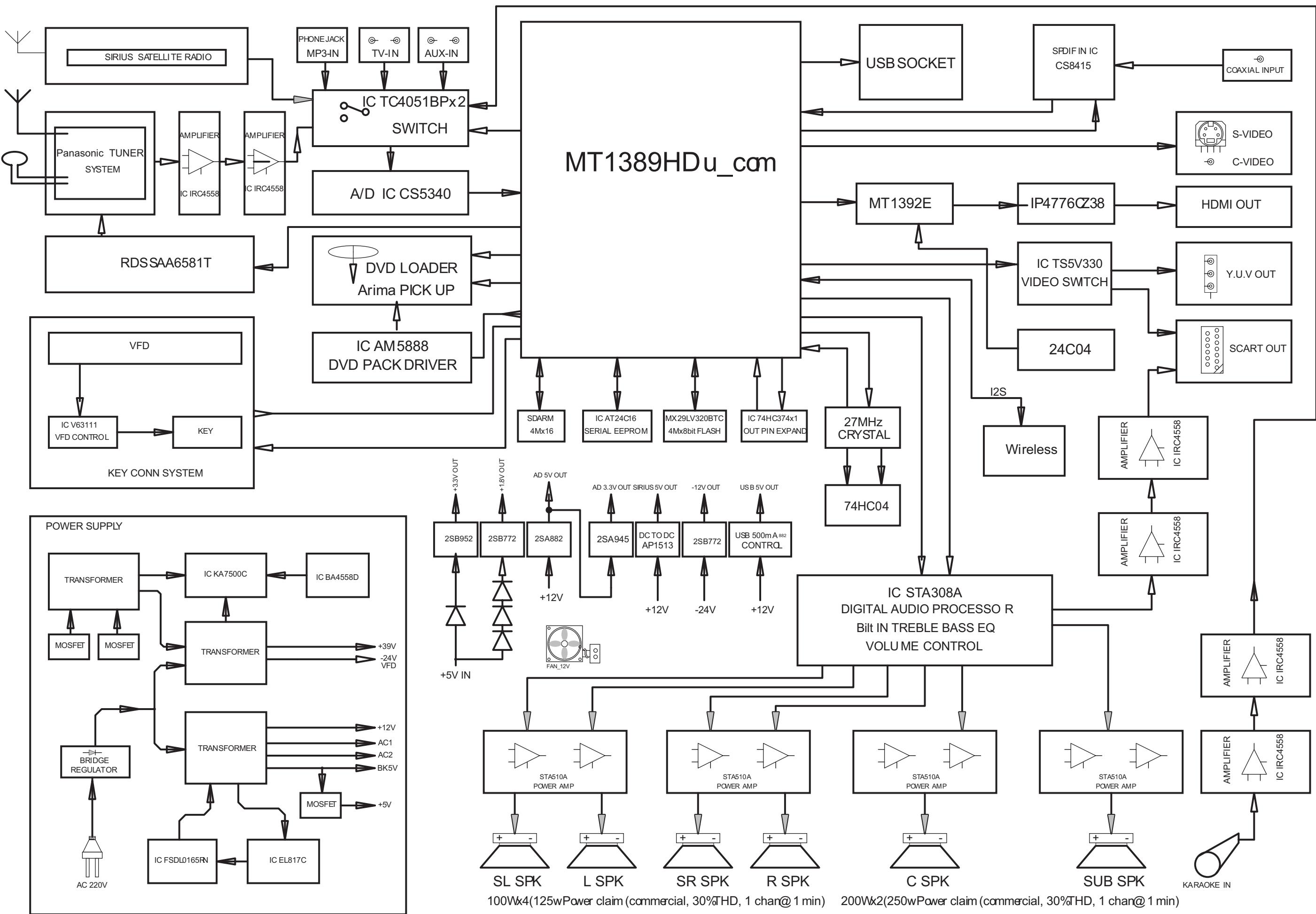
Service position A



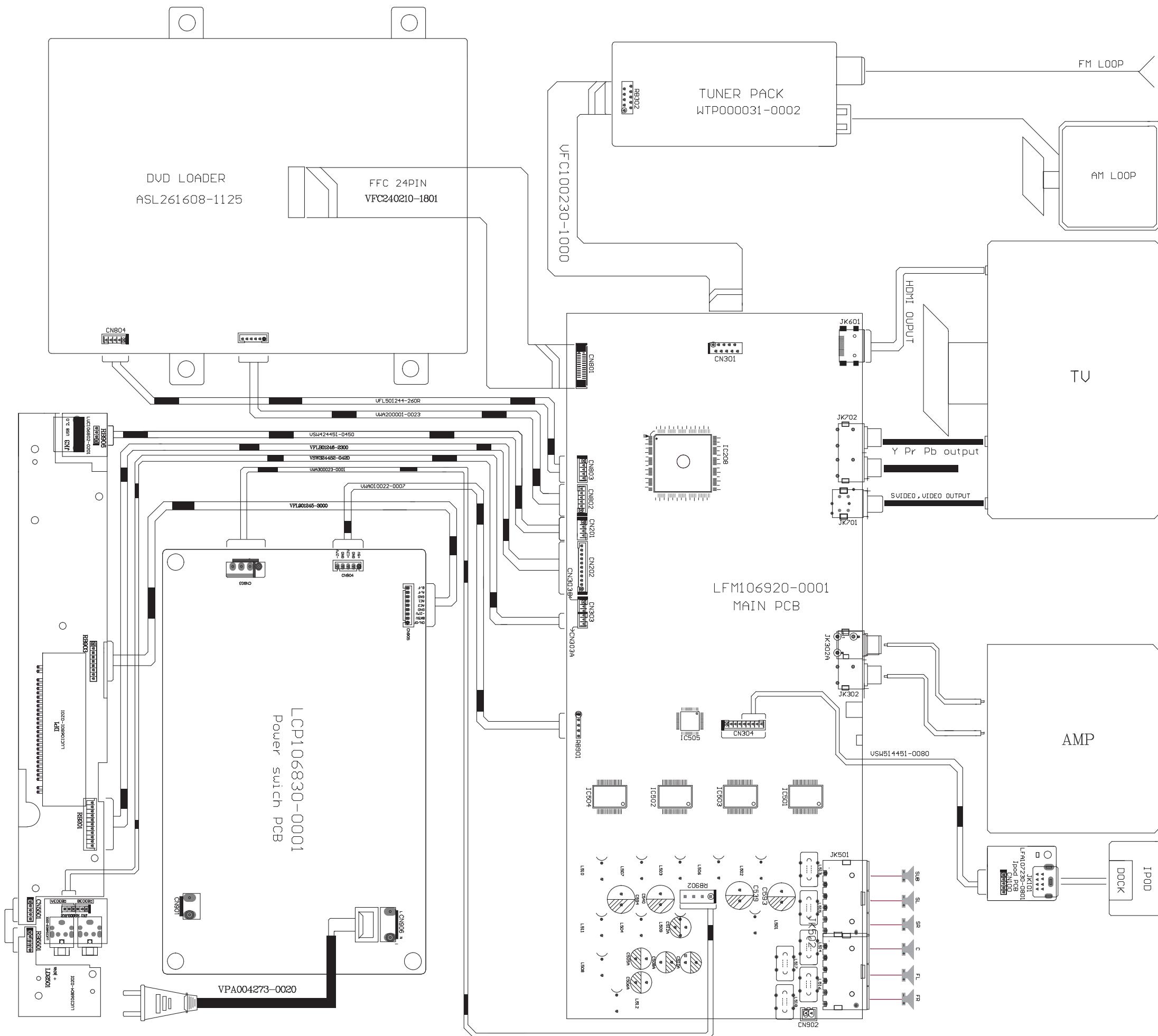
Note: In some service positions the components or copper patterns of one board may risk touching its neighbouring pc boards or metallic parts. To prevent such short-circuit use a piece of hard paper or other insulating material between them.

Service position B



**BLOCK DIAGRAM**

## **WIRING DIAGRAM**



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# IPOD BOARD

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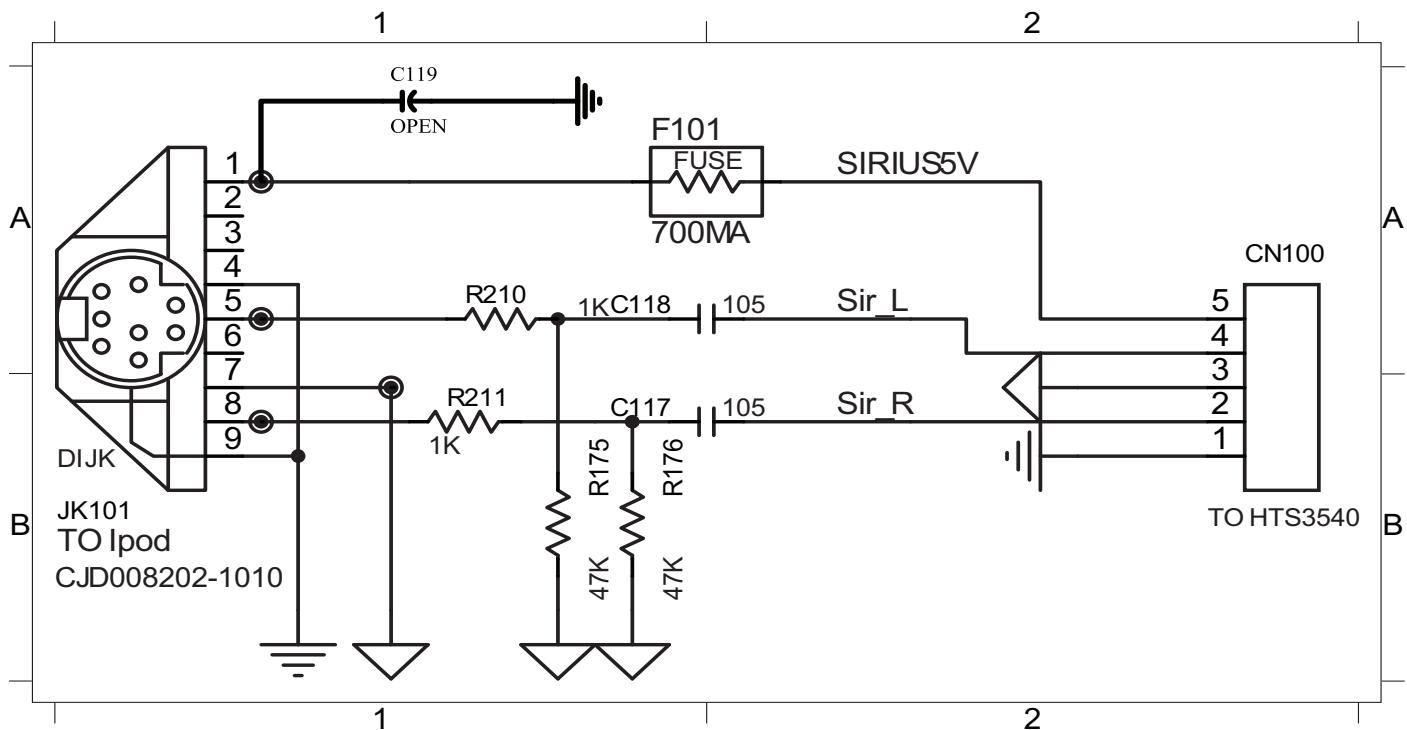
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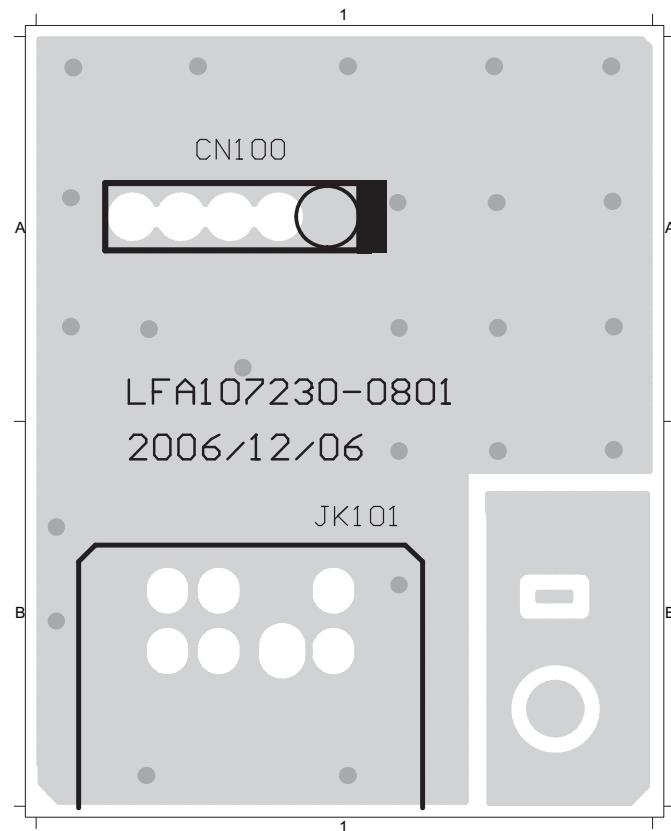
# CIRCUIT DIAGRAM

C117 B1 CN100 A2 R175 B1 R210 A1  
 C118 A1 F101 A1 R176 B1 R211 A1



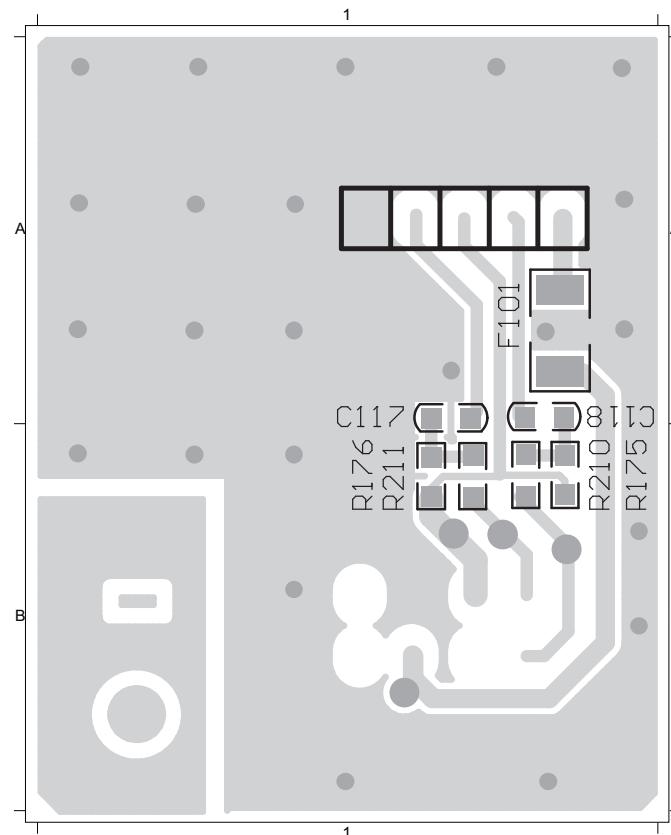
## PCB LAYOUT TOP VIEW

CN100 A1  
JK101 B1



## PCB LAYOUT Bottom VIEW

C117 B1 F101 A1 R176 B1 R211 B1  
C118 B1 R175 B1 R210 B1

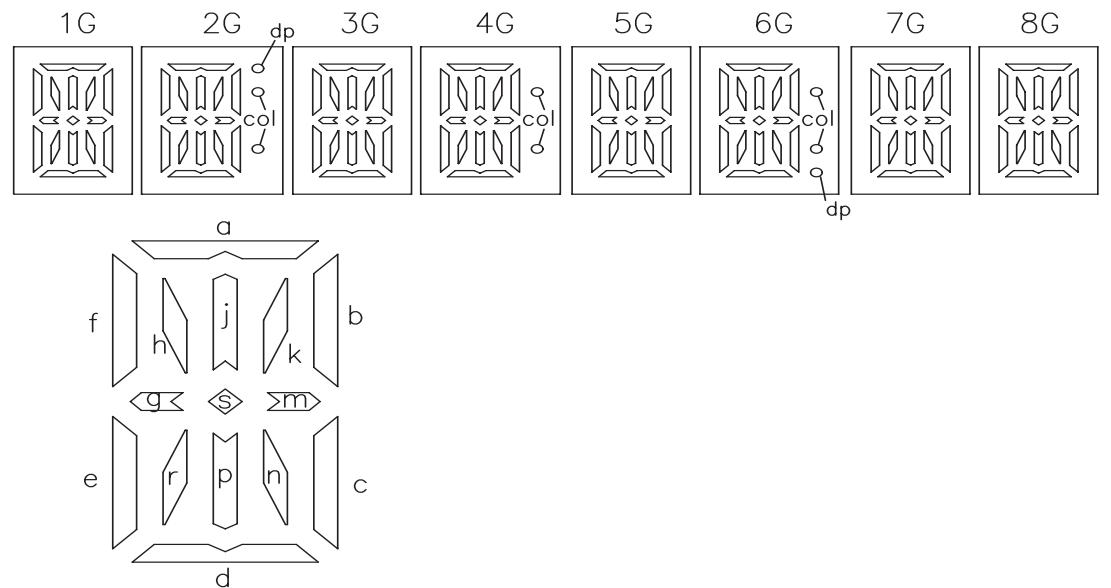


# CONTROL BOARD

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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							
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	—	dp	—	col	—	col	—	—
P15	s	s	s	s	s	s	s	s
P16	—	col	—	—	—	dp	—	—

## PIN CONNECTION

PIN NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
CONNECTION	F	F	NP	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12
PIN NO.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
CONNECTION	P13	P14	P15	P16	1G	2G	3G	4G	5G	6G	7G	8G	NP	F	F

