

Service  
Service  
Service



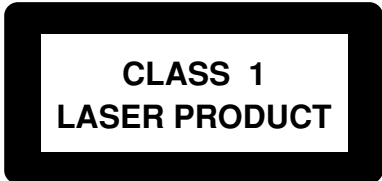
# Service Manual

For repair information on the Subwoofer please refer to  
Service Manual of Active Subwoofer SW3000/SW3500  
12NC: 3139 785 30057



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3139 785 30242

Version 1.2



# PHILIPS



## SPECIFICATIONS

### AMPLIFIER SECTION

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Power Output	
- Stereo mode (DIN).....	2 x 25 W
- Surround mode (1 kHz).....	15 WRMS/channel
Total Harmonic Distortion.....	10 % at rated power (1 kHz)
Frequency Response .....	180 Hz-14 kHz/±1 dB
Signal-to-Noise Ratio.....	> 65dB(CCIR)
Input Sensitivity.....	400 mV

### TUNER SECTION

---

Tuning Range.....	FM 87.5 -108 MHz (100 kHz steps)
.....	AM 530 - 1700 kHz (10 kHz steps)
26 dB Quieting Sensitivity.....	FM 20 dB
26 dB Quieting Sensitivity.....	AM 3162 uV/m
Image Rejection Ratio.....	FM 25 dB
.....	AM 28 dB
IF Rejection Ratio.....	FM 60 dB
.....	AM 24 dB
Signal-to-Noise Ratio.....	FM 60 dB
.....	AM 40 dB
AM Suppression Ratio.....	FM 30 dB
Harmonic Distortion.....	FM Mono 3%
.....	FM Stereo 3%
.....	AM 5%
Frequency Response.....	FM 180 Hz-10kHz/±6 dB
Stereo Separation.....	FM 26 dB(1 kHz)
Stereo threshold.....	FM 23.5 dB

### DVD SECTION

#### Audio Performance :

Laser Type.....	Semiconductor
Disc Diameter.....	12cm/8cm
Video S/N ratio.....	65 dB/A - WTD
Audio DAC.....	24 Bits/96 kHz
Frequency Response.....	4 Hz-20 kHz (44.1kHz)
.....	4 Hz-22 kHz (48 kHz)
.....	4 Hz-44 kHz (96 kHz)
Digital Output.....	SPDIF Coaxial & Optical
Distortion.....	0.5% (1kHz)

#### MP3 :

MP3 - CD bitrate.....	32, 64, 96, 128, 192, 256(kbps)
MP3 - CD sampling frequencies.....	32, 44.1, 48(KHz)
Recording format.....	JPEG

#### Video Performances :

Video Decoding.....	MPEG-2
Video DAC.....	10 Bits
Signal System.....	PAL/NTSC
Video Format.....	4:3/16:9
Composite Video Output.....	1.0Vp-p,75Ω
S-Video Output.....	Y - 1.0Vp-p,75Ω
.....	C - 0.286Vp-p,75Ω

### MISCELLANEOUS / GENERAL SECTION

---

Power Supply Rating.....	120V/60 Hz (for /37S)
.....	110~127V/60Hz (for /21L, /21R)
.....	220~240V/50Hz (for /22S, /30S)
.....	220~240V/50/60Hz (for /21S, /21H)
Power Consumption.....	160 W
Dimensions (w x h x d).....	435 mm x 69 mm x 359mm
Weight.....	7.1 kg

### IR REMOTE CONTROL

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Effective Range.....	> 8 Meter
Number of Keys.....	45
Battery (1.5V).....	AA x 2

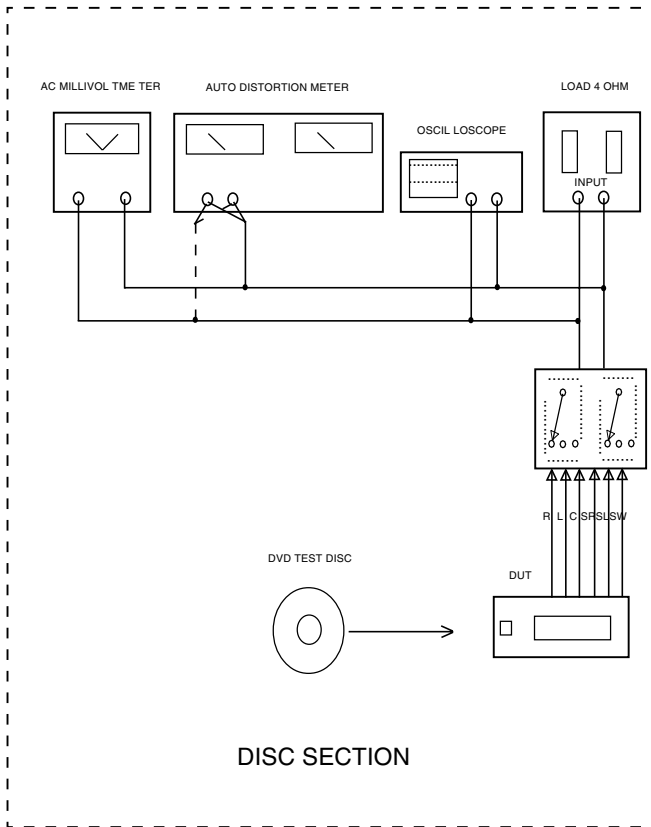
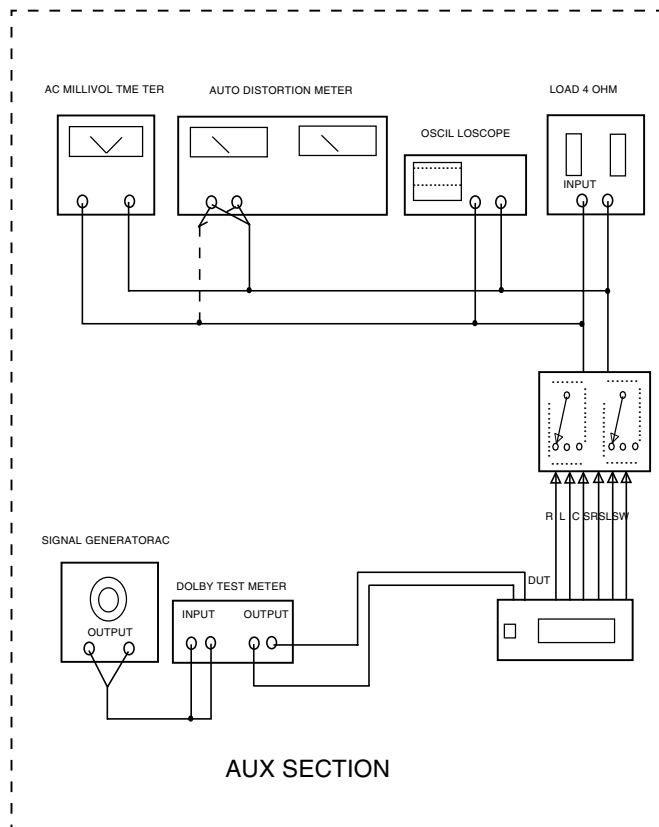
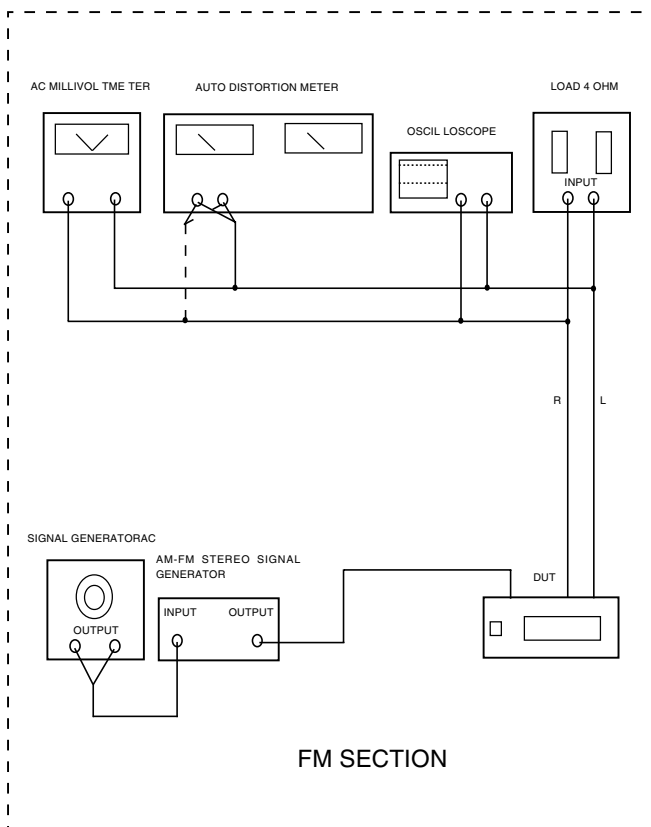
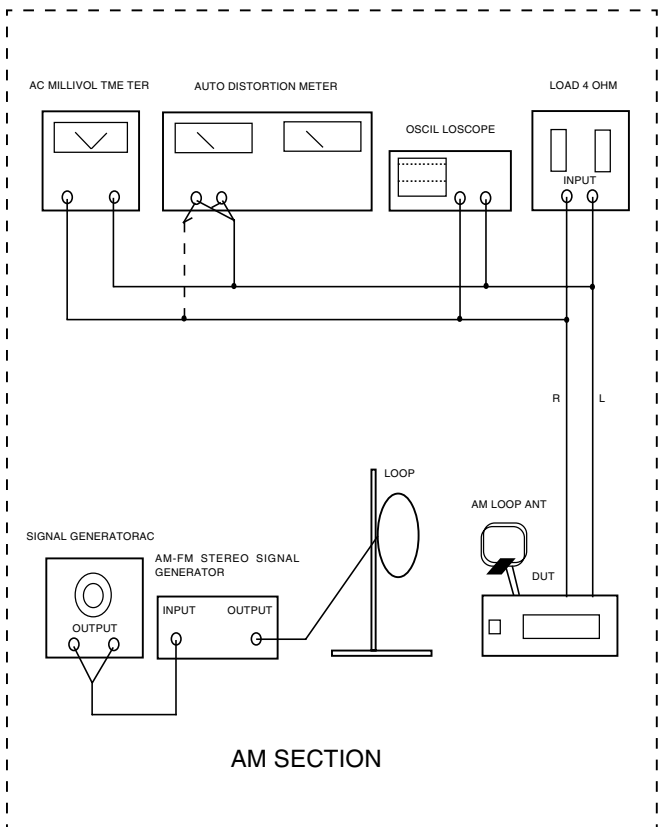
### SPEAKERS

#### Front Speakers / Center speaker

System.....	1-way shielded
Impedance/ ohm.....	4Ω
Speaker drivers.....	3" full range
Dimensions (w x h x d).....	90 mm x 90 mm x 90 mm
Weight.....	0.45 Kg/each
Power output.....	25W/10 % THD

#### Rear (surround) Speaker

System.....	1-way shielded
Impedance/ ohm.....	4Ω
Speaker drivers.....	3" full range
Dimensions (w x h x d).....	90 mm x 90 mm x 90 mm
Weight.....	0.45 Kg/each
Power output.....	25W/10 % THD



# 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

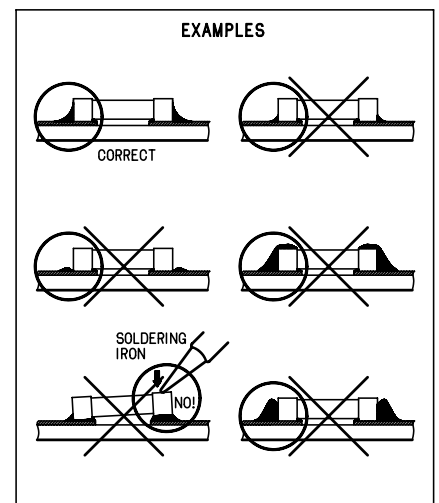
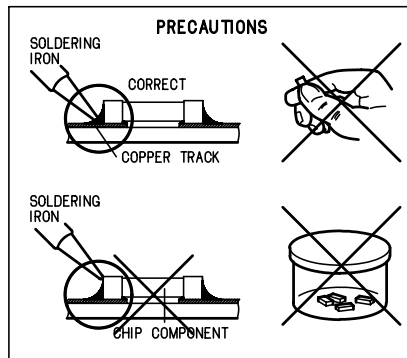
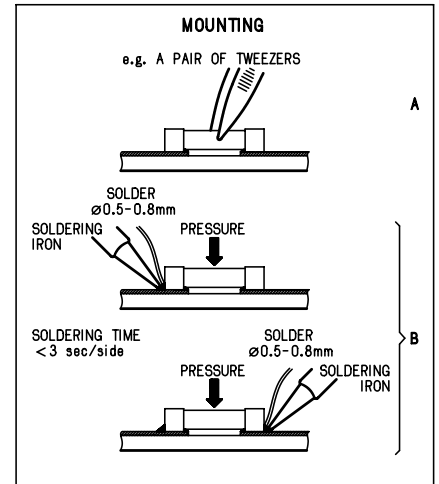
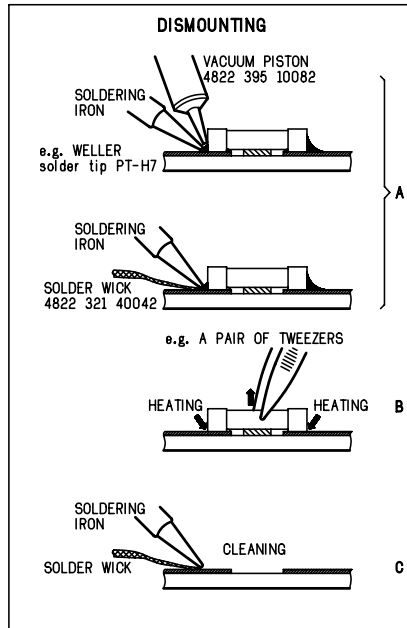
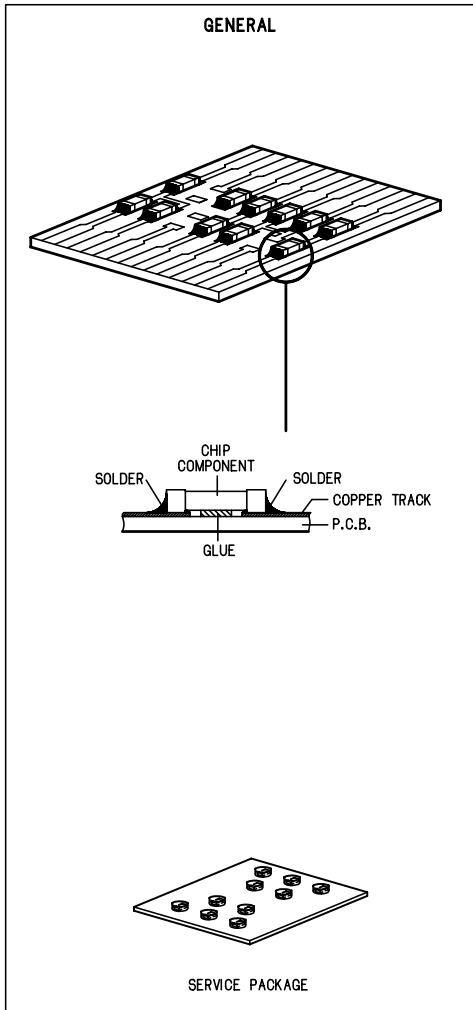
## Compact Disc:

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

## ESD Equipment:

Anti-static table mat - large 1200x650x1.25mm .....	4822 466 10953
anti-static table mat - small 600x650x1.25mm .....	4822 466 10958
Anti-static wristband .....	4822 395 10223
Connectorbox (1MΩ) .....	4822 395 11307
Extension cable (to connect wristband to conn.box) .....	4822 320 11305
Connecting cable (to connect table mat to conn.box) .....	4822 320 11306
Earth cable (to Connect product to mat or box) --	4822 320 11308
Complete kit ESD3 (combining all above products) .....	4822 320 10671
Wristband tester .....	4822 344 13999

## HANDLING CHIP COMPONENTS



**(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.

**ESD****(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.

**(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 enfilez 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).

Unvorsichtige 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.

**(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)**

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

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

**(NL)**

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

**(F)**

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

**(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.

**(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.

"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 suojaletituksen ohitettaessa olet alltiina näkymättömälle laserisäteilylle. Älä katso säteeseen!

**(DK) Advarse !**

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

## System, Region code, Tuner, etc. setting procedure

### 1) System Reset

- Press "SYSTEM" button on R/C. TV show "SETUP"
- Select the menu using the "▼" and "▶" button on R/C
- Go feature setup page to do system reset

### 2) Region Code Change

After replacement / repair of the MPEG board, the customer setting and the region code may be lost. Changing the Region code will put the player back in the state which it has left the factory.

#### Region Code

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

#### TV System

1	NTSC
2	PAL
3	AUTO

#### Menu/ Audio Subtitle (AS) Language

1	English
2	English
3	English
4	English

#### AFS

001	LX3000D/LX3500D
002	MX3600D/MX3800

#### oem derivative

08

- region code = 1 digit
- tv system = 1 digit
- "as/menu lang" = 1 digit
- "AFS" = "architecture Feature Set" = 3 digits

This field is used to define the architecture / features sets for each product.

- "oem derivative" = 2 digit

This field is used to define the OEM set. This will affect the background display.

Hence in total, reprogramming will be done by way of the remote control. It should run as below :-

- Put the player in stop mode. No disc loaded.
- Press the following key on remote control:

For LX3000S/21L (Latam) :

<PLAY> <159> <411> <001> <08> <PLAY>

For LX3000D/21S (Latam) :

<PLAY> <159> <411> <001> <08> <PLAY>

For LX3000D/22S (Europe) :

<PLAY> <159> <221> <001> <08> <PLAY>

For LX3000D/30S (Australia/NZ) :

<PLAY> <159> <431> <001> <08> <PLAY>

For LX3000/37S (USA) :

<PLAY> <159> <111> <001> <08> <PLAY>

For LX3500D/21H (APAC) ;

<PLAY> <159> <331> <001> <08> <PLAY>

For LX3500D/21R (APAC) :

<PLAY> <159> <331> <001> <08> <PLAY>

For LX3500D/33S (Korea) :

<PLAY> <159> <311> <001> <08> <PLAY>

For LX3500/37S (USA) :

<PLAY> <159> <111> <001> <08> <PLAY>

\* After the Region Code is changed it is necessary to reset the system so that the new Region Code will be fully effective. All customer setting will be lost.

\* On top of the maximum number of times allowed for changing the region code is changed to 25.

\* When the counter reaches 25, you will not be able to further change the code until you reset the timer by the Region Code timer reset procedure

## CAUTION !

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

### 3) Region code change timer reset

Press below key to reset the timer :

- In DISC source, stop mode and no disc in tray.
- Press R/C "Play -159-PLAY" to reset timer to 25

### 4) Tuner area change

- Press the "OPEN/CLOSE" button to open the set's door
- Press "1" "5" "9" button by using R/C.
- TV Show "TUNER AREA ADJUST"
- Select the tuner area you want by using the "▼" and "▶" button on R/C, then press "OK" to confirm. TV show "TUNER AREA CHANGED"

If you didn't press it in five seconds, the system will remain original status.

AREA	BAND	FREQUENCY (Hz)		STEP(Hz)
USA	FM	87.5M	108M	100K
	AM	530K	1700K	10K
APAC	FM	87.5M	108M	50K
	AM	531K	1602K	9K
EUROPE	FM	87.5M	108M	50K
	AM	531K	1602K	9K
LATAM	FM	87.5M	108M	50K
	AM	530K	1710K	10K
AUSTRALIA / NZ	FM	87.5M	108M	50K
	AM	531K	1602K	9K

Note :-

- Please refer to the above different tuner area.
- For /22S the Pr Pb Y output will be at SCART connector.

### 5. Video Out Change

- Press "SYSTEM" on R/C button
- Select the menu using the "▼" and "▶" button on R/C
- Go picture setup page select Video out item.
- If /22S version then set to SCART other area then set to PR PB Y

### 6. Password Change

- Press "SYSTEM" on R/C button
  - Select the menu using the "▼" and "▶" button on R/C
  - Go feature setup page select "PASSWORD". TV show "ENTER CODE". Press 4 times of "STOP" button on R/C.
  - Select "PARENTAL" "8 ADULT" on TV.
  - Enter PASSWORD to "1234"
- \* "1234" is a default password supplied.

### 7. Upgrading new software in MPEG Board

- Open the CD-door, then insert the CD-R program disc.
- Close the CD-door.
- TV will show:-
  - "disc loading"
  - "bank30.rom"
  - "writing" about 6 seconds.
  - "Done"

\* The latest upgraded is in version VER0410.

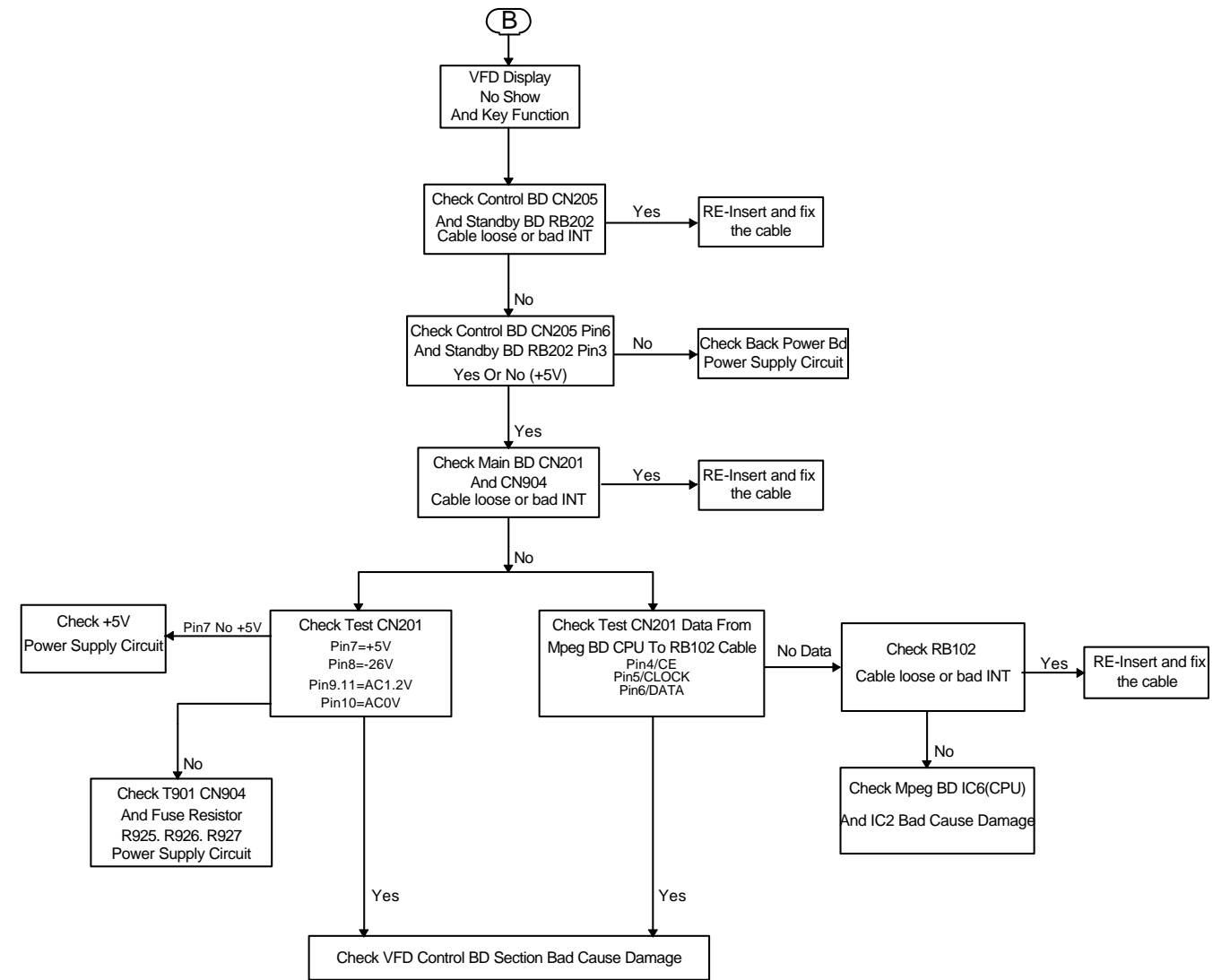
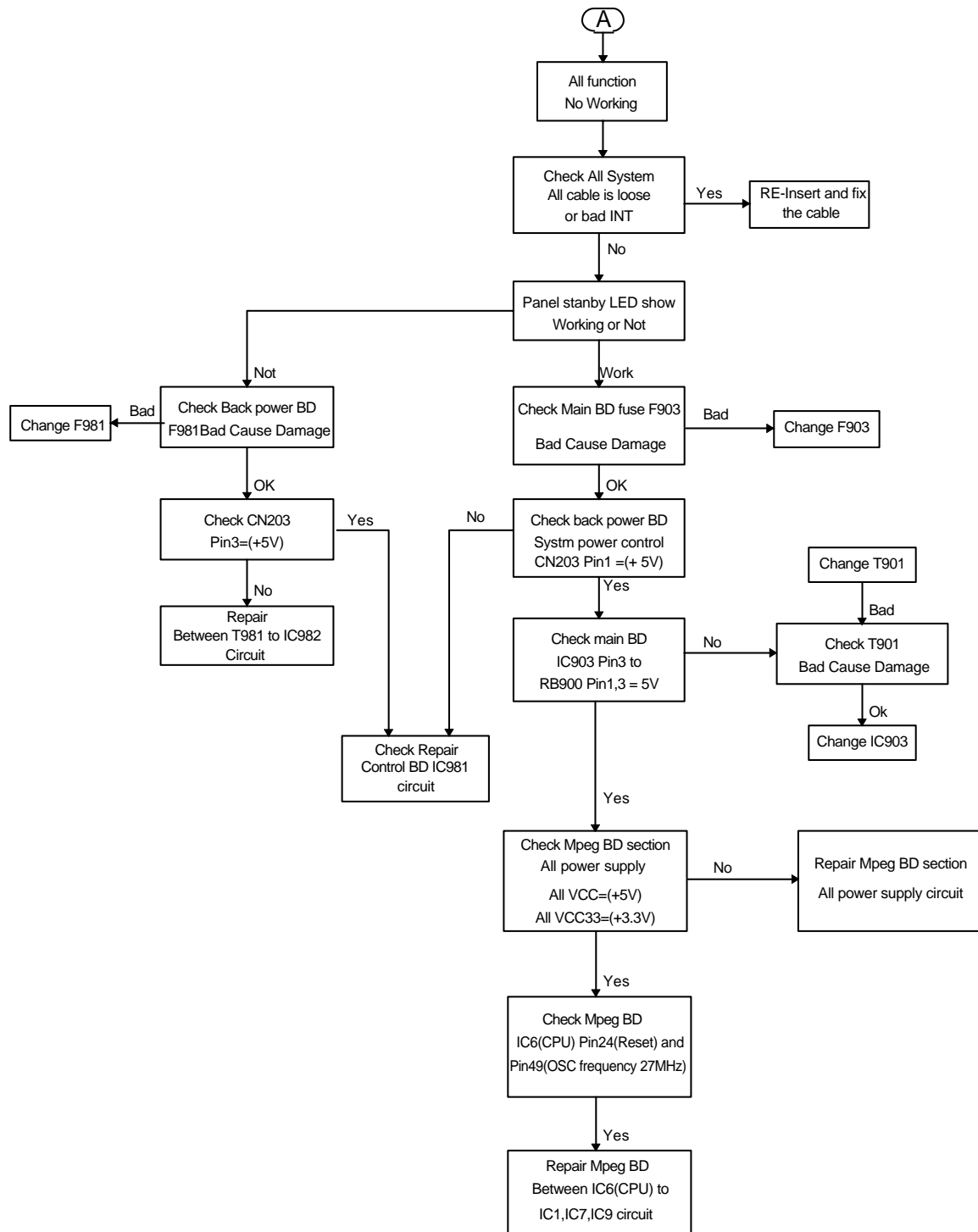
### 8. Check software version

- Open the CD door.
- Press "123" and "OK" on the remote control.
- TV will show the software version on screen.

# REPAIR INSTRUCTIONS

## MAIN UNIT REPAIR CHART

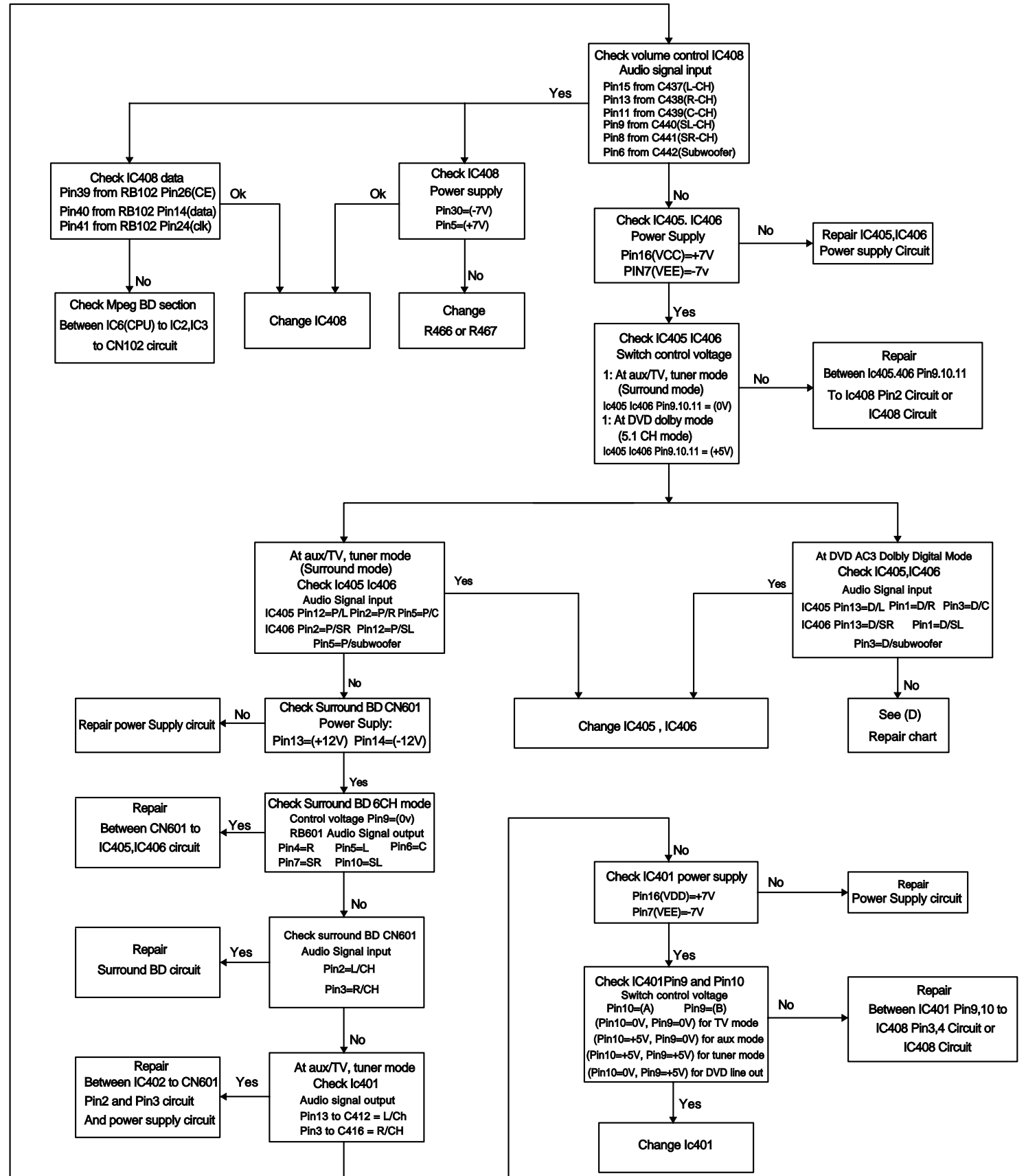
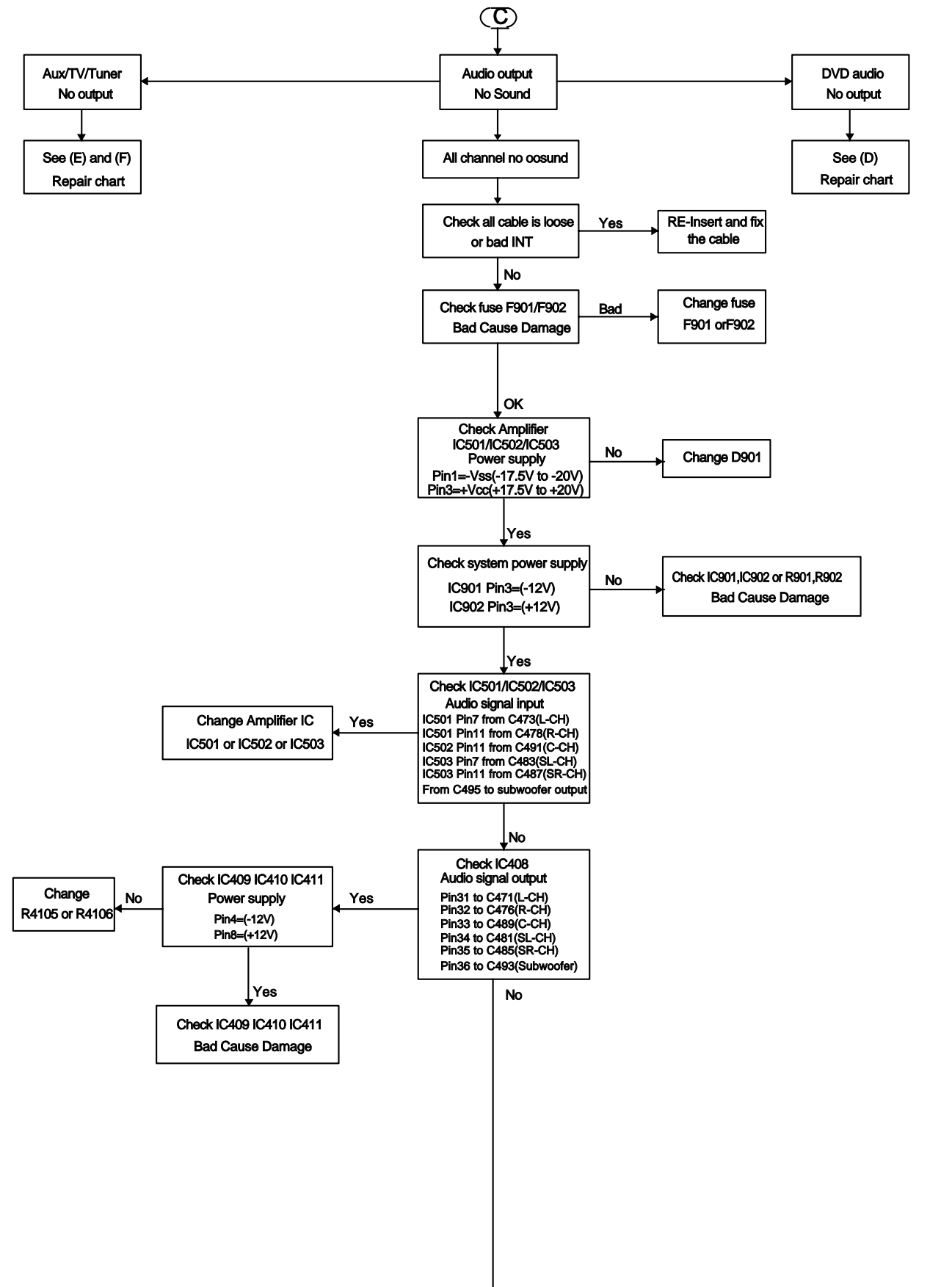
- (A)  
All Function  
No Working
- (B)  
VFD Display  
No Show  
And Key Function
- (C)  
Audio Output  
No Sound
- (D)  
DVD Audio  
No Output
- (E)  
Aux/TV  
No Output
- (F)  
Tuner  
No Output
- (G)  
Ear Head Phone  
No Sound
- (H)  
Audio Line  
No Output
- (I)  
Center Line  
No Output
- (J)  
Subwoofer Line  
No Output
- (K)  
Digital Line  
No Output



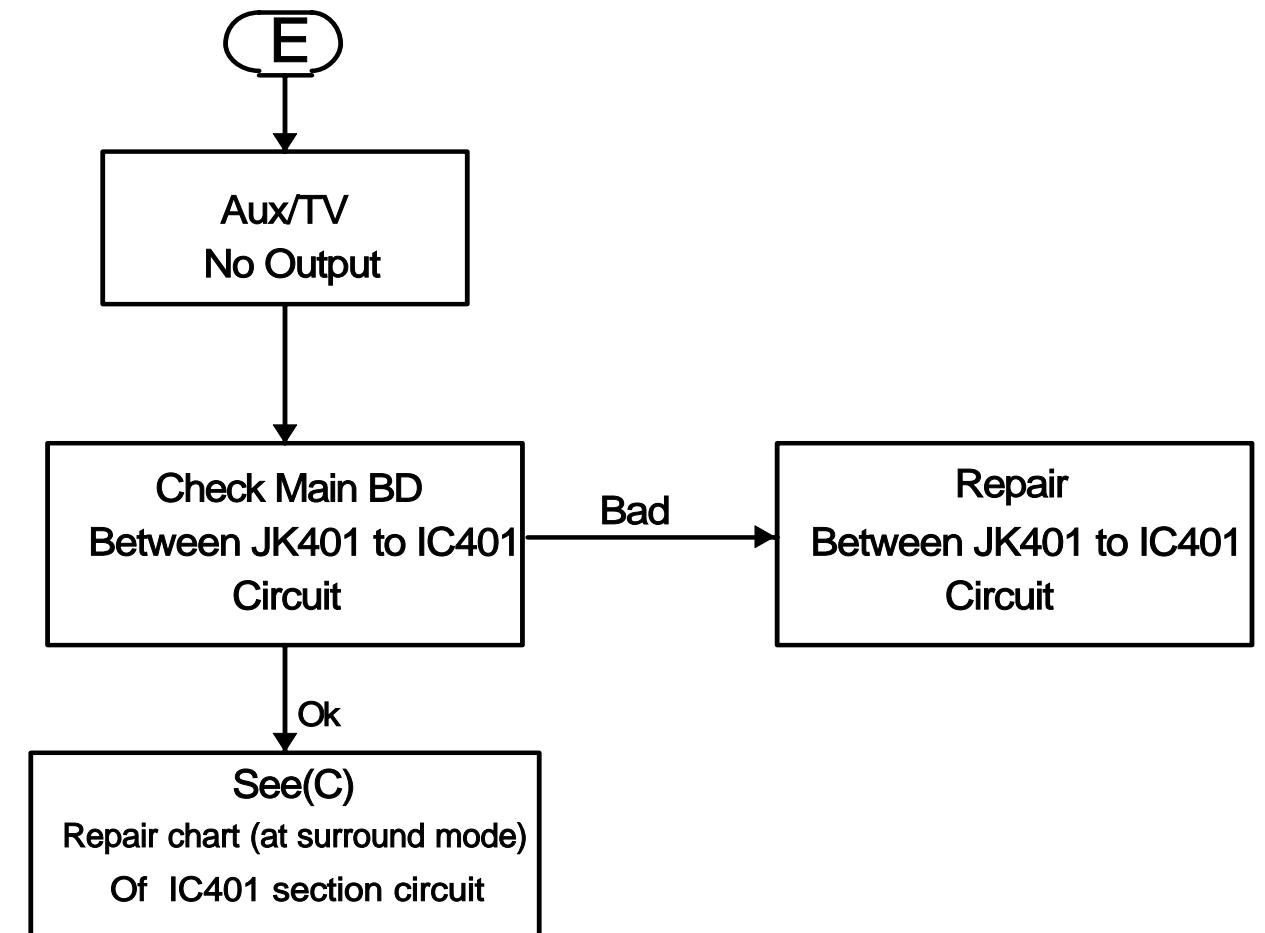
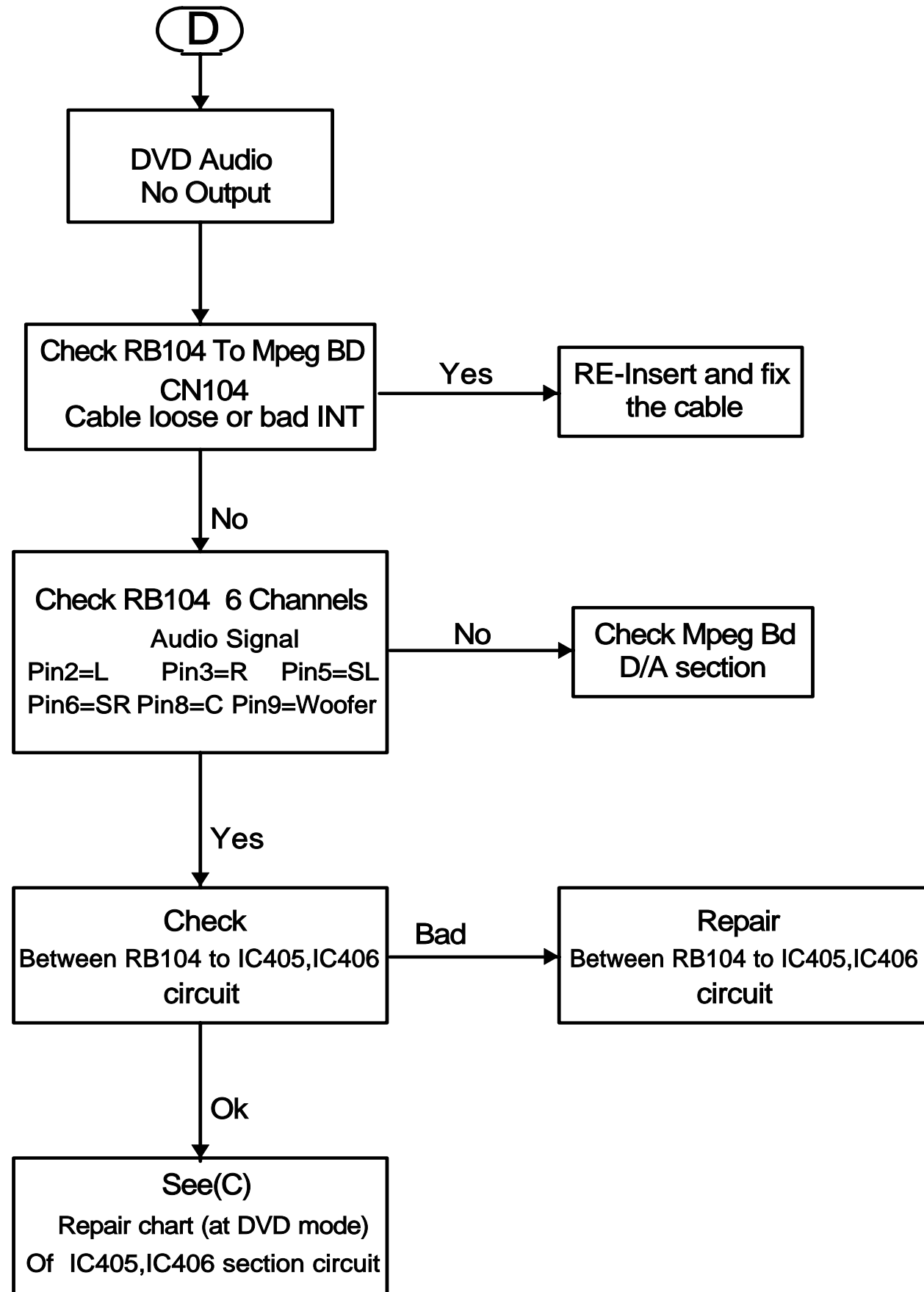
Note: BD=Board  
 Main BD = LVM0189C011  
 MPEG BD = LFF0205C001  
 Surround BD = LVA0192C001  
 Tuner BD = LVT0187C001



