

Service
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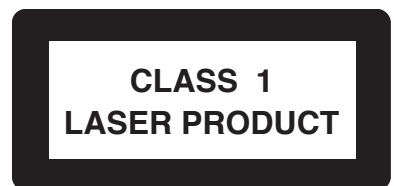


Service Manual



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Version 1.0



PHILIPS

SPECIFICATIONS

AMPLIFIER SECTION

Output power	3640 W PMPO
Stereo mode (DIN)	140 W + 140 W RMS
Surround mode (1 kHz)	DIN OUT
Frequency Response	180 Hz - 14 kHz / \pm 3 dB
Signal-to-Noise Ratio	> 62dB (A-weighted)
AUX/TV In	500 mV

Output Sensitivity	
Headphone	800 mV – 1100 mV
Line Out	400 mV – 600 mV

TUNER SECTION

Tuning Range	FM 87.5 – 108 MHz (50 kHz steps)
.....	MW 531 – 1602 kHz (9 kHz steps)
.....	MW 530 – 1710 kHz (10 kHz steps)
26 dB Quieting Sensitivity	FM 20 dB
26 dB Quieting Sensitivity	MW 3162 mV/m
Image Rejection Radio	FM 25dB
.....	MW 28 dB
IF Rejection Ratio	FM 60 dB
.....	MW 24 dB
Signal-to-Noise Ratio	FM \geq 55 dB
.....	MW \geq 35 dB
MW Suppression Ratio	FM 30 dB
Harmonic Distortion	FM Mono 3 %
.....	FM Stereo 3 %
.....	MW 5 %
Frequency Response	FM 180 Hz – 10 kHz / \pm 6 dB
Stereo Separation	FM 26 dB (1 kHz)
Stereo Threshold	FM 23.5 dB

TAPE SECTION

Frequency Response	
Normal tape (type 1)	80 – 12500 Hz (8 dB)
Signal-to-Noise Ratio	
Normal tape (type 1)	\geq 46 dBA
Wow and flutter	\leq 0.4% DIN

DVD SECTION

Laser Type	Semiconductor
Disc Diameter	12cm / 8cm
Video Decoding	MPEG-2 / MPEG-1
Video DAC	10 Bits
Signal System	PAL / NTSC
Video Format	4:3 / 16:9
Video S/N	56 dB (minimum)
Composite Video Output	1.0 Vp-p, 75 Ω
S-Video Output	Y - 1.0 Vp-p, 75 Ω
.....	C - 0.286 Vp-p, 75 Ω
Audio DAC	24 Bits / 96 kHz
Frequency Response	4 Hz - 20 kHz (44.1kHz)
.....	4 Hz - 22 kHz (48kHz)

.....	4 Hz - 44 kHz (96kHz)
Digital Output	
.....	SPDIF (Sony Philips digital interface) Coaxial
PCM	IEC 60958
Dolby Digital/DTS	IEC 60958, IEC 61937

MAIN UNIT

Power Supply Rating	110 - 127 / 220 - 240V
.....	50 / 60 Hz Switchable
Power Consumption	
Active	85W
ECO Power Standby	< 1 W
Dimensions (w x h x d)	265x 322 x 354 (mm)
Weight	5.7 kg

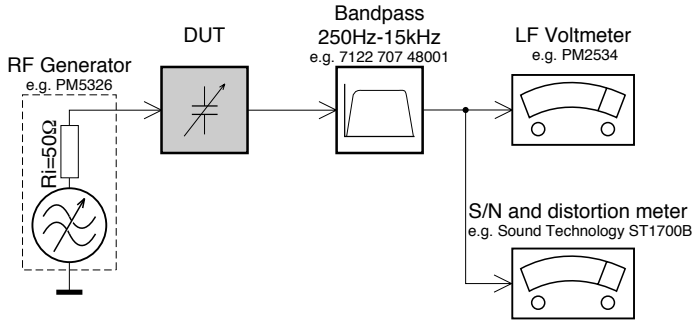
SPEAKERS

Front speakers	
System	3-way, Bass reflex
Impedance	8 Ω
Speaker drivers	6.5" woofer,
.....	2" tweeter
Frequency response	50 Hz – 20 kHz
Dimensions (w x h x d)	235 x 457 x 246.5 (mm)
Weight	5.08 kg/each

Specifications and external appearance are subject to change without notice.

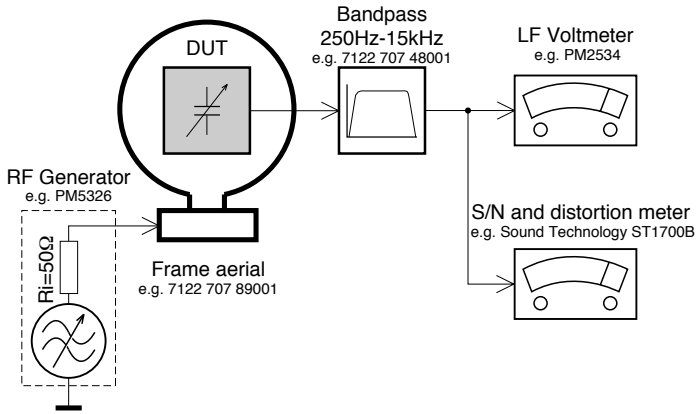
MEASUREMENT SETUP

Tuner FM



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

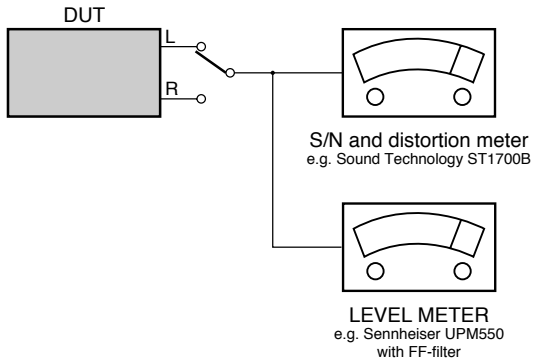
Tuner AM (MW,LW)



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

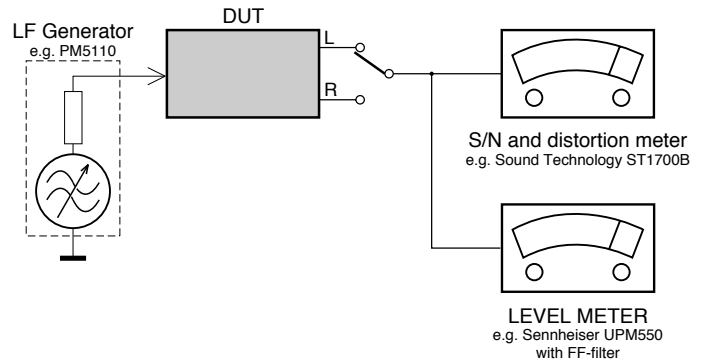
CD

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



Recorder

Use Universal Test Cassette **CrO2** SBC419 4822 397 30069
or Universal Test Cassette **Fe** SBC420 4822 397 30071



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

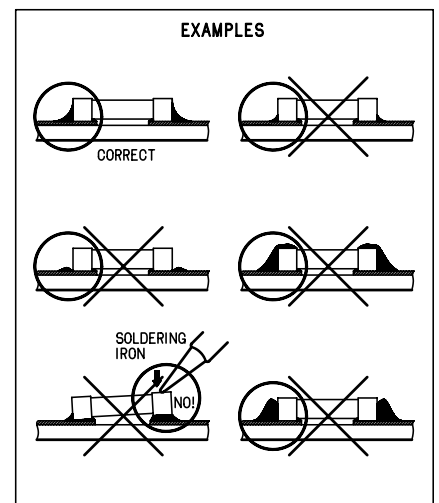
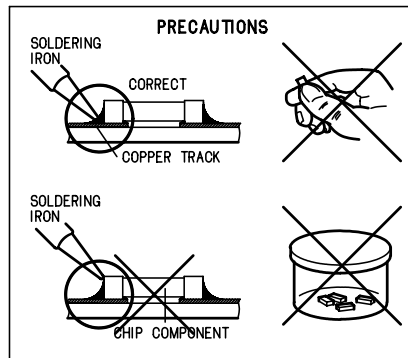
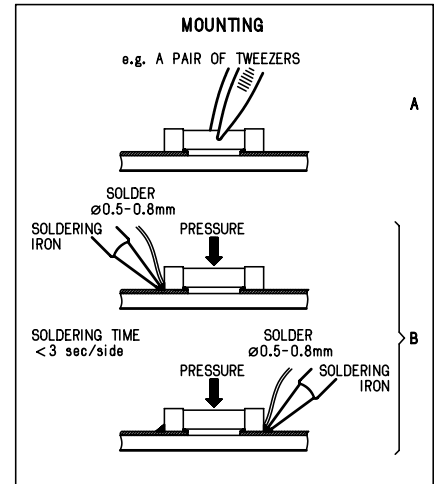
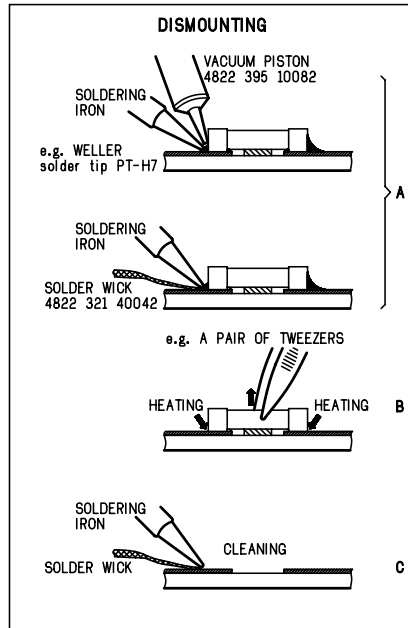
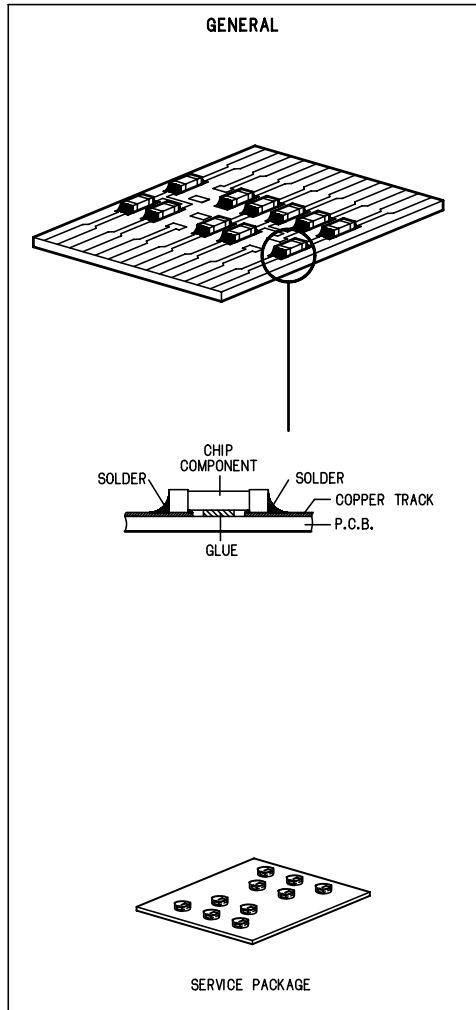
Compact Disc:

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 (1M Ω)	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 ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione.

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

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

(GB)

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 utilisées 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 suojalukituksen ohitettaessa olet alttiina näkymättömälle laserisäteilylle. Älä katso säteeseen!

(DK) Advarse !

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

INFORMATION ABOUT LEAD-FREE SOLDERING

Philips CE is producing lead-free sets from 1.1.2005 onwards.

IDENTIFICATION:

Regardless of special logo (not always indicated) one must treat all sets from 1 Jan 2005 onwards, according next rules:



Example S/N:



Bottom line of typeplate gives a 14-digit S/N. Digit 5&6 is the year, digit 7&8 is the week number, so in this case 2005 wk12

So from 0501 onwards = from 1 Jan 2005 onwards

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

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

- Use only lead-free solder alloy Philips SAC305 with order code 0622 149 00106. If lead-free solder-paste is required, please contact the manufacturer of your solder-equipment. In general use of solder-paste within workshops should be avoided because paste is not easy to store and to handle.
- Use only adequate solder tools applicable for lead-free solder alloy. The solder tool must be able
 - To reach at least a solder-temperature of 400°C,
 - To stabilize the adjusted temperature at the solder-tip
 - To exchange solder-tips for different applications.
- Adjust your solder tool so that a temperature around 360°C – 380°C is reached and stabilized at the solder joint. Heating-time of the solder-joint should not exceed ~ 4 sec. Avoid temperatures above 400°C otherwise wear-out of tips will rise drastically and flux-fluid will be destroyed. To avoid wear-out of tips switch off un-used equipment, or reduce heat.
- Mix of lead-free solder alloy / parts with leaded solder alloy / parts is possible but PHILIPS recommends strongly to avoid mixed solder alloy types (leaded and lead-free).
If one cannot avoid or does not know whether product is lead-free, clean carefully the solder-joint from old solder alloy and re-solder with new solder alloy (SAC305).
- Use only original spare-parts listed in the Service-Manuals. Not listed standard-material (commodities) has to be purchased at external companies.
- Special information for BGA-ICs:
 - always use the 12nc-recognizable soldering temperature profile of the specific BGA (for de-soldering always use the lead-free temperature profile, in case of doubt)
 - lead free BGA-ICs will be delivered in so-called 'dry-packaging' (sealed pack including a silica gel pack) to protect the IC against moisture. After opening, dependent of MSL-level seen on indicator-label in the bag, the BGA-IC possibly still has to be baked dry. (MSL=Moisture Sensitivity Level). This will be communicated via AYS-website. Do not re-use BGAs at all.
- For sets produced before 1.1.2005 (except products of 2004), containing leaded solder-alloy and components, all needed spare-parts will be available till the end of the service-period. For repair of such sets nothing changes.
- On our website www.atyourservice.ce.Philips.com you find more information to:
 - * BGA-de-/soldering (+ baking instructions)
 - * Heating-profiles of BGAs and other ICs used in Philips-sets

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

For additional questions please contact your local repair-helpdesk.

SERVICE INSTRUCTION

Safety regulations require that after a repair, the set must be returned in its original condition. Pay in particular attention to the following points:

- Route the wire trees correctly and fix them with the mounted cable clamps.
- Check the insulation of the AC Power lead for external damage.
- Check the strain relief of the AC Power cord for proper function.
- Check the electrical DC resistance between the AC Power Plug and the secondary side (only for sets which have a AC Power isolated power supply):
 1. Unplug the AC Power cord and connect a wire between the two pins of the AC Power plug.
 2. Set the AC Power switch to the "on" position (keep the AC Power cord unplugged!).
 3. Measure the resistance value between the pins of the AC Power plug and the metal shielding of the tuner or the aerial connection on the set. The reading should be larger than 4,5 Mohm (For U.S. it should be between 4,2 Mohm and 12 Mohm).
 4. Switch "off" the set, and remove the wire between the two pins of the AC Power plug.
- Check the cabinet for defects, to avoid touching of any inner parts by the customer.

PREPARATIONS AND CONTROLS

Preparations

Notes:

- The clock will be cancelled when the power cord is disconnected or if a power failure occurs.
- During clock setting, if no button is pressed within 10 seconds, the system will exit the setting mode and go back to it's previous status.

Step 3: Setting the TV set

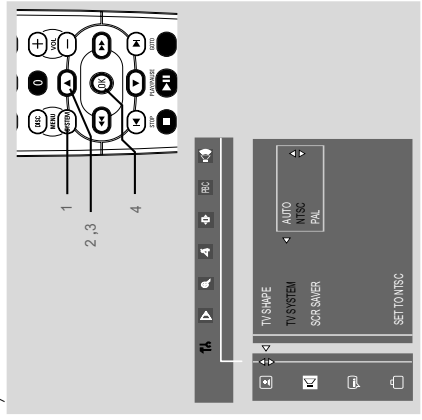
IMPORTANT!

- Make sure you have completed all the necessary connections. (See Connections - Connecting TV set)

- 1 Press **DISC (DISC 1-2-3)** on the front panel (or press **DISC 1/2/3** on the remote control).
- 2 Turn on the TV set and set to the correct Video-In channel. You should see the blue Philips DVD background screen on the TV set.
 - You may go to channel 1 on your TV set, then press the channel down button repeatedly until you see the Video In channel.
 - Or, you can use the TV remote control to select different video modes.
 - Or, set TV to channel 3 or 4 if you are using an RF modulator.

Selecting the color system that matches your TV set

This DVD Mini Hi-Fi System is compatible with both NTSC and PAL. For the playback of a DVD disc on this DVD Mini Hi-Fi System, the color systems of the DVD, TV set and DVD Mini Hi-Fi System should match.



- 1 In disc mode, stop playback and press **SYSTEM MENU**.

- 2 Select **TV** icon and press **▼**.
- 3 Press **◀◀ / ▶▶ / ▲ / ▼** keys on the remote control to toggle through the functions and select your preferred option.
 - Move to **TV** and press **▶▶**.
 - Move to "TV System" and press **▶▶**.

AUTO

- Select this if the connected TV set is compatible with both NTSC and PAL (multi system). The output format will be consistent with the video signal of the disc.

NTSC

- Select this if the connected TV set is NTSC system. It will change the video signal of a PAL video disc and output to NTSC system.

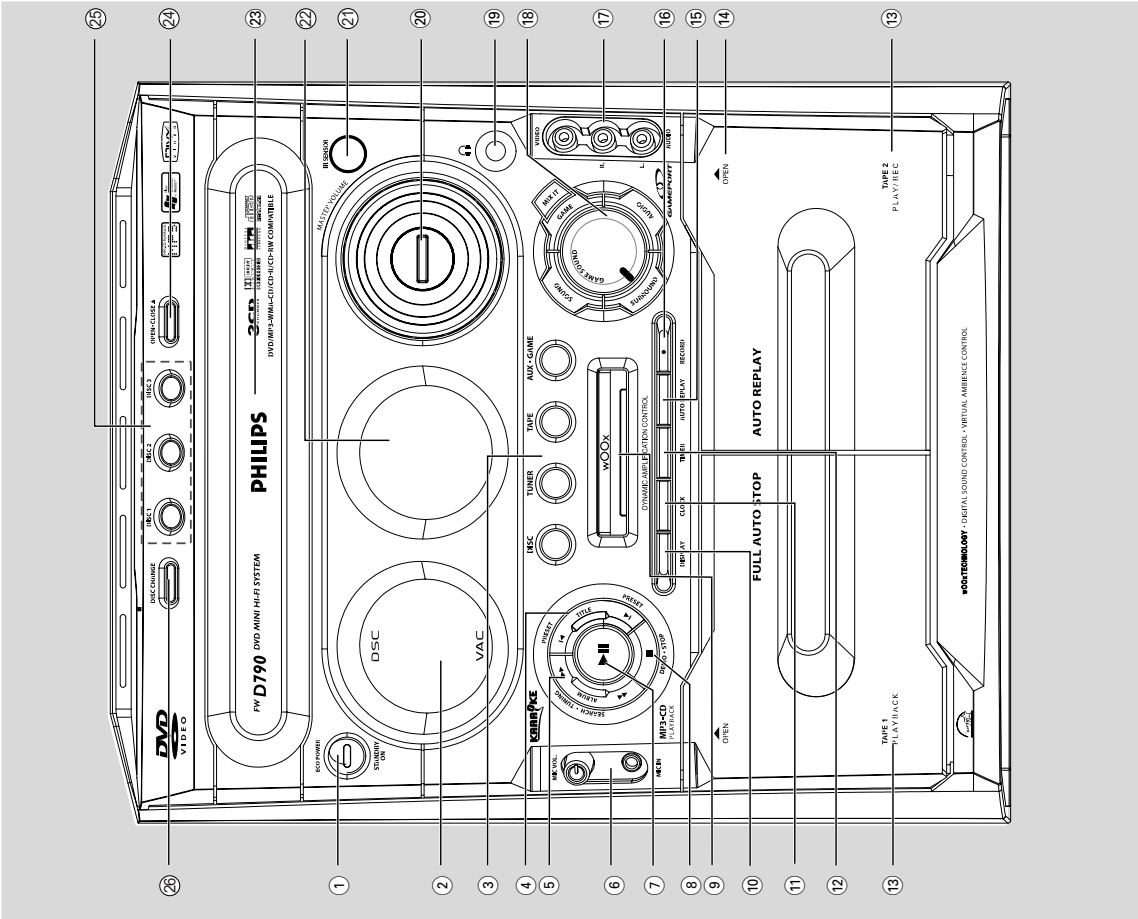
PAL

- Select this if the connected TV set is PAL system. It will change the video signal of an NTSC disc and output to PAL format.

- 4 Select an item and press **OK**.

To remove the menu

Press **SYSTEM MENU**.



PREPARATIONS AND CONTROLS

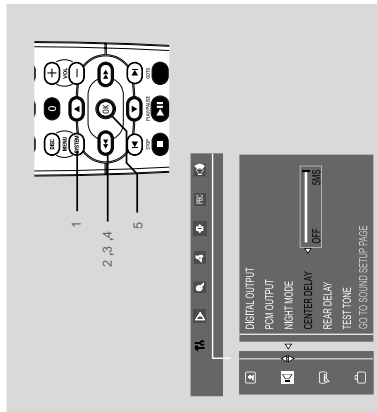
Connections

Step 4: Setting speakers

IMPORTANT!

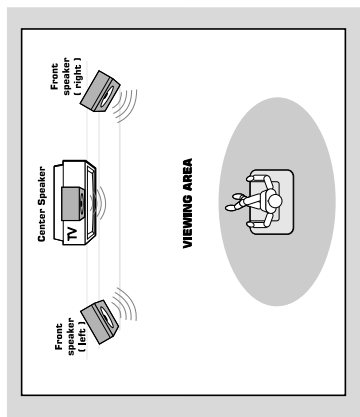
This function is only available when you have connected other 3.1-channel speakers.

You can adjust the delay time (center and rear only) for individual speakers to optimize the sound effect according to your surroundings and setup. Speaker settings are only active on effective in the case of Multi-channel audio output.



- In disc mode, press **SYSTEM MENU**.
 - Select **1** icon and press **▼**.
 - Press **◀ / ▶** / **▲ / ▼** keys on the remote control to select your preferred option.
 - Move to **1** and press **▶▶▶**.
 - Move to "CENTER DELAY" or "REAR DELAY" and press **▶▶▶**.
 - Press **▶▶▶** to set CENTER DELAY or REAR DELAY values you want.
 - Use longer delay time if the surround speakers are closer to the listener than the front speakers.
 - Press **OK** to confirm.
- To remove the menu**
Press **SYSTEM MENU**.

Step 1: Placing speakers

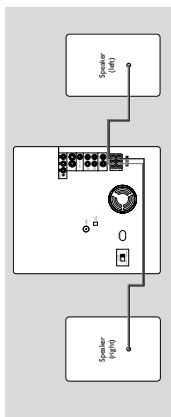


Place the front left and right speakers at equal distances from the TV set and at an angle of approximately 45 degrees from the listening position.

Notes:

- To avoid magnetic interference, do not position the front speakers too close to your TV set.
- Allow adequate ventilation around the DVD Mini Hi-Fi System.

Step 2: Connecting speakers



Connect the speaker wires to the SPEAKERS (FRONT) terminals, right speaker to "R" and left speaker to "L"; coloured (marked) wire to "+" and black (unmarked) wire to "-"; Fully insert the stripped portion of the speaker wire into the terminal as shown.

Speakers	Black	White
Front Left (L)	Black	White
Front Right (R)	Black	Red

Notes:

- For optimal sound performance, use the supplied speakers.
- Do not connect more than one speaker to any one pair of +/- speaker terminals.
- Do not connect speakers with an impedance lower than the speakers supplied. Please refer to the SPECIFICATIONS section of this manual.

IMPORTANT!

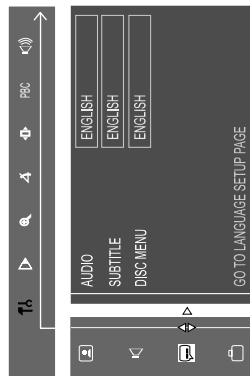
The type plate is located on the rear of the system.

To avoid overheating of the system, a safety circuit has been built in. Therefore, your system may switch to Standby mode automatically under extreme conditions. If this happens, let the system cool down before reusing it.

Preparations

Step 5: Setting language preference

You can select your preferred language settings so that this DVD Mini Hi-Fi System will automatically switch to the language for you whenever you load a disc. If the language selected is not available on the disc, the language set by default will be used instead. But the menu language of the DVD Mini Hi-Fi System cannot be changed once selected.



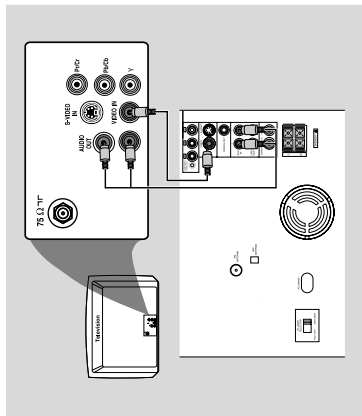
- In disc mode, stop playback and press **SYSTEM MENU**.
 - Select **1** icon and press **▼**.
 - Press **◀ / ▶** / **▲ / ▼** keys on the remote control to select your preferred option.
 - Move to **1** and press **▶▶▶**.
 - Move to one of the following and press **▶▶▶**.
 - Audio (disc's soundtrack)
 - Subtitle (disc's subtitles)
 - Disc Menu (on screen menu)
 - Press **▲ / ▼** to select a language and press **OK**.
 - Repeat **steps 3-4** for other settings.
- To remove the menu**
Press **SYSTEM MENU**.

PREPARATIONS AND CONTROLS

Connections

Connections

Step 3: Connecting TV set

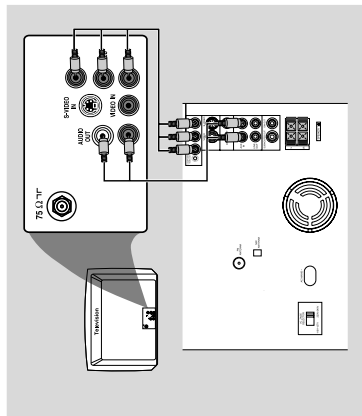


IMPORTANT!

- You only need to make one video connection from the following options, according to the capabilities of your TV system.
- S-Video or Component Video connection provides higher picture quality. These options must be available on your TV set.
- Connect the system directly to the TV set.

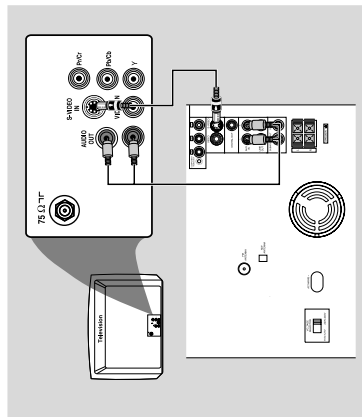
Using Video In jack (CVBS)

Use the composite video cable (yellow) to connect the system's VIDEO jack to the video input jack (or labeled as AV In, Video In, Composite or Baseband) on the TV set. To listen to TV channels through this system, use the audio cables (white/red) to connect AUX IN (L/R) jacks to the corresponding AUDIO OUT jacks on the TV set.



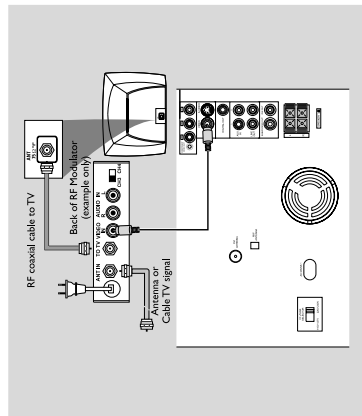
Using component Video In jack (Pr Pb Y)

Use the component video cables (red/blue/green) to connect the system's Pr Pb Y jacks to the corresponding Component video input jacks (or labeled as Pr/Cr Pb/Cb Y or YUV) on the TV set. To listen to TV channels through this system, use the audio cables (white/red) to connect AUX IN jacks to the corresponding AUDIO OUT jacks on the TV set.



Using S-Video In jack

Use the S-Video cable (not supplied) to connect the system's S-VIDEO OUT jack to the S-Video input jack (or labeled as Y/C or S-VHS) on the TV set. To listen to TV channels through this system, use the audio cables (white/red) to connect AUX IN jacks to the corresponding AUDIO OUT jacks on the TV set.



IMPORTANT!

- If your TV set only has a single Antenna In jack (or labeled as 75 ohm or RF In), you will need a RF modulator in order to view the DVD playback via TV. See your electronics retailer or contact Philips for details on RF modulator availability and operations.

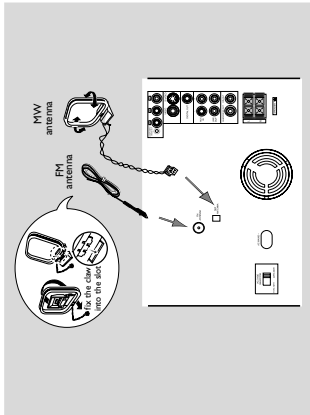
Using an accessory RF modulator

Use the composite cable (yellow) to connect the system's VIDEO jack to the video input jack on the RF modulator. Use the RF coaxial cable (not supplied) to connect the RF modulator to your TV's RF jack.

PREPARATIONS AND CONTROLS

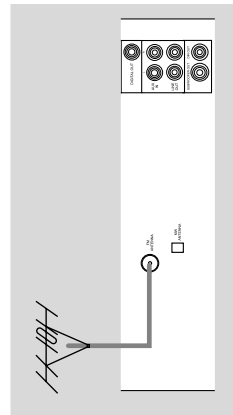
Connections

Step 4: Connecting FM/MW antennas



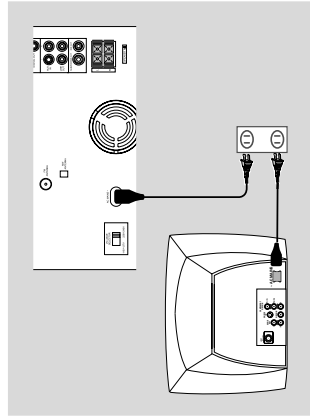
Connect the supplied MW loop antenna to the **MW** jack. Place the MW loop antenna on a shelf or attach it to a stand or wall. Connect the supplied FM antenna to the **FM** jack. Extend the FM antenna and fix its end to the wall.

For better FM stereo reception, connect an outdoor FM antenna to the FM ANTENNA terminal.



- Notes:**
- Adjust the position of the antennas for optimal reception.
 - Position the antennas as far as possible from your TV set, VCR or other radiation sources to prevent unwanted interference.

Step 5: Connecting the power cord



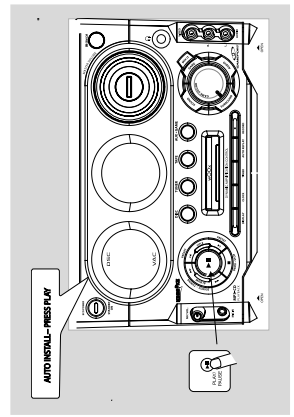
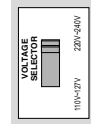
After everything is connected properly, plug in the AC power cord to the power outlet.

Never make or change any connection with the power switched on.

On the DVD Mini Hi-Fi System

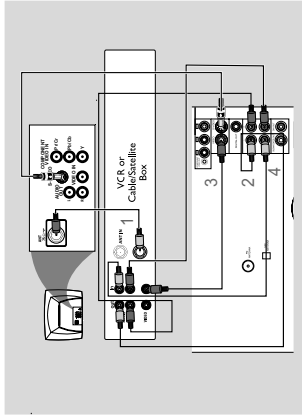
"AUTO INSTALL - PRESET PLAY" may appear on the display panel. Press **▶** on the front panel to search and store all available radio stations or press **■** to exit (See page 37, Tuner Operations- Presetting radio stations).

If your system is equipped with a Voltage Selector set the **VOLTAGE SELECTOR** to the local power line voltage.



Connections

Step 6: Connecting a VCR or cable/satellite box



Viewing and listening to playback

- 1 Connect the VCR or Cable/Satellite Box to the TV system as shown.
- 2 Connect the system's **AUX IN** jacks to the **AUDIO OUT** jacks on the VCR or Cable/Satellite box.

Before starting operation, press **AUX/GAME** on the remote control to select "AUX" in order to activate the input source.

Using the VCR for recording DVDs

Some DVDs are copy-protected. You cannot record or dub protected discs using a VCR.

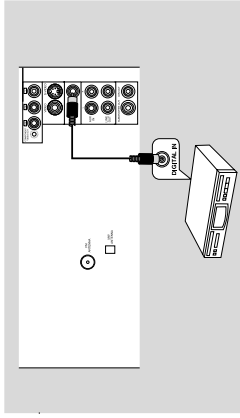
- 3 Connect the system's **VIDEO** jack to the **VIDEO IN** jack on the VCR.

- 4 Connect the system's **LINE OUT (RL)** jacks to the **AUDIO IN** jacks on the VCR. This will allow you to make analog stereo (two channel, right and left) recording.

To view DVD playback while recording

You must connect the system to your TV system using the **S-VIDEO** (as shown above) or the Component (Pr-Pb-Y) video connection.

Step 7: Connecting digital audio equipment



Recording (digital)

Connect the system's **DIGITAL OUT** jack to the **DIGITAL IN** jack on a digital recording device (DTS-Digital Theater System compatible, with a Dolby Digital decoder, for example).

Before operation, set the **DIGITAL OUTPUT** according to the audio connection. (See Using the Setup Menu - Setting the digital output).

Step 8: Connecting to game console

IMPORTANT!

- **Gameport inputs are for the game console only.**

Use the game console's video cable (not supplied) to connect its video output to the **GAMEPORT: VIDEO** terminal.

Use the game console's audio cable (not supplied) to connect its audio output to the **GAMEPORT: AUDIO L/ AUDIO R** terminals. Use the video cable (yellow) to connect the **VIDEO OUT** terminal to the video input on the TV for viewing.

Notes:

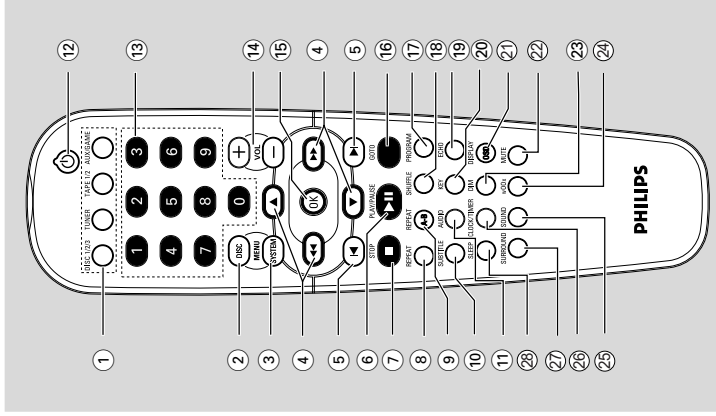
- On the TV, the **Video Input jack is usually yellow and might be labeled ATV In, CVBS, composite or Baseband.**
- To avoid magnetic interference, do not position the front speakers too close to your TV.