Note: F: Filament P: Anode G: Grid NP: No pin

**VOLTAGE**

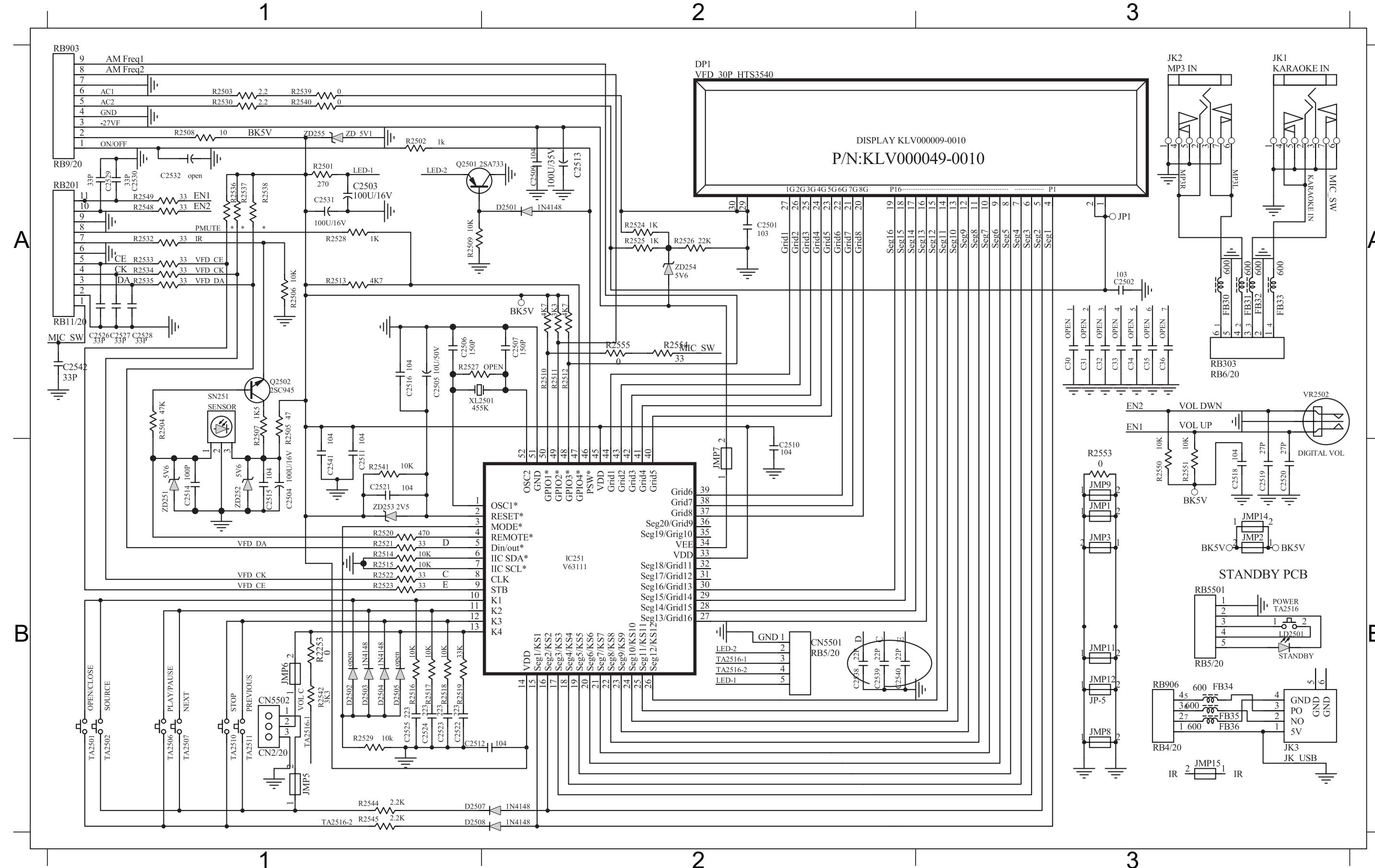
IC251																				
Pin NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	4.70	-23.00	-26.00	-23.00	-23.00	-21.00	-21.00	-23.00	-23.00	-21.00	-21.00	-23.00	-23.00	-23.00	-21.00	-26.00	-26.00	-23.00	4.70	
Pin NO	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Voltage	-26.00	-23.00	-23.00	-22.00	-22.00	-24.00	-24.00	-24.00	-24.00	-24.00	4.70	4.70	0.00	0.00	0.00	4.70	0.00	2.30	2.30	
Pin NO	41	42	43	44	45	46	47	48	49	50	51	52								
Voltage	4.70	0.00	4.00	3.20	0.00	0.00	3.20	3.20	0.00	0.00	0.00									

Q2501			
Pin NO	b	c	e
Voltage	4.10	0.00	3.60

Q2502			
Pin NO	b	c	e
Voltage	4.30	4.10	3.70

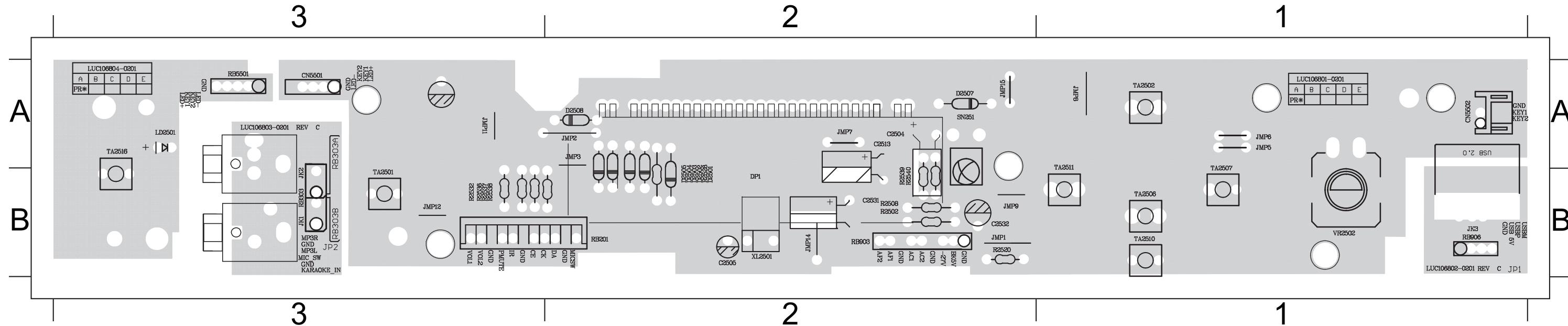
**CIRCUIT DIAGRAM**

C2501 A3	C2509 A2	C2515 B1	C2522 B1	C2528 A1	C2540 B2	D2507 B1	FB35 B3	JMP11 B3	LD2501 B3	R2503 A1	R2509 A1	R2517 B1	R2523 B1	R2530 A1	R2540 A1	R2549 A1	RB903 A1	TA2507 B1	ZD251 B1
C2502 A3	C2510 B2	C2516 A1	C2523 B1	C2529 A1	C2541 B1	D2508 B1	FB36 B3	JMP12 B3	JMP6 B1	Q2501 A1	R2504 A1	R2518 B1	R2524 A2	R2532 A1	R2541 B1	R2553 B3	RB906 B3	TA2510 B1	ZD252 B1
C2504 B1	C2511 B1	C2518 B3	C2524 B1	C2530 A1	C2542 A1	DP1 A2	IC251 B2	JMP14 B3	JMP7 B2	Q2502 A1	R2505 A1	R2519 B1	R2525 A2	R2533 A1	R2542 B1	R2554 A2	SN251 A1	TA2511 B1	ZD253 B1
C2505 A1	C2512 B1	C2519 B3	C2525 B1	C2531 A1	D2501 A2	FB30 A3	JK2 A3	JMP15 B3	JMP8 B3	R2253 B1	R2506 A1	R2514 B1	R2526 A2	R2534 A1	R2544 B1	RB201 A1	TA2501 B1	ZD254 A2	
C2506 A1	C2513 A2	C2520 B3	C2526 A1	C2538 B2	D2503 B1	FB31 A3	JK3 B3	JMP2 B3	JMP9 B3	R2501 A1	R2507 A1	R2515 B1	R2521 B1	R2528 A1	R2545 B1	RB303AA3	TA2502 B1	VR2502A3	
C2507 A2	C2514 B1	C2521 B1	C2527 A1	C2539 B2	D2504 B1	FB34 B3	JMP1 B3	JMP3 B3	JP1 A3	R2508 A1	R2509 A1	R2516 B1	R2522 B1	R2529 B1	R2548 A1	RB501B3	TA2506 B1	ZD255 A1	

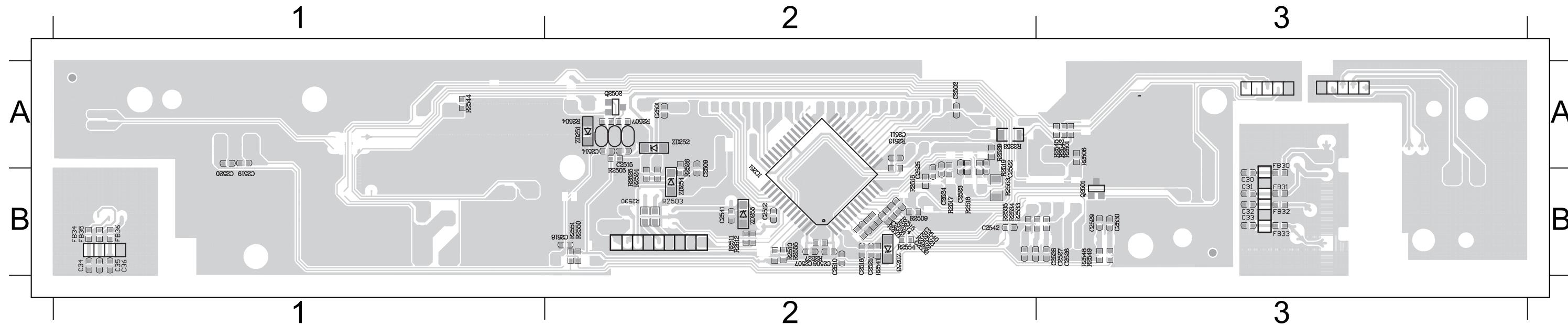


**PCB LAYOUT - TOP VIEW**

C2504	A2	C2531	B2	D2504	B2	DP1	B2	JMP1	B2	JMP14	B2	JMP3	A2	JMP7	A2	JP1	B1	R2502	B2	R2528	B2	R2540	B2	RB5501	A3	SN251	A2	TA2506	B1	TA2511	B1	XL2501	B2
C2505	B2	D2501	B2	D2507	A2	JK2	B3	JMP11	A3	JMP15	A2	JMP5	A1	JMP8	A1	JP2	B3	R2508	B2	R2532	B3	RB201	B2	RB903	B2	TA2501	A3	TA2507	B1	TA2516	A3		
C2513	A2	D2503	B2	D2508	A2	JK3	B1	JMP12	B3	JMP2	A2	JMP6	A1	JMP9	B2	LD2501	A3	R2520	B2	R2539	B2	RB303A	B3	RB906	B1	TA2502	A1	TA2510	B1	VR2502	B1		

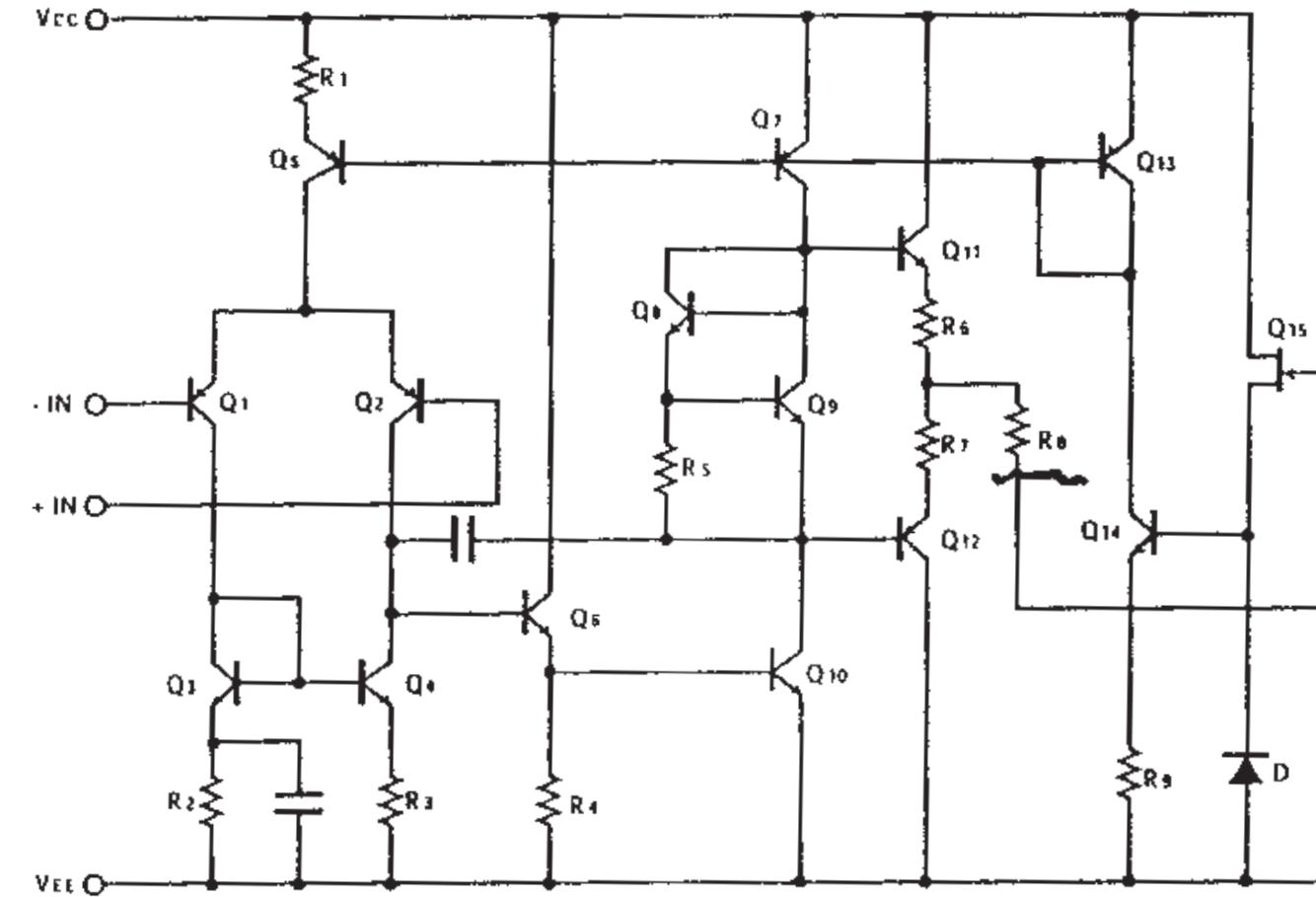
**PCB LAYOUT - BOTTOM VIEW**

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C2502	A2	C2510	B2	C2515	A2	C2520	B1	C2524	B2	C2528	B3	C2539	B2	FB30	B3	FB36	B1	R2253	A2	R2505	B2	R2510	B2	R2516	B2	R2521	B2	R2525	B2	R2533	B2	R2542	A3	R2549	B3	ZD252	A2		
C2506	B2	C2511	A2	C2516	B2	C2521	B2	C2525	A2	C2529	B3	C2540	B2	FB31	B3	IC251	B2	R2501	A3	R2506	A3	R2513	A2	R2517	B2	R2522	B2	R2526	B2	R2534	B2	R2544	A1	R2553	B2	ZD253	B2		
C2507	B2	C2512	B2	C2518	B2	C2522	B2	C2526	B3	C2530	B3	C2541	B2	FB34	B1	Q2501	B3	R2503	B2	R2507	A2	R2514	B2	R2518	B2	R2523	B2	R2529	A2	R2535	B2	R2545	A3	R2554	B2	ZD254	B2		