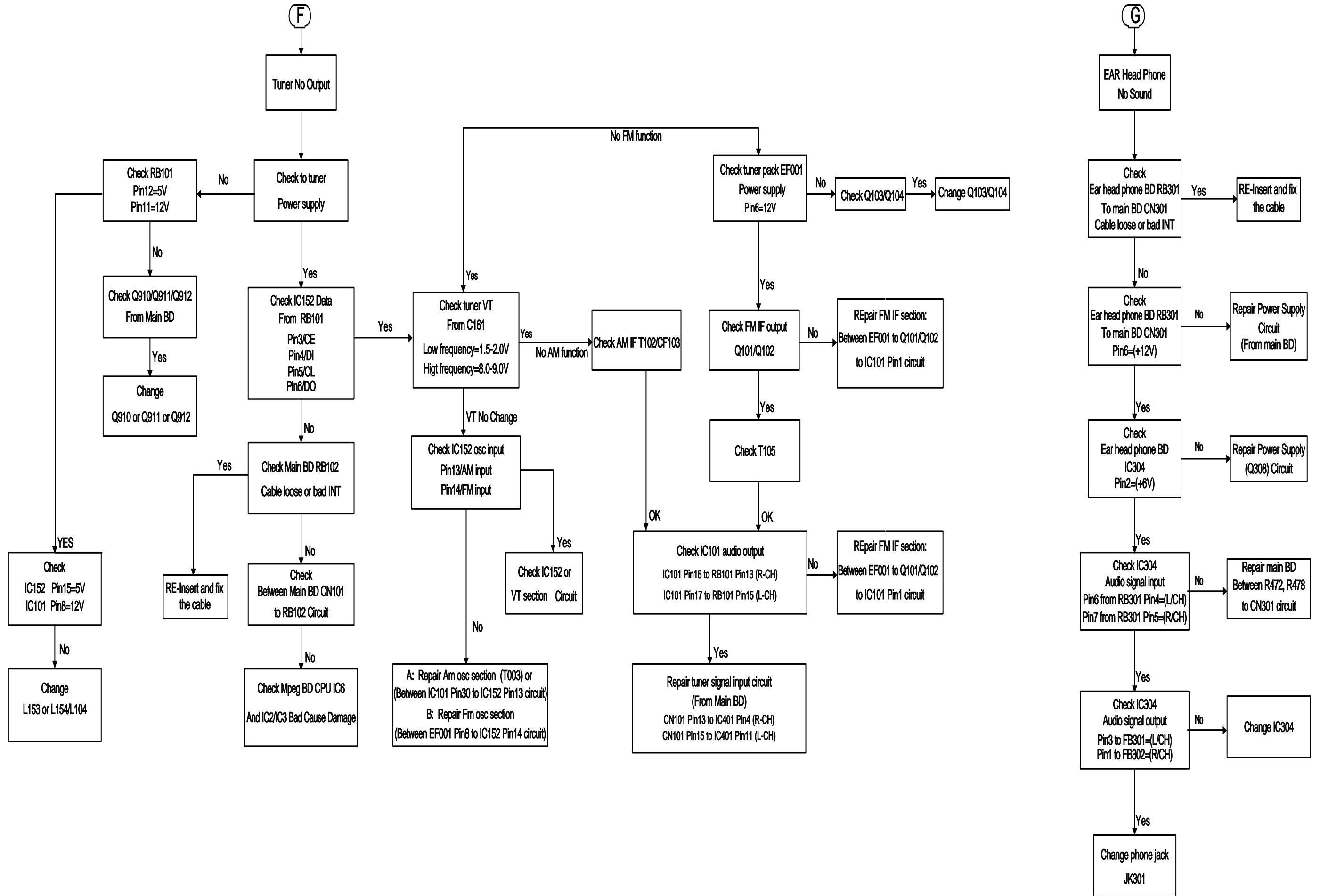
# REPAIR INSTRUCTIONS



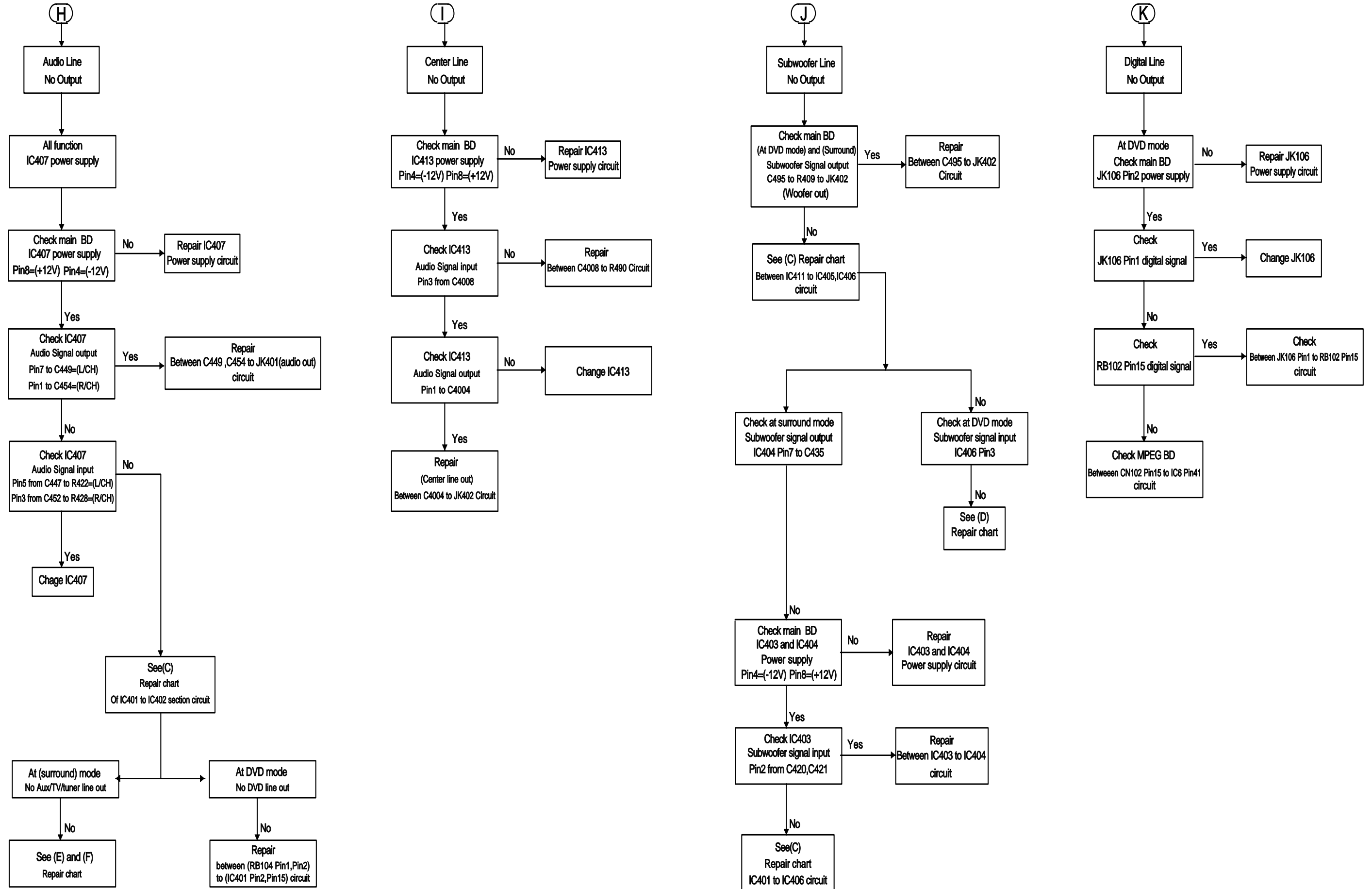
## REPAIR INSTRUCTIONS



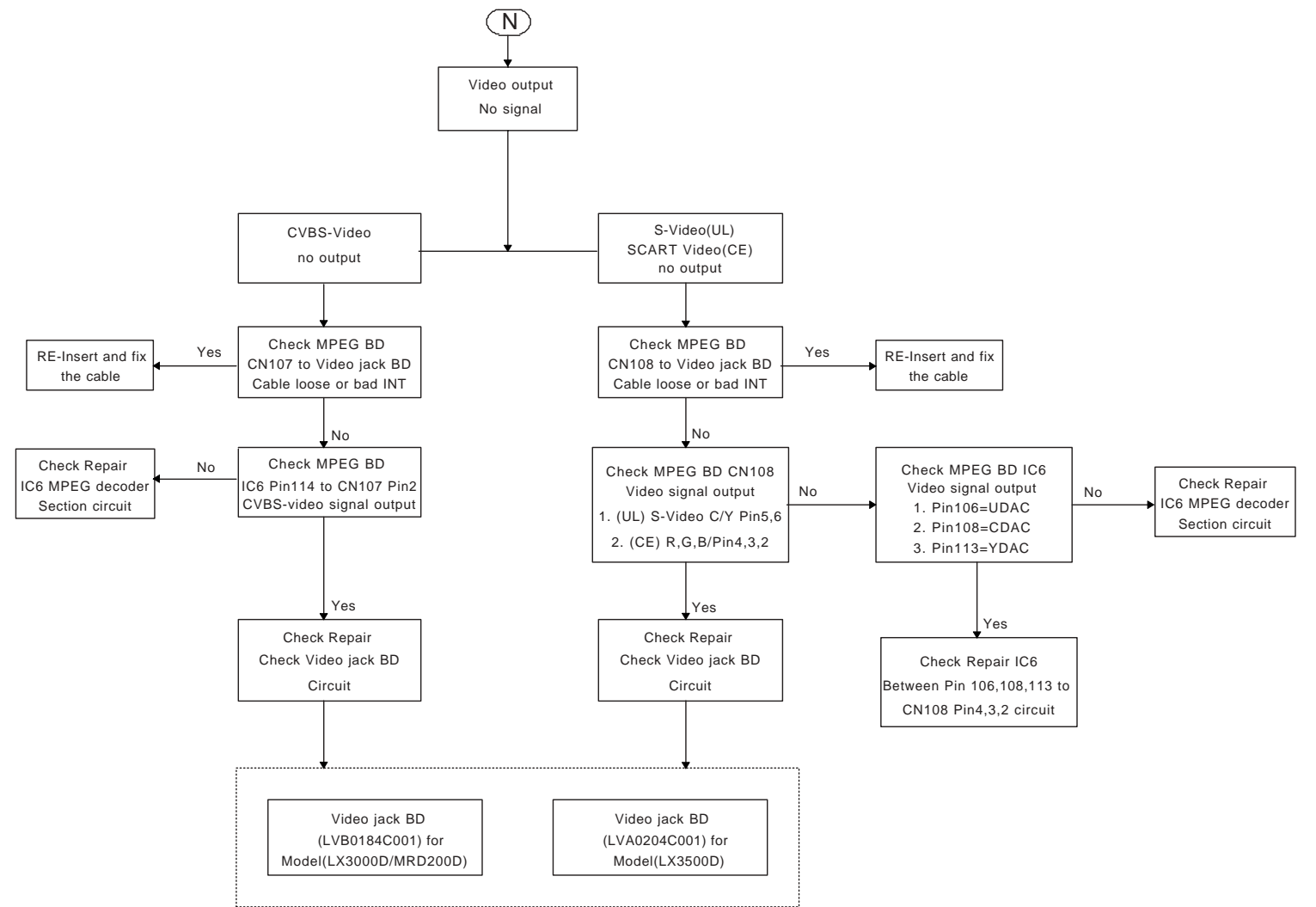
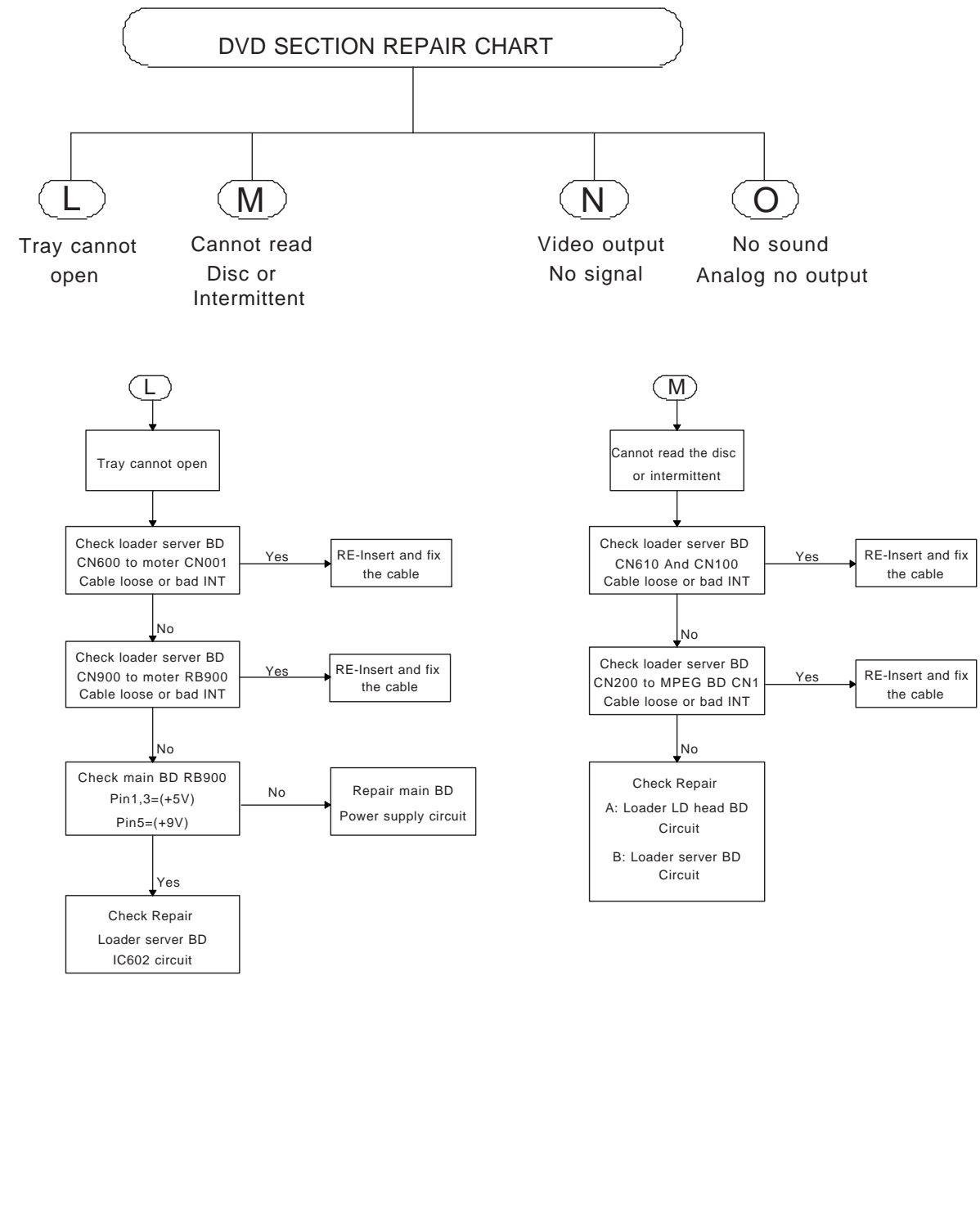
# REPAIR INSTRUCTIONS



# REPAIR INSTRUCTIONS

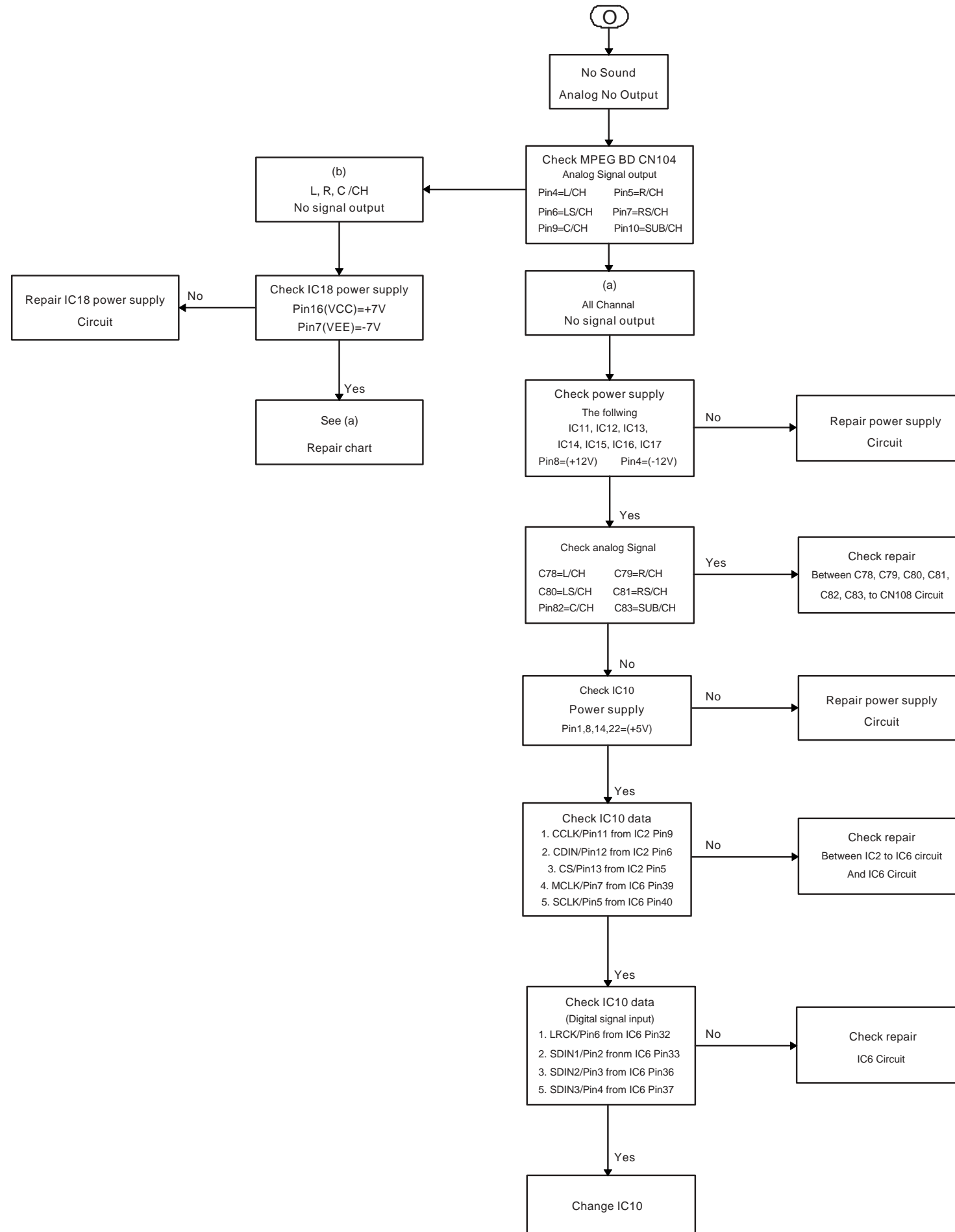


# REPAIR INSTRUCTIONS



Note: BD=Board  
 MPEG BD = LFF0205C001  
 Video jack board(LX3000D/MRD200D)=LVB0184C001  
 Video jack board(LX3500D)=LVA0204C001

# REPAIR INSTRUCTIONS



## DISASSEMBLY INSTRUCTIONS

### Dismantling of the Key Board 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.*

To manually open the DVD Tray, place the set on its right side. Insert a mini screw driver with diameter 2mm and 50mm length into the slot on the bottom of DVD tray 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 2 and close the tray manually by pushing it back in.

3) Loosen 11 screws and remove the Top Cover by lifting the rear portion upwards before sliding it out towards the rear.  
- 7 screws on the back  
- 2 screws each on the left & right side

4) Loosen 7 screws & lift up the top edge of Front Panel assembly to free some catches (see figure 3) before sliding it out towards the front.  
- 5 screws on the bottom  
- 1 screw each on the left & right side

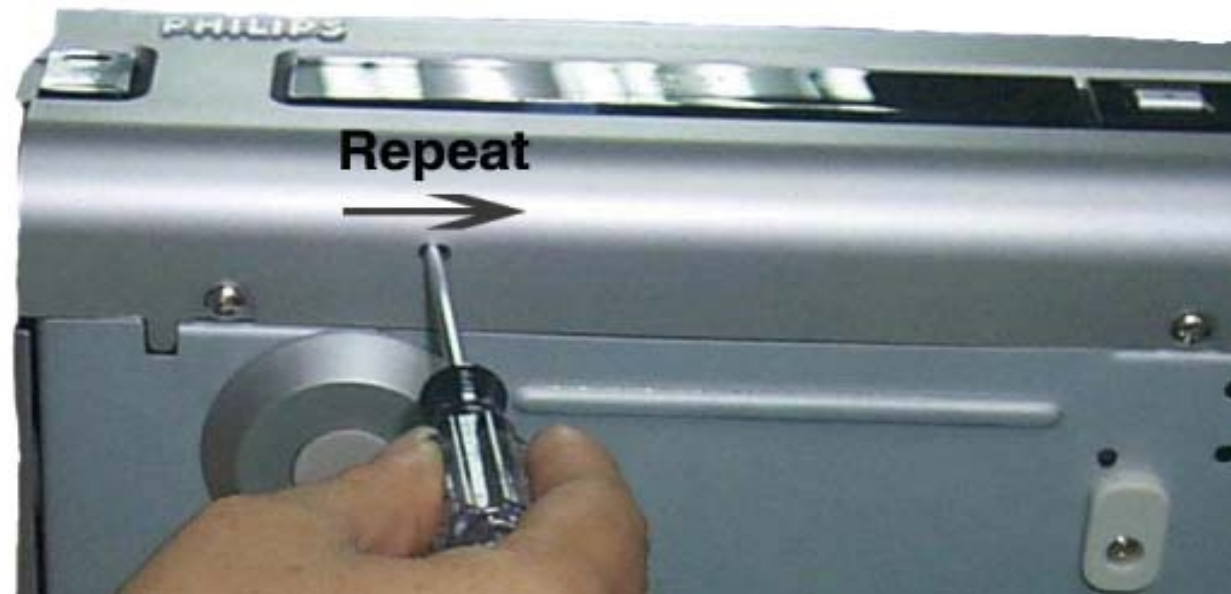


Figure 1

Insert a mini screw driver (as shown in figure 3) into the slot and slide it towards the right

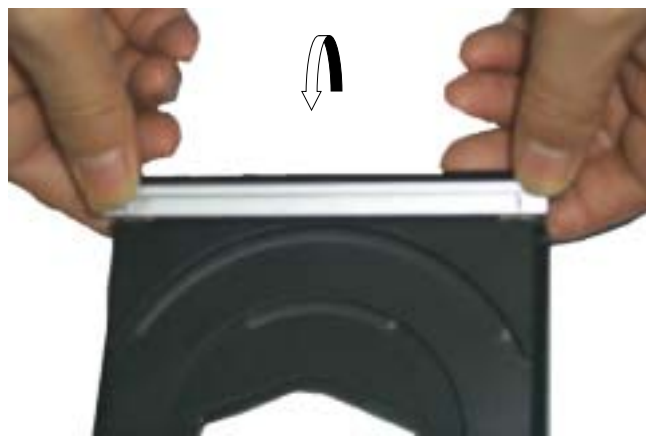


Figure 2



Figure 3

### Dismantling of the MPEG Board

1) Loosen 4 screws A to remove the metal cover together with MPEG board and remove the connector as shown in figure 4.

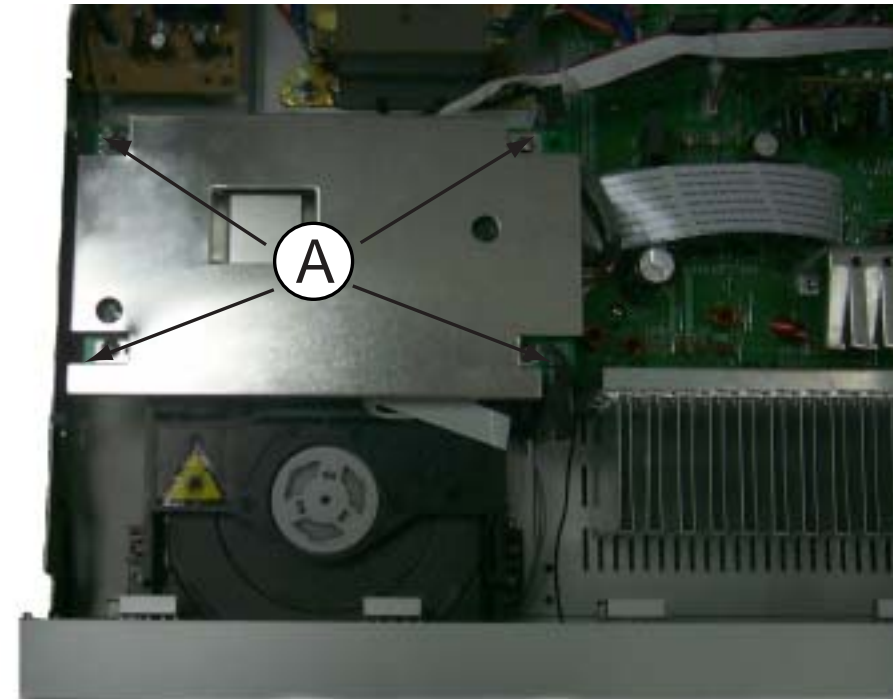


Figure 4

*Note: Do not lost the limited between the MPEG board and the servo board*

### Dismantling of the DVD Module

1) Loosen 4 screws B to remove the DVD module as shown in figure 5 .

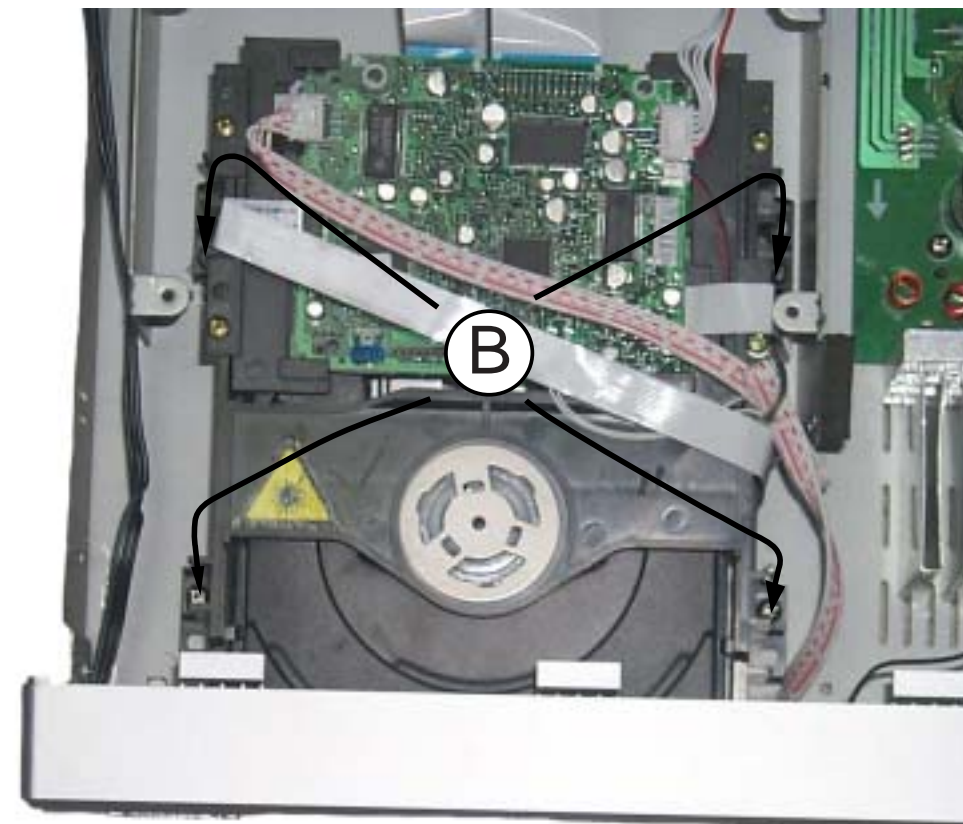
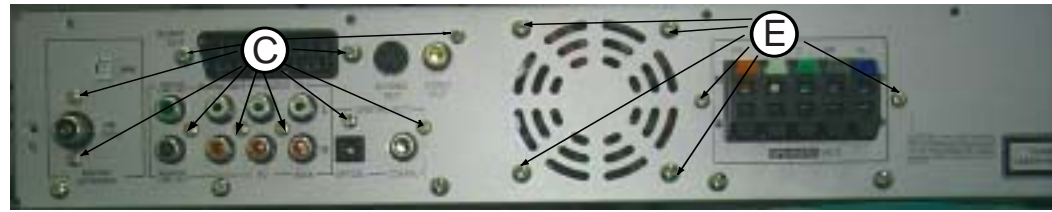


Figure5

**Dismantling of the Main Board (include Tuner & Surround Board)**

- 1) Loosen 6 screws F on the top of main board as shown in figure 7.
- 2) Loosen 10 screws C at the back panel as shown in figure 8.
- 3) Loosen 3 screws D on the bottom cover as shown in figure 9.
- 4) Remove all connectors on tuner, surround, RGB/Scart & main board.



Scart Jack use for LX3000/22S only

Figure 8



RGB Jack use for LX3000/21S/21L/30S;  
LX3500/37S/21R/21H

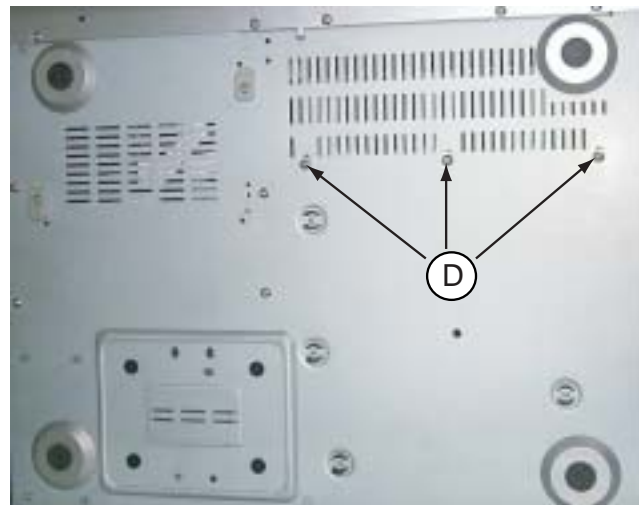


Figure 9



Figure 7

**Dismantling of the Speaker Jack Board & Fan**

- 1) Loosen 6 screws E at the back panel as shown in figure 8.
- 2) Remove all connectors at speaker jack and Fan.

**SERVICE POSITIONS**

Service position A



Service position B



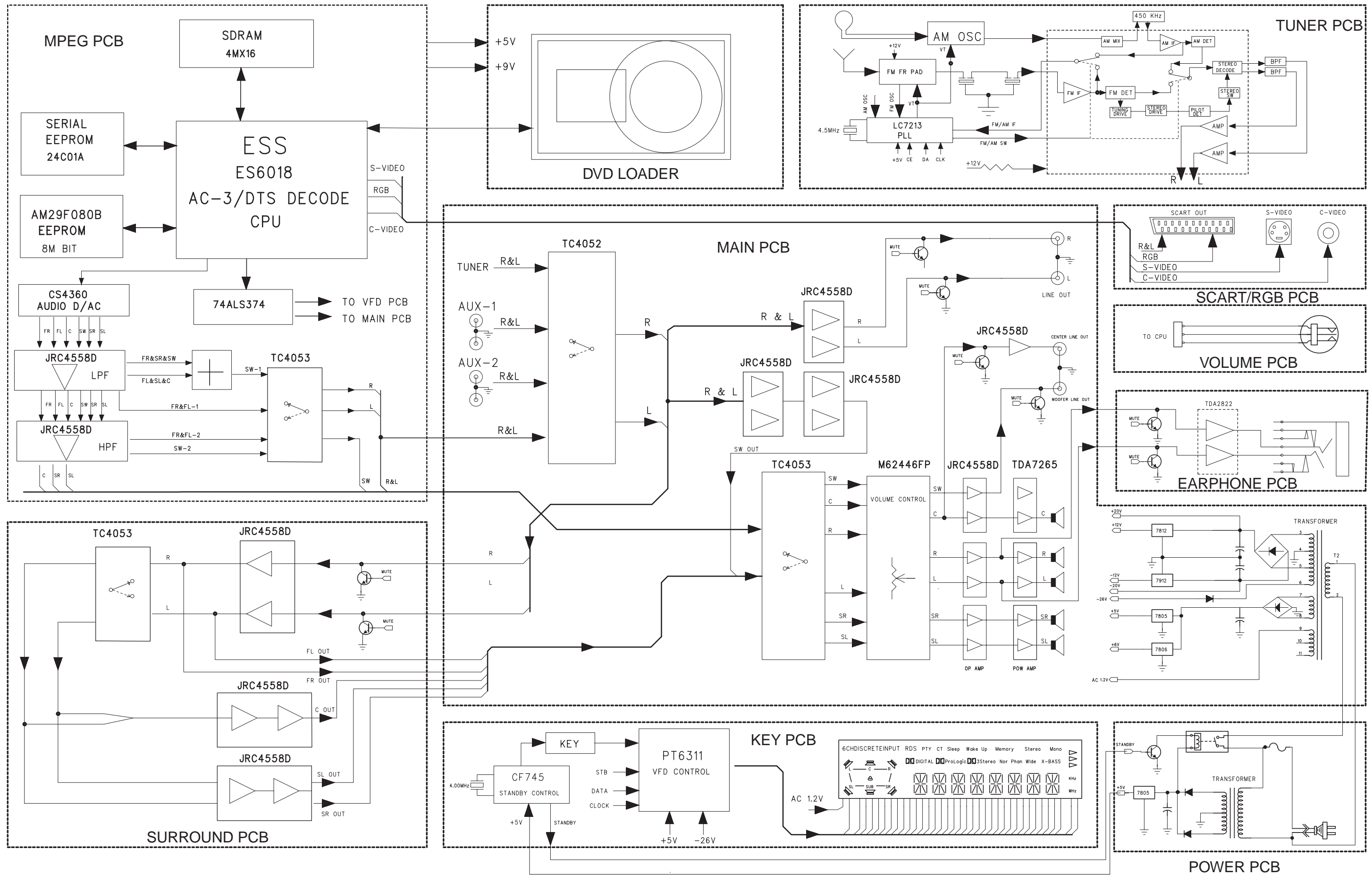
Note: In some service positions the components or copper patterns of one board may risk touching its neighbouring pc boards or metallic parts. To prevent such short-circuit use a piece of hard paper or other insulating material between them.

Service position C

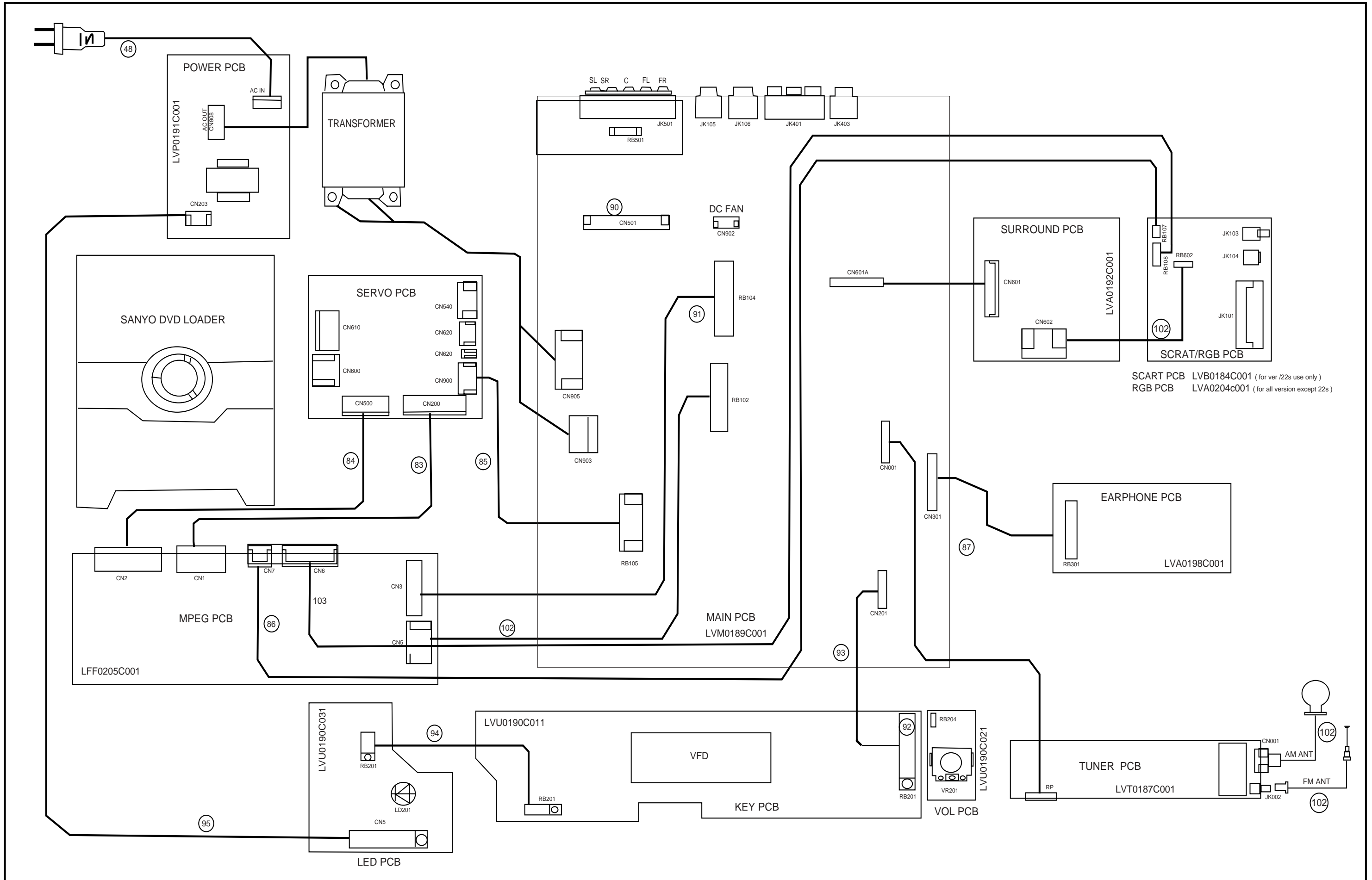




# BLOCK DIAGRAM

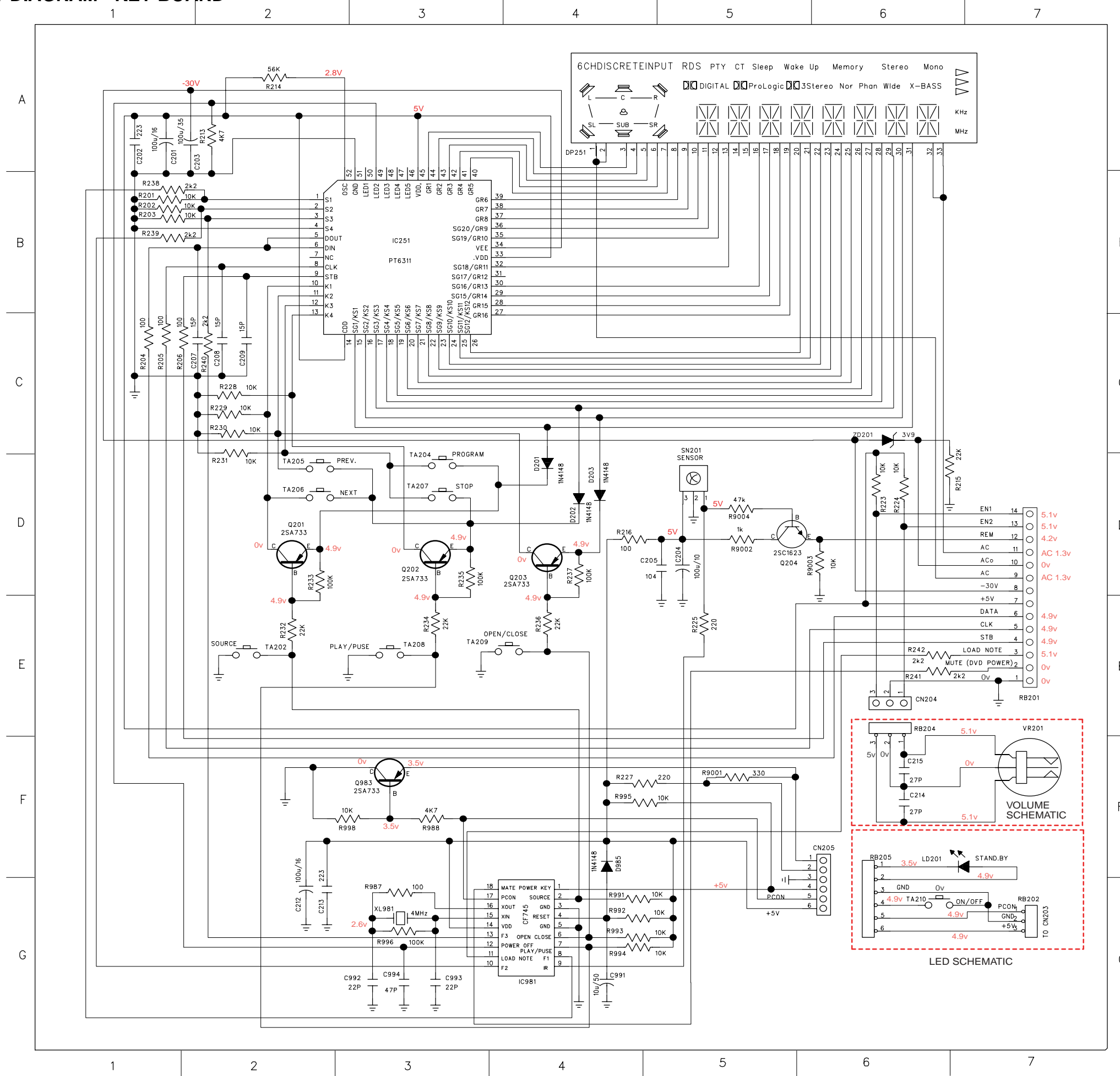


# WIRING DIAGRAM





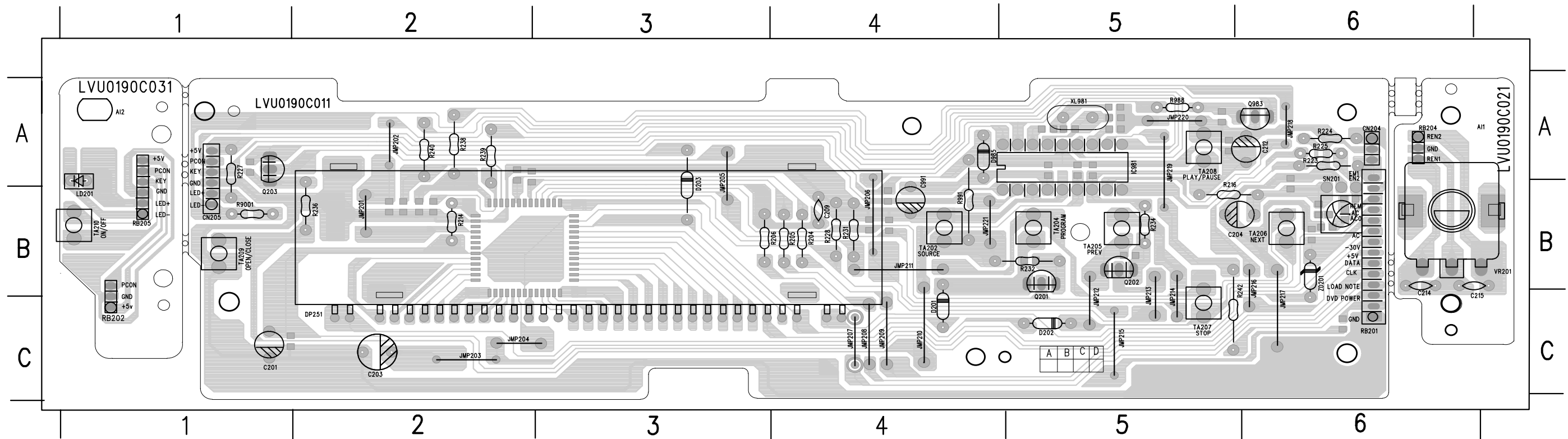
# CIRCUIT DIAGRAM - KEY BOARD



C201	A1	R237	D4
C202	A1	R238	B1
C203	A1	R239	B1
C204	D5	R240	C2
C205	D5	R241	E6
C207	C1	R242	E6
C208	C2	R987	G3
C209	C2	R988	F3
C212	G2	R991	G4
C213	G2	R992	G4
C214	F6	R993	G4
C215	F6	R994	G4
C991	G4	R995	F4
C992	G3	R996	G3
C993	G3	R998	F2
C994	G3	R9001	F5
CN203	G7	R9002	D5
CN204	E6	R9003	D6
CN205	F5	R9004	D5
D201	D4	RB201	E7
D202	D4	RB202	G7
D203	D4	RB204	F6
D985	F4	RB205	F6
DP251	A4	SN201	D5
IC251	B3	TA202	E2
IC981	G4	TA204	D3
LD201	F7	TA205	D2
Q201	D2	TA206	D2
Q202	D3	TA207	D3
Q203	D4	TA208	E3
Q204	D5	TA209	E3
Q983	F3	TA210	G6
R201	B1	VR201	F7
R202	B1	XL981	G3
R203	B1	ZD201	C6
R204	C1		
R205	C1		
R206	C1		
R213	A2		
R214	A2		
R215	D6		
R216	D4		
R223	D6		
R224	D6		
R225	E5		
R227	F4		
R228	C2		
R229	C2		
R230	C2		
R231	C2		
R232	E2		
R233	D2		
R234	E3		
R235	D3		
R236	E4		

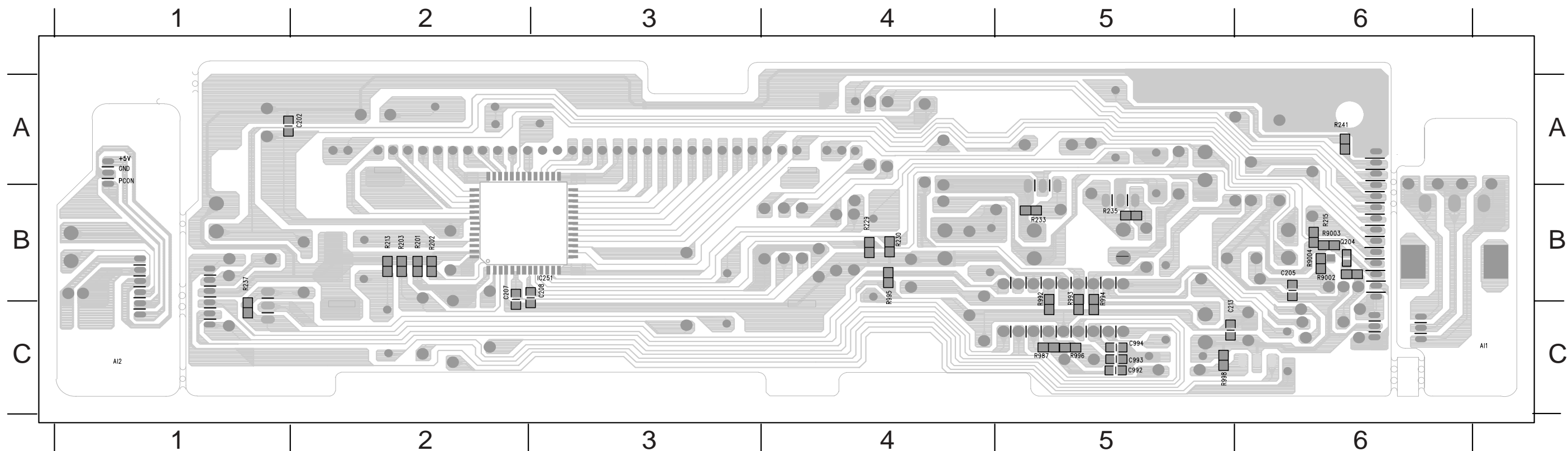
### PCB LAYOUT TOP VIEW - KEY BOARD

C201 C1 C214 B5 D202 C5 R205 B4 R223 A6 R228 B4 R236 B2 R241 C6 R9001 B1 Q938 A5 LD201 A1 SN201 B6 TA206 B6 VR201 B5 JWP202 A2 JWP206 B4 JWP210 C4 JWP214 C5 JWP218 A6 TA210 B1  
 C204 B6 C215 B6 D203 B3 R206 B4 R224 A6 R231 B4 R238 A2 R242 C5 Q201 C5 CN204 A5 RB201 C6 TA202 B4 TA207 C5 XL981 A5 JWP203 C2 JWP207 C4 JWP211 B4 JWP215 C5 JWP219 A6  
 C209 B4 C991 B4 D985 A4 R214 B2 R225 A6 R232 B5 R239 A2 R988 A5 Q202 B5 CN205 B1 RB202 C1 TA204 B5 TA208 A5 ZD201 B6 JWP204 C2 JWP208 C4 JWP212 C5 JWP216 C6 JWP220 A5  
 C212 A6 D201 C4 R204 B4 R216 B6 R227 A1 R234 B5 R240 A2 R991 B4 Q203 A1 C981 A5 RB204 A6 TA205 B5 TA209 B1 JWP201 B2 JWP205 B3 JWP209 C4 JWP213 C5 JWP217 C6 JWP221 B4



### PCB LAYOUT BOTTOM VIEW - KEY BOARD

C205 B6 C207 C2 C213 C5 C993 C5 R201 B2 R203 B2 R215 B6 R230 B4 R235 B5 R241 C6 R992 A6 R994 B5 R996 C5 R9002 B6 R9004 B6 Q204 B6  
 C202 A1 C208 C3 C992 C5 C994 C5 R202 B2 R213 B2 R229 B4 R233 B5 R237 C1 R987 A5 R993 C5 R995 B4 R998 C5 R9003 B6 IC251 B3





**ELECTRICAL PARTS LIST - KEY, VOLUME & LED BOARD****MISCELLANEOUS**

DP251	9965 000 12538	VFD DISPLAY
SN201	9965 000 13071	IRT SENSOR IRM-2038F4 W/GND
TA202	4822 276 13648	TACT SWITCH
TA204	4822 276 13648	TACT SWITCH
TA205	4822 276 13648	TACT SWITCH
TA206	4822 276 13648	TACT SWITCH
TA207	4822 276 13648	TACT SWITCH
TA208	4822 276 13648	TACT SWITCH
TA209	4822 276 13648	TACT SWITCH
TA210	4822 276 13648	TACT SWITCH
VR201	9965 000 12539	ROTARY ENCODER EC16B24-204
XL981	9965 000 12540	CRYSTAL 4,00MHZ

**CAPACITORS**

C201	9965 000 12541	100UF 16V 20%
C202	9965 000 13179	0,022UF 50V
C203	9965 000 13070	100UF 50V 20%
C204	4822 126 14585	0,1UF 50V 5%
C205	9965 000 12544	0,1UF 50V 5%
C207	4822 126 13486	15PF 2% NP0 63V
C208	4822 126 13486	15PF 2% NP0 63V
C209	9965 000 12545	15PF 50V 5%
C212	9965 000 12541	100UF 16V 20%
C213	9965 000 13179	0,022UF 50V
C214	9965 000 12546	27PF 50V 5%
C215	9965 000 12546	27PF 50V 5%
C991	9965 000 12547	10UF 50V 20%
C992	5322 122 32658	22PF 5% 50V
C993	5322 122 32658	22PF 5% 50V
C994	4822 126 13692	47PF 1% NP0 63V

**RESISTORS**

R201	9965 000 12484	10K 1/10W 5%
R202	9965 000 12484	10K 1/10W 5%
R203	9965 000 12484	10K 1/10W 5%
R204	4822 050 21001	100R 1% 0,6W
R205	4822 050 21001	100R 1% 0,6W
R206	4822 050 21001	100R 1% 0,6W
R213	4822 051 20472	4K7 5% 0,1W
R214	9965 000 09727	56K 1/6W 5% CF
R215	4822 051 20223	22K 5% 0,1W
R216	4822 050 21001	100R 1% 0,6W
R218	9965 000 12548	220R 1/10W 5%
R223	4822 050 21003	10K 1% 0,6W
R224	4822 050 21003	10K 1% 0,6W
R225	9965 000 12549	220R 1/6W 5% CF
R227	9965 000 12549	220R 1/6W 5% CF
R228	4822 050 21003	10K 1% 0,6W
R229	9965 000 12484	10K 1/10W 5%
R230	9965 000 12484	10K 1/10W 5%
R231	4822 050 21003	10K 1% 0,6W
R232	4822 050 22203	22K 1% 0,6W

R233	4822 117 10837	100K 1% 0,1W
R234	4822 050 22203	22K 1% 0,6W
R235	4822 117 10837	100K 1% 0,1W
R236	4822 050 22203	22K 1% 0,6W
R237	4822 117 10837	100K 1% 0,1W
R238	9965 000 12515	2,2K 1/6W 5% CF
R239	9965 000 12515	2,2K 1/6W 5% CF
R240	9965 000 12515	2,2K 1/6W 5% CF
R241	4822 117 11449	2K2 5% 0,1W 0805
R242	9965 000 12515	2,2K 1/6W 5% CF
R987	4822 117 11373	100R 1% RC12H 0805
R988	9965 000 09725	4,7K 1/6W 5% CF
R991	4822 050 21003	10K 1% 0,6W
R992	9965 000 12484	10K 1/10W 5%
R993	9965 000 12484	10K 1/10W 5%
R994	9965 000 12484	10K 1/10W 5%
R995	9965 000 12484	10K 1/10W 5%
R996	4822 117 10837	100K 1% 0,1W
R998	9965 000 12484	10K 1/10W 5%
R9001	9965 000 12592	330R 1/6W 5%
R9002	4822 051 20102	1K 5% 0,1W
R9003	9965 000 12484	10K 1/10W 5% CF
R9004	9965 000 12482	47K 5% 0,1W

**DIODES**

D201	4822 130 30621	1N4148
D202	4822 130 30621	1N4148
D203	4822 130 30621	1N4148
D301	4822 130 30621	1N4148
D302	4822 130 30621	1N4148
D985	4822 130 30621	1N4148
LD201	9965 000 12537	LED 3 DIA RED ROUND
ZD201	9965 000 12554	ZENER 3,8-4,0V 0,5W

**TRANSISTORS & INTEGRATED CIRCUITS**

IC251	9965 000 12550	PT6311(PTC)
IC981	9965 000 12551	CF745
Q201	4822 130 63876	2SA733R
Q202	4822 130 63876	2SA733R
Q203	4822 130 63876	2SA733R
Q204	9965 000 09584	2SC945
Q983	4822 130 63876	2SA733R

Note: Only the parts mentioned in this list are normal service spare parts.