FUNCTIONAL OVERVIEW

Functional Overview

- Controls on the system**
- ① **ECO POWER/STANDBY ON**
to switch the system on, to Eco Power or Standby mode.
 - ② **DISPLAY SCREEN**
to view the current status of the system.
 - ③ **SOURCE**
to select the following:
DISC (DISC 1-2-3)
to select disc tray 1, 2 or 3
TUNER (BAND)
to select waveband: FM or MW.
TAPE (TAPE 1-2)
to select tape deck 1 or 2.
AUX-GAME
to select a connected external source: TV/CDR, AUX (auxiliary) or Gameport mode.
 - ④ **PREV / PRESET / NEXT ◀▶ (TITLE - / +)**
for DISC to select previous/next title, chapter or track during playback.
for TUNER to select a preset radio station.
for CLOCK to set the hour.
 - ⑤ **SEARCH-TUNING ◀◀ / ▶▶ (ALBUM - / +)**
for DISC to search backward/forward, to select previous/next album in MP3/WMA stop mode (with MENU ON).
for TAPE to rewind or fast forward.
for TUNER to tune to a lower or higher radio frequency.
for CLOCK to set the minute.
 - ⑥ **MICVOL/ MIC IN**
to adjust the mixing level for karaoke or microphone recording.
to connect microphone jack.
 - ⑦ **▶II (PLAY/PAUSE)**
for DISC to start or interrupt playback.
for TAPE to start playback.
for PLUG&PLAY ... (On the system only) to initiate plug & play mode.
 - ⑧ **DEMO-STOP ■**
for DISC to stop playback or to clear a programme.
for DEMO (in Standby or ECO power mode) to activate/deactivate demonstration.
for PLUG&PLAY ... (on the system only) to exit plug&play mode.
 - ⑨ **WOOX**
Selects different type of enhanced WOOX sound settings (WOOX 1, WOOX 2, WOOX 3 or WOOX OFF).
 - ⑩ **DISPLAY**
to display disc information during disc playback.
 - ⑪ **CLOCK**
to view or to set clock.
 - ⑫ **TIMER**
to view or to set timer.
 - ⑬ **TAPE DECK 1 / 2**
 - ⑭ **▲ OPEN**
to open the tape deck door.
 - ⑮ **AUTO REPLAY**
to select continuous playback in either AUTO PLAY or ONCE mode only.
 - ⑯ **RECORD**
to start recording on tape deck 2.
 - ⑰ **VIDEO**
use a video cable to connect to your game console's video output
AUDIO L./ AUDIO R.
use an audio cable to connect to your game console's left/right audio output.
 - ⑱ **SOUND**
to select various sound effect.
SURROUND
to select various surround sound effect.
AUDIO
to select the preferred language for audio
to select AUDIO channel in karaoke mode.
MIX IT
to mix the game sound with your favorite music from one of the music sources (DISC, TUNER, TAPE1/2 or AUX)
GAME
to select different type of equaliser setting for Gameport (SPEED, PUNCH or BLAST).
GAME SOUND
to adjust the game's output volume level.

Remote control



Notes:

- First, select the source you wish to control by pressing one of the source select keys on the remote control (DISC or TUNER, for example).
- Then select the desired function (▶▶, ▶◀ or ▶I for example).

① SOURCE

- to select the relevant active mode: DISC1/2/3, TUNER, TAPE1/2, or AUX/GAME.
- TUNER: toggles between FM and MW band.
- AUX/GAME: toggles between AUX and GAMEPORT mode.

② DISC MENU (disc mode only)

- to enter or exit the disc contents menu.

③ SYSTEM MENU (disc mode only)

- to enter or exit the system menu bar.

FUNCTIONAL OVERVIEW

Functional Overview

- ④ ◀◀ / ▶▶ / ▲ / ▼
 - to select movement direction in disc contents menu/system menu bar.
 - to tuner mode, to tune to lower or higher radio frequency. (◀◀ / ▶▶)
 - in Disc mode, press to fast reverse/forward the disc.
- ⑤ |◀/▶|
 - in Disc mode, press to skip to the previous/next chapter/track.
 - in Tuner mode, to select a preset radio station number
- ⑥ **PLAY/PAUSE ▶||**
 - to start or interrupt disc playback.
 - to resume playback from last stop point.
- ⑦ **STOP ■**
 - to stop playing the disc.
- ⑧ **REPEAT**
 - to select variations of continuous playback.
- ⑨ **REPEAT A-B**
 - to repeat a specific section on a disc.
- ⑩ **SUBTITLE**
 - to select desired subtitle.
- ⑪ **AUDIO**
 - to select the audio channel.
- ⑫ **POWER ⏻**
 - to switch to eco power or standby mode.
- ⑬ **Numeric Keypad (0-9)**
 - to enter a track/title number of the disc.
 - to enter a number of preset radio stations.
- ⑭ **VOL +/-**
 - adjust the volume level.
 - adjust key control/ ECHO level in karaoke mode.
 - adjust speakers level in speaker setting mode.
- ⑮ **OK**
 - to exit or confirm the selection.
- ⑯ **GOTO**
 - to go direct to desired title, chapter or time.
- ⑰ **PROGRAM**
 - in disc mode, to program favorite tracks.
 - in tuner mode, to program favorite stations.
- ⑱ **SHUFFLE**
 - to playback in random mode.
- ⑲ **ECHO**
 - to adjust the echo level in karaoke mode.
- ⑳ **KEY**
 - to change the tone level to suit your vocal range.
- ㉑ **DISPLAY (OSD)**
 - to view the time, title or chapter information.
- ㉒ **MUTE**
 - to interrupt or resume sound reproduction.
- ㉓ **DIM**
 - to select different brightness for VFD.
- ㉔ **wOOx**
 - Selects different type of enhanced wOOx sound settings (wOOx 1, wOOx 2, wOOx 3 or wOOx OFF).
- ㉕ **SOUND**
 - to select various sound effect.
- ㉖ **CLOCK/TIMER**
 - to view clock/ timer.
 - to enter timer setting mode.
- ㉗ **SURROUND**
 - to select various surround sound effect.
- ㉘ **SLEEP**
 - to set the sleep (auto-off) timer function.

Troubleshooting

WARNING

Under no circumstances should you try to repair the system yourself, as this will invalidate the warranty. Do not open the system as there is a risk of electric shock.

If a fault occurs, first check the points listed below before taking the system for repair. If you are unable to remedy a problem by following these hints, consult your dealer or Philips for help.

Problem	Solution
No power.	<ul style="list-style-type: none"> ✓ Check if the AC power cord is properly connected.
"NO DISC" is displayed.	<ul style="list-style-type: none"> ✓ Check if the disc is inserted upside down. ✓ Wait until the moisture condensed at the lens has cleared. ✓ Replace or clean the disc, see "Maintenance". ✓ Use a readable disc or correctly recorded format MP3-CD.
No picture.	<ul style="list-style-type: none"> ✓ Select the appropriate video input mode on the TV set. ✓ Check if the TV set is switched on. ✓ Check the video connection. ✓ Check if the system is securely connected.
Distorted or poor picture.	<ul style="list-style-type: none"> ✓ Sometimes a slight picture distortion may appear. This is not a malfunction. ✓ Clean the disc. ✓ Connect the system to the S-video input of your TV set.
The aspect ratio of the screen cannot be changed even though you have set the TV shape.	<ul style="list-style-type: none"> ✓ The aspect ratio is fixed on the DVD disc. ✓ The aspect ratio may not be changed for some TV systems.
The DVD player does not start playback.	<ul style="list-style-type: none"> ✓ Insert a readable disc. ✓ Check the disc type, color system and region code. ✓ Clean the disc. ✓ Place the disc with the playback side down. ✓ Press SYSTEM MENU to turn off the setup menu. ✓ Cancel the parental control rating function or change the rating level. ✓ Moisture has condensed inside the system. ✓ Remove the disc and leave the system turned on for about an hour. ✓ Disconnect the power plug from the jack, and insert again.
The system does not respond when the buttons are pressed.	

Troubleshooting

Problem

The language for the sound or subtitle cannot be changed when playing a DVD.

No image is output when a function is selected.

Sound cannot be heard or is of poor quality

Poor radio reception.

Recording or playback cannot be made

The tape deck door cannot open

Left and right sound outputs are reversed.

The remote control does not function.

The display is dark

The timer is not working

The Clock/Timer setting is erased

Solution

✓ Multi-language sound or subtitle is not recorded on the DVD.

✓ Changing the language for the sound or subtitle is prohibited on the DVD.

✓ Make sure the component is connected correctly.

✓ Press the correct function button for the input source.

✓ Adjust the volume.

✓ Disconnect the headphones.

✓ Check that the speakers are connected correctly.

✓ Check if the stripped speaker wire is clamped.

✓ If the system is in pause, slow motion or fast

forward/reverse mode, press **▶||** to resume the

normal play mode.

✓ Make sure the MP3-CD was recorded within 32-

256 kbps bit rate with sampling frequencies at

48 kHz, 44.1 kHz or 32 kHz.

✓ If the signal is too weak, adjust the antenna or

connect an external antenna for better

reception.

✓ Increase the distance between the System and

your TV set or VCR.

✓ Clean deck parts, see "Maintenance".

✓ Use only NORMAL tape.

✓ Apply a piece of adhesive tape over the missing

tab space.

✓ Remove and reconnect the AC power plug and

switch on the system again.

✓ Check the speaker connections and location.

✓ Point the remote control at the remote control

sensor of the unit.

✓ Reduce the distance to the player.

✓ Remove any possible obstacles.

✓ Replace the batteries with new ones.

✓ Check that the batteries are loaded correctly.

✓ Press DIM again.

✓ Set the clock correctly.

✓ If recording is in progress, stop it

Power has been interrupted or the power cord

has been disconnected. Reset the clock/timer.

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 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 /MRD200
002	MX3600D/MX3800
003	LX3700D/LX3750W
005	MRD210
006	MX3660D
008	FW-D550/FWD570

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 use 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 FW-D550 /21M (A/P) :

<PLAY> <159> <331> <008> <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 reach 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"
- 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)
A/P (21M)	FM	87.5M	108M
	MW	531K	1602K
		530K	1710K

Note :-

Please refer to the above different tuner area.

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.

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. Checking on the Software version

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

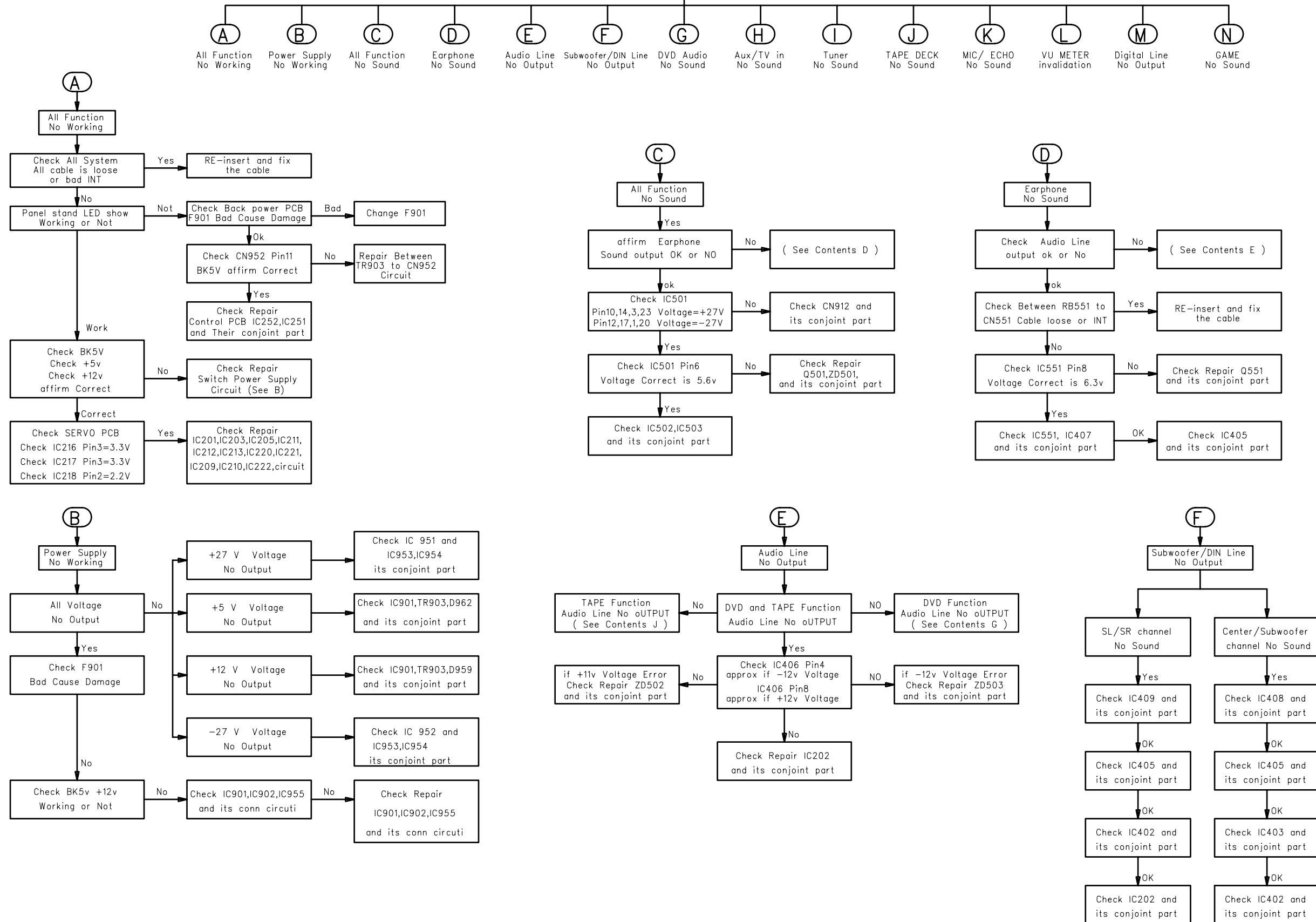
8. Upgrading new software

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

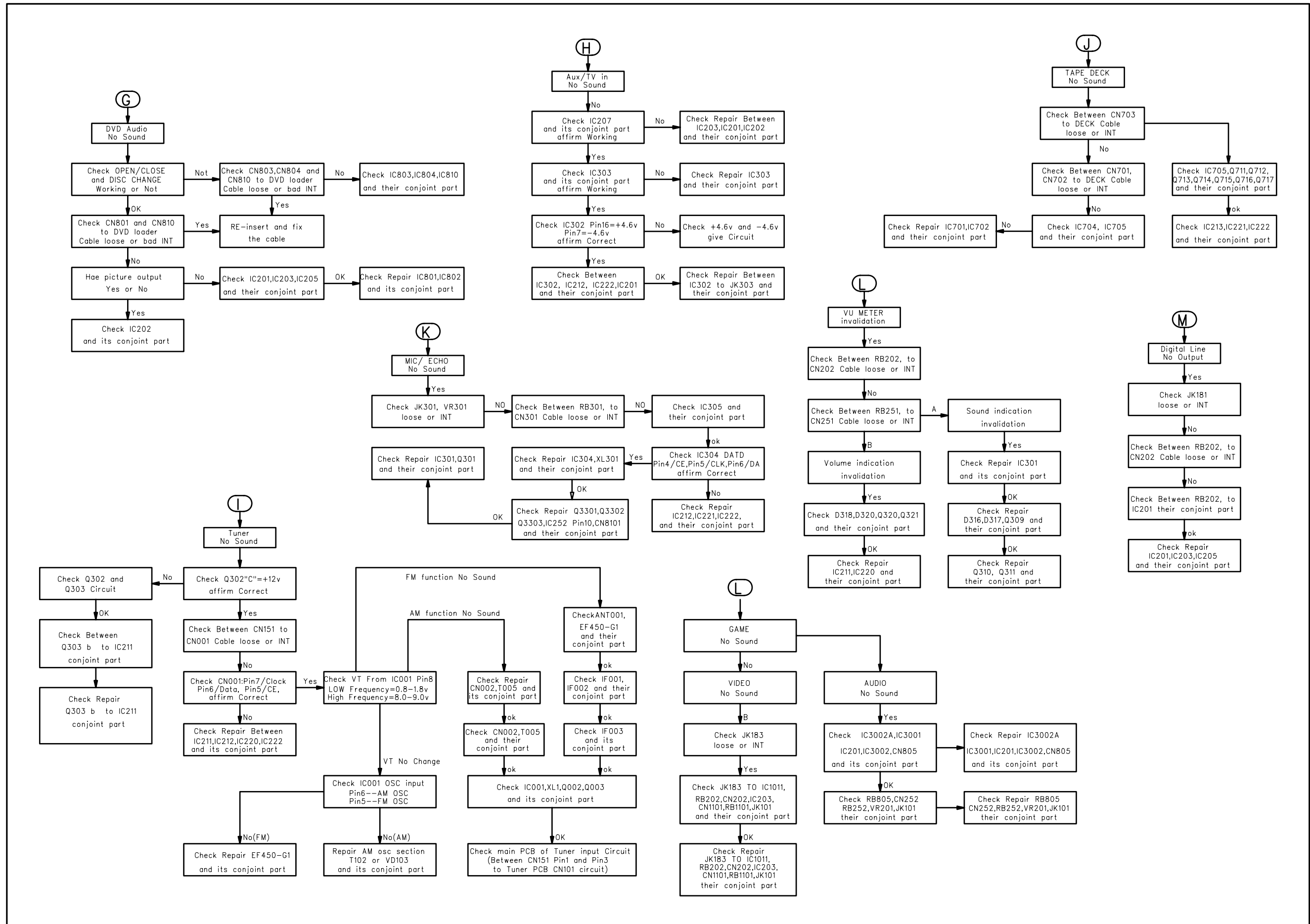
* The latest upgraded is in version VER*****.

REPAIR INSTRUCTIONS

MAIN UNIT REPAIR CHART



REPAIR INSTRUCTIONS



DISMANTLING INSTRUCTIONS

Dismantling of the Cassette Cover

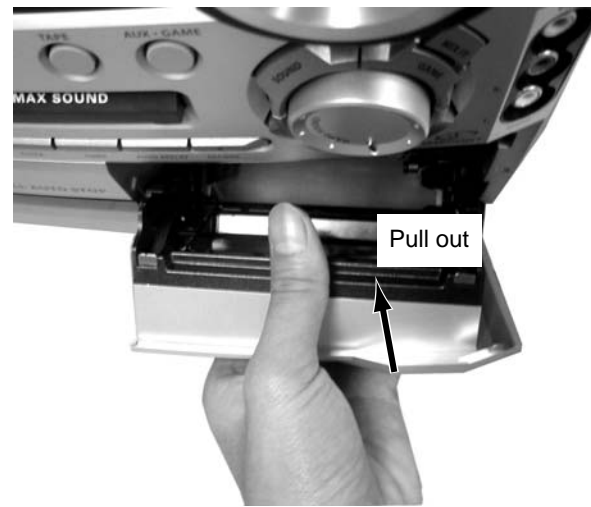


Figure 1

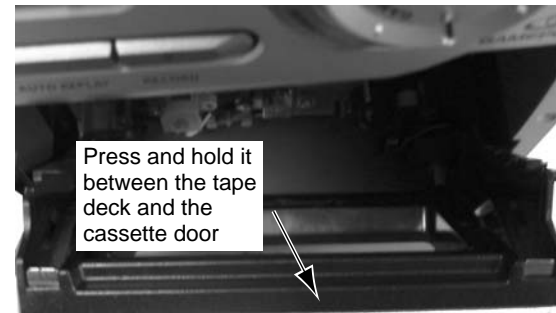


Figure 2

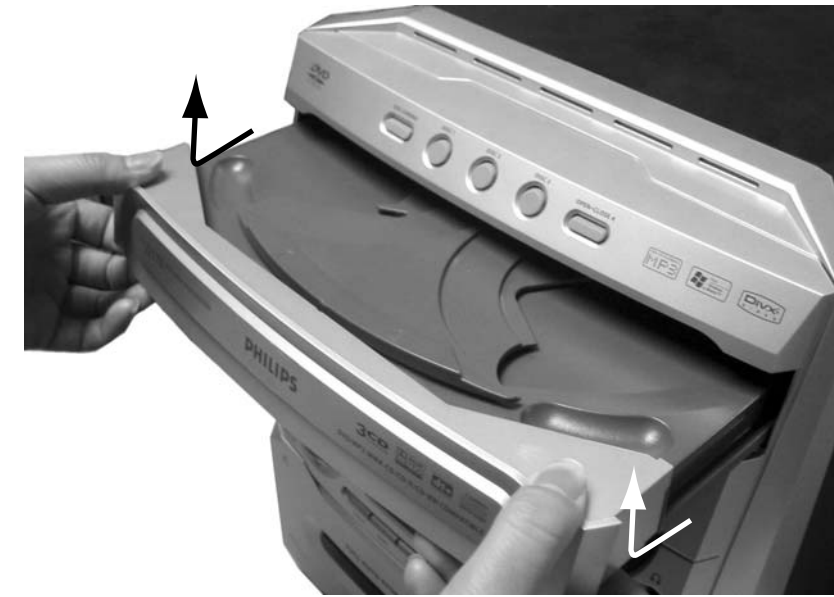


Figure 4

Dismantling the 3CDC Module

- 1) Loosen the 4 screws, slide Cover top (pos 255) towards the rear and remove it upwards.
- 2) Push the gear slowly towards the front as shown in figure 3 until the CDC tray starts to move out of the Front Cabinet. The CDC tray is now disengaged and can be pulled out completely.
- 3) Push the gear slowly towards the front as shown in figure 3 until the CDC tray starts to move out of the Front Cabinet. The CDC tray is now disengaged and can be pulled out completely.
- 4) Remove the Cover Tray as shown in figure 4.
- 5) Loosen 4 screws A to remove the CDC Module (pos 1105) as shown in figure 3.

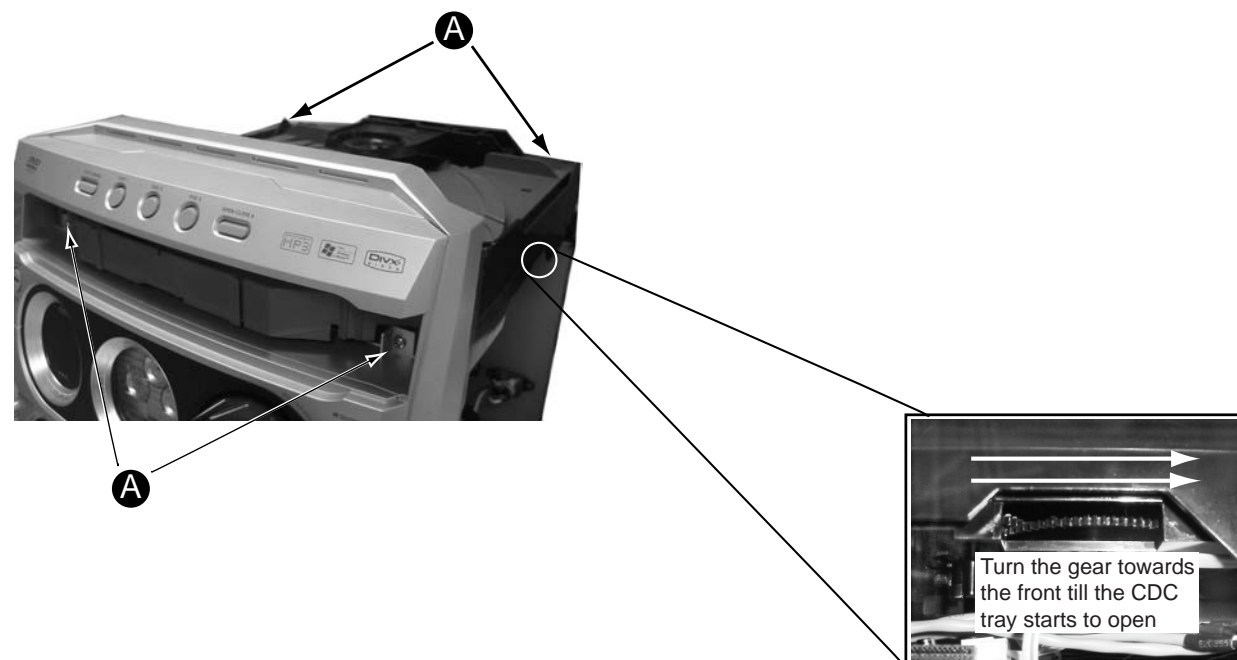


Figure 3

Dismantling of the Cover Front Display and Cover Front Ornamental (pos 130)

- 1) Remove the Volume knobs as stated in Dismantling the Cover Front Display in Figure 5.

Notes: *There is nothing are sandwiched between the Front Cabinet (pos 101) and Cover Front Display (pos 129) but it has to be removed in order to reach the catches for the Cover Front Ornamental (pos 130) .*



Figure 5

Detaching the Main board and Front Cabinet Assembly from the Bottom/Rear assembly

- 1) Release 2 catches 'B' to free the Main board from the Front Cabinet Assembly as shown in figure 6.
- 2) Loosen 2 screws 'D' at the bottom of the Front Cabinet on both sides of the set.
- 3) Release 2 catches 'C' on both sides of the Front Cabinet and pull the Front Cabinet assembly out of the Bottom plate.

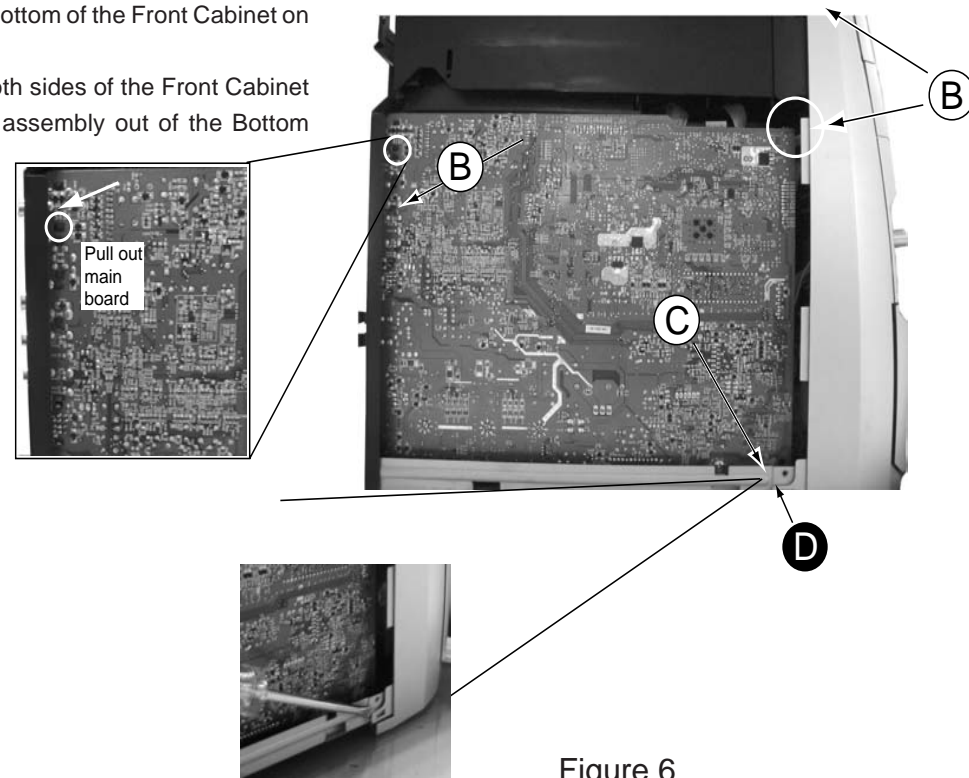


Figure 6

Dismantling of the Key Board , VFD Board, Tape Board and Cassette module

- 1) Loosen 5 screws 'E' to remove the Bracket CDC Right as shown in figure 7.
- 2) Loosen 5 screws 'F' to remove the KEY board figure 7.
- 3) Loosen 9 screws 'H' to remove the VFD Board figure 9.
- 4) Loosen 1 screws 'G' to remove the Tape Board figure 8.
- 5) Loosen 8 screws 'I' to remove the Cassette Module figure 10.

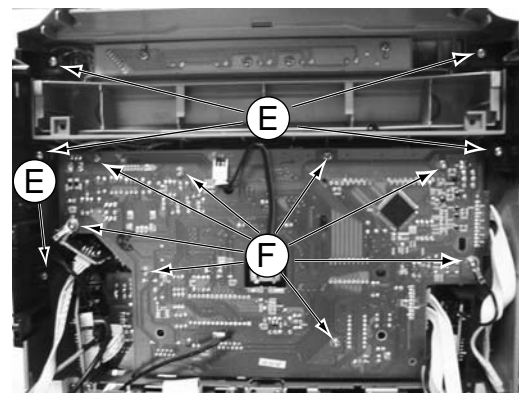


Figure 7

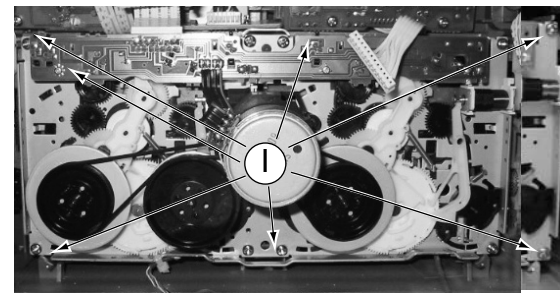


Figure 10

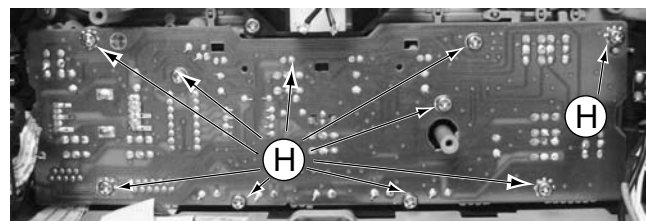


Figure 9

Dismantling of the Rear Panel

- 1) Loosen 8 screws 'J' to remove the Rear Panel figure 11.
- 3) Release 2 catches 'K' on both sides of the Rear Panel with the help of a minus screw driver and pull out the Rear Panel figure 11.

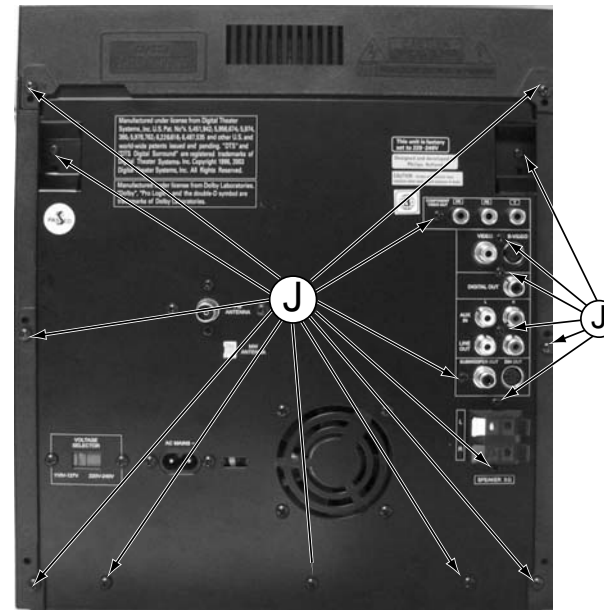


Figure 11

Dismantling of the Power Board

- 1) Loosen 4 screws 'L' to remove the Power Board figure 12.