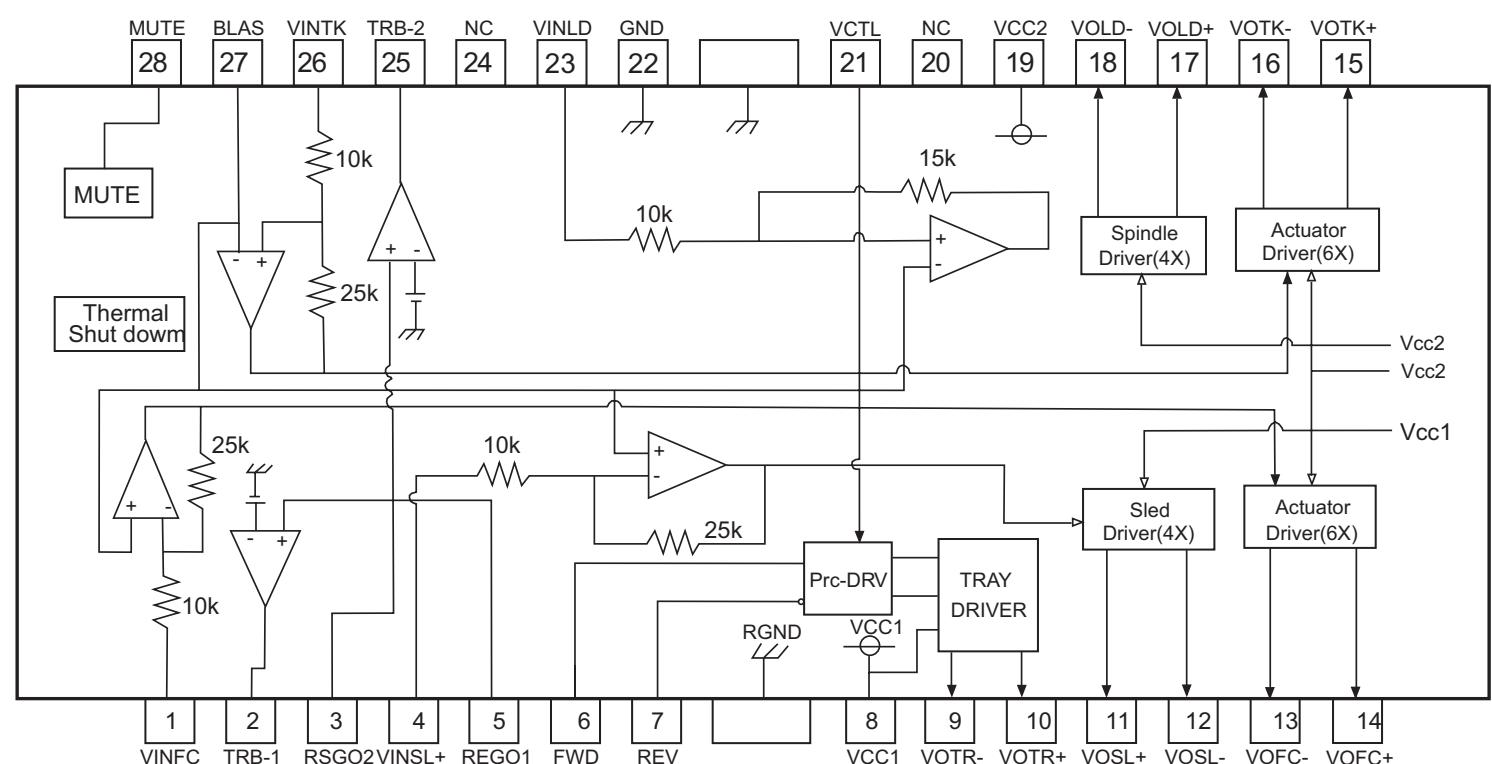


7 - 1  
INTERNAL IC DIAGRAM - CO4558A HOSP**MAIN BOARD**

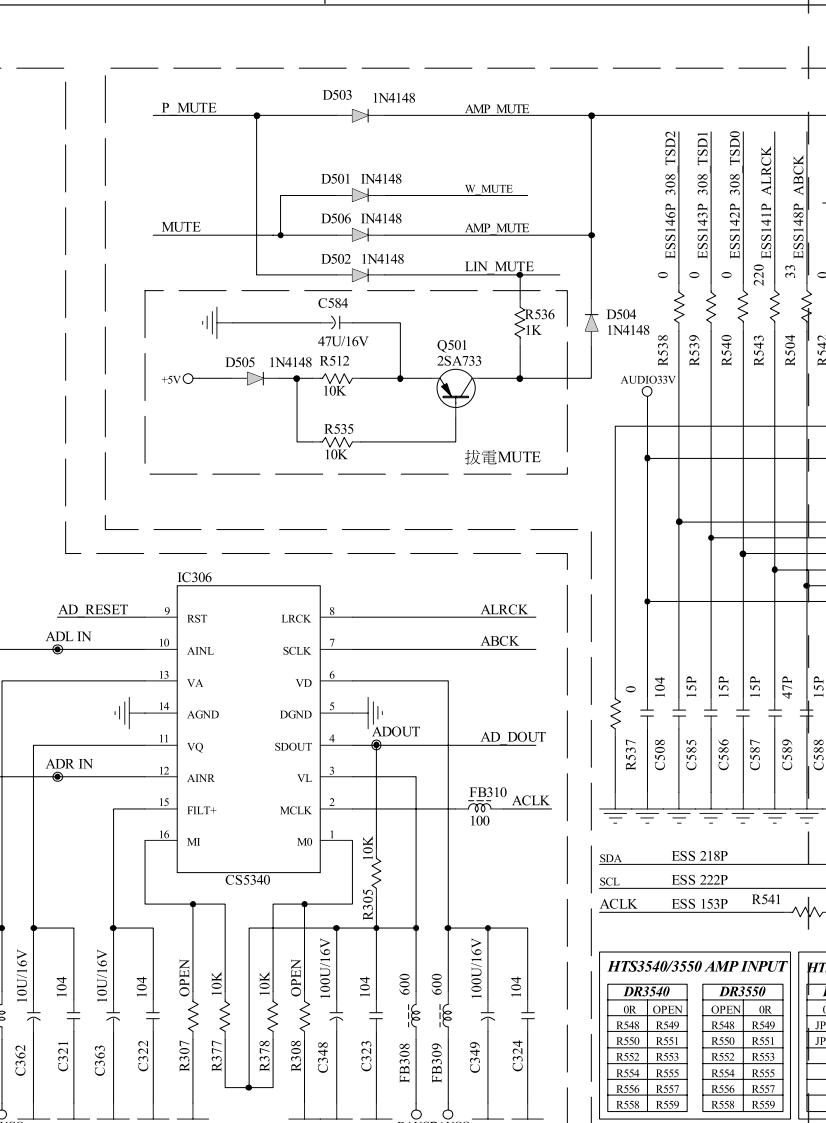
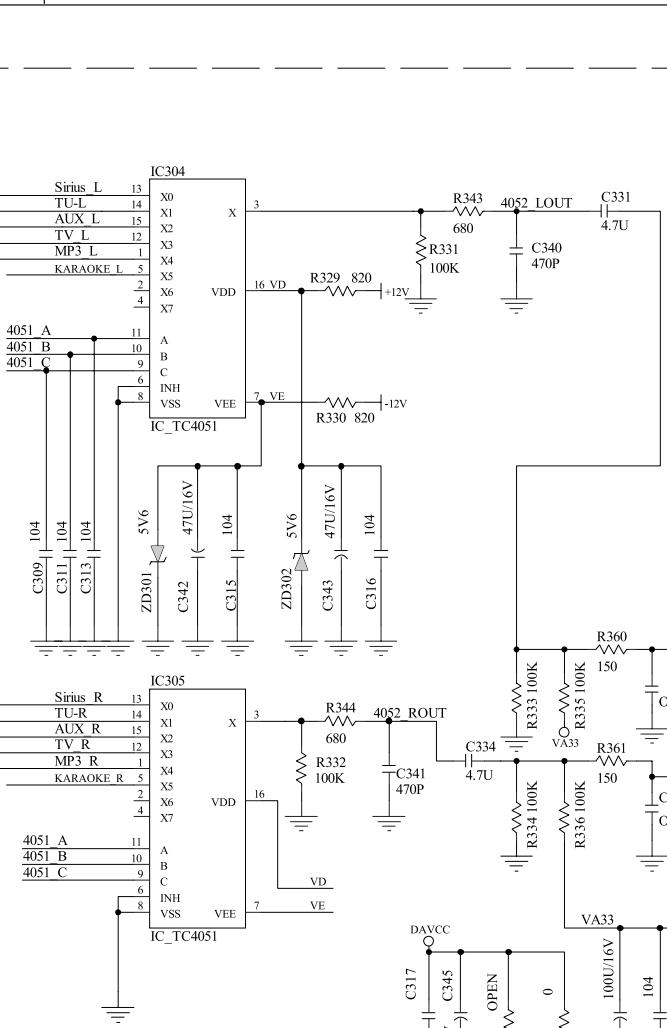
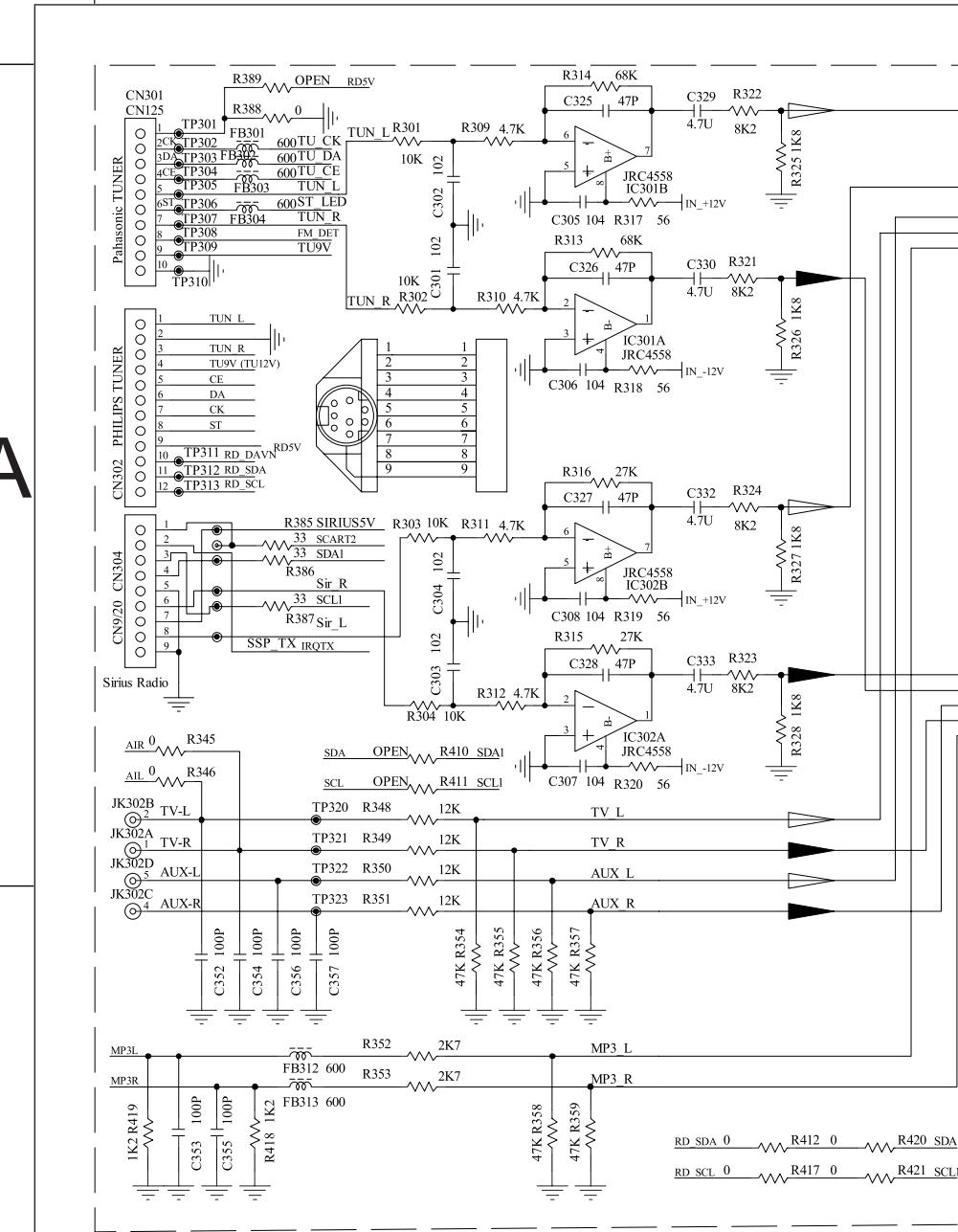
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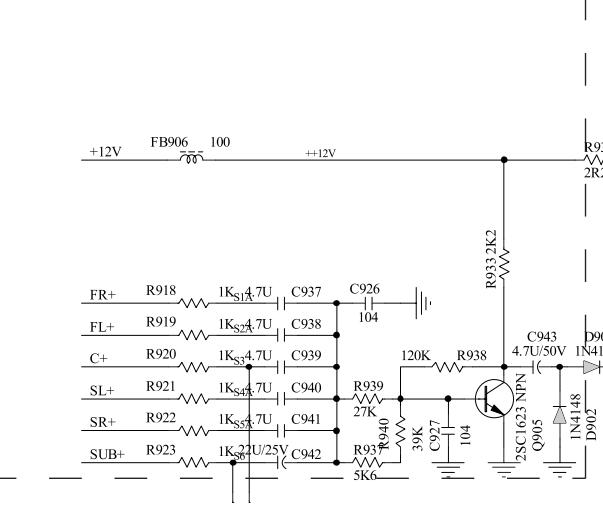
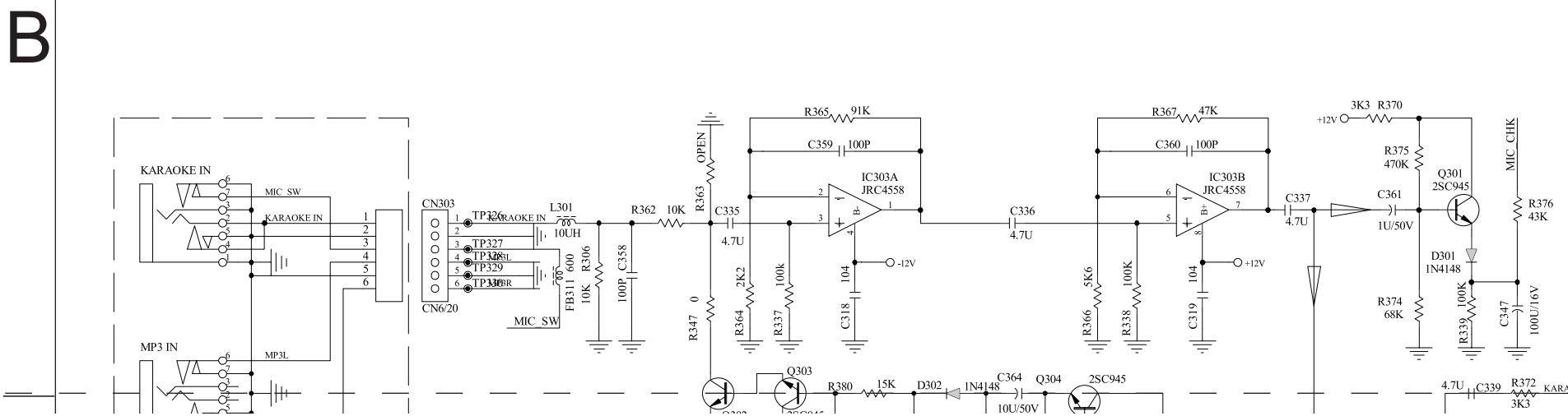
## INTERNAL IC DIAGRAM - V5888S HOSP



## Circuit Diagram (Amplifier - Top Left)



## AUX/TUNER/Satellite RADIO IN+AD



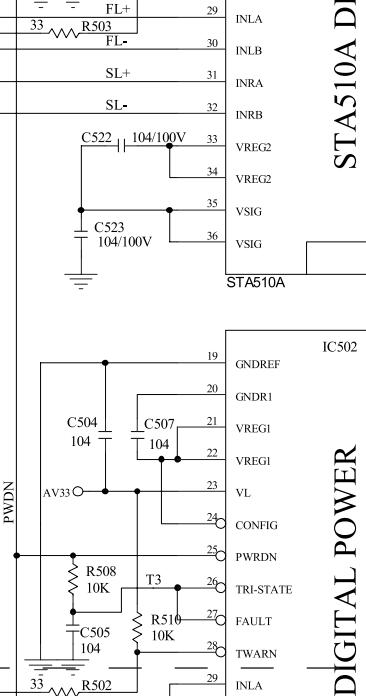
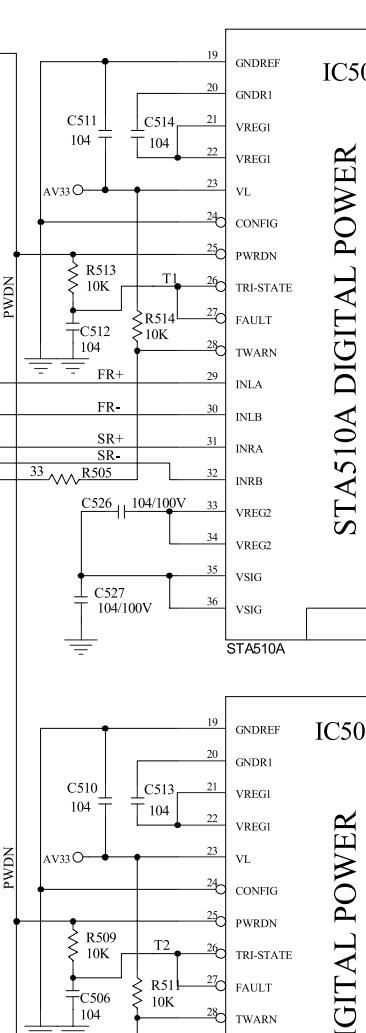
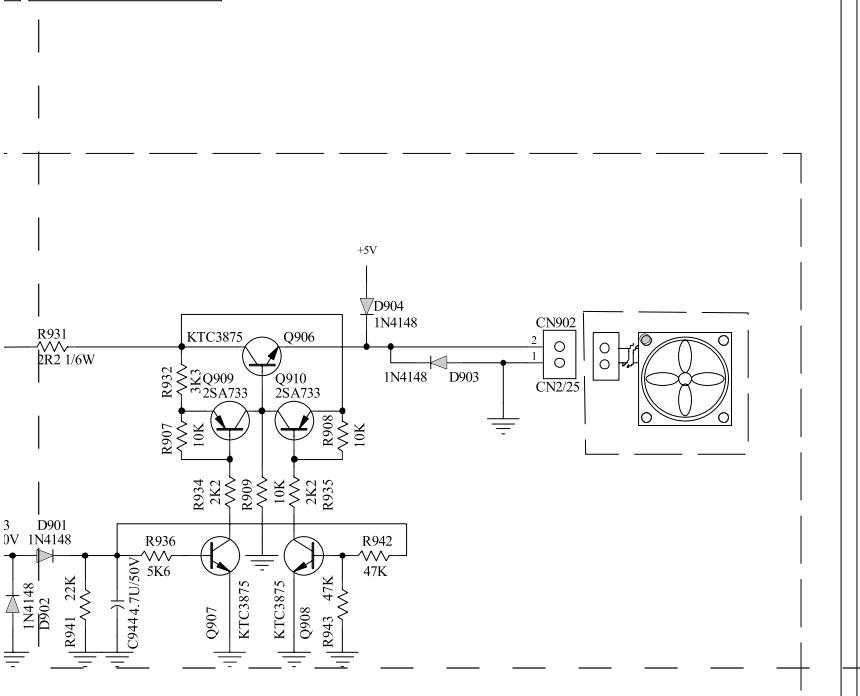
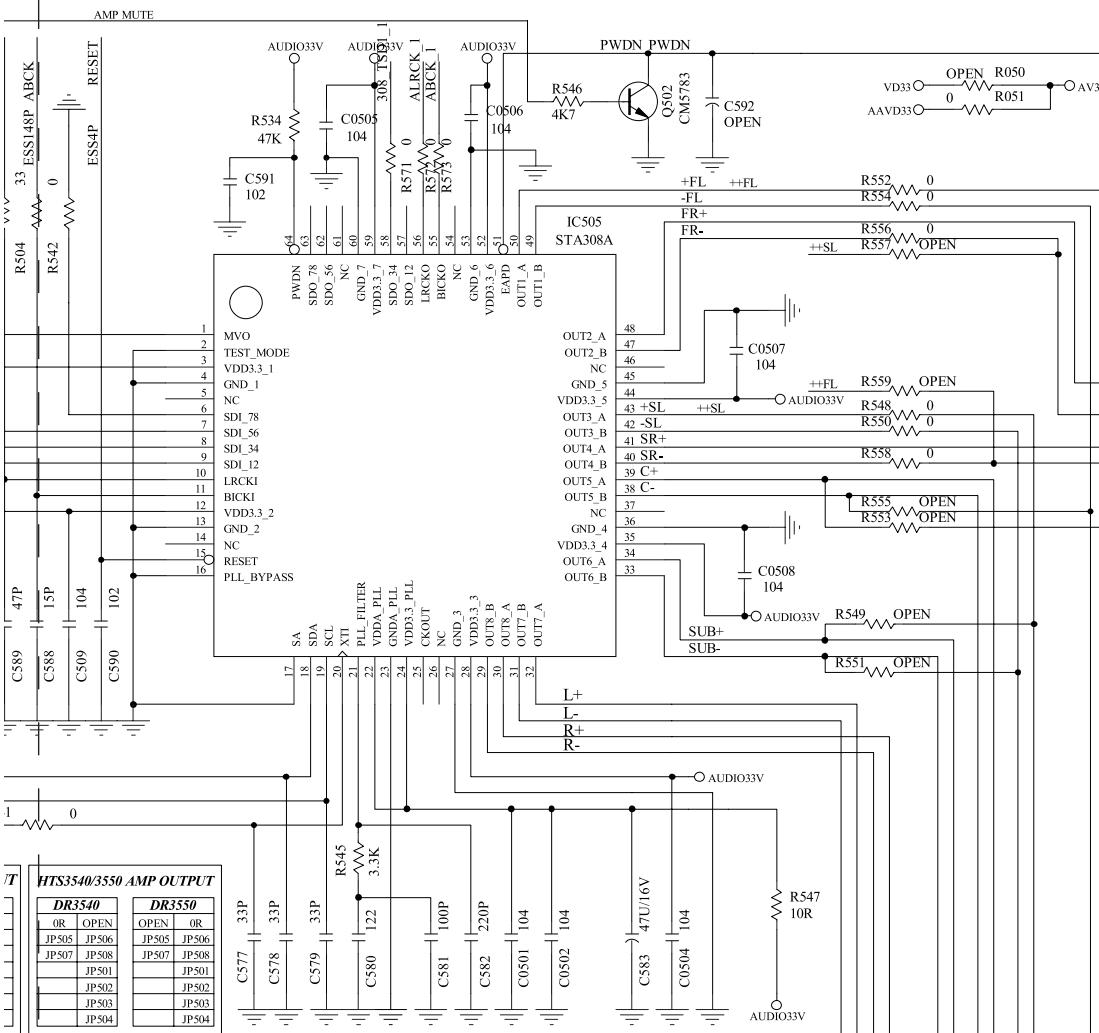
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C0103	D4	C532	C5	C924	D1
C0104	D4	C533	B5	C925	D2
C0105	D4	C534	C5	C926	B3
C0106	D4	C535	B5	C927	B3
C0107	D4	C536	B5	C928	D1
C0109	D4	C537	A5	C929	D1
C0110	D4	C538	A5	C930	D2
C0111	D4	C539	C5	C931	D2
C0112	D4	C540	B5	C932	D1
C0113	D4	C541	C5	C933	D2
C0114	D4	C542	B5	C935	D2
C0115	D5	C543	B5	C936	D2
C0116	D5	C544	B5	C937	B3
C0117	D5	C545	A5	C938	B3
C0118	D5	C546	A5	C939	B3
C0119	D5	C547	C5	C940	B3
C0120	D5	C548	C5	C941	B3
C0121	D5	C549	C5	C942	B3
C0501	B3	C550	C5	C943	B3
C0502	B4	C551	B5	C944	B3
C0504	B4	C552	B5	C945	C2
C0505	A3	C553	B5	C947	D1
C0506	A3	C554	B5	C952	C2
C0507	A4	C555	B5	C953	C2
C0508	A4	C556	B5	C955	D1
C301	A1	C557	B5	C956	D1
C302	A1	C558	B5	CE501	C5
C303	A1	C559	B5	CE502	C5
C304	A1	C560	A5	CE503	C5
C305	A1	C561	A5	CE504	C5
C306	A1	C562	A5	CE505	C5
C307	A1	C563	A5	CE506	C5
C308	A1	C564	A5	CE507	C5
C309	A1	C565	B5	CE508	C5
C311	A2	C566	A5	CE509	C5
C313	A2	C567	A5	CE510	C5
C315	A2	C568	A5	CE511	C5
C316	A2	C569	A5	CE512	C5
C317	B2	C570	A5	CN301	A1
C320	B2	C571	C5	CN303A	B1
C321	B2	C572	B5	CN304A	A1
C322	B2	C573	B5	CN801	A1
C323	B3	C574	B5	CN902	B4
C324	B3	C575	A5	D304	C1
C325	A1	C576	A5	D305	C2
C326	A1	C577	B3	D503	A3
C327	A1	C578	B3	D504	A3
C328	A1	C579	B3	D505	A2
C329	A1	C580	B3	D506	A3
C330	A1	C581	B3	D701	D2
C331	A2	C582	B3	D702	D3
C332	A1	C583	B4	D703	D3