**ELECTRICAL PARTS LIST - EARPHONE BOARD**

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**MISCELLANEOUS**

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FB301	9965 000 12470	BEAD FERITE 100R/ AT 100MHZ
FB302	9965 000 12470	BEAD FERITE 100R/ AT 100MHZ
JK301	9965 000 12555	HEADPHONE JACK D3,5

**CAPACITORS**

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C328	4822 124 40248	10UF 20% 63V
C331	9965 000 12558	220UF 16V 20%
C332	9965 000 12558	220UF 16V 20%
C333	9965 000 12559	100UF 16V 20%
C334	9965 000 12559	100UF 16V 20%
C339	4822 124 22652	2,2UF 50V +80-20%
C340	2038 554 00065	100NF +80-20% Y5V 50V
C341	2038 554 00065	100NF +80-20% Y5V 50V
C342	9965 000 12559	100UF 50V +80-20%
C343	2038 554 00065	100NF +80-20% Y5V 50V
C344	2038 554 00065	100NF +80-20% Y5V 50V
C345	2038 554 00065	100NF +80-20% Y5V 50V
C348	9965 000 12558	220UF 16V 20%
C350	2038 554 00065	100NF +80-20% Y5V 50V

**RESISTORS**

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R349	9965 000 09724	3,9K 1/6W 5% CF
R350	9965 000 12560	56K 1/6W 5%
R353	9965 000 12482	47K 1/10W 5%
R354	9965 000 12482	47K 1/10W 5%
R355	4822 050 24703	47K 1/6W 5%
R356	9965 000 12562	9,1K 1/6W 5% CF
R357	4822 050 24703	47K 1/6W 5%
R358	9965 000 12562	9,1K 1/6W 5% CF
R359	9965 000 09724	3,9K 1/6W 5% CF
R360	4822 050 21001	100R 1% 0,6W
R361	4822 050 21001	100R 1% 0,6W
R362	4822 050 21502	1K5 1% 0,6W
R363	4822 050 24703	47K 1% 0,6W
R364	9965 000 09728	750R 5% 1/6W
R365	9965 000 09728	750R 5% 1/6W
R366	4822 050 21001	100R 1% 0,6W
R367	4822 050 21001	100R 1% 0,6W
R368	4822 050 22203	22K 5% 1/6W

**DIODES**

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ZD302	4822 130 80272	MTZJ7,5C
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**TRANSISTORS & INTEGRATED CIRCUITS**

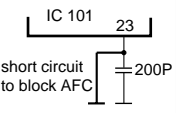
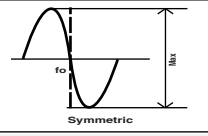
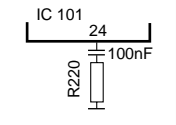
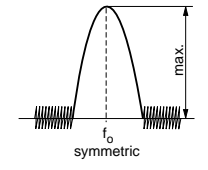
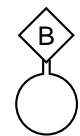
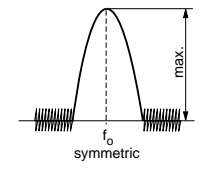
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IC304	9965 000 12563	TDA2822
Q306	4822 130 43818	2SC2878
Q307	4822 130 43818	2SC2878
Q308	4822 130 41651	2SC2001L

Note: Only the parts mentioned in this list are normal service spare parts.



**TUNER ADJUSTMENT TABLE**

Waverange	Input frequency	Input	Tuned to	Adjust	Output	Scope/Voltmeter	
<i>VARICAP ALIGNMENT</i>							
<b>FM</b> 87.5 - 108MHz (50kHz grid)			108MHz	5130	1	6.5V ±0.2V	
			87.5MHz	check		1.5V ±0.5V	
<b>AM</b> 531 - 1602kHz (9kHz grid) ( 22S / 30S / 21R / 21H )			1602kHz	TC002		7.8V ±0.2V	
			531kHz	T003		1.1V ±0.2V	
<b>AM</b> 530-1700kHz (10kHz grid) ( 21L / 21L / 37S )			1700kHz	TC002		8.0V ±0.2V	
			530kHz	T003		1.1V ±0.2V	
<i>FM - IF</i>							
<b>FM</b>	10.7MHz, 50mV continuous wave	F		T105	2		
<i>FM - RF</i>							
<b>FM</b>	108MHz	A mod=1kHz Δf=±2.5kHz	108MHz			MAX	
	87.5MHz		87.5MHz				
<i>AM IF</i>							
<b>AM</b>	450kHz	C Δf = ±5kHz V <sub>RF</sub> = 3mV		T102	4		
<b>AM AFC MW</b>	Connect pin 29 of IC 101 (AM Osc.) with short wire to ground (pin 28)						
<i>AM RF <sup>3)</sup></i>							
<b>MW</b>	1557kHz	B 	1557kHz	TC001	4		
	576kHz		576kHz	T002			
<b>MW</b>	1650kHz		Δf = ±30kHz V <sub>RF</sub> as low as possible	1650kHz			TC001
	580kHz		580kHz	T002			

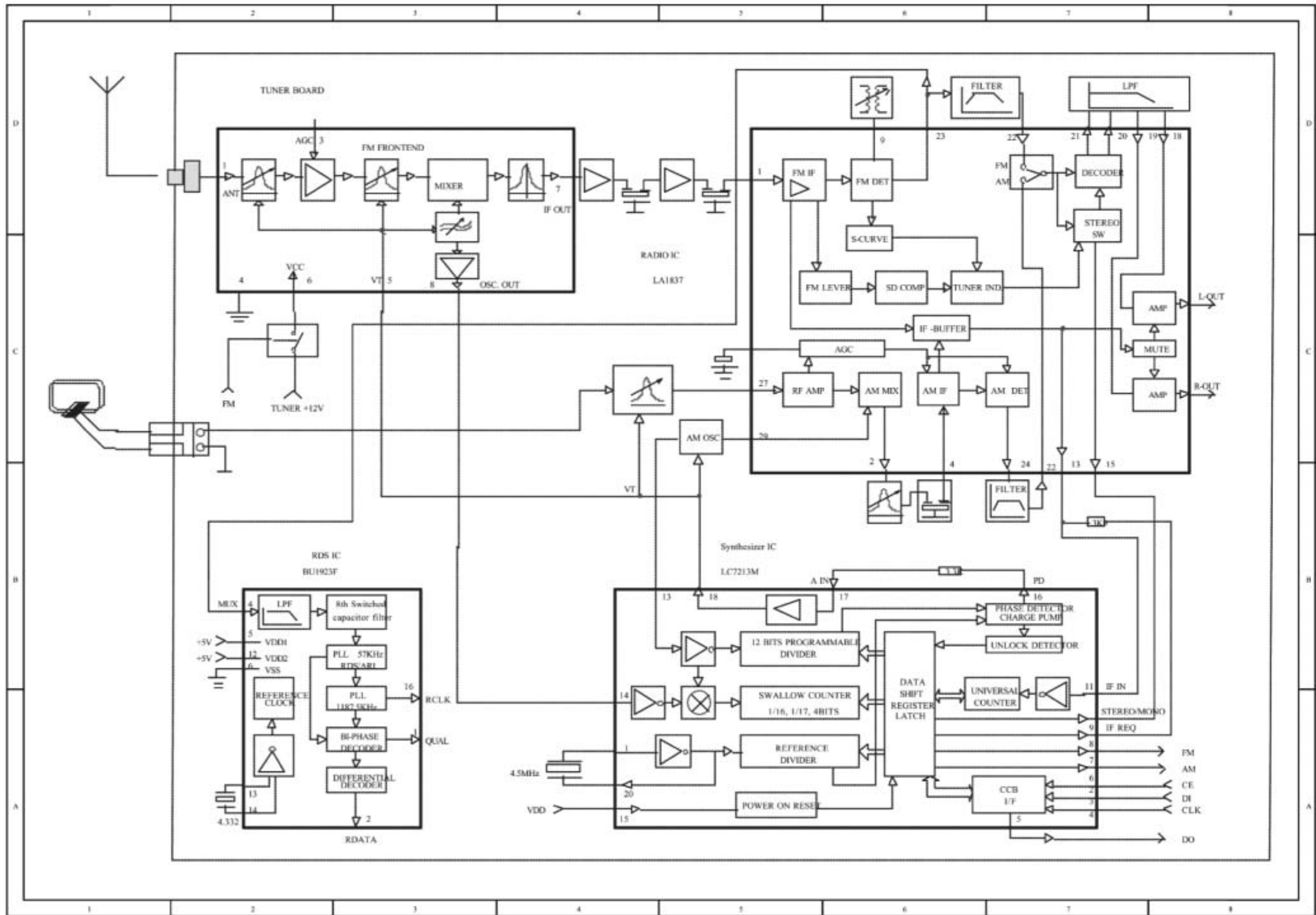
# TUNER BOARD

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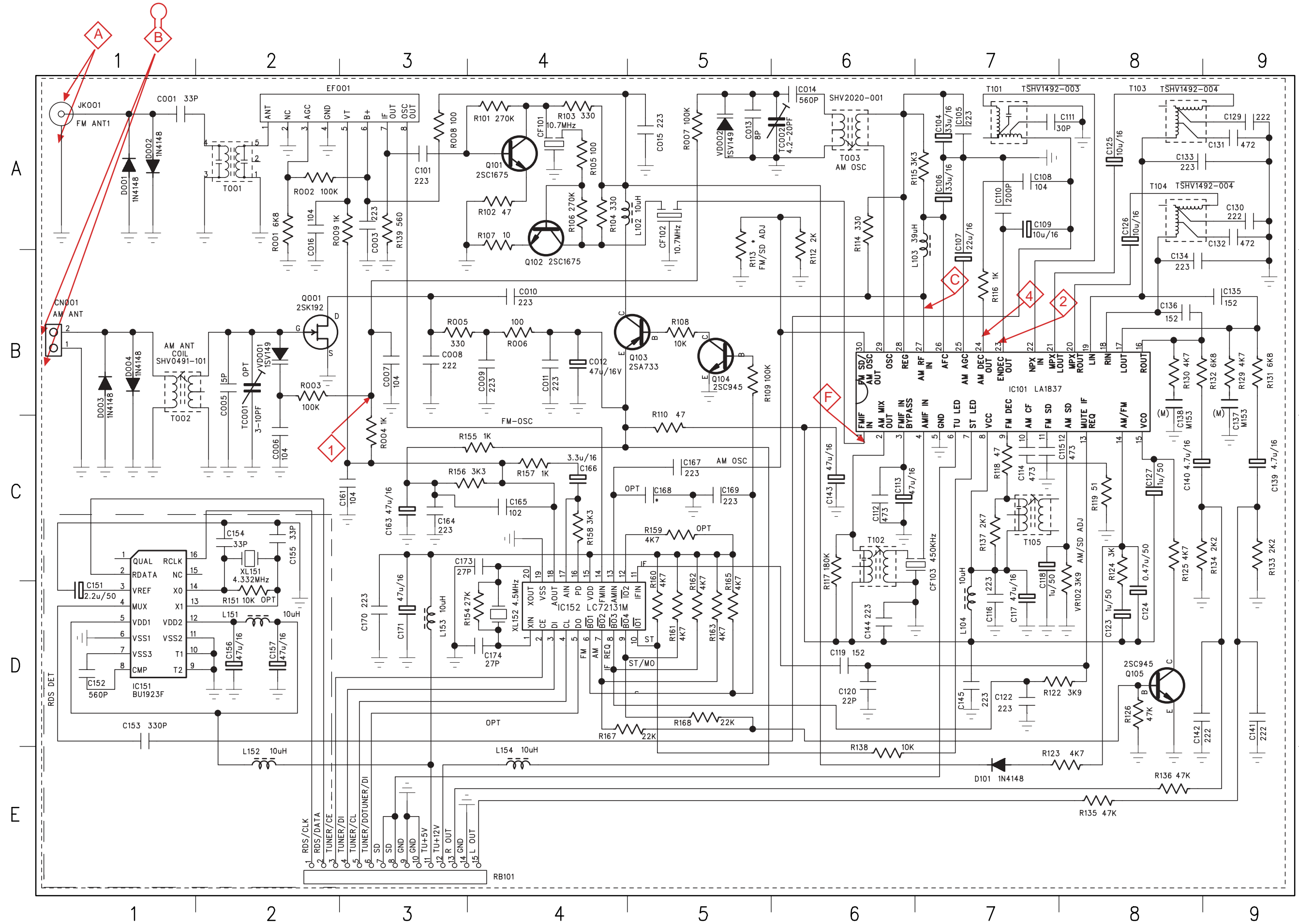
Tuner Adjustment Table ..... 6-1  
 Block Diagram ..... 6-2  
 Circuit Diagram ..... 6-3  
 PCB Layout Top View ..... 6-4  
 PCB Layout Bottom View ..... 6-5  
 Electrical Parts List ..... 6-6

Use Service Testprogram. By selecting the TUNER TEST test frequencies will be stored as preset frequencies automatically.  
 1) If sensitivity of frequency counter is too low adjust to max. channel separation (input signal: stereo left 90% + 9%, adjust output on right channel to minimum)  
 2) RC network serves for damping the IF-filter while adjusting the other one.  
 3) For AM RF adjustments the original frame antenna has to be used!

# BLOCK DIAGRAM



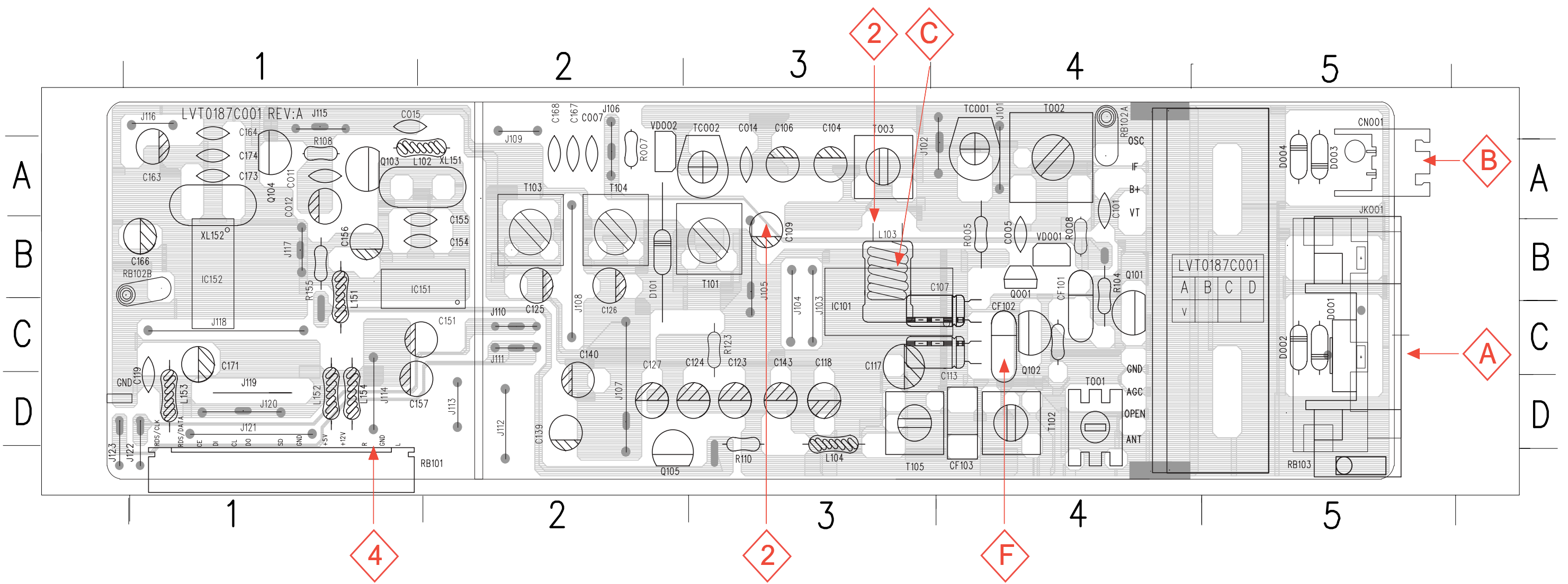
# CIRCUIT DIAGRAM



C001	A1	EF001	A2
C003	A3	IC101	C7
C005	A2	IC151	D1
C006	C2	L151	D2
C007	C3	L152	E2
C008	B3	L153	D3
C009	B4	L154	E4
C010	B4	Q101	A4
C011	B4	Q102	B4
C012	B4	Q103	B5
C013	A4	Q104	B5
C014	A6	Q105	D8
C015	A5	Q001	B2
C016	A2	R001	B2
C101	A3	R002	A2
C104	A7	R003	C3
C106	A7	R004	C3
C107	B7	R005	B3
C108	A8	R006	B4
C109	A8	R007	A5
C110	A7	R008	A3
C111	A7	R009	A3
C112	C6	R101	A4
C113	C6	R102	A4
C114	C7	R103	A4
C115	C7	R104	A4
C116	D7	R105	A4
C117	D7	R106	A4
C118	C7	R107	B4
C119	D9	R108	B5
C120	D6	R109	B5
C122	D7	R110	C5
C123	D8	R113	B6
C124	D8	R114	B6
C125	A8	R115	A7
C126	A8	R116	B7
C127	C8	R117	D6
C129	A9	R118	C7
C130	A9	R119	C8
C131	A9	R122	D7
C132	A9	R123	E7
C133	A9	R124	D8
C134	B8	R125	D8
C135	B5	R126	E8
C136	B8	R129	B9
C137	A9	R130	B8
C138	C8	R131	B9
C139	C9	R132	B9
C140	C9	R133	D9
C141	D9	R134	C9
C142	E9	R135	E8
C143	C6	R136	E8
C144	D6	R137	C7
C145	D7	R138	E6
C151	D1	R151	D2
C152	D1	R154	D4
C153	E1	R155	C4
C154	C2	R156	C3
C155	C2	R157	C4
C156	D2	R158	C4
C157	D2	R159	C5
C161	C3	R160	D5
C162	C3	R161	D5
C163	C3	R162	D5
C164	C3	R163	D5
C165	C4	R164	D5
C166	C4	R165	D5
C167	C5	R166	E5
C168	C5	T101	A7
C169	C5	T102	D6
C170	D3	T103	A9
C171	D3	T002	A2
C172	D4	T003	A6
C173	D4	T001	A2
C174	D4	T002	C2
CF101	A4	T003	A6
CF102	A5	VD001	B2
CF103	D7	VD002	A5
CN001	B1	VR101	B5
D101	E7	VR102	D8
D001	A1	XL151	D2
D002	A1	XL152	D4
D003	B1		
D004	B1		

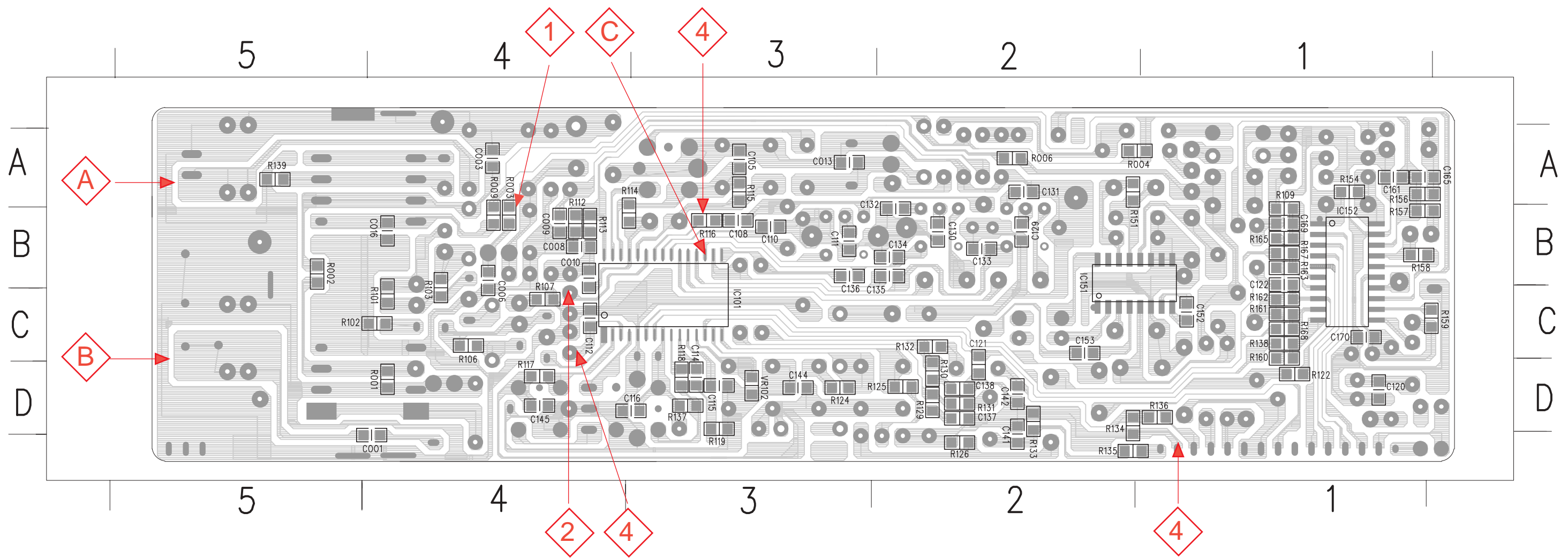
# PCB LAYOUT TOP VIEW

C005 A1	C109 B3	C139 D2	C164 A1	CN001 A5	L151 C1	R007 A2	T104 B2	XL152 A1	J110 C2	J120 D1	IC152 B1
C007 A2	C113 C4	C140 C2	C166 B1	D001 C5	L152 D1	R008 B4	T105 D3	J101 A4	J111 D2	J121 D1	R155 B1
C011 B1	C117 C4	C143 D3	C167 A2	D002 C5	L153 D1	R104 B4	TC001 A4	J102 A4	J112 D2	J122 D1	
C012 B1	C118 D3	C151 C1	C168 A2	D003 A5	L154 D1	R105 C4	TC002 A3	J103 C3	J113 D2	J123 D1	
C014 A3	C119 C1	C153 C2	C171 C1	D004 A5	Q001 B4	R108 A1	T001 D4	J104 C3	J114 C1	Q105 D2	
C015 A2	C123 D3	C154 B2	C173 A1	D101 B2	Q101 B4	R110 D3	T002 A4	J105 B3	J115 A1	RB102A A4	
C101 B4	C124 D3	C155 B2	C174 A1	JK001 C5	Q102 C4	R123 C3	T003 A3	J106 A2	J116 A1	RB102B B1	
C104 A3	C125 B2	C156 B1	CF101 C4	L102 A2	Q103 A1	T101 B3	VD001 B4	J107 D2	J117 B1	RB103 D5	
C106 A3	C126 B2	C157 C2	CF102 C4	L103 B3	Q104 A1	T102 D4	VD002 A3	J108 C2	J118 C1	RB101 D1	
C107 C4	C127 D2	C163 A1	CF103 D4	L104 D3	R005 B4	T103 B2	XL151 A2	J109 A2	J119 D1	IC151 B1	



PCB LAYOUT BOTTOM VIEW

R001 D5	R106 C4	R119 D3	R134 D2	R160 C1	C006 B4	C111 B3	C131 A2	C144 D3	IC152 B1
R002 B5	R107 C4	R122 D1	R135 D2	R161 C1	C007 A2	C112 C4	C132 A3	C145 D4	VR102 D3
R003 B4	R109 A1	R124 D3	R136 D1	R162 C1	C008 B4	C114 C3	C133 B2	C152 D1	
R004 A1	R112 B4	R125 D3	R137 D3	R163 B1	C009 B4	C115 D3	C134 B2	C153 C2	
R005 A4	R113 B4	R126 D2	R138 C1	R165 B1	C010 B4	C116 D4	C135 B3	C161 C3	
R006 A2	R114 B4	R129 D2	R151 A2	R167 B1	C013 A3	C120 D1	C136 B3	C165 A1	
R009 B4	R115 A3	R130 D2	R154 A1	R168 C1	C016 B4	C121 D2	C137 D2	C169 B1	
R101 B4	R116 B3	R131 D2	R157 A1	R156 A1	C105 A3	C122 B1	C138 D2	C170 C1	
R102 C4	R117 C4	R132 C2	R158 B1	C001 D5	C108 B3	C129 B2	C141 D2	IC101 C3	
R103 B4	R118 C3	R133 D2	R159 C1	C003 A4	C110 B3	C130 B2	C142 D2	IC151 B2	



## ELECTRICAL PARTS LIST - TUNER BOARD

## MISCELLANEOUS

CN001	9965 000 12565	CONNECTOR 2PIN, AM ANTENNA
EF001	9965 000 12566	TUNER FRONTEND FTE3-500H
EF001	9965 000 14228	TUN. FRONTEND KST-F404VA2FM /22S
JK001	9965 000 12567	FM ANTENNA SOCKET
XL151	9965 000 12572	CRYSTAL 4,332MHZ /22S
XL152	4822 242 82184	CRYSTAL 4,5MHZ

## CAPACITORS

C001	2238 861 18339	33PF 1% 50V 0805
C003	9965 000 12573	0,022UF 50V 20%
C005	9965 000 12574	5PF 50V +/-0,5PF
C006	4822 126 14585	100NF 10% X7R 0805 50V
C007	2038 554 00065	100NF +80-20% Y5V 50V
C008	9965 000 12585	0,022UF 50V 10%
C009	9965 000 12573	0,022UF 50V 20%
C010	9965 000 12573	0,022UF 50V 20%
C011	4822 122 30103	22NF 80% 63V
C012	9965 000 12575	47UF 16V 20%
C013	9965 000 13454	8PF 50V 5%
C014	9965 000 12577	560PF 50V 5%
C015	4822 122 30103	22NF 80% 63V
C016	4822 126 14585	100NF 10% X7R 0805 50V
C101	4822 122 30103	22NF 80% 63V
C104	9965 000 13074	33UF 100V 20%
C105	9965 000 12573	0,022UF 50V 20%
C106	9965 000 13074	33UF 100V 20%
C107	9965 000 13075	22UF 16V 20%
C108	4822 126 14585	0,1UF 50V 10%
C109	9965 000 12580	10UF 16V 20%
C110	9965 000 12581	200PF 50V 5%
C111	9965 000 12582	30PF 50V 5%
C112	9965 000 12524	0,047UF 50V 20%
C113	9965 000 13076	47UF 16V 20%
C114	9965 000 12524	0,047UF 50V 20%
C115	9965 000 12524	0,047UF 50V 20%
C116	9965 000 12573	0,022UF 50V 20%
C117	9965 000 13076	47UF 16V 20%
C118	9965 000 12583	1UF 50V 20%
C119	9965 000 13077	1500PF 50V 10%
C120	5322 122 32658	22PF 5% 50V
C122	9965 000 12573	0,022UF 50V 20%
C123	9965 000 12583	1UF 50V 20%
C124	9965 000 12584	0,47UF 50V 20%
C125	9965 000 12580	10UF 16V 20%
C126	9965 000 12580	10UF 16V 20%
C127	9965 000 12583	1UF 50V 20%
C129	9965 000 12585	0,0022UF 50V 10%
C130	9965 000 12585	0,0022UF 50V 10%
C131	5322 126 10223	4,7NF 10% X7R 63V
C132	5322 126 10223	4,7NF 10% X7R 63V
C133	9965 000 12573	0,022UF 50V 20%
C134	9965 000 12573	0,022UF 50V 20%

C135	4822 126 13344	1,5NF 5% 63V
C136	4822 126 13344	1,5NF 5% 63V
C137	4822 126 13188	15NF 5% X7R 63V
C138	4822 126 13188	15NF 5% X7R 63V
C139	9965 000 12586	4,7UF 16V 20%
C140	9965 000 12586	4,7UF 16V 20%
C141	9965 000 12585	0,0022UF 10% 50V
C142	9965 000 12585	0,0022UF 10% 50V
C143	9965 000 12575	47UF 16V 20%
C144	9965 000 12573	0,022UF 50V 20%
C145	9965 000 12573	0,022UF 50V 20%
C151	9965 000 14227	2,2UF 16V 20% /22S
C152	5322 116 80853	560PF 5%NP0 63V /22S
C153	9965 000 13078	330PF 50V 5% /22S
C154	5322 122 32072	33PF 2%NP0 100V /22S
C155	5322 122 32072	33PF 2%NP0 100V /22S
C156	9965 000 12575	47UF 16V 20% /22S
C157	9965 000 12575	47UF 16V 20% /22S
C161	4822 126 14585	100NF 10% X7R 0805 50V
C163	9965 000 12575	47UF 16V 20%
C164	4822 122 30103	22NF 80% 63V
C165	9965 000 12588	1000PF 50V 5%
C166	9965 000 13079	3,3UF 16V 20%
C167	4822 122 30103	22NF 80% 63V
C169	9965 000 12573	0,022UF 50V 20%
C170	9965 000 12573	0,022UF 50V 20%
C171	9965 000 13076	47UF 16V 20%
C173	9965 000 12546	27PF 50V 5%
C174	9965 000 12546	27PF 50V 5%
TC001	4822 125 50692	TRIMMER 3-10PF
TC002	4822 125 50693	TRIMMER 4,2-20PF

## RESISTORS

R001	9965 000 12591	6,8K 1/10W 5%
R002	4822 117 10837	100K 1% 0,1W
R003	4822 117 10837	100K 1% 0,1W
R004	4822 051 20102	1K 5% 0,1W
R005	9965 000 12592	330R 5% 1/6W
R006	4822 117 11373	100R 1% RC12H 0805
R007	4822 050 21004	100K 1% 0,6W
R008	4822 050 21001	100R 1% 0,6W
R009	4822 051 20102	1K 5% 0,1W
R101	4822 051 20274	270K 1% 0,1W
R102	4822 051 20479	47R 5% 0,1W
R103	4822 117 13577	330R 1% RC12H 0805 1,25W
R104	9965 000 12592	330R 1/6W 5% CF
R105	4822 050 21001	100R 1% 0,6W
R106	4822 051 20274	270K 1% 0,1W
R107	4822 051 20109	10R 5% 0,1W
R108	4822 050 21003	10K 1% 0,6W
R109	4822 117 10837	100K 1% 0,1W
R110	9965 000 12593	47R 1/6W 5% CF

## ELECTRICAL PARTS LIST - TUNER BOARD

R112	4822 051 20202	2K 5% 0,1W
R114	4822 117 13577	330R 1% RC12H 0805 1,25W
R115	4822 051 20332	3K3 5% 0,1W
R116	4822 051 20102	1K 5% 0,1W
R117	2120 108 92641	180K 1% 0,1W
R118	4822 051 20479	47R 5% 0,1W
R119	4822 051 20519	51R 5% 0,1W
R122	4822 051 20392	3K90 5% 0,1W
R123	9965 000 09725	4,7K 1/6W 5% CF
R124	4822 051 20302	3K 5% 0,1W
R125	4822 051 20102	1K 5% 0,1W
R126	9965 000 12482	47K 1/10W 5%
R129	4822 051 20472	4K7 5% 0,1W
R130	4822 051 20472	4K7 5% 0,1W
R131	9965 000 12591	6,8K 1/10W 5%
R132	9965 000 12591	6,8K 1/10W 5%
R133	4822 117 11449	2K2 5% 0,1W 0805
R134	4822 117 11449	2K2 5% 0,1W 0805
R135	9965 000 12482	47K 1/10W 5%
R136	9965 000 12482	47K 1/10W 5%
R137	4822 117 12955	2K7 5% 1/10W
R138	9965 000 12484	10K 1/10W 5%
R151	9965 000 12484	10K 1/10W 5% /22S
R154	9965 000 12484	10K 1/10W 5%
R155	9965 000 12519	1K 1/6W 5% CF
R156	4822 051 20332	3K3 5% 0,1W
R157	4822 051 20102	1K 5% 0,1W
R158	4822 051 20332	3K3 5% 0,1W
R159	4822 051 20472	4K7 5% 0,1W
R160	4822 051 20472	4K7 5% 0,1W
R161	4822 051 20472	4K7 5% 0,1W
R162	4822 051 20472	4K7 5% 0,1W
R163	4822 051 20472	4K7 5% 0,1W
R165	4822 051 20472	4K7 5% 0,1W
R167	4822 051 20223	22K 5% 0,1W
R168	4822 051 20223	22K 5% 0,1W
VR102	4822 051 20392	3K9 5% 0,1W

## COILS &amp; FILTERS

CF101	4822 242 82181	CER FILTER SFE10,7MA
CF102	9965 000 12564	CER FILTER 10,7MHZ SFE-10,7MS
CF103	9965 000 13181	CER FILTER 450KHZ SFU450B
L102	9965 000 12568	CHOKE 10UH
L103	9965 000 12569	CHOKE 39 MH
L104	9965 000 12568	CHOKE 10UH
L151	9965 000 12568	CHOKE 10UH /22S
L152	9965 000 12568	CHOKE 10UH /22S
L153	9965 000 12568	CHOKE 10UH
L154	9965 000 12568	CHOKE 10UH
T001	9965 000 12597	OSC FM S-8N
T002	9965 000 12598	ANT OSC AM 4-6:10T 1-3:86T
T003	9965 000 13081	OSC AM 108UH

T101	9965 000 12599	FILTER 78KHZ
T102	9965 000 12570	IFT AM 455KHZ Q=130
T103	9965 000 12600	FILTER 16KHZ
T104	9965 000 12600	FILTER 16KHZ
T105	9965 000 12571	FM IFT 10,7MHZ Q=MIN, 60

## DIODES

D001	4822 130 30621	1N4148
D002	4822 130 30621	1N4148
D003	4822 130 30621	1N4148
D004	4822 130 30621	1N4148
D101	4822 130 30621	1N4148
VD001	4822 130 81673	1SV149
VD002	4822 130 81673	1SV149

## TRANSISTORS &amp; INTEGRATED CIRCUITS

IC101	9965 000 12594	LA1837 SANYO
IC151	9965 000 12596	BU1923F /22S
IC152	9965 000 12595	LC72131M
Q001	4822 130 63173	2SK192AY
Q101	4822 130 41595	2SC1675L
Q102	4822 130 41595	2SC1675L
Q103	4822 130 63876	2SA733R
Q104	4822 130 41198	2SC945P
Q105	4822 130 41198	2SC945P

Note: Only the parts mentioned in this list are normal service spare parts.

WIRING CONNECTION

# DVD LOADER KIT572SE

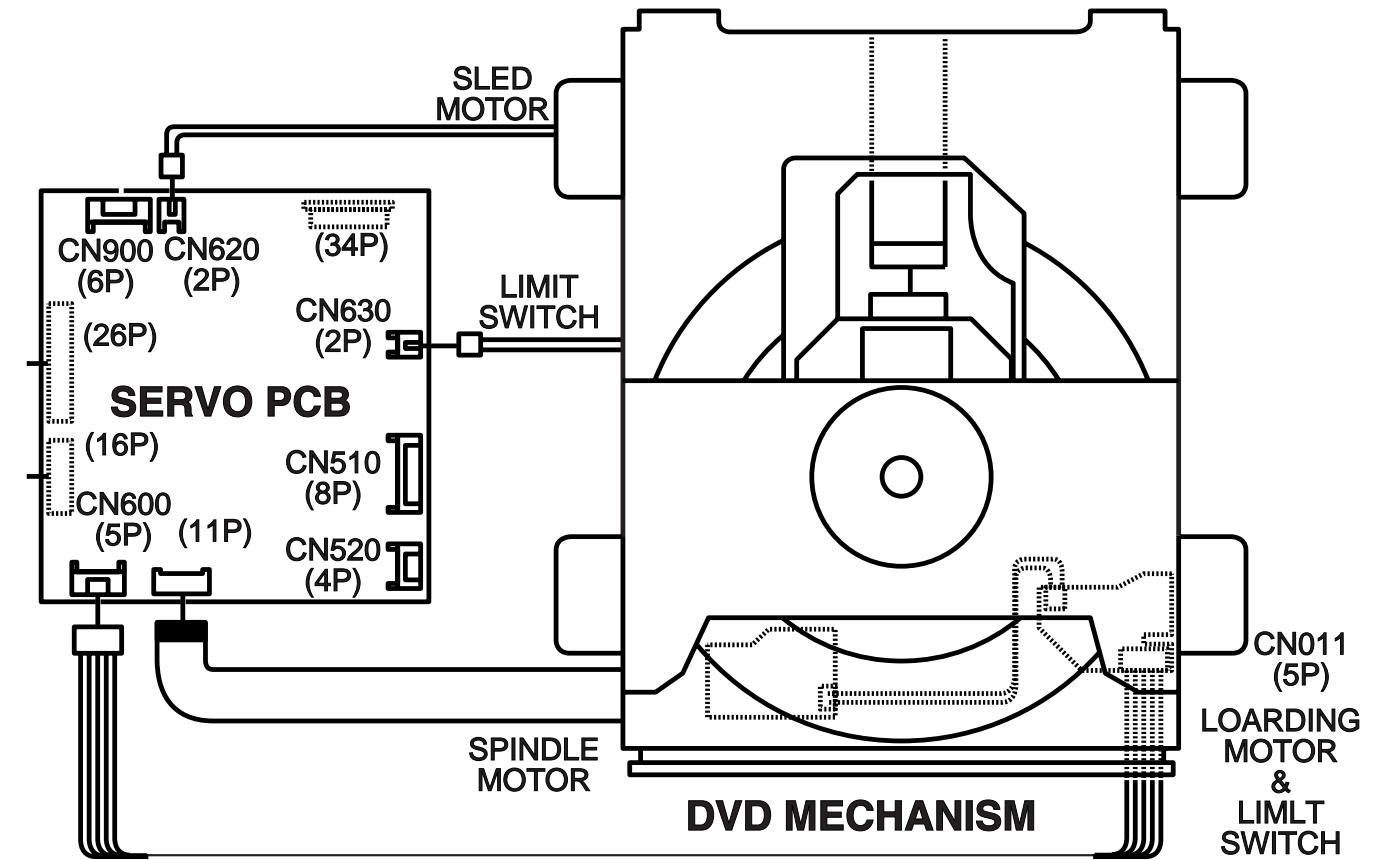
It is not recommended for component repair on this Module but to replace the major assembly when it becomes defective. Therefore limited service parts list are published in this chapter.

The Circuit & Layout diagrams are published for reference only. The repair assistance on DVD section is given on Chapter 2.