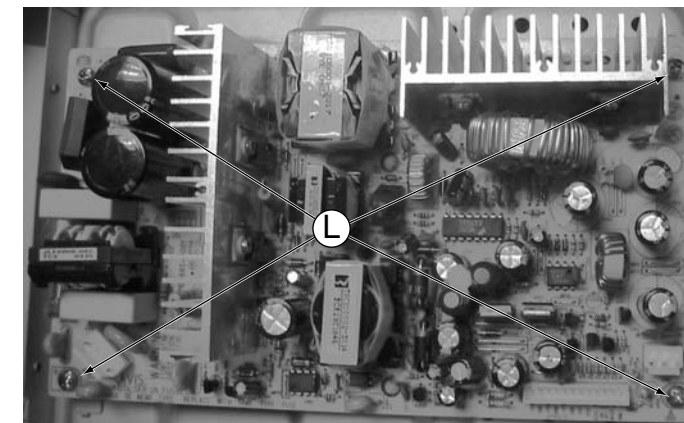
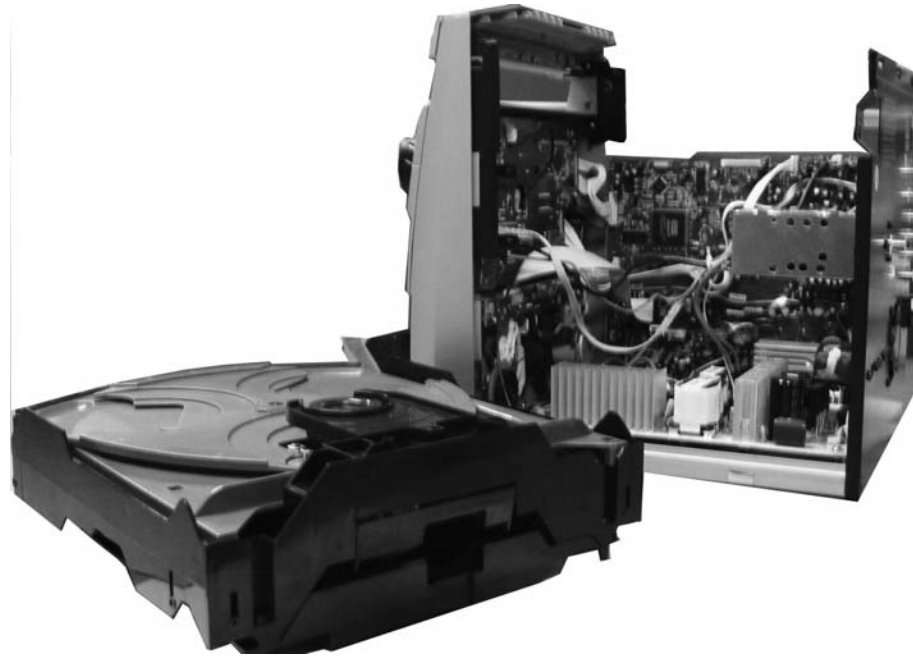


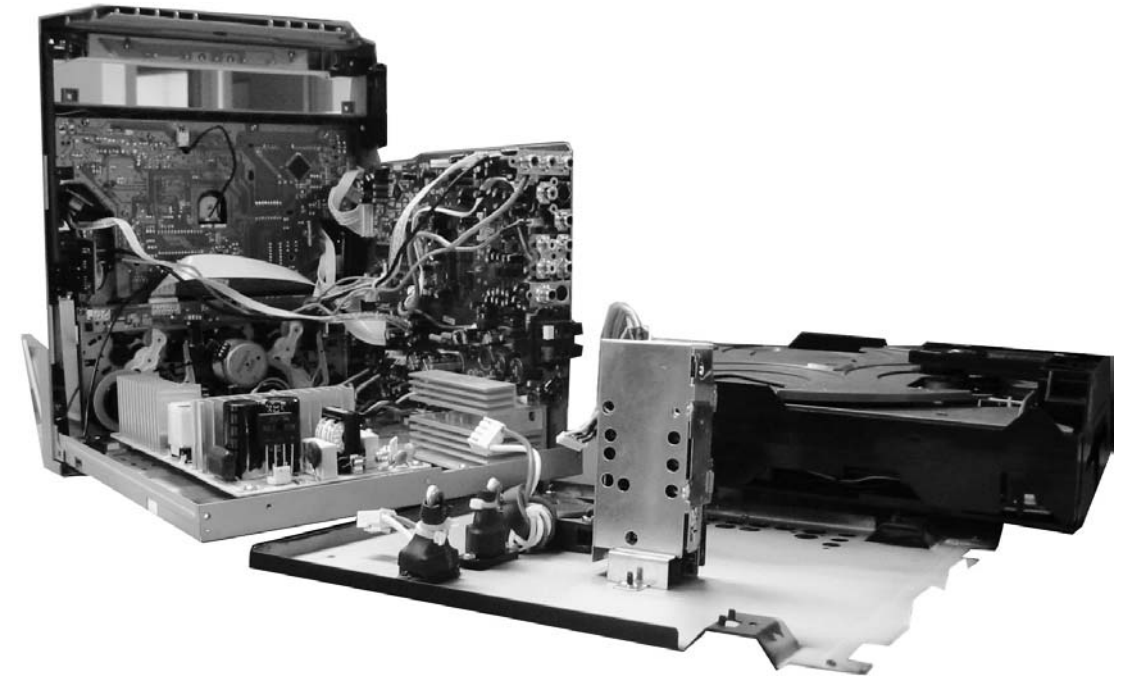
Figure 12

Service positions

Service position A

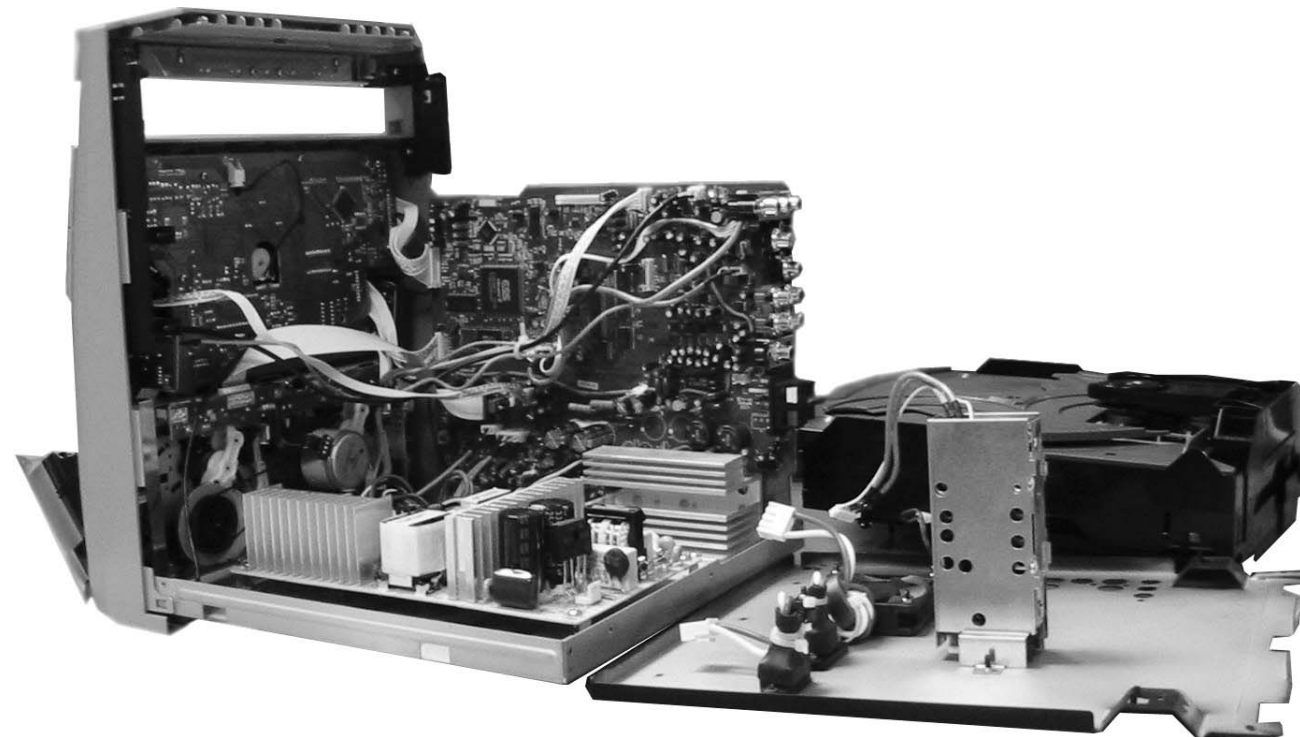


Service position B

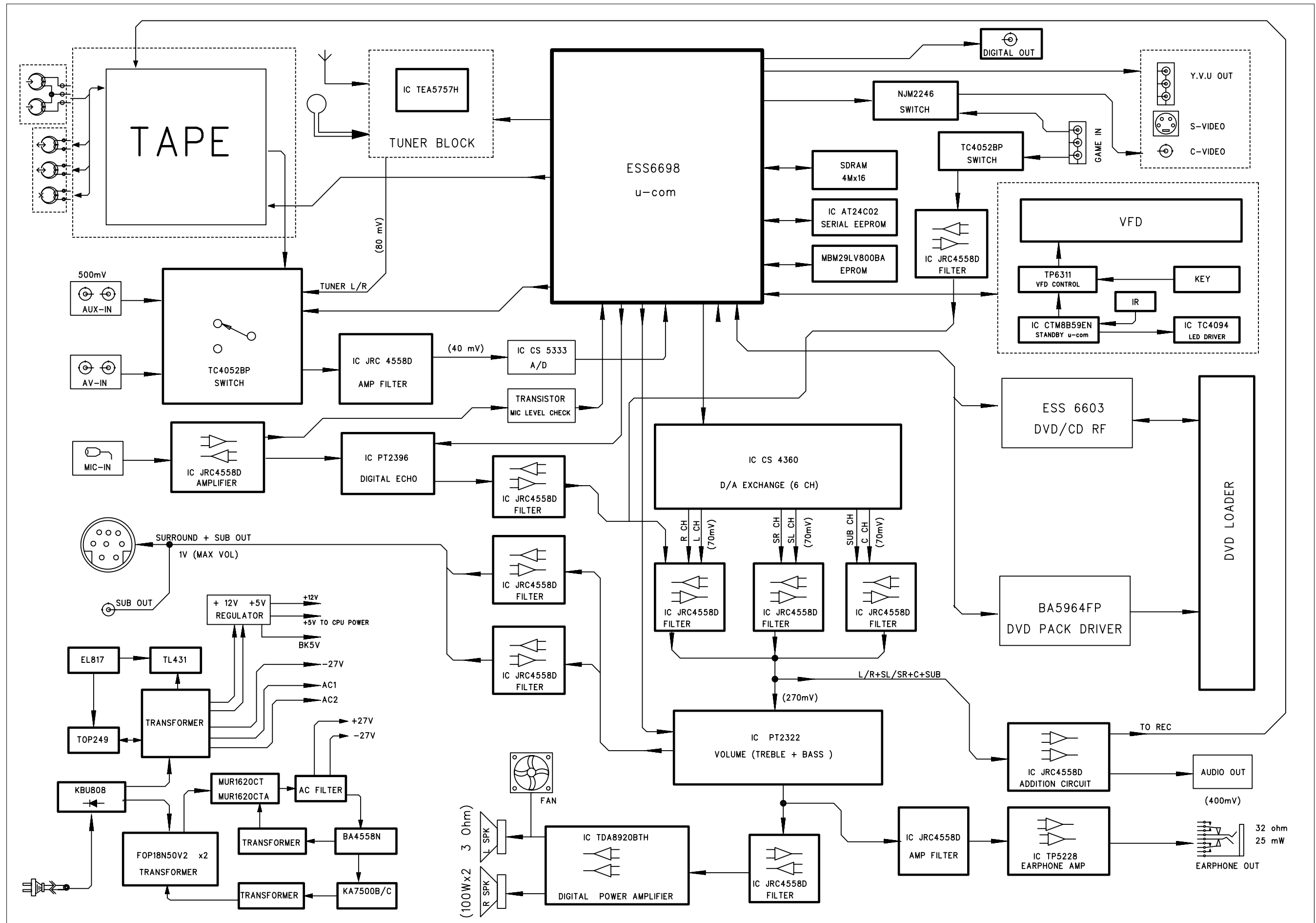


Note: After re-assembly, it is very important to ensure the wires are properly inserted into their respective sockets and routed not to touch or obstruct any moving parts.

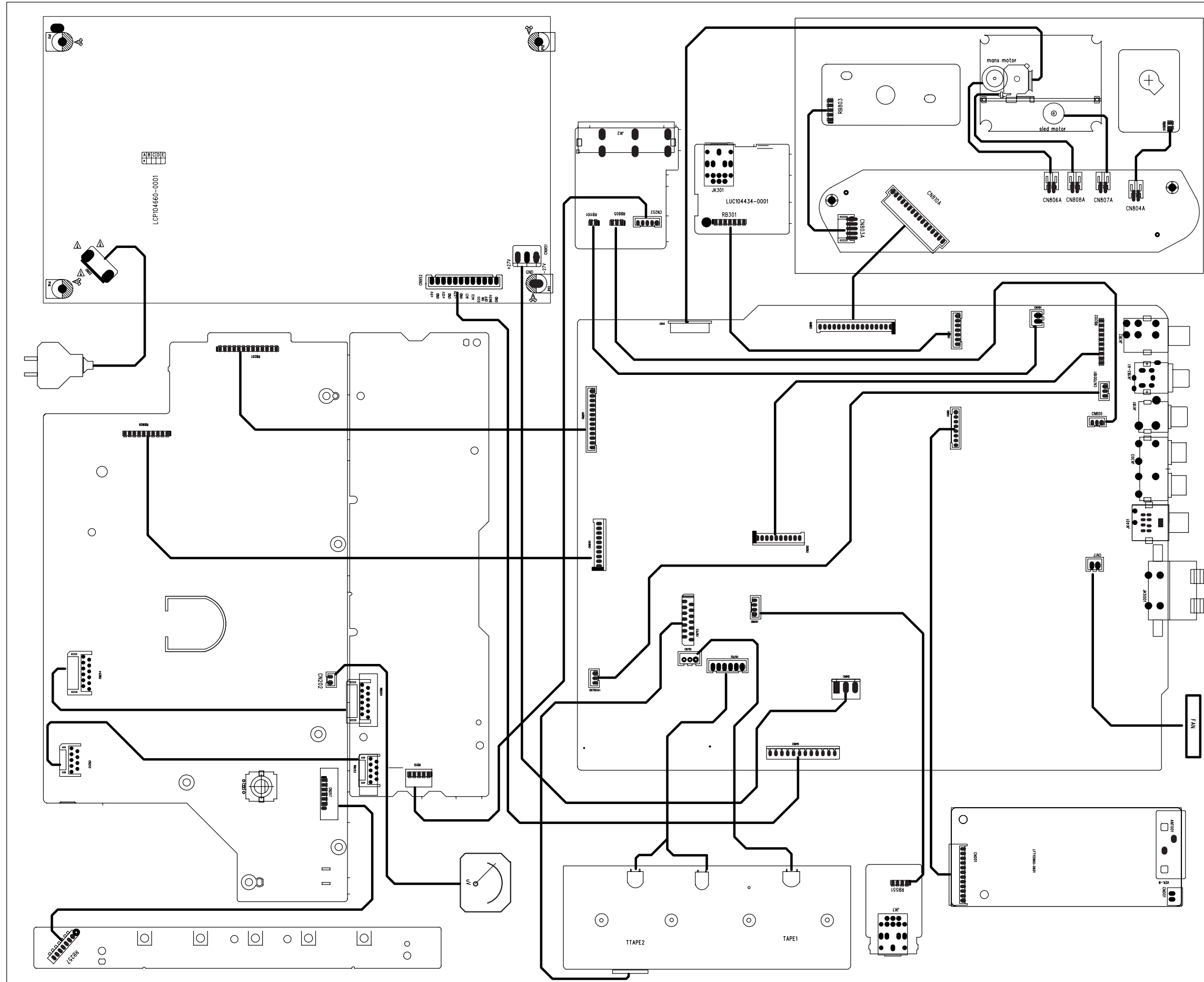
Service position C



SET BLOCK DIAGRAM



SET WIRING DIAGRAM

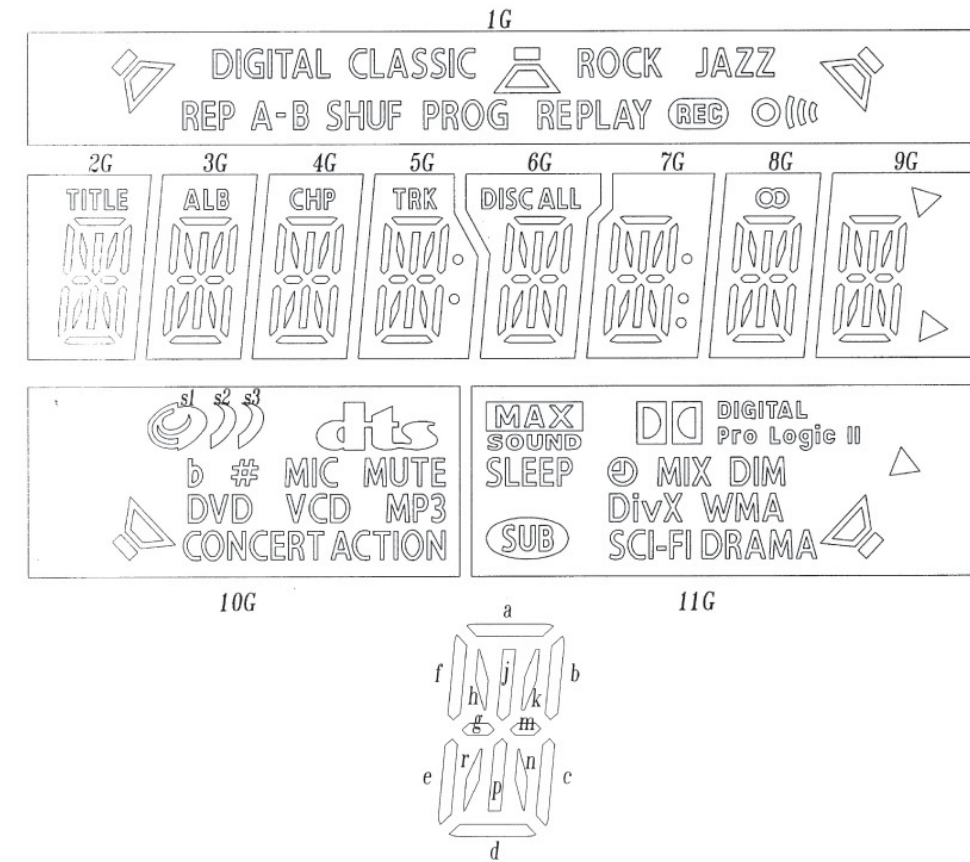


KEY / VIDEO / SENSOR / PHONE / VOL / VU BOARD

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 Electrical Parts List 5-7

FTD DISPLAY PIN ASSIGNMENT



	1G	2G	3G	4G	5G	6G	7G	8G	9G	10G	11G
P1		a	a	a	a	a	a	a	a	s1	
P2	DIGITAL	b	b	b	b	b	b	b	b	s2	DIGITAL
P3	CLASSIC	h	h	h	h	h	h	h	h	s3	Pro Logic II
P4		j	j	j	j	j	j	j	j		
P5	ROCK	k	k	k	k	k	k	k	k	#	
P6	JAZZ	f	f	f	f	f	f	f	f	#	
P7		g	g	g	g	g	g	g	g	MIC	SLEEP
P8	REP	m	m	m	m	m	m	m	m	MUTE	
P9	A	c	c	c	c	c	c	c	c	DVD	MIX
P10	-B	r	r	r	r	r	r	r	r	V	DIM
P11	SHUF	p	p	p	p	p	p	p	p	CD	DivX
P12	PROG	n	n	n	n	n	n	n	n	MP3	WMA
P13	RE	e	e	e	e	e	e	e	e		
P14	PLAY	d	d	d	d	d	d	d	d	CONCERT	SCI-FI
P15		TITLE	ALB	CHP	TRK	DISC	Col			ACTION	DRAMA
P16					Col	ALL	Dp				

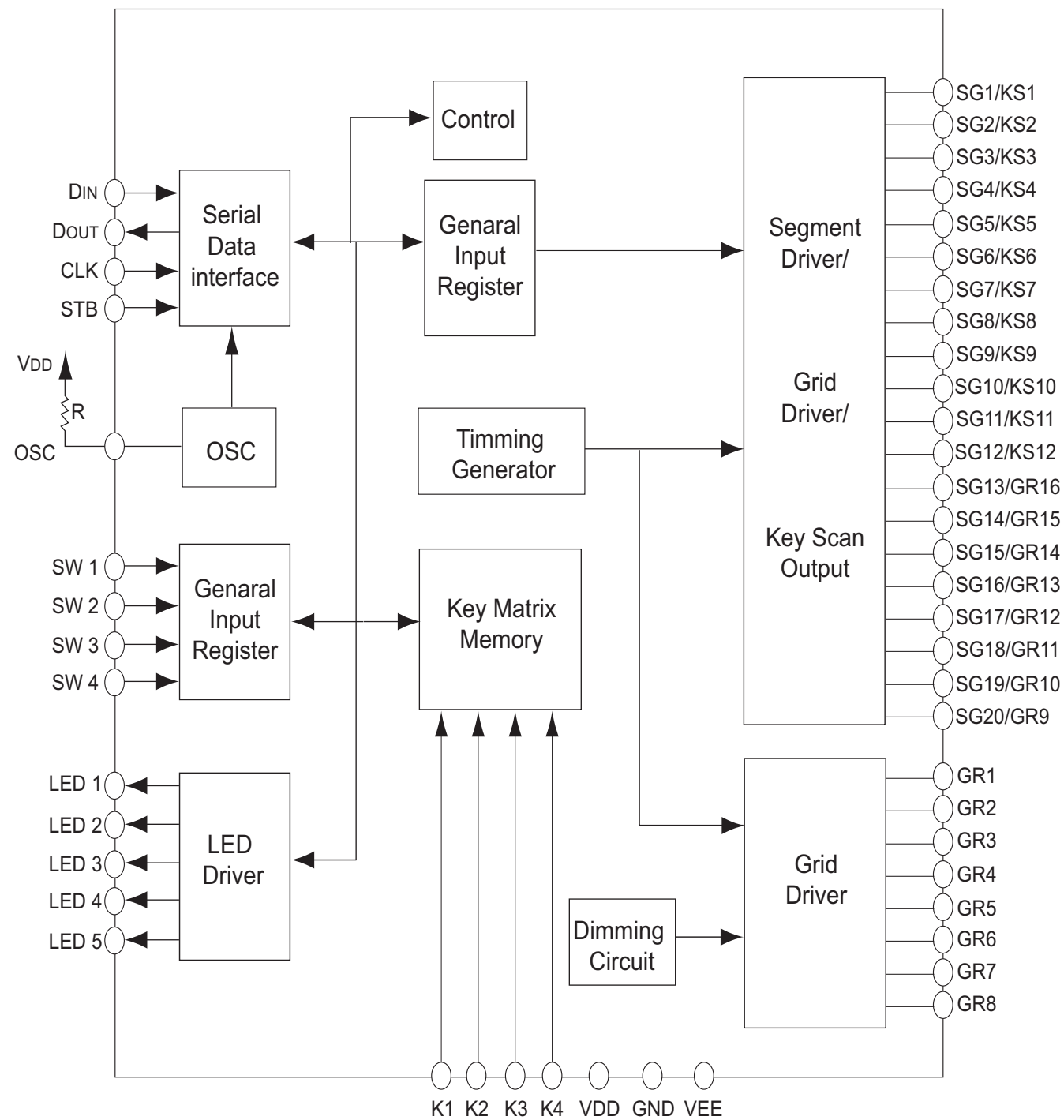
PIN CONNECTION

PIN NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45			
CONNECTION	F	N	F	N	1	2	3	4	5	6	7	8	9	10	11	N	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	N	F	N	F	
	1	P	1	P	G	G	G	G	G	G	G	G	G	G	G	X	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	P	2	P	2												

Note

- 1. Fn: Filament pin
- 2. nG : Grid pin
- 3. Pn : Anode pin
- 4. NP : No Pin
- 5. NC : No Connection pin

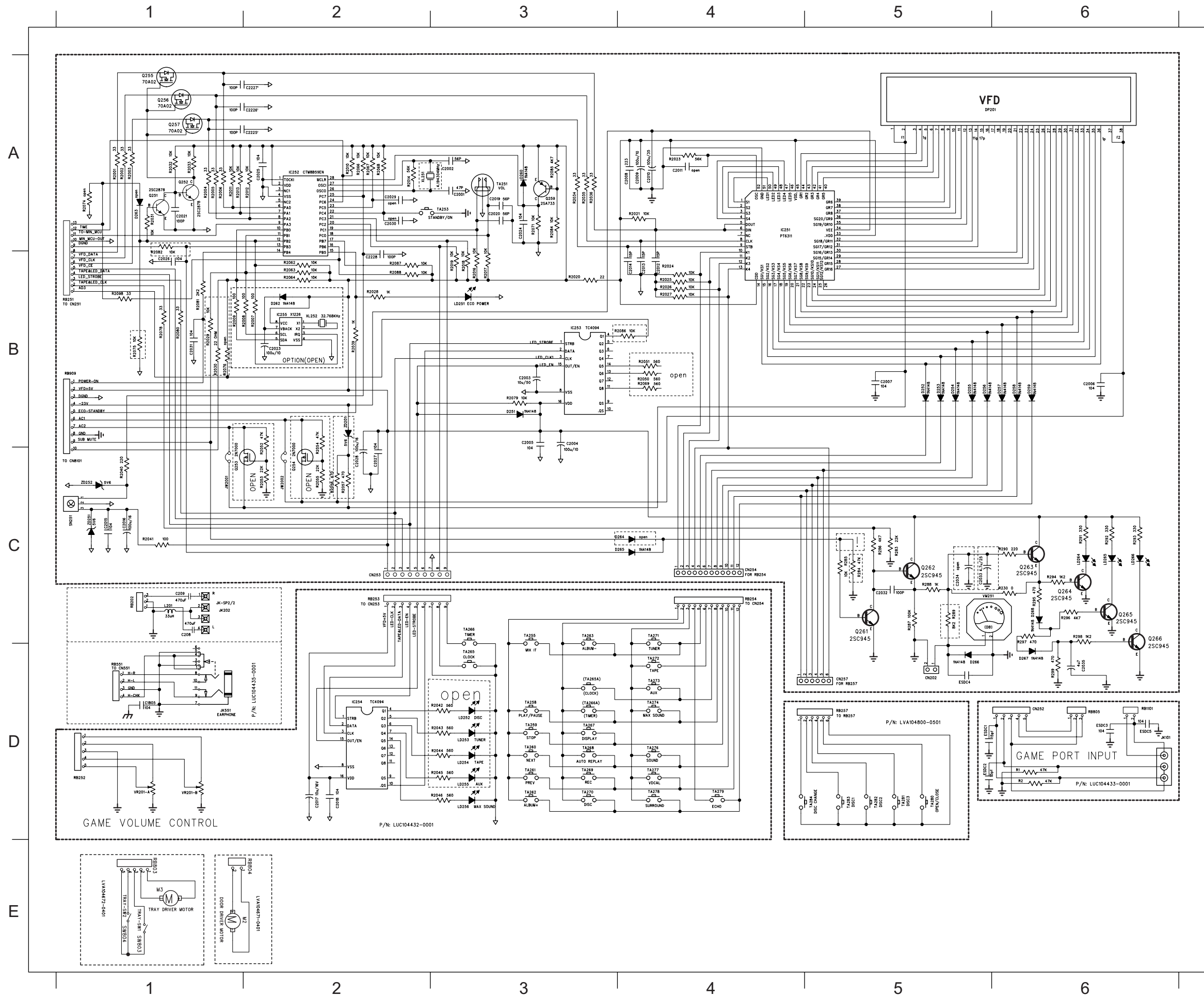
INTERNAL BLOCK DIAGRAM VFD CONTROLLER - IC TP6311QH



PIN DESCRIPTION VFD CONTROLLER - IC TP6311QH

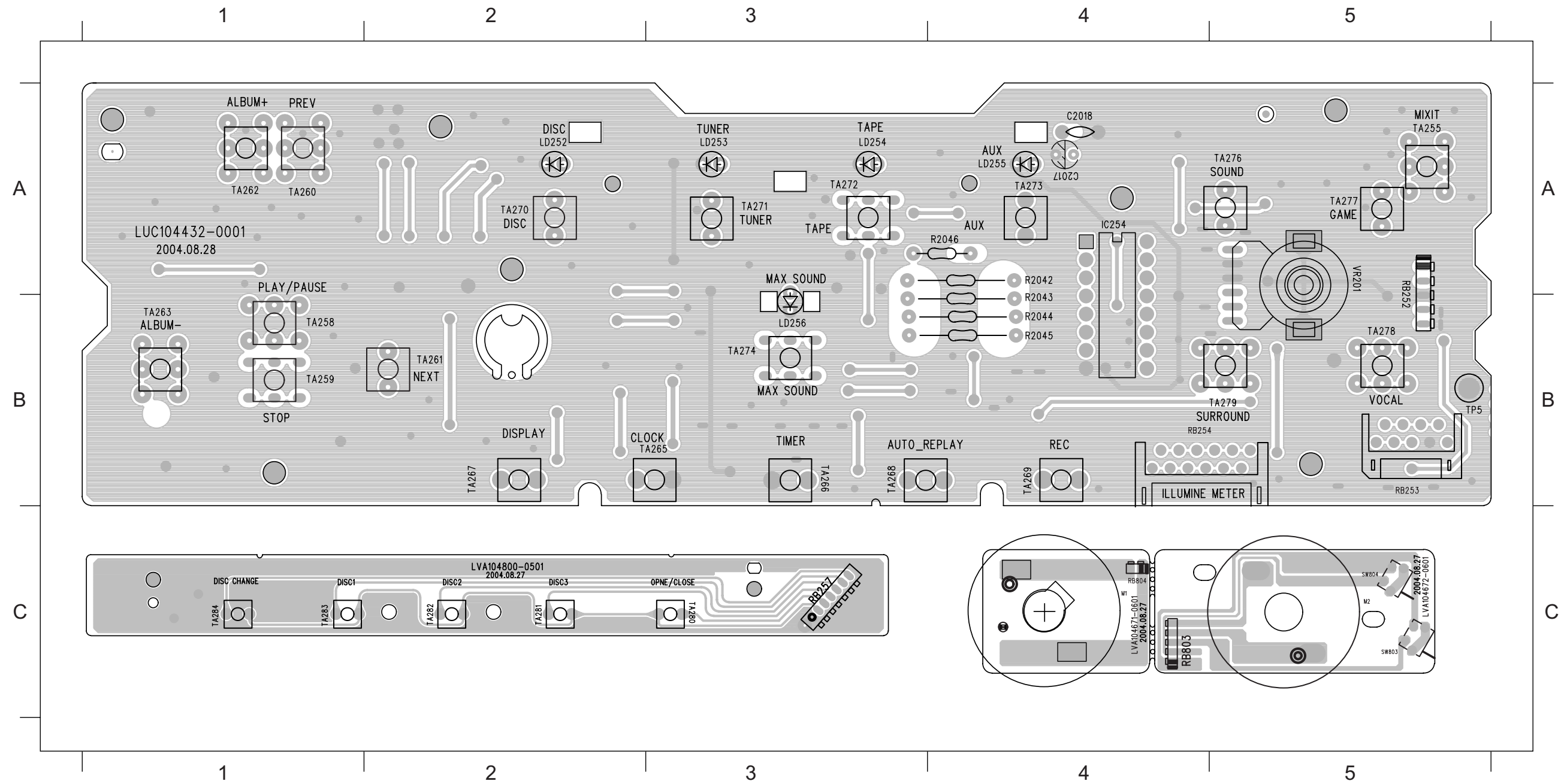
Pin Name	I/O	Description
SW 1 to SW 4	I	General Purpose Input Pins
DOUT	O	Data Output Pin (N-Channel, Open-Drain) This pin outputs serial data at the falling edge of the shift clock (starting from the lower bit).
DIN	I	Data Input Pin This pin inputs serial data at the rising edge of the shift clock (starting from the lower bit)
N C	-	No Connection
CLK	I	Clock Input Pin This pin reads serial data at the rising edge and outputs data at the falling edge .
STB	I	Serial Interface Strobe Pin The data input after the STB has fallen is processed as a command . When this pin is "HIGH", CLK is ignored.
K 1 to K 4	I	Key Data Input Pins The data inputted to these pins are latched at the end of the display cycle.
VDD	-	Logic Power Supply
SG1/K S1 to SG12/K S12	O	High-Voltage Segment Output Pins Also acts as the Key Source
SG20/GR9 to SG19/GR10 SG18/GR11 to SG13/GR16	O	High Voltage Segment/ Grid Output Pins
VEE	-	Pull-Down Level
GR1 to GR8	O	High-Voltage Grid Output Pins
LED1 to LED5	O	LED Output Pin
GND	-	Ground Pin
OSC	I	Oscillator Input Pin A resistor is connected to this pin to determine the oscillation frequency

CIRCUIT DIAGRAM - KEY BOARD



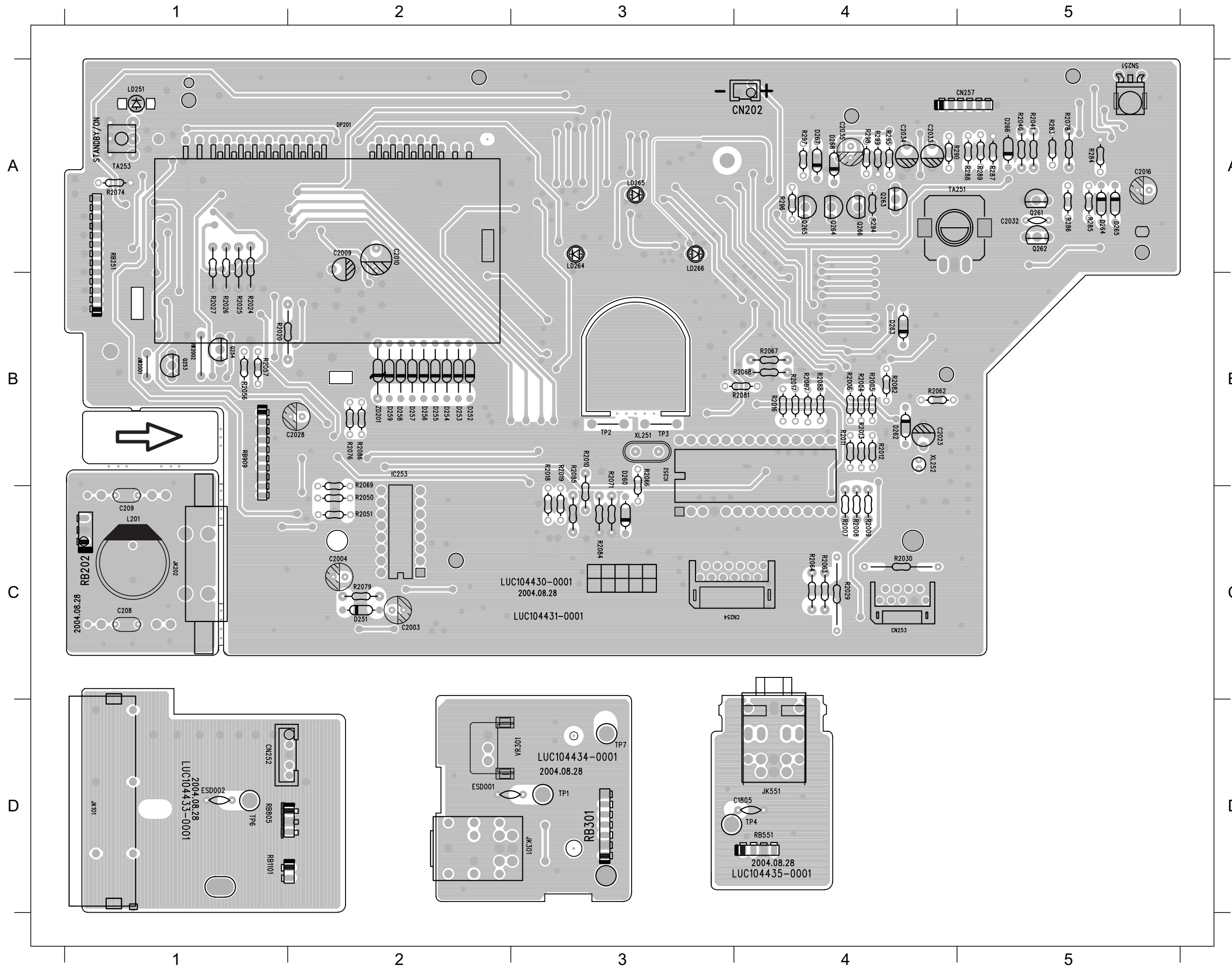
C1805	D1	R284	C5	SW803	E1
C2001	A3	R285	C5	SW804	E1
C2002	A3	R286	C5	TA251	A3
C2003	B3	R287	C5	TA253	A3
C2004	B3	R288	C5	TA255	C3
C2005	B3	R289	C5	TA258	D3
C2006	B6	R291	C6	TA259	D3
C2007	B5	R292	C6	TA260	D3
C2008	A4	R293	C6	TA261	D3
C2009	A4	R294	C6	TA262	D3
C2010	A4	R295	C6	TA263	C3
C2012	B4	R296	C6	TA265	D3
C2013	B4	R297	C6	TA265A	D3
C2014	B4	R298	C6	TA266	C3
C2015	C1	R299	D6	TA266A	D3
C2016	C1	R2001	A1	TA267	D3
C2017	D2	R2002	A1	TA268	D3
C2018	D2	R2003	A1	TA269	D3
C2019	A3	R2004	A1	TA270	D3
C2020	A3	R2005	A1	TA271	C4
C2021	A1	R2006	A1	TA272	D4
C2024	A3	R2010	A2	TA273	D4
C2025	A2	R2011	A1	TA274	D4
C2026	B1	R2012	A2	TA276	D4
C2027	C2	R2013	A1	TA277	D4
C2028	C2	R2014	A2	TA278	D4
C2031	B1	R2016	B3	TA279	D4
C2032	C5	R2017	B3	TA280	D5
C2033	C5	R2018	B3	TA281	D5
C2035	D6	R2019	B3	TA282	D5
C2225	A2	R2020	B3	TA283	D5
C2226	A2	R2021	A4	TA284	D5
C2227	A2	R2023	A4	VM251	C5
C2228	B2	R2024	B4	VR201-A	D1
CN202	D5	R2025	B4	VR201-B	D1
CN252	D6	R2026	B4	XL251	A2
CN253	C2	R2027	B4	ZD201	B2
CN254	C4	R2028	B2	ZD251	C1
CN257	D5	R2029	B1	ZD252	C1
D251	B3	R2030	B1		
D252	B5	R2031	A1		
D253	B5	R2032	A1		
D254	B5	R2033	A1		
D255	B5	R2034	A3		
D256	B5	R2035	A3		
D257	B6	R2036	A3		
D258	B6	R2039	B2		
D259	B6	R2040	C1		
D260	A3	R2041	C1		
D265	C4	R2046	D3		
D266	D5	R2056	C2		
D267	D6	R2057	C2		
D268	C6	R2062	B2		
DP201	A6	R2063	B2		
ESDC2	D5	R2064	B2		
ESDC5	D6	R2066	A2		
IC251	A4	R2067	A2		
IC252	A2	R2068	A2		
IC253	B3	R2071	A3		
IC254	D2	R2075	B1		
JK101	D6	R2078	B1		
JK551	D1	R2079	B3		
JW2001	C1	R2080	B1		
JW2002	C2	R2081	B1		
LD251	B3	R2082	B1		
LD256	D3	R2084	A3		
LD264	C6	R2085	A3		
LD265	C6	R2086	B4		
LD266	C6	R2087	B2		
M2	E2	R2088	B2		
M3	E1	R2098	B1		
Q251	A1	RB1101	D6		
Q252	A1	RB202	C1		
Q255	A1	RB251	B1		
Q256	A1	RB252	D1		
Q257	A1	RB253	C2		
Q259	A3	RB254	C4		
Q261	C5	RB257	D5		
Q262	C5	RB551	D1		
Q263	C6	RB803	E1		
Q264	C6	RB804	E2		
Q265	C6	RB805	D6		
Q266	C6	RB909	B1		
R230	C6	SN251	C1		