# Circuit Diagram (Amplifier - Top Right)

3

4

5



IC504

STA510A DIGITAL POWER

IC503

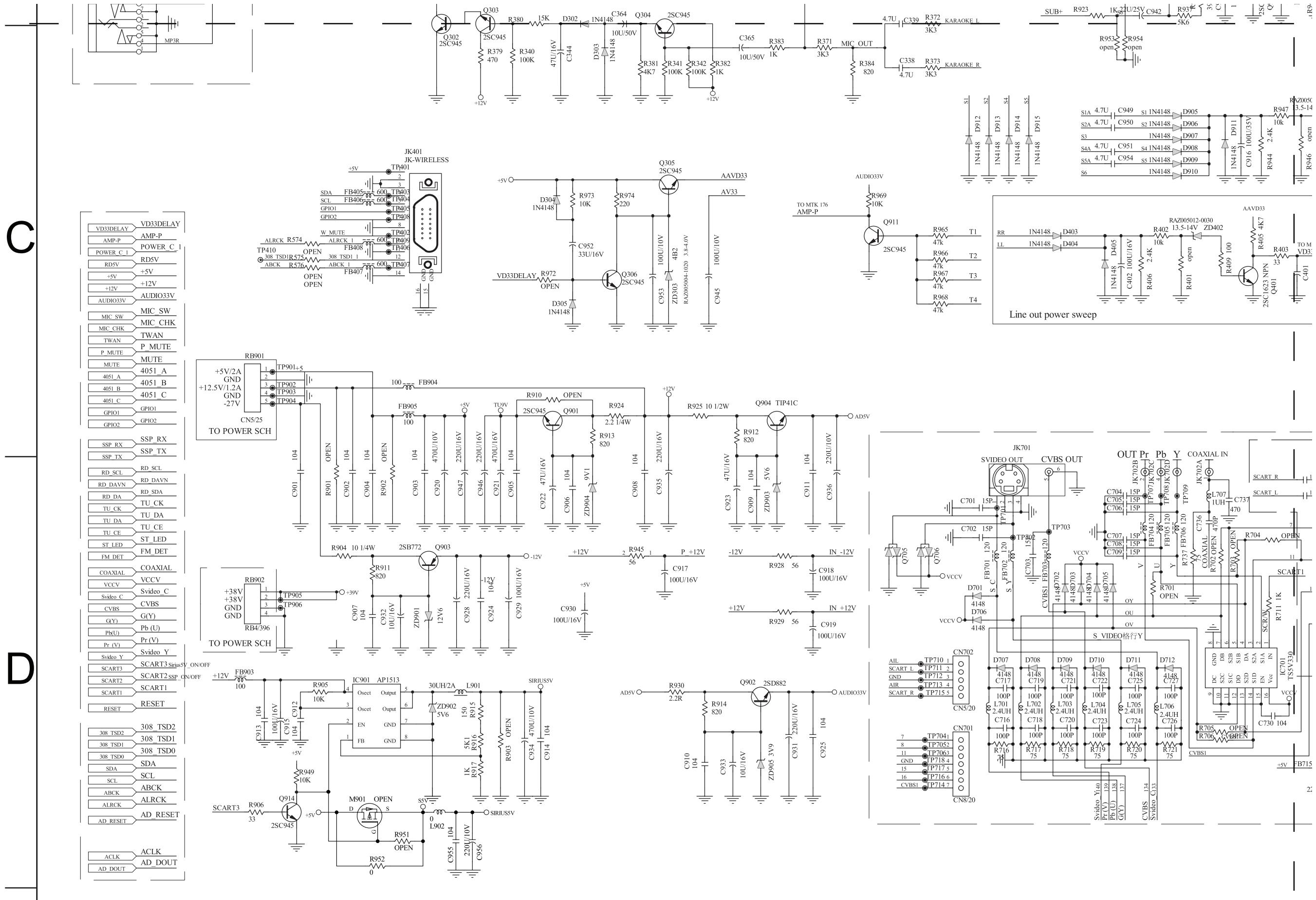
STA510A DIGITAL POWER

DIGITAL POWER

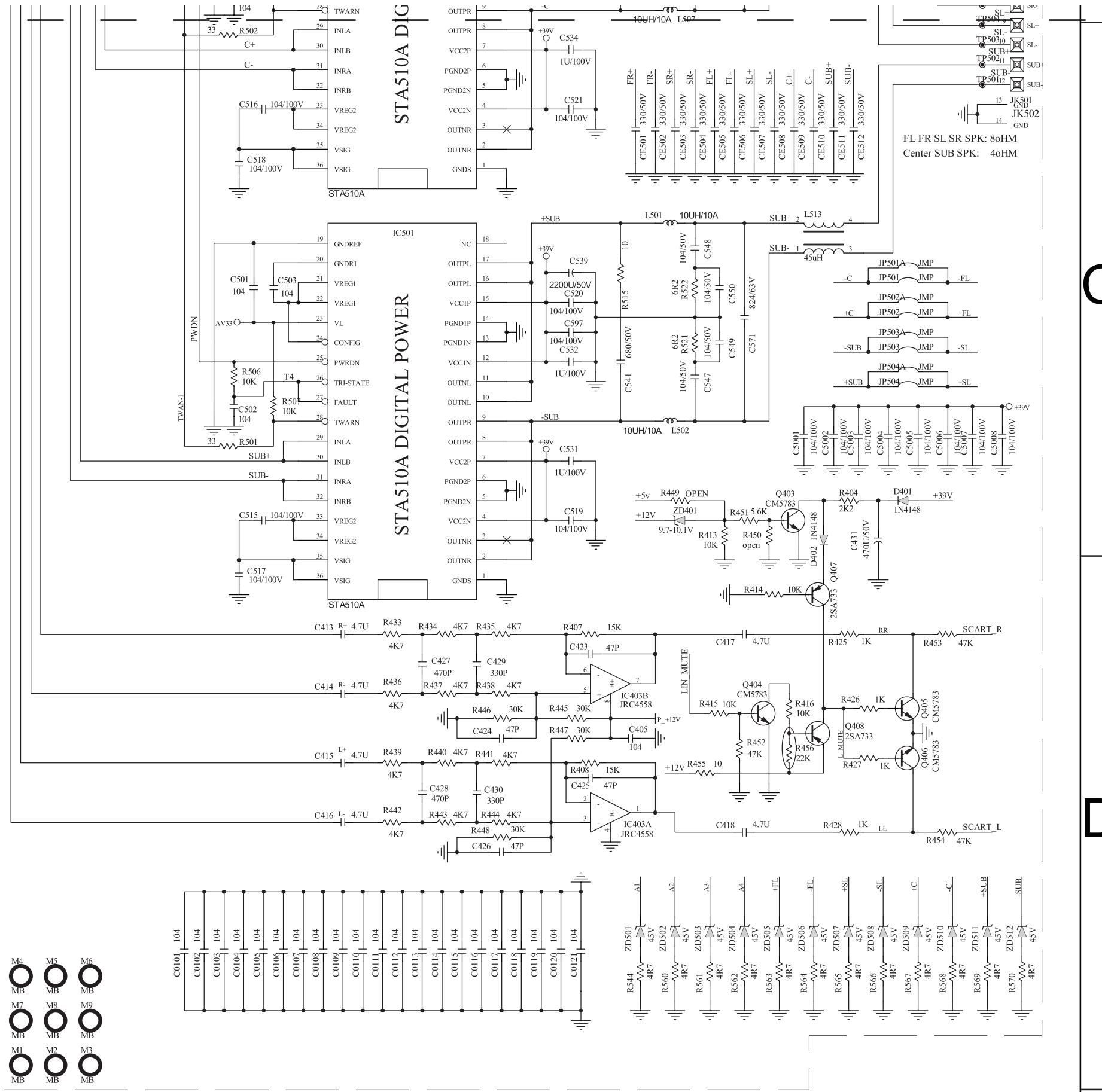
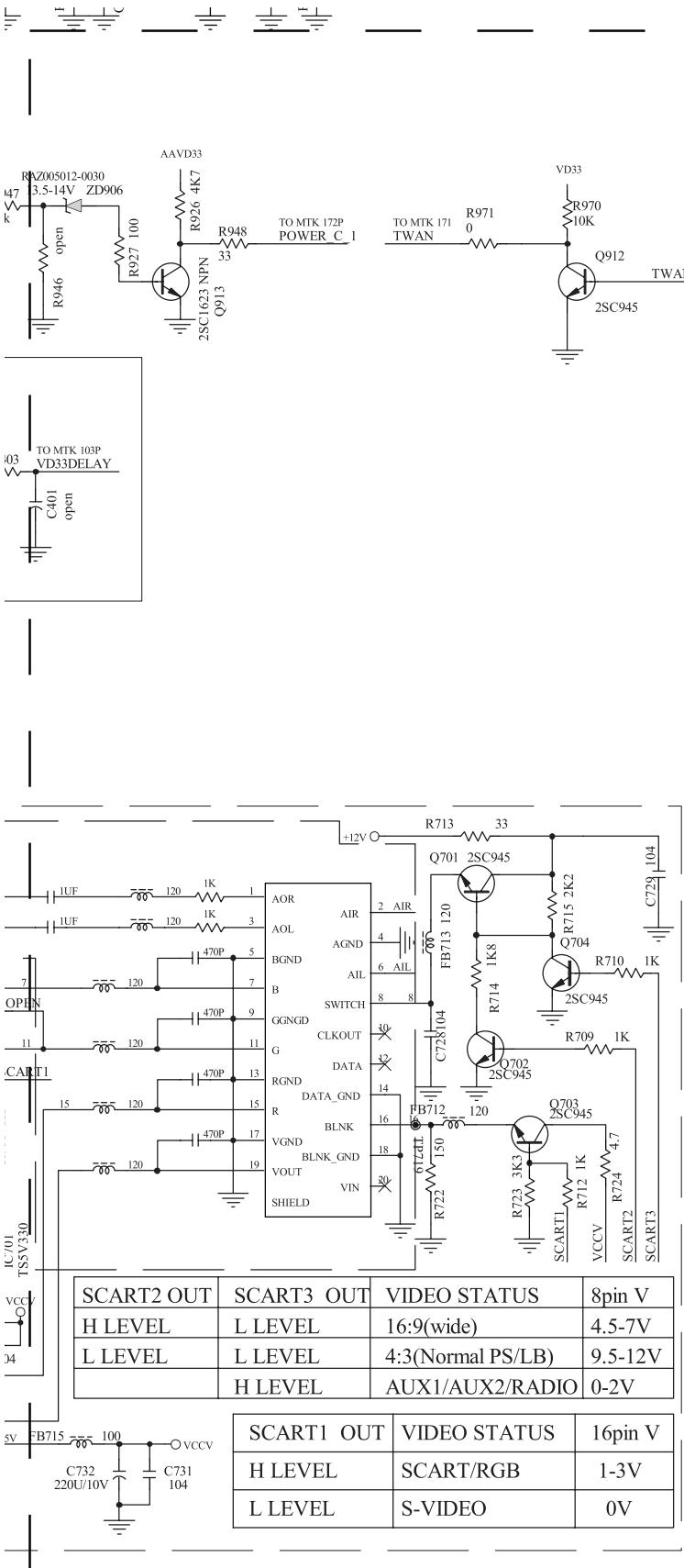
IC502

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D705	D3	R317	A1	R909	B3
D706	D2	R318	A1	R911	C2
D707	D2	R319	A1	R912	C2
D708	D2	R320	A1	R913	C2
D709	D3	R321	A1	R914	D2
D710	D3	R322	A1	R918	B3
D711	D3	R323	A1	R919	B3
D712	D3	R324	A1	R920	B3
D901	B3	R325	A1	R921	B3
D902	B3	R326	A1	R922	B3
D903	B4	R327	A1	R923	B3
D904	B3	R328	A1	R924	C2
D905	C3	R329	A2	R925	C2
D906	C3	R330	A2	R926	C3
D907	C3	R331	A2	R927	C3
D908	C3	R332	A2	R928	D2
D909	C3	R333	A2	R929	D2
D910	C3	R334	A2	R930	D2
D911	C3	R336	A2	R931	B3
FB301	A1	R336	A2	R932	B3
FB302	A1	R343	A2	R933	B3
FB303	A1	R344	A2	R934	B3
FB304	A1	R345	A1	R935	B3
FB307	B2	R346	A1	R936	B3
FB308	B3	R348	A1	R937	B3
FB309	B3	R349	A1	R938	B3
FB310	A3	R350	A1	R939	B3
FB312	B1	R351	B1	R940	B3
FB313	B1	R352	B1	R941	B3
FB701	D2	R353	B1	R942	B3
FB702	D2	R354	B1	R943	B3
FB703	D2	R355	B1	R944	C3
FB704	D3	R356	B1	R945	D2
FB705	D3	R357	B1	R947	C3
FB706	D3	R358	B1	R948	C3
FB715	D3	R359	B1	R949	D1
FB904	C1	R360	A2	R952	D1
FB905	C1	R361	A2	R969	C2
FB906	B3	R369	B2	R970	C2
IC301	A1	R377	B2	R971	C3
IC302	A1	R378	B2	R973	C2
IC304	A2	R385	A1	R974	C2
IC305	A2	R386	A1	R9801	C1
IC306	A2	R387	A1	R981	D1
IC501	C4	R388	A1	ZD301	A2
IC502	B4	R418	B1	ZD302	A2
IC503	A4	R419	B1	ZD303	C2
IC504	A4	R501	C4	ZD901	D1
IC505	A4	R502	C4	ZD903	D2
JK302	A1	R503	B3	ZD904	D2
JK501	C5	R504	A3	ZD905	D2
JK701	C2	R505	A4	ZD906	C3
L501	C5	R507	C4		
L502	C5	R508	B4		
L503	B5	R509	B4		
L504	B5	R510	A3		
L505	B5	R511	A5		
L506	B5	R512	A5		
L509	A5	R513	B5		
L510	A5	R514	B5		
L511	A5	R515	B5		
L512	A5	R516	B5		
L513	C5	R517	B5		
L514	B5	R518	C5		
L515	B5	R519	C5		
L516	A5	R520	B5		
L517	A5	R521	B5		
L518	A5	R522	B5		
L701	D2	R526	B5		
L702	D2	R527	B5		
L703	D3	R528	A5		
L704	D3	R529	A5		
L705	D3	R530	A5		
L706	D3	R531	A5		
L707	D3	R532	A5		
L902	D1	R534	A3		
Q305	C2	R535	A3		
Q306	C2	R537	A3		
Q501	A3	R538	A3		
Q502	A4	R539	A3		
Q705	D2	R540	A3		
Q706	D2	R541	A3		
Q901	C2	R542	A3		
Q902	D2	R543	A3		
Q903	D1	R545	B3		
Q904	C2	R546	A4		
Q905	B3	R547	B4		
Q906	C2	R548	A4		
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Q909	C2	R551	A4		
Q910	C2	R552	A4		
Q911	C2	R553	A4		
Q912	C4	R554	A4		
Q913	C3	R555	A4		
Q914	C2	R556	A4		
Q915	C2	R557	A4		
Q916	C2	R558	A4		
Q917	C2	R559	A4		
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Q929	C2	R571	A4		
Q930	C2	R572	A4		
Q931	C2	R573	A4		
Q932	C2	R574	A4		
Q933	C2	R575	A4		
Q934	C2	R576	A4		
Q935	C2	R577	A4		
Q936	C2	R578	A4		
Q937	C2	R579	A4		
Q938	C2	R580	A4		
Q939	C2	R581	A4		
Q940	C2	R582	A4		
Q941	C2	R583	A4		
Q942	C2	R584	A4		
Q943	C2	R585	A4		
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Q962	C2	R604	A4		
Q963	C2	R605	A4		
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Q965	C2	R607	A4		
Q966	C2	R608	A4		
Q967	C2	R609	A4		</