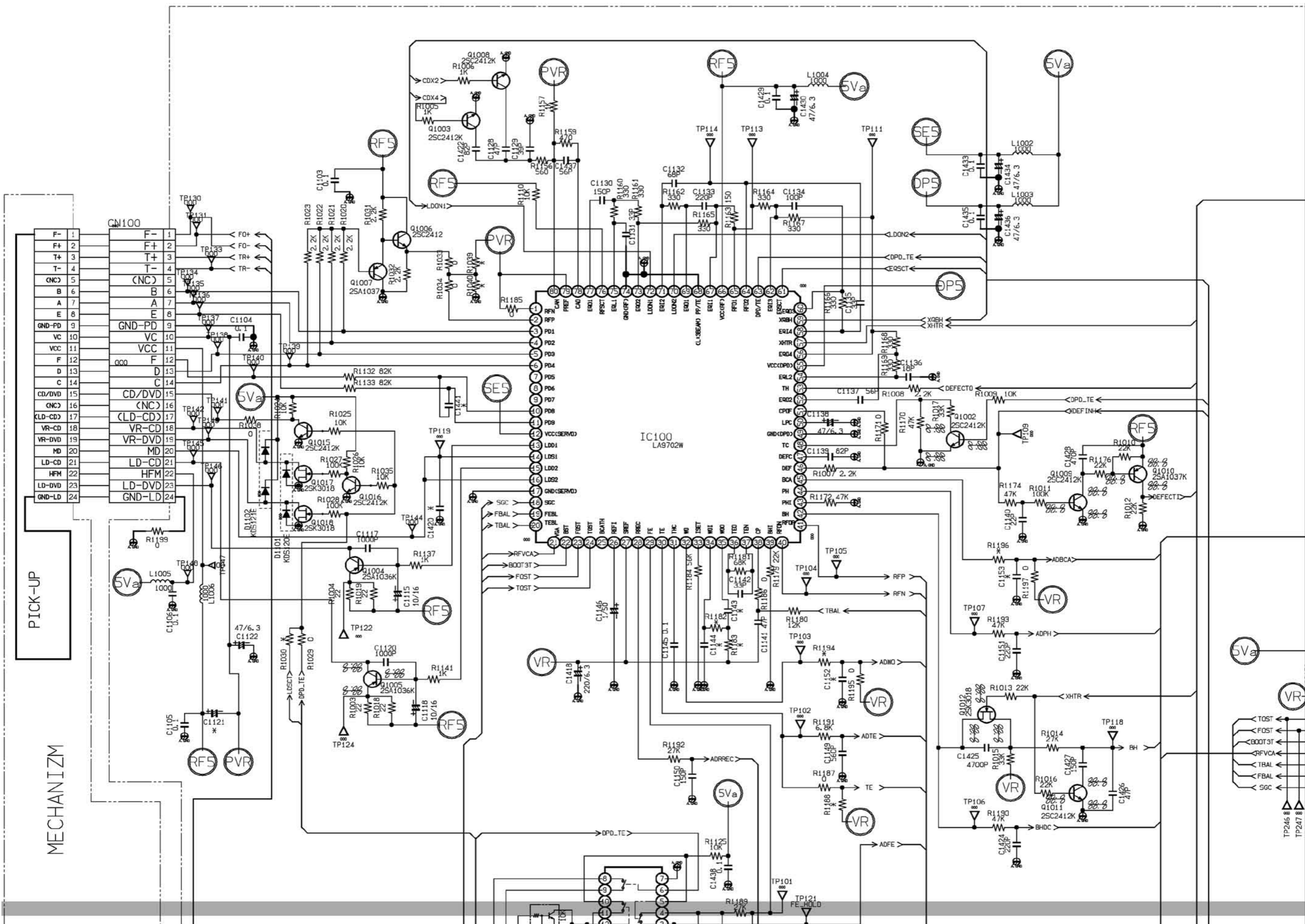


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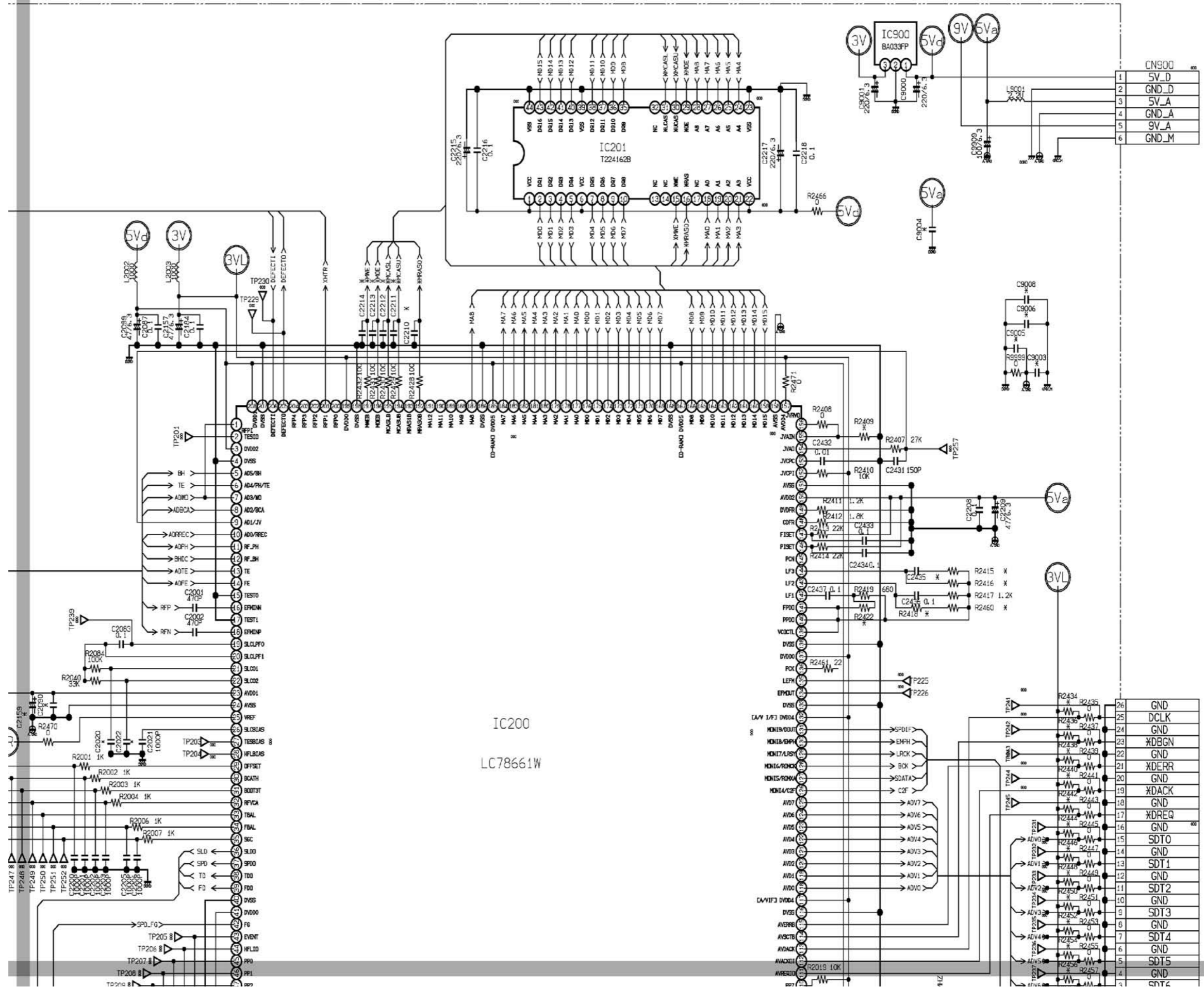


SCHEMATIC DIAGRAM (TOP LEFT) - SERVO BOARD





SCHEMATIC DIAGRAM (TOP RIGHT) - SERVO BOARD

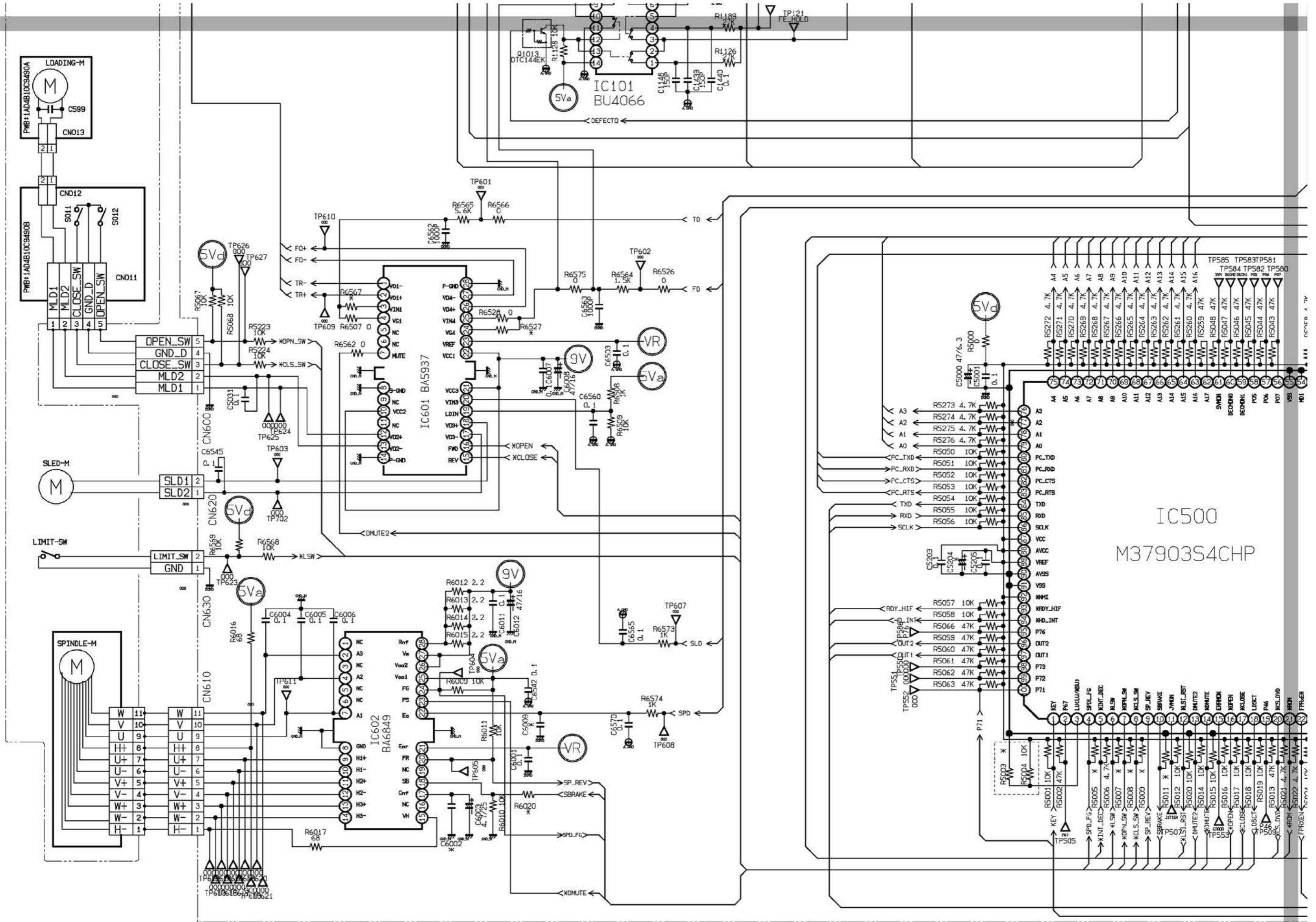


IC200  
LC78661W

1	5V_D
2	GND_D
3	5V_A
4	GND_A
5	9V_A
6	GND_M

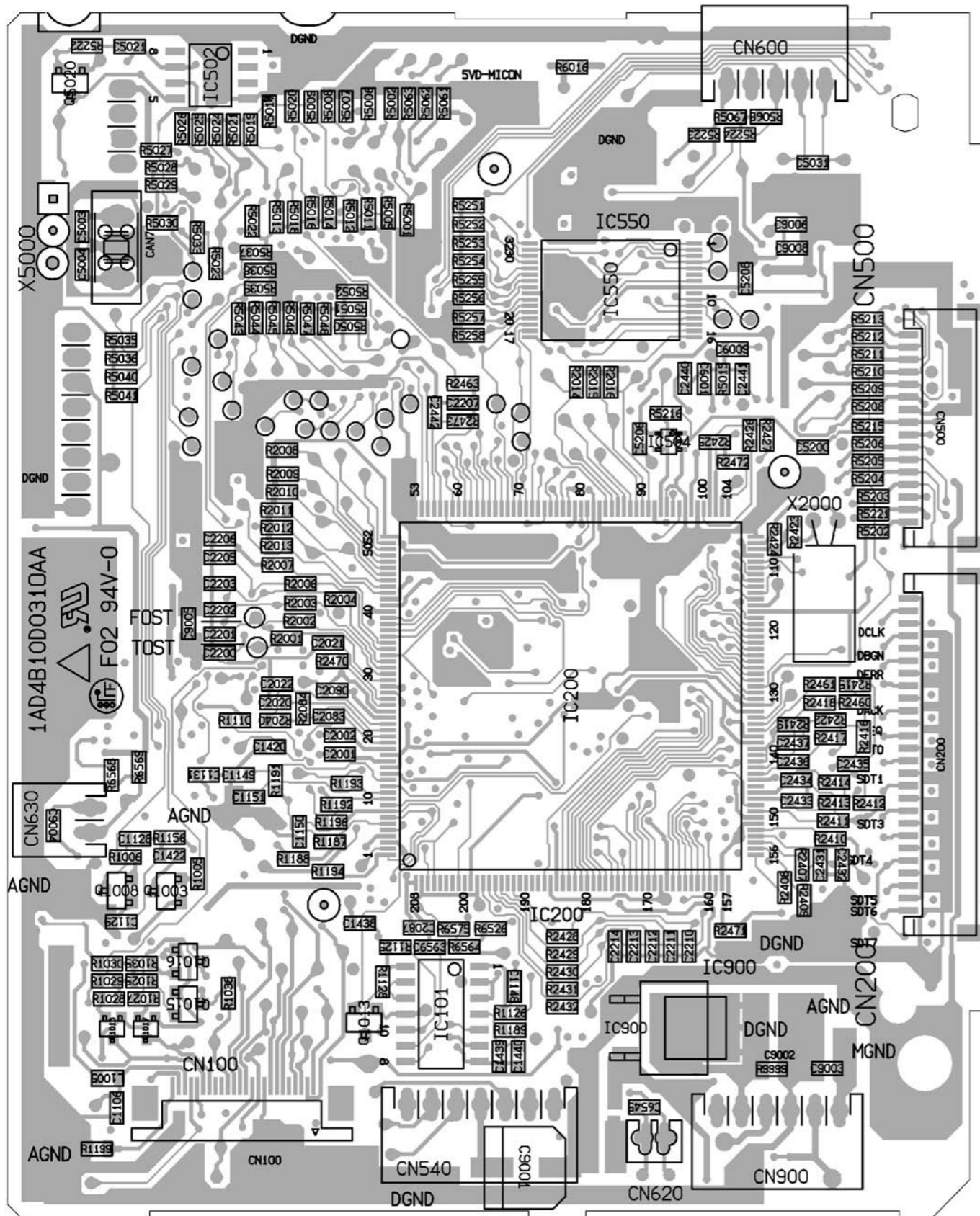
26	GND
25	DCLK
24	GND
23	XDBGN
22	GND
21	XDERR
20	GND
19	XDACK
18	GND
17	XDREQ
16	GND
15	SDT0
14	GND
13	SDT1
12	GND
11	SDT2
10	GND
9	SDT3
8	GND
7	SDT4
6	GND
5	SDT5
4	GND
3	GNT2

SCHEMATIC DIAGRAM (BOTTOM LEFT) - SERVO BOARD

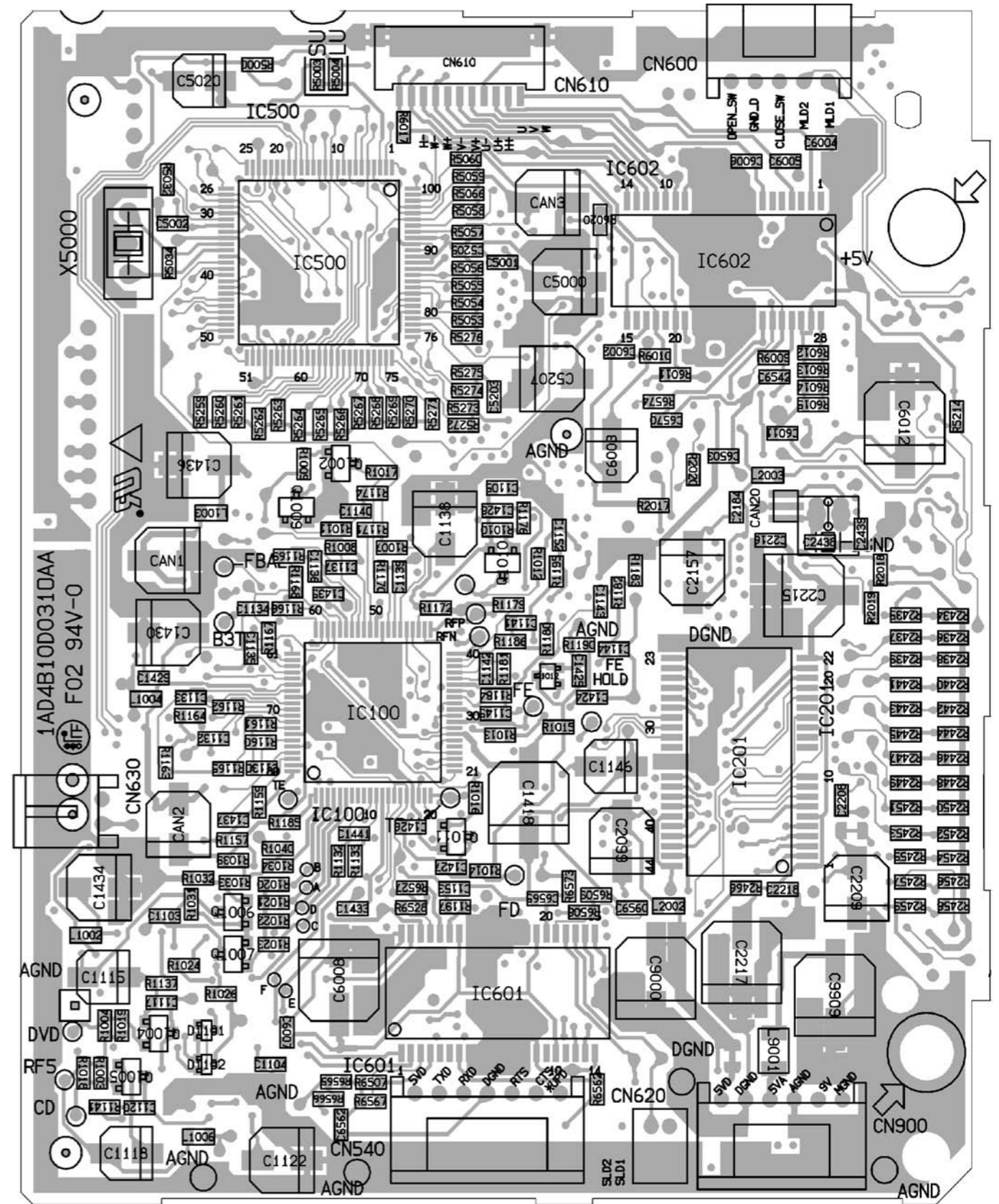




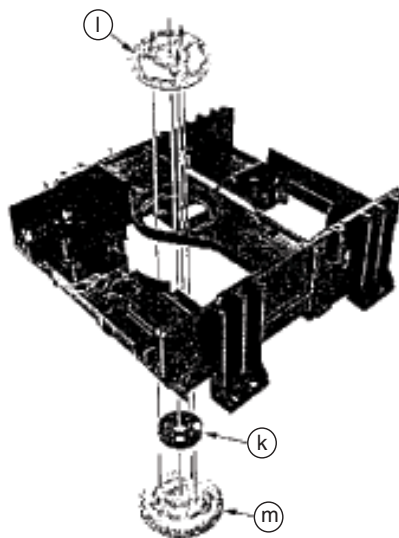
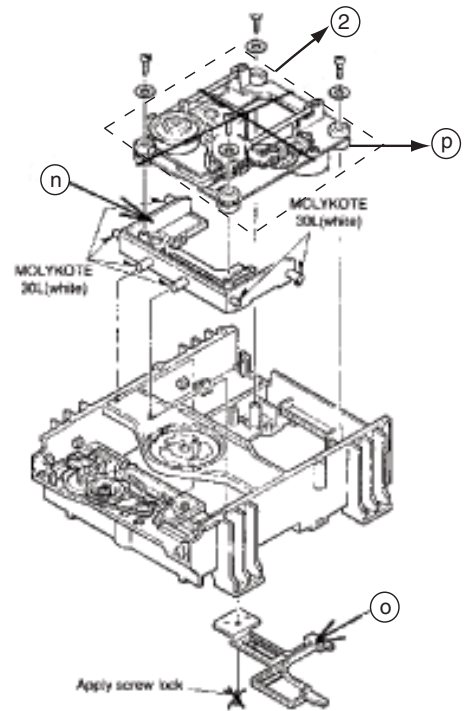
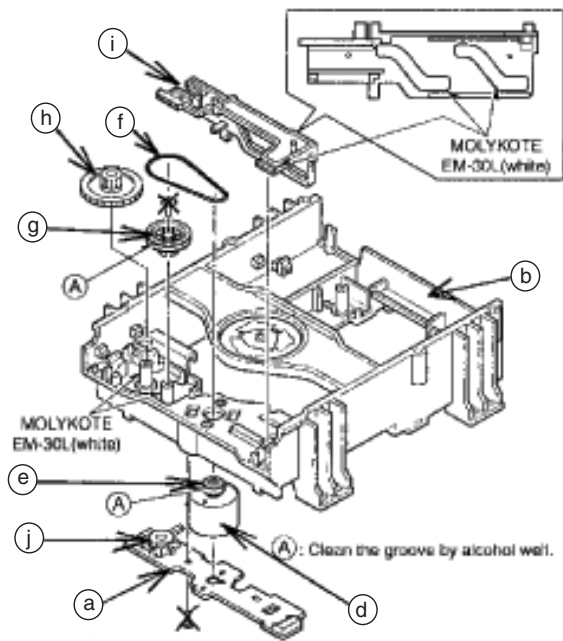
LAYOUT DIAGRAM (DVD SIDE A)



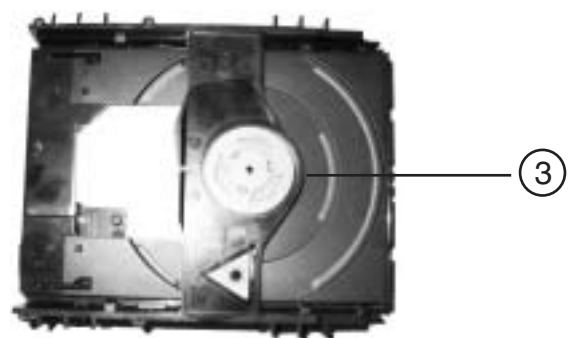
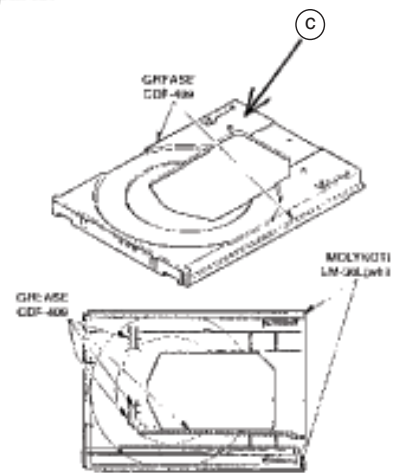
LAYOUT DIAGRAM (DVD SIDE B)



# Exploded View - DVD Loader



## Tray parts.



Without DVD Drive

**MECHANICAL / ELECTRICAL PARTS LIST - DVD MODULE**

---

1	9965 000 13082	SERVO PC BOARD ASSEMBLY
2	9965 000 13083	DVD DRIVE MECHANISM
3	9965 000 13084	LOADER MECHANISM ( <i>without Servo Board and DVD Drive mechanism</i> )
c	9965 000 13085	TRAY
f	9965 000 13086	BELT
j	9965 000 13087	SWITCH LEVER
p	9965 000 13088	SPACER MECHA (SUSPENSION)
d+e	9965 000 13089	MOTOR W/PULLEY ASSEMBLY
	9965 000 12822	COMPLETE DVD MODULE ( <i>with Servo Board and DVD Drive mechanism</i> )
	9965 000 16344	FLEX CABLE 24PIN 24CM ( <i>for connection between DVD's OPU and Servo Board</i> )

Note: Only the parts mentioned in this list are normal service spare parts.

# DVD LOADER KIT772SI

It is not recommended for component repair on this Module but to replace the major assembly when it becomes defective. Therefore limited service parts list are published in this chapter.

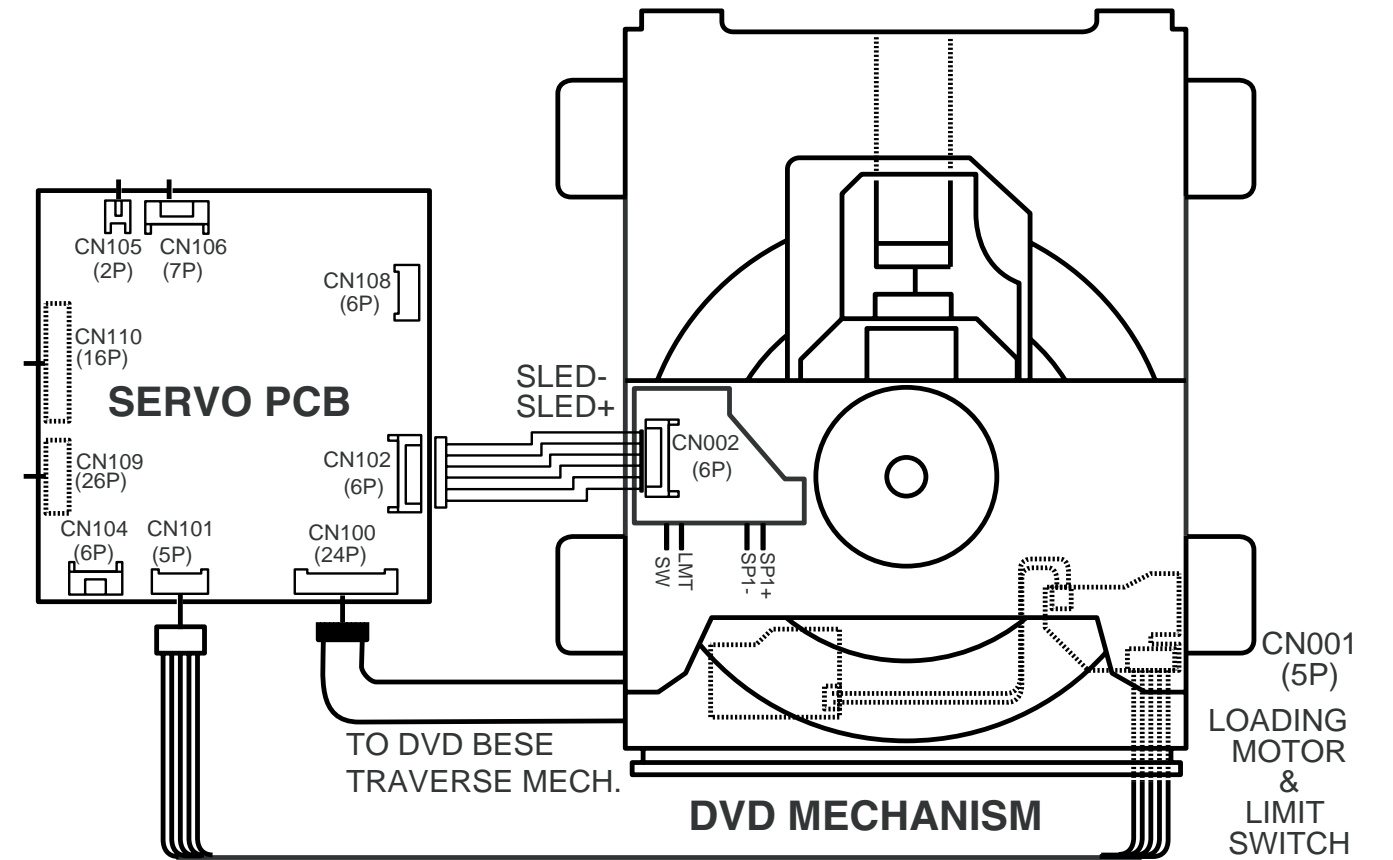
The Circuit & Layout diagrams are published for reference only. The repair assistance on DVD section is given on Chapter 2.



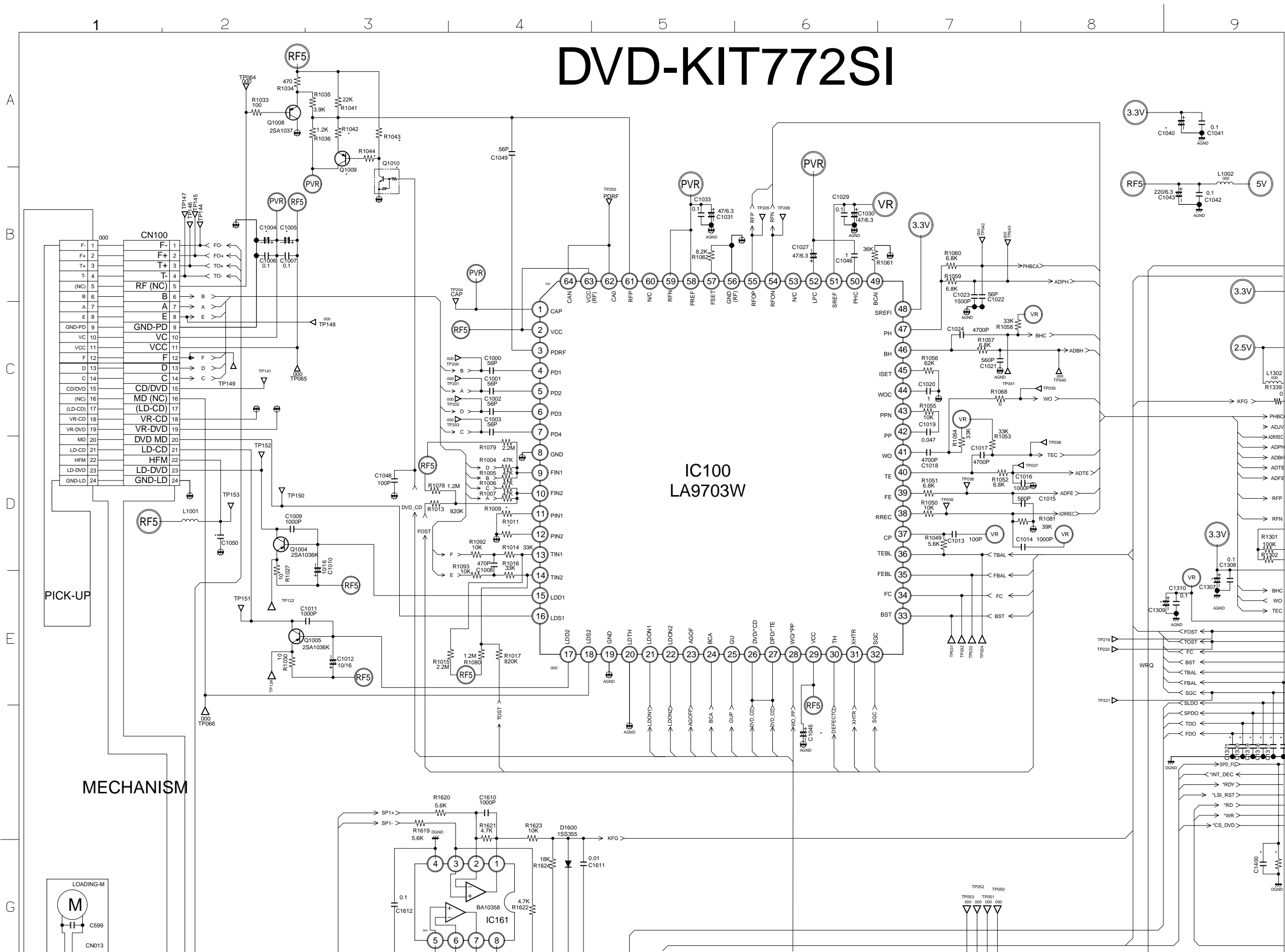
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## WIRING CONNECTION



### SCHEMATIC DIAGRAM (TOP LEFT) - SERVO BOARD

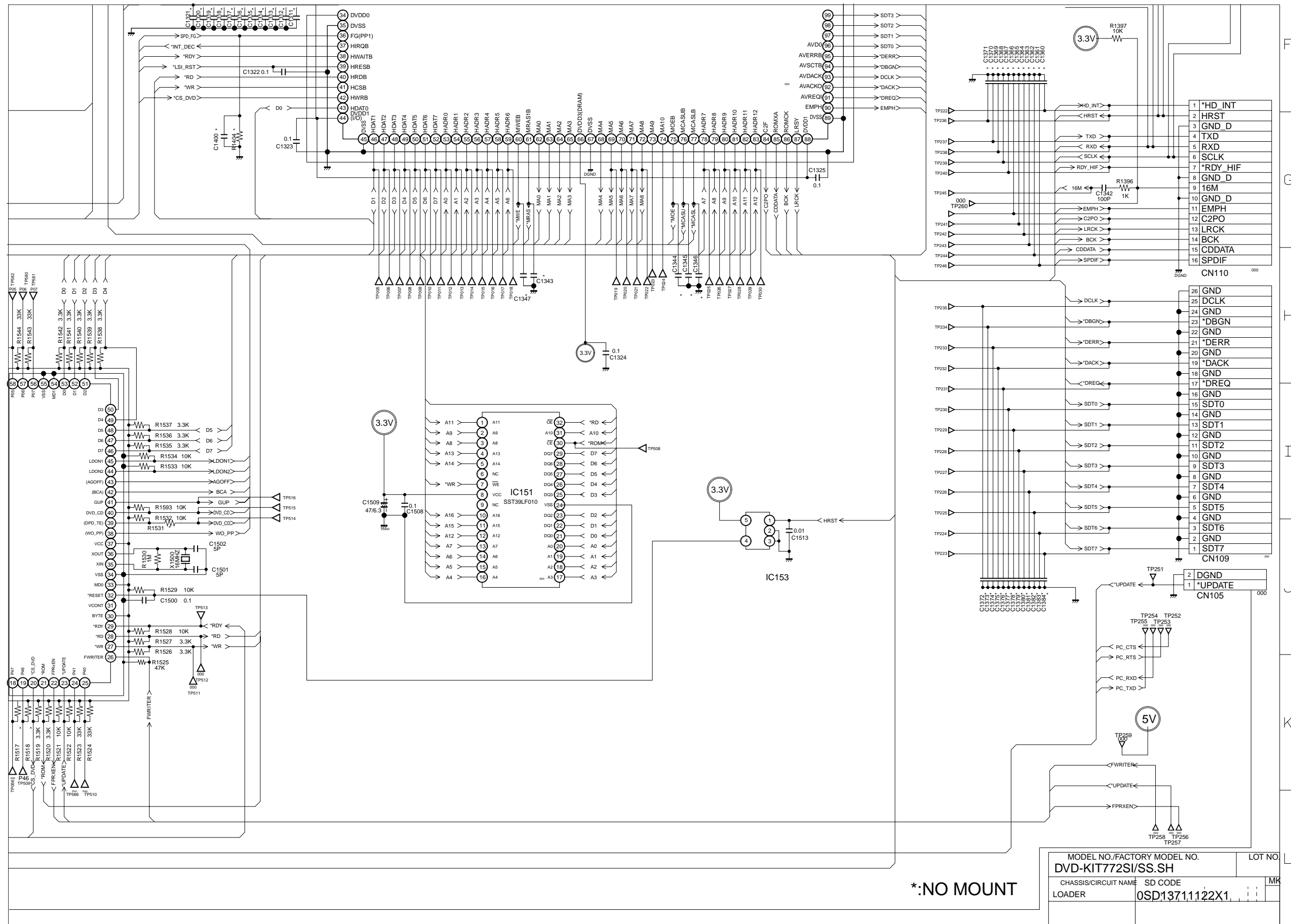








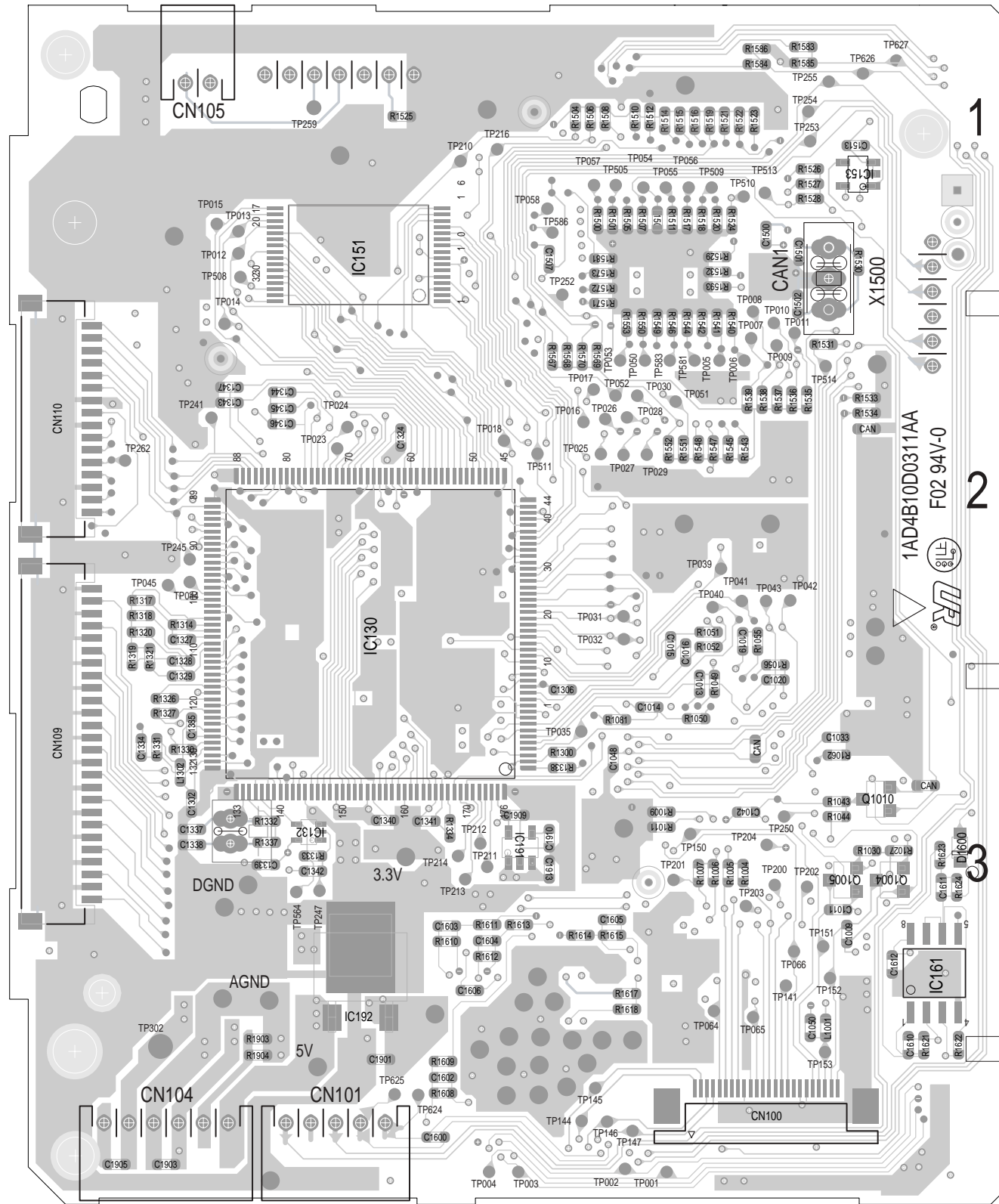
# SCHEMATIC DIAGRAM (BOTTOM RIGHT) - SERVO BOARD



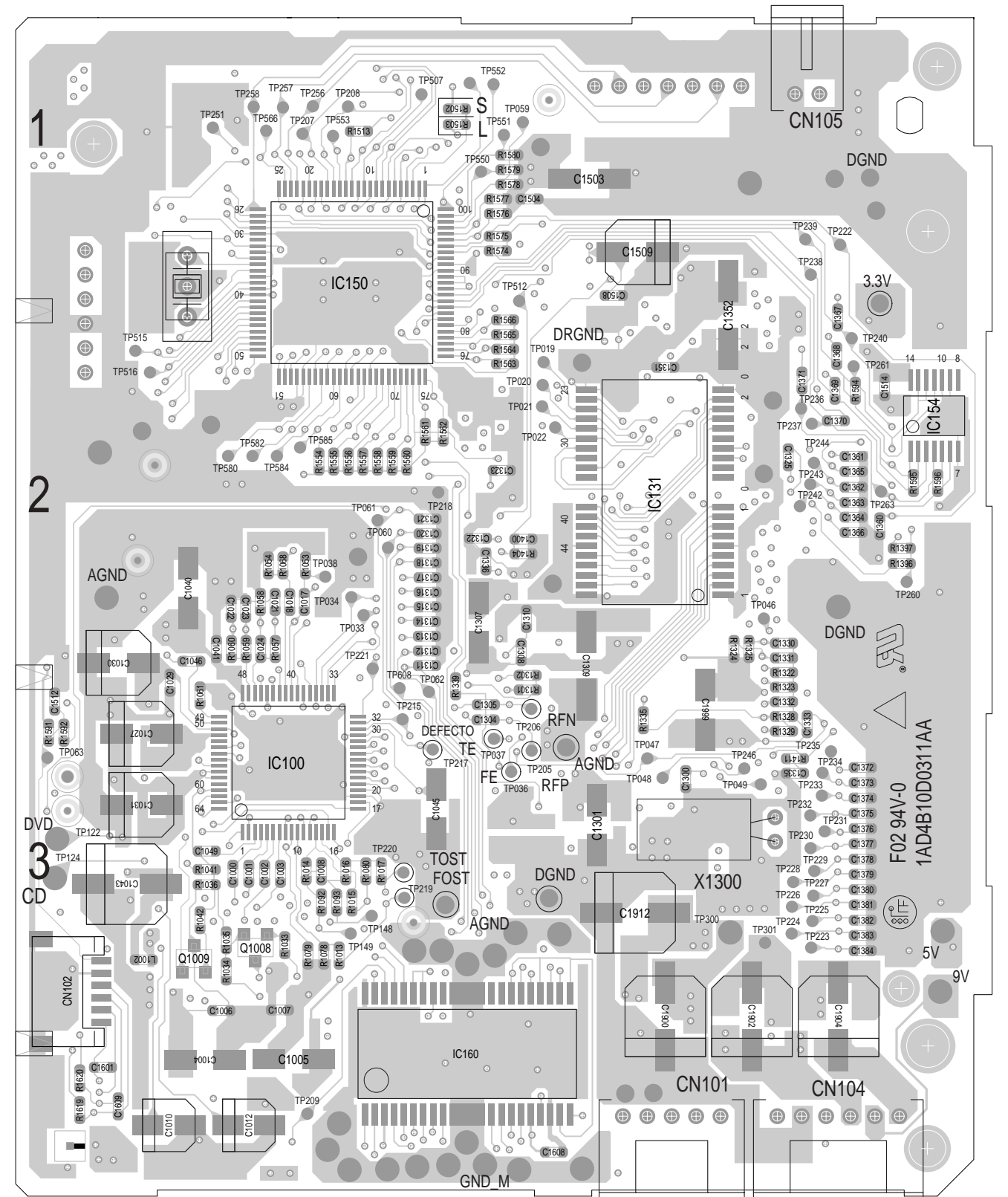
\*:NO MOUNT

MODEL NO./FACTORY MODEL NO.		LOT NO.
DVD-KIT772SI/SS.SH		
CHASSIS/CIRCUIT NAME	SD CODE	MR
LOADER	0SD137.1.122X1	

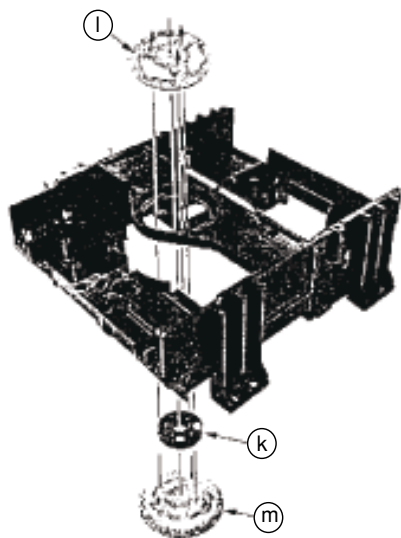
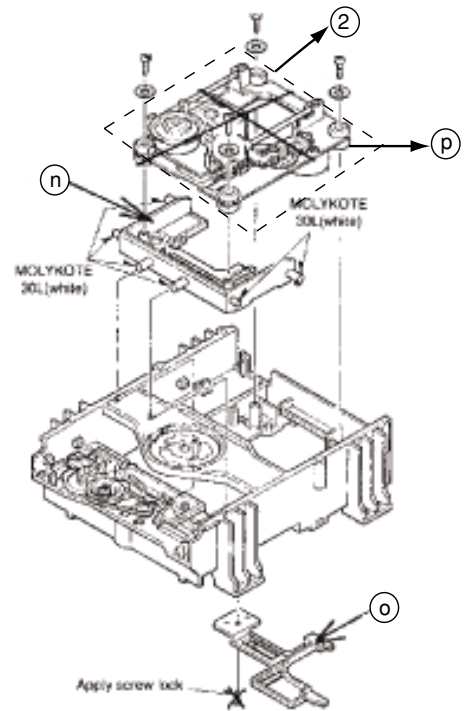
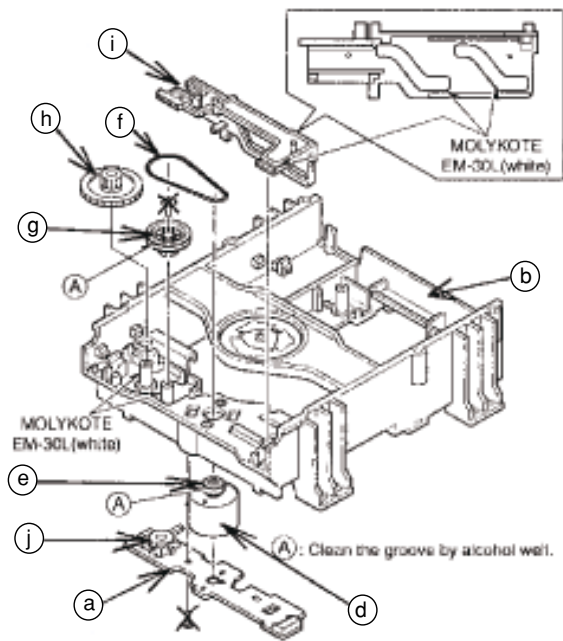
LAYOUT DIAGRAM ( DVD SIDE A)



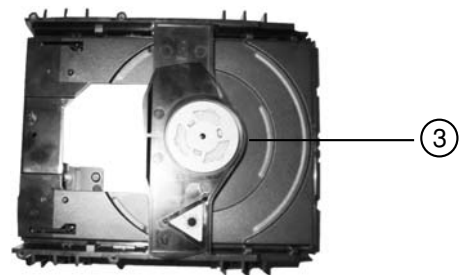
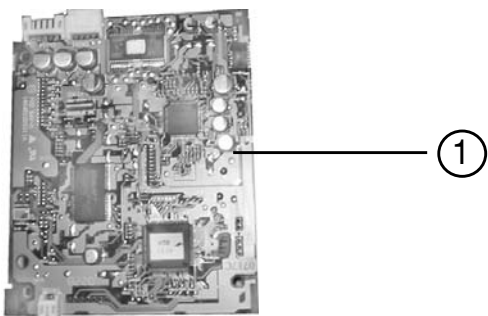
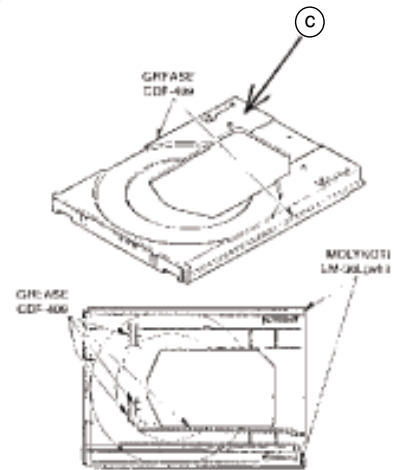
LAYOUT DIAGRAM ( DVD SIDE B)



# Exploded View - DVD Loader



## Tray parts.



Without DVD Drive

**MECHANICAL / ELECTRICAL PARTS LIST - DVD MODULE**

---

1	9965 000 16291	SERVO PC BOARD ASSEMBLY
2	9965 000 16292	DVD DRIVE MECHANISM
3	9965 000 16293	LOADER MECHANISM <i>(without Servo Board and DVD Drive mechanism)</i>
c	9965 000 13085	TRAY
f	9965 000 13086	BELT
j	9965 000 13087	SWITCH LEVER
p	9965 000 13088	SPACER MECHA (SUSPENSION)
d+e	9965 000 13089	MOTOR W/PULLEY ASSEMBLY
	9965 000 15489	Complete DVD MODULE KIT772SI <i>(with Servo Board and DVD Drive mechanism)</i>
	9965 000 16344	FLEX CABLE 24PIN 24CM <i>(for connection from DVD's OPU to Servo Board)</i>
	9965 000 16345	FLEX CABLE 6PIN 15CM <i>(for connection from DVD's small pcb to Servo Board)</i>

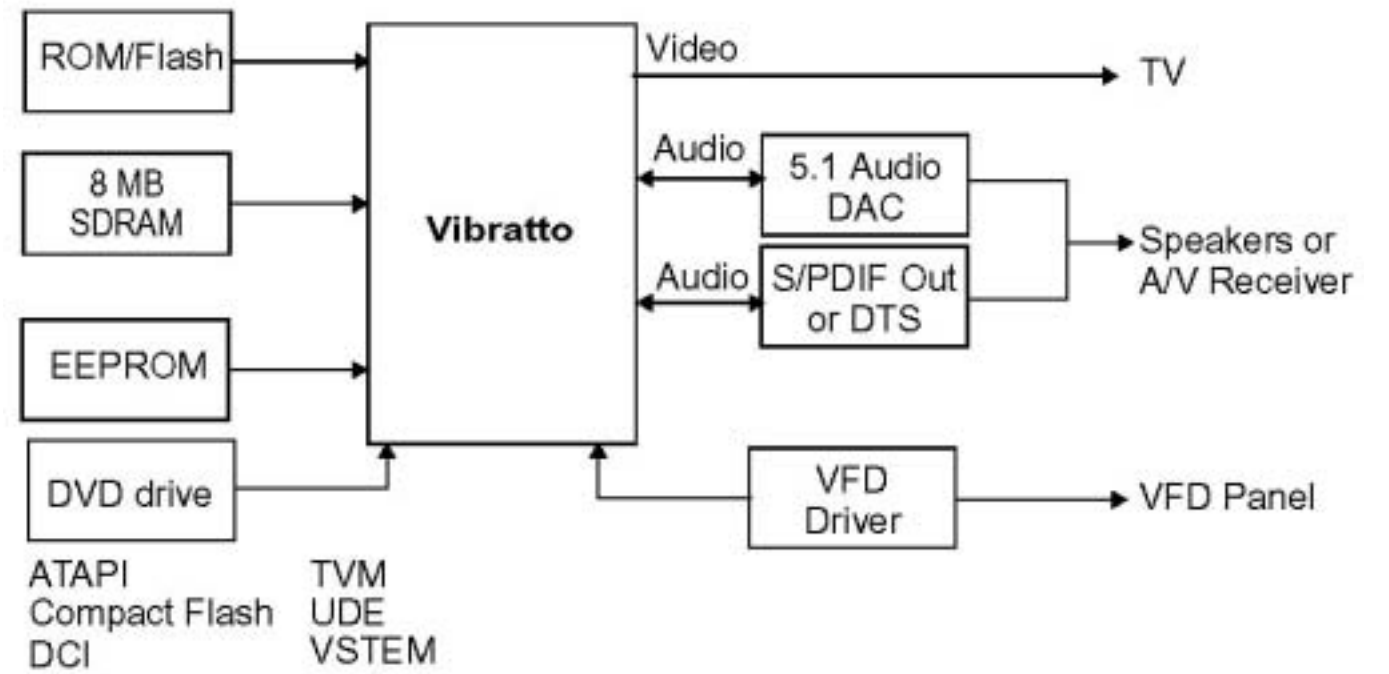
Note: Only the parts mentioned in this list are normal service spare parts.