PCB LAYOUT - KEY BOARD (TOP)



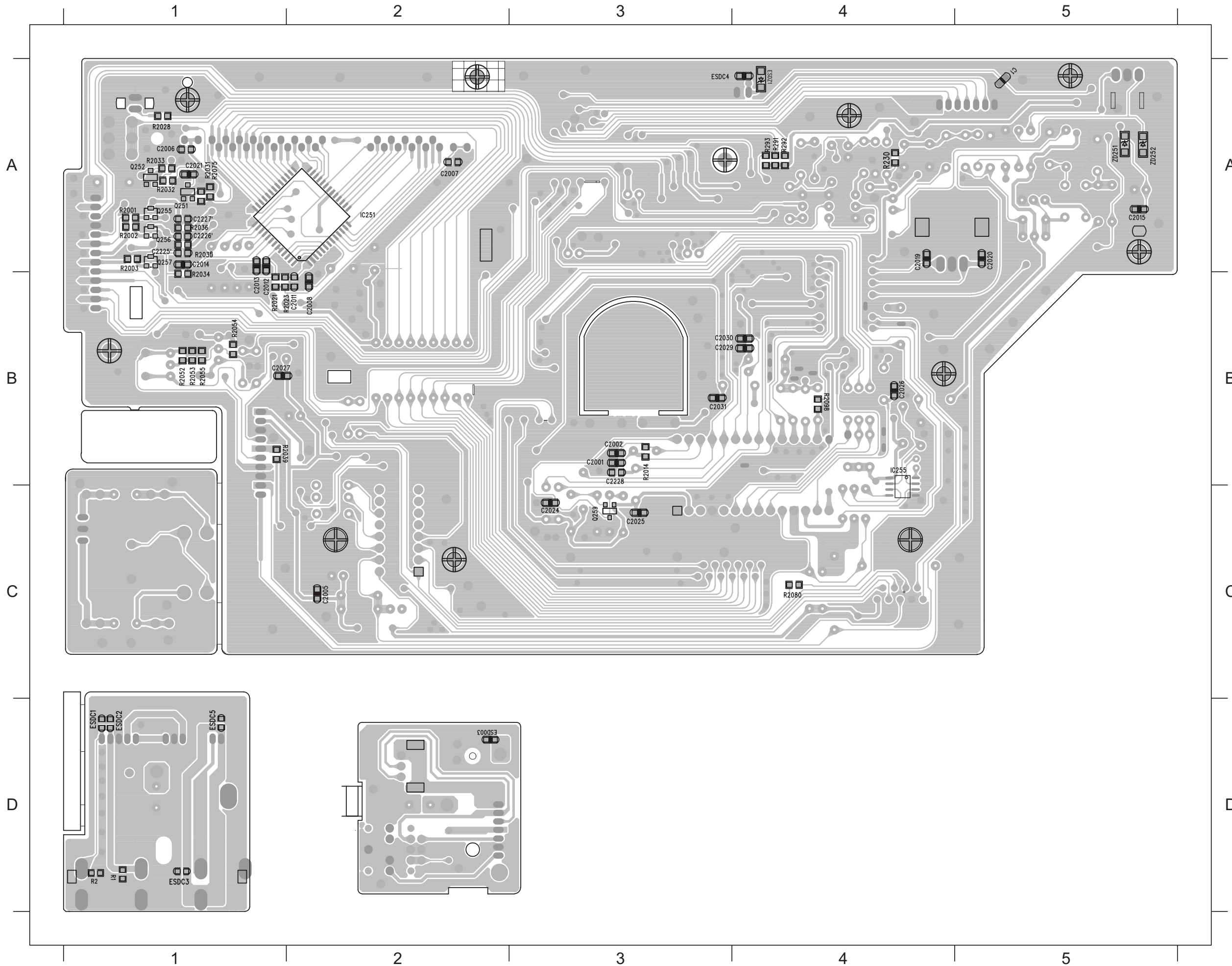
- C2017 A4
- C2018 A4
- IC254 A4
- LD256 B3
- M1 C4
- M2 C5
- R2042 A4
- R2043 B4
- R2044 B4
- R2045 B4
- R2046 A4
- RB252 A5
- RB253 B5
- RB254 B4
- RB257 C3
- RB803 C4
- RB804 C4
- SW803 C5
- SW804 C5
- TA255 A5
- TA258 B1
- TA259 B1
- TA260 A1
- TA261 B2
- TA262 A1
- TA263 B1
- TA265 B3
- TA266 B3
- TA267 B2
- TA268 B3
- TA269 B4
- TA270 A2
- TA271 A3
- TA272 A3
- TA273 A4
- TA274 B3
- TA276 A5
- TA277 A5
- TA278 B5
- TA279 B5
- TA280 C3
- TA281 C2
- TA282 C2
- TA283 C1
- TA284 C1
- TP5 B5
- VR201 A5

PCB LAYOUT - GAME & MIC & PHONE BOARD (TOP VIEW)



C1805	D4	R2025	B1
C2003	C2	R2026	B1
C2004	A2	R2027	B1
C2009	A2	R2029	C4
C2010	A2	R2030	C4
C2016	A5	R2040	A5
C2023	B4	R2041	A5
C2028	B2	R2056	B1
C2032	A5	R2057	B1
C2034	A4	R2062	B4
C2035	A4	R2063	C4
CN202	A4	R2064	C4
CN252	D1	R2066	B3
CN253	C4	R2067	B4
CN254	C3	R2068	B4
CN257	A5	R2071	B3
D251	C2	R2074	A1
D252	B2	R2076	B2
D253	B2	R2078	A5
D254	B2	R2079	C2
D255	B2	R2081	B4
D256	B2	R2082	B4
D257	B2	R2084	C3
D258	B2	R2085	B3
D259	B2	R2086	B2
D260	B3	R2087	B4
D265	A5	R2088	B4
D266	A5	RB202	C1
D267	A4	RB251	A1
D268	A4	RB301	D3
DP201	A2	RB551	D4
ESD001	D2	RB805	D1
ESD002	D1	RB909	B1
IC252	B3	RB1101	D1
IC253	B2	SN251	A5
JK101	D1	TA251	A4
JK301	D3	TA253	A1
JK551	D4	TP1	D3
L201	C1	TP4	D4
LD251	A1	TP6	D1
LD264	A3	TP7	D3
LD265	A3	VR301	D3
LD266	A3	XL251	B3
Q253	B1	XL252	B4
Q254	B1	ZD201	B2
Q261	A5		
Q262	A5		
Q263	A4		
Q264	A4		
Q265	A4		
Q266	A4		
R283	A5		
R284	A5		
R285	A5		
R286	A5		
R287	A5		
R288	A5		
R289	A5		
R290	A4		
R294	A4		
R295	A4		
R296	A4		
R297	A4		
R298	A4		
R299	A4		
R2004	B4		
R2005	B4		
R2006	B4		
R2007	C4		
R2008	C4		
R2009	C4		
R2010	B3		
R2011	B4		
R2012	B4		
R2013	B4		
R2016	B4		
R2017	B4		
R2018	B3		
R2019	B3		
R2020	B1		
R2024	B1		

PCB LAYOUT - GAME & MIC & PHONE BOARD (BOTTOM VIEW)



C2001	B3
C2002	B3
C2005	C2
C2006	A1
C2007	A2
C2008	B2
C2011	B2
C2012	B1
C2013	B1
C2014	A1
C2015	A5
C2019	A4
C2020	A5
C2021	A1
C2024	C3
C2025	C3
C2026	B4
C2027	B1
C2029	B3
C2030	B3
C2031	B3
C2225	A1
C2226	A1
C2227	A1
C2228	B3
ESDC2	D1
ESDC5	D1
IC251	A2
IC255	B4
Q251	A1
Q252	A1
Q255	A1
Q256	A1
Q257	A1
Q259	C3
R230	A4
R291	A4
R292	A4
R293	A4
R2001	A1
R2002	A1
R2003	A1
R2014	B3
R2021	B1
R2023	B1
R2028	A1
R2031	A1
R2032	A1
R2033	A1
R2034	B1
R2035	A1
R2036	A1
R2039	B1
R2052	B1
R2053	B1
R2054	B1
R2055	B1
R2075	A1
R2080	C4
R2098	B4
ZD251	A5
ZD252	A5

ELECTRIC PARTS - KEY BOARD

SW803	9940 000 00871	TACT SW DIA1.7MM
SW804	9940 000 00871	TACT SW DIA1.7MM
TA280	9940 000 00872	TACT SW 50MA 12V
TA281	9940 000 00872	TACT SW 50MA 12V
TA282	9940 000 00872	TACT SW 50MA 12V
TA283	9940 000 00872	TACT SW 50MA 12V
TA284	9940 000 00872	TACT SW 50MA 12V

ELECTRIC PARTS - VFD+CONTL+GAME+MIC+PHONE BOARD

DP201	9940 000 00879	VFD 46X26MM HNA-11LS11T	TA270	9940 000 00872	TACT SW 50MA 12V
IC251	9940 000 00907	IC 52 PIN TP6311QH	TA271	9940 000 00872	TACT SW 50MA 12V
IC252	9940 000 00923	IC 28 PIN CTM8059EN	TA272	9940 000 00872	TACT SW 50MA 12V
IC253	9940 000 00922	IC 16 PIN CD4094B	TA273	9940 000 00872	TACT SW 50MA 12V
IC254	9940 000 00922	IC 16 PIN CD4094B	TA274	9940 000 00872	TACT SW 50MA 12V
JK101	9940 000 00965	RCA JACK 3P WT-RD-YL AXIAL	TA276	9940 000 00872	TACT SW 50MA 12V
JK301	9940 000 00964	PHONE JACK D3.5 11P	TA277	9940 000 00872	TACT SW 50MA 12V
JK551	9940 000 00964	PHONE JACK D3.5 11P	TA278	9940 000 00872	TACT SW 50MA 12V
LD251	9940 000 00878	LED 3 DIA RED ROUND	TA279	9940 000 00872	TACT SW 50MA 12V
LD266	9940 000 00018	LED	VR201	9940 000 00885	CONTROL ROTRY 20KB
Q251	9940 000 00915	XISTR NPN 2SC1623	VR301	9940 000 00882	CONTROL ROTRY 50KB
Q252	9940 000 00915	XISTR NPN 2SC1623	XL251	9940 000 00966	CRYSTAL 4.194304MHZ
Q253	9940 000 00886	MOS FET 2N7000 60V 200MA			
Q254	9940 000 00886	MOS FET 2N7000 60V 200MA			
Q255	9940 000 00914	FET 2N7002LT1			
Q256	9940 000 00914	FET 2N7002LT1			
Q257	9940 000 00914	FET 2N7002LT1			
Q259	9940 000 00921	XISTR PNP 2SA812 HFE:200-400			
Q261	4822 130 41198	2SC945P			
Q262	4822 130 41198	2SC945P			
Q264	4822 130 41198	2SC945P			
Q265	4822 130 41198	2SC945P			
Q266	4822 130 41198	2SC945P			
SN251	9940 000 00926	IRT SENSOR GP1UX501QS			
TA251	9942 000 00881	ENCODER			
TA253	9940 000 00872	TACT SW 50MA 12V			
TA255	9940 000 00872	TACT SW 50MA 12V			
TA258	9940 000 00872	TACT SW 50MA 12V			
TA259	9940 000 00872	TACT SW 50MA 12V			
TA260	9940 000 00872	TACT SW 50MA 12V			
TA261	9940 000 00872	TACT SW 50MA 12V			
TA262	9940 000 00872	TACT SW 50MA 12V			
TA263	9940 000 00872	TACT SW 50MA 12V			
TA265	9940 000 00872	TACT SW 50MA 12V			
TA266	9940 000 00872	TACT SW 50MA 12V			
TA267	9940 000 00872	TACT SW 50MA 12V			
TA268	9940 000 00872	TACT SW 50MA 12V			
TA269	9940 000 00872	TACT SW 50MA 12V			

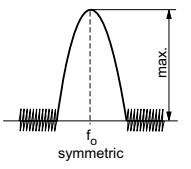
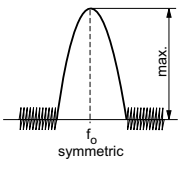
Note: Only these parts mentioned in the list are normal service parts.

TUNER ADJUSTMENT TABLE

TUNER BOARD (9940 000 00873)

TABLE OF CONTENTS

Tuner Adjustment Table 6-1
 Circuit Diagram 6-2
 PCB Layout Top View 6-3
 PCB Layout Bottom View 6-4

Waverange	Input frequency	Input	Tuned to	Adjust	Output	Scope/Voltmeter
<i>VARICAP ALIGNMENT</i>						
FM 87.5 - 108MHz (50kHz grid)			108MHz	check		7.5V ± 1V
			87.5MHz	check		1.4V ± 0.2V
MW 531-1602kHz (10kHz grid) (21L / 21L / 37S)			1602KHz	check		7.2V ± 1V
			531KHz	T005		1.1V ± 0.2V
<i>FM - RF</i>						
FM	108MHz		106MHz	VC001	MAX	MAX
	87.5MHz	mod=1kHz Δf=±22.5kHz	90.1MHz	L001		
<i>AM IF</i>						
AM	450kHz			T001 T002	MAX	
AM AFC MW	Connect pin 6 of IC001 (AM Osc.) with short wire to ground (pin 4)	Δf = ±15kHz V _{RF} = 3mV		T003		
		ΔV=mV				
<i>AM RF ³⁾</i>						
MW	1404kHz		1404kHz	VC001	MAX	
	612kHz		612kHz	T006		

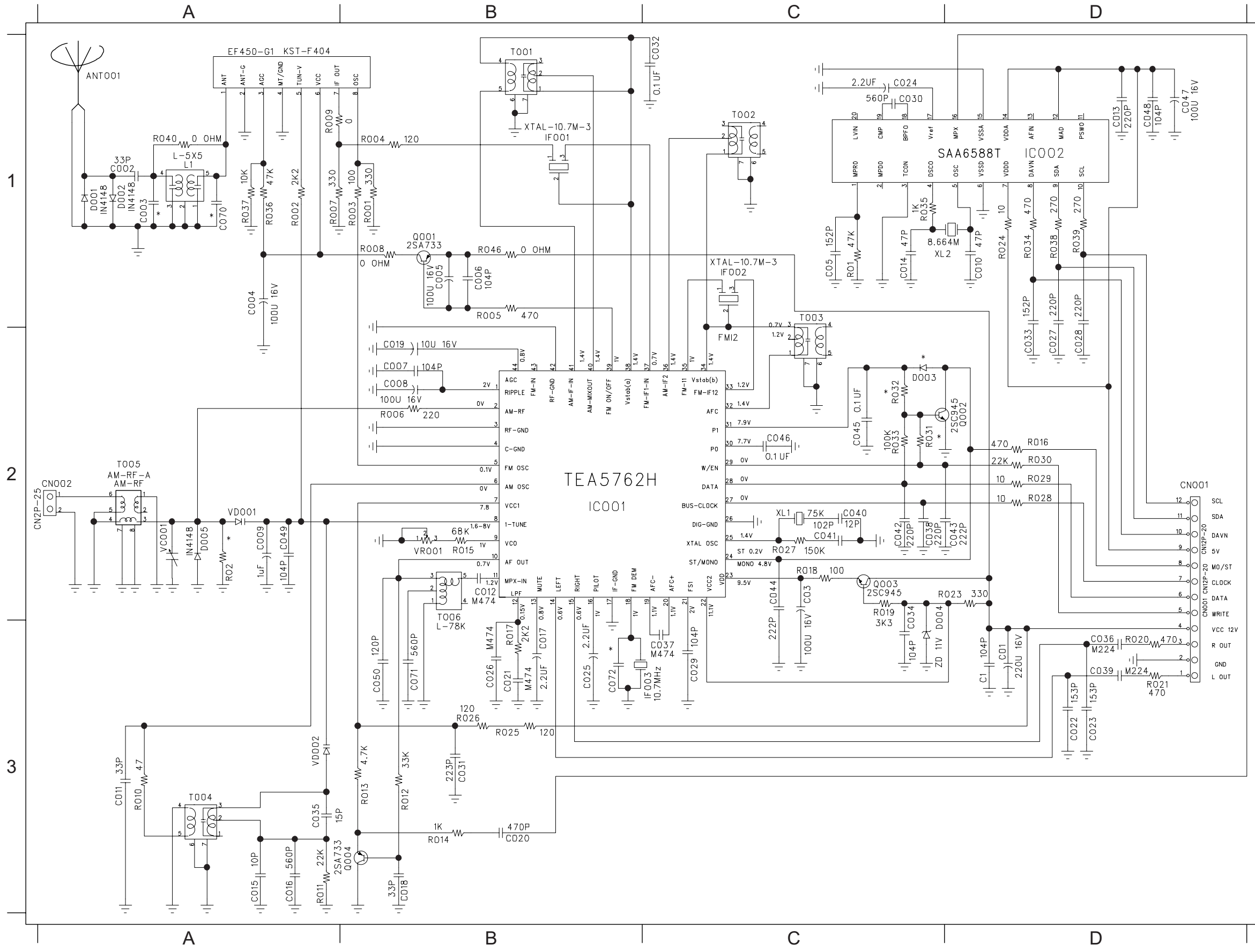
Use Service Testprogram. By selecting the TUNER TEST test frequencies will be stored as preset frequencies automatically.

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!

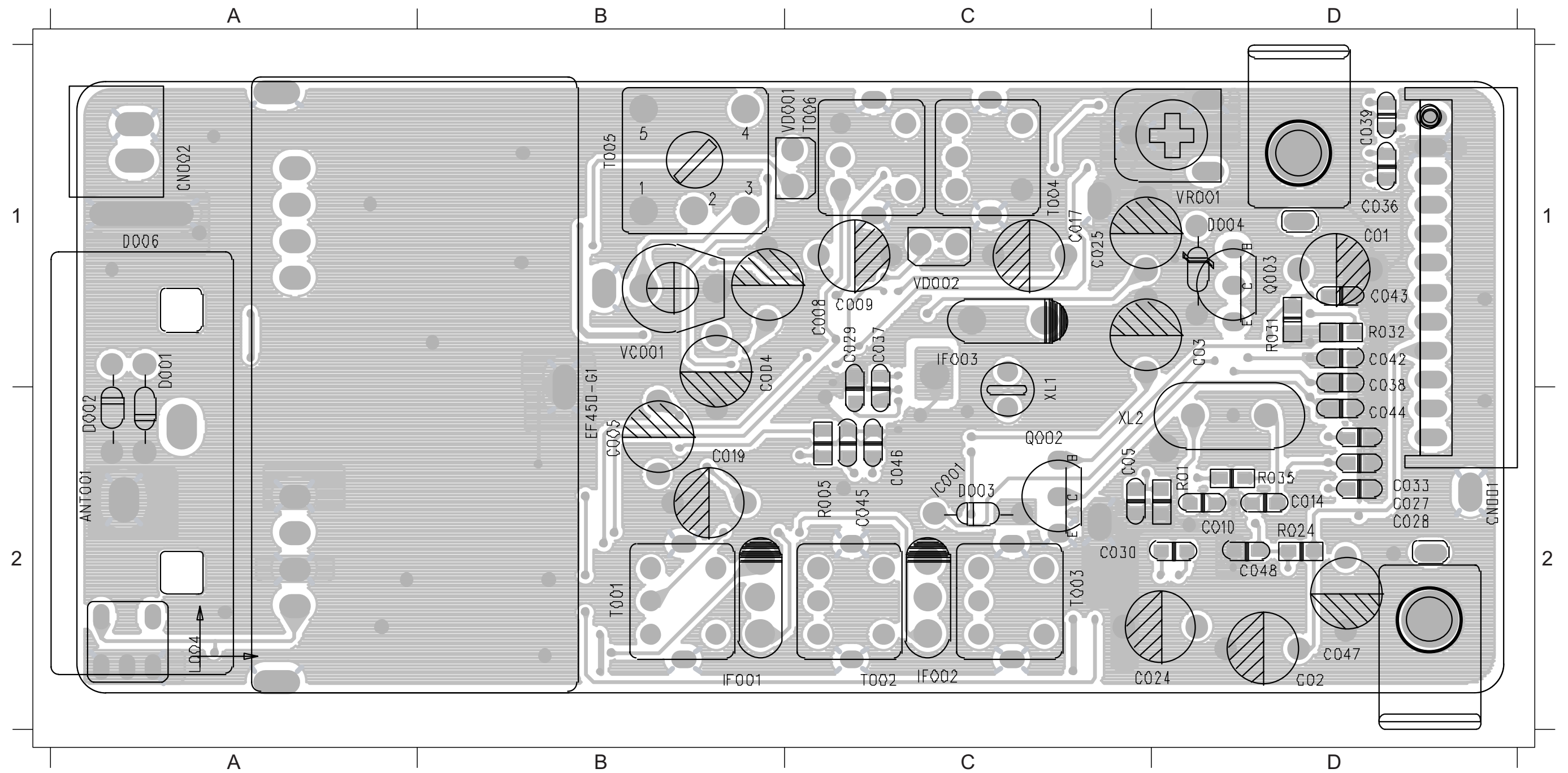
TUNER ADJUSTMENT TABLE



ANT001	A1	R01	C1
C1	D3	R001	B1
C01	D3	R002	A1
C03	C2	R003	B1
C05	C1	R004	B1
C002	A1	R005	B1
C004	A1	R006	B2
C005	B1	R007	A1
C006	B1	R008	B1
C007	B2	R009	A1
C008	B2	R010	A3
C009	A2	R011	A3
C010	D1	R012	B3
C011	A3	R013	B3
C012	B2	R014	B3
C013	D1	R015	B2
C014	C1	R016	D2
C015	A3	R017	B3
C016	A3	R018	C2
C017	B3	R019	C2
C018	B3	R020	D3
C019	B2	R021	D3
C020	B3	R023	D2
C021	B3	R024	D1
C022	D3	R025	B3
C023	D3	R026	B3
C024	C1	R027	C2
C025	B3	R028	D2
C026	B3	R029	D2
C027	D2	R030	D2
C028	D2	R033	C2
C029	C3	R034	D1
C030	C1	R035	C1
C031	B3	R036	A1
C032	B3	R037	A1
C033	D2	R038	D1
C034	C2	R039	D1
C035	A3	R040	A1
C036	D3	R046	B1
C037	C3	T001	B1
C038	C2	T002	C1
C039	D3	T003	C1
C040	C2	T004	A3
C041	C2	T005	A2
C042	C2	T006	B2
C043	D2	VC001	A2
C044	C2	VD001	A2
C045	C2	VD002	A3
C046	C2	VR01	B2
C047	D1	XL1	C2
C048	D1	XL2	C1
C049	A2		
C050	B3		
C071	B3		
CN001	D2		
CN002	A2		
D001	A1		
D002	A1		
D004	C2		
D005	A2		
EF450-G1	A1		
IC001	B2		
IC002	D1		
IF001	B1		
IF002	C1		
IF003	C3		
Q001	B1		
Q002	D2		
Q003	C2		
Q004	B3		

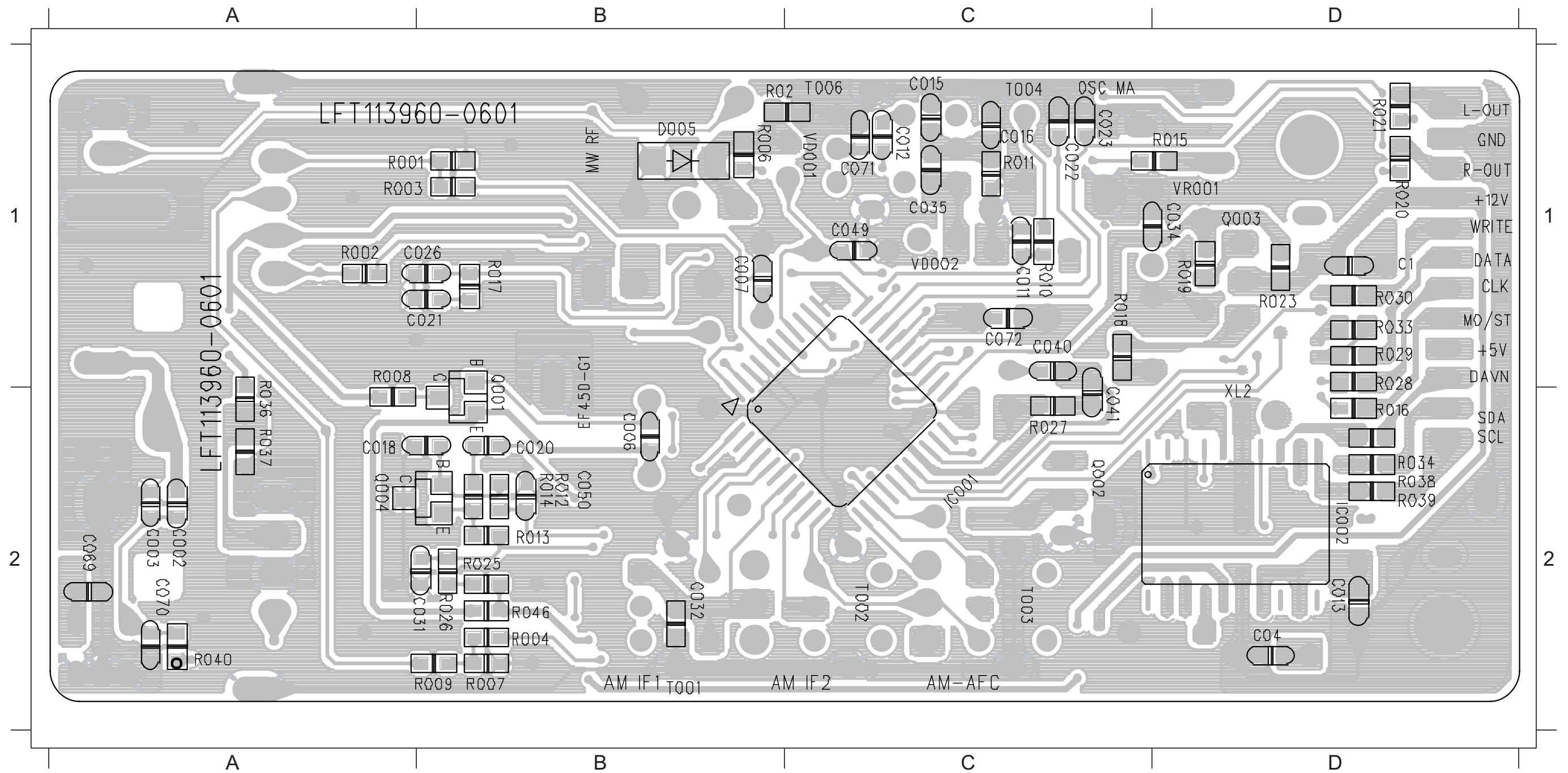
CIRCUIT DIAGRAM - TUNER BOARD (TOP VIEW)

ANT001	A2	C010	D2	C029	C1	C043	D1	D001	A1	Q003	D1	T004	C1	XL2	C2
C01	D1	C014	D2	C030	C2	C044	D2	D002	A2	R01	D2	T005	B1		
C03	D1	C017	C1	C033	D2	C045	C2	D004	D1	R005	C2	T006	C1		
C05	C2	C019	B2	C036	D1	C046	C2	IC001	C2	R024	D2	VC001	B1		
C004	B1	C024	D2	C037	C1	C047	D2	IF001	B2	R035	D2	VD001	C1		
C005	B2	C025	C1	C038	D1	C048	D2	IF002	C2	T001	B2	VD002	C1		
C008	C1	C027	D2	C039	D1	CN001	D2	IF003	C1	T002	C2	VR001	D1		
C009	C1	C028	D2	C042	D1	CN002	A1	Q002	C2	T003	C2	XL1	C2		



PCB LAYOUT - TUNER BOARD (BOTTOM VIEW)

C1	D1	C016	C1	C032	B2	D005	B1	R002	A1	R011	C1	R019	D1	R029	D1	R040	A2	VR001	D1
C002	A2	C018	A2	C034	D1	IC001	C2	R003	A1	R012	B2	R020	D1	R030	D1	R046	B2	XL2	D2
C006	B2	C020	B2	C035	C1	IC002	D2	R004	B2	R013	B2	R021	D1	R033	D1	T002	C2		
C007	B1	C021	B1	C040	C1	Q001	B2	R006	B1	R014	B2	R023	D1	R034	D2	T003	C2		
C011	C1	C022	C1	C041	C2	Q002	C2	R007	B2	R015	D1	R025	B2	R036	A2	T004	C1		
C012	C1	C023	C1	C049	C1	Q003	D1	R008	A1	R016	D2	R026	B2	R037	A2	T006	C1		
C013	D2	C026	B1	C050	B2	Q004	A2	R009	B2	R017	B1	R027	C2	R038	D2	VD001	C1		
C015	C1	C031	B2	C071	C1	R001	A1	R010	C1	R018	C1	R028	D1	R039	D2	VD002	C1		