# Circuit Diagram (Amplifier - Bottom Left)



## Circuit Diagram (Amplifier - Bottom Right)



3

4

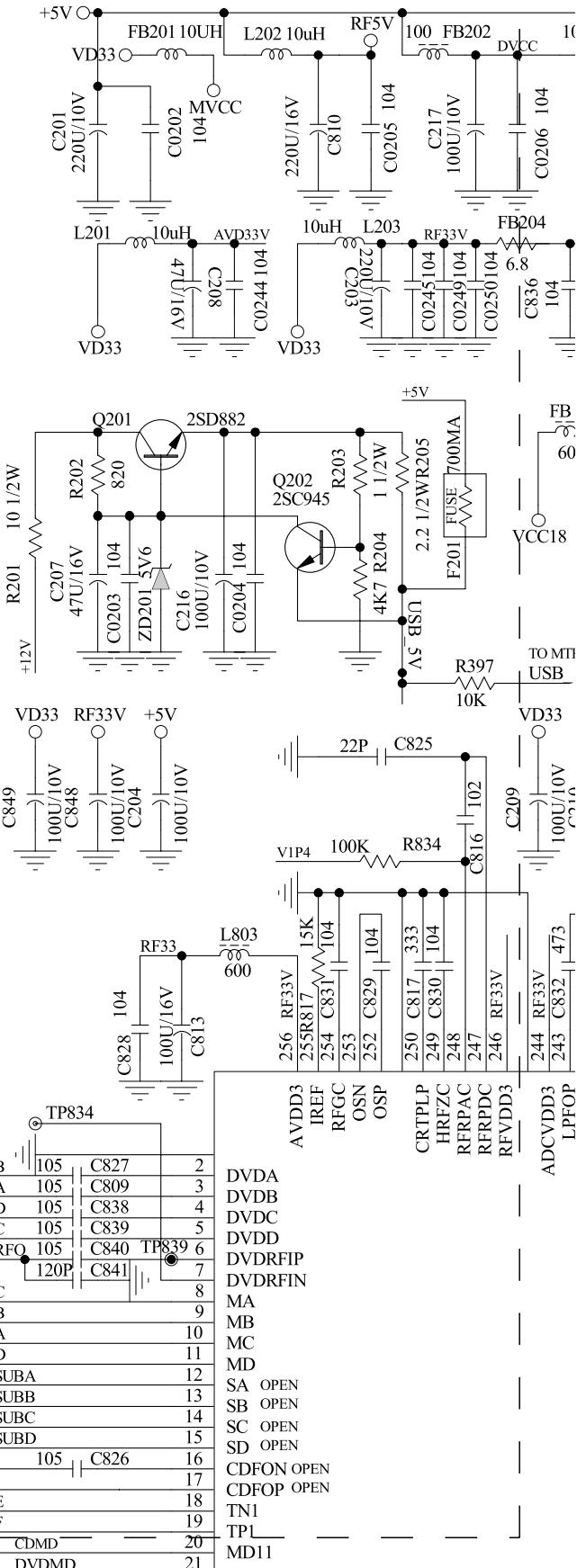
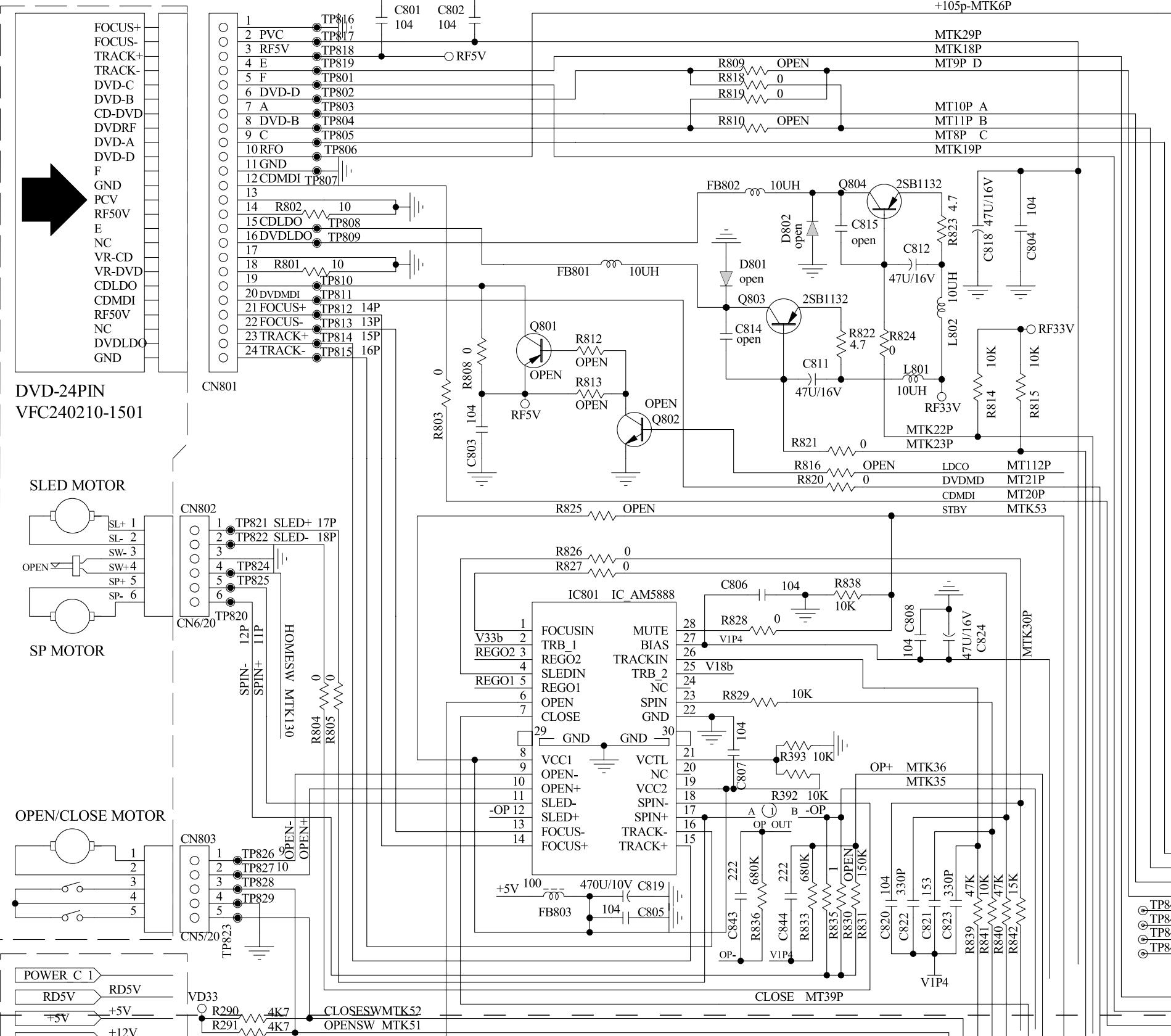
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**Circuit Diagram (Servo - Top Left)**

1

2

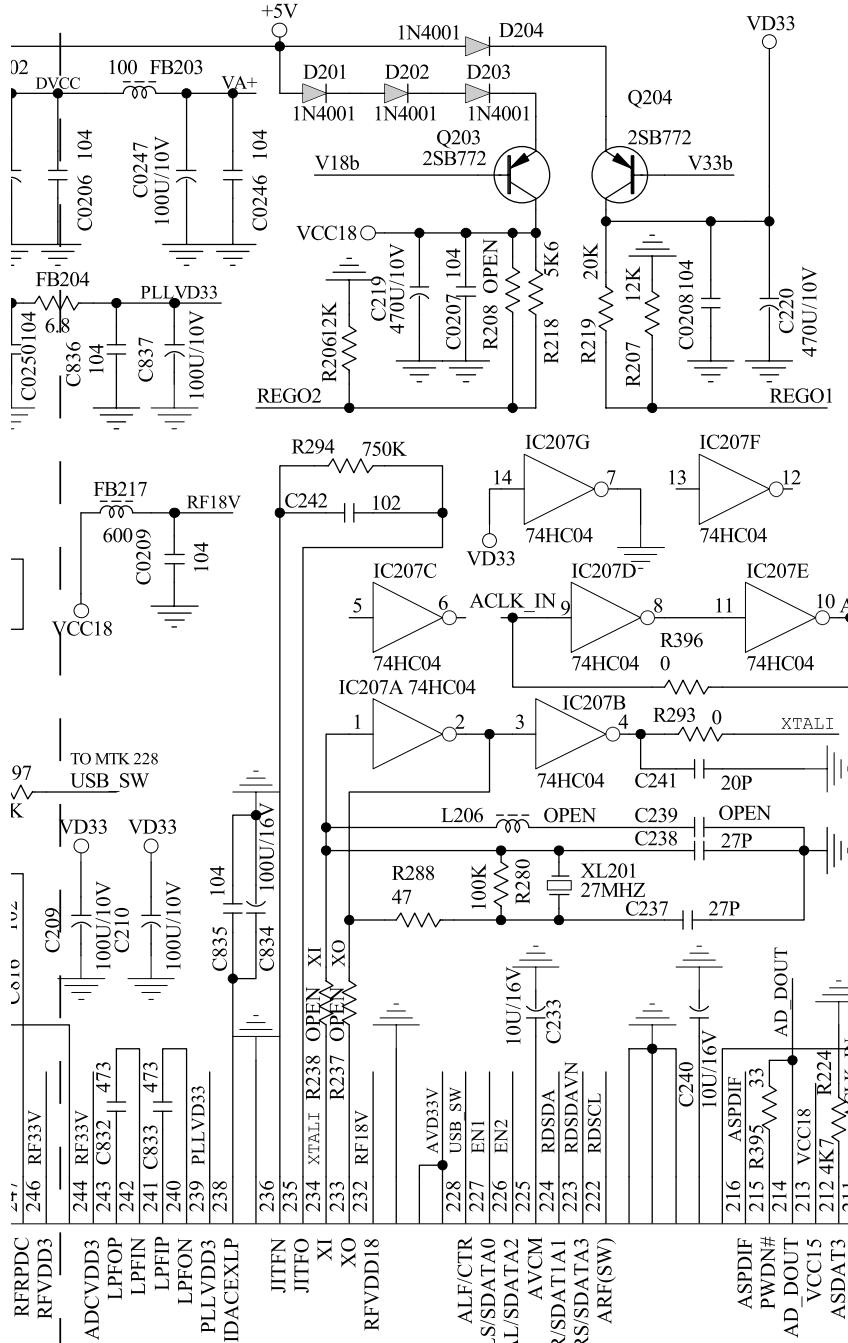
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**Arima OPU**

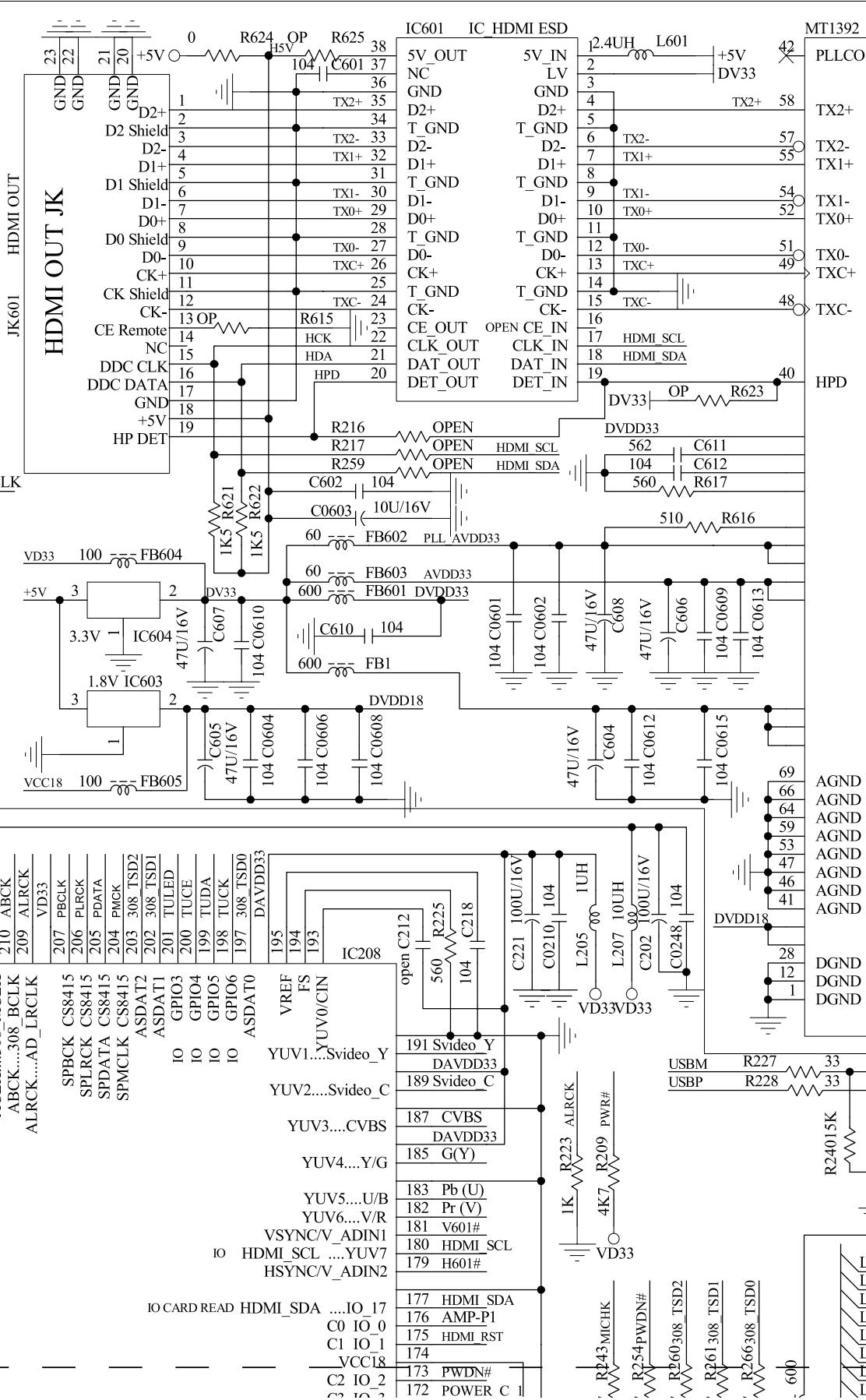
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C0203	A3	C300	A5
C0204	A3	C601	A4
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C0206	A3	C604	B5
C0207	A3	C605	B4
C0208	A4	C606	A4
C0209	A3	C607	A4
C0210	A3	C608	A5
C0211	D2	C609	B5
C0212	C5	C610	A4
C0213	C5	C611	A5
C0214	C5	C612	A1
C0215	D1	C801	A1
C0216	D1	C802	A1
C0217	D1	C803	A1
C0218	D1	C804	A2
C0219	D1	C805	B2
C0220	D1	C806	B2
C0221	D1	C807	B2
C0222	D1	C808	B2
C0223	D1	C809	B3
C0224	D1	C810	A3
C0225	D1	C811	A2
C0226	D1	C812	A2
C0227	D1	C813	B3
C0228	D1	C814	B3
C0229	D1	C815	B3
C0230	D2	C816	B3
C0231	D2	C817	B3
C0232	D2	C818	A2
C0233	D2	C819	B2
C0234	D5	C820	B2
C0235	D5	C821	B2
C0236	D5	C822	B2
C0237	D5	C823	B2
C0238	D5	C824	B2
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C0241	D5	C827	B2
C0242	D5	C828	C3
C0243	D5	C829	B3
C0244	A3	C830	B3
C0245	A3	C831	B3
C0246	A3	C832	B3
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C0249	A3	C835	B3
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C0252	C5	C838	B3
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C0254	B4	C840	B3
C0255	B4	C841	B3
C0256	A4	C842	C2
C0257	A4	C843	B2
C0258	A4	C844	B2
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C0262	B3	C848	C1
C0263	B3	C849	C1
C0264	B3	C850	C1
C0265	B3	C851	C1
C0266	B3	C852	C1
C0267	B3	C853	C1
C0268	B3	C854	C1
C0269	B3	C855	C1
C0270	B3	C856	C1
C0271	B3	C857	C1
C0272	B3	C858	C1
C0273	B3	C859	C1
C0274	B3	C860	C1
C0275	B3	C861	C1
C0276	B3	C862	C1
C0277	B3	C863	C1
C0278	B3	C864	C1
C0279	B3	C865	C1
C0280	B3	C866	C1
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C0304	B3	C890	C1
C0305	B3	C891	C1
C0306	B3	C892	C1
C0307	B3	C893	C1
C0308	B3	C894	C1
C0309	B3	C895	C1
C0310	B3	C896	C1
C0311	B3	C897	C1
C0312	B3	C898	C1
C0313	B3	C899	C1
C0314	B3	C900	C1
C0315	B3	C901	C1
C0316	B3	C902	C1
C0317	B3	C903	C1
C0318	B3	C904	C1
C0319	B3	C905	C1
C0320	B3	C906	C1
C0321	B3	C907	C1
C0322	B3	C908	C1
C0323	B3	C909	C1
C0324	B3	C910	C1
C0325	B3	C911	C1
C0326	B3	C912	C1
C0327	B3	C913	C1
C0328	B3	C914	C1
C0329	B3	C915	C1
C0330	B3	C916	C1
C0331	B3	C917	C1
C0332	B3	C918	C1
C0333	B3	C919	C1
C0334	B3	C920	C1
C0335	B3	C921	C1
C0336	B3	C922	C1
C0337	B3	C923	C1
C0338	B3	C924	C1
C0339	B3	C925	C1
C0340	B3	C926	C1
C0341	B3	C927	C1
C0342	B3	C928	C1
C0343	B3	C929	C1
C0344	B3	C930	C1
C0345	B3	C931	C1
C0346	B3	C932	C1
C0347	B3	C933	C1
C0348	B3	C934	C1
C0349	B3	C935	C1
C0350	B3	C936	C1
C0351	B3	C937	C1
C0352	B3	C938	C1
C0353	B3	C939	C1
C0354	B3	C940	C1
C0355	B3	C941	C1
C0356	B3	C942	C1
C0357	B3	C943	C1
C0358	B3	C944	C1
C0359	B3	C945	C1
C0360	B3	C946	C1
C0361	B3	C947	C1
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C0363	B3	C949	C1
C0364	B3	C950	C1
C0365	B3	C951	C1
C0366	B3	C952	C1
C0367	B3	C953	C1
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C0370	B3	C956	C1
C0371	B3	C957	C1
C0372	B3	C958	C1
C0373	B3	C959	C1
C0374	B3	C960	C1
C0375	B3	C961	C1
C0376	B3	C962	C1
C0377	B3	C963	C1
C0378	B3	C964	C1
C0379	B3	C965	C1
C0380	B3	C966	C1
C0381	B3	C967	C1
C0382	B3	C968	C1
C0383	B3	C969	C1
C0384	B3	C970	C1
C0385	B3	C971	C1
C0386	B3	C972	C1
C0387	B3	C973	C1
C0388	B3	C974	C1
C0389	B3	C975	C1
C0390	B3	C976	C1
C0391	B3	C977	C1
C0392	B3	C978	C1
C0393	B3	C979	C1
C0394	B3	C980	C1
C0395	B3	C981	C1
C0396	B3	C982	C1
C0397	B3	C983	C1
C0398	B3	C984	C1
C0399	B3	C985	C1
C0400	B3	C986	C1
C0401	B3	C987	C1
C0402	B3	C988	C1
C0403	B3</		