6018/6028 INTERNAL IC DIAGRAM

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# MAIN BOARD

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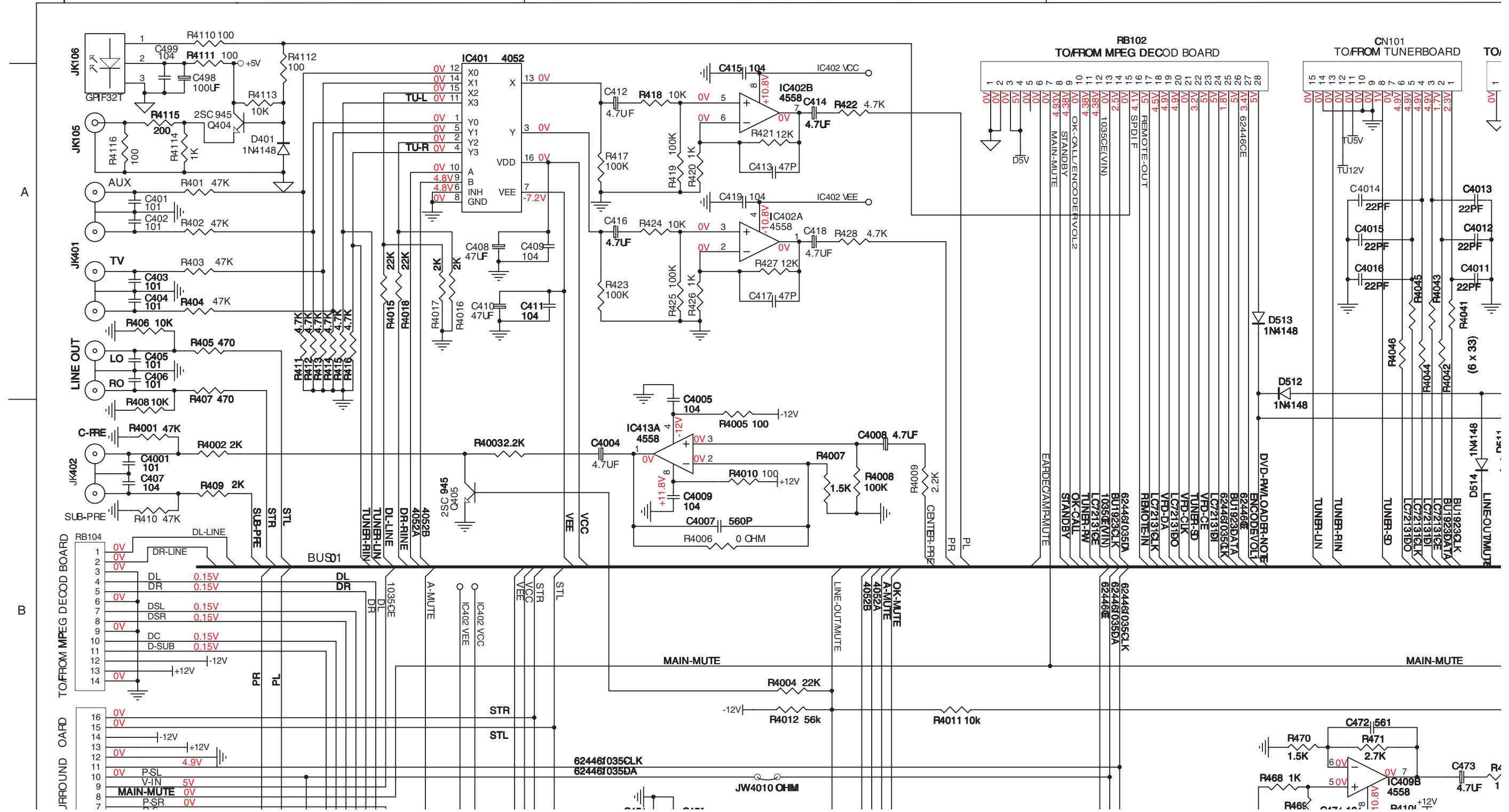
# CIRCUIT DIAGRAM ( Top Left )

C401 A1	C416 A2	C431 D1	C446 D1	C461 D2	C476 C3	C491 D3	C508 D4	C524 C4	C922 B5	C941 A4	C4015 A3	R407 A1	R421 A2	R436 D1	R453 C2	R468 C3	R483 C3	R498 D3	R514 D4	R530 C4	R913 A5	R4005 B2
C402 A1	C471 A2	C432 D1	C447 C2	C462 D2	C477 C3	C492 D3	C509 D4	C525 C4	C923 A5	C942 A4	C4016 A3	R408 B1	R422 A2	R437 D1	R454 C2	R469 C3	R484 C3	R499 D3	R515 D4	R531 C5	R914 A5	R4006 B2
C403 A1	C418 A2	C433 D1	C448 C2	C463 D2	C478 C3	C493 D3	C510 D4	C901 C4	C924 B5	C943 A5	C4021 C2	R409 B1	R423 A2	R438 C2	R455 C2	R470 B3	R485 C3	R501 C4	R516 C5	R532 C5	R915 A5	R4007 B2
C404 A1	C419 A2	C434 D1	C449 C2	C464 D3	C479 C3	C494 D3	C511 D4	C902 C4	C925 B5	C944 B1	C4022 C2	R410 B1	R424 A2	R439 C2	R456 D2	R471 B3	R486 C3	R502 C4	R517 C4	R533 C5	R916 A4	R4008 B2
C405 A1	C420 C1	C435 D1	C450 B2	C465 D3	C480 C3	C495 D3	C512 C4	C903 C4	C926 B5	C945 B2	C4023 C2	R411 A1	R425 A2	R440 C2	R457 D2	R472 C3	R487 C3	R503 C4	R518 C4	R534 C5	R917 A4	R4009 B2
C406 A1	C421 C1	C436 D1	C451 B2	C466 D3	C481 C3	C496 D3	C513 C4	C904 C4	C927 B5	C946 B2	C4024 C2	R412 A1	R426 A2	R441 C2	R458 D2	R473 C3	R488 C3	R504 C4	R519 C5	R535 C5	R918 A4	R4010 B2
C407 B1	C422 C1	C437 C2	C452 C2	C467 D2	C482 C3	C497 A1	C514 C4	C905 C4	C928 B4	C947 B2	C4030 C2	R413 A1	R427 A2	R442 C2	R459 D2	R474 C3	R489 C3	R505 C4	R520 C5	R536 C5	R919 A4	R4011 B2
C408 A1	C423 C1	C438 C2	C453 C2	C468 D2	C483 C3	C498 A1	C515 C5	C906 C4	C929 B4	C948 B2	C4031 C2	R414 A1	R428 A2	R443 C2	R460 D2	R475 C3	R490 C3	R506 C4	R521 C5	R537 C5	R920 D5	R4012 B2
C409 A2	C424 C1	C439 C2	C454 C2	C469 D3	C484 C3	C499 A1	C516 C5	C907 C4	C930 B4	C949 B2	C4032 C3	R415 A1	R429 C1	R444 C2	R461 C2	R476 C3	R491 C3	R507 C4	R522 C5	R538 C5	R921 A1	R4013 B2
C410 A1	C425 C1	C440 D2	C455 C2	C470 D3	C485 C3	C500 C4	C517 C5	C908 C4	C931 A4	C950 B2	R401 A1	R416 A1	R430 C1	R445 C2	R462 C2	R477 C3	R492 C3	R508 C4	R523 C5	R539 C5	R922 A1	R4014 B2
C411 A2	C426 C1	C441 D2	C456 C2	C471 C3	C486 C3	C503 C4	C518 C5	C909 C4	C932 A4	C951 B2	R402 A1	R417 A2	R431 C1	R446 C2	R463 C2	R478 C3	R493 C3	R509 C4	R524 C5	R540 C5	R923 A1	R4015 B2
C412 A2	C427 D1	C442 D2	C457 C2	C472 B3	C487 C3	C504 C4	C519 C5	C910 C4	C933 A4	C952 B2	R403 A1	R418 A2	R432 C1	R447 C2	R464 C2	R479 C3	R494 D3	R510 A5	R525 C5	R541 C5	R924 A1	R4016 B2
C413 A2	C428 D1	C443 D2	C458 C3	C473 B3	C488 C3	C505 C4	C520 C5	C911 C4	C934 A4	C953 B2	R404 A1	R419 A2	R433 C1	R448 C2	R465 C2	R480 C3	R495 D3	R511 D4	R526 C5	R542 C5	R925 A1	R4017 A1
C414 A2	C429 D1	C444 D2	C459 D2	C474 B3	C489 D3	C506 C4	C521 C5	C912 C4	C935 A4	C954 B2	R405 A1	R420 A2	R434 C1	R449 C2	R466 D2	R481 C3	R496 D3	R512 D4	R527 C5	R543 C5	R926 A1	R4018 A1
C415 A2	C430 D1	C445 D2	C460 D2	C475 B3	C490 D3	C507 C4	C523 C5	C913 C4	C936 A4	C955 B2	R406 A1	R421 A2	R435 D1	R450 C2	R467 D2	R482 C3	R497 D3	R513 D4	R528 C4	R544 C5	R927 A1	R4019 A1

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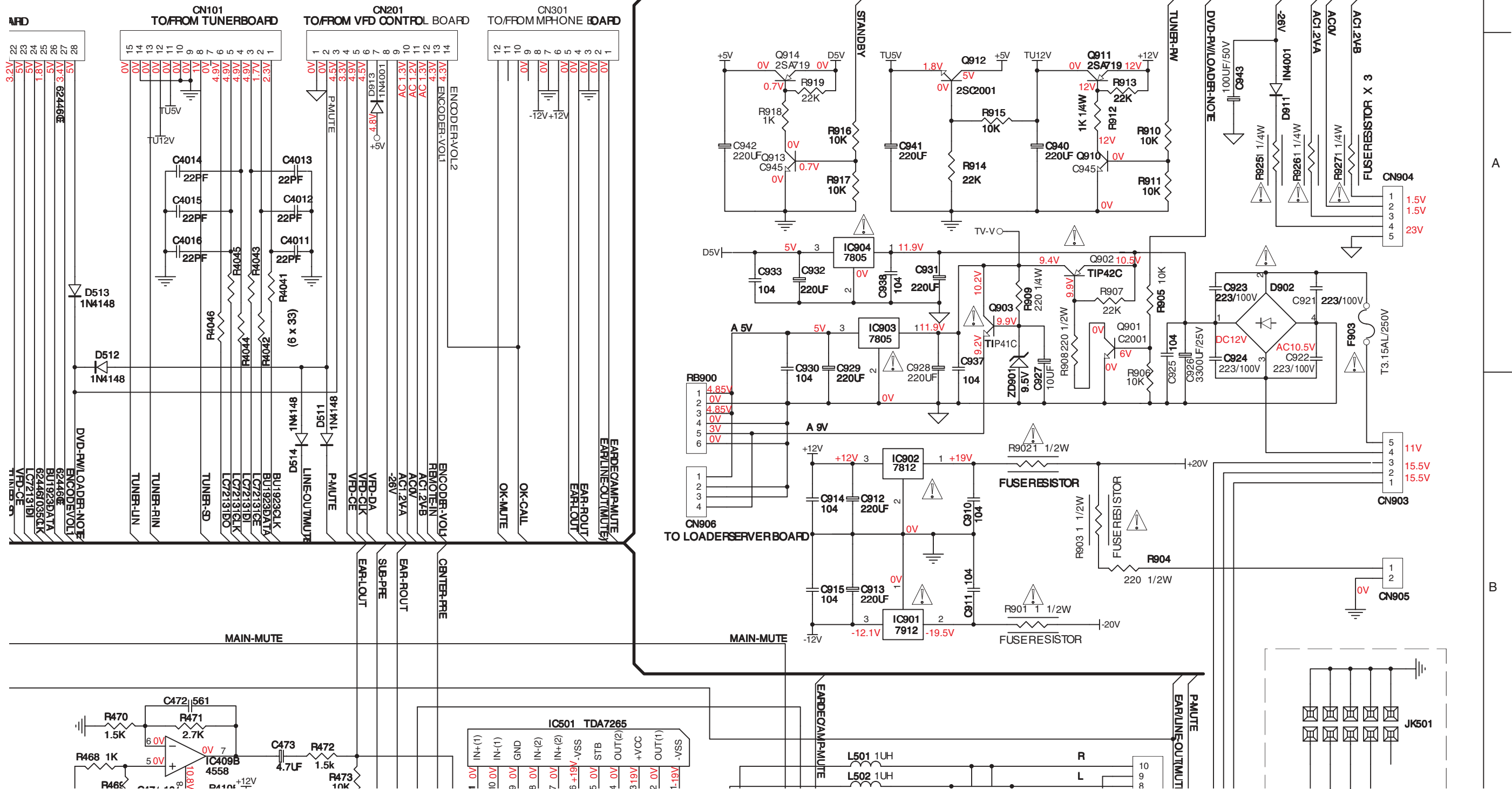
### CIRCUIT DIAGRAM ( Top Right )

R407 A1	R421 A2	R436 D1	R453 C2	R468 C3	R483 C3	R498 D3	R514 D4	R530 C4	R913 A5	R4005 B2	R4024 C2	R4103 D3	RB601 B1	Q910 A5	D401 A1	D911 A5	IC501 B4	CN903 B5	ESD-C3 D5
R408 B1	R422 A2	R437 D1	R454 C2	R469 C3	R484 C3	R499 D3	R515 D4	R531 C5	R914 A5	R4006 B2	R4025 C2	R4104 D4	RB900 B4	Q911 A5	D501 C4	D912 D4	IC502 C4	CN904 A4	ESD-C4 D5
R409 B1	R423 A2	R438 D1	R455 C2	R470 C3	R485 C3	R501 C4	R516 C5	R532 C5	R915 A5	R4007 B2	R4026 C2	R4105 B3	Q401 C2	Q912 A5	D502 C4	D913 D4	IC503 D4	CN905 B5	ESD-C5 D5
R410 B1	R424 A2	R439 C2	R456 C2	R471 C3	R486 C3	R502 C4	R517 C4	R533 C5	R916 A4	R4008 B2	R4030 C3	R4106 B3	Q402 C2	Q913 A4	D503 C5	D914 D4	IC504 A1	CN906 B4	ESD-C6 D5
R411 A1	R425 A2	R440 C2	R457 C2	R472 C3	R487 C3	R503 C4	R518 C4	R534 C5	R917 A4	R4009 B2	R4031 C3	R4107 D4	Q403 D3	Q914 A4	D504 C4	D915 D4	IC505 C1	JK105 A1	ESD-C7 D5
R412 A1	R426 A2	R441 C2	R458 C2	R473 C3	R488 C3	R504 C4	R519 C5	R535 C5	R918 A4	R4010 B2	R4032 C3	R4110 A1	Q404 A1	L501 B4	D507 D4	D916 D4	IC506 D1	JK106 A1	ESD-C8 D5
R413 A1	R427 A2	R442 C2	R459 C2	R474 C3	R489 C3	R505 C4	R520 C5	R536 C5	R919 A4	R4011 B2	R4041 A3	R4111 A1	Q405 B1	L502 B4	D508 C4	D917 D4	IC507 C1	JK401 A1	ESD-C9 D5
R414 A1	R428 A2	R443 C2	R460 C2	R475 C3	R490 C3	R506 C4	R521 C5	R537 C5	R920 D5	R4012 B2	R4042 A3	R4112 A1	Q501 C5	L503 C4	D509 C4	D918 D4	IC508 D1	JK402 B1	ESD-C9 D5
R415 A1	R429 C1	R444 C2	R461 C2	R476 C3	R491 C3	R507 C4	R522 C5	R538 C5	R925 A1	R4015 A1	R4043 A3	R4113 A1	Q502 C5	L505 C4	D510 C5	D919 D4	IC509 C2	JK501 C5	ESD-C9 D5
R416 A1	R430 C1	R445 C2	R462 C2	R477 C3	R492 C3	R508 C4	R523 C5	R539 C5	R926 A1	R4016 A1	R4044 A3	R4114 A1	Q503 C4	L506 C4	D511 B5	D920 D4	IC508 D2	JW401 C2	ESD-C9 D5
R417 A2	R431 C1	R446 C2	R463 C2	R478 C3	R493 C3	R509 C4	R524 C5	R540 C5	R927 A1	R4017 A1	R4045 A3	R4115 A1	Q504 C4	ZD401 D2	D512 B5	D921 D4	IC509 C3	JW402 C1	ESD-C9 D5
R419 A2	R432 C1	R447 C2	R464 C2	R479 C3	R494 C3	R510 C4	R525 C5	R541 C5	R928 A1	R4018 A1	R4046 A3	R4116 A1	Q505 C5	ZD402 D2	D514 B5	D922 D4	IC510 C3	JW403 D1	ESD-C9 D5
R418 A2	R433 C1	R448 C2	R465 C2	R480 C3	R495 C3	R511 D4	R526 C5	R542 C5	R929 A1	R4021 B2	R4100 D3	RB102 A2	Q901 A5	ZD403 D2	D901 D5	D923 D4	IC511 D3	D514 B3	ESD-C1 D5
R419 A2	R434 C1	R449 C2	R466 D2	R481 C3	R496 C3	R512 D4	R527 C5	R543 C5	R930 A5	R4022 C2	R4101 D3	RB104 B1	Q902 A5	ZD404 D2	D902 A5	D924 D4	IC512 C2	ESD-C1 D5	ESD-C2 D5
R420 A2	R435 D1	R450 C2	R467 D2	R482 C3	R497 C3	R513 D4	R528 C5	R544 C5	R931 A5	R4023 B2	R4102 D3	RB501 C5	Q903 A5	ZD901 A5	D910 D5	D925 D4	IC513 B2	CN501 C5	ESD-C2 D5

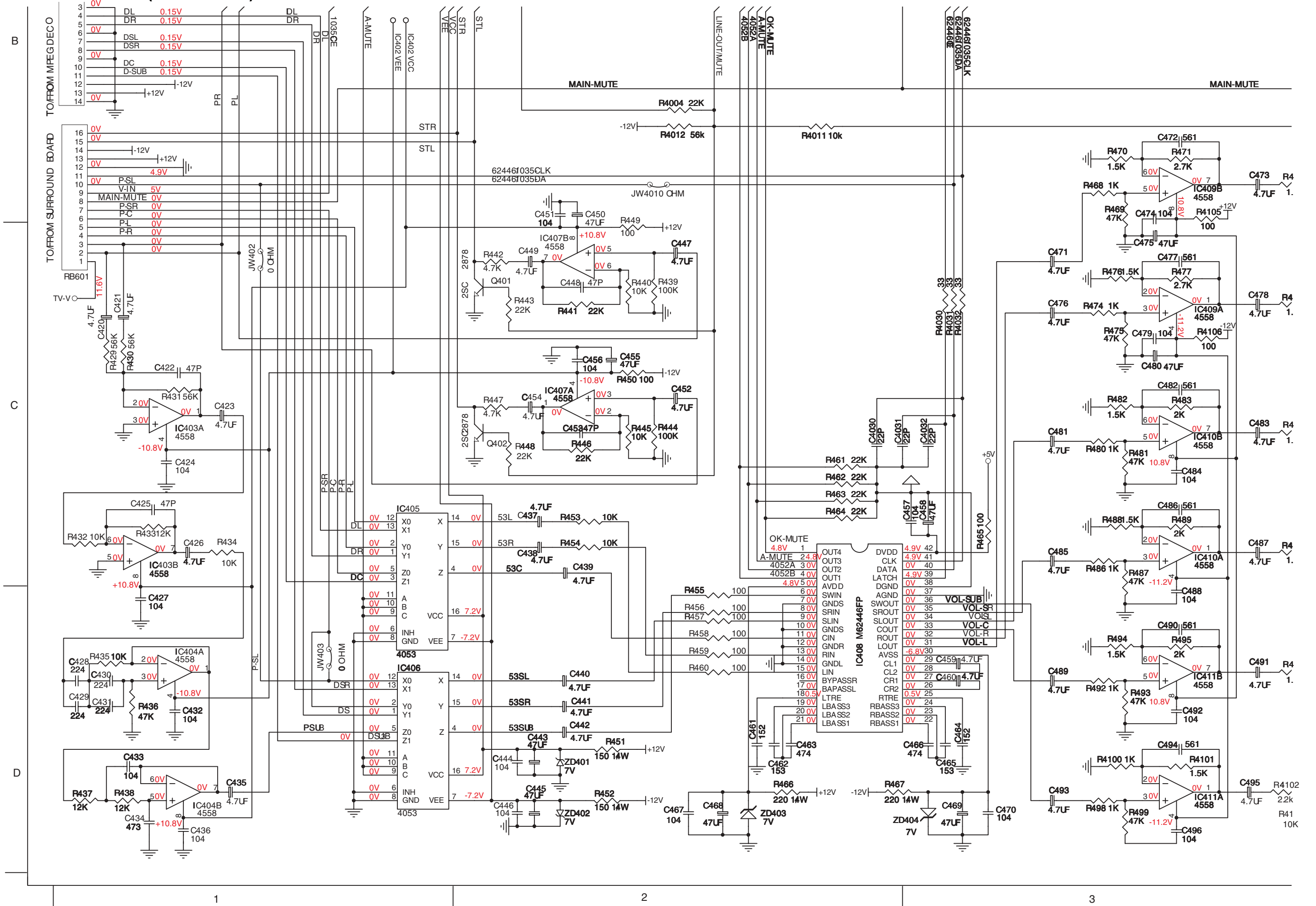
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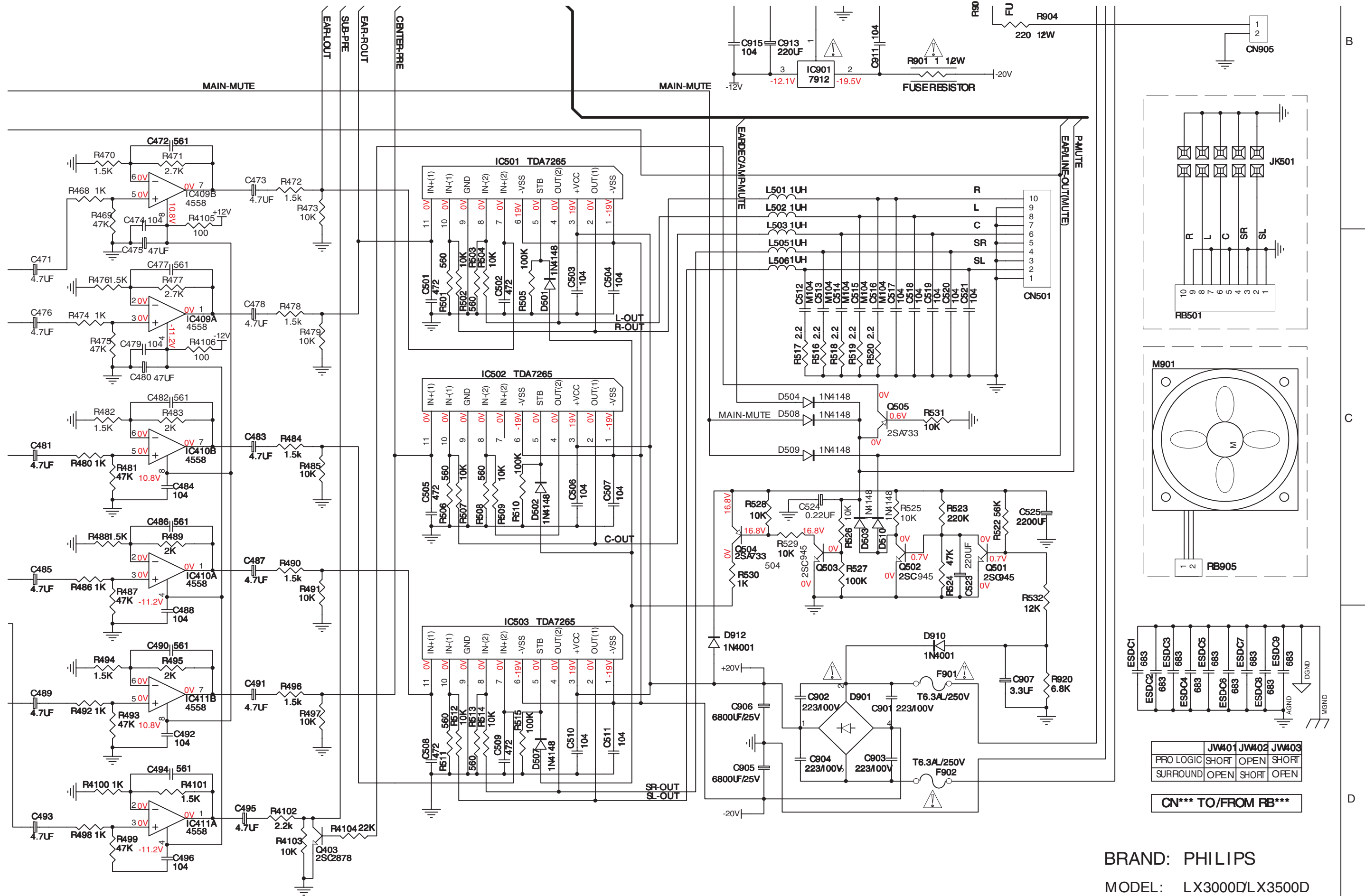
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### CIRCUIT DIAGRAM ( Bottom Left )

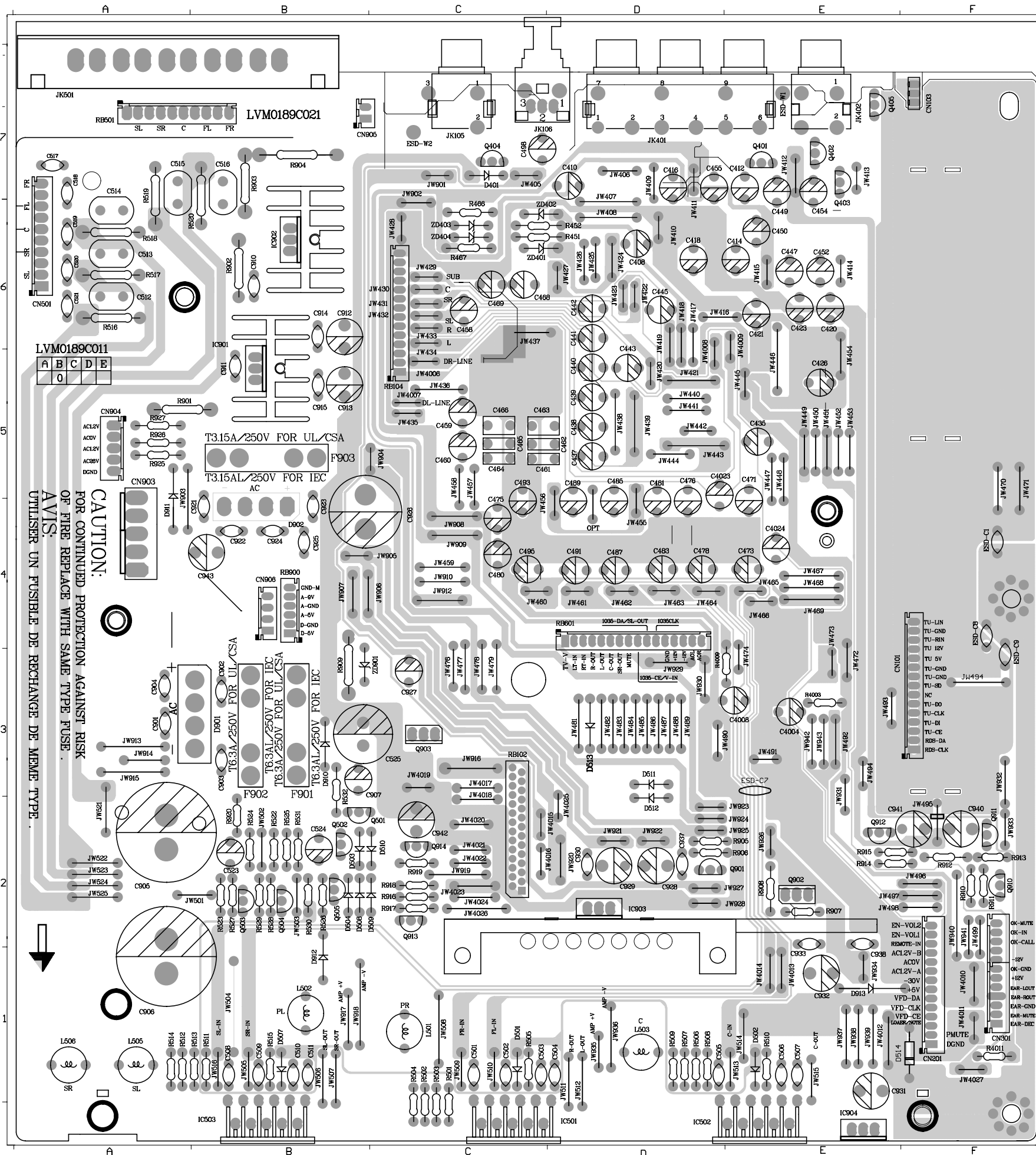


# CIRCUIT DIAGRAM ( Bottom Right )



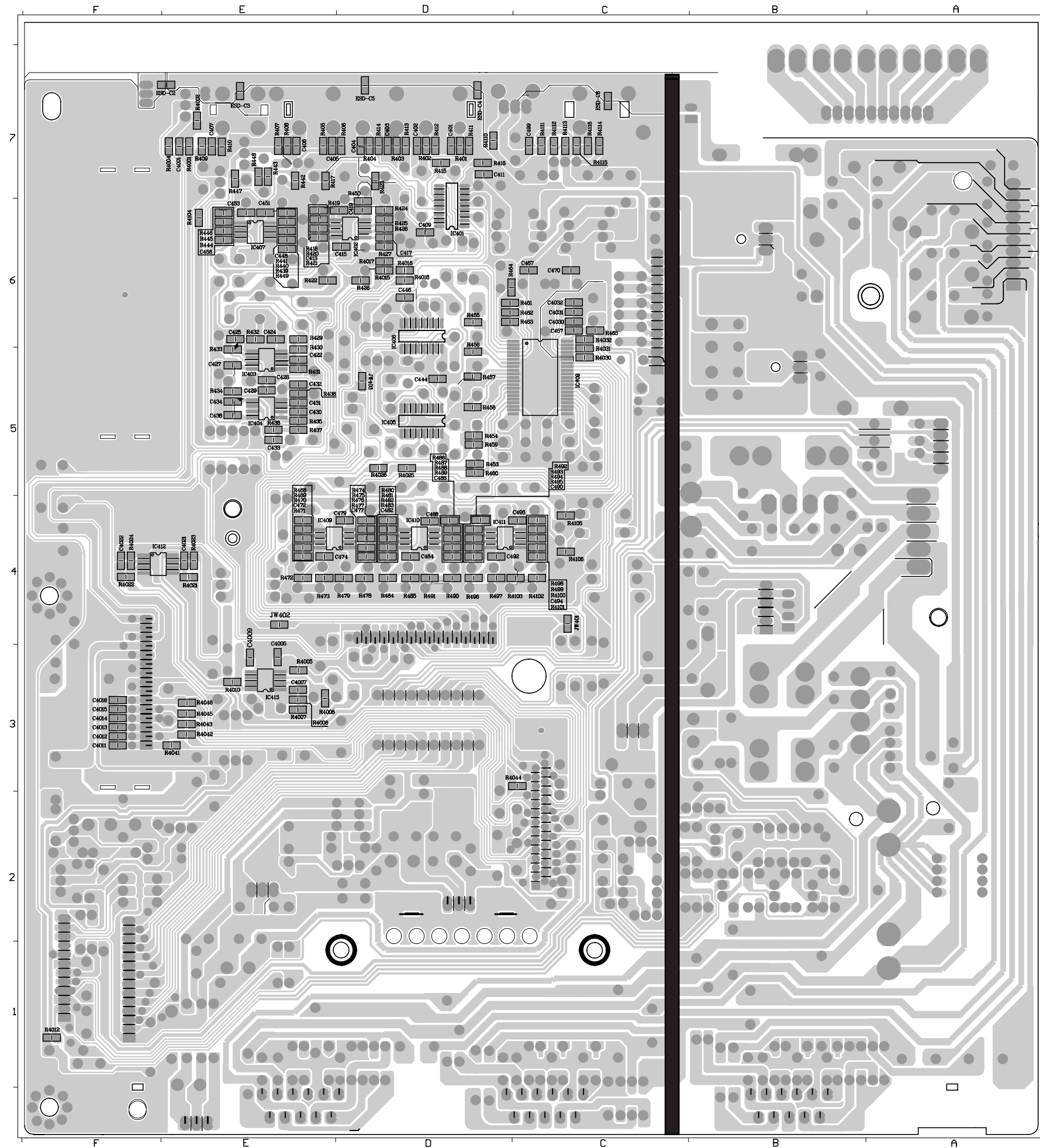
BRAND: PHILIPS  
 MODEL: LX3000DLX3500

# PCB LAYOUT (COMPONENT VIEW)



C408 D6	C902 B3	R905 D2	CN103 F3	JW456 D4	JW912 C4
C410 D7	C903 B3	R906 D2	CN201 F1	JW457 C4	JW913 A3
C412 E7	C904 A3	R907 E2	CN301 F1	JW458 C4	JW914 A3
C414 E6	C905 A2	R908 E2	CN501 A6	JW459 C4	JW915 A3
C416 D7	C906 A1	R909 B3	CN903 A4	JW460 D4	JW916 C3
C418 D6	C907 B3	R910 F2	CN904 A5	JW461 D4	JW917 B1
C420 E6	C910 B6	R911 F2	CN905 B7	JW462 D4	JW918 B1
C421 E6	C911 B5	R912 F2	CN906 B4	JW463 D4	JW919 C2
C423 E6	C912 B6	R913 F2	F901 B3	JW464 D4	JW920 D2
C426 E5	C913 B5	R914 E2	F902 B3	JW465 E4	JW921 D2
C435 E5	C914 B6	R915 E2	F903 B5	JW466 E4	JW922 D2
C437 D5	C915 B5	R916 C2	IC501 C1	JW467 E4	JW923 D2
C438 D5	C921 B5	R917 C2	IC502 E1	JW468 E4	JW924 D2
C439 D5	C922 B4	R918 C2	IC503 B1	JW469 E4	JW925 D2
C440 D5	C923 B4	R919 C2	IC901 B5	JW470 F5	JW926 E2
C441 D6	C924 B4	R920 B3	IC902 B6	JW471 F5	JW927 D2
C442 D6	C925 B4	R925 A5	IC903 D2	JW472 E3	JW928 E2
C443 D5	C926 C4	R926 A5	IC904 E1	JW473 E3	JW929 D3
C445 D6	C927 C3	R927 A5	JK105 C7	JW474 E3	JW930 D3
C447 E6	C928 D2	R4003 E3	JK106 C7	JW476 C3	JW931 E2
C449 E7	C929 D2	R4009 E3	JK401 D7	JW477 C3	JW932 F2
C450 E6	C930 D2	R4011 F1	JK402 E7	JW478 C3	JW933 F2
C452 E6	C931 E1	RB102 C2	JK501 A7	JW479 C3	JW934 E1
C455 D7	C932 E1	RB104 C6	JW405 C7	JW480 D3	JW935 D1
C458 C6	C933 E1	RB501 A7	JW406 D7	JW481 D3	JW936 D1
C459 C5	C938 E2	R601 D4	JW407 D7	JW482 D3	JW937 E1
C460 C5	C937 D2	RB900 B4	JW408 D6	JW483 D3	JW938 E1
C461 C5	C940 F2	ZD401 C6	JW409 D7	JW484 D3	JW939 E1
C462 C5	C941 F2	ZD402 C6	JW410 D7	JW485 D3	JW940 F1
C463 C5	C942 C2	ZD403 C6	JW411 D7	JW486 D3	JW941 F1
C464 C5	C943 B4	ZD404 C6	JW412 E7	JW487 D3	JW942 E3
C462 C5	C4004 E3	ZD901 B3	JW413 E7	JW488 D3	JW943 E3
C466 C5	C4008 E3	Q401 E7	JW414 E6	JW489 D3	JW4006 C5
C468 C6	C4023 D5	Q402 E7	JW415 E6	JW490 D3	JW4007 C5
C469 C6	C4024 E4	Q403 E7	JW416 E6	JW491 E3	JW4008 D5
C471 E5	R451 D6	Q404 C7	JW417 D5	JW492 E3	JW4009 D6
C473 E4	R452 C6	Q405 E7	JW418 D5	JW493 E3	JW4010 F1
C475 C4	R466 C7	Q501 B2	JW419 D5	JW494 F3	JW4011 F1
C476 D5	R467 C6	Q502 B2	JW420 D5	JW495 F2	JW4012 E1
C478 D4	R501 C1	Q503 B2	JW421 D5	JW496 F2	JW4013 E1
C480 C4	R502 C1	Q504 B2	JW422 D6	JW497 F2	JW4014 E1
C481 D4	R503 C1	Q505 B2	JW423 D6	JW498 F2	JW4015 C2
C483 D4	R504 C1	Q901 D2	JW424 D6	JW499 F2	JW4016 C2
C485 D5	R505 C1	Q902 E2	JW425 D6	JW501 A2	JW4017 C3
C489 D4	R507 D1	Q910 D2	JW426 D6	JW502 B2	JW4018 C3
C491 D4	R508 D1	Q911 F2	JW428 C6	JW503 B2	JW4019 C3
C493 C5	R509 D1	Q912 E2	JW429 C6	JW504 B1	JW4020 C3
C495 C4	R510 E1	Q913 C2	JW430 C6	JW505 B1	JW4021 C2
C498 C7	R511 B1	Q914 C2	JW431 C6	JW507 B1	JW4022 C2
C501 C1	R512 A1	L501 B1	JW432 C6	JW508 C1	JW4023 C2
C502 C1	R513 A1	L502 B1	JW433 C6	JW509 C1	JW4025 D3
C503 C1	R514 A1	L503 C1	JW434 C6	JW510 C1	JW4026 C2
C504 D1	R515 B1	L505 A1	JW435 C5	JW511 D1	JW4027 F1
C505 D1	R516 A6	L506 A1	JW436 C5	JW512 D1	ESD-C1 F4
C506 E1	R517 A6	D401 C7	JW437 C6	JW513 E1	ESD-C7 E3
C507 E1	R518 A6	D501 C1	JW438 D5	JW514 E1	ESD-C8 F4
C508 B1	R519 A7	D502 E1	JW439 D5	JW515 E1	ESD-C9 F5
C509 B1	R520 B7	D503 B2	JW440 D5	JW516 B1	
C510 B1	R522 B2	D504 B2	JW441 D5	JW517 B1	
C511 B1	R523 B2	D507 B1	JW442 D5	JW521 A2	
C512 A6	R524 B2	D508 B2	JW443 D5	JW522 A2	
C513 A6	R525 B2	D509 C2	JW444 D5	JW523 A2	
C514 A6	R526 B2	D510 C2	JW445 E5	JW524 A2	
C515 A7	R527 B2	D511 D3	JW446 E5	JW525 A2	
C516 B7	R528 B2	D512 D2	JW447 E5	JW901 C7	
C517 A7	R466 C6	D513 D3	JW448 E5	JW902 C7	
C518 A7	R529 B2	D514 F1	JW449 E5	JW903 B5	
C519 A6	R530 B2	D901 A3	JW450 E5	JW904 C5	
C520 A6	R531 B2	D902 B5	JW451 E5	JW905 B4	
C521 A6	R532 B3	D910 B3	JW452 E5	JW906 B4	
C523 B2	R901 A5	D911 A5	JW452 E5	JW907 B4	
C524 B2	R902 B6	D912 B1	JW453 E5	JW908 C4	
C525 B3	R903 B7	D913 E1	JW454 E5	JW909 C4	
C901 A3	R904 B7	CN101 F3	JW455 D4	JW910 C4	

# PCB LAYOUT(COPPERSIDE VIEW)



- |           |         |          |
|-----------|---------|----------|
| C401 D7   | R411 D7 | R492 D4  |
| C402 D7   | R412 D7 | R493 D4  |
| C403 D7   | R413 D7 | R495 D4  |
| C404 D7   | R414 D7 | R496 D4  |
| C405 E7   | R415 D7 | R497 D4  |
| C406 E7   | R416 D7 | R498 C4  |
| C407 E7   | R417 E7 | R499 C4  |
| C409 D6   | R418 E6 | R4001 E7 |
| C415 D6   | R419 D6 | R4002 E7 |
| C417 D6   | R420 E6 | R4004 E7 |
| C419 D6   | R421 E6 | R4005 E3 |
| C422 E5   | R422 E6 | R4006 E3 |
| C424 E6   | R423 D7 | R4007 E3 |
| C425 E6   | R424 D6 | R4008 E3 |
| C425 E6   | R425 D6 | R4010 E3 |
| C427 E5   | R426 D6 | R4012 F1 |
| C428 E5   | R427 D6 | R4015 F1 |
| C429 E5   | R428 D6 | R4016 D6 |
| C430 E5   | R429 E6 | R4017 D6 |
| C431 E5   | R430 E6 | R4018 D6 |
| C432 E5   | R431 E5 | R4021 E4 |
| C433 E5   | R432 E6 | R4022 F4 |
| C434 E5   | R433 E6 | R4023 E4 |
| C436 E5   | R434 E5 | R4024 F4 |
| C444 D5   | R435 D5 | R4025 D5 |
| C446 D6   | R436 E5 | R4026 D5 |
| C448 E6   | R437 E5 | R4030 C5 |
| C451 E6   | R438 E5 | R4031 C5 |
| C453 E6   | R439 E6 | R4032 C6 |
| C454 E6   | R440 E6 | R4041 E3 |
| C456 E6   | R441 E6 | R4042 E3 |
| C457 C6   | R442 E7 | R4043 E3 |
| C467 C6   | R443 E7 | R4044 E3 |
| C470 C6   | R444 E6 | R4045 E3 |
| C472 E4   | R445 E6 | R4046 F3 |
| C474 E4   | R446 E6 | R4100 C4 |
| C477 D4   | R447 E7 | R4101 C4 |
| C479 D4   | R448 E7 | R4102 C4 |
| C482 D4   | R449 E6 | R4103 C4 |
| C484 D4   | R450 D6 | R4104 E6 |
| C486 D4   | R453 D5 | R4105 C4 |
| C488 D4   | R454 D5 | R4106 C4 |
| C490 D4   | R455 D6 | R4110 D7 |
| C492 D4   | R456 D6 | R4111 C7 |
| C494 C4   | R457 D5 | R4112 C7 |
| C496 C4   | R458 D5 | R4113 C7 |
| C499 C7   | R459 D5 | R4114 C7 |
| C4001 E7  | R460 D5 | R4115 C7 |
| C4005 E3  | R461 C6 | R4116 C7 |
| C4007 E3  | R462 C6 | IC401 D7 |
| C4009 E3  | R463 C6 | IC402 D6 |
| C4011 F3  | R464 C6 | IC403 E6 |
| C4012 F3  | R465 C6 | IC404 E5 |
| C4013 F3  | R468 E4 | IC405 D5 |
| C4014 F3  | R469 E4 | IC406 D6 |
| C4015 F3  | R470 E4 | IC407 E6 |
| C4016 F3  | R471 E4 | IC408 D5 |
| C4021 E4  | R472 E4 | IC409 E4 |
| C4022 F4  | R473 D4 | IC410 D4 |
| C4030 C6  | R474 D4 | IC411 D4 |
| C4031 C6  | R475 D4 | IC412 E4 |
| C4032 C6  | R476 D4 | IC413 E3 |
| ESD-C2 E7 | R477 D4 | JW401 D4 |
| ESD-C3 E7 | R478 D4 | JW402 E4 |
| ESD-C4 D7 | R479 D4 | JW403 D6 |
| ESD-C5 D7 | R480 D4 |          |
| ESD-C6 C7 | R481 D4 |          |
| R401 D7   | R482 D4 |          |
| R402 D7   | R483 D4 |          |
| R403 D7   | R484 D4 |          |
| R404 D7   | R485 D4 |          |
| R405 E7   | R486 D4 |          |
| R406 D7   | R487 D4 |          |
| R407 E7   | R488 D4 |          |
| R408 E7   | R489 D4 |          |
| R409 E7   | R490 D4 |          |
| R410 E7   | R491 D4 |          |