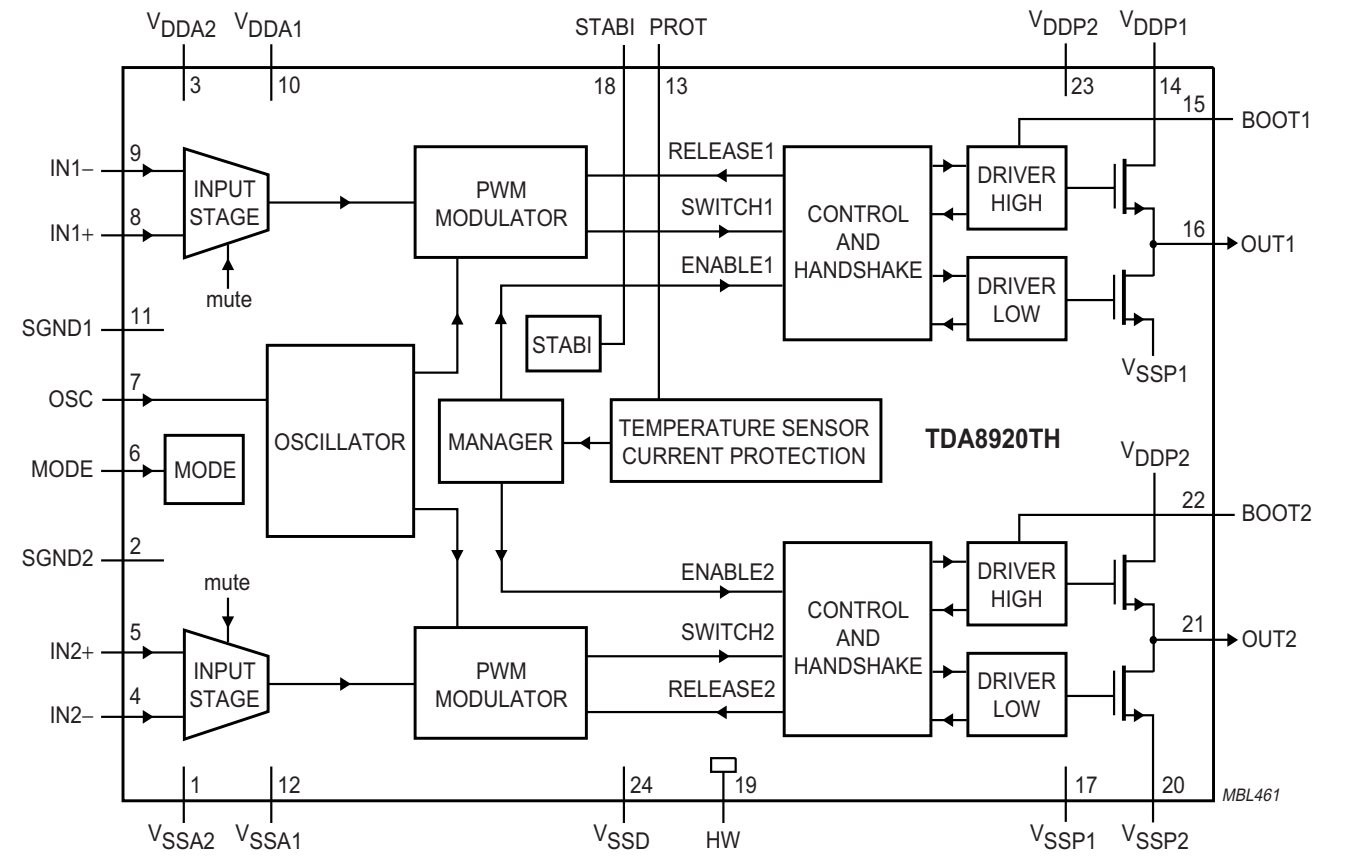


TDA8920 INTERNAL IC DIAGRAM

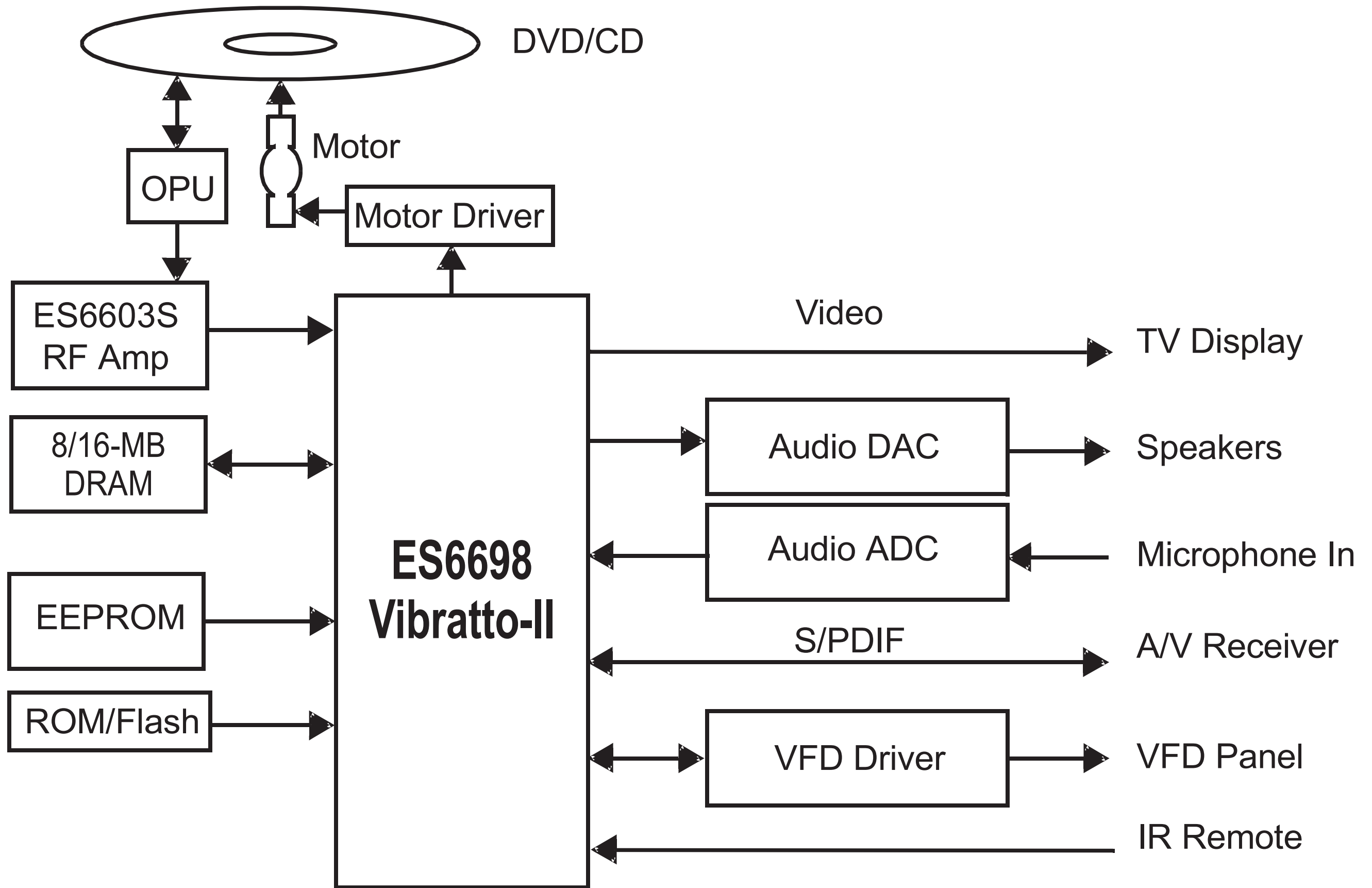
MAIN BOARD

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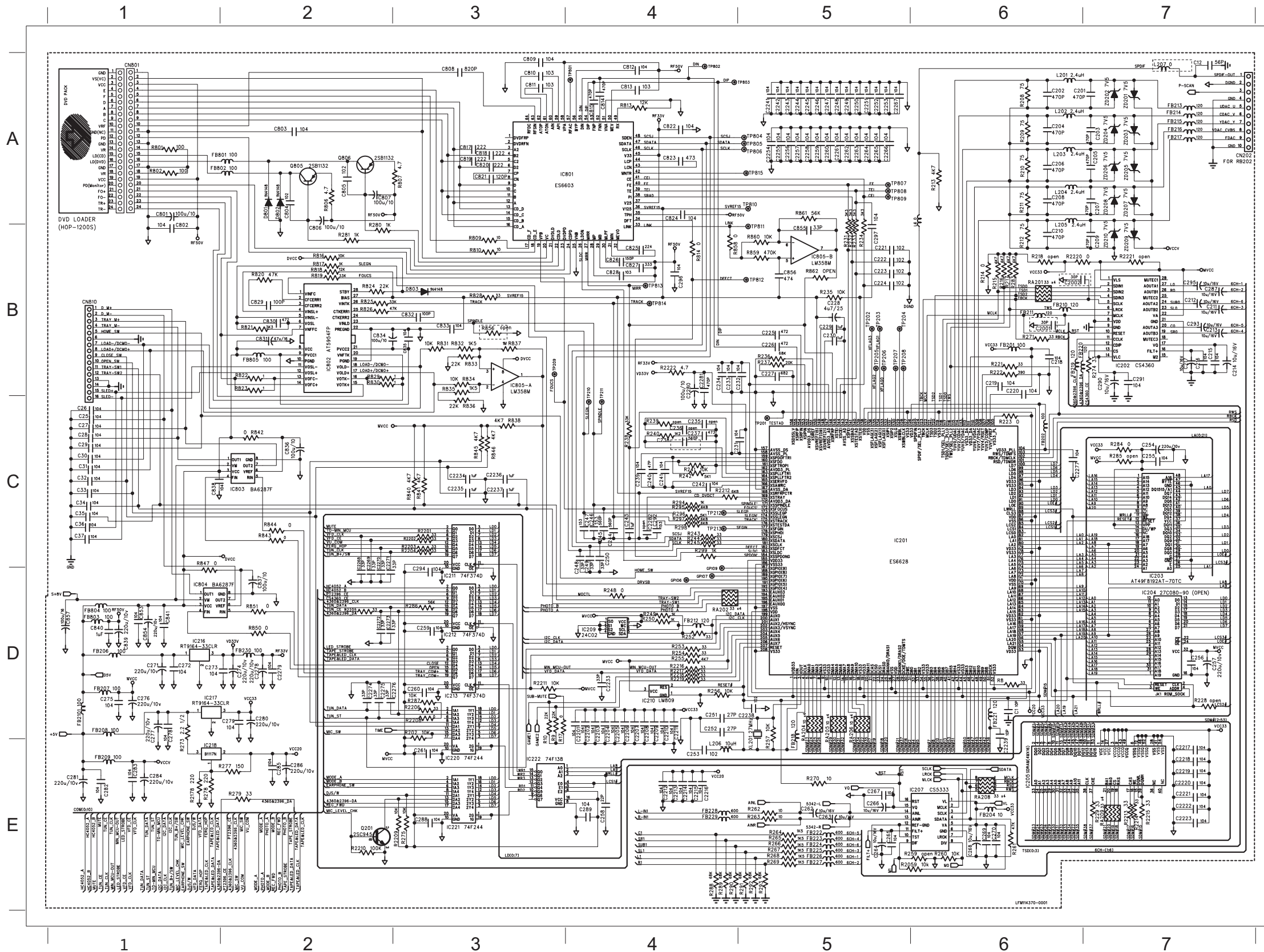
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BLOCK DIAGRAM - MAIN BOARD

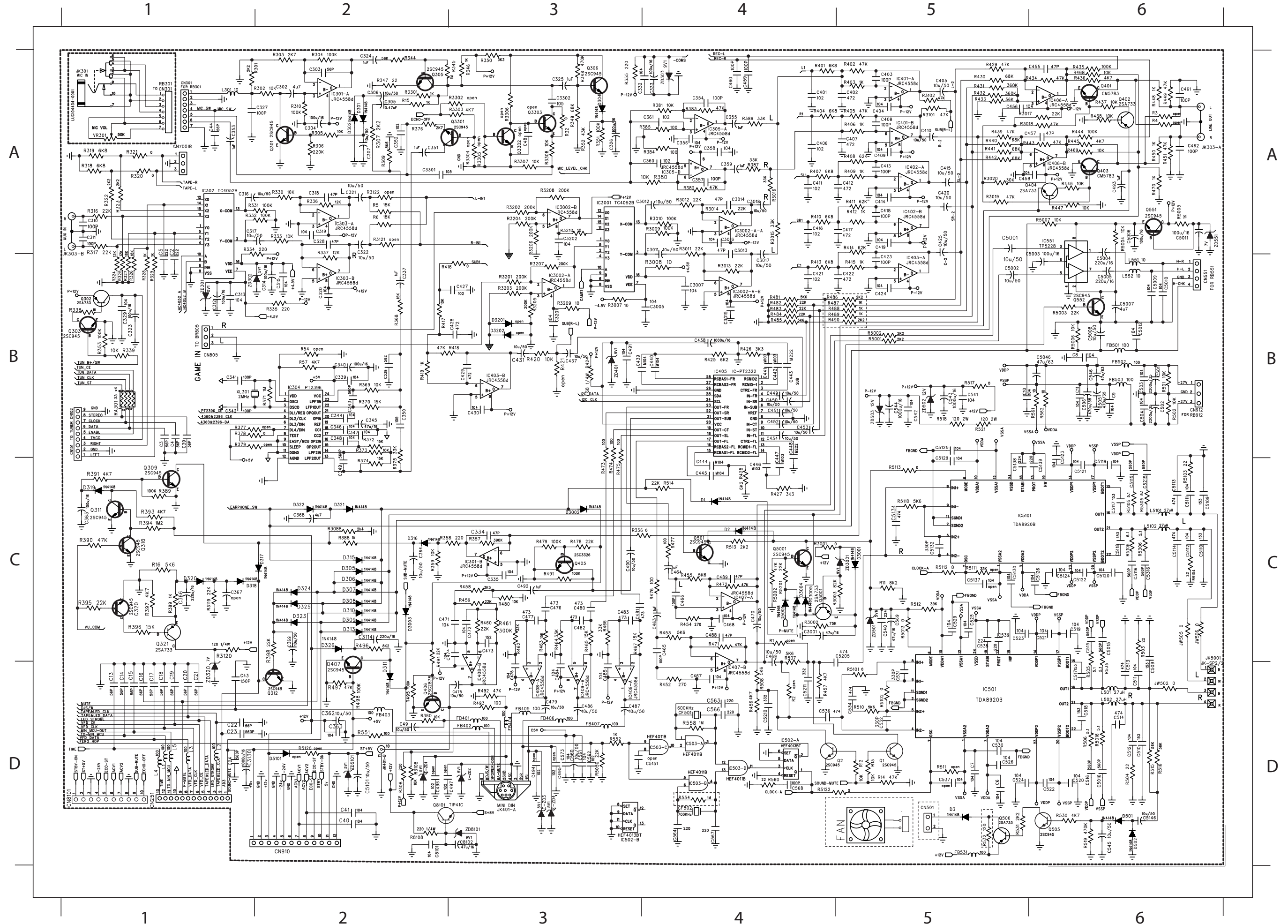


CIRCUIT DIAGRAM - MAIN BOARD SERVO PART



C1	D6	C294	D3	C2273	D2	R235	B5	R2205	D2
C12	A7	C295	B7	C2266	A5	R236	B5	R2206	D3
C26	C1	C296	B4	C2274	D2	R237	B5	R2208	D3
C27	C1	C297	B4	C2275	D2	R238	B4	R2209	E3
C28	C1	C801	A1	C2276	D2	R240	C4	R2210	E2
C29	C1	C802	A1	C2277	C6	R241	C4	R2211	D3
C30	C1	C803	A2	C2278	D2	R242	C4	R2212	C4
C31	C1	C804	A2	C2279	D2	R243	C4	R2213	E7
C32	C1	C805	A2	C2280	B4	R244	C4	R2214	E7
C33	C1	C806	B2	C2281	B4	R245	C4	R2215	E7
C34	C1	C807	A2	N202	A7	R248	D4	R2218	D4
C35	C1	C808	A3	CN801	A1	R249	D4	R2219	D4
C36	C1	C809	A3	CN810	B1	R250	D4	R2220	D4
C37	C1	C810	A3	D801	A2	R252	D4	R2221	D4
C201	A6	C811	A3	D802	A2	R253	D4	R2222	B4
C202	A6	C812	A4	D803	B3	R254	D4	RA201	B6
C203	A7	C813	A4	FB201	B6	R255	D4	RA202	D4
C204	A6	C814	A4	FB202	C6	R256	D4	RA203	D4
C205	A7	C815	A4	FB204	E6	R257	D5	RA204	D5
C206	A6	C817	A3	FB206	D1	R260	E6	RA205	D5
C207	A7	C818	A3	FB207	D1	R261	E6	RA206	D5
C208	A6	C819	A3	FB208	D1	R262	E5	RA208	E6
C209	B7	C820	A3	FB209	E1	R263	E5	RA209	E7
C210	B6	C821	A3	FB210	B6	R264	E5	XL201	D5
C211	B7	C822	A4	FB211	B6	R265	E5	ZD201	A7
C212	B7	C823	A4	FB212	D4	R266	E5	ZD202	A7
C213	B7	C824	A4	FB213	A7	R267	E5	ZD203	A7
C214	B7	C825	B4	FB214	A7	R268	E5	ZD204	A7
C215	B7	C826	B4	FB215	A7	R269	E5	ZD205	A7
C216	B7	C827	B4	FB216	A7	R270	E5	ZD206	A7
C217	B7	C828	B4	FB217	A7	R271	B6	ZD207	A7
C218	B6	C829	B2	FB218	D5	R273	E1	ZD208	A7
C219	B6	C830	B2	FB219	B6	R274	B7	ZD209	B7
C220	B6	C831	B2	FB220	B6	R275	E3	ZD210	B7
C221	B5	C832	B3	FB221	D6	R277	E2		
C222	B5	C833	B3	FB222	E5	R279	E2		
C223	B5	C834	B2	FB223	E5	R278	E1		
C224	B5	C835	B3	FB224	E5	R280	B2		
C225	B5	C836	C2	FB225	E5	R281	B2		
C226	B5	C837	D2	FB226	E5	R282	B6		
C227	B5	C838	C1	FB227	E5	R284	C7		
C228	B5	C839	D1	FB228	E4	R286	D3		
C229	B5	C840	D1	FB229	E4	R287	D3		
C230	B5	C841	D1	FB230	D2	R288	E4		
C231	C4	C853	D1	FB801	A1	R289	E4		
C232	B4	C854	D1	FB802	A1	R290	E4		
C233	B4	C855	D1	FB803	D1	R291	E5		
C234	B4	C856	B5	FB804	D1	R292	E5		
C235	B4	C857	D1	FB805	B2	R293	E5		
C236	C4	C2001	B6	FB2101	D1	R294	C4		
C237	C4	C2002	B6	IC201	C5	R295	C4		
C238	C4	C2003	D4	IC202	B7	R296	C4		
C239	C4	C2004	D4	IC203	D7	R297	C4		
C240	C4	C2005	D4	IC204	E6	R298	C4		
C241	C4	C2006	D4	IC205	E6	R299	C4		
C242	C4	C2007	D4	IC206	E6	R801	A1		
C243	C4	C2008	D4	IC207	E6	R802	A1		
C244	C4	C2009	D4	IC208	D4	R803	A2		
C245	C4	C2010	D4	IC209	D4	R804	A3		
C246	C4	C2011	D4	IC210	D3	R805	B3		
C247	C4	C2012	D4	IC211	D3	R806	B3		
C248	C4	C2013	D4	IC212	D3	R807	B3		
C249	C4	C2014	D4	IC213	D3	R808	B3		
C250	C4	C2015	D4	IC214	D1	R809	B3		
C251	D4	C2212	E4	IC215	D1	R810	B3		
C252	D4	C2213	E4	IC216	D1	R811	B3		
C253	E4	C2214	E4	IC217	D1	R812	B4		
C254	C7	C2215	E4	IC218	E1	R813	B4		
C255	C7	C2216	E4	IC219	E3	R814	B2		
C256	D7	C2217	E7	IC220	E3	R815	B2		
C257	D7	C2218	E7	IC221	E3	R816	B2		
C258	E4	C2219	E7	IC222	E3	R817	B2		
C259	D3	C2220	E7	IC223	E3	R818	B2		
C260	D3	C2221	E7	IC224	E3	R819	B2		
C261	E3	C2222	E7	IC225	E3	R820	B2		
C262	E5	C2223	E7	IC226	E3	R821	B2		
C263	E5	C2224	E7	IC227	E3	R822	B2		
C264	E5	C2225	E7	IC228	E3	R823	B2		
C265	E5	C2226	E7	IC229	E3	R824	B2		
C266	E5	C2227	E7	IC230	E3	R825	B2		
C267	E5	C2228	E7	IC231	E3	R826	B2		
C268	E6	C2229	E7	IC232	E3	R827	B2		
C269	E6	C2230	E7	IC233	E3	R828	B2		
C270	E6	C2231	E7	IC234	E3	R829	B2		
C271	D1	C2243	A5	Q201	E2	R830	B2		
C272	D1	C2244	A5	Q805	A2	R831	B3		
C273	D1	C2245	A5	Q806	A2	R832	B3		
C274	D2	C2246	A5	R8	D6	R833	C3		
C275	D1	C2247	A5	R9	D3	R834	C3		
C276	D1	C2248	A5	R10	D3	R835	C3		
C277	D1	C2249	A5	R11	D3	R836	C3		
C278	D1	C2250	A5	R12	D3	R837	C3		
C279	D2	C2251	A5	R13	D3	R838	C3		
C280	D2	C2252	A5	R14	D3	R839	C3		
C281	E1	C2253	A5	R15	D3	R840	C3		
C282	E1	C2254	A5	R16	D3	R841	C3		
C283	E1	C2255	A5	R17	D3	R842	C2		
C284	E1	C2256	A5	R18	D3	R843	C2		
C285	E2	C2257	A5	R19	D3	R844	C2		
C286	E2	C2258	A5	R20	D3	R845	C2		
C287	E2	C2259	A5	R21	D3	R846	C3		
C288	E3	C2260	A5	R22	D3	R847	C1		
C289	E4	C2261	A5	R23	D3	R848	C2		
C290	B7	C2262	A5	R24	D3	R849	C2		
C291	B7	C2263	A5	R25	D3	R850	D2		
C292	C4	C2264	A5	R26	D3	R851	D2		
C293	B7	C2265	A5	R27	D3	R852	B4		
				R28	D3	R853	B5		
				R29	D3	R854	B5		
				R30	D3	R855	B5		
				R31	D3	R856	B5		
				R32	D3	R857	B5		
				R33	D3	R858	B5		
				R34	D3	R859	B5		
				R35	D3	R860	B5		
				R36	D3	R861	A5		
				R37	D3	R862	A5		
				R38	D3	R863	A5		
				R39	D3	R864	A5		
				R40	D3	R865	A5		
				R41	D3	R866	A5		
				R42	D3	R867	A5		
				R43	D3	R868	A5		

CIRCUIT DIAGRAM - MAIN BOARD

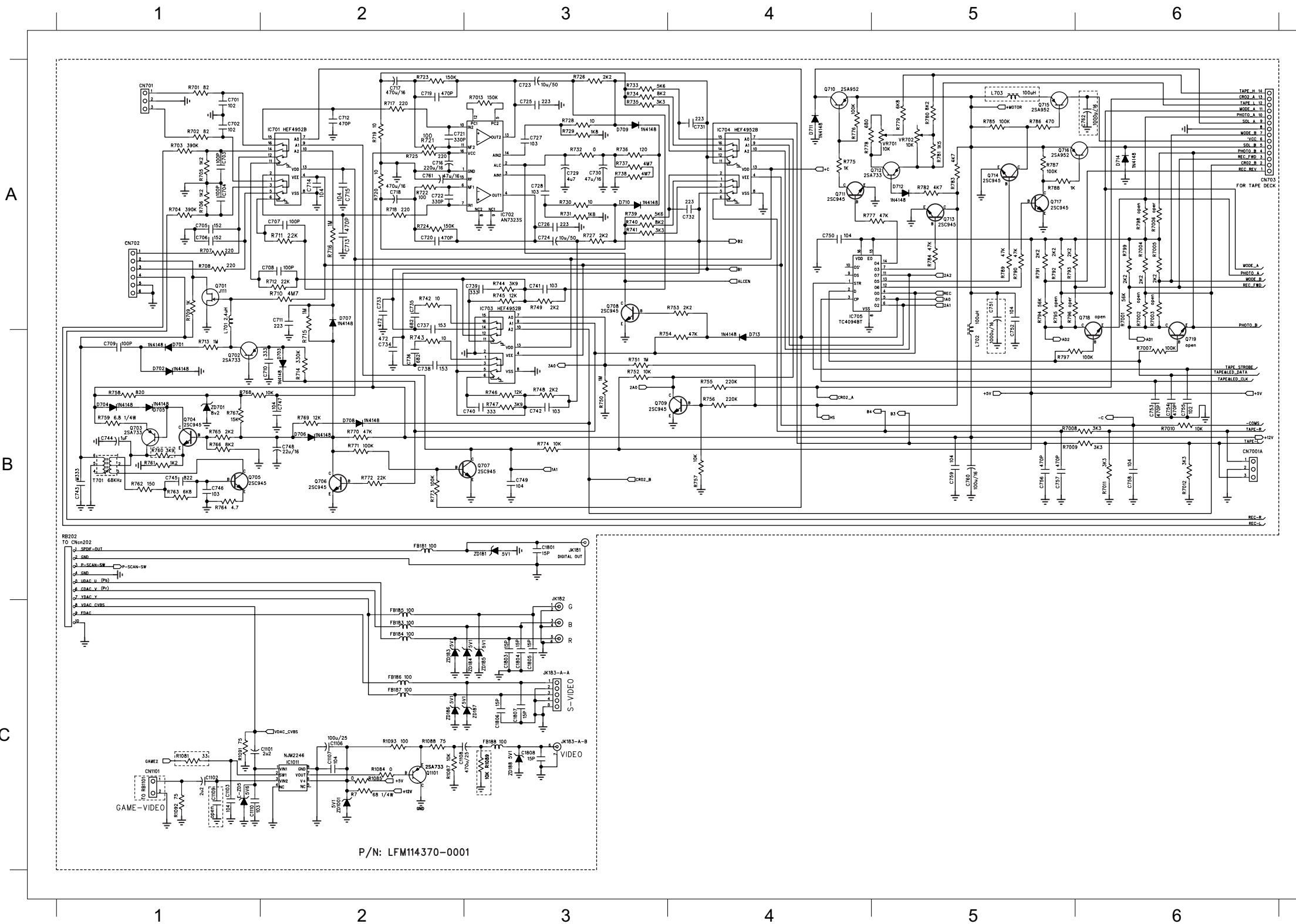


CIRCUIT DIAGRAM MAPPING - MAIN BOARD SERVO PART

C2	A1	C49	D2	C325	A3	C350	B2	C404	A5	C427	B3	C454	B4	C476	C3	C504	B6	C532	D5	C3001	C4	C5006	A6	C5123	C6	CN912	B6	D322	C2	FB503	B6	IC409-A	D3	JW505	C6	Q310	C1	R6	A2	R320	A1	R346	A3
C6	D5	C302	A2	C326	A3	C351	A2	C405	A5	C428	B3	C455	A6	C477	C3	C505	B6	C534	D5	C3005	B4	C5007	B6	C5124	C6	CN7001B	A1	D323	C2	FB531	D5	IC409-B	D3	JW506	C6	Q311	C1	R11	C5	R321	A1	R347	A2
C7	D5	C303	A2	C327	A2	C352	A2	C406	A4	C429	B3	C456	A5	C478	D3	C506	B6	C536	D4	C3007	B4	C5008	B6	C5125	B5	CN8101	D1	D324	C2	IC301-A	A2	IC501	D5	L1	D1	Q312	D2	R12	D5	R322	A1	R348	A3
C8	B6	C304	A2	C328	A2	C353	A1	C407	A5	C430	B3	C457	A5	C479	D3	C509	D6	C538	C5	C3011	A4	C5009	B6	C5126	C6	D1	C4	D325	C2	IC301-B	C3	IC502-A	D4	L2	D1	Q320	C1	R13	D5	R323	A1	R349	A3
C9	B6	C305	A2	C329	B1	C354	A4	C408	A5	C431	B3	C458	A5	C480	C3	C510	D6	C539	C5	C3012	A4	C5012	B6	C5129	C5	D2	C4	D326	C2	IC302	A1	IC502-B	D3	L3	D1	Q321	C1	R14	D5	R324	B1	R350	A3
C10	B5	C306	A2	C332	A3	C355	A4	C409	A5	C437	B3	C459	A4	C481	C3	C512	D6	C540	C5	C3013	A4	C5015	C6	C5130	C5	D3	D5	D501	D6	IC303-A	A2	IC503-A	D4	L4	D1	Q401	A6	R15	A2	R325	B1	R351	A3
C11	B6	C307	A2	C333	A4	C356	A4	C410	A5	C438	B4	C460	A4	C482	C3	C511	D6	C541	B5	C3014	A4	C5046	B6	C5132	C5	D301	A2	D502	D6	IC303-B	B2	IC503-B	D4	L5	D1	Q402	A6	R57	B2	R326	B1	R352	A3
C13	D1	C310	A1	C334	C3	C357	A4	C411	A4	C439	B3	C461	A6	C483	C3	C513	D6	C542	B5	C3015	B4	C5101	D2	C5134	C5	D302	A2	D3001	C5	IC304	B2	IC503-C	D4	L301	A1	Q403	A6	RA301	B1	R327	B1	R353	B1
C14	D1	C311	A1	C335	C3	C358	A4	C412	A5	C440	B4	C462	A6	C484	D3	C514	D6	C543	B5	C3016	A4	C5109	C6	C5138	C5	D304	A3	D3002	C3	IC305-A	A4	IC503-D	D4	L501	D6	Q404	A5	R301	A1	R328	B1	R355	A3
C15	D1	C312	B1	C337	B2	C359	A4	C413	A5	C441	B4	C463	C4	C485	D3	C515	C6	C544	B5	C3017	B4	C5110	C6	C5139	C6	D305	C2	D3003	C2	IC305-B	A4	IC551	A6	L502	D6	Q405	C3	R302	A2	R329	B1	R356	C3
C17	D1	C313	B1	C338	B2	C360	A4	C414	A5	C442	B4	C464	C4	C486	D3	C516	D6	C545	D6	C3018	A4	C5111	C6	C5146	D6	D306	C2	D3004	C4	IC403-A	B5	IC3001	A3	L551	B6	Q406	D2	R303	A2	R330	A2	R357	C3
C18	D1	C314	B2	C339	B2	C361	A4	C415	A5	C443	B4	C465	C4	C487	D3	C518	D6	C546	B6	C3114	C2	C5112	C6	C5215	C6	D307	C2	D3005	C4	IC403-B	B3	IC3002-A-A	A4	L552	B6	Q407	D2	R304	A2	R331	A1	R358	C2
C19	D1	C315	B2	C340	B2	C362	D2	C416	A4	C444	C4	C466	C4	C488	C4	C519	C6	C560	D3	C3130	D1	C5113	C6	C5316	C6	D308	C2	D5001	C4	IC401-A	A5	IC3002-A-B	B4	L5101	C6	Q501	C4	R305	A2	R332	A1	R359	C2
C20	D1	C316	A1	C341	B1	C363	D2	C417	A5	C445	C4	C467	D4	C489	C4	C520	D6	C561	D3	C3201	B3	C5114	C6	C8101	D2	D309	C2	FB401	D3	IC401-B	A5	IC3002-A	B3	L5102	C6	Q505	D6	R306	A2	R333	A2	R360	D2
C21	D1	C317	A1	C342	B1	C364	C2	C418	A5	C446	C4	C468	C4	C490	C3	C521	C6	C562	D3	C3202	A3	C5115	C6	C8102	D3	D310	C2	FB402	D3	IC402-A	A5	IC3002-B	A3	Q1	D5	Q506	D5	R307	A2	R334	A1	R368	B2
C22	D1	C318	A2	C343	B2	C365	C1	C419	A5	C447	B4	C469	C4	C491	B3	C522	D6	C563	D4	C3301	A2	C5116	C6	CF501	D4	D311	D2	FB403	D2	IC402-B	A5	IC5101	C5	Q2	D5	Q551	A6	R308	D2	R335	B2	R369	B2
C23	D1	C319	A2	C344	B2	C366	C1	C420	A5	C448	B4	C470	C4	C492	C3	C523	C5	C564	D4	C3302	A3	C5117	C6	CF502	D4	D313	C2	FB404	D3	IC405	B4	JK301	A1	Q301	A2	Q552	B6	R309	A2	R336	A2	R370	B2
C24	D1	C320	B2	C345	B2	C368	C2	C421	B4	C449	B4	C471	C2	C493	A6	C524	D5	C566	D4	C5001	A5	C5118	C6	CN301	A1	D316	C2	FB405	D3	IC406-A	A6	JK303-A	A6	Q302	B1	Q3301	A3	R310	A2	R337	A2	R371	B2
C39	B1	C321	A2	C346	B2	C369	C2	C422	B5	C450	B4	C472	C3	C497	D3	C525	C5	C567	D4	C5002	B5	C5119	C6	CN501	D5	D318	C1	FB406	D3	IC406-B	A6	JK303-B	A1	Q303	B1	Q3001	C4	R316	A1	R338	B1	R372	B2
C40	D2	C322	A2	C347	B2	C401	A4	C423	B5	C451	B4	C473	C3	C501	B6	C526	D5	C568	D4	C5003	A6	C5120	C6	CN551	B6	D319	C1	FB407	D3	IC407-B	D4	JK401-A	D3	Q305	A2	Q5001	C4	R317	A1	R339	B1	R373	B2
C41	D2	C323	B1	C348	B2	C402	A5	C424	B5	C452	B4	C474	C3	C502	B6	C529	C5	C569	C5	C5004	B6	C5121	C6	CN805	B1	D320	C1	FB501	B6	IC408-A	D3	JK5001	C6	Q306	A3	Q8101	D2	R318	A1	R344	A2	R374	C2
C43	D1	C324	A2	C349	C2	C403	A5	C425	A5	C453	B4	C475	D3	C503	B6	C530	D5	C573	D3	C5005	B6	C5122	C6	CN910	D2	D321	C2	FB502	B6	IC408-B	D3	JW502	D6	Q309	C1	R5	A2	R319	A1	R345	A3	R375	C2

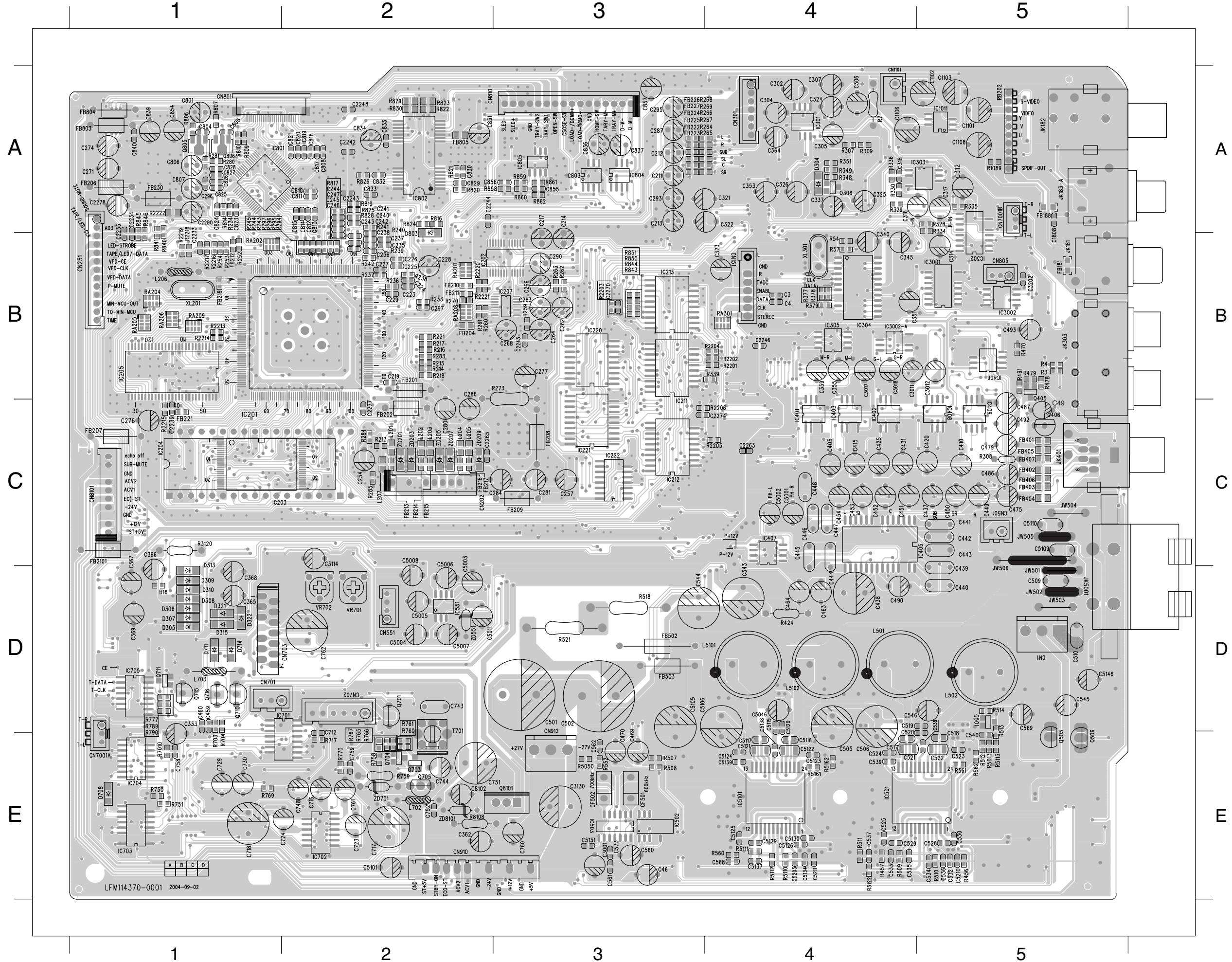
R376	A2	R402	A5	R428	C4	R450	A6	R472	C4	R494	C2	R531	D5	R3016	A4	R3307	A3	R5202	C4
R378	B1	R403	A5	R429	A5	R451	A6	R473	C3	R495	D2	R535	D6	R3017	A5	R3308	A3	R5305	C6
R380	A4	R404	A4	R430	A5	R452	D4	R474	C3	R496	C2	R551	D2	R3018	A5	R5001	B5	R5306	C6
R381	A4	R405	A5	R431	A5	R453	C4	R475	C3	R497	D2	R552	D3	R3019	A5	R5002	B5	R8108	D2
R382	A4	R406	A5	R432	A5	R454	C4	R476	C4	R498	D2	R554	D4	R3020	A5	R5003	B6	XL301	B1
R383	A4	R407	A4	R433	A5	R455	C4	R477	C4	R501	B6	R558	D4	R3088	C2	R5004	A6	ZD301	B1
R384	A4	R408	A5	R434	A5	R456	D4	R478	C3	R502	B6	R560	D4	R3101	A5	R5005	A6	ZD302	B1
R385	A4	R409	A5	R435	A6	R457	D4	R479	C3	R503	C6	R561	B6	R3102	A5	R5006	B6	ZD303	A4
R386	A4	R410	A4	R436	A6	R458	C3	R480	C3	R504	D6	R562	B6	R3119	C1	R5007	A6	ZD320	D1
R387	A4	R411	A5	R437	A6	R459	C3	R481	B4	R505	D6	R3108	D2	R3120	C1	R5013	C5	ZD401	B3
R388	C2	R412	A5	R438	A6	R460	C3	R482	B4	R506	D6	R3001	C4	R3201	B3	R5016	D6	ZD501	C5
R389	C1	R413	B4	R439	A5	R461	C3	R483	B4	R507	C4	R3002	C4	R3202	A3	R5101	D5	ZD502	B5
R390	C1	R414	A5	R440	A5	R462	C3	R484	B4	R508	D4	R3003	C4	R3203	B3	R5102	D5	ZD503	B5
R391	C1	R415	B5	R441	A5	R463	C3	R485	B4	R510	D5	R3007	B3	R3204	A3	R5103	C6	ZD551	A6
R393	C1	R416	B2	R442	A5	R464	C3	R486	B4	R513	C4	R3008	B4	R3205	B3	R5104	C6	ZD3001	C5
R394	C1	R417	B2	R443	A5	R465	C3	R487	B4	R514	C4	R3009	A4	R3206	A3	R5105	C6	ZD5101	D2
R395	C1	R418	B3	R444	A6	R466	C3	R488	B4	R515	D6	R3010	A4	R3207	B3	R5106	C6	ZD8101	D3
R396	C1	R419	B2	R445	A6	R467	C3	R489	B4	R516	D6	R3011	A4	R3208	A3	R5110	C5		
R397	C1	R420	B3	R446	A6	R468	A6	R490	B4	R518	B5	R3012	A4	R3209	B3	R5112	C5		
R398	C2	R425	B4	R447	A6	R469	A6	R491	C3	R519	D6	R3013	B4	R3210	A3	R5113	C5		
R399	C1	R426	B4	R448	A6	R470	A6	R492	D3	R521	B5	R3014	A4	R3301	A2	R5122	D4		
R401	A4	R427	C4	R449	A6	R471	C4	R493	D3	R530	D6	R3015	A4	R3303	A3	R5201	C4		