# Circuit Diagram (Servo - Top Right)

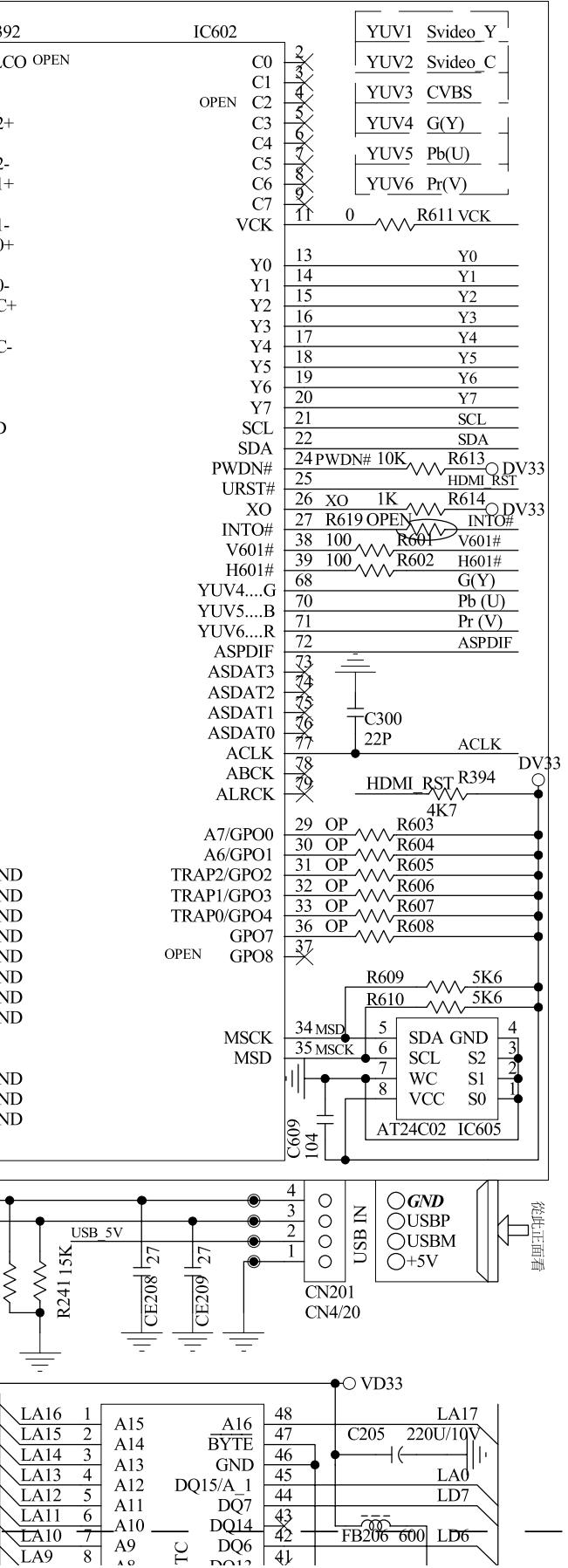
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4



5

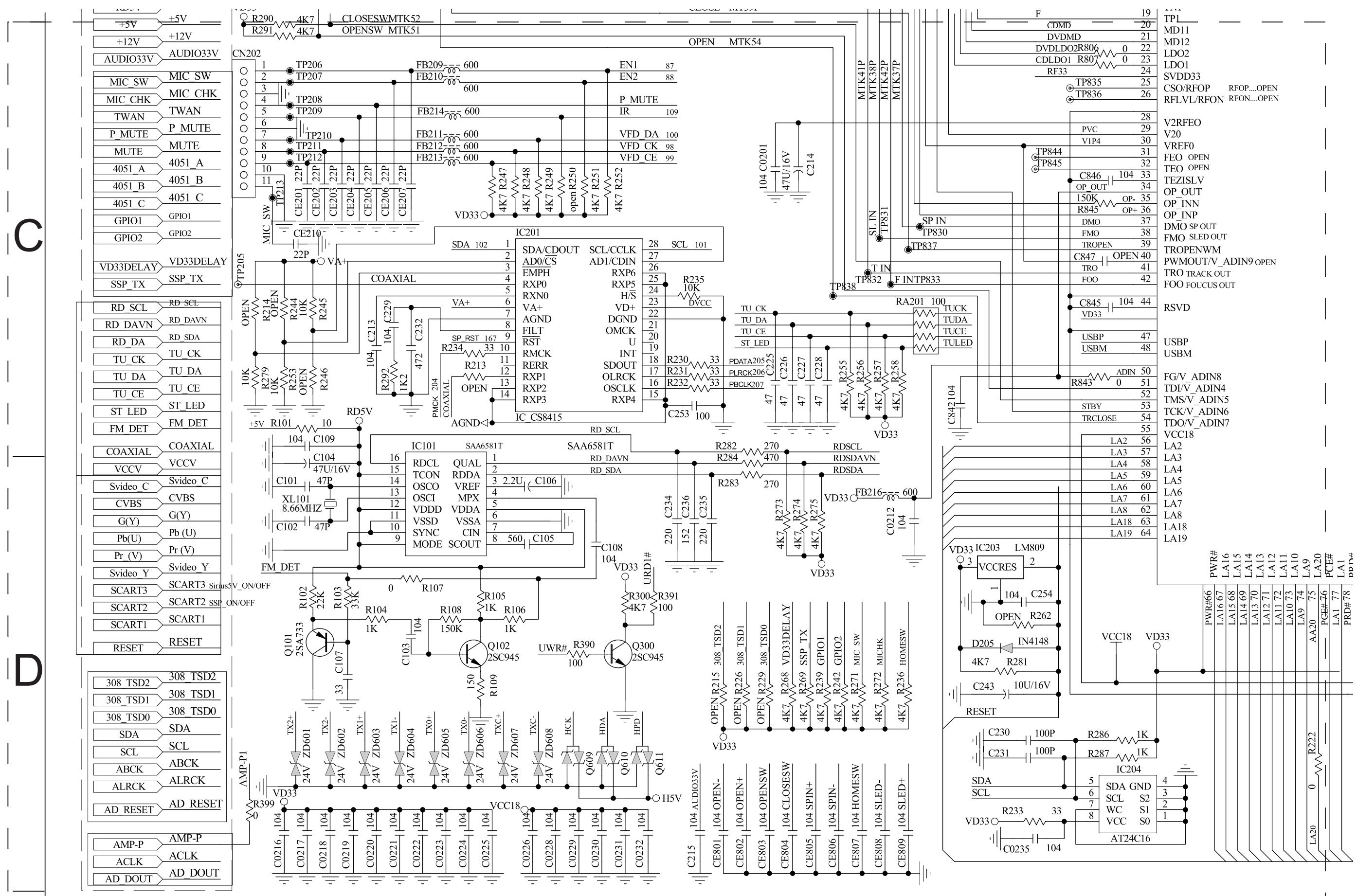


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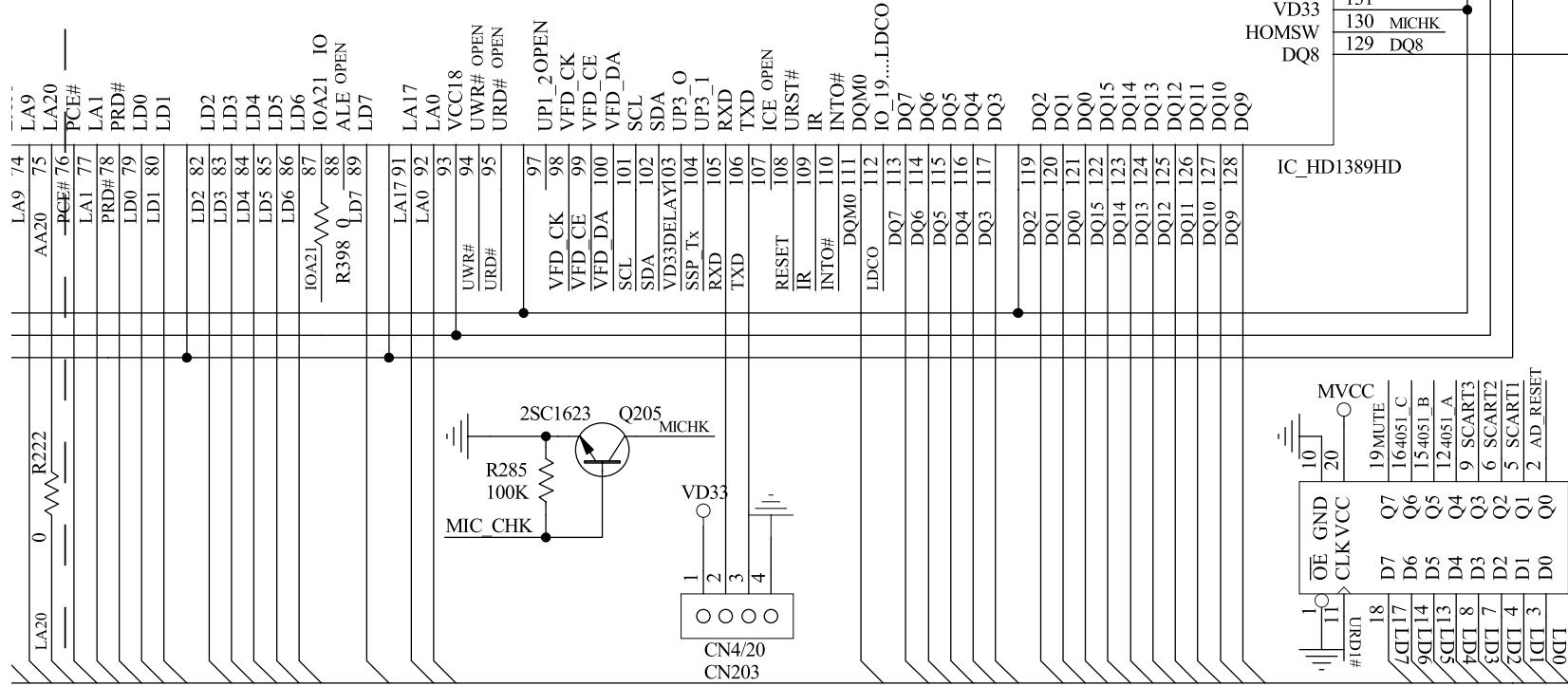
B

D205	D2	R253	C1
FB1	A4	R255	C2
FB201	A3	R256	C2
FB202	A3	R257	C2
FB203	A3	R258	C2
FB204	A3	R260	C5
FB205	C5	R261	C5
FB206	C5	R263	A3
FB207	D5	R266	C5
FB208	D5	R269	D2
FB209	C1	R271	D2
FB210	C1	R272	D2
FB211	C1	R279	C1
FB212	C1	R280	B3
FB213	C1	R281	D2
FB214	C1	R282	C2
FB216	D2	R283	D2
FB217	A3	R284	D2
FB601	A4	R286	D3
FB602	A4	R287	D3
FB603	A4	R288	B3
FB604	A4	R290	C1
FB605	B4	R291	C1
FB801	A1	R292	C1
FB802	A2	R293	A4
FB803	B1	R294	A3
IC201	C1	R300	D2
IC202	C5	R390	D1
IC203	D2	R391	D2
IC204	D3	R392	B2
IC205	D5	R393	B2
IC206	D5	R394	A5
IC207	A3	R395	B4
IC208	B4	R397	A3
IC602	A5	R398	D3
IC801	B1	R399	D1
JK601	A4	L601	A5
L201	A3	L602	A5
L202	A3	L609	B5
L203	A3	L610	B5
L204	D5	L611	A5
L205	B5	L613	A5
L601	A5	L614	A5
L801	A2	L616	A5
L802	A2	L617	A5
L803	B3	L618	A4
Q201	A3	Q202	A4
Q202	A3	Q203	A3
Q203	A3	Q204	A4
Q204	A4	Q205	A1
Q206	A3	Q207	A1
Q300	D2	Q609	C3
Q610	D2	Q807	C3
Q611	D2	Q808	A1
Q803	A2	Q804	A2
Q804	A2	R201	A2
R201	A2	R218	A2
R202	A3	R219	A4
R203	A3	R220	C5
R204	A3	R221	C5
R205	A3	R222	A2
R206	A3	R223	A2
R207	A4	R224	A2
R209	B5	R225	A2
R210	C5	R226	B1
R211	C5	R227	B1
R212	C5	R228	B2
R216	A4	R229	B2
R217	A4	R230	C3
R218	A3	R231	A4
R219	A4	R232	C2
R220	C5	R233	C2
R221	C5	R234	C2
R222	D3	R235	C2
R223	B3	R236	B2
R224	B4	R237	B2
R225	B4	R238	B2
R227	B5	R239	B2
R228	B5	R240	B2
R229	B5	R241	B5
R230	C2	R242	D2
R231	C2	R243	C1
R232	C2	R244	C1
R233	D2	R245	C1
R234	C1	R246	C1
R235	C2	R247	C1
R236	C2	R248	C1
R237	C2	R249	C1
R238	C2	R250	C2
R239	C2	R251	C2
R240	B5	R252	C2
R241	B5		

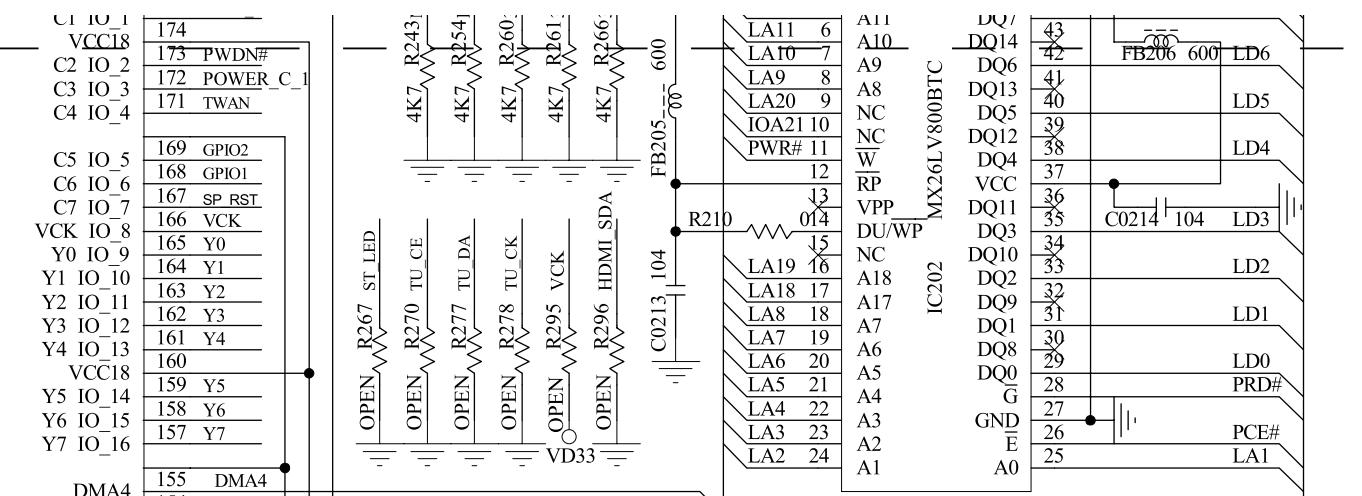
# Circuit Diagram (Servo - Bottom Left)