## ELECTRICAL PARTS LIST - MAIN BOARD

## MISCELLANEOUS

F901	9965 000 12501	△ FUSE 6,3A 250V SLOW
F902	9965 000 12501	△ FUSE 6,3A 250V SLOW
F903	9965 000 12500	△ FUSE 3,15A 250V SLOW
JK105	9965 000 12507	CINCH SOCKET 1P BLACK
JK106	9965 000 12506	SOCKET OPTICAL OUT
JK401	9965 000 12505	CINCH SOCKET 6P WHITE/RED
JK402	9965 000 12504	CINCH SOCKET 2P WHITE/RED
JK501	9965 000 12502	△ LOUDSPEAKER SOCKET 10P
RB102	9965 000 12503	SOCKET FFC 28PIN VERT,

## CAPACITORS

C401	4822 126 13221	100PF 2% NP0 63V
C402	4822 126 13221	100PF 2% NP0 63V
C403	4822 126 13221	100PF 2% NP0 63V
C404	4822 126 13221	100PF 2% NP0 63V
C405	4822 126 13221	100PF 2% NP0 63V
C406	4822 126 13221	100PF 2% NP0 63V
C407	4822 126 14585	100NF 10% X7R 0805 50V
C408	4822 124 40433	47UF 20% 25V
C409	4822 126 14585	100NF 10% X7R 0805 50V
C410	4822 124 40433	47UF 20% 25V
C411	4822 126 14585	100NF 10% X7R 0805 50V
C412	9965 000 12522	4,7UF 50V 20%
C413	4822 126 13692	47PF 1% NP0 63V
C414	9965 000 12522	4,7UF 50V 20%
C415	4822 126 14585	100NF 10% X7R 0805 50V
C416	9965 000 12522	4,7UF 50V 20%
C417	4822 126 13692	47PF 1% NP0 63V
C418	9965 000 12522	4,7UF 50V 20%
C419	4822 126 14585	100NF 10% X7R 0805 50V
C420	9965 000 12522	4,7UF 50V 20%
C421	9965 000 12522	4,7UF 50V 20%
C422	4822 126 13692	47PF 1% NP0 63V
C423	9965 000 12522	4,7UF 50V 20%
C424	4822 126 14585	100NF 10% X7R 0805 50V
C425	4822 126 13692	47PF 1% NP0 63V
C426	9965 000 12522	4,7UF 50V 20%
C427	4822 126 14585	100NF 10% X7R 0805 50V
C428	9965 000 12523	0,22UF 50V 20%
C429	9965 000 12523	0,22UF 50V 20%
C430	9965 000 12523	0,22UF 50V 20%
C431	9965 000 12523	0,22UF 50V 20%
C432	4822 126 14585	100NF 10% X7R 0805 50V
C433	4822 126 14585	100NF 10% X7R 0805 50V
C434	9965 000 12524	0,047UF 50V 20%
C435	9965 000 12522	4,7UF 50V 20%
C436	4822 126 14585	100NF 10% X7R 0805 50V
C437	9965 000 12522	4,7UF 50V 20%
C438	9965 000 12522	4,7UF 50V 20%
C439	9965 000 12522	4,7UF 50V 20%
C440	9965 000 12522	4,7UF 50V 20%
C441	9965 000 12522	4,7UF 50V 20%

C442	9965 000 12522	4,7UF 50V 20%
C443	4822 124 40433	47UF 20% 25V
C444	4822 126 14585	100NF 10% X7R 0805 50V
C445	4822 124 40433	47UF 20% 25V
C446	4822 126 14585	100NF 10% X7R 0805 50V
C447	9965 000 12522	4,7UF 50V 20%
C448	4822 126 13692	47PF 1% NP0 63V
C449	9965 000 12522	4,7UF 50V 20%
C450	4822 124 40433	47UF 20% 25V
C451	4822 126 14585	100NF 10% X7R 0805 50V
C452	9965 000 12522	4,7UF 50V 20%
C453	4822 126 13692	47PF 1% NP0 63V
C454	9965 000 12522	4,7UF 50V 20%
C455	4822 124 40433	47UF 20% 25V
C456	4822 126 14585	100NF 10% X7R 0805 50V
C457	4822 126 14585	100NF 10% X7R 0805 50V
C458	4822 124 40433	47UF 20% 25V
C459	9965 000 12522	4,7UF 50V 20%
C460	9965 000 12522	4,7UF 50V 20%
C461	9965 000 13068	0,0015UF 100V 5%
C462	9965 000 12526	0,015UF 100V 5%
C463	9965 000 12527	0,47UF 100V 5%
C464	9965 000 13068	0,0015UF 100V 5%
C465	9965 000 12526	0,015UF 100V 5%
C466	9965 000 12527	0,47UF 100V 5%
C467	4822 126 14585	100NF 10% X7R 0805 50V
C468	4822 124 40433	47UF 20% 25V
C469	4822 124 40433	47UF 20% 25V
C470	4822 126 14585	100NF 10% X7R 0805 50V
C471	9965 000 12522	4,7UF 50V 20%
C472	5322 116 80853	560PF 5%NP0 63V
C473	9965 000 12522	4,7UF 50V 20%
C474	4822 126 14585	100NF 10% X7R 0805 50V
C475	4822 124 40433	47UF 20% 25V
C476	9965 000 12522	4,7UF 50V 20%
C477	5322 116 80853	560PF 5%NP0 63V
C478	9965 000 12522	4,7UF 50V 20%
C479	4822 126 14585	100NF 10% X7R 0805 50V
C480	4822 124 40433	47UF 20% 25V
C481	9965 000 12522	4,7UF 50V 20%
C482	5322 116 80853	560PF 5%NP0 63V
C483	9965 000 12522	4,7UF 50V 20%
C484	4822 126 14585	100NF 10% X7R 0805 50V
C485	9965 000 12522	4,7UF 50V 20%
C486	5322 116 80853	560PF 5%NP0 63V
C487	9965 000 12522	4,7UF 50V 20%
C488	4822 126 14585	100NF 10% X7R 0805 50V
C489	9965 000 12522	4,7UF 50V 20%
C490	5322 116 80853	560PF 5%NP0 63V
C491	9965 000 12522	4,7UF 50V 20%
C492	4822 126 14585	100NF 10% X7R 0805 50V
C493	9965 000 12522	4,7UF 50V 20%

## ELECTRICAL PARTS LIST - MAIN BOARD

C494	5322 116 80853	560PF 5%NP0 63V
C495	9965 000 12522	4,7UF 50V 20%
C496	4822 126 14585	100NF 10% X7R 0805 50V
C498	4822 124 40207	100UF 20% 25V
C499	4822 126 14585	100NF 10% X7R 0805 50V
C501	9965 000 12528	4700PF 50V 10%
C502	9965 000 12528	4700PF 50V 10%
C503	9965 000 12529	0,1UF 50V +80-20%
C504	9965 000 12529	0,1UF 50V +80-20%
C505	9965 000 12528	4700PF 50V 10%
C506	9965 000 12529	0,1UF 50V +80-20%
C507	9965 000 12529	0,1UF 50V +80-20%
C508	9965 000 12528	4700PF 50V 10%
C509	9965 000 12528	4700PF 50V 10%
C510	9965 000 12529	0,1UF 50V +80-20%
C511	9965 000 12529	0,1UF 50V +80-20%
C512	5322 121 42578	100NF 5% 250V
C513	5322 121 42578	100NF 5% 250V
C514	5322 121 42578	100NF 5% 250V
C515	5322 121 42578	100NF 5% 250V
C516	5322 121 42578	100NF 5% 250V
C517	9965 000 12529	0,1UF 50V +80-20%
C518	9965 000 12529	0,1UF 50V +80-20%
C519	9965 000 12529	0,1UF 50V +80-20%
C520	9965 000 12529	0,1UF 50V +80-20%
C521	9965 000 12529	0,1UF 50V +80-20%
C523	9965 000 12558	220UF 20% 16V
C524	9965 000 13453	0,22UF 50V 20%
C525	9965 000 13069	2200UF 25V 20%
C901	9965 000 08286	0,022UF 5% 100V MYLAR
C902	9965 000 08286	0,022UF 5% 100V MYLAR
C903	9965 000 08286	0,022UF 5% 100V MYLAR
C904	9965 000 08286	0,022UF 5% 100V MYLAR
C905	9965 000 12531	△ 6800UF 25V 20%
C906	9965 000 12531	△ 6800UF 25V 20%
C907	9965 000 12532	3,3UF 50V 20%
C910	9965 000 12529	0,1UF 50V +80-20%
C911	9965 000 12529	0,1UF 50V +80-20%
C912	9965 000 12533	220UF 25V 20%
C913	9965 000 12533	220UF 25V 20%
C914	9965 000 12529	0,1UF 50V +80-20%
C915	9965 000 12529	0,1UF 50V +80-20%
C921	9965 000 08286	0,022UF 5% 100V MYLAR
C922	9965 000 08286	0,022UF 5% 100V MYLAR
C923	9965 000 08286	0,022UF 5% 100V MYLAR
C924	9965 000 08286	0,022UF 5% 100V MYLAR
C925	9965 000 12529	0,1UF 50V +80-20%
C926	9965 000 12534	△ 3300UF 25V 20%
C927	4822 124 40248	10UF 20% 63V
C928	9965 000 12533	220UF 25V 20%
C929	9965 000 12533	220UF 25V 20%
C930	9965 000 12529	0,1UF 50V +80-20%

C931	9965 000 12533	△ 220UF 25V 20%
C932	9965 000 12533	220UF 25V 20%
C933	9965 000 12529	0,1UF 50V +80-20%
C937	9965 000 12529	0,1UF 50V +80-20%
C938	9965 000 12529	0,1UF 50V +80-20%
C940	9965 000 12533	220UF 25V 20%
C941	9965 000 12533	220UF 25V 20%
C942	9965 000 12533	220UF 25V 20%
C943	9965 000 12536	100UF 50V 20%
C4001	4822 126 13221	100PF 2% NP0 63V
C4004	9965 000 12522	4,7UF 50V 20%
C4005	4822 126 14585	100NF 10% X7R 0805 50V
C4007	5322 116 80853	560PF 5%NP0 63V
C4008	9965 000 12522	4,7UF 50V 20%
C4009	4822 126 14585	100NF 10% X7R 0805 50V
C4011	5322 122 32658	22PF 5% 50V
C4012	5322 122 32658	22PF 5% 50V
C4013	5322 122 32658	22PF 5% 50V
C4014	5322 122 32658	22PF 5% 50V
C4015	5322 122 32658	22PF 5% 50V
C4016	5322 122 32658	22PF 5% 50V
C4030	5322 122 32658	22PF 5% 50V
C4031	5322 122 32658	22PF 5% 50V
C4032	5322 122 32658	22PF 5% 50V

## RESISTORS

R401	9965 000 12482	47K 1/10W 5%
R402	9965 000 12482	47K 1/10W 5%
R403	9965 000 12482	47K 1/10W 5%
R404	9965 000 12482	47K 1/10W 5%
R405	4822 051 20471	470R 5% 0,1W
R406	4822 051 20332	3K3 5% 0,1W
R407	4822 051 20471	470R 5% 0,1W
R408	4822 051 20332	3K3 5% 0,1W
R409	4822 051 20202	2K 5% 0,1W
R410	9965 000 12482	47K 1/10W 5%
R411	4822 051 20472	4K7 5% 1/10W
R412	4822 051 20472	4K7 5% 1/10W
R413	4822 051 20472	4K7 5% 1/10W
R414	4822 051 20472	4K7 5% 1/10W
R415	4822 051 20472	4K7 5% 1/10W
R416	4822 051 20472	4K7 5% 1/10W
R417	4822 117 10837	100K 1% 0,1W
R418	9965 000 12484	10K 5% 1/10W
R419	4822 117 10837	100K 1% 0,1W
R420	4822 051 20102	1K 5% 0,1W
R421	9965 000 12483	12K 5% 1/10W
R422	4822 051 20472	4K7 5% 0,1W
R423	4822 117 10837	100K 1% 0,1W
R424	9965 000 12484	10K 5% 1/10W
R425	4822 117 10837	100K 1% 0,1W
R426	4822 051 20102	1K 5% 0,1W

## ELECTRICAL PARTS LIST - MAIN BOARD

## RESISTORS

R427	9965 000 12483	12K 5% 1/10W
R428	4822 051 20472	4K7 5% 0,1W
R429	4822 117 11148	56K 1% 0,1W
R430	4822 117 11148	56K 1% 0,1W
R431	4822 117 11148	56K 1% 0,1W
R432	9965 000 12484	10K 1/10W 5%
R433	9965 000 12483	12K 1/10W 5%
R434	9965 000 12484	10K 1/10W 5%
R435	9965 000 12484	10K 1/10W 5%
R436	9965 000 12482	47K 1/10W 5%
R437	9965 000 12483	12K 1/10W 5%
R438	9965 000 12483	12K 1/10W 5%
R439	4822 117 10837	100K 1% 0,1W
R440	9965 000 12484	10K 1/10W 5%
R441	4822 051 20223	22K 5% 0,1W
R442	4822 051 20472	4K7 5% 0,1W
R443	4822 051 20223	22K 5% 0,1W
R444	4822 117 10837	100K 1% 0,1W
R445	9965 000 12484	10K 1/10W 5%
R446	4822 051 20223	22K 5% 0,1W
R447	4822 051 20472	4K7 5% 0,1W
R448	4822 051 20223	22K 5% 0,1W
R449	4822 117 11373	100R 1% RC12H 0805
R450	4822 117 11373	100R 1% RC12H 0805
R451	4822 116 83868	150R 5% 0,5W
R452	4822 116 83868	150R 5% 0,5W
R453	9965 000 12484	10K 1/10W 5%
R454	9965 000 12484	10K 1/10W 5%
R455	4822 117 11373	100R 1% RC12H 0805
R456	4822 117 11373	100R 1% RC12H 0805
R457	4822 117 11373	100R 1% RC12H 0805
R458	4822 117 11373	100R 1% RC12H 0805
R459	4822 117 11373	100R 1% RC12H 0805
R460	4822 117 11373	100R 1% RC12H 0805
R461	4822 051 20223	22K 5% 0,1W
R462	4822 051 20223	22K 5% 0,1W
R463	4822 051 20223	22K 5% 0,1W
R464	4822 051 20223	22K 5% 0,1W
R465	4822 117 11373	100R 1% RC12H 0805
R466	4822 116 83872	220R 5% 0,5W
R467	4822 116 83872	220R 5% 0,5W
R468	4822 051 20102	1K 5% 0,1W
R469	9965 000 12482	47K 1/10W 5%
R470	4822 117 11139	1K5 1% 0,1W
R471	4822 117 12955	2K7 1% 0,1W 0805
R472	4822 117 11139	1K5 1% 0,1W
R473	9965 000 12484	10K 1/10W 5%
R474	4822 051 20102	1K 5% 0,1W
R475	9965 000 12482	47K 1/10W 5%
R476	4822 117 11139	1K5 1% 0,1W
R477	4822 117 12955	2K7 1% 0,1W 0805
R478	4822 117 11139	1K5 1% 0,1W
R479	9965 000 12484	10K 1/10W 5%
R480	4822 051 20102	1K 5% 0,1W
R481	9965 000 12482	47K 1/10W 5%
R482	4822 117 11139	1K5 1% 0,1W
R483	4822 051 20202	2K 5% 0,1W
R484	4822 117 11139	1K5 1% 0,1W
R485	9965 000 12484	10K 1/10W 5%
R486	4822 051 20102	1K 5% 0,1W
R487	9965 000 12482	47K 1/10W 5%
R488	4822 117 11139	1K5 1% 0,1W
R489	4822 051 20202	2K 5% 0,1W
R490	4822 117 11139	1K5 1% 0,1W
R491	9965 000 12484	10K 1/10W 5%
R492	4822 051 20102	1K 5% 0,1W
R493	9965 000 12482	47K 1/10W 5%
R494	4822 117 11139	1K5 1% 0,1W
R495	4822 051 20202	2K 5% 0,1W
R496	4822 117 11139	1K5 1% 0,1W
R497	9965 000 12484	10K 1/10W 5%
R498	4822 051 20102	1K 5% 0,1W
R499	9965 000 12482	47K 1/10W 5%
R501	4822 050 25601	560R 1% 0,6W
R502	4822 050 21003	10K 1% 0,6W
R503	4822 050 25601	560R 1% 0,6W
R504	4822 050 21003	10K 1% 0,6W
R505	4822 050 21004	100K 1% 0,6W
R506	4822 050 25601	560R 1% 0,6W
R507	4822 050 21003	10K 1% 0,6W
R508	4822 050 25601	560R 1% 0,6W
R509	4822 050 21003	10K 1% 0,6W
R510	4822 050 21004	100K 1% 0,6W
R511	4822 050 25601	560R 1% 0,6W
R512	4822 050 21003	10K 1% 0,6W
R513	4822 050 25601	560R 1% 0,6W
R514	4822 050 21003	10K 1% 0,6W
R515	4822 050 21004	100K 1% 0,6W
R516	4822 116 81154	2R2 5% 0,5W
R517	4822 116 81154	2R2 5% 0,5W
R518	4822 116 81154	2R2 5% 0,5W
R519	4822 116 81154	2R2 5% 0,5W
R520	4822 116 81154	2R2 5% 0,5W
R522	9965 000 09727	56K 1/6W 5% CF
R523	9965 000 08284	220K 1/6W 5% CF
R524	4822 050 24703	47K 1% 0,6W
R525	4822 050 21003	10K 1% 0,6W
R526	4822 050 21003	10K 1% 0,6W
R527	4822 050 21004	100K 1% 0,6W
R528	4822 050 21003	10K 1% 0,6W
R529	4822 050 21003	10K 1% 0,6W
R530	9965 000 12519	1K 1/6W 5%
R531	4822 050 21003	10K 1% 0,6W
R532	9965 000 12516	12K 1/6W 5% CF

## ELECTRICAL PARTS LIST - MAIN BOARD

R901	9965 000 12517	△ 1R 1/2W 5%
R902	9965 000 12517	△ 1R 1/2W 5%
R903	9965 000 12517	△ 1R 1/2W 5%
R904	9965 000 12518	220R 2W 5%
R905	4822 050 21003	10K 1% 0,6W
R906	4822 050 21003	10K 1% 0,6W
R907	4822 050 22203	22K 1% 0,6W
R908	4822 050 22201	220R 1% 0,6W
R909	4822 116 83872	220R 5% 0,5W
R910	4822 050 21003	10K 1% 0,6W
R911	4822 050 21003	10K 1% 0,6W
R912	4822 050 21003	10K 1% 0,6W
R913	4822 050 22203	22K 1% 0,6W
R914	4822 050 22203	22K 1% 0,6W
R915	4822 050 21003	10K 1% 0,6W
R916	4822 050 21003	10K 1% 0,6W
R917	4822 050 21003	10K 1% 0,6W
R918	9965 000 12519	1K 1/6W 5% CF
R919	4822 050 22203	22K 1% 0,6W
R920	9965 000 12520	6,8K 1/6W 5% CF
R925	9965 000 12521	△ 1R 1/4W 5%
R926	9965 000 12521	△ 1R 1/4W 5%
R927	9965 000 12521	△ 1R 1/4W 5%
R4001	9965 000 12482	47K 1/10W 5%
R4002	4822 051 20202	2K 5% 0,1W
R4003	9965 000 12515	2,2K 1/6W 5% CF
R4004	4822 051 20223	22K 5% 0,1W
R4005	4822 117 11373	100R 1% RC12H 0805
R4006	4822 051 20008	0R JUMPER 0,1W
R4007	4822 117 11139	1K5 1% 0,1W
R4008	4822 117 10837	100K 1% 0,1W
R4009	9965 000 12515	2,2K 1/6W 5% CF
R4010	4822 117 11373	100R 1% RC12H 0805
R4011	4822 050 21003	10K 1% 0,6W
R4012	4822 117 11148	56K 1% 0,1W
R4015	4822 051 20223	22K 5% 0,1W
R4016	4822 051 20202	2K 5% 1/10W
R4017	4822 051 20202	2K 5% 1/10W
R4018	4822 051 20223	22K 5% 1/10W
R4030	2322 734 63309	33R 1% RC12H 0805
R4031	2322 734 63309	33R 1% RC12H 0805
R4032	2322 734 63309	33R 1% RC12H 0805
R4041	2322 734 63309	33R 1/10W 5%
R4042	2322 734 63309	33R 1/10W 5%
R4043	2322 734 63309	33R 1/10W 5%
R4044	2322 734 63309	33R 1/10W 5%
R4045	2322 734 63309	33R 1/10W 5%
R4046	2322 734 63309	33R 1/10W 5%
R4100	4822 051 20102	1K 5% 0,1W
R4101	4822 117 12955	2K7 1% 0,1W 0805
R4102	4822 051 20202	2K 5% 0,1W
R4103	9965 000 12484	10K 1/10W 5%
R4104	4822 051 20223	22K 5% 0,1W
R4105	4822 117 11373	100R 1% RC12H 0805
R4106	4822 117 11373	100R 1% RC12H 0805
R4110	4822 117 11373	100R 1% RC12H 0805
R4111	4822 117 11373	100R 1% RC12H 0805
R4112	4822 117 11373	100R 1% RC12H 0805
R4113	9965 000 12484	10K 1/10W 5%
R4114	4822 051 20102	1K 5% 0,1W
R4115	4822 117 11373	100R 1% RC12H 0805
R4116	4822 117 11373	100R 1% RC12H 0805
JW402	4822 051 20008	JUMPER 0R 0805
COILS & FILTERS		
L501	4822 157 71807	RF COIL 1UH
L502	4822 157 71807	RF COIL 1UH
L503	4822 157 71807	RF COIL 1UH
L505	4822 157 71807	RF COIL 1UH
L506	4822 157 71807	RF COIL 1UH
DIODES		
D401	4822 130 30621	1N4148
D501	4822 130 30621	1N4148
D502	4822 130 30621	1N4148
D503	4822 130 30621	1N4148
D504	4822 130 30621	1N4148
D507	4822 130 30621	1N4148
D508	4822 130 30621	1N4148
D509	4822 130 30621	1N4148
D510	4822 130 30621	1N4148
D511	4822 130 30621	1N4148
D512	4822 130 30621	1N4148
D513	4822 130 30621	1N4148
D901	9965 000 12508	△ KBU8B 8A 100V
D902	9965 000 12509	△ RS402L 4A
D910	4822 130 31438	△ 1N4001G
D911	4822 130 31438	△ 1N4001G
D912	4822 130 31438	△ 1N4001G
D913	4822 130 31438	△ 1N4001G
ZD401	4822 130 80272	MTZJ7,5C
ZD402	4822 130 80272	MTZJ7,5C
ZD403	4822 130 34167	BZX79-B6V2
ZD404	4822 130 34167	BZX79-B6V2
ZD901	4822 130 61219	BZX79-B10
TRANSISTORS & INTEGRATED CIRCUITS		
IC401	9965 000 12510	TC4052BFBN CHIP
IC402	9965 000 12491	JRC4558D JRC
IC403	9965 000 12491	JRC4558D JRC
IC404	9965 000 12491	JRC4558D JRC
IC405	9965 000 12492	TC4053BFBN CHIP
IC406	9965 000 12492	TC4053BFBN CHIP
IC407	9965 000 12491	JRC4558D JRC

**ELECTRICAL PARTS LIST - MAIN BOARD**

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## Transistors &amp; Integrated circuits

IC408	9965 000 12514	M62446FP
IC409	9965 000 12491	JRC4558D JRC
IC410	9965 000 12491	JRC4558D JRC
IC411	9965 000 12491	JRC4558D JRC
IC413	9965 000 12491	JRC4558D JRC
IC501	9965 000 12511	△ TDA7265 SGS THOMSON
IC502	9965 000 12511	△ TDA7265 SGS THOMSON
IC503	9965 000 12511	△ TDA7265 SGS THOMSON
IC901	5322 209 81856	△ LM7912CT
IC902	4822 209 70084	△ NJM7812A
IC903	5322 209 81331	△ MC7805ACT
IC904	9965 000 12512	△ BA05T ROHM
Q401	4822 130 43818	2SC2878
Q402	4822 130 43818	2SC2878
Q403	4822 130 43818	2SC2878
Q404	4822 130 41198	2SC945P
Q405	4822 130 43818	2SC2878
Q501	4822 130 41198	2SC945P
Q502	4822 130 41198	2SC945P
Q503	4822 130 41198	2SC945P
Q504	9965 000 12513	2SC719
Q505	4822 130 63876	2SA733R
Q901	4822 130 41651	2SC2001L
Q902	5322 130 44523	△ TIP42C
Q903	5322 130 44506	△ TIP41C
Q910	4822 130 41198	2SC945P
Q911	9965 000 12513	2SC719
Q912	4822 130 41651	2SC2001L
Q913	4822 130 41198	2SC945P
Q914	9965 000 12513	2SC719

Note: Only the parts mentioned in this list are normal service spare parts.

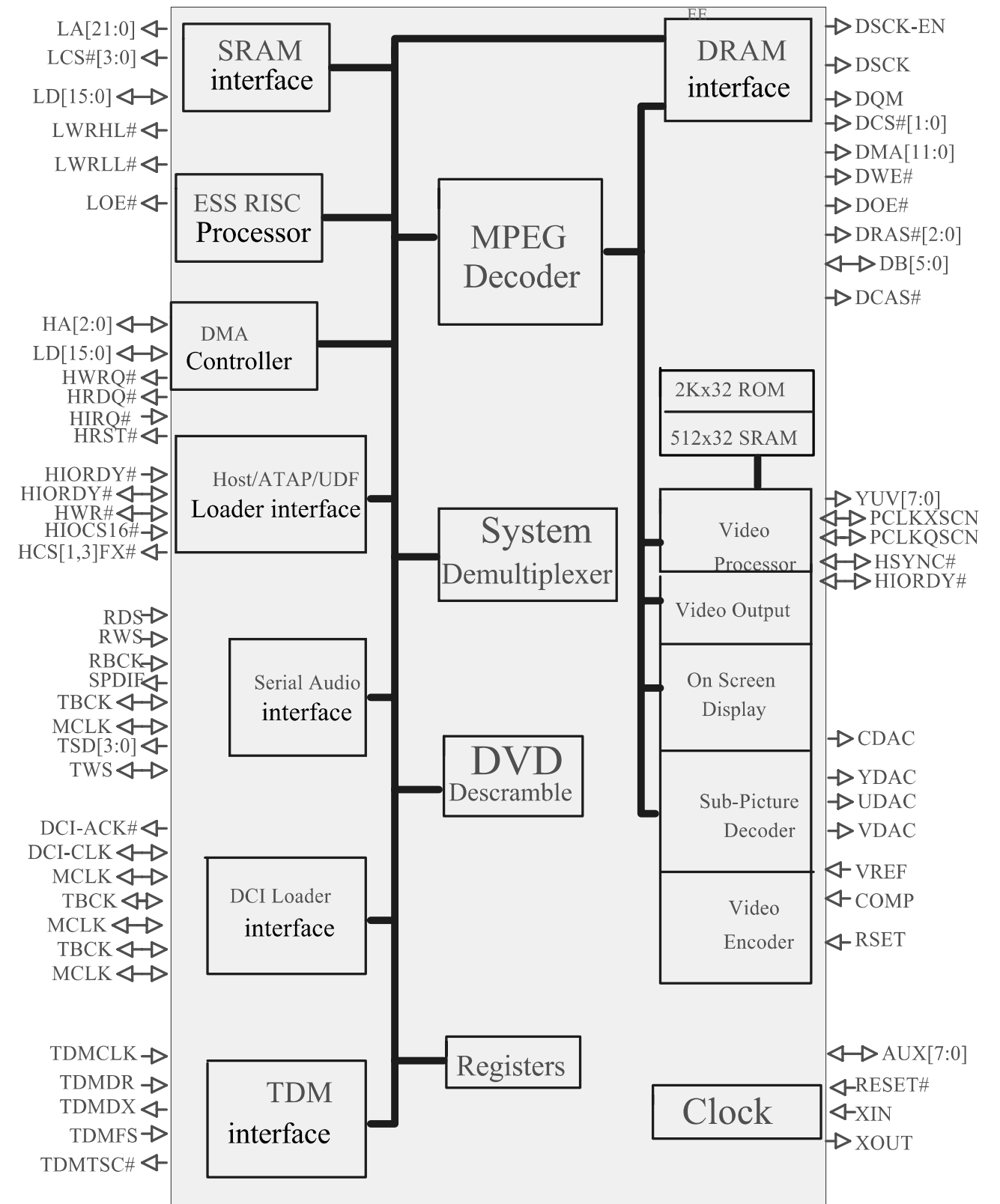


ESS 6018 / 6028 INTERNAL DIAGRAM

# MPEG BOARD

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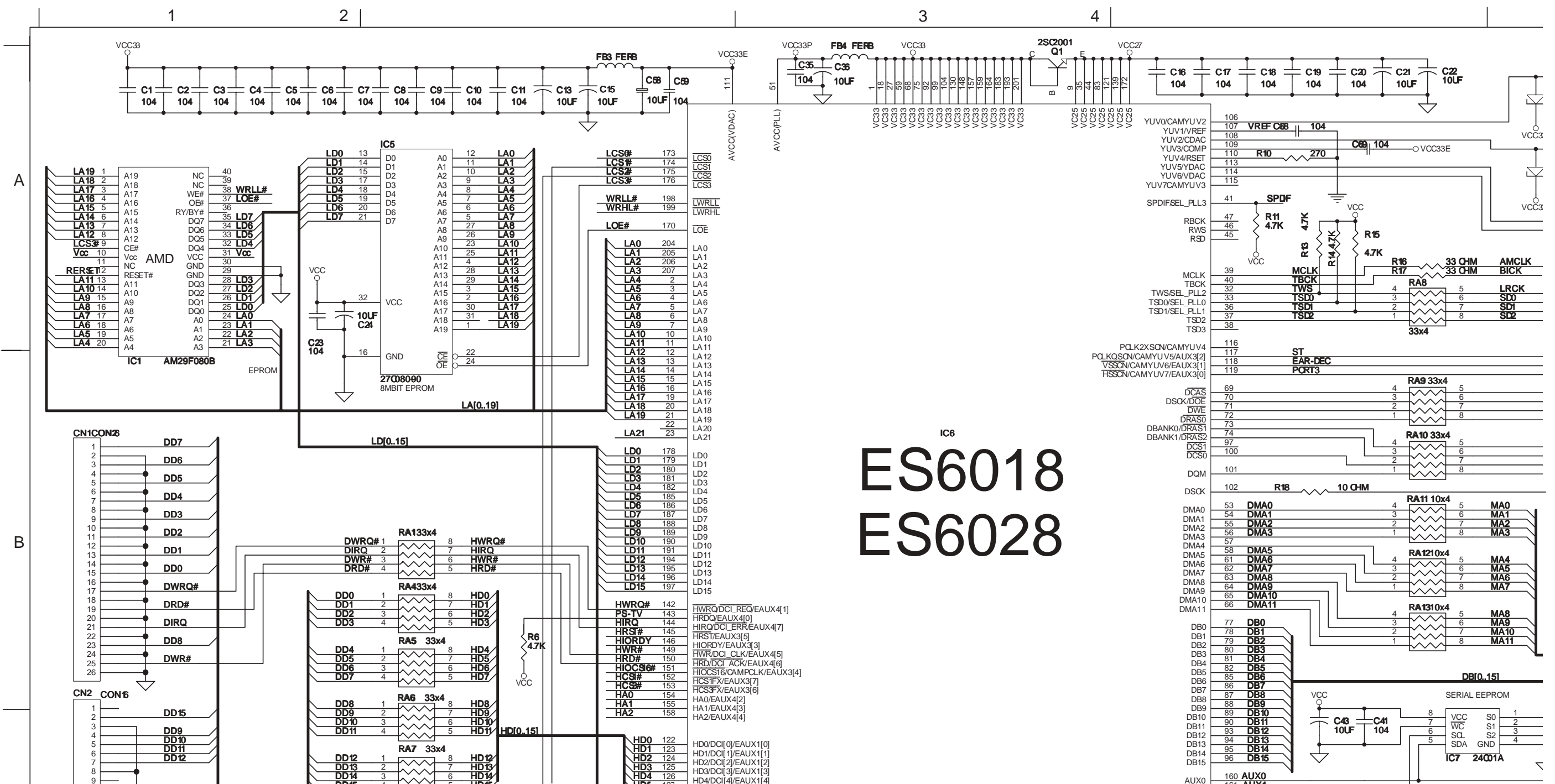
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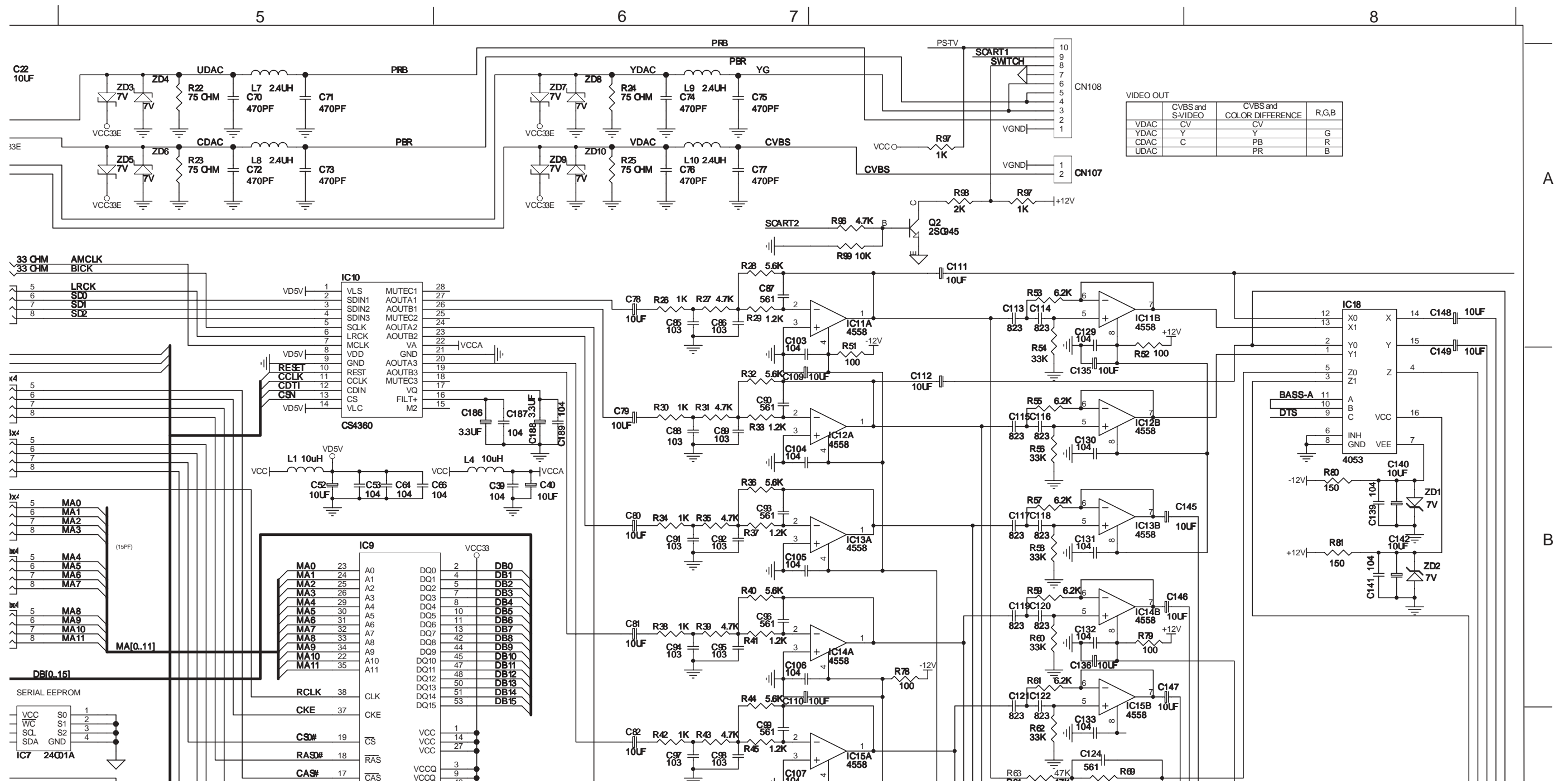
### CIRCUIT DIAGRAM (Top Left)

RA0 C2	RA19 D2	R22 A5	R38 B6	R55 B7	R72 C8	R93 D6	C10 A2	C27 C5	C48 D4	C68 A4	C84 C6	C101 C6	R118 B7	C135 B7	C154 D5	C170 C8	C186 B6	IC6 B3	L10 A6	CN5 D5
RA1 B2	RA20 D2	R23 A5	R39 B6	R56 B7	R73 C8	R94 D4	C11 A2	C28 C5	C49 D3	C69 A4	C85 A6	C102 C6	R119 B7	C137 D8	C155 D5	C171 D5	C187 B6	IC7 C4	D1 C2	CN6 A7
RA2 B2	RA21 D2	R24 A6	R40 B6	R57 B7	R74 C8	R95 D4	C12 A2	C29 C5	C50 D4	C70 A5	C87 A6	C103 B6	C120 B7	C138 C8	C156 D5	C172 D5	C188 B6	IC9 D5	ZD1 B8	CN7 A7
RA5 B2	RA22 C2	R25 A6	R41 B6	R58 B7	R77 C8	R96 A7	C13 A2	C30 C5	C51 D4	C71 A5	C88 B6	C104 B6	C121 C7	C139 B8	C157 D4	C173 D5	C189 B6	IC10 A5	ZD2 B8	
RA7 C2	R8 C2	R26 A6	R42 C6	R59 B7	R78 B8	R97 A7	C15 A2	C31 C5	C52 B5	C72 A5	C89 B6	C105 B6	C122 C7	C140 B8	C158 D3	C174 D5	C190 D1	IC18 A8	ZD3 A5	
RA8 A4	R9 C2	R27 A6	R43 C6	R60 B7	R82 D6	R98 A7	C16 A4	C32 C5	C53 B5	C73 A5	C90 B6	C106 B6	C124 C7	C141 B8	C159 D3	C175 D5	C191 D1	FB1 D4	ZD4 A5	
RA9 B4	R10 A4	R28 A6	R44 C6	R61 B7	R83 D6	R99 A7	C17 A4	C35 A3	C54 D4	C74 A6	C91 B6	C107 C6	C125 C8	C142 B8	C160 D3	C176 D5	C192 D1	FB2 D5	ZD5 A5	
RA10 B4	R11 A4	R29 A6	R45 C6	R62 C7	R84 D6	C1 A1	C18 A4	C36 A3	C55 D4	C75 A6	C92 B6	C108 C6	C126 C8	C145 B7	C161 D3	C177 D4	C193 D1	FB3 A2	ZD6 A5	
RA11 B4	R13 A4	R30 B6	R46 C6	R63 C7	R85 D6	C2 A1	C19 A4	C39 B6	C56 D5	C76 A6	C93 B6	C109 B6	C127 C8	C146 B7	C162 D3	C178 D3	C194 D1	FB4 A3	ZD7 A6	
RA12 B2	R14 A4	R31 B6	R47 C6	R64 C7	R86 D6	C3 A1	C20 A4	C40 B6	C57 D5	C77 A6	C94 B6	R110 B6	C128 C8	C147 B7	C163 D3	C179 D3	C195 D1	L1 B5	ZD8 A6	
RA13 B4	R15 A4	R32 B6	R48 C6	R65 C7	R87 D6	C4 A1	C21 A4	C41 C4	C58 A2	C78 A6	C95 B6	R112 B7	C129 C8	C148 A8	C164 D3	C180 D3	C197 C4	L4 B6	ZD9 A6	
RA14 C4	R16 A4	R33 B6	R49 C6	R66 C7	R88 D6	C5 A1	C22 A4	C43 C4	C59 A2	C79 B6	C96 B6	R113 A7	C130 B7	C149 A8	C165 D3	C181 D3	IC1 A1	L5 C4	Q1 A3	
RA15 C5	R17 A4	R34 B6	R51 B7	R68 C7	R89 D6	C6 A1	C23 A1	C44 D5	C61 C2	C80 B6	C97 C6	R114 A7	C131 B7	C150 C8	C166 D3	C182 D4	IC2 C1	L6 C4	Q2 A7	
RA16 D2	R18 B4	R35 B6	R52 A7	R69 C7	R90 D6	C7 A1	C24 A1	C45 D5	C62 C3	C81 B6	C98 C6	R115 B7	C132 B7	C151 D5	C167 D3	C183 C4	IC3 C1	L7 A5	CN1 B1	
RA17 D2	R19 C4	R36 B6	R53 A7	R70 C8	R91 D6	C8 A2	C25 C5	C46 D5	C64 B5	C82 C6	C99 C6	R116 B7	C133 C7	C152 D5	C168 D3	C184 C4	IC4 D1	L8 A5	CN2 C1	
RA18 D2	R20 C4	R37 B6	R54 A7	R71 C8	R92 D6	C9 A2	C26 C5	C47 D5	C66 B5	C83 C6	C100 C6	R117 B7	C134 C7	C153 D5	C169 A8	C185 C4	IC5 A2	L9 A6	CN3 D3	



ES6018  
ES6028

# CIRCUIT DIAGRAM (Top Right)



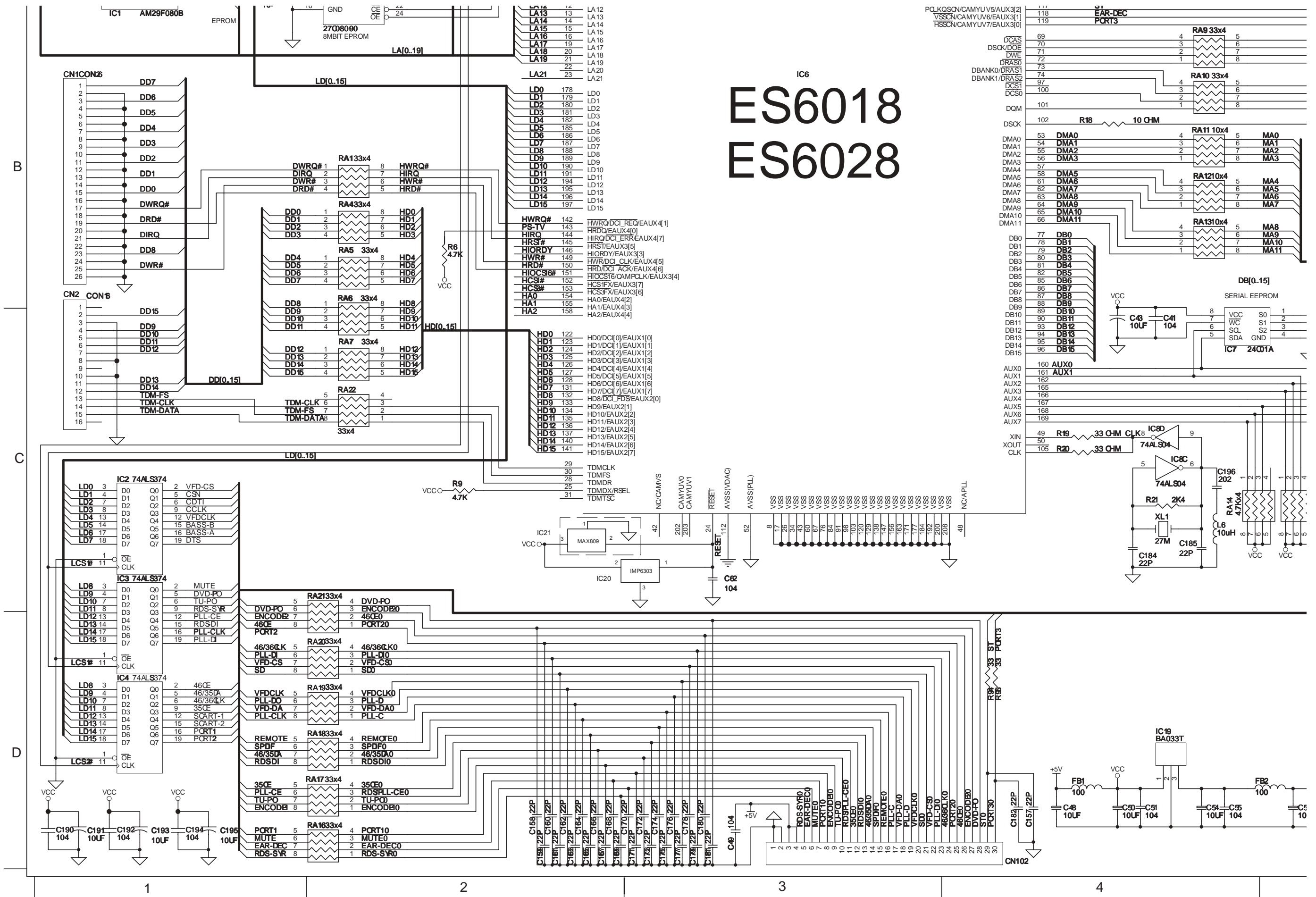
	CVBS and S-VIDEO	CVBS and COLOR DIFFERENCE	R,G,B
VDAC	CV	CV	G
YDAC	Y	Y	B
CDAC	C	PB	R
UDAC		PR	B