CIRCUIT DIAGRAM - TAPE PART



C701	A1	D701	B1	R726	A3	R7001	A6
C702	A1	D702	B1	R727	A3	R7004	A6
C703	A1	D703	B2	R728	A3	R7005	A6
C704	A1	D704	B1	R729	A3	R7007	B6
C705	A1	D705	B1	R730	A3	R7008	B5
C706	A1	D706	B2	R731	A3	R7009	B5
C707	A2	D707	A2	R732	A3	R7010	B6
C708	A2	D708	B2	R733	A3	R7011	B6
C709	B1	D709	A3	R734	A3	R7012	B6
C710	B2	D710	A3	R735	A3	R7013	A3
C711	A2	D711	A4	R736	A3	RB202	B1
C713	A2	D712	A5	R737	A3	T701	B1
C714	A2	D713	B4	R738	A3	VR701	A5
C715	A2	D714	A6	R739	A3	VR702	A5
C716	A2	E-ZD05	C1	R740	A3	ZD181	B3
C717	A2	FB181	B2	R741	A3	ZD183	C2
C718	A2	FB183	C2	R742	A2	ZD184	C3
C719	A2	FB184	C2	R743	B2	ZD185	C3
C720	A2	FB185	C2	R744	A3	ZD186	C2
C721	A2	FB186	C2	R745	A3	ZD187	C3
C722	A2	FB187	C2	R746	B3	ZD188	C3
C723	A3	FB188	C3	R747	B3	ZD701	B1
C724	A3	IC1011	C2	R748	B3	ZD1001	C2
C725	A3	IC701	A2	R749	A3		
C726	A3	IC702	A3	R750	B3		
C727	A3	IC703	A3	R751	B3		
C728	A3	IC704	A4	R752	B3		
C729	A3	IC705	A4	R753	A4		
C730	A3	JK181	B3	R754	B4		
C731	A4	JK182	C3	R755	B4		
C732	A4	JK183-A-A	C3	R756	B4		
C733	A2	JK183-A-B	C3	R757	B4		
C734	B2	L701	A1	R758	B1		
C735	A2	L702	B5	R759	B1		
C736	B2	L703	A5	R760	B1		
C737	A2	Q701	A1	R761	B1		
C738	B2	Q702	B1	R762	B1		
C739	A3	Q703	B1	R763	B1		
C740	B3	Q704	B1	R764	B1		
C741	A3	Q705	B1	R765	B1		
C742	B3	Q706	B2	R766	B1		
C743	B1	Q707	B3	R767	B1		
C744	B1	Q708	A3	R768	B1		
C745	B1	Q709	B3	R769	B2		
C746	B1	Q710	A4	R770	B2		
C747	B2	Q711	A4	R771	B2		
C748	B2	Q712	A5	R772	B2		
C749	B3	Q713	A5	R773	B2		
C750	A4	Q714	A5	R774	B3		
C751	B5	Q715	A5	R775	A4		
C752	B5	Q716	A5	R776	A4		
C753	B6	Q717	A5	R777	A4		
C754	B6	Q1101	C2	R778	A4		
C755	B6	R7	C2	R779	A5		
C756	B5	R701	A1	R780	A5		
C757	B5	R702	A1	R781	A5		
C758	B6	R703	A1	R782	A5		
C759	B5	R704	A1	R783	A5		
C760	B5	R705	A1	R784	A5		
C761	A2	R706	A1	R785	A5		
C762	A6	R707	A1	R786	A5		
C1101	C2	R708	A1	R787	A5		
C1102	C1	R709	A1	R788	A5		
C1103	C1	R710	A2	R789	A5		
C1106	C2	R711	A2	R790	A5		
C1107	C2	R712	A2	R791	A5		
C1108	C2	R713	B1	R792	A5		
C1801	B3	R714	B2	R793	A5		
C1803	C3	R715	B2	R794	A5		
C1804	C3	R716	A2	R797	B5		
C1805	C3	R717	A2	R799	A6		
C1806	C3	R718	A2	R1081	C1		
C1807	C3	R719	A2	R1084	C2		
C1808	C3	R720	A2	R1087	C2		
CN701	A1	R721	A2	R1088	C2		
CN702	A1	R722	A2	R1089	C3		
CN703	A6	R723	A2	R1091	C1		
CN1101	C1	R724	A2	R1092	C1		
CN7001AB6		R725	A2	R1093	C2		

PCB LAYOUT - MAIN BOARD TOP VIEW



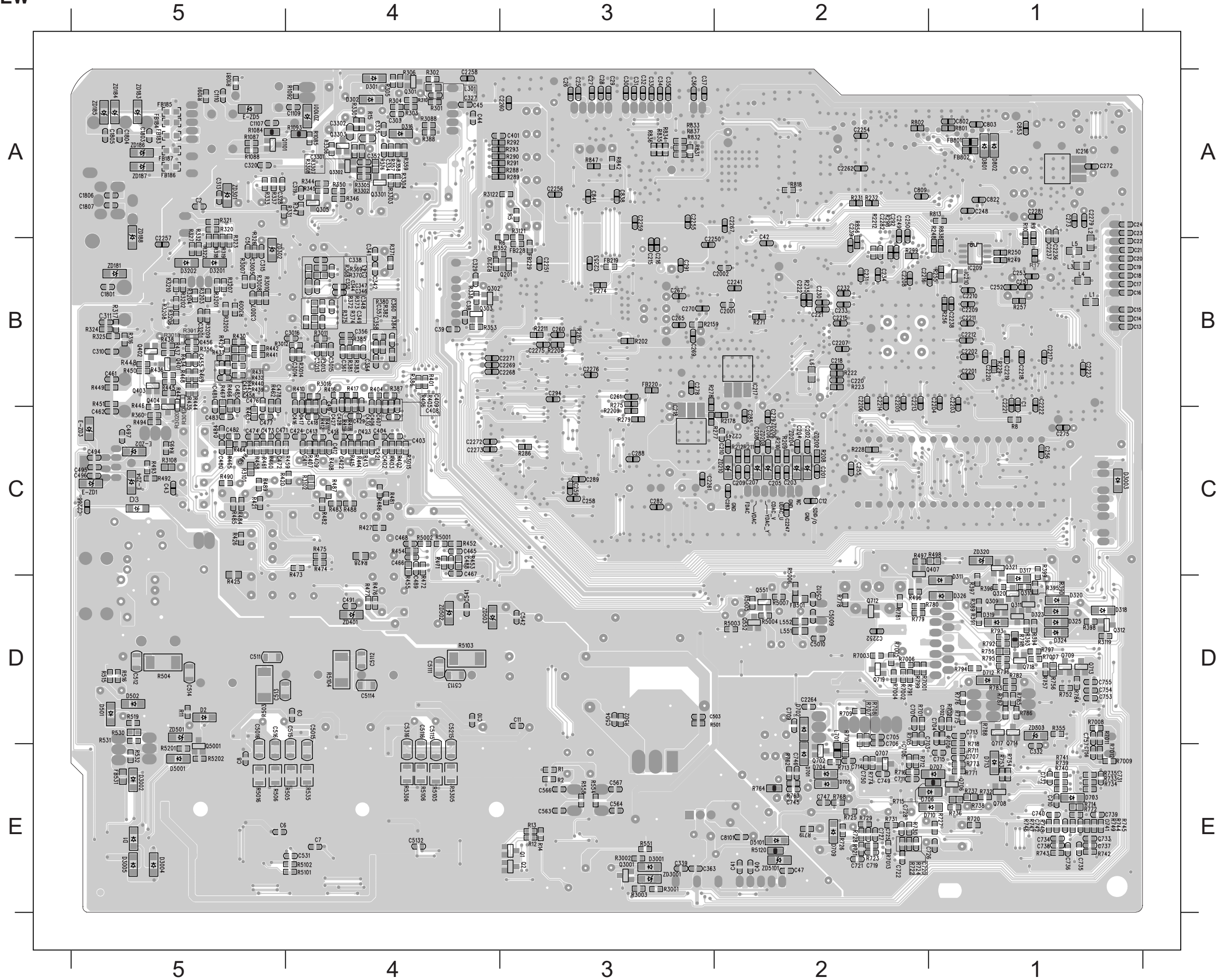
PCB LAYOUT MAPPING - MAIN BOARD TOP VIEW

C3	B4	C420	C5	C758	E1	C5101	E2	FB227	A3	FB226	A3	R507	E3	R5113	E5
C46	E3	C425	C4	C759	E2	C5105	D3	FB230	A1	Q306	A4	R508	E3	R5122	E4
C49	B6	C431	C4	C760	E3	C5106	D3	FB401	C5	Q405	B5	R510	E5	R5161	E4
C211	A3	C437	C5	C761	E2	C5109	D5	FB402	C5	Q406	C5	R513	E5	R5162	E4
C212	A3	C438	D4	C762	D2	C5110	D5	FB403	C5	Q501	D5	R514	D5	R7010	E1
C213	A3	C439	D5	C801	A1	C5117	E4	FB404	C5	Q505	E5	R518	D3	R8108	E2
C214	A3	C440	D5	C804	A1	C5118	E4	FB405	C5	Q506	E5	R521	D3	RA201	B2
C217	A3	C441	C5	C805	A1	C5119	D4	FB406	C5	Q701	D2	R552	E3	RA202	B1
C219	B2	C442	C5	C806	A1	C5120	D4	FB407	C5	Q703	E2	R560	E4	RA204	B1
C223	B2	C443	C5	C807	A1	C5121	E4	FB502	D3	Q704	E2	R561	E5	RA205	B1
C224	B2	C444	D4	C808	A2	C5122	E4	FB503	D3	Q705	E2	R562	E5	RA206	B1
C225	B2	C445	C4	C810	A2	C5123	E4	FB803	A1	Q710	D1	R703	E1	RA208	B2
C226	B2	C446	C4	C811	A2	C5124	E4	FB804	A1	Q711	D1	R704	E1	RA209	B1
C227	B2	C447	C4	C812	A2	C5125	E4	FB805	A2	Q715	D1	R717	E2	RA301	B4
C228	B2	C448	C4	C813	A2	C5126	E4	FB2101	C1	Q716	D1	R750	E2	RB202	A5
C229	B2	C449	C5	C814	A2	C5127	E4	IC201	C1	Q805	A1	R751	E1	T701	D2
C237	B2	C450	C5	C815	A2	C5128	E4	IC202	B2	Q806	A1	R758	E2	VR701	D2
C238	A2	C451	C4	C817	A2	C5129	E4	IC203	C1	Q8101	E3	R759	E2	VR702	D2
C240	A2	C452	C4	C818	A2	C5130	E4	IC205	B1	R7	A4	R760	D2	XL201	B1
C241	A2	C453	C4	C819	A2	C5134	E4	IC207	B3	R57	B4	R761	D2	XL301	B4
C242	A2	C454	C4	C820	A2	C5138	D4	IC211	C3	R213	C2	R765	E2	ZD201	C2
C243	A2	C459	D1	C821	A2	C5139	E4	IC212	C3	R214	B2	R766	E2	ZD203	C2
C244	A2	C460	D1	C823	A1	C5146	D5	IC213	B3	R215	B2	R767	E2	ZD205	C2
C245	A2	C463	D4	C824	A1	C8102	E2	IC220	B3	R216	B2	R769	E1	ZD207	C2
C246	A2	C464	D4	C825	A1	CF501	E3	IC221	C3	R217	B2	R770	E2	ZD209	C2
C247	A2	C469	E3	C826	A1	CF502	E3	IC222	C3	R221	B2	R777	D1	ZD551	D2
C254	C2	C470	E3	C827	A1	CN151	B4	IC301	A4	R233	B2	R789	D1	ZD701	E2
C257	C3	C475	C5	C828	A1	CN202	C2	IC302	B5	R234	A1	R790	D1	ZD8101	E2
C262	B3	C479	C5	C829	A2	CN251	B1	IC303	A5	R236	B2	R806	A1		
C263	B3	C486	C5	C830	A2	CN301	A4	IC304	B4	R237	B2	R807	A1		
C264	B3	C487	C5	C831	A2	CN501	C5	IC305	B4	R238	B2	R809	A1		
C266	B3	C490	D4	C832	A2	CN551	D2	IC401	C4	R240	A2	R810	A1		
C268	B3	C492	C5	C833	A2	CN701	D1	IC402	C4	R241	A2	R814	A1		
C271	A1	C493	B5	C834	A2	CN702	D2	IC403	C4	R242	B2	R816	A2		
C274	A1	C501	D3	C835	A2	CN703	D2	IC405	C5	R243	A1	R817	A2		
C276	C1	C502	D3	C836	A3	CN801	A1	IC406	B5	R244	A1	R819	A2		
C277	B3	C505	E4	C837	A3	CN805	B5	IC407	C4	R245	A1	R820	A2		
C280	C2	C506	E4	C839	A1	CN810	A2	IC408	C5	R252	B1	R821	A2		
C281	C3	C509	D5	C840	A1	CN910	E2	IC409	C5	R253	B1	R822	A2		
C284	C3	C510	D5	C854	A1	CN912	E3	IC501	E4	R254	B1	R823	A2		
C286	B2	C518	E5	C855	A3	CN1101	A4	IC502	B2	R260	B2	R824	A2		
C287	A3	C519	D4	C856	A2	CN7001	BA5	IC503	E3	R261	B2	R825	A2		
C290	B3	C520	D4	C857	A3	CN8101	C1	IC551	D2	R262	B3	R826	A2		
C293	A3	C521	E4	C1101	A5	D304	A4	IC701	D2	R263	B3	R828	A2		
C295	A3	C522	E5	C1102	A5	D305	D1	IC702	E2	R264	A4	R829	A2		
C296	A1	C523	E5	C1103	A5	D306	D1	IC703	E1	R265	A4	R830	A2		
C297	B2	C524	E4	C1106	A4	D307	D1	IC704	E1	R266	A4	R840	B1		
C302	A4	C525	E4	C1108	A5	D308	D1	IC705	D1	R267	A4	R841	B1		
C304	A4	C526	E5	C1808	B5	D309	D1	IC801	A1	R268	A4	R843	B3		
C305	A4	C529	E4	C2233	B1	D310	D1	IC802	A2	R269	A4	R844	B3		
C306	A4	C530	E5	C2234	A1	D313	C1	IC803	A3	R270	B2	R845	A1		
C307	A4	C532	E5	C2235	A1	D321	D1	IC804	A3	R273	B3	R846	A1		
C312	A5	C534	E5	C2239	C1	D322	D1	IC805	A3	R280	A1	R850	B3		
C314	B5	C536	E5	C2242	A2	D708	E1	IC1011	A5	R281	A1	R851	B3		
C316	A4	C538	D5	C2243	A2	D711	D1	IC3001	B5	R283	B2	R858	A2		
C317	A5	C539	E4	C2248	A2	D714	D1	IC3002	B5	R284	C2	R859	A3		
C318	A4	C540	E5	C2263	C4	D803	A2	IC3002-AB4	R294	A1	R860	A3			
C321	A4	C543	D4	C2270	B3	FB181	B5	IC5101	E4	R295	A1	R861	A3		
C322	A4	C544	D3	C2274	C4	FB188	A5	JK181	B5	R296	A1	R1089	A5		
C323	B4	C545	D5	C2277	C2	FB201	B2	JK182	A5	R297	A1	R2201	B4		
C324	A4	C546	D4	C2278	A1	FB202	C2	JK183-A	A5	R307	A4	R2202	B4		
C325	A4	C560	E3	C2280	A1	FB204	B2	JK303	B5	R308	C5	R2203	B3		
C326	A4	C561	E3	C3001	E3	FB206	A1	JK401	C5	R309	A4	R2204	B4		
C333	D1	C562	E3	C3011	B4	FB207	C1	JW502	D5	R328	A5	R2205	C4		
C337	A4	C568	E4	C3012	B5	FB208	C3	JW505	C5	R329	A4	R2206	C4		
C340	B4	C569	D5	C3017	B4	FB209	C3	JW506	D5	R330	A4	R2208	B3		
C345	B4	C573	E3	C3018	B4	FB210	B2	JK5001	D5	R334	A5	R2209	C3		
C351	B4	C712	E2	C3114	C2	FB211	B2	L201	C2	R335	A5	R2213	B1		
C353	A4	C716	E2	C3130	E3	FB212	B1	L202	C2	R336	A4	R2214	B1		
C355	B4	C717	E2	C3202	B5	FB213	C2	L203	C2	R339	B4	R2215	C1		
C359	B4	C718	E1	C5001	C4	FB214	C2	L204	C2	R348	A4	R2216	B1		
C362	E2	C723	E2	C5002	C4	FB215	C2	L205	C2	R349	A4	R2217	B1		
C364	A4	C724	E2	C5003	C2	FB216	C2	L206	B1	R351	A4	R2218	B1		
C365	D1	C729	E1	C5004	D2	FB217	C2	L207	C2	R378	B4	R2219	B1		
C366	C1	C730	E1	C5005	D2	FB218	B1	L501	D4	R456	E5	R2220	B2		
C368	D1	C743	D2	C5006	C2	FB221	C1	L502	D5	R457	E4	R2222	A1		
C369	D1	C744	E2	C5007	D2	FB222	A3	L702	E2	R470	B5	R3120	C1		
C405	C4	C748	E2	C5008	C2	FB223	A3	L703	D1	R478	B5	R5013	E5		
C410	C5	C751	E2	C5011	D2	FB224	A3	L5101	D4	R479	B5	R5110	E4		
C415	C4	C752	E2	C5046	D4	FB225	A3	L5102	D4	R491	B5	R5112	E4		

PCB LAYOUT MAPPING - MAIN BOARD BOTTOM VIEW

C1	B1	C282	C3	C483	C5	C2201	B1	D324	D1	Q3301	A4	R360	C5	R462	B5	R740	E1	R3017	B5
C2	A5	C283	C2	C484	C5	C2203	B1	D325	D1	Q3302	A4	R368	B4	R463	C5	R741	E1	R3018	B5
C6	E5	C285	C2	C485	B5	C2204	B1	D326	D1	Q5001	E5	R369	B4	R464	C5	R742	E1	R3019	C5
C7	E4	C288	C3	C488	C4	C2205	B2	D501	D5	R5	A3	R370	B4	R465	C5	R743	E1	R3020	C5
C8	E5	C289	C3	C489	D4	C2206	B2	D502	D5	R6	B4	R371	B4	R466	B5	R744	E1	R3088	A4
C9	D4	C291	B3	C491	D4	C2207	B2	D701	E2	R8	C1	R372	B4	R467	B5	R745	E1	R3101	C5
C10	D4	C292	A2	C494	C5	C2208	B2	D702	D2	R9	A1	R373	B4	R468	B5	R746	E1	R3102	C4
C11	D3	C294	B3	C495	C5	C2209	B1	D703	E1	R10	A1	R374	B4	R469	B5	R747	E1	R3108	C5
C12	C2	C303	A4	C496	C5	C2210	B1	D704	E2	R11	D5	R375	B4	R471	C4	R748	E1	R3119	D1
C13	B1	C310	B5	C497	C5	C2211	B1	D705	E2	R12	E3	R376	A4	R472	D4	R749	E1	R3201	B5
C14	B1	C311	B5	C503	D3	C2212	B1	D706	E1	R13	E3	R380	B4	R473	C4	R752	D1	R3202	B5
C15	B1	C313	A5	C504	D3	C2213	B2	D707	E1	R14	E3	R381	B4	R474	C4	R753	E1	R3203	B5
C16	B1	C315	B5	C511	D5	C2214	B2	D709	E2	R15	A4	R382	B4	R475	C4	R754	E1	R3204	B5
C17	B1	C319	A4	C512	D5	C2215	B2	D710	E1	R17	B1	R383	B4	R476	D4	R755	D1	R3205	B5
C18	B1	C320	A5	C513	D5	C2216	B2	D712	D1	R202	B3	R384	B4	R477	D4	R756	D1	R3206	B5
C19	B1	C327	A4	C514	D5	C2217	B1	D713	E1	R208	C2	R385	B4	R480	C5	R757	D1	R3207	B5
C20	B1	C328	A5	C515	D4	C2218	B1	D801	A1	R209	C2	R386	B4	R481	C4	R762	E2	R3208	B5
C21	B1	C329	B4	C516	D5	C2219	B1	D802	A1	R210	C2	R387	B4	R482	C4	R763	E2	R3209	B5
C22	B1	C332	E1	C541	D4	C2220	B1	D3001	E3	R211	C2	R388	A4	R483	C4	R764	E2	R3210	B5
C23	A1	C334	A4	C542	D3	C2221	B1	D3002	E5	R212									

PCB LAYOUT - MAIN BOARD BOTTOM VIEW



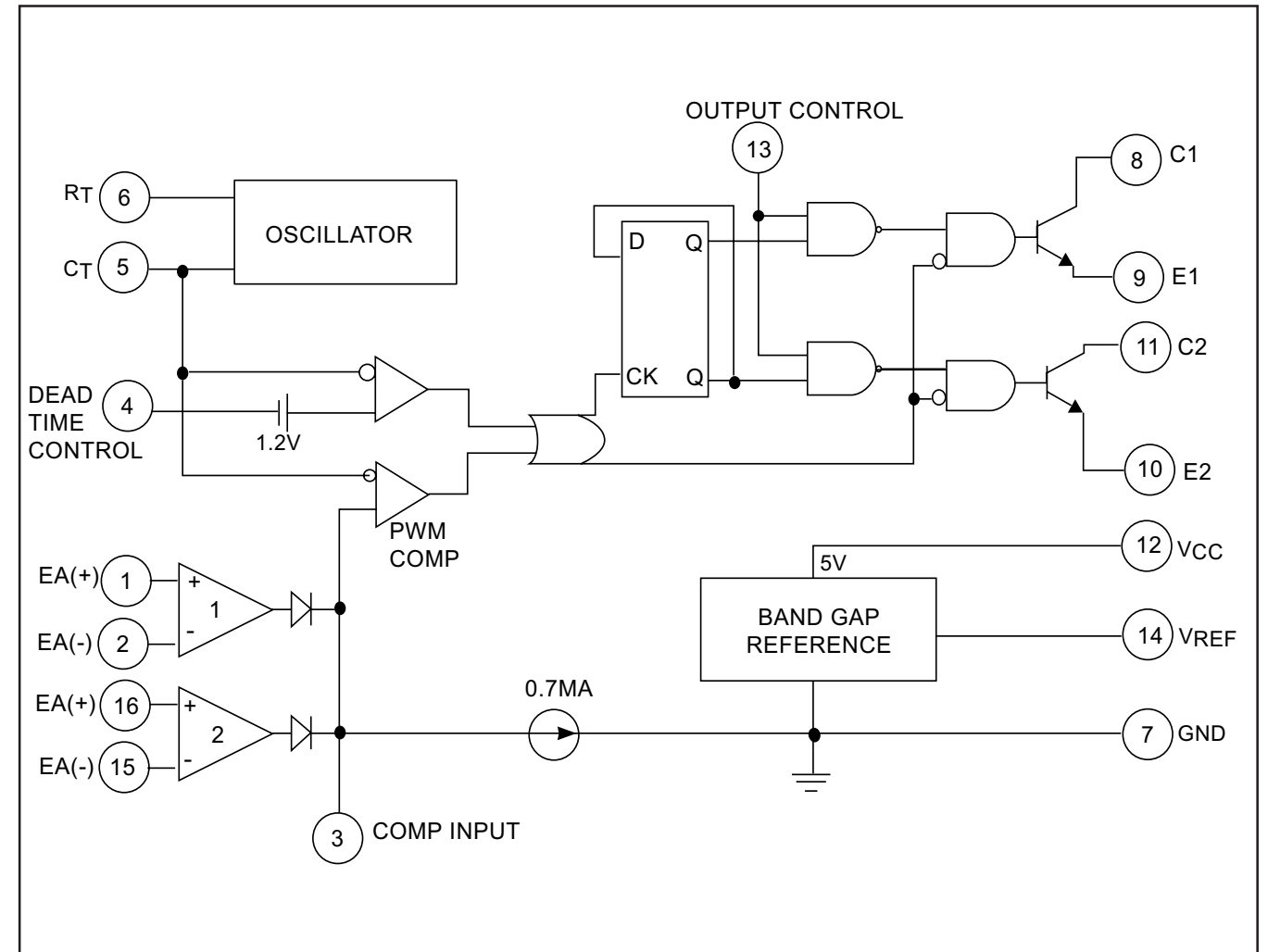
ELECTRIC PARTS - MAIN BOARD

CF501	9940 000 00822	RESONATOR 2PIN 600KHZ	IC703	4822 209 32919	HEF4952BT
CF502	9940 000 00823	RESONATOR 2PIN 700KHZ	IC704	4822 209 32919	HEF4952BT
IC1011	4822 209 60614	IC NJM2246M	IC705	5322 209 11306	HEF4094BT
IC201	9940 000 00827	IC 208P ES6698FD W/DTS	IC801	9940 000 00853	IC 64PIN ES6603S
IC202	9940 000 00828	IC 28PIN CS4360	IC802	9940 000 00854	IC 28PIN D5954
IC203	9940 000 00829	IC 48PIN MX29LV160ABTC-70	IC803	9940 000 00855	IC 8PIN BA6287FE2
IC205	9940 000 00831	IC 54PIN K4S641632H-UC 75	IC804	9940 000 00855	IC 8PIN BA6287FE2
IC207	9940 000 00832	IC CS5333 16PIN	IC805	9940 000 00856	IC 8PIN LM358MX NS
IC209	9940 000 00833	IC 8PIN M24C04-WMN6T EEPROM	JK181	9965 000 25156	RCA JACK 1 PIN BLAK
IC210	9940 000 00834	IC 3PIN LM809	JK182	9940 000 00857	RCA JACK 3P R-B-G
IC211	9940 000 00835	IC 20PIN 74F374D	JK183A	9965 000 25153	RCA+DIN JK 1RCA+4P DIN YEL
IC212	9940 000 00835	IC 20PIN 74F374D	JK303	9940 000 00859	RCA JACK 4P AUDIO IN
IC213	9940 000 00835	IC 20PIN 74F374D	JK401	9940 000 00861	RCA+DIN JACK 1RCA+8P DIN
IC216	9965 000 15887	IC RT9164-33CLR	JK5001	9940 000 00862	SPK JACK 4P R-W-B-B
IC217	9965 000 15887	IC RT9164-33CLR	L501	9940 000 00863	INDUCTOR 27UH 20% 6A
IC218	9940 000 00837	IC 3PIN LD1117 ADJ	L502	9940 000 00863	INDUCTOR 27UH 20% 6A
IC220	9940 000 00838	IC 20PIN 74F244	Q701	9940 000 00864	FET J111TO92 40V 20MA
IC221	9940 000 00838	IC 20PIN 74F244	RA201	9940 000 00865	RES ARRAY 4X33R 1/10W 5%
IC222	9940 000 00839	IC 16PIN 74F138D	RA202	9940 000 00865	RES ARRAY 4X33R 1/10W 5%
IC3001	9940 000 00841	IC 16PIN TC4052BFN	RA204	9965 000 23614	CHIP ARRAY 10 RX4 1/16 W 5%
IC3002	9940 000 00842	IC 8PIN JRC4558M	RA205	9965 000 23614	CHIP ARRAY 10 RX4 1/16 W 5%
IC3002A	9940 000 00842	IC 8PIN JRC4558M	RA206	9965 000 23614	CHIP ARRAY 10 RX4 1/16 W 5%
IC301	9940 000 00842	IC 8PIN JRC4558M	RA208	9940 000 00865	RES ARRAY 4X33R 1/10W 5%
IC302	9940 000 00841	IC 16PIN TC4052BFN	RA209	9940 000 00865	RES ARRAY 4X33R 1/10W 5%
IC303	9940 000 00842	IC 8PIN JRC4558M	RA301	9940 000 00865	RES ARRAY 4X33R 1/10W 5%
IC304	9940 000 00844	IC 24PIN PT2396S	T701	9940 000 00866	OSC COIL REC 3MH
IC305	9940 000 00842	IC 8PIN JRC4558M	VR701	9940 000 00867	CNTL TRIMR 10KB 30%
IC401	9940 000 00842	IC 8PIN JRC4558M	VR702	9940 000 00868	XSTAL 2.0MHZ +/-15PPM
IC402	9940 000 00842	IC 8PIN JRC4558M			
IC403	9940 000 00842	IC 8PIN JRC4558M			
IC405	9940 000 00845	IC 28PIN PT2322-S			
IC406	9940 000 00842	IC 8PIN JRC4558M			
IC407	9940 000 00842	IC 8PIN JRC4558M			
IC408	9940 000 00842	IC 8PIN JRC4558M			
IC409	9940 000 00842	IC 8PIN JRC4558M			
IC501	9940 000 00846	IC 24PIN TDA8920BTH	Note:	Only these parts mentioned in the list are normal service parts.	
IC502	5322 209 14477	HEF4013BT			
IC503	9940 000 00848	IC 14PIN HEF4011BT(D)			
IC5101	9940 000 00846	IC 24PIN TDA8920BTH			
IC551	9940 000 00849	IC 8PIN TP5228 DRIVER W/MUTE			
IC701	4822 209 32919	HEF4952BT			
IC702	9322 140 00668	IC SM AN7323S (MATJ)			

POWER BOARD

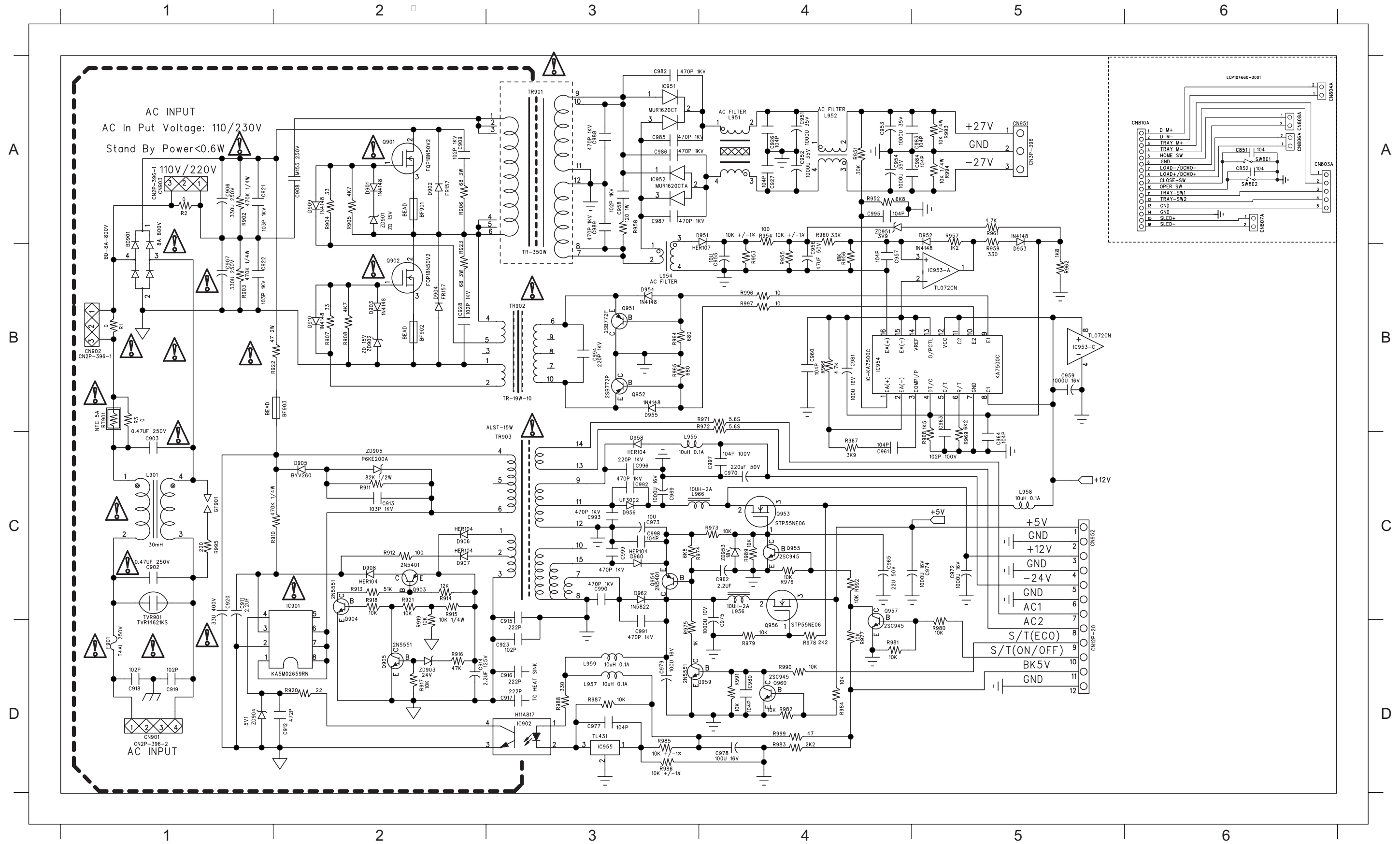
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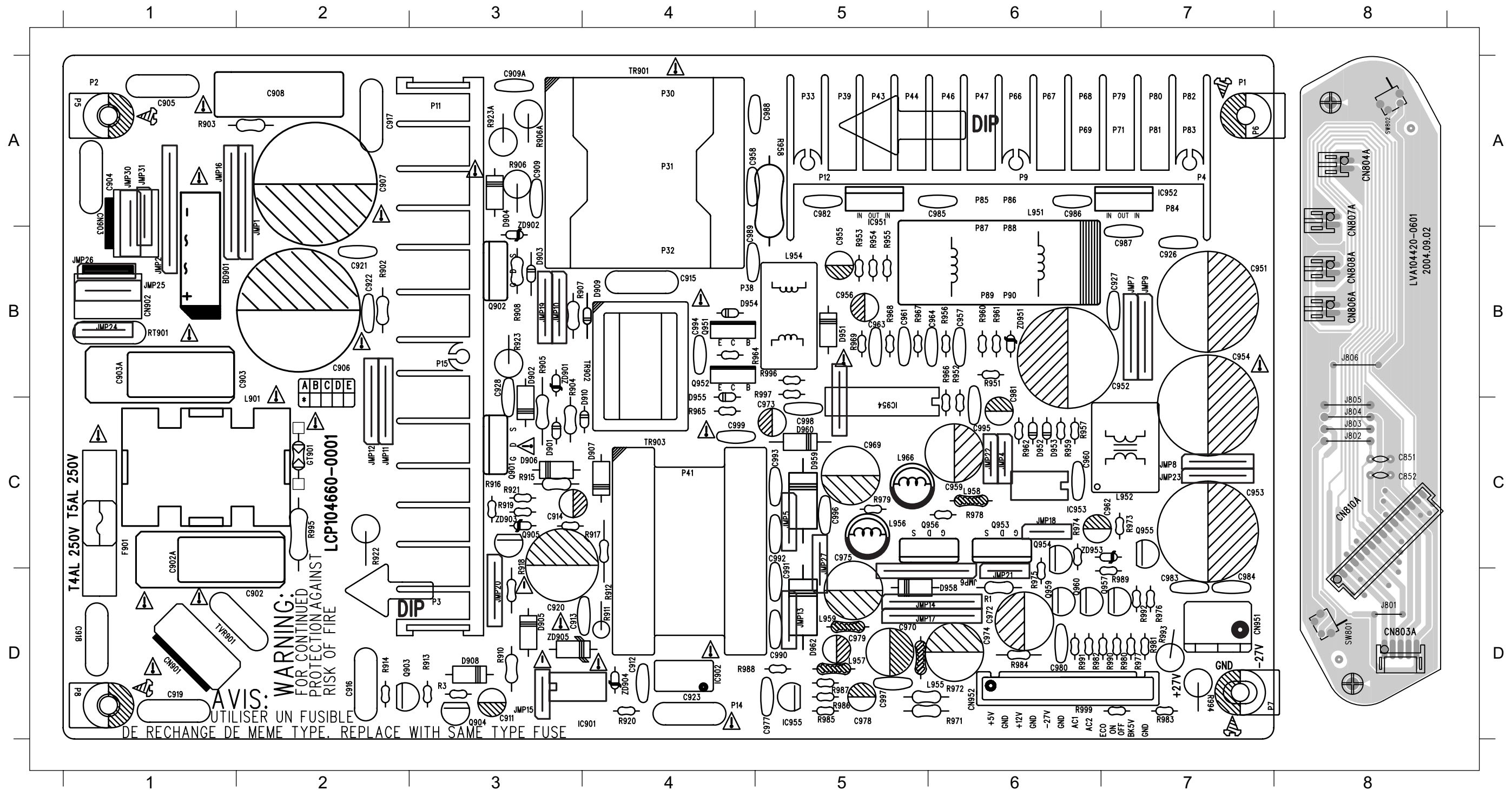
CIRCUIT DIAGRAM - POWER BOARD