# Circuit Diagram (Servo - Bottom Right)



# MT1389HD

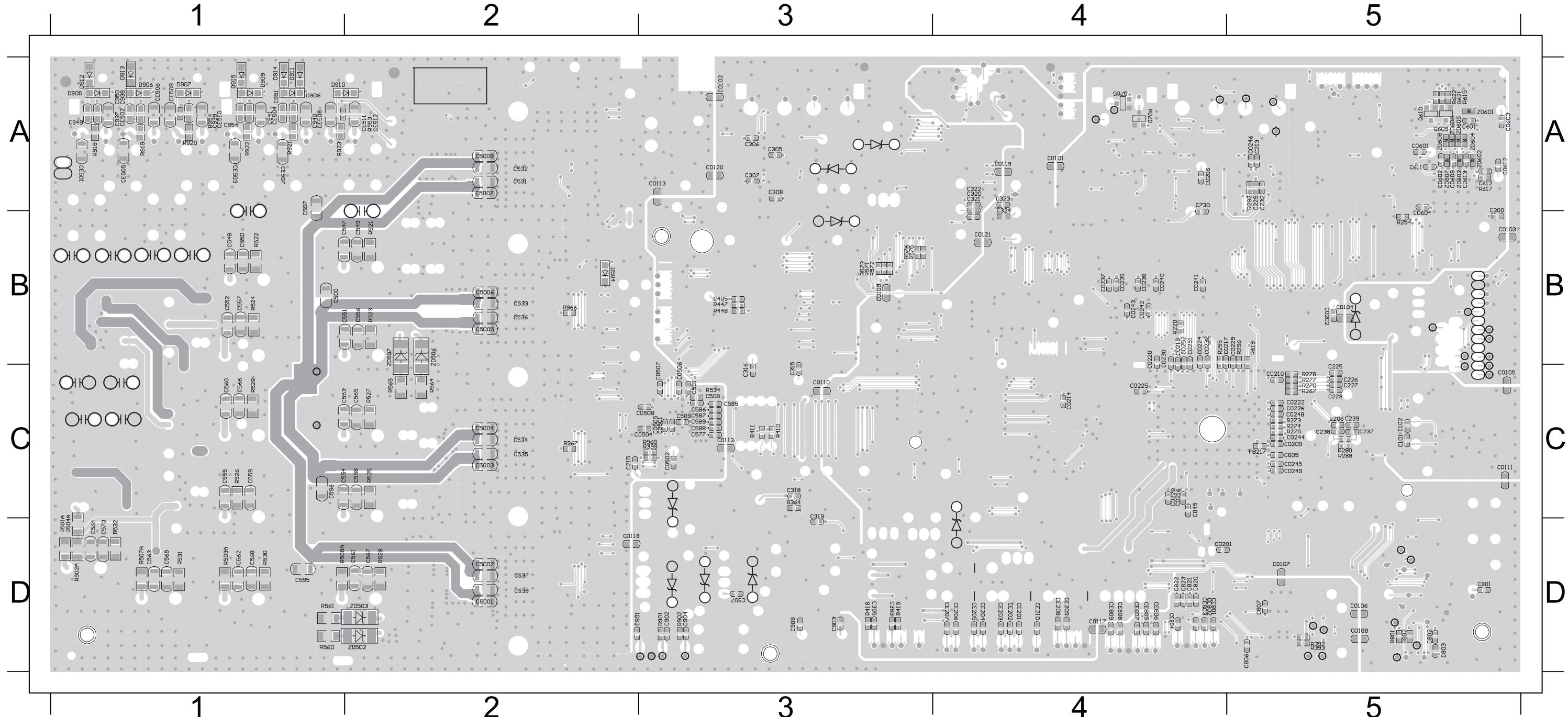


# PCB Layout Top View

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C0115	A3	C205	D4	C303	A3	C354	A3	C521	C2	C578	C3	C708	A5	C813	D5	C846	C4	C933	D3	D304	A3	FB203	A4	FB603	A5	IC301	A3	L204	B4	Q906	A2	R222	C4	R256	C5	R304	A3	R332	A4	R378	B4	R518	B2	R613	B5	R820	D5	R911	D3	R945	B3		
C0116	D2	C206	C4	C304	A3	C356	A3	C522	B2	C579	C3	C709	A5	C816	D5	C848	C5	C935	D3	D305	A3	FB204	C5	FB604	B5	IC302	A3	L205	B5	L705	B4	Q907	A2	R223	B5	R257	C5	R305	B4	R333	B4	R385	C3	R519	D2	R614	B5	R821	D5	R912	D2	R947	A3
C0203	C3	C207	C3	C309	C3	C357	A3	C523	B2	C580	C3	C716	B4	C817	D5	C849	C5	C936	D3	D503	B3	FB205	C4	FB605	B5	IC304	B3	L207	B5	L706	B4	Q908	A2	R224	C5	R258	C5	R309	A3	R334	B4	R387	C3	R535	B2	R624	A5	R823	D5	R914	C3	R949	B2
C0204	D4	C208	C5	C311	C3	C362	B4	C524	B2	C581	C3	C717	B4	C818	D5	C905	B5	C942	A2	D505	B2	FB206	B4	FB701	B4	IC305	B3	L501	B1	L707	A4	Q909	A2	R225	B5	R260	B4	R310	A3	R335	B4	R387	C3	R535	B2	R624	A5	R823	D5	R914	C3	R949	B2
C0205	D5	C209	B4	C313	B3	C363	A4	C525	C2	C582	C3	C718	B4	C819	D5	C906	B5	C943	B2	D506	B3	FB207	B4	FB702	B4	IC306	A4	L502	B2	L801	D5	Q910	A2	R227	D4	R261	B4	R311	A3	R336	B4	R388	B5	R537	C3	R701	A4	R824	D5	R924	B5	R970	B4
C0207	D4	C210	B4	C317	A4	C501	A2	C526	D2	C583	C3	C719	B4	C824	D4	C909	D3	C944	A3	D701	B4	FB208	B4	FB703	B4	IC501	A2	L503	C2	L802	D5	Q911	C2	R228	D4	R263	B4	R312	A3	R343	A3	R390	C4	R538	C3	R703	A4	R826	D5	R925	D3	R971	B4
C0208	D4	C211	B4	C325	A3	C502	A2	C527	D2	C584	B2	C720	B4	C825	D5	C910	D3	C945	B3	D702	B4	FB209	D4	FB704	A4	IC502	C2	L504	D1	L803	C5	Q912	C3	R230	A5	R266	B4	R313	A3	R344	A3	R391	C4	R539	C3	R706	B4	R827	D5	R926	A3	R973	A3
C0212	D4	C214	D4	C326	A3	C503	A2	C528	B2	C590	C3	C721	B4	C826	D5	C911	D3	C947	B5	D703	B4	FB210	D4	FB705	A4	IC503	B2	L505	C1	L902	B2	Q913	A3	R231	A5	R269	B4	R314	A3	R345	A3	R394	B5	R540	C3	R716	B4	R828	D5	R927	A3	R974	B3
C0213	C4	C216	C4	C327	A3	C504	C2	C529	D2	C593	B1	C722	B4	C827	D5	C916	A3	C952	A3	D704	B4	FB211	D4	FB706	A5	IC504	D2	L506	C2	Q201	D3	R051	B3	R232	A5	R271	C4	R315	A3	R346	A3	R395	B5	R541	C3	R717	B4	R829	D5	R928	B3	R201	C5
C0215	C4	C217	A4	C328	A3	C505	C2	C530	B2	C594	D1	C723	B4	C828	C5	C917	B3	C953	B3	D705	B4	FB212	D4	FB715	A4	IC505	C3	L507	D2	Q202	D3	R201	D3	R233	B4	R272	C3	R316	A3	R348	A3	R397	D4	R542	C3	R718	B4	R830	D5	R929	B3	R202	B4
C0218	C4	C218	B5	C329	A3	C506	B2	C539	B1	C602	A5	C724	B4	C829	D5	C918	B3	C955	B2	D706	B4	FB213	D4	FB801	D5	IC602	A5	L508	D1	Q203	D4	R202	C3	R234	A5	R279	B5	R317	A3	R349	A3	R398	C4	R543	C3	R719	B4	R831	D5	R930	D3	RB901	D3
C0221	D4	C219	D4	C330	A3	C507	C2	C540	C1	C604	A5	C725	B4	C830	D5	C919	B3	C956	B2	D707	B4	FB214	D4	FB802	D5	IC801	D5	L509	D2	Q204	D4	R203	D3	R235	B5	R281	B4	R318	A3	R350	A3	R501	A2	R545	C3	R720	B4	R833	D5	R931	A2	RB902	C1
C0223	C4	C220	D4	C331	A4	C508	C1	C541	A2	C605	B5	C726	B4	C831	D5	C920	D4	D708	B4	FB216	D4	FB803	D5	JK302	A3	L510	D2	Q300	C4	R204	C3	R239	B4	R319	C5	R351	A3	R502	C2	R546	C3	R721	B4	R834	D5	R932	A2	XL201	C5				
C0231	C4	C221	B5	C332	B3	C509	B1	C542	B2	C606	A5	C727	B4	C832	D5	C921	B5	CN203	B4	D709	B4	FB301	B5	JK501	A2	L511	D1	Q305	A3	R205	D3	R240	D4	R283	C5	R320	A3	R352	D3	R503	B2	R547	C3	R737	A5	R836	D5	R933	B2	ZD201	D4		
C0235	B4	C230	B4	C333	B3	C510	C1	C543	B2	C607	A5	C731	A4	C833	D5	C922	B5	CN301	B5	D710	B4	FB302	C5	FB905	D3	JK502	A2	L512	D1	Q306	B3	R206	D4	R241	B4	R284	C5	R321	A3	R353	D3	R504	C3	R548	B2	R803	D5	R843	D5	R939	A2	ZD904	B5
C0247	A5	C231	B4	C334	A4	C511	C1	C544	C2	C608	A5	C732	B4	C834	D5	C923	D2	CN303AB3	D1	D711	B4	FB303	C5	FB906	B3	JK601	A5	L513	A2	Q501	B2	R207	D4	R242	B4	R286	B4	R322	A3	R354	A3	R505	D2	R550	B2	R804	D4	R839	D5	R935	A2	ZD302	C3
C0250	D5	C233	C5	C340	A4	C512	D2	C545	C3	C609	A5	C736	A5	C836	D5	C924	D3	CN801	D5	D712	B4	FB304	C5	IC201	A5	JK701	A4	L514	A2	Q502	C3	R209	C4	R243	C3	R355	A3	R506	A2	R552	B2	R805	D4	R840	D5	R936	B2	ZD303	B3				
C0606	A5	C240	C5	C341	A4	C513	C1	C546	D2	C610	B5	C737	A4	C837	D5	C925	C3	CN802	D4	D901	A2	FB307	B4	IC202</																													

**PCB Layout Bottom View**

C0101	A4	C0112	C3	C0209	C5	C0226	C5	C0242	B4	C0502	C3	C0609	A5	C232	A5	C320	A4	C5003	C2	C535	C2	C553	C2	C563	D1	C587	C3	C730	A4	C835	C5	C939	A1	CE206	D4	CE506	A1	CE804	D4	D906	A1	Q705	A4	R399	C2	R528	C1	R621	A5	R952	B2
C0102	A3	C0113	A3	C0210	C5	C0228	C4	C0243	B4	C0504	C3	C0612	A5	C237	C5	C321	A4	C5004	C2	C536	D2	C555	C1	C564	D1	C588	C3	C801	D5	C845	C4	C940	A1	CE207	D4	CE507	A1	CE805	D4	D907	A1	Q706	A4	R418	D3	R529	D2	R622	A5	R969	C2
C0103	B5	C0117	D4	C0214	C4	C0229	B5	C0244	C5	C0505	C3	C0613	A5	C238	C5	C322	A4	C5005	C2	C537	D2	C555	C1	C565	C2	C589	C3	C802	D5	C901	D2	C941	A1	CE208	D4	CE508	A1	CE806	D4	D908	A1	R200	D4	R419	D3	R530	D1	R801	D5		
C0104	B5	C0118	D2	C0216	C4	C0230	B4	C0245	C5	C0506	C3	C213	A5	C300	B5	C323	A4	C5006	B2	C538	D2	C556	B1	C566	C1	C591	C3	C803	D5	C902	D3	C954	A1	CE210	D4	CE510	A1	CE809	D4	D910	A1	R263	B4	R522	B2	R531	D1	R918	A1		
C0105	C5	C0119	A4	C0217	B4	C0232	B4	C0246	A5	C0507	C3	C215	C2	C305	A3	C324	A4	C5007	A2	C547	B2	C557	B1	C568	D1	C595	D1	C806	D5	C903	D3	C954	A1	CE210	D4	CE510	A1	CE809	D4	D910	A1	R263	B4	R522	B2	R531	D1	R918	A1		
C0106	D5	C0120	A3	C0219	B4	C0237	B4	C0248	C5	C0508	C3	C225	C5	C306	A3	C353	D3	C5008	A2	C548	B1	C558	C2	C569	D1	C596	C1	C807	D5	C904	D3	CE201	D4	CE501	A1	CE511	A2	CN201	D4	D911	A1	R280	C5	R523	B2	R534	C3	R919	A1		
C0107	D5	C0121	A4	C0220	B4	C0238	B4	C0249	C5	C0601	A5	C226	C5	C307	A3	C355	D3	C531	A2	C549	B2	C559	C1	C570	D1	C597	B1	C820	D4	C907	D3	CE202	D4	CE502	A1	CE512	A2	CN304A	B2	FB217	C5	R288	C5	R524	B1	R571	B3	R920	A1		
C0109	B3	C0201	D4	C0222	C5	C0239	B4	C0251	B4	C0602	A5	C227	C5	C308	A3	C500	B1	C532	A2	C550	B1	C560	C1	C577	C3	C601	A5	C821	D4	C908	D3	CE203	D4	CE503	A1	CE801	D4	D504	B2	Q206	B4	R292	A5	R525	C2	R572	B3	R921	A1		
C0110	C3	C0202	B5	C0224	B4	C0240	B4	C0252	B4	C0603	A5	C228	C5	C315	C3	C5001	D2	C533	B2	C551	B2	C561	D2	C585	C3	C611	A5	C822	D4	C937	A1	CE204	D4	CE504	A1	CE802	D4	D905	A1	Q609	A5	R392	D5	R526	C1	R573	B3	R922	A1		
C0111	C5	C0206	A4	C0225	C4	C0241	B4	C0501	C3	C0604	B5	C229	A5	C316	C3	C5002	D2	C534	C2	C552	B1	C562	D1	C586	C3	C612	A5	C823	D4	C938	A1	CE205	D4	CE505	A1	CE803	D4	D906	A1	Q610	A5	R393	D5	R527	C2	R617	A5	R923	A1		



**VOLTAGE**

IC201																				
Pin NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	3.30	0.00	0.00	2.50	2.50	5.10	0.00	0.00	3.30	2.50	5.10	1.80	0.00	0.00	5.00	5.00	0.00	5.00	0.00	
Pin NO	21	22	23	24	25	26	27	28												
Voltage	5.00	0.00	5.00	0.00	0.00	0.00	5.00	3.30												

IC202																				
Pin NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	0.35	1.60	2.00	1.90	2.50	1.70	0.70	1.70	0.00	0.00	3.30	3.30	0.00	3.30	0.40	0.00	1.50	1.40	1.50	1.90
Pin NO	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Voltage	2.10	1.90	1.80	1.95	2.00	0.00	0.00	0.00	0.85	1.65	1.20	1.20	1.20	0.85	1.70	3.30	1.50	1.65	2.20	
Pin NO	41	42	43	44	45	46	47	48												
Voltage	1.40	1.60	1.70	2.00	0.00	0.00	1.00													

IC203																				
Pin NO	1	2	3																	
Voltage	3.30	3.30	0.00																	

IC204																				
Pin NO	1	2	3	4	5	6	7	8												
Voltage	0.00	0.00	0.00	0.00	3.30	3.30	0.00	3.30												

IC205																				
Pin NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	0.00	3.30	1.50	1.60	0.00	3.30	1.25	1.00	0.00	0.00	0.00	0.00	1.60	1.50	3.30	0.00	1.40	1.50	0.00	3.30

IC206																				
Pin NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Voltage	3.20	1.00	3.20	1.10	1.30	0.00	1.30	1.20	3.20	1.30	1.20	0.00	1.30	3.20	2.60	3.20	3.00	3.00	1.40	
Pin NO	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Voltage	1.20	0.00	0.00	1.40	1.60	1.80	3.20	0.00	1.60	1.80	1.20	0.50	0.00	0.00	0.00	3.20	1.80	2.30	0.00	
Pin NO	41	42	43	44	45	46	47	48	49	50	51	52	53	54						
Voltage	0.00	1.00	3.20	1.40	0.70	0.00	0.70	1.30	3.20	1.30	1.40	0.00	0.80	0.00						

IC207																				
Pin NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
Voltage	1.40	1.50	1.50	0.50	0.00	3.30	0.00	1.50	1.50	1.50	0.00	0.00	0.00	3.30						

IC208																			
Pin NO	1	2	3	4	5	6	7												

# POWER BOARD

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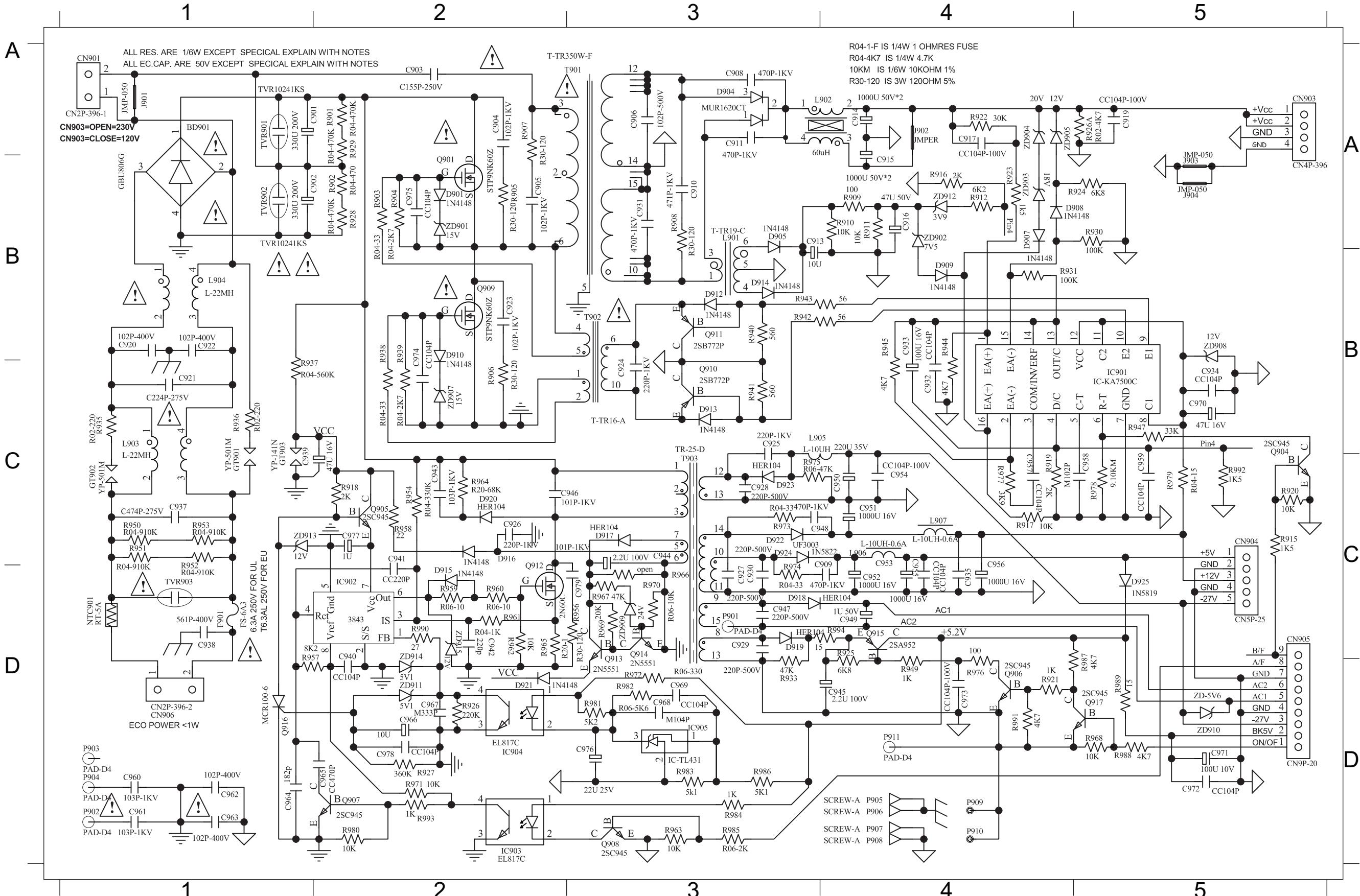
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## VOLTAGE

IC901																
Pin NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Voltage	4.80	4.80	2.40	0.00	1.70	3.40	0.00	12.00	2.30	2.30	12.00	12.00	4.90	4.90	2.40	0.00
IC902																
Pin NO	1	2	3	4	5	6	7	8								
Voltage	2.70	0.00	0.50	2.10	0.00	1.00	11.00	4.90								
IC903																
Pin NO	1	2	3	4												
Voltage	4.90	4.20	0.00	1.00												
IC904																
Pin NO	1	2	3	4												
Voltage	4.60	3.50	0.00	2.60												
IC905																
Pin NO	1	2	3													
Voltage	3.50	0.00	2.40													
Q901				Q907				Q911				Q915				
Pin NO	b	c	e	Pin NO	b	c	e	Pin NO	b	c	e	Pin NO	b	c	e	
Voltage	148.00	318.00	148.00	Voltage	0.60	0.00	0.00	Voltage	1.50	0.00	1.80	Voltage	42.00	4.90	42.00	
Q904				Q908				Q912				Q916				
Pin NO	b	c	e	Pin NO	b	c	e	Pin NO	b	c	e	Pin NO	b	c	e	
Voltage	0.00	3.40	0.00	Voltage	0.00	4.30	0.00	Voltage	0.00	550.00	0.00	Voltage	1.50	0.00	0.00	
Q905				Q909				Q913				Q917				
Pin NO	b	c	e	Pin NO	b	c	e	Pin NO	b	c	e	Pin NO	b	c	e	
Voltage	11.50	13.50	11.00	Voltage	0.00	147.90	0.00	Voltage	72.00	0.00	2.50	Voltage	0.60	0.00	0.00	
Q906				Q910				Q914				Q918				
Pin NO	b	c	e	Pin NO	b	c	e	Pin NO	b	c	e	Pin NO	b	c	e	
Voltage	0.00	41.90	0.00	Voltage	1.50	0.00	1.80	Voltage	0.00	0.60	0.00	Voltage	0.60	0.00	0.00	