A

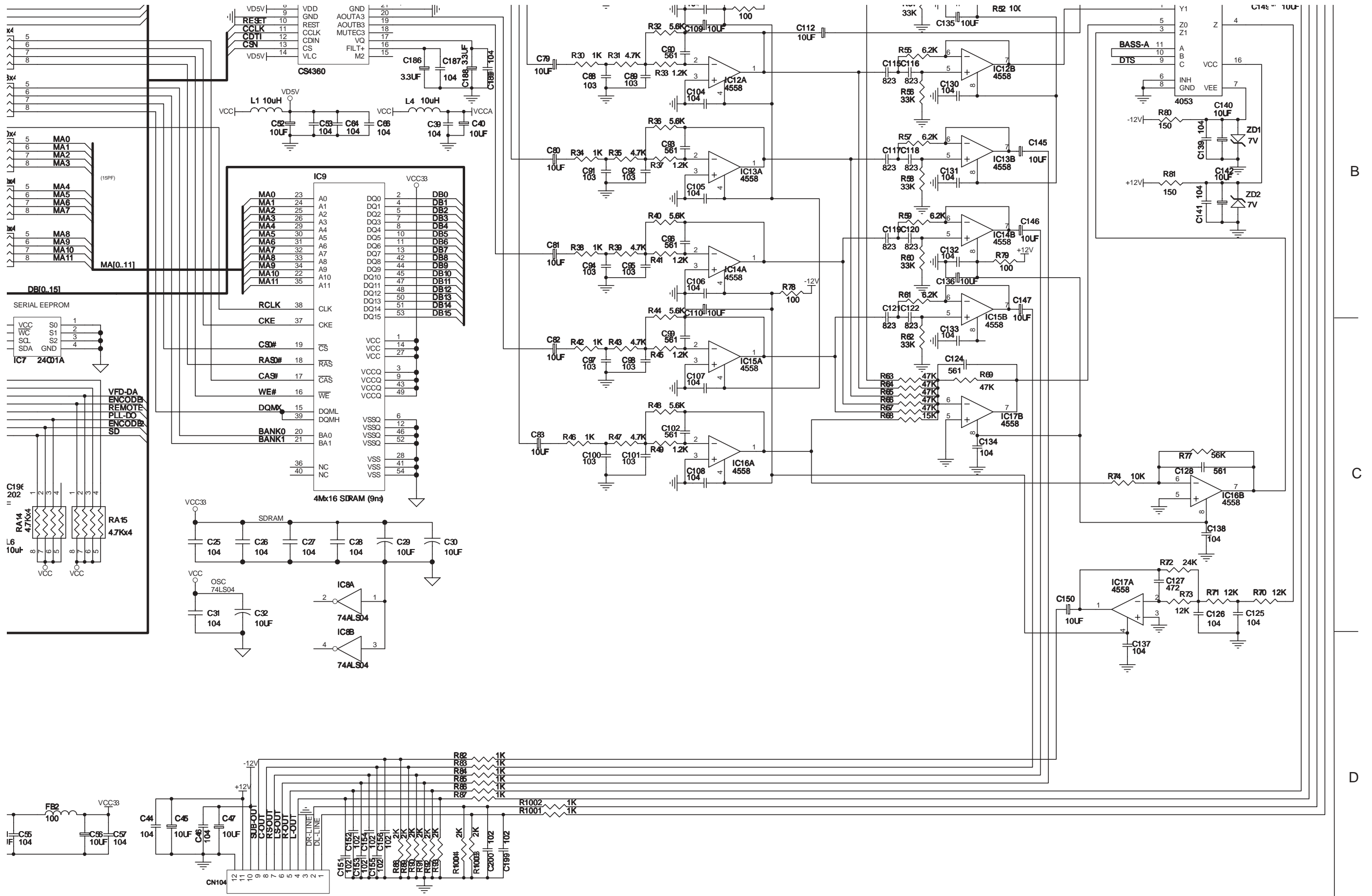
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# CIRCUIT DIAGRAM (Bottom Left)

# ES6018 ES6028



# CIRCUIT DIAGRAM (Bottom Right)



B

C

D

5

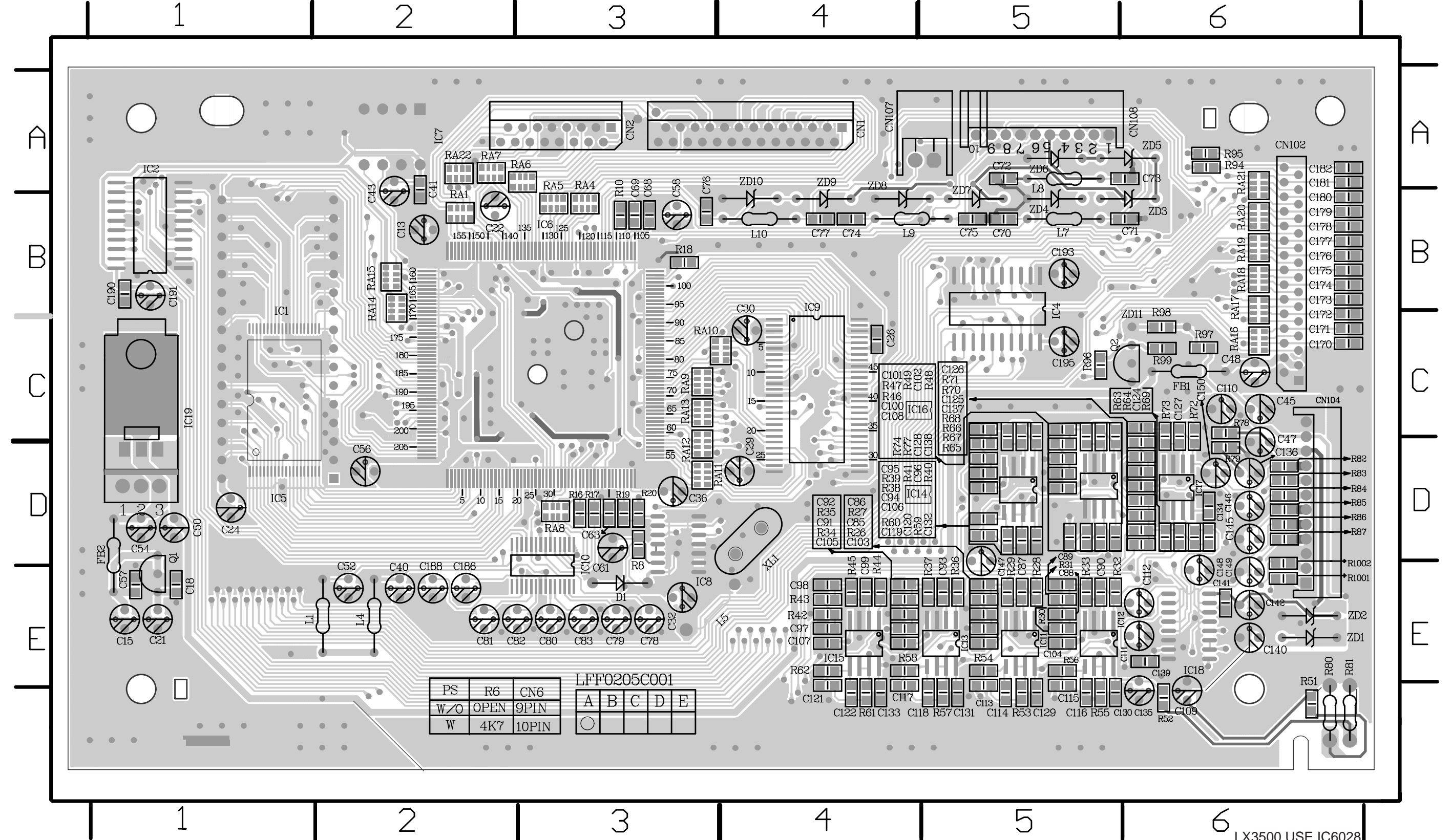
6

7

8

### PCB LAYOUT (COMPONENT SMT VIEW)

RA1 A2 RA13 C3 R8 D3 R29 E5 R39 D5 R49 D5 R60 D5 R70 D6 R82 D6 R99 C6 C29 D3 C50 D1 C72 A5 C83 D3 C94 D5 C104 E5 C114 E5 C127 C6 C138 D5 C150 D6 C179 B6 C195 C5 ZD3 D6 FB2 D1 IC4 C5 IC13 E5  
 RA4 B3 RA14 B2 R10 B3 R30 E5 R40 D5 R51 W6 R61 E4 R71 D6 R83 D6 R1001 E6 C30 B4 C52 E2 C74 B4 C85 E5 C95 D5 C105 E4 C115 E5 C128 D5 C139 E6 C170 C6 C180 B6 CN1 A4 ZD4 B5 XL1 E3 IC6 B3 IC14 D5  
 RA5 B3 RA15 B2 R16 D3 R31 E5 R41 D5 R52 E6 R62 E4 R72 C6 R84 D6 R1002 D6 C32 E3 C54 D1 C75 B5 C86 E5 C96 D5 C106 D5 C116 E5 C129 E5 C140 E6 C171 C6 C181 A6 CN2 B3 ZD5 E6 L1 E2 IC7 A2 IC15 E4  
 RA6 A3 RA16 C6 R17 D3 R32 E5 R42 E4 R53 E5 R63 D6 R73 C6 R86 D6 C13 B2 C36 D3 C56 D2 C76 B3 C87 E5 C97 E4 C107 E4 C118 E5 C130 E5 C149 E6 C172 B6 C182 A6 CN102 A6 ZD6 A5 L4 E2 IC6 B3 IC16 D5  
 RA7 A2 RA17 C6 R18 B3 R33 E5 R43 E4 R54 E5 R64 D6 R74 D5 R87 D6 C15 E1 C40 E2 C57 E1 C77 B4 C88 E5 C98 E4 C108 D5 C119 D5 C131 E5 C142 E6 C173 B6 C186 E2 CN104 C6 ZD7 B5 L5 D4 IC7 A2 IC17 D6  
 RA8 D3 RA18 B6 R19 D3 R34 E4 R44 E4 R55 E5 R65 D6 R77 D5 R94 A6 C18 E1 C41 A2 C58 B3 C78 E3 C89 E5 C99 E4 C109 E6 C120 D5 C132 D5 C145 D6 C174 B6 C188 E2 CN107 A4 ZD8 A4 L7 B5 IC8 D3 IC18 E6  
 RA9 C3 RA19 B6 R20 D3 R35 E4 R45 E5 R56 E5 R66 D6 R78 C6 R95 A6 C21 E1 C43 A2 C68 B3 C79 E3 C90 E5 C100 D5 C110 C6 C121 E4 C133 E4 C146 D6 C175 B6 C190 B1 CN108 A6 ZD9 A4 L8 A5 IC9 C4 IC19 C1  
 RA10 C4 RA20 B6 R26 E5 R36 E5 R46 D5 R57 E5 R67 D6 R79 D6 R96 C5 C22 A2 C45 C6 C69 B3 C80 E3 C91 E4 C101 D5 C111 E6 C122 E4 C135 E6 C147 E5 C176 B6 C191 B1 D1 E3 ZD10 A4 L9 B4 IC10 D3 Q1 D1  
 RA11 D3 RA21 A6 R27 E5 R37 E5 R47 D5 R58 E4 R68 D6 R80 E6 R97 C6 C24 D1 C47 D6 C70 B5 C81 D3 C92 E4 C102 D5 C112 E6 C124 D6 C136 D6 C148 E6 C177 B6 C193 B5 ZD1 E6 ZD11 C6 L10 B4 IC11 E5 Q2 D6  
 RA12 C3 RA22 A2 R28 E5 R38 D5 R48 D5 R59 D5 R69 D6 R81 E6 R98 C6 C26 C4 C48 C6 C71 B6 C82 E2 C93 E5 C103 E5 C113 E5 C126 D6 C137 D6 C149 E6 C178 B6 C194 D6 ZD2 E6 FB1 C6 IC2 A1 IC12 E5

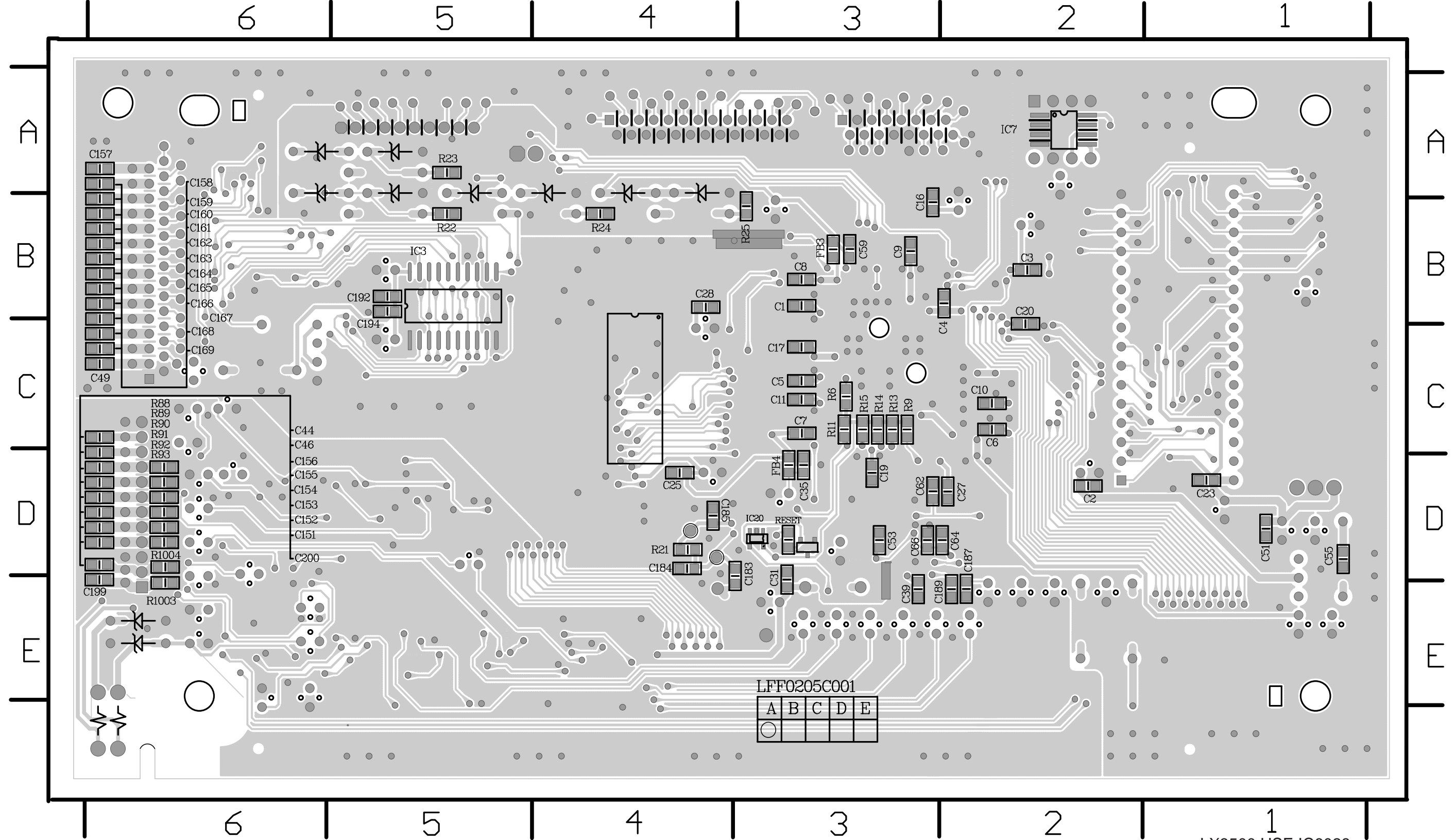


PS	R6	CN6	LFF0205C001				
W/O	OPEN	9PIN	A	B	C	D	E
W	4K7	10PIN	○				

LX3500 USE IC6028  
 LX3000 USE IC6018

### PCB LAYOUT (COMPERSIDE VIEW)

R6 C3	R25 A3	C4 B2	C19 D3	C44 C6	C151 D6	C161 B6	C184 D4	FB4 D3
R9 C3	R88 D6	C5 B3	C20 B2	C46 C6	C152 D6	C162 B6	C185 D4	IC3 B5
R11 C3	R89 D6	C6 C2	C23 C1	C49 C6	C153 D6	C163 B6	C187 D2	IC7 A2
R13 C3	R90 D6	C7 B3	C25 D4	C51 D1	C154 D6	C164 B6	C189 D2	IC20 D3
R14 C3	R91 D6	C8 C3	C26 C4	C53 D3	C155 D6	C165 B6	C194 B5	
R15 C3	R92 D6	C9 B3	C27 D2	C55 D1	C156 D6	C166 B6	C196 D4	
R21 D4	R93 D6	C10 C2	C28 B4	C59 B3	C157 A6	C167 B6	C197 D3	
R22 B5	C1 B3	C11 C3	C31 C3	C62 D2	C158 A6	C168 C6	C199 E6	
R23 A5	C2 D2	C16 B3	C35 D3	C64 D2	C159 A6	C169 C6	C200 E6	
R24 B4	C3 B2	C17 C3	C39 D3	C66 D2	C160 B6	C183 D4	FB3 B3	



LX3500 USE IC6028  
 LX3000 USE IC6018

ELECTRICAL PARTS LIST - MPEG BOARD

MISCELLANEOUS

CN1	9965 000 12467	SOCKET FFC 26PIN HORT,
CN2	9965 000 12468	SOCKET FFC 16PIN HORT,
CN102	9965 000 12469	SOCKET FFC 28PIN HORT,
XL1	9965 000 13072	CRYSTAL 27MHZ

CAPACITORS

C1	4822 126 14585	100NF 10% X7R 0805 50V
C2	4822 126 14585	100NF 10% X7R 0805 50V
C3	4822 126 14585	100NF 10% X7R 0805 50V
C4	4822 126 14585	100NF 10% X7R 0805 50V
C5	4822 126 14585	100NF 10% X7R 0805 50V
C6	4822 126 14585	100NF 10% X7R 0805 50V
C7	4822 126 14585	100NF 10% X7R 0805 50V
C8	4822 126 14585	100NF 10% X7R 0805 50V
C9	4822 126 14585	100NF 10% X7R 0805 50V
C10	4822 126 14585	100NF 10% X7R 0805 50V
C11	4822 126 14585	100NF 10% X7R 0805 50V
C13	9965 000 12474	10UF 16V 20%
C15	9965 000 12474	10UF 16V 20%
C16	4822 126 14585	100NF 10% X7R 0805 50V
C17	4822 126 14585	100NF 10% X7R 0805 50V
C18	4822 126 14585	100NF 10% X7R 0805 50V
C19	4822 126 14585	100NF 10% X7R 0805 50V
C20	4822 126 14585	100NF 10% X7R 0805 50V
C21	9965 000 12474	10UF 16V 20%
C22	9965 000 12474	10UF 16V 20%
C23	4822 126 14585	100NF 10% X7R 0805 50V
C24	9965 000 12474	10UF 16V 20%
C25	4822 126 14585	100NF 10% X7R 0805 50V
C26	4822 126 14585	100NF 10% X7R 0805 50V
C27	4822 126 14585	100NF 10% X7R 0805 50V
C28	4822 126 14585	100NF 10% X7R 0805 50V
C29	9965 000 12474	10UF 16V 20%
C30	9965 000 12474	10UF 16V 20%
C31	4822 126 14585	100NF 10% X7R 0805 50V
C32	9965 000 12474	10UF 16V 20%
C35	4822 126 14585	100NF 10% X7R 0805 50V
C36	9965 000 12474	10UF 16V 20%
C39	4822 126 14585	100NF 10% X7R 0805 50V
C40	9965 000 12474	10UF 16V 20%
C41	4822 126 14585	100NF 10% X7R 0805 50V
C43	9965 000 12474	10UF 16V 20%
C44	4822 126 14585	100NF 10% X7R 0805 50V
C45	9965 000 12474	10UF 16V 20%
C46	4822 126 14585	100NF 10% X7R 0805 50V
C47	9965 000 12474	10UF 16V 20%
C48	9965 000 12474	10UF 16V 20%
C49	4822 126 14585	100NF 10% X7R 0805 50V
C50	9965 000 12474	10UF 16V 20%
C51	4822 126 14585	100NF 10% X7R 0805 50V
C52	9965 000 12474	10UF 16V 20%
C53	4822 126 14585	100NF 10% X7R 0805 50V

C54	9965 000 12474	10UF 16V 20%
C55	4822 126 14585	100NF 10% X7R 0805 50V
C56	9965 000 12474	10UF 16V 20%
C57	4822 126 14585	100NF 10% X7R 0805 50V
C58	9965 000 12474	10UF 16V 20%
C59	4822 126 14585	100NF 10% X7R 0805 50V
C61	9965 000 12474	10UF 16V 20%
C62	4822 126 14585	100NF 10% X7R 0805 50V
C64	4822 126 14585	100NF 10% X7R 0805 50V
C66	4822 126 14585	100NF 10% X7R 0805 50V
C68	4822 126 14585	100NF 10% X7R 0805 50V
C69	4822 126 14585	100NF 10% X7R 0805 50V
C70	9965 000 12475	470PF 50V 5%
C71	9965 000 12475	470PF 50V 5%
C72	9965 000 12475	470PF 50V 5%
C73	9965 000 12475	470PF 50V 5%
C74	9965 000 12475	470PF 50V 5%
C75	9965 000 12475	470PF 50V 5%
C76	9965 000 12475	470PF 50V 5%
C77	9965 000 12475	470PF 50V 5%
C78	9965 000 12474	10UF 16V 20%
C79	9965 000 12474	10UF 16V 20%
C80	9965 000 12474	10UF 16V 20%
C81	9965 000 12474	10UF 16V 20%
C82	9965 000 12474	10UF 16V 20%
C83	9965 000 12474	10UF 16V 20%
C85	9965 000 12476	0,01UF 50V 20%
C86	9965 000 12476	0,01UF 50V 20%
C87	5322 116 80853	560PF 5%NP0 63V
C88	9965 000 12476	0,01UF 50V 20%
C89	9965 000 12476	0,01UF 50V 20%
C90	5322 116 80853	560PF 5%NP0 63V
C91	9965 000 12476	0,01UF 50V 20%
C92	9965 000 12476	0,01UF 50V 20%
C93	5322 116 80853	560PF 5%NP0 63V
C94	9965 000 12476	0,01UF 50V 20%
C95	9965 000 12476	0,01UF 50V 20%
C96	5322 116 80853	560PF 5%NP0 63V
C97	9965 000 12476	0,01UF 50V 20%
C98	9965 000 12476	0,01UF 50V 20%
C99	5322 116 80853	560PF 5%NP0 63V
C100	9965 000 12476	0,01UF 50V 20%
C101	9965 000 12476	0,01UF 50V 20%
C102	5322 116 80853	560PF 5%NP0 63V
C103	4822 126 14585	100NF 10% X7R 0805 50V
C104	4822 126 14585	100NF 10% X7R 0805 50V
C105	4822 126 14585	100NF 10% X7R 0805 50V
C106	4822 126 14585	100NF 10% X7R 0805 50V
C107	4822 126 14585	100NF 10% X7R 0805 50V
C108	4822 126 14585	100NF 10% X7R 0805 50V
C109	9965 000 12474	10UF 16V 20%
C110	9965 000 12474	10UF 16V 20%

ELECTRICAL PARTS LIST - MPEG BOARD

C111	9965 000 12474	10UF 16V 20%
C112	9965 000 12474	10UF 16V 20%
C113	9965 000 12477	0,082UF 50V 10%
C114	9965 000 12477	0,082UF 50V 10%
C115	9965 000 12477	0,082UF 50V 10%
C116	9965 000 12477	0,082UF 50V 10%
C117	9965 000 12477	0,082UF 50V 10%
C118	9965 000 12477	0,082UF 50V 10%
C119	9965 000 12477	0,082UF 50V 10%
C120	9965 000 12477	0,082UF 50V 10%
C121	9965 000 12477	0,082UF 50V 10%
C122	9965 000 12477	0,082UF 50V 10%
C124	5322 116 80853	560PF 5%NP0 63V
C125	4822 126 14585	100NF 10% X7R 0805 50V
C126	4822 126 14585	100NF 10% X7R 0805 50V
C127	9965 000 12478	4700PF 50V 20%
C128	5322 116 80853	560PF 5%NP0 63V
C129	4822 126 14585	100NF 10% X7R 0805 50V
C130	4822 126 14585	100NF 10% X7R 0805 50V
C131	4822 126 14585	100NF 10% X7R 0805 50V
C132	4822 126 14585	100NF 10% X7R 0805 50V
C133	4822 126 14585	100NF 10% X7R 0805 50V
C134	4822 126 14585	100NF 10% X7R 0805 50V
C135	9965 000 12474	10UF 16V 20%
C136	9965 000 12474	10UF 16V 20%
C137	4822 126 14585	100NF 10% X7R 0805 50V
C138	4822 126 14585	100NF 10% X7R 0805 50V
C139	4822 126 14585	100NF 10% X7R 0805 50V
C140	9965 000 12474	10UF 16V 20%
C141	4822 126 14585	100NF 10% X7R 0805 50V
C142	9965 000 12474	10UF 16V 20%
C145	9965 000 12474	10UF 16V 20%
C146	9965 000 12474	10UF 16V 20%
C147	9965 000 12474	10UF 16V 20%
C148	9965 000 12474	10UF 16V 20%
C149	9965 000 12474	10UF 16V 20%
C150	9965 000 12474	10UF 16V 20%
C151	9965 000 12479	1000PF 50V 20%
C152	9965 000 12479	1000PF 50V 20%
C153	9965 000 12479	1000PF 50V 20%
C154	9965 000 12479	1000PF 50V 20%
C155	9965 000 12479	1000PF 50V 20%
C156	9965 000 12479	1000PF 50V 20%
C157	5322 122 32658	22PF 5% 50V
C158	5322 122 32658	22PF 5% 50V
C159	5322 122 32658	22PF 5% 50V
C160	5322 122 32658	22PF 5% 50V
C161	5322 122 32658	22PF 5% 50V
C162	5322 122 32658	22PF 5% 50V
C163	5322 122 32658	22PF 5% 50V
C164	5322 122 32658	22PF 5% 50V
C165	5322 122 32658	22PF 5% 50V

ELECTRICAL PARTS LIST - MPEG BOARD

C166	5322 122 32658	22PF 5% 50V
C167	5322 122 32658	22PF 5% 50V
C168	5322 122 32658	22PF 5% 50V
C169	5322 122 32658	22PF 5% 50V
C170	5322 122 32658	22PF 5% 50V
C171	5322 122 32658	22PF 5% 50V
C172	5322 122 32658	22PF 5% 50V
C173	5322 122 32658	22PF 5% 50V
C174	5322 122 32658	22PF 5% 50V
C175	5322 122 32658	22PF 5% 50V
C176	5322 122 32658	22PF 5% 50V
C177	5322 122 32658	22PF 5% 50V
C178	5322 122 32658	22PF 5% 50V
C179	5322 122 32658	22PF 5% 50V
C180	5322 122 32658	22PF 5% 50V
C181	5322 122 32658	22PF 5% 50V
C182	5322 122 32658	22PF 5% 50V
C183	5322 122 32658	22PF 5% 50V
C183	9965 000 12480	0,002UF 50V 5%
C184	5322 122 32658	22PF 5% 50V
C185	5322 122 32658	22PF 5% 50V
C186	9965 000 12481	3,3UF 50V 20%
C187	4822 126 14585	100NF 10% X7R 0805 50V
C188	9965 000 12481	3,3UF 50V 20%
C189	4822 126 14585	100NF 10% X7R 0805 50V
C190	4822 126 14585	100NF 10% X7R 0805 50V
C191	9965 000 12474	10UF 16V 20%
C192	4822 126 14585	100NF 10% X7R 0805 50V
C193	9965 000 12474	10UF 16V 20%
C194	4822 126 14585	100NF 10% X7R 0805 50V
C195	9965 000 12474	10UF 16V 20%
C197	4822 126 13618	330PF 1%NPO 63V
C199	9965 000 12479	1000PF 50V 20%
C200	9965 000 12479	1000PF 50V 20%

RESISTORS

R6	4822 051 20472	4K7 5% 0,1W
R8	4822 051 20223	22K 5% 0,1W
R9	4822 051 20472	4K7 5% 0,1W
R10	4822 117 11504	270R 1% 0,1W
R11	4822 051 20472	4K7 5% 0,1W
R13	4822 051 20472	4K7 5% 0,1W
R14	4822 051 20472	4K7 5% 0,1W
R15	4822 051 20472	4K7 5% 0,1W
R16	2322 734 63309	33R 1% RC12H 0805
R17	2322 734 63309	33R 1% RC12H 0805
R18	4822 051 20109	10R 5% 0,1W
R19	2322 734 63309	33R 1% RC12H 0805
R20	2322 734 63309	33R 1% RC12H 0805
R21	4822 051 20242	2K4 5% 0,1W
R22	4822 117 11927	75R 1% 0,1W
R23	4822 117 11927	75R 1% 0,1W





**ELECTRICAL PARTS LIST - MPEG BOARD**

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**COILS & FILTERS**

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L4	4822 157 10568	CHOKE COIL 10UH
L5	4822 157 10568	CHOKE COIL 10UH
L7	9965 000 12472	CHOKE 2,4UH
L8	9965 000 12472	CHOKE 2,4UH
L9	9965 000 12472	CHOKE 2,4UH
L10	9965 000 12472	CHOKE 2,4UH

**DIODES**

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D1	4822 130 30621	1N4148
ZD1	4822 130 80272	MTZJ7,5C
ZD2	4822 130 80272	MTZJ7,5C
ZD3	4822 130 80272	MTZJ7,5C
ZD4	4822 130 80272	MTZJ7,5C
ZD5	4822 130 80272	MTZJ7,5C
ZD6	4822 130 80272	MTZJ7,5C
ZD7	4822 130 80272	MTZJ7,5C
ZD8	4822 130 80272	MTZJ7,5C
ZD9	4822 130 80272	MTZJ7,5C
ZD10	4822 130 80272	MTZJ7,5C

**TRANSISTORS & INTEGRATED CIRCUITS**

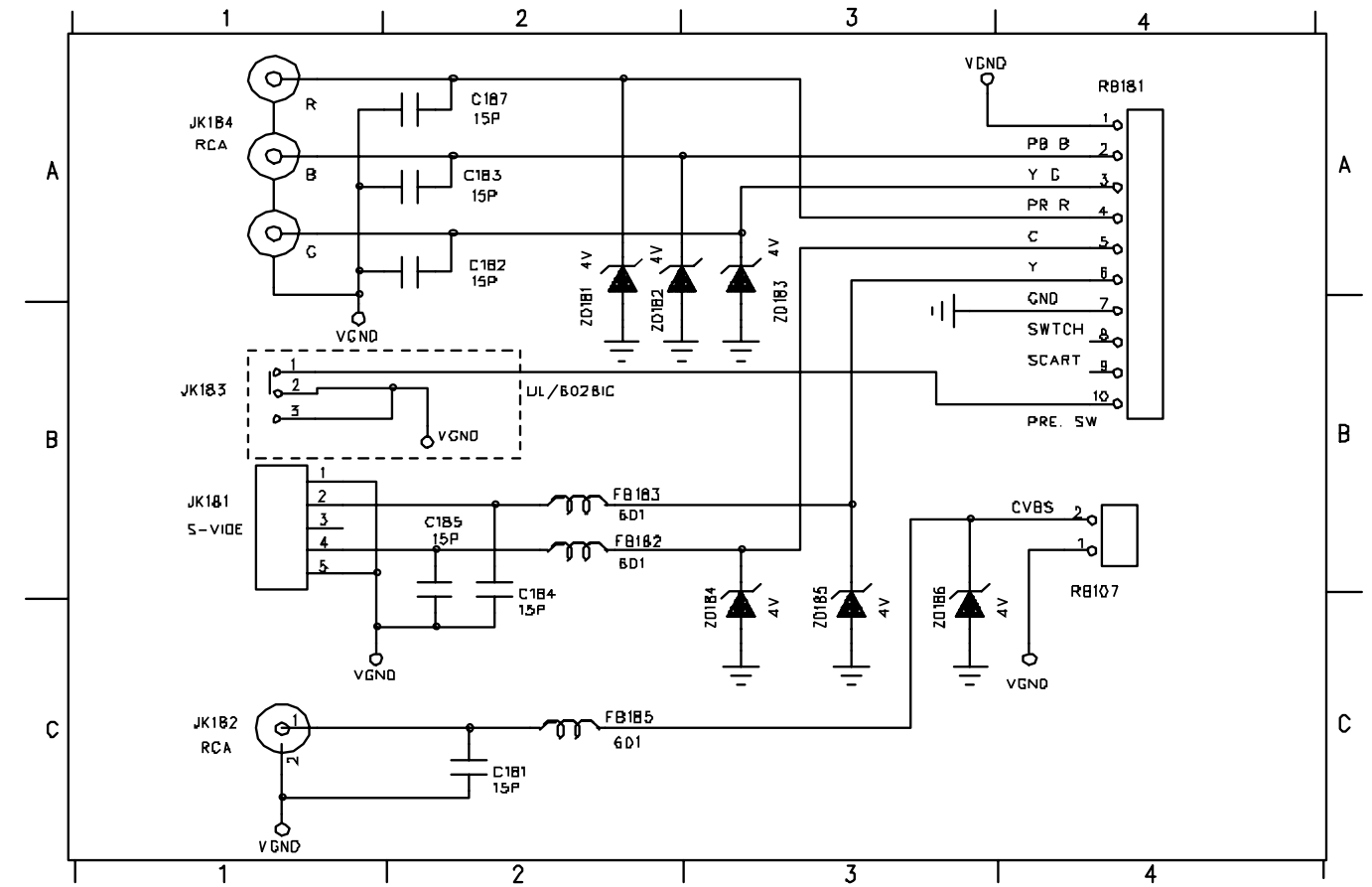
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IC1	9965 000 12489	EEPROM AM29F080B-90CE
IC2	9965 000 12494	74HC374
IC3	9965 000 12494	74HC374
IC4	9965 000 12494	74HC374
IC6	9965 000 12495	ES6018 MICRO CPU LX3000D
IC6	9965 000 12496	ES6028 MICRO CPU LX3500D
IC7	9965 000 12497	EEPROM AT24C02
IC8	9965 000 12498	74HCU04D PHILIPS
IC9	9965 000 12499	SYNCHRO, DRAM 4MX16 Y3V TW
IC10	9965 000 12490	CS4360
IC11	9965 000 12491	JRC4558D JRC
IC12	9965 000 12491	JRC4558D JRC
IC13	9965 000 12491	JRC4558D JRC
IC14	9965 000 12491	JRC4558D JRC
IC15	9965 000 12491	JRC4558D JRC
IC16	9965 000 12491	JRC4558D JRC
IC17	9965 000 12491	JRC4558D JRC
IC18	9965 000 12492	TC4053BFN CHIP
IC19	9965 000 12493	BA033T REGULATOR 3,3V 1A
Q1	4822 130 41651	2SC2001L
Q2	4822 130 41651	2SC2001L

Note: Only the parts mentioned in this list are normal service spare parts.

CIRCUIT DIAGRAM - RGB BOARD

C181 C2 C183 A2 C185 B2 FB182 B2 FB185 C2 JK182 C1 JK184 A1 RB181 A4 ZD182 A2 ZD184 B3 ZD186 C3  
 C182 A2 C184 B2 C187 A2 FB183 B2 JK181 B1 JK183 B1 RB107 B4 ZD181 A2 ZD183 A3 ZD185 B3



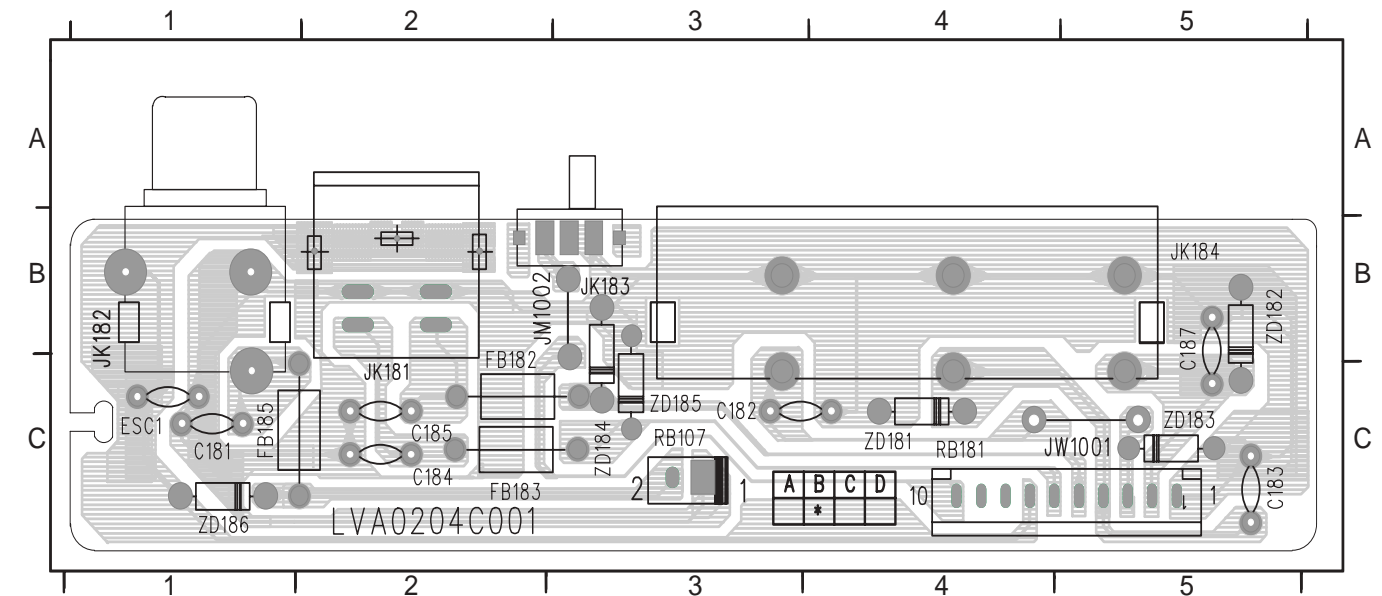
# SCART & RGB BOARD

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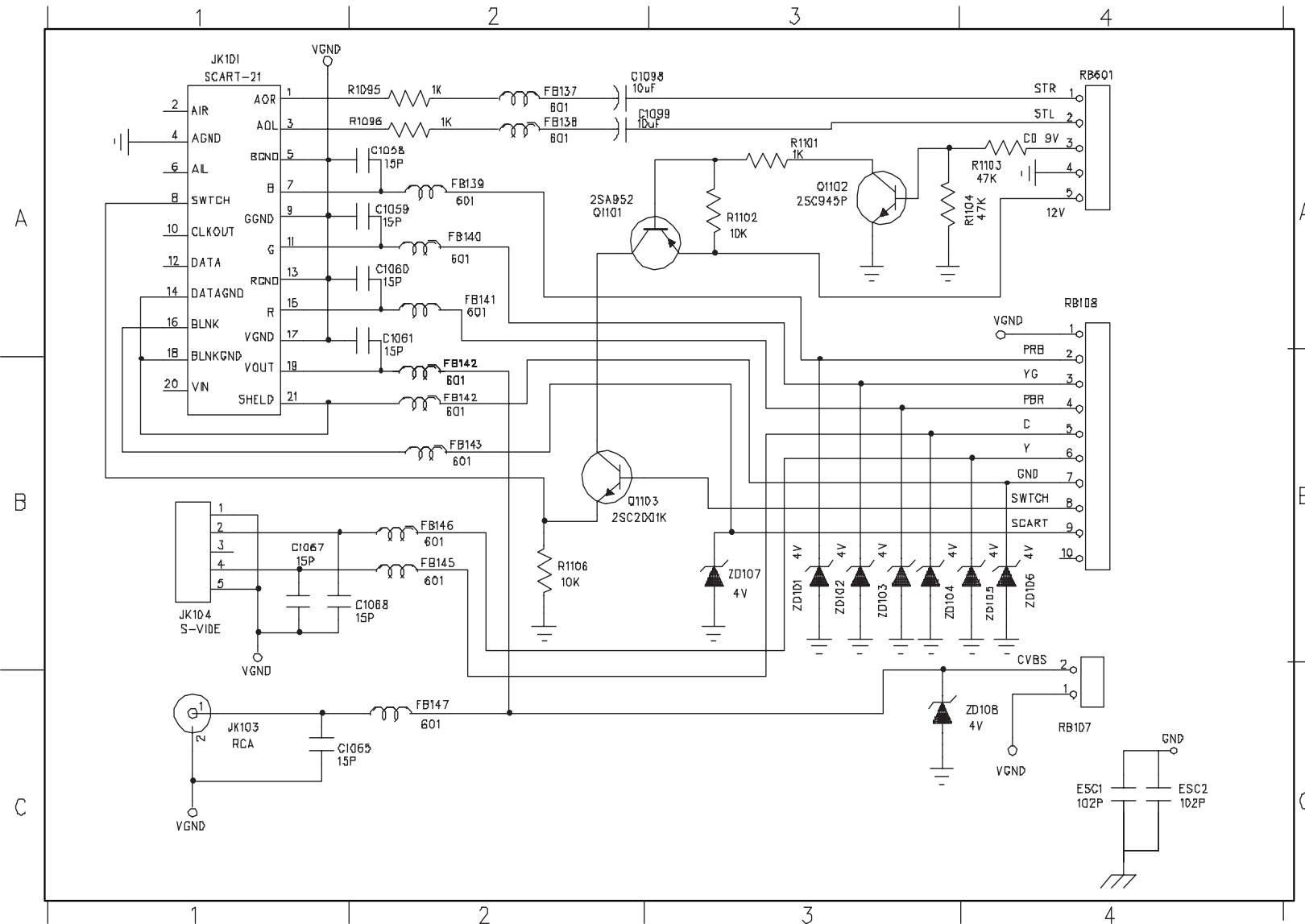
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PCB LAYOUT - RGB BOARD

C181 C1 C183 C5 C185 C2 ESC1 C1 FB183 C2 JW1001 C5 RB107 C3 ZD181 C4 ZD183 C5 ZD185 B3 JK181 B3 JK183 B3  
 C182 C3 C184 C2 C187 C5 FB182 C2 FB185 C1 JW1002 B3 RB181 C4 ZD182 B5 ZD184 B3 ZD186 C1 JK182 B1 JK184 B5

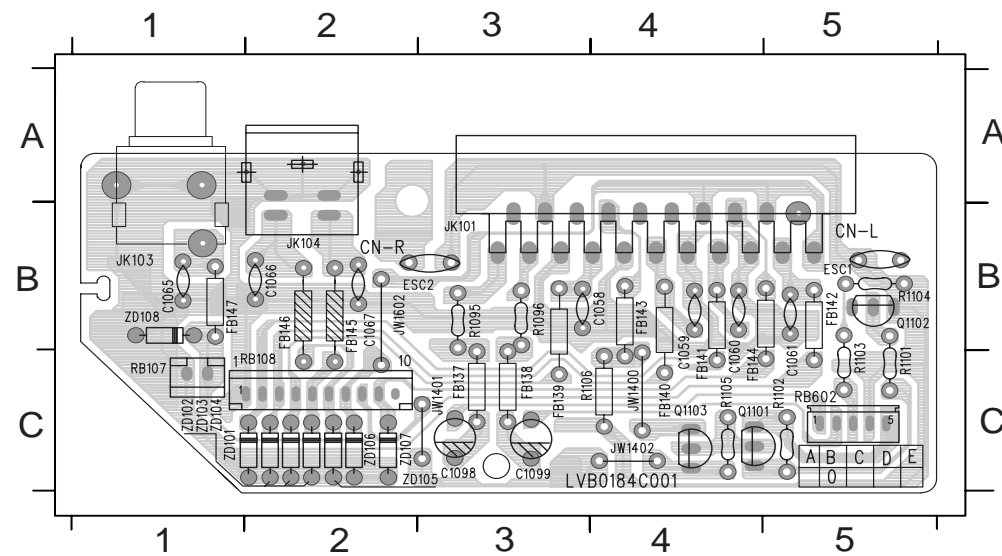


CIRCUIT DIAGRAM - SCART BOARD



- C1058 A2
- C1059 A2
- C1060 A2
- C1061 A2
- C1065 C1
- C1066 B1
- C1098 A2
- C1099 A2
- ESC1 C4
- ESC2 C4
- FB137 A2
- FB138 A2
- FB139 A2
- FB140 A2
- FB141 A2
- FB142 B2
- FB143 B2
- FB144 B2
- FB145 B2
- FB146 B2
- FB147 C2
- JK101 A1
- JK103 C1
- JK104 B1
- Q1101 A2
- Q1102 A3
- Q1103 B2
- R1095 A2
- R1096 A2
- R1101 A3
- R1102 A3
- R1103 A4
- R1104 A3
- R1106 B2
- RB107 C4
- RB108 B4
- RB601 A4
- ZD101 B3
- ZD102 B3
- ZD103 B3
- ZD104 B3
- ZD105 B4
- ZD106 B4
- ZD107 B3
- ZD108 C3

PCB LAYOUT - SCART BOARD



- C1058 B4
- C1059 B4
- C1060 B4
- C1061 B5
- C1065 B1
- C1066 B2
- C1067 B2
- C1096 C3
- C1099 C3
- ESC1 B5
- ESC2 B3
- FB137 C3
- FB138 C3
- FB139 B3
- FB140 B4
- FB141 B4
- FB142 B5
- FB143 B4
- FB144 B4
- FB145 B2
- FB146 B2
- FB147 B1
- JK101 A3
- JK103 B1
- JK104 B2
- JW1400 C4
- JW1401 C3
- JW1602 B2
- Q1101 C5
- Q1102 B5
- Q1103 C4
- R1095 B3
- R1096 B3
- R1101 C5
- R1102 C5
- R1103 C5
- R1104 B5
- R1106 C4
- RB107 C1
- RB108 C2
- RB602 C5
- ZD101 C2
- ZD102 C2
- ZD103 C2
- ZD104 C2
- ZD105 C2
- ZD106 C2
- ZD107 C2
- ZD108 B1

**ELECTRICAL PARTS LIST - RGB BOARD (NOT FOR /22 VERSION)****MISCELLANEOUS**

JK181	9965 000 12607	DIN JACK, S-VIDEO OUT
JK182	9965 000 12608	RCA JACK YELLOW, VIDEO OUT
JK183	9965 000 12610	SLIDE SWITCH 1P2T LX3500D
JK184	9965 000 12609	RCA JACK R/G/B

**CAPACITORS**

C181	9965 000 12590	15PF 50V 5%
C182	9965 000 12590	15PF 50V 5%
C183	9965 000 12590	15PF 50V 5%
C184	9965 000 12590	15PF 50V 5%
C185	9965 000 12590	15PF 50V 5%
C187	9965 000 12590	15PF 50V 5%
ESC1	9965 000 13094	0,068UF 50V 10%

**DIODES**

ZD181	4822 130 10209	ZENER 4,1-4,3V 0,5W
ZD182	4822 130 10209	ZENER 4,1-4,3V 0,5W
ZD183	4822 130 10209	ZENER 4,1-4,3V 0,5W
ZD184	4822 130 10209	ZENER 4,1-4,3V 0,5W
ZD185	4822 130 10209	ZENER 4,1-4,3V 0,5W
ZD186	4822 130 10209	ZENER 4,1-4,3V 0,5W

Note: Only the parts mentioned in this list are normal service spare parts.