BD901 A1 C908 A2 C919 D1 C953 A4 C963 B5 C978 D4 C988 A3 C998 C3 CN903 A1 D908 C2 D960 C3 IC954 B4 L959 D3 Q954 C3 R903 B1 R914 C2 R951 A4 R961 A5 R973 C4 R983 D4 R993 A5 TR902 B3
 BF901 A2 C909 A2 C920 C1 C954 A4 C964 C5 C979 D3 C989 A3 C999 C3 CN951 A5 D909 A2 D962 C3 IC955 D3 L966 C3 Q955 C4 R904 A2 R915 C2 R952 A4 R962 B5 R974 C3 R984 D4 R994 A5 TR903 C3
 BF902 B2 C911 C1 C921 A1 C955 B4 C965 C4 C980 D4 C990 C3 CN803A A6 CN952 C5 D910 B2 F901 D1 L901 C1 Q901 A2 Q956 D4 R905 A2 R916 D2 R953 B4 R964 B3 R975 D3 R985 D3 R995 C1 TVR901 C1
 BF903 B2 C912 D2 C922 B1 C956 B4 C969 C3 C981 B4 C991 D3 CN804A A6 D901 A2 D951 A4 GT901 C1 L951 A4 Q902 B2 Q957 C4 R906 A2 R917 D2 R954 A4 R965 B3 R976 C4 R986 D3 R996 B4 ZD901 A2
 C851 A6 C913 C2 C923 D3 C957 B4 C970 C4 C982 A3 C992 C3 CN806A A6 D902 A2 D952 A5 IC901 C2 L952 A4 Q903 C2 Q959 D4 R907 B2 R918 C2 R955 B4 R966 B4 R977 D4 R987 D3 R997 B4 ZD902 B2
 C852 A6 C914 D2 C926 A4 C958 A3 C972 C5 C983 A5 C993 C3 CN807A A6 D903 B2 D953 B5 IC902 D3 L954 B3 Q904 C2 Q960 D4 R908 B2 R919 C2 R956 B4 R967 C4 R978 D4 R988 D3 R998 D4 ZD903 D2
 C902 C1 C915 D3 C927 A4 C959 B5 C973 C3 C984 A5 C994 B3 CN808A A6 D904 B2 D954 B3 IC951 A3 L955 C3 Q905 D2 R1 B1 R910 C2 R920 D2 R957 A5 R968 C5 R979 D4 R989 C4 RT901 B1 ZD904 D1
 C903 C1 C916 D3 C928 B2 C960 B4 C974 C5 C985 A3 C995 A4 CN810A A6 D905 C2 D955 B3 IC952 A3 L956 C4 Q951 B3 R2 A1 R911 C2 R921 C2 R958 A3 R969 C5 R980 D5 R990 D4 SW801 A6 ZD905 C2
 C906 A1 C917 D3 C951 A4 C961 C4 C975 C4 C986 A3 C996 C3 CN901 D1 D906 C2 D958 C3 IC953-A B5 L957 D3 Q952 B3 R3 B1 R912 C2 R922 B2 R959 B5 R971 B4 R981 D4 R991 D4 SW802 A6 ZD951 A4
 C907 B1 C918 D1 C952 A4 C962 C4 C977 D3 C987 A3 C997 C4 CN902 B1 D907 C2 D959 C3 IC953-C B5 L958 C5 Q953 C4 R902 A1 R913 C2 R923 B2 R960 A4 R972 B4 R982 D4 R992 C4 TR901 A3 ZD953 C4



PCB LAYOUT - POWER BOARD

BD901	B1	C913	D3	C953	C7	C974	D6	C991	C5	CN902	B1	D953	C6	J801	D8	JMP12	C2	JMP30	A1	Q905	C3	R906	A3	R922	C2	R965	C4	R982	D6	R999	D6	C851	C8	C914	C3	C954	B7	C975	C5	C992	C5	CN903	A1	D954	B4	J802	C8	JMP13	D5	JMP31	A1	Q951	B4	R906A	A3	R923	B3	R966	B6	R983	D7	RT901	B1	C852	C8	C915	B4	C955	B5	C977	D5	C993	C5	CN951	D7	D955	B4	J803	C8	JMP14	D5	L901	C2	Q952	B4	R907	B3	R923A	A3	R967	B5	R984	D6	SW801	D8	C902	D2	C916	D2	C956	B5	C978	D5	C994	B4	CN952	D6	D958	D6	J804	C8	JMP15	D3	L951	A6	Q953	C6	R908	B3	R951	B6	R968	B5	R985	D5	SW802	A8	C902A	C1	C917	A2	C957	B6	C979	D5	C995	C6	D901	C3	D959	C5	J805	C8	JMP16	A1	L952	C7	Q954	C6	R910	D3	R952	B6	R969	B5	R986	D5	TR901	A4	C903	B2	C918	D1	C958	A4	C980	D6	C996	C5	D902	B3	D960	C5	J806	B8	JMP17	D5	L954	B5	Q955	C7	R911	D4	R953	B5	R971	D6	R987	D5	TR902	B4	C903A	B1	C919	D1	C959	C6	C981	B6	C997	D5	D903	B3	D962	D5	JMP18	A2	JMP18	C6	L955	D6	Q956	C6	R912	D4	R954	B5	R972	D6	R988	D4	TR903	C4	C904	A1	C920	D3	C960	C6	C982	A5	C998	C5	D904	A3	F901	C1	JMP2	B1	JMP19	B3	L956	C5	Q957	D7	R913	D3	R955	B5	R973	C7	R989	D7	TVR901	D1	C905	A1	C921	B2	C961	B5	C983	D7	C999	C4	D905	D3	GT901	C2	JMP4	C6	JMP20	D3	L957	D5	Q959	D6	R914	D2	R956	B6	R974	C6	R990	D7	ZD901	B3	C906	B2	C922	B2	C962	C7	C984	D7	CN803A	D8	D906	C3	IC901	D4	JMP5	C5	JMP21	D6	L958	C6	Q960	D6	R915	C3	R957	C6	R975	D6	R991	D6	ZD902	A3	C907	A2	C923	D4	C963	B5	C985	A6	CN804A	A8	D907	C4	IC902	D4	JMP6	D6	JMP22	C6	L959	D5	R1	D6	R916	C3	R958	A5	R976	D7	R992	D7	ZD903	C3	C908	A2	C926	B7	C964	B6	C986	A6	CN806A	B8	D908	D3	IC951	A5	JMP7	B7	JMP23	C7	L966	C5	R3	D3	R917	C4	R959	C6	R977	D7	R993	D7	ZD904	D4	C909	A3	C927	B7	C969	C5	C987	B7	CN807A	A8	D909	B4	IC952	A7	JMP8	C7	JMP24	B1	Q901	C3	R902	B2	R918	C3	R960	B6	R978	C6	R994	D7	ZD905	D3	C909A	A3	C928	B3	C970	D5	C988	A5	CN808A	B8	D910	B4	IC953	C6	JMP9	B7	JMP25	B1	Q902	B3	R903	A1	R919	C3	R961	B6	R979	C5	R995	C2	ZD951	B6	C911	D3	C951	B7	C972	D6	C989	B4	CN810A	C8	D951	B5	IC954	C5	JMP10	B3	JMP26	B1	Q903	D2	R904	B3	R920	D4	R962	C6	R980	D7	R996	B5	ZD953	C6	C912	D4	C952	B7	C973	C5	C990	D5	CN901	D1	D952	C6	IC955	D5	JMP11	C2	JMP27	C5	Q904	D3	R905	B3	R921	C3	R964	B4	R981	D7	R997	B5
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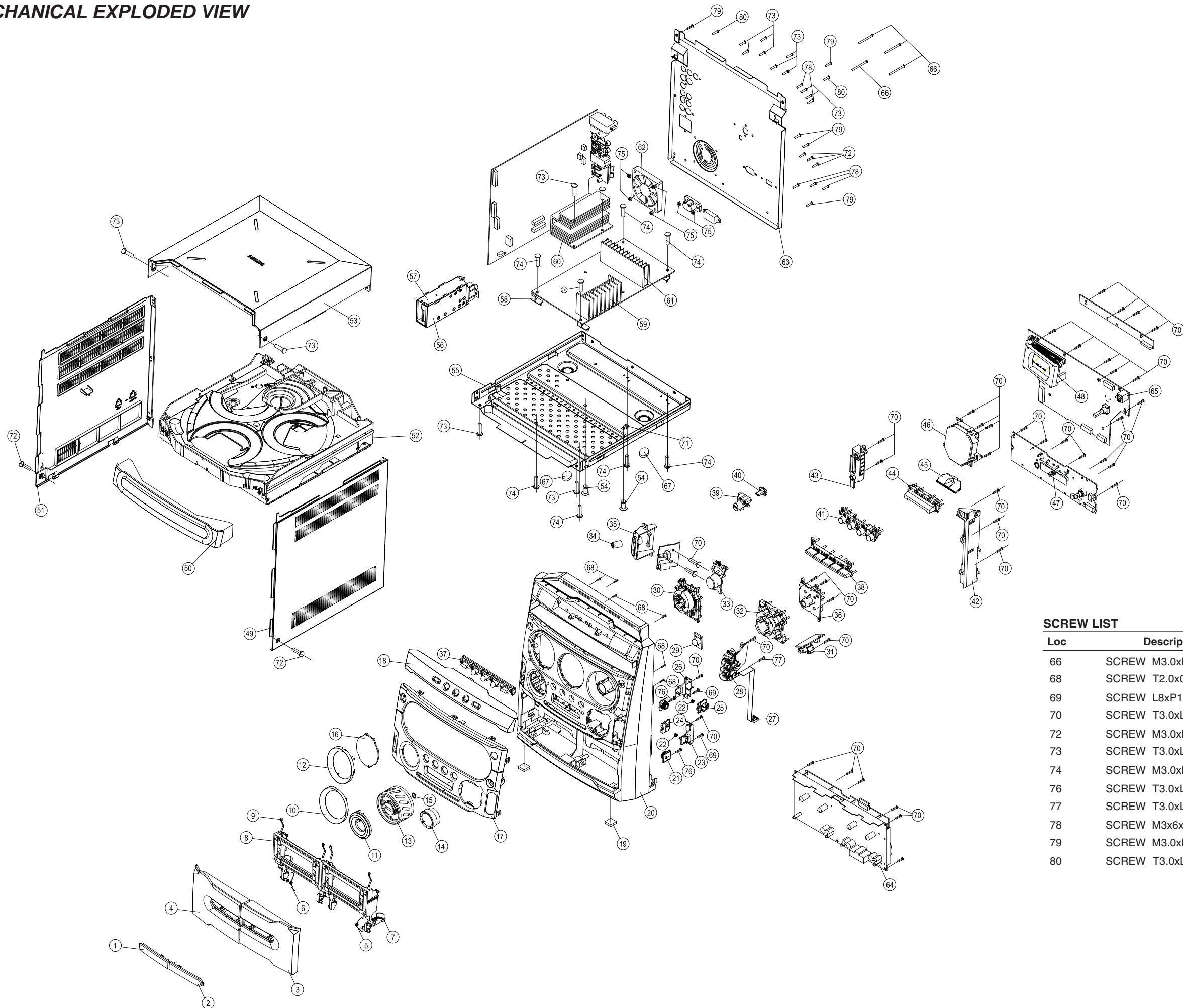


ELECTRIC PARTS - POWER BOARD

BD901	9940 000 00931	BRIDGE KBU808 8A 1000V	IC901	9940 000 00945	IC 8PIN KA5M02659RN
C902	△ 9940 000 00932	COND SAFTY 0.47μF 275V 10%	IC902	9940 000 00946	OPTICAL SENSOR 4P
C903	△ 9940 000 00932	COND SAFTY 0.47μF 275V 10%	IC951	9940 000 00947	BRIDGE MUR1620CT 8A 200V
C909	9940 000 01085	COND DISC 0.001μF 1KV 20%	IC952	9940 000 00948	RECTIFIER FEP16AT TO-220AB
C913	9940 000 01086	COND DISC 0.01μF 1KV 20%	IC953	9940 000 00949	IC 8PIN JRC4558D
C915	△ 9940 000 01087	COND SAFTY 0.0022μF 400V 20%	IC954	9940 000 00951	IC 16PIN KA7500C
C916	△ 9940 000 00934	COND SAFTY 0.0022μF 400V 20%	IC955	9940 000 00952	IC 3PIN TL431
C917	△ 9940 000 00934	COND SAFTY 0.0022μF 400V 20%	L901	9940 000 00953	AC FILTER 25MH
C918	△ 9940 000 00935	COND SAFTY 0.001μF 250V 20%	Q901	9940 000 00954	MOSFET FQP18N50V2
C919	△ 9940 000 00935	COND SAFTY 0.001μF 250V 20%	Q902	9940 000 00954	MOSFET FQP18N50V2
C921	9940 000 01086	COND DISC 0.01μF 1KV 20%	Q953	9940 000 00955	MOS/FET STP60NF06 60A
C922	9940 000 01086	COND DISC 0.01μF 1KV 20%	Q956	9940 000 00955	MOS/FET STP60NF06 60A
C923	△ 9940 000 00935	COND SAFTY 0.001μF 250V 20%	R971	△ 9940 000 00956	FUSE RES 5.6Ω 1/4W 5%
C926	9940 000 01086	COND DISC 0.01μF 1KV 20%	R972	△ 9940 000 00956	FUSE RES 5.6Ω 1/4W 5%
C927	9940 000 01086	COND DISC 0.01μF 1KV 20%	RT901	9940 000 00957	NTC 5Ω 5A
C928	9940 000 01085	COND DISC 0.001μF 1KV 20%	TR901	△ 9940 000 00958	SW. MODEL TRANSFORMER
C958	9940 000 01085	COND DISC 0.001μF 1KV 20%	TR902	△ 9940 000 01057	SW. MODEL TRANSFORMER
C982	9940 000 00936	COND DISC 470PF 1KV 10%	TR903	△ 9940 000 00961	SW. MODEL TRANSFORMER
C985	9940 000 00936	COND DISC 470PF 1KV 10%	TVR901	9940 000 00962	PTC THERMISTOR 50A 561V
C986	9940 000 00936	COND DISC 470PF 1KV 10%	ZD905	9940 000 00963	DIODE P6KE200A
C987	9940 000 00936	COND DISC 470PF 1KV 10%			
C988	9940 000 00936	COND DISC 470PF 1KV 10%			
C989	9940 000 00936	COND DISC 470PF 1KV 10%			
C990	9940 000 00936	COND DISC 470PF 1KV 10%			
C991	9940 000 00936	COND DISC 470PF 1KV 10%			
C992	9940 000 00936	COND DISC 470PF 1KV 10%			
C993	9940 000 00936	COND DISC 470PF 1KV 10%			
C994	9940 000 00937	COND DISC 220PF 1KV 10%			
C996	9940 000 00937	COND DISC 220PF 1KV 10%			
C999	9940 000 00936	COND DISC 470PF 1KV 10%			
D902	9940 000 00938	DIODE PR1507 1.5A 1000V			
D904	9940 000 00938	DIODE PR1507 1.5A 1000V			
D905	4822 130 11044	BYV26D			
D906	9940 000 00941	DIODE HER104 1A 300V 50NS			
D907	9940 000 00941	DIODE HER104 1A 300V 50NS			
D908	9940 000 00941	DIODE HER104 1A 300V 50NS			
D951	9965 000 09537	DIODE FR107 1A/1000V			
D958	9940 000 00941	DIODE HER104 1A 300V 50NS			
D959	9940 000 00943	DIODE UF3003 3A 200V			
D960	9940 000 00941	DIODE HER104 1A 300V 50NS			

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

MECHANICAL EXPLODED VIEW



SCREW LIST

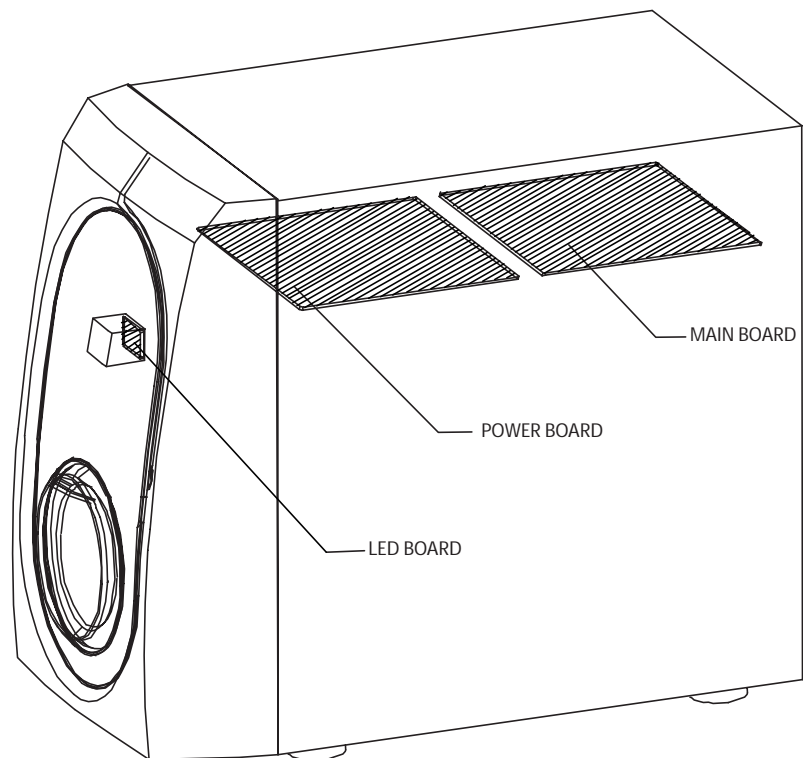
Loc	Description
66	SCREW M3.0xP0.5x22mm
68	SCREW T2.0x0.63PxL7mm
69	SCREW L8xP1.06xT3.0mm D=7.5mm
70	SCREW T3.0xL8xP1.06mm,0.47g
72	SCREW M3.0xP0.5x8
73	SCREW T3.0xL8xP1.06mm
74	SCREW M3.0xP0.5x6,0.5g
76	SCREW T3.0xL8.0xW/@10.0mm
77	SCREW T3.0xL10xP1.06mm
78	SCREW M3x6x0.5P
79	SCREW M3.0xP0.5x10
80	SCREW T3.0xL10xP1.06mm

MAIN SET MECHANICAL & ACCESSORIES PARTS

1	9940 000 00909	LENS CASS. (L)	9965 000 23583	FM ANTENNA 1000MM
2	9940 000 00911	LENS CASS. (R)	9940 000 01054	LINE CORD 2P 2000MM
3	9940 000 00908	COV. DOOR CASS	9940 000 00925	LOOP ANT W/2P 2.5MM
4	9940 000 00906	COV. DOOR CASS(L)	9940 000 02069	MAIN SPK ASS'Y 140WX2 8Ω
5	9965 000 22200	SPRING TWIST (R)	△ 9940 000 00929	PICK UP ASS'Y HITACHI
6	9965 000 22201	SPRING TWIST (L)	9965 000 14636	RCA CABLE 1200MM OD2.6x5.2
7	9965 000 22173	DOOR CASSETTE-RIGHT	9965 000 20234	RCA CABLE 1500MM OD2.6x7.8
8	9965 000 22172	DOOR CASSETTE LEFT	9965 000 20577	RCA CABLE 1500MM OD2.6x5.2
9	9965 000 22205	SPRING CASSETTE	9940 000 01055	REMOTE CONTROL 45KEYS
10	9940 000 00902	COVER VU METER	9940 000 02075	RIGHT SURROUND SPK 6R 50W
11	9940 000 00883	CAP KNOB VOLUME	9940 000 02076	LEFT SURROUND SPK 6R 50W
12	9940 000 00901	COVER VFD	9940 000 02077	CENTER SPK 3R 100W 2WAY
13	9940 000 00891	KNOB VOLUME		
14	9940 000 00884	KNOB ROTARY		
16	9940 000 00904	WINDOW DISPLAY		
17	9940 000 01044	PANEL FRONT DISPLAY		
18	9940 000 01045	FRONT CDC		
19	9965 000 22119	FOOT RUBBER		
20	9940 000 01048	FRONT CABINET		
21	9965 000 22120	DAMPER-ASSY-MODULE-0.8		
24	9965 000 22141	PUSH CATCH RIGHT		
25	9965 000 22140	PUSH CATCH-LEFT		
30	9940 000 00895	BUT. CNTL(3)		
32	9940 000 00893	BUT. CNTL(1)		
33	9940 000 00894	BUT. CNTL(2)		
34	9940 000 00876	KARAOKE KNOB		
37	9940 000 00887	BUTTON DISC SELECT		
38	9940 000 00892	BUTTON CASS		
39	9940 000 00888	BUTTON POWER STANDBY		
41	9940 000 01046	BUTTON SOURCE(WOOX)		
44	9940 000 01047	BUTTON MAX-WOOX		
49	9940 000 00913	PANEL RIGHT		
50	9940 000 02068	COVER TRAY CDC		
51	9940 000 00912	PANEL LEFT		
52	9940 000 00874	3 CDC MODULE		
56	9940 000 00873	TUNER MODULE		
62 △	9940 000 00917	FAN 60X60X15MM DC 12V		
64	9940 000 00927	TAPE DECK PHILIPS		
67	9940 000 00877	RUBBER φ14XT2MM		
73	9940 000 00899	COVER TOP		

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

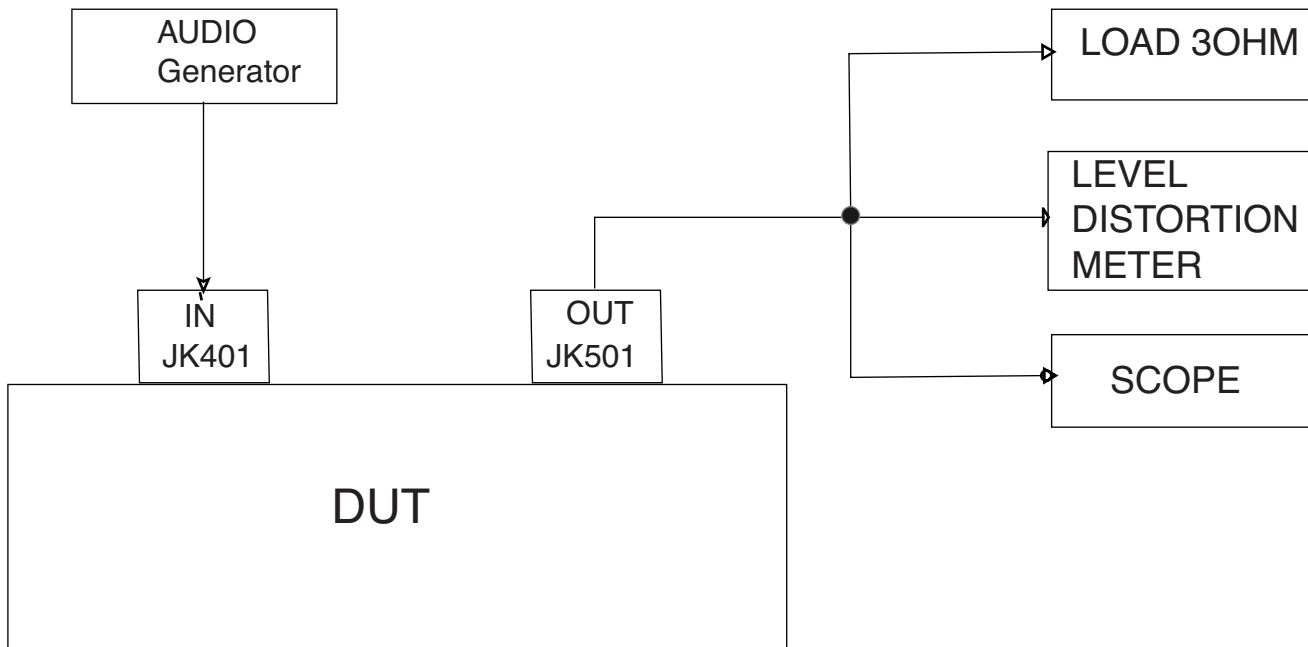
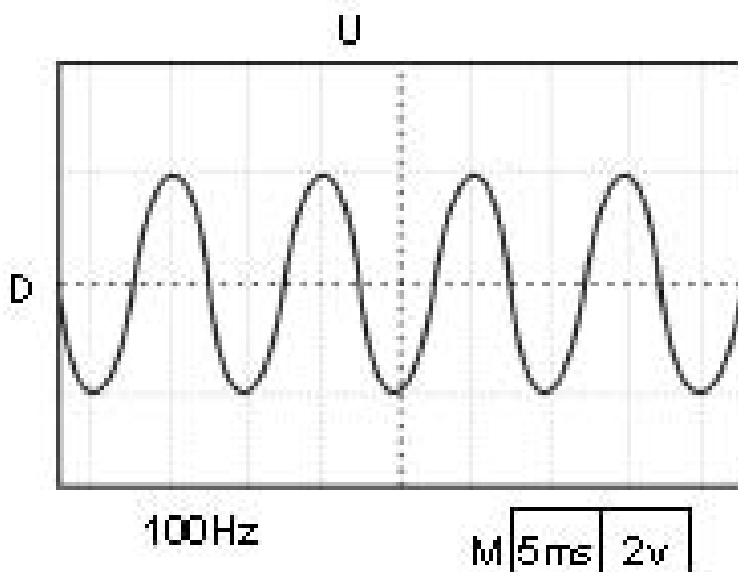
LOCATION OF PC BOARDS



SPECIFICATIONS

SUBWOOFER

Subwoofer (not magnetically shielded design)	6.5"
Output Power(10% at 80Hz)	100W (4Ω)
Reproduction Frequency Response	30 Hz-200 Hz
Input Sensitivity (Subwoofer In)	450 mV/rms
AC Power	110 - 127V / 220 - 240V
Power Consumption	40 W (at 1/8 Rated Power)
Dimensions (w x h x d)	200 mm x 310 mm x 380 mm
Weight	6.2 Kg

MEASUREMENT SETUP**Audio Test Signal**

DISASSEMBLY INSTRUCTIONS

Dismantling the Grill Base & Speaker Driver

1. Place the Subwoofer Box as shown in the Picture 1 and use a screw driver to open the Grill Base.

Caution: Take care the surface when take out the Grill Base of Subwoofer



Picture 1

2. Place the Subwoofer Box as shown in the Picture 2 and loosen 4 screws B to remove the Speaker Driver.



Picture 2

Dismantling the Front Assembly

1. Place the Subwoofer Box as shown in the Picture 3 (Bottom view) and use a screw driver to force open the front assembly.

Caution: Do not break the bundle of wires to the front. Take care the surface when take out the front panel of subwoofer



Picture 3

Dismantling the Rear assembly

1. Loosen 8 screws A as shown in the Picture 4 (Rear View) to pull out the Printed Circuit Board assembly.

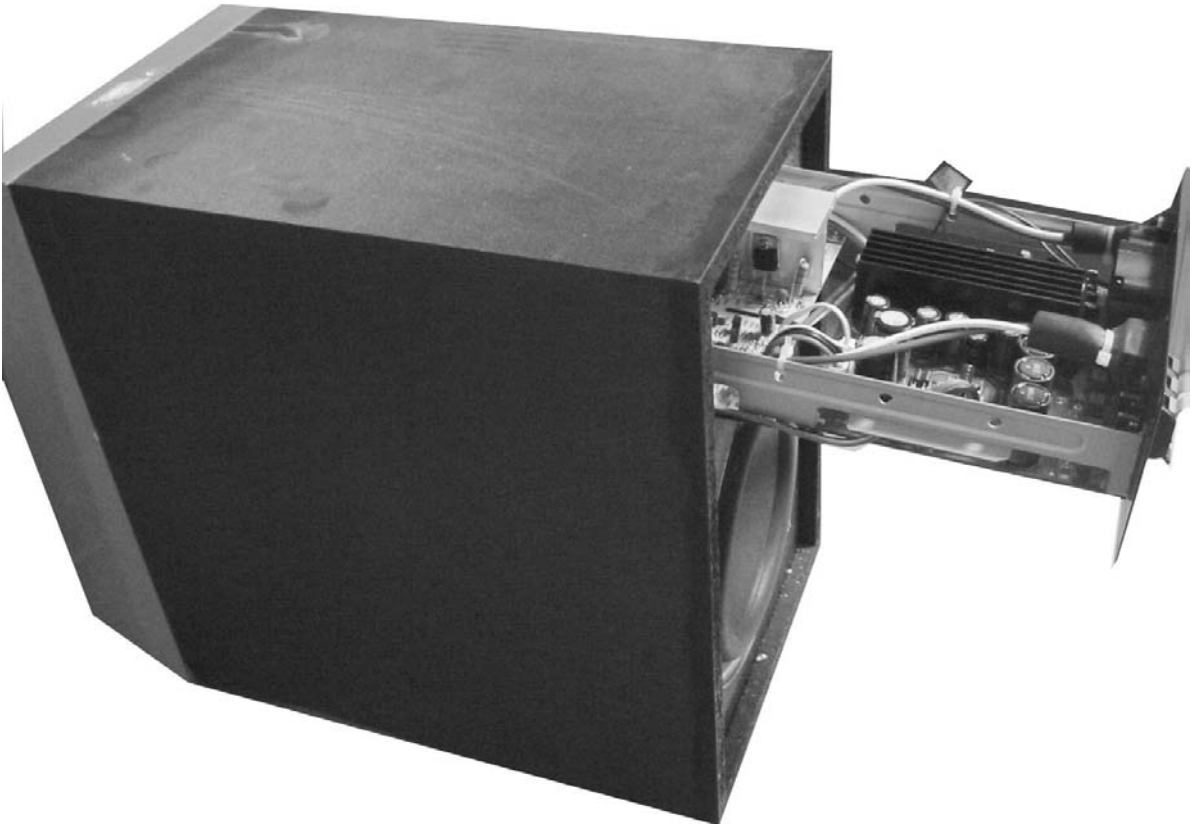
Caution: Do not break the bundle of wires to the front.



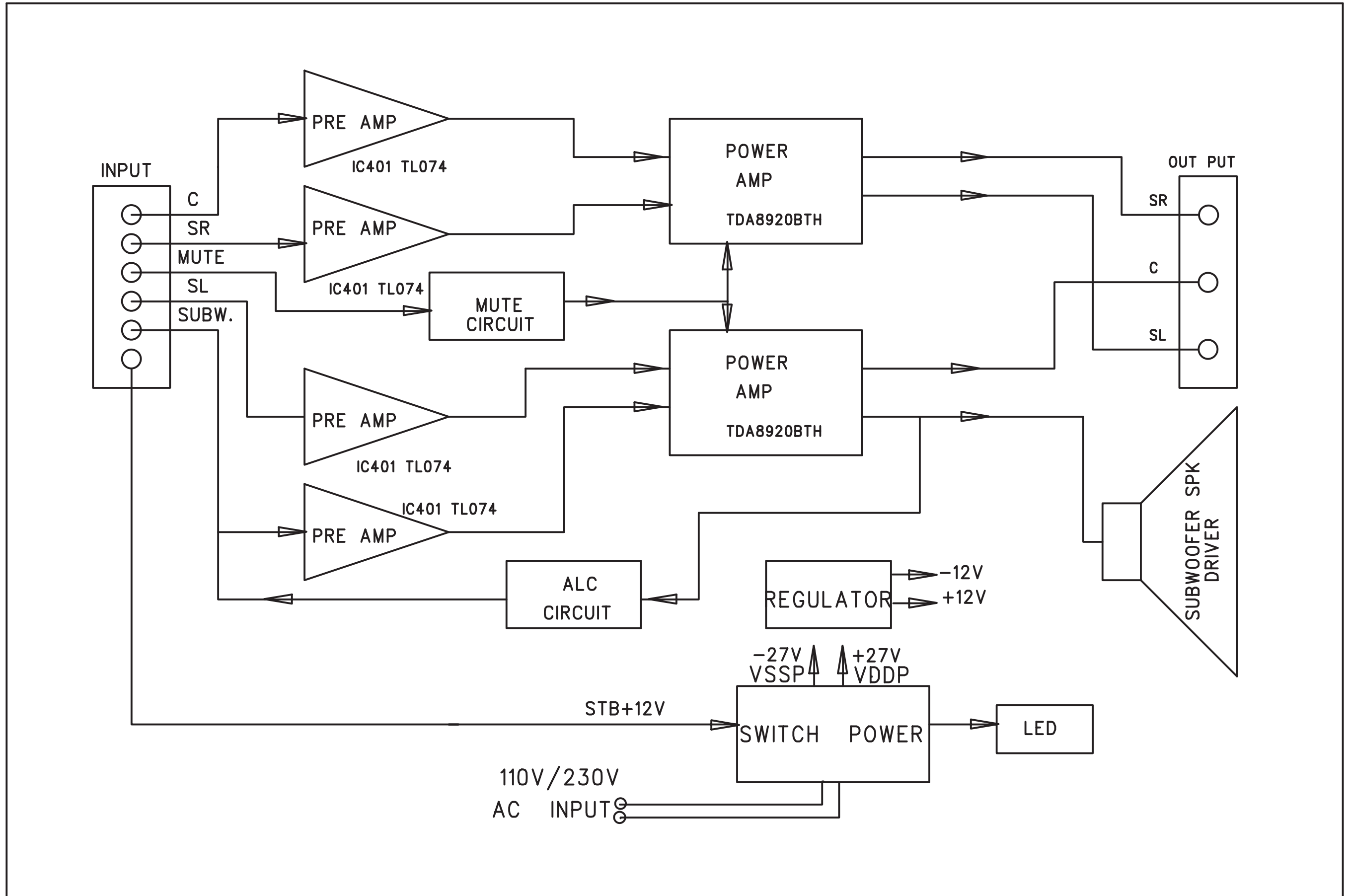
Picture 4

WARNING: THERE IS ONLY A LED BETWEEN FRONT PANEL AND WOOD BOX. IF NOT NECESSARY, PLEASE DO NOT TRY TO OPEN THE FRONT PANEL!!!