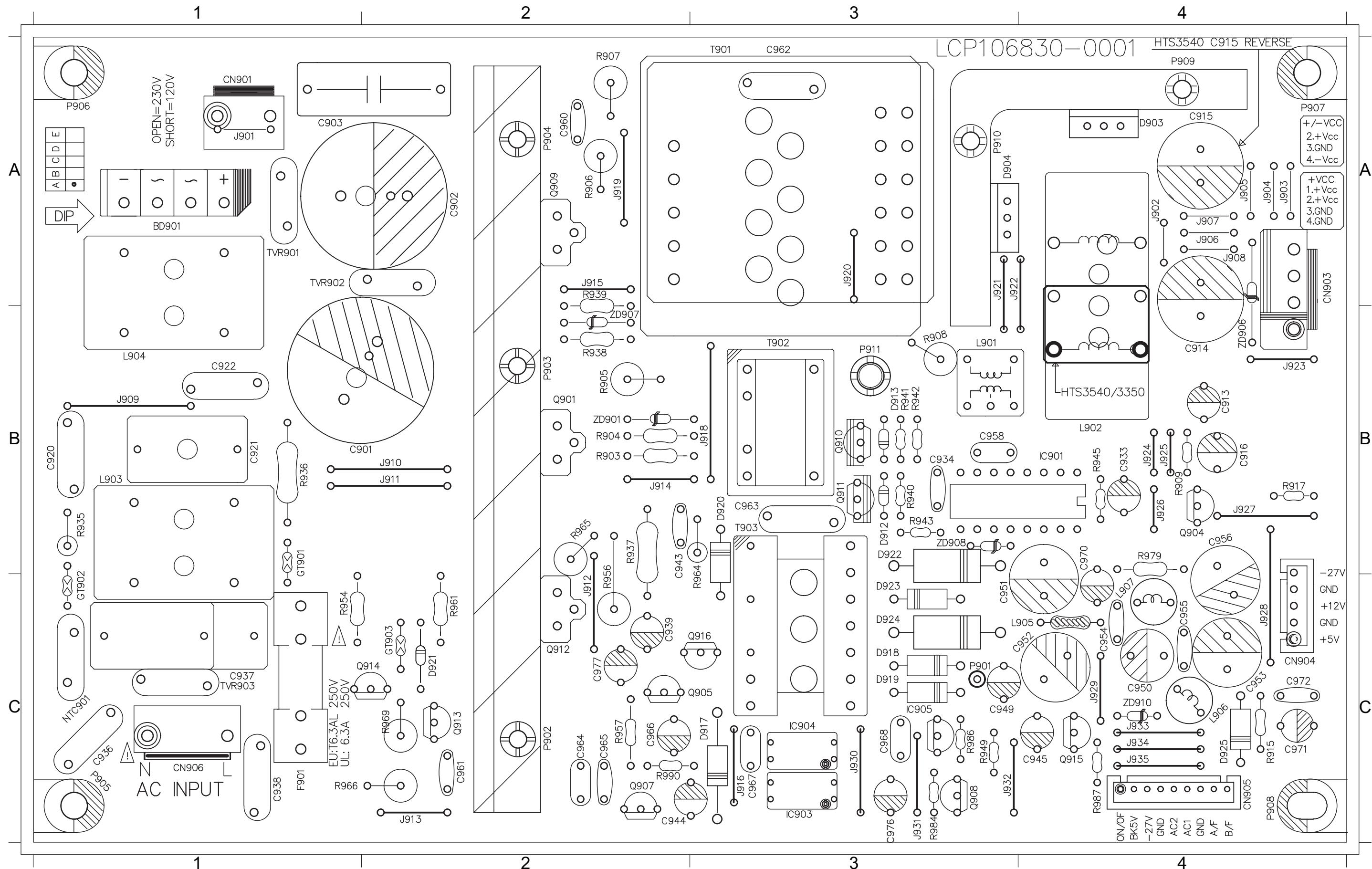
**CIRCUIT DIAGRAM**

BD901	A1	C913	A3	C924	B3	C934	B4	C945	D4	C956	C4	C966	D2	C978	D2	D909	B4	D920	C2	IC902	C2	L903	B1	Q907	D2	Q917	D4	R923	A4	R933	D3	R944	B4	R958	C2	R968	D5	R978	C5	R988	D5	TVR902	A1	ZD910	D5				
C901	A1	C914	A4	C925	B3	C935	C4	C946	C2	C957	C4	C967	D2	CN903	A5	D910	B2	D921	D2	IC903	D2	Q908	D3	R901	A2	R912	C4	R924	B1	R945	B4	R959	C3	R969	C3	R979	C5	R989	D5	TVR903	C1	ZD911	D2						
C902	A1	C915	A4	C926	C2	C937	C1	C948	C3	C958	C5	C968	D3	CN904	C5	D912	B3	D922	C3	IC904	D2	Q909	B2	R902	A2	R915	C5	R925	C4	R936	B1	R947	B5	R960	C2	R970	C3	R980	D2	R990	C2	ZD901	A2	ZD912	A4				
C903	A2	C916	A4	C927	C3	C938	C1	C949	C4	C959	C5	C969	D3	CN905	D5	D913	B3	D923	C3	IC905	D3	Q910	B3	R903	A2	R916	A4	R926A	A5	R937	B1	R949	D4	R961	C2	R971	D2	R981	D3	R991	D4	ZD902	A4	ZD913	C1				
C904	A2	C917	A4	C928	C3	C939	C1	C950	C4	C960	D1	C970	B5	CN906	D1	D914	B3	D924	C3	J901	A1	L907	C4	Q911	B3	R904	A4	R917	C4	R926B	D2	R938	B2	R939	B2	R951	C1	R962	C2	R972	D3	R982	D3	R993	D2	ZD903	A4	ZD914	C2
C906	A3	C919	A5	C929	C3	C940	C2	C951	C4	C961	D1	C971	D5	D901	A2	D915	C2	D925	C5	J902	A4	NTC901	C1	Q912	C2	R905	A2	R918	C2	R927	D2	R939	B2	R951	C1	R963	D3	R973	C3	R983	D3	R994	C4	ZD904	A4				
C908	A3	C920	B1	C930	C3	C941	C2	C952	C4	C962	D1	C972	D5	D904	A3	D916	C2	F901	C1	J903	A5	Q901	A2	Q913	D3	R906	B2	R919	C4	R928	A2	R940	B3	R952	C1	R964	C2	R974	C3	R984	D3	T901	A3	ZD905	A4				
C909	C4	C921	B1	C931	A3	C942	C2	C953	C4	C963	D1	C973	D4	D905	A3	D917	C3	GT901	C1	J904	A5	Q904	C5	Q914	C3	R908	A3	R920	C5	R929	A2	R941	B3	R953	C1	R965	C2	R975	C3	R985	D3	T902	B3	ZD907	B2				
C910	A3	C922	B1	C932	B4	C943	C2	C954	C4	C964	D1	C976	D3	D907	A4	D918	C3	GT902	C1	L901	A3	Q905	C2	Q915	C4	R909	A4	R921	D4	R930	A5	R942	B3	R954	C2	R966	C3	R976	D3	R986	D3	T903	C3	ZD908	B5				
C911	A3	C923	B2	C933	B4	C944	C3	C955	C4	C965	D2	C977	C2	D908	A4	D919	C3	IC901	B5	L902	A4	Q916	D1	R910	A4	R922	A4	R931	B4	R943	C3	R977	C4	R987	D5	TVR901	A1	ZD909	C3										



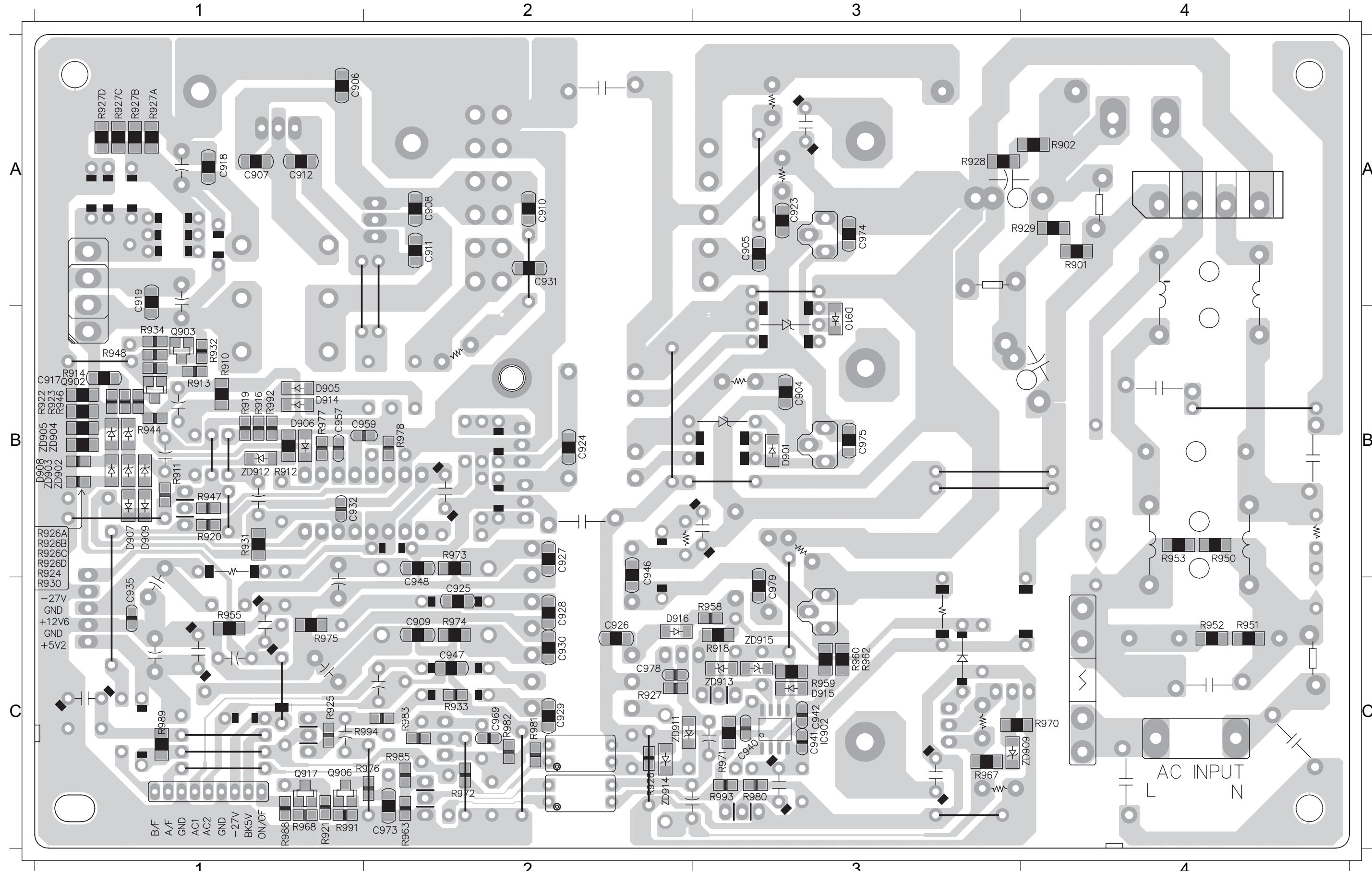
## PCB LAYOUT - TOP VIEW

BD901	A1	C915	C4	C934	B3	C945	C4	C954	C4	C962	A3	C970	B4	CN904	C4	D917	C3	D923	C3	IC901	B4	J903	A4	J913	C2	J921	A3	J927	B4	J933	C4	L904	B1	Q904	B4	Q911	B3	R903	B2	R915	C4	R939	B2	R949	C3	R966	C1	R990	C2	TVR903	C1
C901	A1	C916	B4	C937	C1	C949	C3	C955	C4	C963	B3	C971	C4	CN905	C4	D918	C3	D924	C3	IC903	C3	J904	A4	J914	B2	J922	A3	J928	C4	J934	C4	L905	C2	Q905	C2	R904	B2	R917	B4	R940	B3	R954	C1	R969	C2	T901	A3	ZD901	B2		
C902	B1	C920	B1	C938	C1	C950	C4	C956	B4	C964	C2	C972	C4	CN906	C1	D919	C3	D925	C4	IC904	C3	J909	B1	J915	A2	J923	B4	J929	C4	J935	C4	L906	C2	Q907	C2	Q913	C2	R905	B2	R935	B1	R941	B3	R957	C2	C979	B4	T902	B3	ZD907	B2
C903	A1	C921	B1	C939	C2	C951	C3	C958	B3	C965	C2	C976	C3	D904	A3	D920	B3	F901	C1	IC905	C3	J910	B2	J916	C3	J924	B4	J930	C3	L901	B3	Q908	C3	Q914	B1	R906	A2	R936	B1	R937	B2	R943	B3	R964	C2	R984	C3	T903	C3	ZD908	B3
C913	B4	C922	B1	C943	B2	C952	C4	C960	A2	C966	C2	C977	C2	D912	B3	D921	C2	GT901	B1	J901	A1	J911	B2	J918	B3	J925	B4	J931	C3	L902	B4	NTC901	C1	Q909	A2	Q915	C4	R908	B3	R937	B2	R943	B3	R964	B2	R986	C4	TVR901	A1	ZD910	C4
C914	B4	C933	B4	C944	C2	C953	C4	C961	C2	C967	C3	CN903	A4	D913	B3	D922	C3	GT902	C1	J902	A4	J912	C2	J920	A3	J926	B4	J932	C3	L903	B1	Q901	B2	Q910	B3	Q916	C3	R909	B4	R938	B2	R945	B4	R965	B2	R987	C4	TVR902	A1		



**PCB LAYOUT - BOTTOM VIEW**

C904	B3	C911	A2	C925	C2	C930	C2	C941	C3	C959	B2	D901	B3	D910	B3	Q906	C1	R911	B1	R920	B1	R925	C1	R929	A4	R947	B1	R955	C1	R963	C2	R972	C2	R977	B1	R983	C2	R993	C3	ZD905	B1	ZD914	C2
C906	A1	C917	A1	C926	C2	C931	A2	C942	C3	C968	C1	D905	B1	D914	B1	Q917	C1	R912	B1	R921	C1	R926AB1	R930	B1	R950	B4	R958	C3	R967	C3	R973	B2	R978	B2	R985	C2	R994	C2	ZD909	C3	ZD911	C2	
C908	A2	C919	A1	C927	B2	C932	B1	C946	C2	C969	C2	D907	B1	D915	C3	R901	A4	R916	B1	R922	B1	R926BB1	R931	B1	R951	C4	R959	C3	R968	C1	R974	C2	R980	C3	R988	C1	ZD902	B1	ZD911	C2			
C909	C2	C923	A3	C928	C2	C935	C1	C948	B2	C973	C2	D908	B1	D916	C2	R902	A4	R918	C3	R923	B1	R927	C2	R933	C2	R952	C4	R960	C3	R970	C4	R975	C1	R981	C2	R989	C1	ZD903	B1	ZD912	B1		
C910	A2	C924	B2	C929	C2	C940	C3	C957	B1	C978	C2	D909	B1	IC902	C3	R910	B1	R919	B1	R924	B1	R928	A3	R944	B1	R953	B4	R962	C3	R971	C3	R976	C2	R982	C2	R991	C1	ZD904	B1	ZD913	C3		



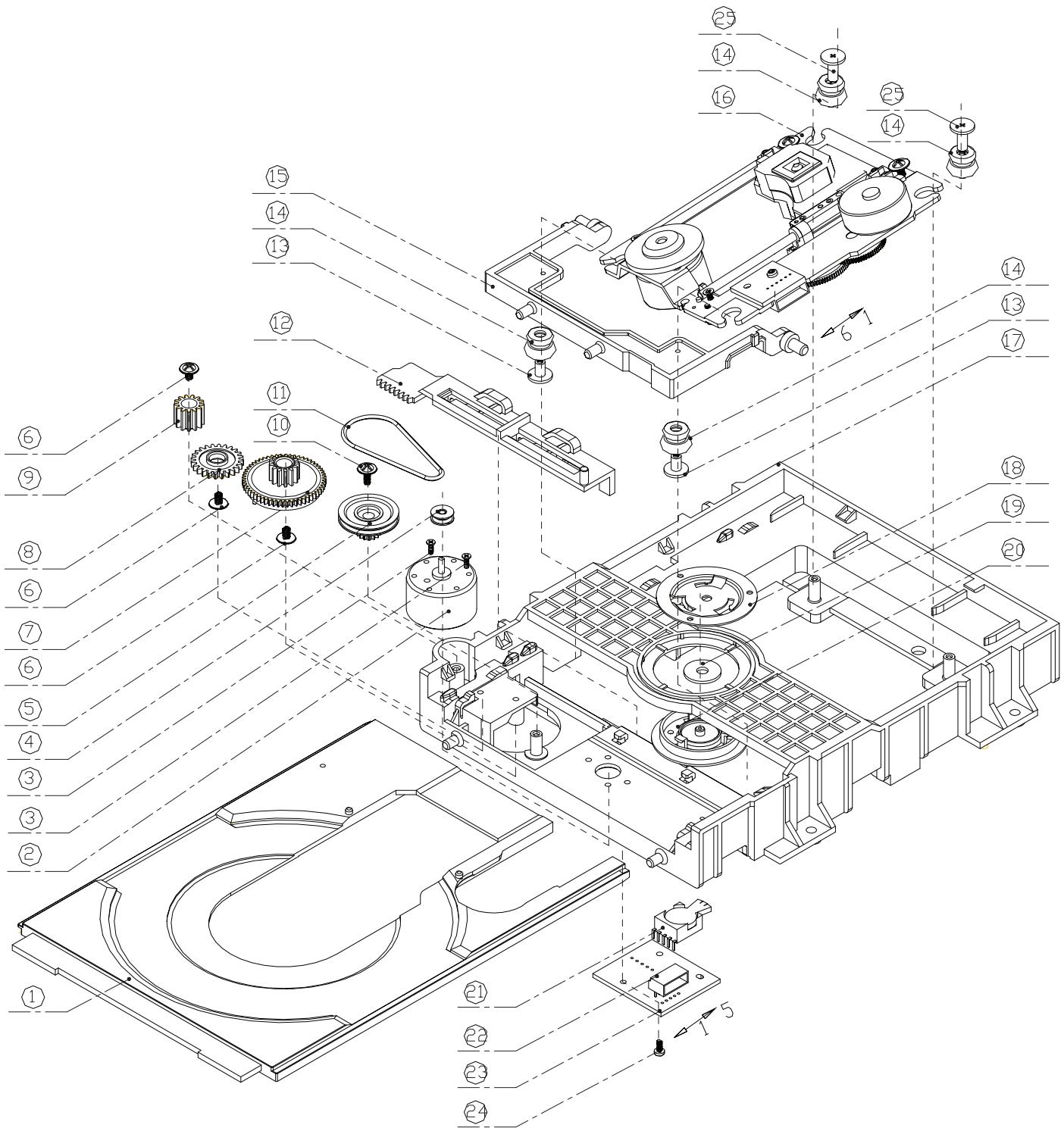
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# EXPLORER VIEW



# Mechanical Exploded View