**ELECTRICAL PARTS LIST - SCART BOARD (FOR /22S VERSION ONLY)****MISCELLANEOUS**

JK101	9965 000 12611	SCART SOCKET
JK103	9965 000 12608	RCA JACK YELLOW, VIDEO OUT
JK104	9965 000 12607	DIN JACK, S-VIDEO OUT

**CAPACITORS**

C1058	9965 000 12590	15PF 50V 5%
C1059	9965 000 12590	15PF 50V 5%
C1060	9965 000 12590	15PF 50V 5%
C1061	9965 000 12590	15PF 50V 5%
C1062	9965 000 12590	15PF 50V 5%
C1063	9965 000 12590	15PF 50V 5%
C1064	9965 000 12590	15PF 50V 5%
C1065	9965 000 12590	15PF 50V 5%
C1066	9965 000 12590	15PF 50V 5%
C1067	9965 000 12590	15PF 50V 5%
C1098	4822 124 40248	10UF 20% 63V
C1099	4822 124 40248	10UF 20% 63V
ESC1	5322 122 32331	1NF 10% 100V
ESC2	5322 122 32331	1NF 10% 100V

**RESISTORS**

R1095	9965 000 12519	1K 1/6W 5% CF
R1096	9965 000 12519	1K 1/6W 5% CF
R1100	4822 050 22203	22K 1% 0,6W
R1101	9965 000 12519	1K 1/6W 5% CF
R1102	4822 050 21003	10K 1/6W 5%
R1103	4822 050 24703	47K 1/6W 5%
R1104	4822 050 24703	47K 1/6W 5%
R1106	4822 050 21003	10K 1/6W 5%

**COILS & FILTERS**

FB137	9965 000 12470	FE BEAD D3,5X6MM 100R
FB138	9965 000 12470	FE BEAD D3,5X6MM 100R
FB139	9965 000 12470	FE BEAD D3,5X6MM 100R
FB140	9965 000 12470	FE BEAD D3,5X6MM 100R
FB141	9965 000 12470	FE BEAD D3,5X6MM 100R
FB142	9965 000 12470	FE BEAD D3,5X6MM 100R
FB143	9965 000 12470	FE BEAD D3,5X6MM 100R
FB144	9965 000 12470	FE BEAD D3,5X6MM 100R
FB145	9965 000 12470	FE BEAD D3,5X6MM 100R
FB146	9965 000 12470	FE BEAD D3,5X6MM 100R
FB147	9965 000 12470	FE BEAD D3,5X6MM 100R

**DIODES**

D1100	4822 130 34167	BZX79-B6V2
ZD101	4822 130 10209	ZENER 4,1-4,3V 0,5W
ZD102	4822 130 10209	ZENER 4,1-4,3V 0,5W
ZD103	4822 130 10209	ZENER 4,1-4,3V 0,5W
ZD104	4822 130 10209	ZENER 4,1-4,3V 0,5W
ZD105	4822 130 10209	ZENER 4,1-4,3V 0,5W
ZD106	4822 130 10209	ZENER 4,1-4,3V 0,5W
ZD107	4822 130 10209	ZENER 4,1-4,3V 0,5W
ZD108	4822 130 10209	ZENER 4,1-4,3V 0,5W

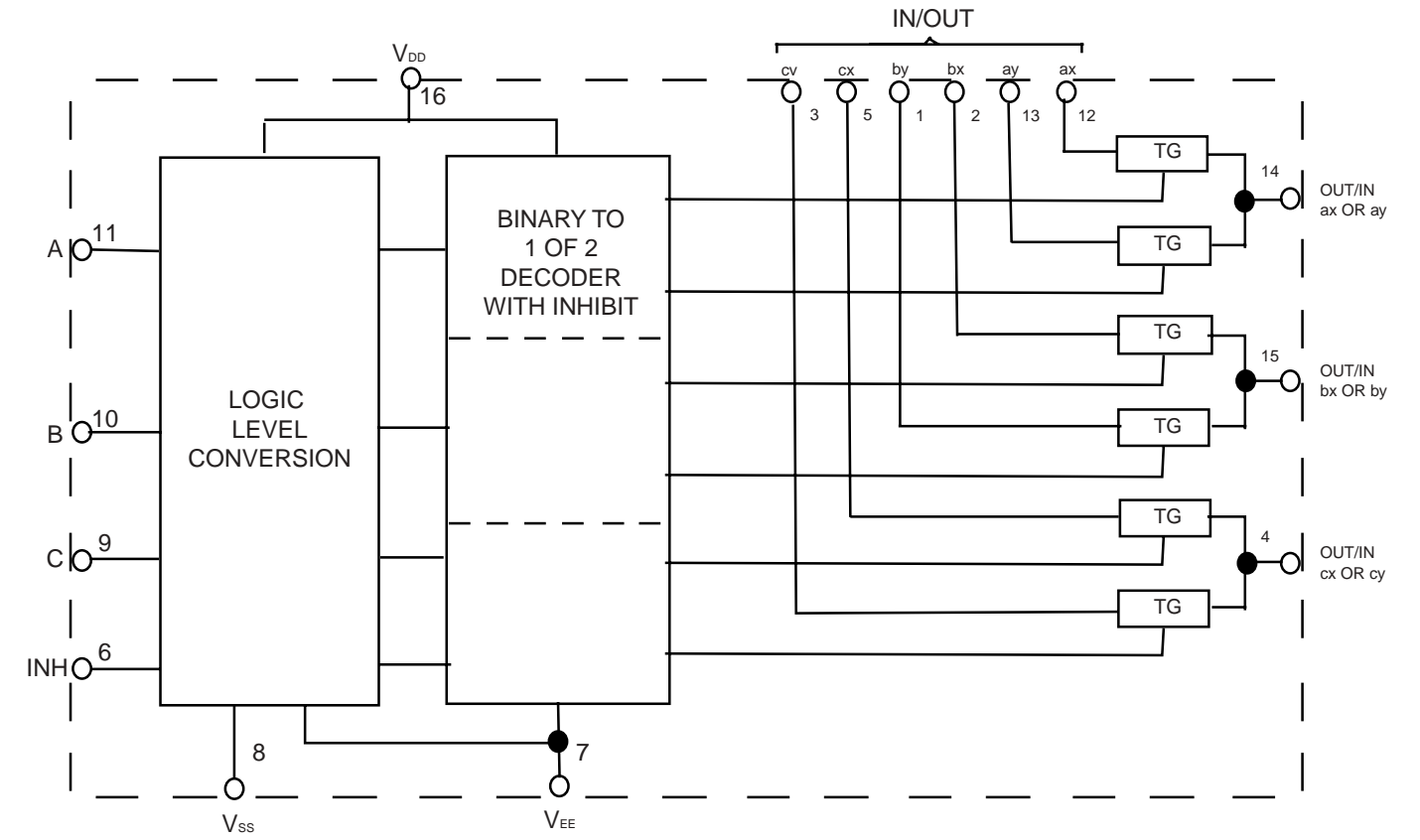
**TRANSISTORS**

Q1100	4822 130 41198	2SC945P
Q1101	4822 130 10211	2SA952
Q1102	4822 130 41198	2SC945P
Q1103	4822 130 41651	2SC2001L

Note: Only the parts mentioned in this list are normal service spare parts.

# SURROUND BOARD

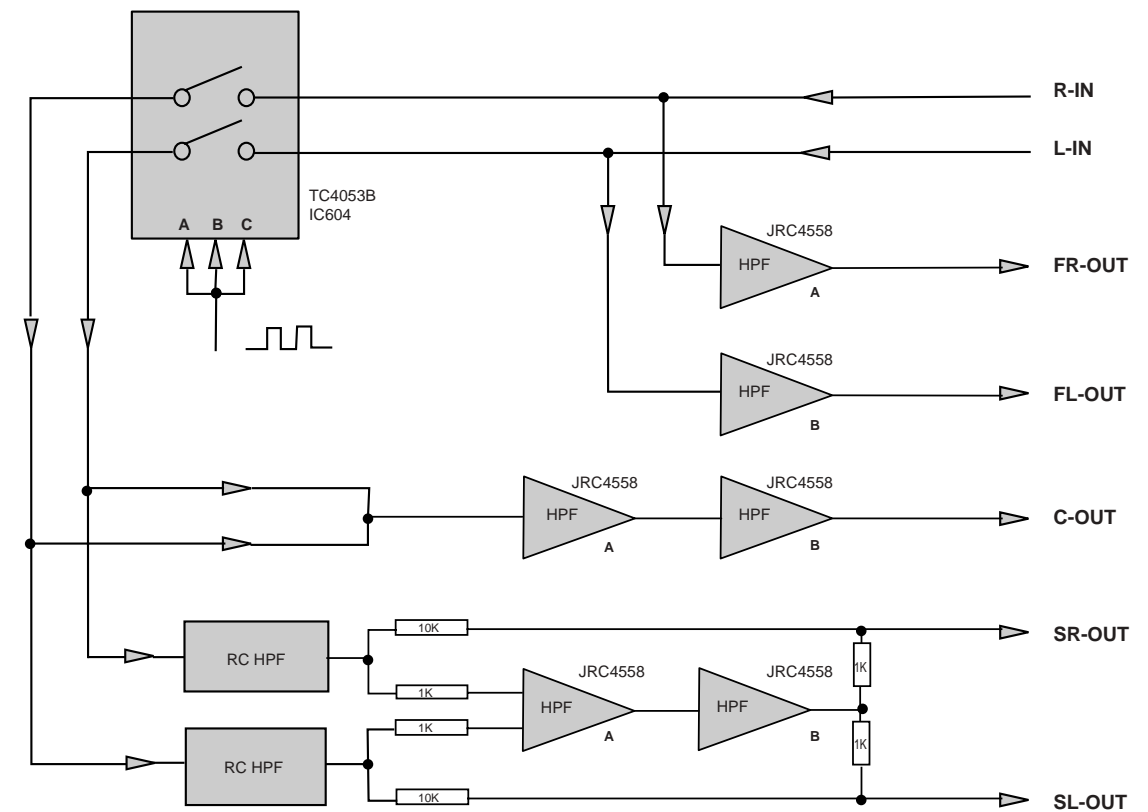
## INTERNAL TC4053 BLOCK DIAGRAM



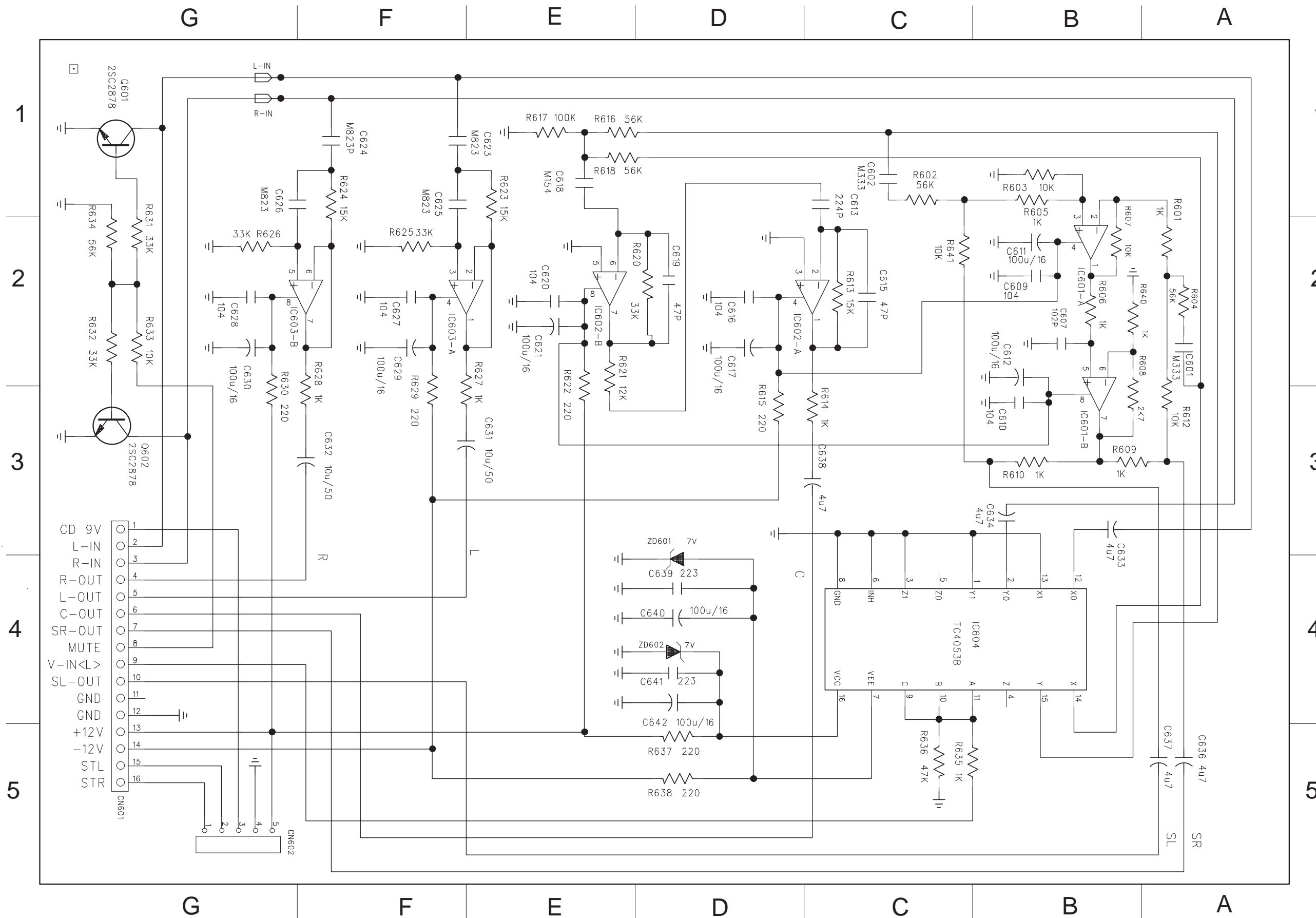
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## SURROUND DIAGRAM



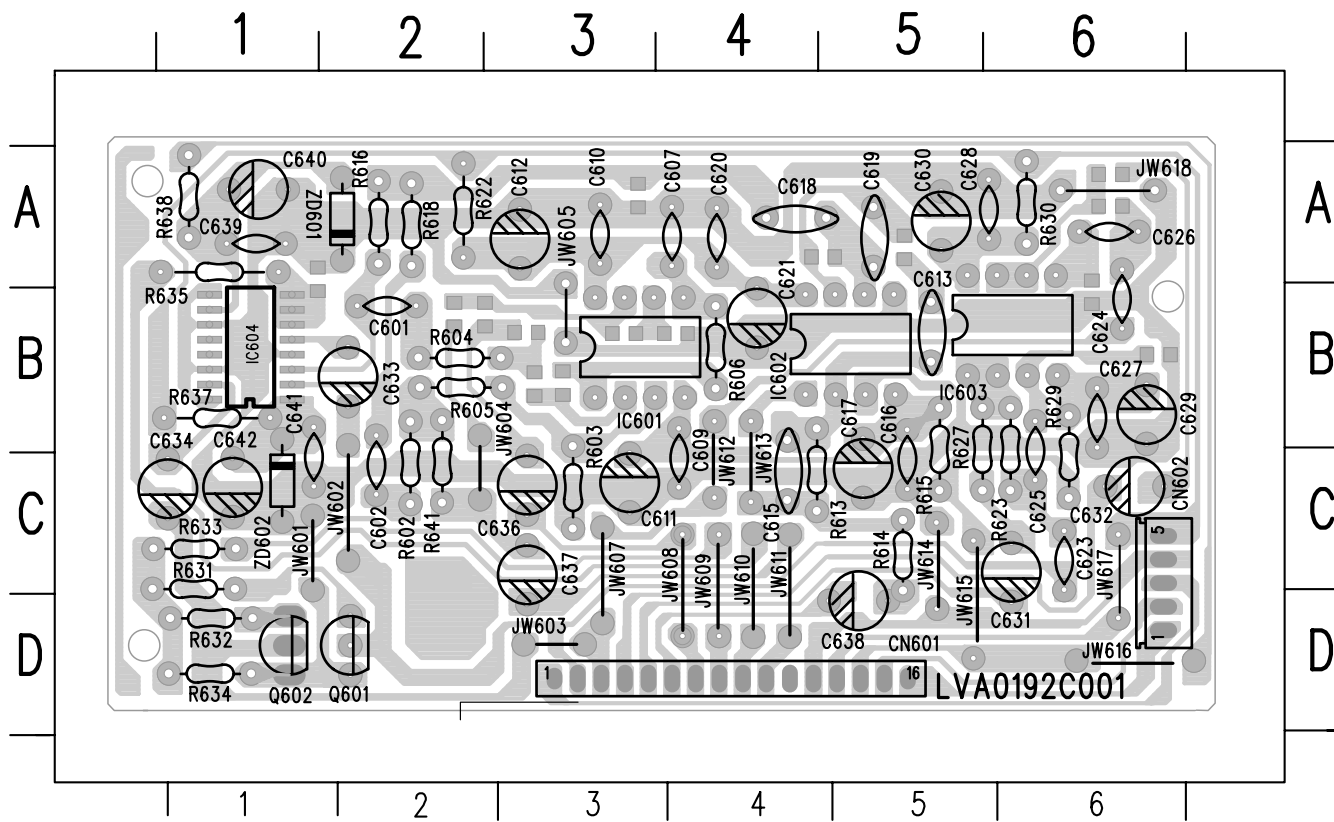
# CIRCUIT DIAGRAM - SURROUND BOARD



- C601 A2
- C602 C1
- C607 B2
- C609 B2
- C610 B3
- C611 B2
- C612 B2
- C613 C1
- C615 C2
- C616 D2
- C617 D2
- C618 D1
- C619 D2
- C620 E2
- C621 E2
- C623 E1
- C624 F1
- C625 F1
- C626 G1
- C627 F2
- C628 G2
- C629 F2
- C630 G2
- C631 E3
- C632 F3
- C633 B3
- C634 B3
- C636 A5
- C637 A5
- C638 C3
- C639 D4
- C640 D4
- C641 D4
- C642 D4
- CN601 G5
- CN602 G5
- IC601 B2
- IC602 C2
- IC603 F2
- IC604 B4
- Q601 G1
- Q602 G3
- R601 A2
- R602 C1
- R603 B1
- R604 A2
- R605 B1
- R606 B2
- R607 B1
- R608 A2
- R609 A3
- R610 B3
- R612 A3
- R613 C2
- R614 C3
- R615 D3
- R616 E1
- R617 E1
- R618 E1
- R620 D2
- R621 D2
- R622 E2
- R623 E1
- R624 F1
- R625 F2
- R626 G2
- R627 E2
- R628 F2
- R629 F2
- R630 G2
- R631 G2
- R632 G2
- R633 G2
- R634 G2
- R635 B5
- R636 C5
- R637 D5
- R638 D5
- R640 A2
- R641 C2
- ZD601 D3
- ZD602 D4

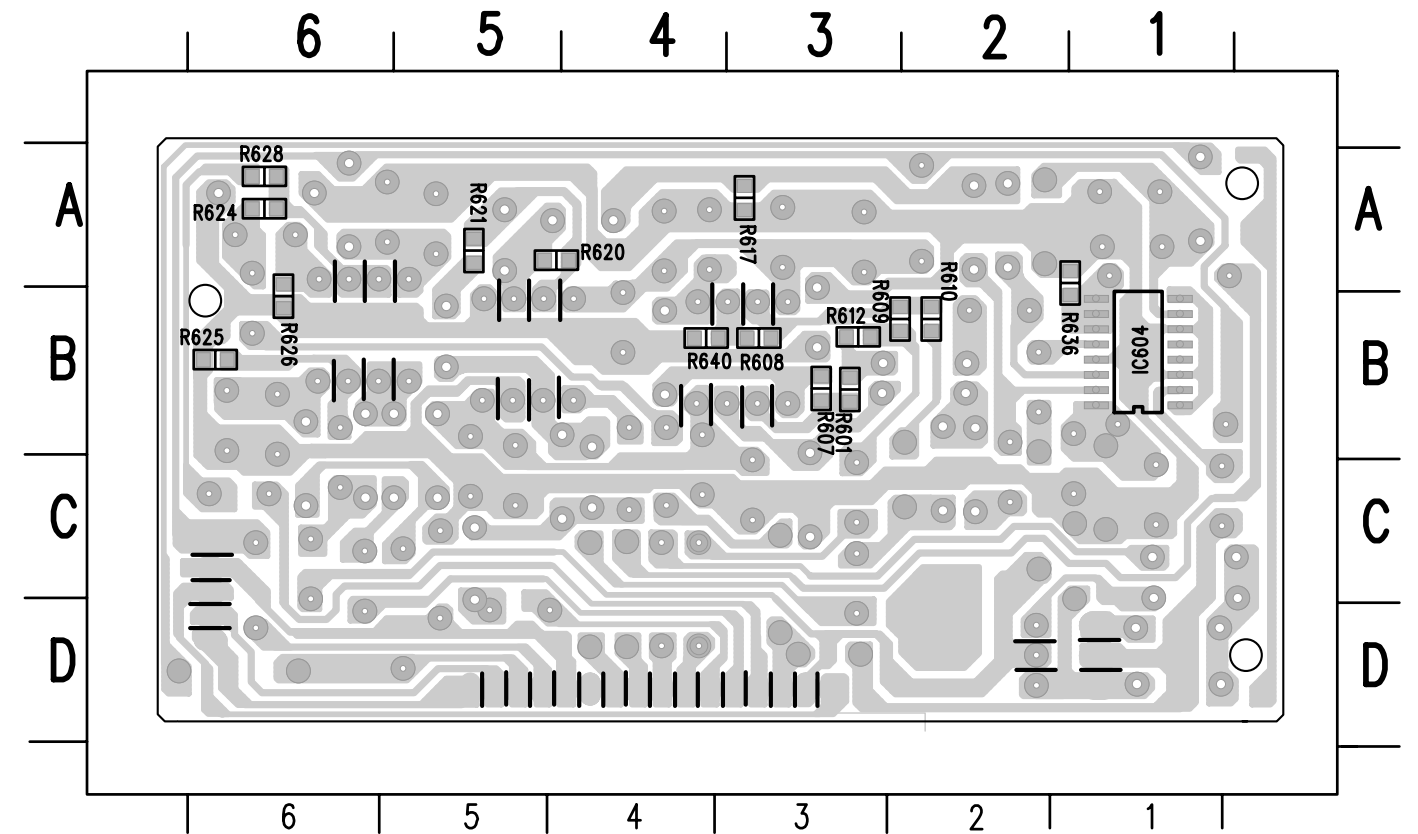
PCB LAYOUT (COMPONENT VIEW) - SURROUND BOARD

C601 B2 C612 A3 C619 A5 C626 A6 C632 C6 C639 A1 IC601 C3 JW602 C2 JW609 D4 JW615 C5 R602 C2 R614 C5 R627 C5 R635 A1  
 C602 C2 C613 B5 C620 A4 C627 B6 C633 B2 C640 A1 IC602 B4 JW603 D3 JW610 D4 JW616 D6 R603 C3 R615 C5 R630 A6 R637 B1  
 C607 A4 C615 C4 C621 B4 C628 A5 C634 C1 C641 C1 IC602 B4 JW604 C2 JW611 D4 JW617 C6 R604 B2 R616 A2 R631 C1 R638 A1  
 C609 B4 C616 C5 C623 C6 C629 B6 C636 C3 C642 C1 IC603 B5 JW605 B3 JW612 C4 JW618 A6 R605 B2 R618 A2 R632 D1 R641 C2  
 C610 A3 C617 C5 C624 B6 C630 A5 C637 C3 CN601 D5 IC604 B1 JW607 C3 JW613 C4 Q601 D2 R606 B4 R622 A2 R633 C1 ZD601 A2  
 C611 C3 C618 A4 C625 C6 C631 C6 C638 D5 CN602 C6 JW601 C1 JW608 D4 JW614 C5 Q602 D1 R613 C5 R623 C6 R634 D1 ZD602 C1



PCB LAYOUT (COPPERSIDE VIEW) - SURROUND BOARD

IC604 B1 R607 B3 R609 B3 R612 B3 R620 A5 R624 A6 R626 B6 R636 A1  
 R601 B3 R608 B3 R610 B2 R617 A3 R621 A5 R625 B6 R628 A6 R640 B4





**ELECTRICAL PARTS LIST - SURROUND BOARD****CAPACITORS**

C601	5322 121 42489	33NF 5% 250V
C602	5322 121 42489	33NF 5% 250V
C607	9965 000 12612	0,001UF 50V +80-20%
C609	2038 554 00065	100NF +80-20% Y5V 50V
C610	2038 554 00065	100NF +80-20% Y5V 50V
C611	9965 000 12559	100UF 16V 20%
C612	9965 000 12559	100UF 16V 20%
C613	9965 000 12613	0,22UF 50V +80-20%
C615	9965 000 12614	47PF 50V 5%
C616	2038 554 00065	100NF +80-20% Y5V 50V
C617	9965 000 12559	100UF 16V 20%
C618	9965 000 12615	0,15UF 100V 5%
C619	9965 000 12614	47PF 50V 5%
C620	2038 554 00065	100NF +80-20% Y5V 50V
C621	9965 000 12559	100UF 16V 20%
C623	9965 000 12616	0,082UF 100V 5%
C624	9965 000 12616	0,082UF 100V 5%
C625	9965 000 12616	0,082UF 100V 5%
C626	9965 000 12616	0,082UF 100V 5%
C627	2038 554 00065	100NF +80-20% Y5V 50V
C628	2038 554 00065	100NF +80-20% Y5V 50V
C629	9965 000 12559	100UF 16V 20%
C630	9965 000 12559	100UF 16V 20%
C631	4822 124 40248	10UF 20% 63V
C632	4822 124 40248	10UF 20% 63V
C633	9965 000 12522	4,7UF 50V 20%
C634	9965 000 12522	4,7UF 50V 20%
C636	9965 000 12522	4,7UF 50V 20%
C637	9965 000 12522	4,7UF 50V 20%
C638	9965 000 12522	4,7UF 50V 20%
C639	4822 122 30103	22NF 80% 63V
C640	9965 000 12559	100UF 16V 20%
C641	4822 122 30103	22NF 80% 63V
C642	9965 000 12559	100UF 16V 20%

**RESISTORS**

R601	4822 051 20102	1K 1/10W 5%
R602	9965 000 09727	56K 1/6W 5% CF
R603	4822 050 21003	10K 1% 0,6W
R604	9965 000 09727	56K 1/6W 5% CF
R605	9965 000 12519	1K 1/6W 5% CF
R606	9965 000 12519	1K 1/6W 5% CF
R607	9965 000 12484	10K 5% 1/10W
R608	4822 117 12955	2K7 5% 1/10W
R609	4822 051 20102	1K 1/10W 5%
R610	4822 051 20102	1K 1/10W 5%
R612	9965 000 12484	10K 5% 1/10W
R613	4822 050 21503	15K 1% 0,6W
R615	9965 000 12549	220R 1/6W 5% CF
R616	9965 000 09727	56K 1/6W 5% CF
R617	4822 117 10837	100K 5% 1/10W
R618	9965 000 09727	56K 1/6W 5% CF

R620	4822 051 20333	33K 5% 1/10W
R621	9965 000 12884	12K 1/10W 5%
R622	9965 000 12549	220R 1/6W 5% CF
R623	4822 050 21503	15K 1% 0,6W
R624	4822 116 83933	15K 5% 1/10W
R625	4822 051 20333	33K 5% 1/10W
R626	4822 051 20333	33K 5% 1/10W
R627	9965 000 12519	1K 1/6W 5% CF
R628	4822 051 20102	1K 1/10W 5%
R629	9965 000 12549	220R 1/6W 5% CF
R630	9965 000 12549	220R 1/6W 5% CF
R631	4822 050 23303	33K 1% 0,6W
R632	4822 050 23303	33K 1% 0,6W
R633	4822 050 21003	10K 1% 0,6W
R634	9965 000 09727	56K 1/6W 5% CF
R635	9965 000 12519	1K 1/6W 5% CF
R636	9965 000 13180	47K 5% 1/10W
R637	9965 000 12549	220R 1/6W 5% CF
R638	9965 000 12549	220R 1/6W 5% CF
R640	4822 051 20102	1K 1/10W 5%
R641	4822 050 21003	10K 1% 0,6W

**DIODES**

ZD601	4822 130 80272	MTZJ7,5C
ZD602	4822 130 80272	MTZJ7,5C

**TRANSISTORS & INTEGRATED CIRCUITS**

IC601	4822 209 83631	NJM4558DD
IC602	4822 209 83631	NJM4558DD
IC603	4822 209 83631	NJM4558DD
IC604	9965 000 12492	TC4053BFN CHIP
Q601	4822 130 41198	2SC945P
Q602	4822 130 41198	2SC945P

Note: Only the parts mentioned in this list are normal service spare parts.

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# POWER BOARD

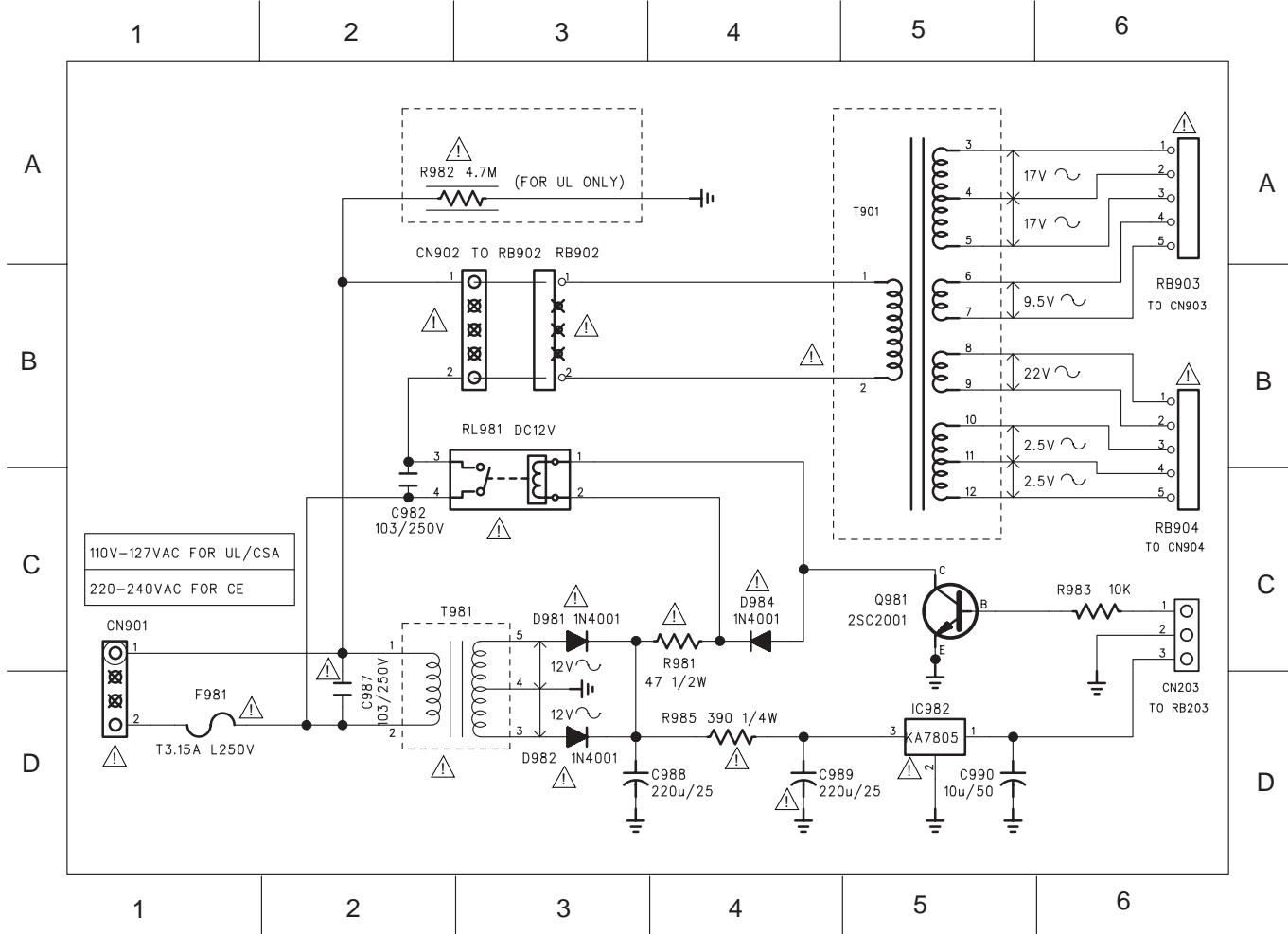
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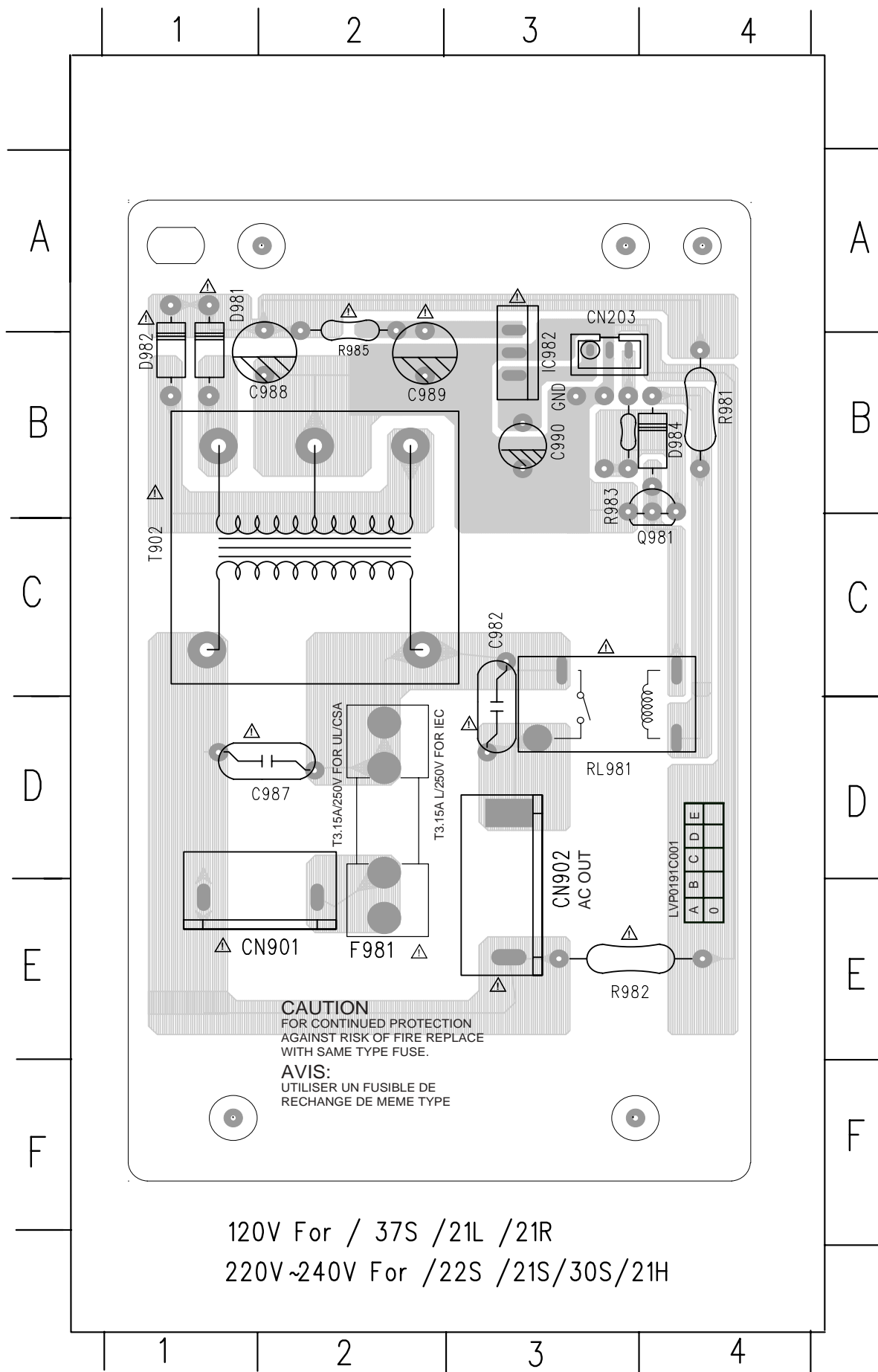
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# CIRCUIT DIAGRAM - POWER BOARD

C982 C2 C988 D3 C990 D5 CN901 D1 D981 C3 D984 C4 Q981 C5 R982 A3 R985 D4 RB904 B6 T901 B5 IC982 D5  
 C987 D2 C989 D4 CN203 C6 CN902 B3 D982 D3 F981 C3 R981 C4 R983 C6 RB903 A6 RL981 C3 T902 D3



# PCB LAYOUT - POWER BOARD



- C982 D3
- C987 D2
- C988 B2
- C989 B2
- C990 B3
- CN203 B3
- CN901 E1
- CN902 E3
- D981 B1
- D982 B1
- D983 B3
- D984 B4
- F981 D2
- IC982 B3
- Q981 C4
- R981 B4
- R982 E3
- R983 B3
- R985 A2
- RL981 C3
- T902 B2

**ELECTRICAL PARTS LIST - POWER BOARD**

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**MISCELLANEOUS**

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CN901	9965 000 12636	△	CONNECTOR 4 PIN P=3,96MM
CN902	9965 000 12601	△	CONNECTOR 5PIN P=3,96MM
F981	9965 000 12500	△	FUSE 3,15A 250V SLOW
RL981	9965 000 09708	△	RELAY GJ-SH-112DM 320R

**CAPACITORS**

---

C982	9965 000 12604	△	0,01UF 20%
C987	9965 000 12604	△	0,01UF 20%
C988	9965 000 12605	△	220UF 35V 20%
C989	9965 000 12605	△	220UF 35V 20%
C990	4822 124 40248		10UF 20% 63V

**RESISTORS**

---

R981	4822 116 52195		47R 5% 0,5W
R982	9965 000 12606	△	4,7M 1/2W 10% /21L/21R/37S
R983	4822 050 21003		10K 1% 0,6W
R985	4822 050 13901		390R 1/4W 5%

**COILS & FILTERS**

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T902	9965 000 12602	△	TRANSFORMER 120V 60HZ (For /21L/21R/37S)
T902	9965 000 12603	△	TRANSFORMER 230V 50HZ (For /21H/21S/22S/30S)

**DIODES**

---

D981	4822 130 31438		1N4001G
D982	4822 130 31438		1N4001G
D983	4822 130 31438		1N4001G
D984	4822 130 31438		1N4001G

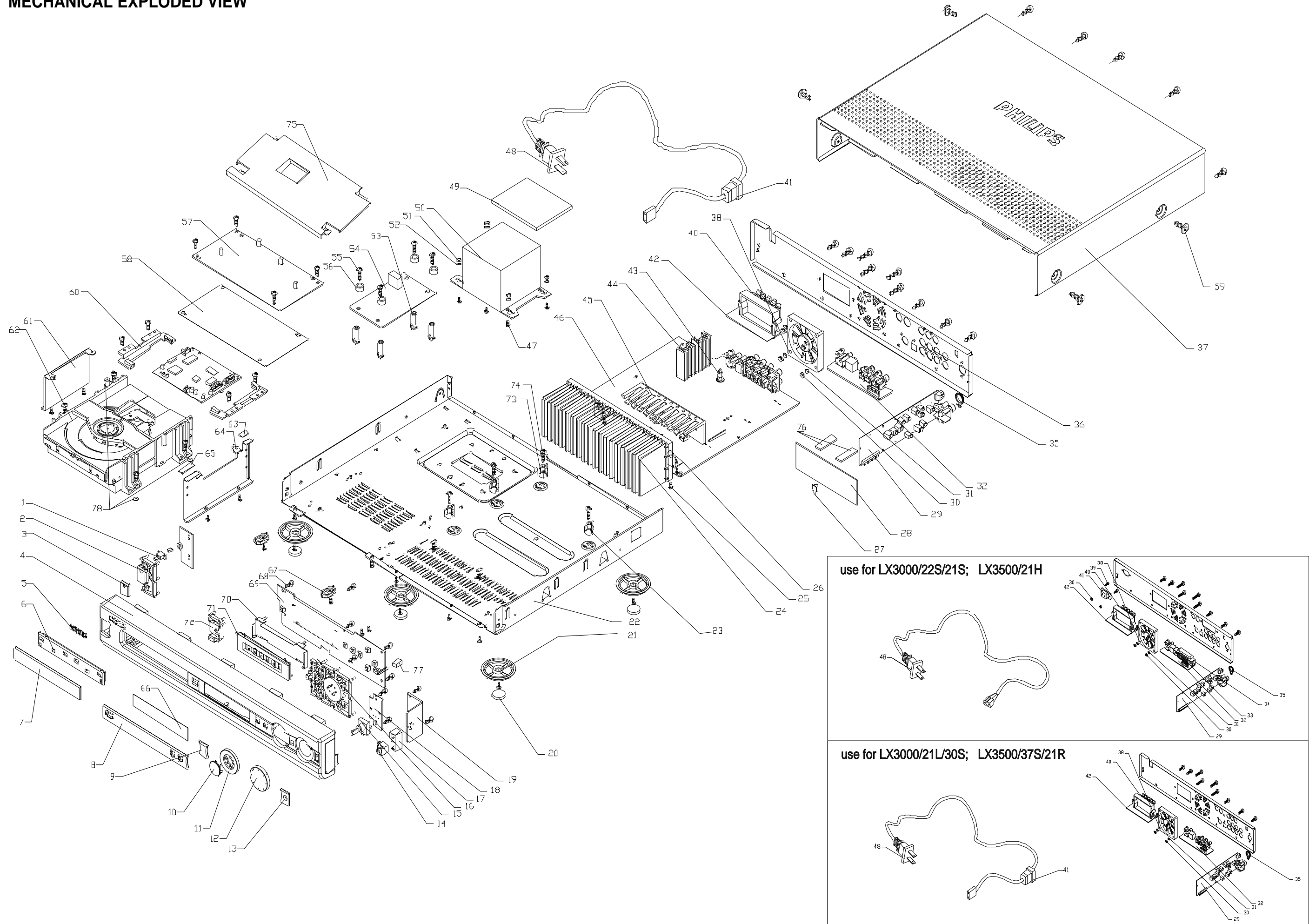
**TRANSISTORS & INTEGRATED CIRCUITS**

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IC982	5322 209 81331		MC7805ACT
Q981	4822 130 41651		2SC2001L

Note: Only the parts mentioned in this list are normal service spare parts.

# MECHANICAL EXPLODED VIEW



## MECHANICAL &amp; ACCESSORIES PARTS LIST - MAIN UNIT

2	9965 000 12421	POWER BASE		9965 000 13092	RGB CABLE 3P 1.5M	EXCEPT /22S
3	9965 000 12422	POWER LENS	LX3000D	9965 000 14653	S-VIDEO CABLE	/37S
3	9965 000 12788	POWER LENS	LX3500D	9965 000 13060	REMOTE CONTROL	
4	9965 000 13051	FRONT CABINET	LX3000D	9965 000 13061	AM LOOP ANTENNA	
4	9965 000 13095	FRONT CABINET	LX3500D	9965 000 13097	INSTR. FOR USE	/37S
5	9965 000 12424	PHILIPS LOGO		9965 000 13062	INSTR. FOR USE	/22S
6	9965 000 12425	DVD DOOR		9965 000 13093	INSTR. FOR USE	/21H/21L/21R/21S/30S
7	9965 000 12426	DVD DOOR LENS	LX3000D	9965 000 13063	LS BOX PACKAGE	LX3000D except /37S
7	9965 000 12811	DVD DOOR LENS	LX3500D	9965 000 14677	LS BOX PACKAGE	LX3000D/37S
8	9965 000 12427	MAIN LENS	LX3000D	9965 000 13098	LS BOX PACKAGE	LX3500D
8	9965 000 12812	MAIN LENS	LX3500D	9965 000 13066	CENTER SPEAKER BOX	LX3000D
9	9965 000 12428	IR LENS	LX3000D	9965 000 13101	CENTER SPEAKER BOX	LX3500D
9	9965 000 12813	IR LENS	LX3500D	9965 000 13064	FRONT SPEAKER BOX	LX3000D
10	9965 000 12429	PLAY COVER		9965 000 13099	FRONT SPEAKER BOX	LX3500D
11	9965 000 12430	PLAY RING	LX3000D	9965 000 13065	SURROUND SPEAKER BOX	LX3000D
11	9965 000 12814	PLAY RING	LX3500D	9965 000 13100	SURROUND SPEAKER BOX	LX3500D
12	9965 000 12431	VOLUME KNOB		9965 000 13067	CLOTH FRAME ASSEMBLY GREY	
13	9965 000 12432	PHONE LENS	LX3000D	9965 000 14678	CLOTH FRAME ASSEMBLY BEIGE	
13	9965 000 12815	PHONE LENS	LX3500D	9965 000 13102	CLOTH FRAME ASSEMBLY ORANGE	
16	9965 000 12433	PLAY BASE				
20	9965 000 12436	FOOT				
21	9965 000 12816	FOOT BRACKET				
23	9965 000 12437	PCB BRACKET				
35	9965 000 12441	HOLDER				
38	9965 000 12442	FAN				
41	9965 000 12817	BUSHING	/21L/21R/30S			
41	4822 532 12729	BUSHING	/37S			
41	9965 000 12443	AC SOCKET	/21H/21S/22S			
43	9965 000 12445	SPACER				
48	9965 000 12819	MAINS CORD	/21L/21R			
48	9965 000 12818	MAINS CORD	/37S			
48	9965 000 12820	MAINS CORD	/21H/21S/22S			
48	9965 000 12821	MAINS CORD	/30S			
50	9965 000 13096	TRANSFORMER 120V	/21L/21R/37S			
50	9965 000 13052	TRANSFORMER 230V	/21H/21S/22S/30S			
53	9965 000 12449	PCB SUPPORT BOTTOM				
62	9965 000 12822	DVD LOADER MODULE				
72	9965 000 12454	EJECT KEY				
73	9965 000 12455	PCB BRACKET				
83	9965 000 13054	FLAT WIRE 26PIN 6CM				
84	9965 000 13055	FLAT WIRE 16PIN 6CM				
91	9965 000 13056	FLAT WIRE 28PIN 15CM				
	9965 000 13057	RCA CABLE 1P 5M				
	9965 000 13058	RCA CABLE 2P 1.2M				
	9965 000 13059	SCART CABLE 1M	/22S			

Note: Only the parts mentioned in this list are normal service spare parts.

## SCREW LIST - MAIN UNIT

25	D3 x 8
39	M3 x 8
47	M4 x 12
55	D3 x 22
59	M3 x 6
68	D3 x 8
74	M3 x 16

**DOCUMENT HISTORY****Version 1.0**

- \* Initial release

**Version 1.1**

- \* New type/version LX3000D/37S has been added
- \* Correction of Service Manual pages
  - Page 1-2 : Deletion of Satellite speakers from the version variation table (no reference required)
  - Page 5-6 : Correction of item no. & part code for JK301 (was JK31), Q306 and Q308
  - Page 6-6 : Addition of EF001 for /22S, correction of item no. & part code for C151, C173, C174, CF101 and Q105 (was Q204) and delete VR101
  - Page 7-7 & 7-8 : Add pictures & item no. for existing part codes.
  - Page 9-8 : Correction of item no. CN102 (was CN3)
  - Page 13-2 : Correction of part code for pos 41 for /37S, addition of Cloth Frame assy Beige for LX3500D, add S-Video cable for /37S

**Version 1.2**

- \* Correction / adaptation of Service manual pages
  - Page 1-1: Addition of Chapter 7A & application of new 12NC 3139 785 3024x to replace existing code 3139 785 30045.
  - Page 1-2: Adaptation for LX3500D/33S
  - Page 2-1: Correction of Region codes
  - Chapter 7: Correction & release of improved drawings
  - Chapter 7A Include new module released via Service Info A02-178