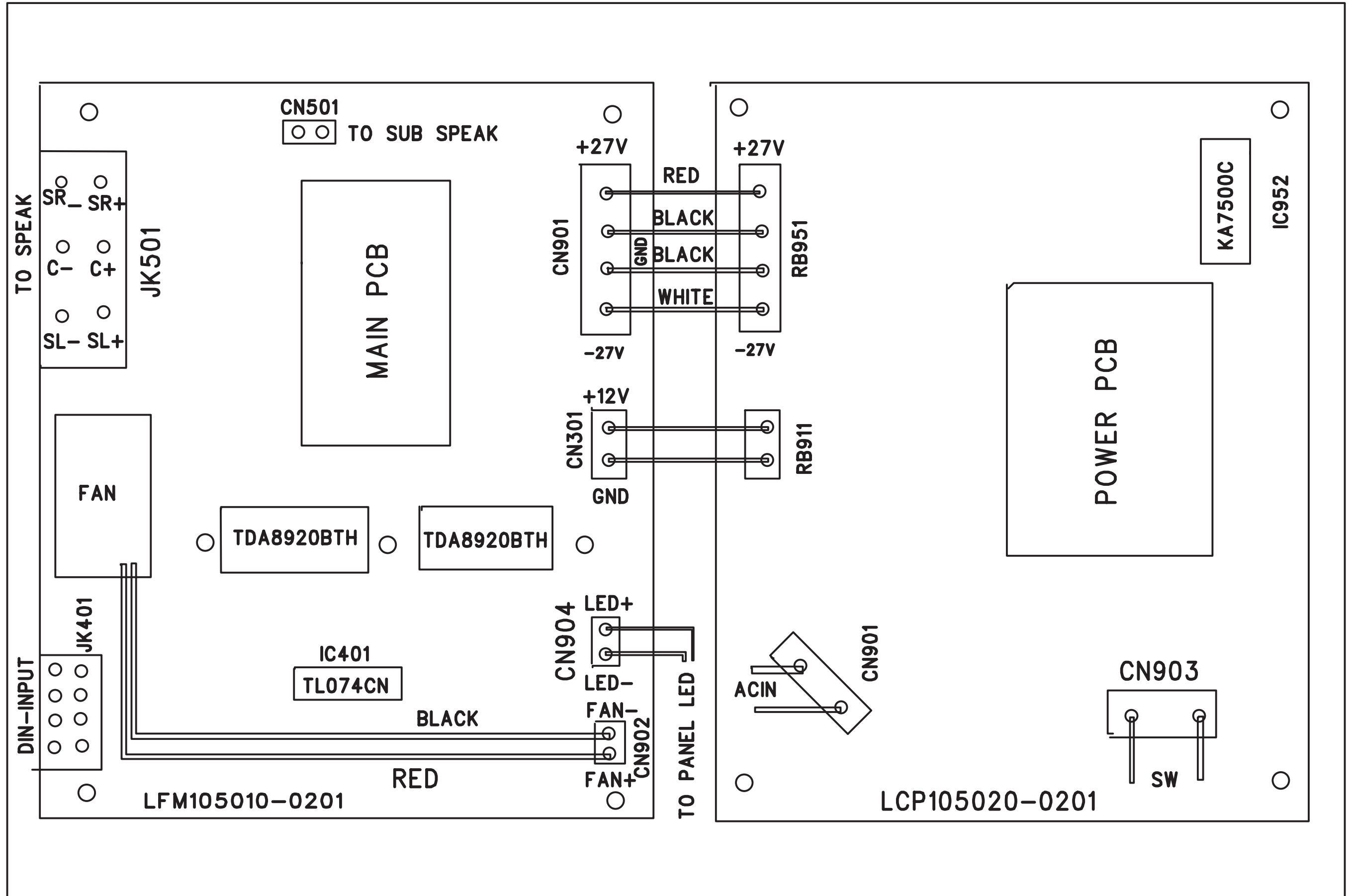
SERVICE POSITION



SUBWOOFER SET BLOCK DIAGRAM



SUBWOOFER SET WIRING DIRGRAM

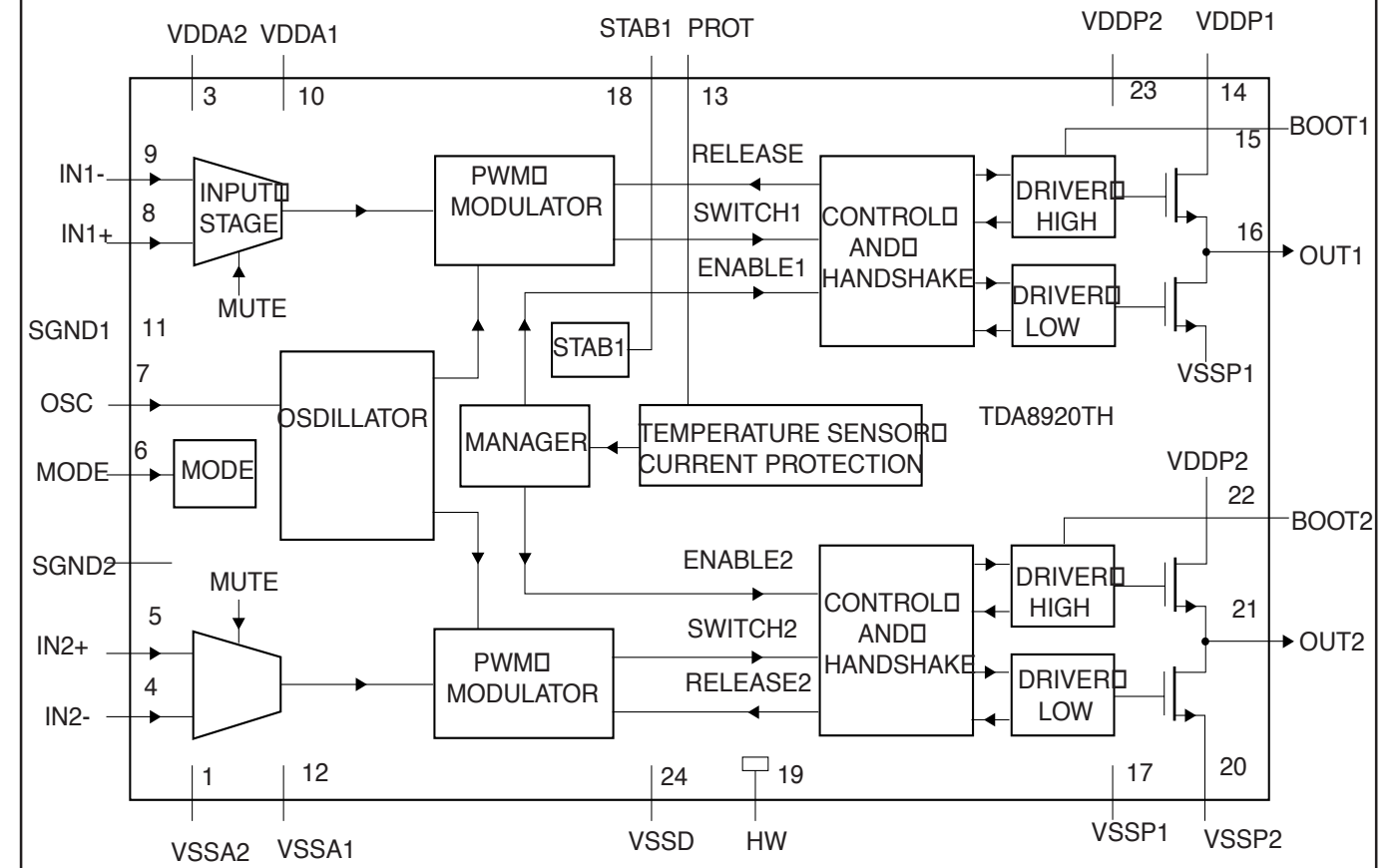


SUBWOOFER MAIN BOARD

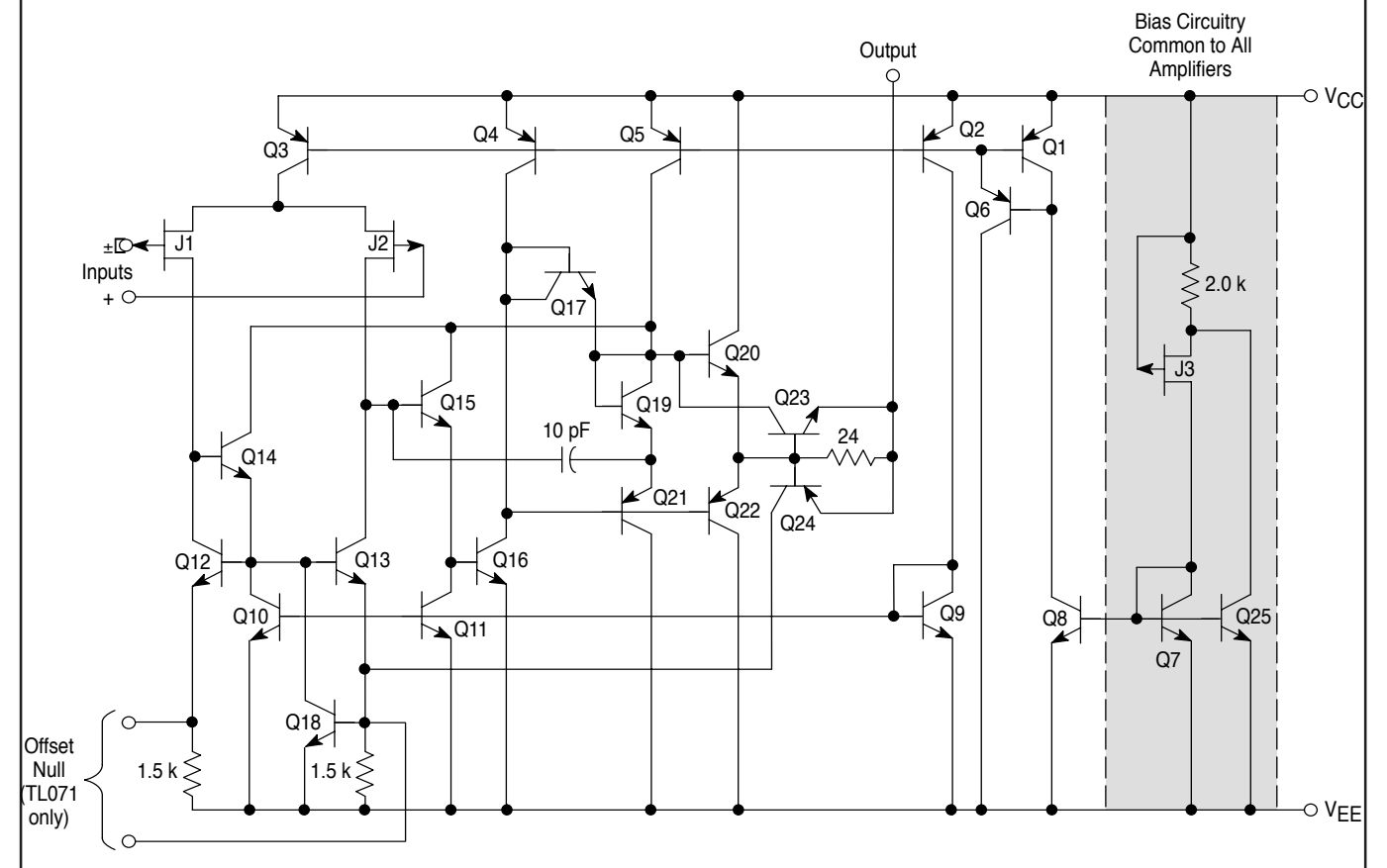
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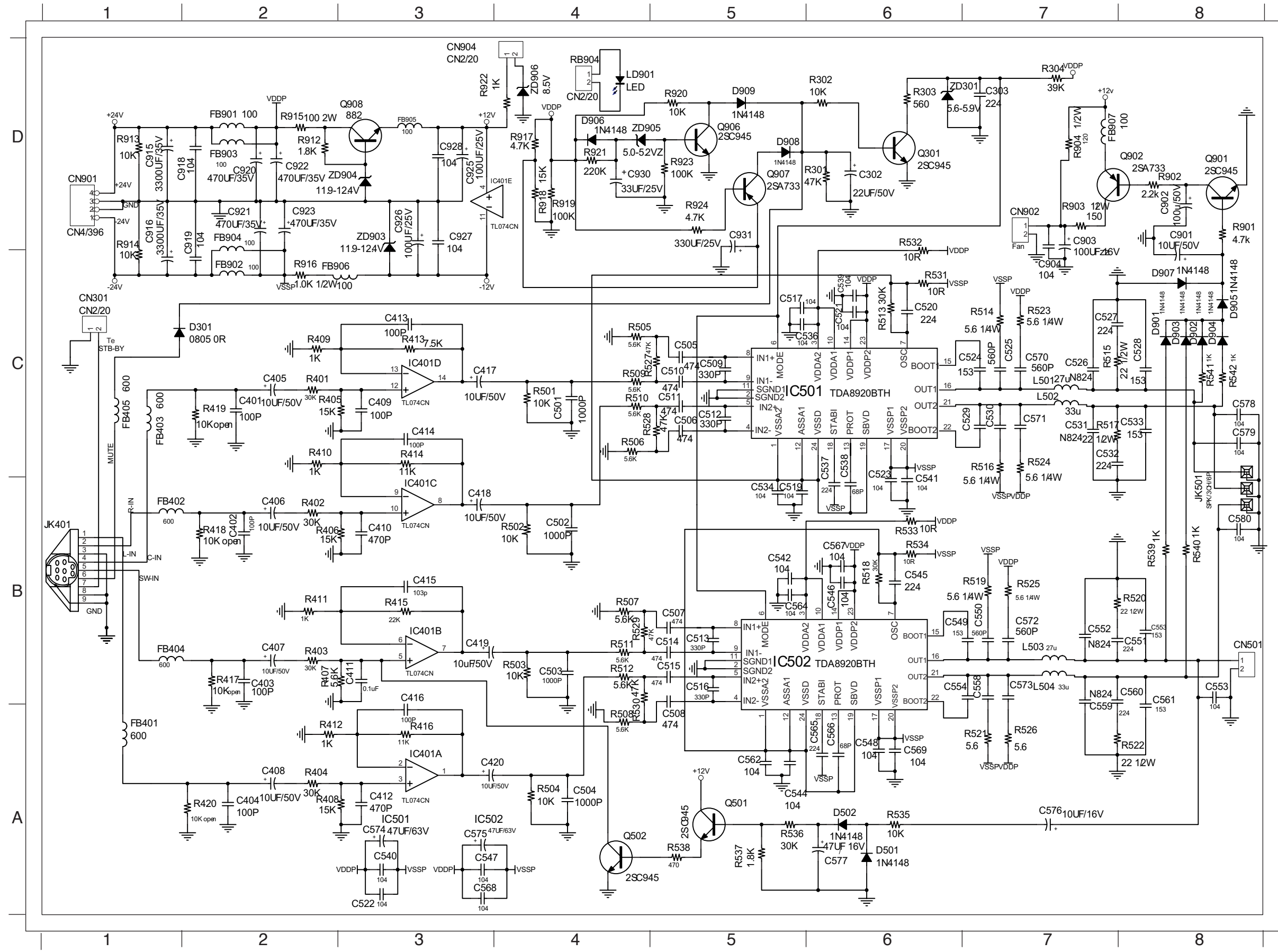
TDA8920TH INTERNAL IC DIAGRAM



TL074 INTERNAL IC DIAGRAM

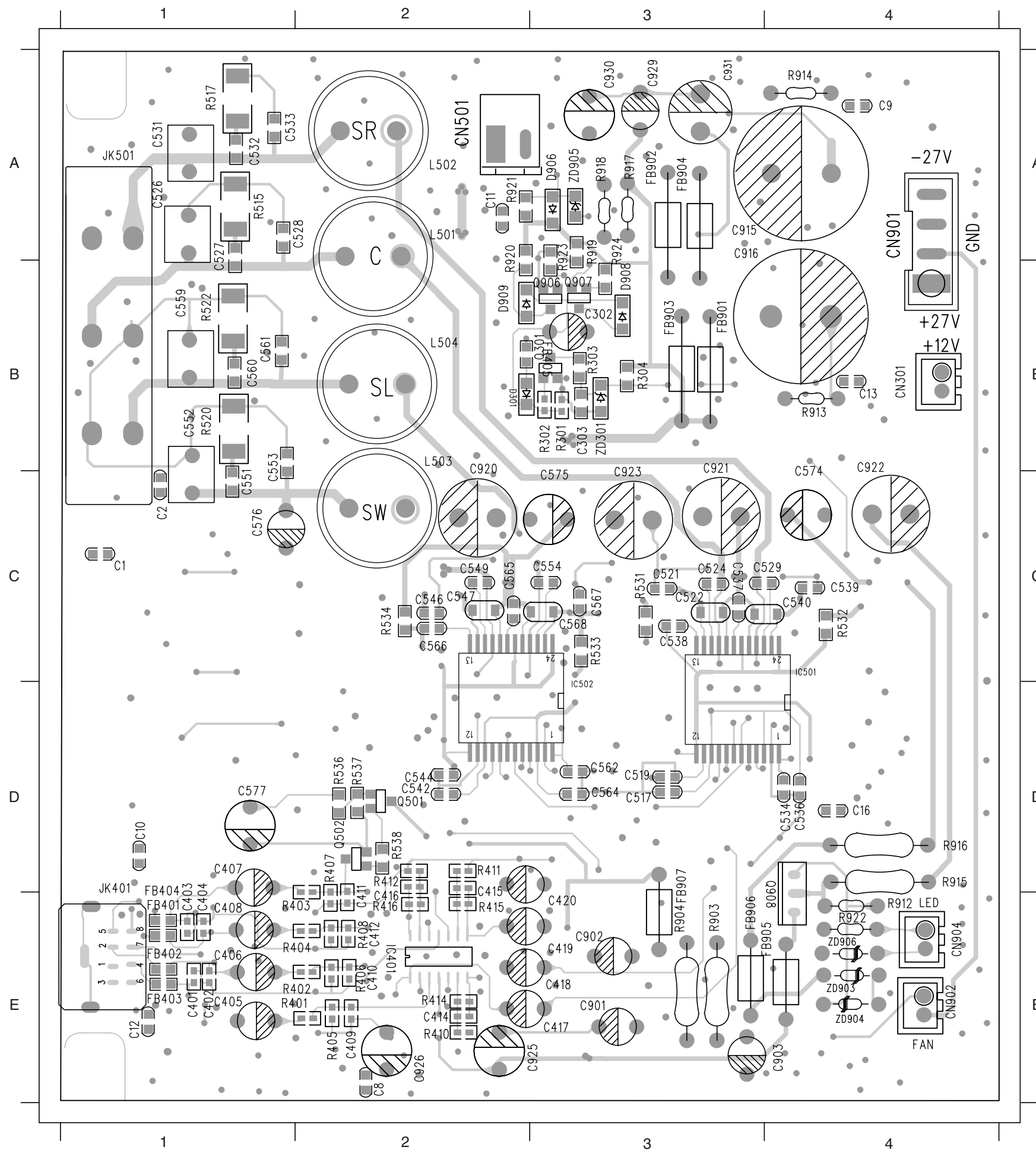


CIRCUIT DIAGRAM - MAIN BOARD



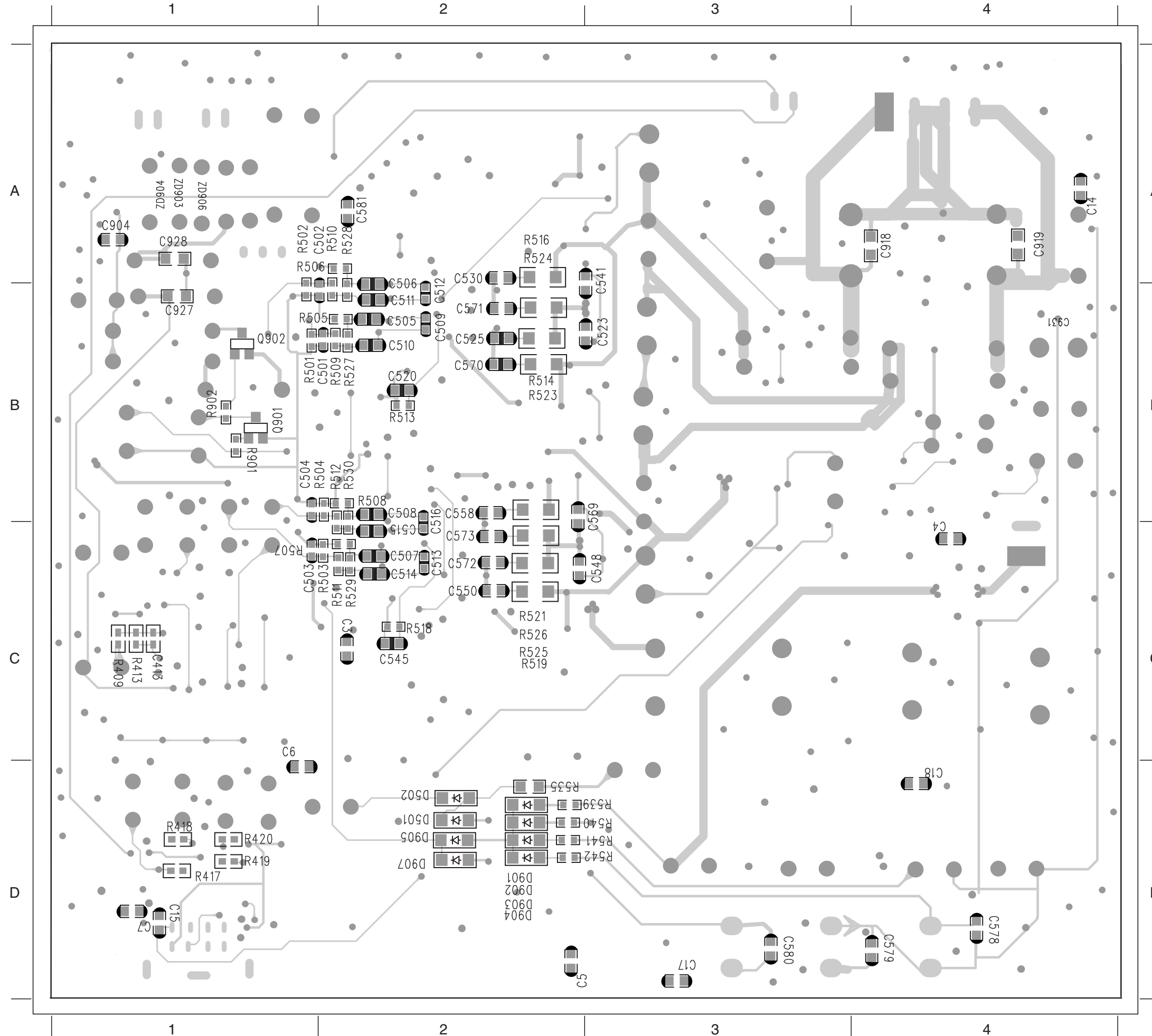
- C302 D6D
- C303 D7D
- C401 C2D
- C403 B2D
- C404 A2D
- C405 C2D
- C406 B2D
- C407 B2D
- C408 A2D
- C409 C3D
- C410 B3D
- C411 B3D
- C412 A3D
- C413 C3D
- C414 C3D
- C415 B3D
- C416 B3D
- C501 C4D
- C502 B4D
- C503 B4D
- C504 A4D
- C505 C5D
- C506 C5D
- C507 B5D
- C508 A5D
- C509 C5D
- C510 C5D
- C511 C5D
- C512 C5D
- C513 B5D
- C514 B5D
- C515 B5D
- C516 B5D
- C517 C5D
- C519 B5D
- C520 C6D
- C521 C6D
- C522 A3D
- C523 B6D
- C524 C7D
- C525 C7D
- C526 C7D
- C528 C8D
- C529 C7D
- C530 C7D
- C531 C7D
- C532 C7D
- C533 C8D
- C534 B5D
- C536 C5D
- C537 B6D
- C538 B6D
- C539 C6D
- C540 A3D
- C541 B6D
- C542 B5D
- C544 A5D
- C545 B6D
- C546 B6D
- C547 A3D
- C548 A6D
- C549 B7D
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- C569 A6D
- C570 C7D
- C571 C7D
- C572 B7D
- C573 B7D
- C574 A3D
- C575 A3D
- C576 10UF/16V
- C577 A6D
- C578 104
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- C580 104
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- C582 104
- C583 104
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- C591 10UF/50V
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- C600 104
- C901 10UF/50V
- C902 100
- C903 150
- C904 120
- C905 100
- C906 100
- C907 100
- C908 100
- C909 100
- C910 D8D
- C911 D8D
- C912 D8D
- C913 D8D
- C914 D8D
- C915 D8D
- C916 D8D
- C917 D8D
- C918 D8D
- C919 D8D
- C920 470UF/35V
- C921 470UF/35V
- C922 470UF/35V
- C923 470UF/35V
- C924 470UF/35V
- C925 100UF/25V
- C926 100UF/25V
- C927 104
- C928 104
- C929 104
- C930 100UF/25V
- C931 330UF/25V
- C932 104
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- C992 104
- C993 104
- C994 104
- C995 104
- C996 104
- C997 104
- C998 104
- C999 104
- C1000 104

MAIN PCB LAYOUT TOP VIEW



C302	B3	CN301	B4	R920	A2
C303	B3	CN501	A2	R921	A2
C401	E1	CN901	A4	R922	E4
C402	E1	CN902	E4	R923	A3
C403	E1	CN904	E4	R924	A3
C404	E1	D301	B2	ZD301	B3
C405	E1	D906	A3	ZD903	E4
C406	E1	D908	B3	ZD904	E4
C407	D1	D909	B2	ZD905	A3
C408	E1	FB401	E1	ZD906	E4
C409	E2	FB402	E1		
C410	E2	FB403	E1		
C411	E2	FB404	E1		
C412	E2	FB405	B3		
C414	E2	FB901	B3		
C415	D2	FB902	A3		
C416	D2	FB903	B3		
C417	E3	FB904	A3		
C418	E3	FB905	E3		
C419	E3	FB906	E3		
C420	E3	FB907	E3		
C517	D3	IC401	E2		
C519	D3	IC501	D3		
C521	C3	IC502	D3		
C522	C3	JK401	E1		
C524	C3	JK501	A1		
C526	A1	L501	A2		
C527	A1	L502	A2		
C528	A1	L503	B2		
C529	C3	L504	B2		
C531	A1	Q301	B2		
C532	A1	Q501	D2		
C533	A1	Q502	D2		
C534	D4	Q906	B3		
C536	D4	Q907	B3		
C537	C3	Q908	E4		
C538	C3	R301	B3		
C539	C4	R302	B3		
C540	C4	R303	B3		
C542	D2	R304	B3		
C544	D2	R401	E2		
C546	C2	R402	E2		
C547	C2	R403	E2		
C549	C2	R404	E2		
C551	C1	R405	E2		
C552	B1	R406	E2		
C553	B1	R407	E2		
C554	C3	R408	E2		
C559	B1	R410	E2		
C560	B1	R411	D2		
C561	B1	R412	D2		
C562	D3	R414	E2		
C564	D3	R415	E2		
C565	C2	R416	E2		
C566	C2	R515	A1		
C567	C3	R517	A1		
C568	C3	R520	B1		
C574	C4	R522	B1		
C575	C3	R531	C3		
C576	C1	R532	C4		
C577	D1	R533	C3		
C901	E3	R534	C2		
C902	E3	R536	D2		
C903	E3	R537	D2		
C915	A3	R538	D2		
C916	A3	R903	E3		
C920	C2	R904	E3		
C921	C3	R912	E4		
C922	C4	R913	B4		
C923	C3	R914	A4		
C925	E2	R915	D4		
C926	E2	R916	D4		
C929	A3	R917	A3		
C930	A3	R918	A3		
C931	A3	R919	A3		

MAIN PCB LAYOUT BOTTOM VIEW



C413	C1	R523	B2
C501	B2	R524	A2
C502	A2	R525	C2
C503	C1	R526	C2
C504	B1	R527	B2
C505	B2	R528	A2
C506	A2	R529	C2
C507	C2	R530	B2
C508	B2	R535	D2
C509	B2	R539	D3
C510	B2	R540	D3
C511	B2	R541	D3
C512	B2	R542	D3
C513	C2	R901	B1
C514	C2	R902	B1
C515	C2	ZD903	A1
C516	B2	ZD904	A1
C520	B2	ZD906	A1
C523	B3		
C525	B2		
C530	A2		
C541	A3		
C545	C2		
C548	C3		
C550	C2		
C558	B2		
C569	B2		
C570	B2		
C571	B2		
C572	C2		
C573	C2		
C578	D4		
C579	D4		
C580	D3		
C904	A1		
C918	A4		
C919	A4		
C927	B1		
C928	A1		
C931	B4		
D501	D2		
D502	D2		
D901	D2		
D902	D2		
D903	D2		
D904	D2		
D905	D2		
D907	D2		
Q901	B1		
Q902	B1		
R409	C1		
R413	C1		
R501	B1		
R501	A1		
R503	C2		
R504	B2		
R505	B1		
R506	A1		
R507	C1		
R508	B2		
R509	B2		
R510	A2		
R511	C2		
R512	B2		
R513	B2		
R514	B2		
R516	A2		
R518	C2		
R519	C2		
R521	C2		

ELECTRICAL PARTS - MAIN BOARD

C915	996500019963	COND ELECT 3300 μ F 35V 20%
C916	996500019963	COND ELECT 3300 μ F 35V 20%
IC401	994000002064	IC 14P TL074CDT
IC501	994000000846	IC 24P TDA8920BTH
IC502	994000000846	IC 24P TDA8920BTH
JK401	996500022220	DIN JACK 8PIN
JK501	994000002062	SPK JACK 6P G-G-B/Bx3
ZD903	996500026940	DIODE ZENR 11.9-12.4V 0.5W
ZD904	996500026940	DIODE ZENR 11.9-12.4V 0.5W
ZD905	996500015910	ZENER DIODE UDZS 5.1B
ZD906	994000002063	DIODE ZENER 8.5-8.9V 0.5W

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

POWER + LED BOARDS

IC-KA7500C INTERNAL IC DIAGRAM

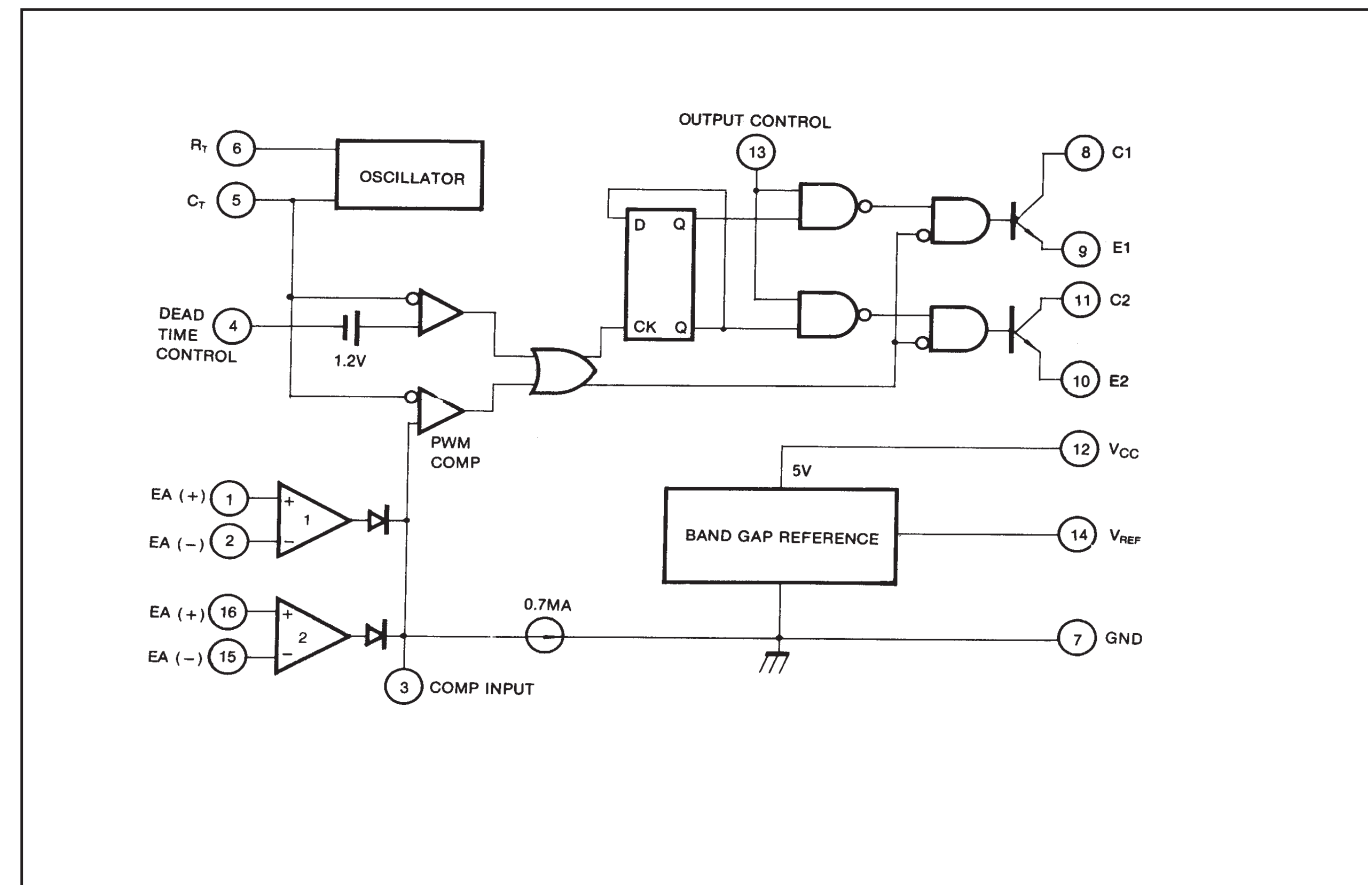
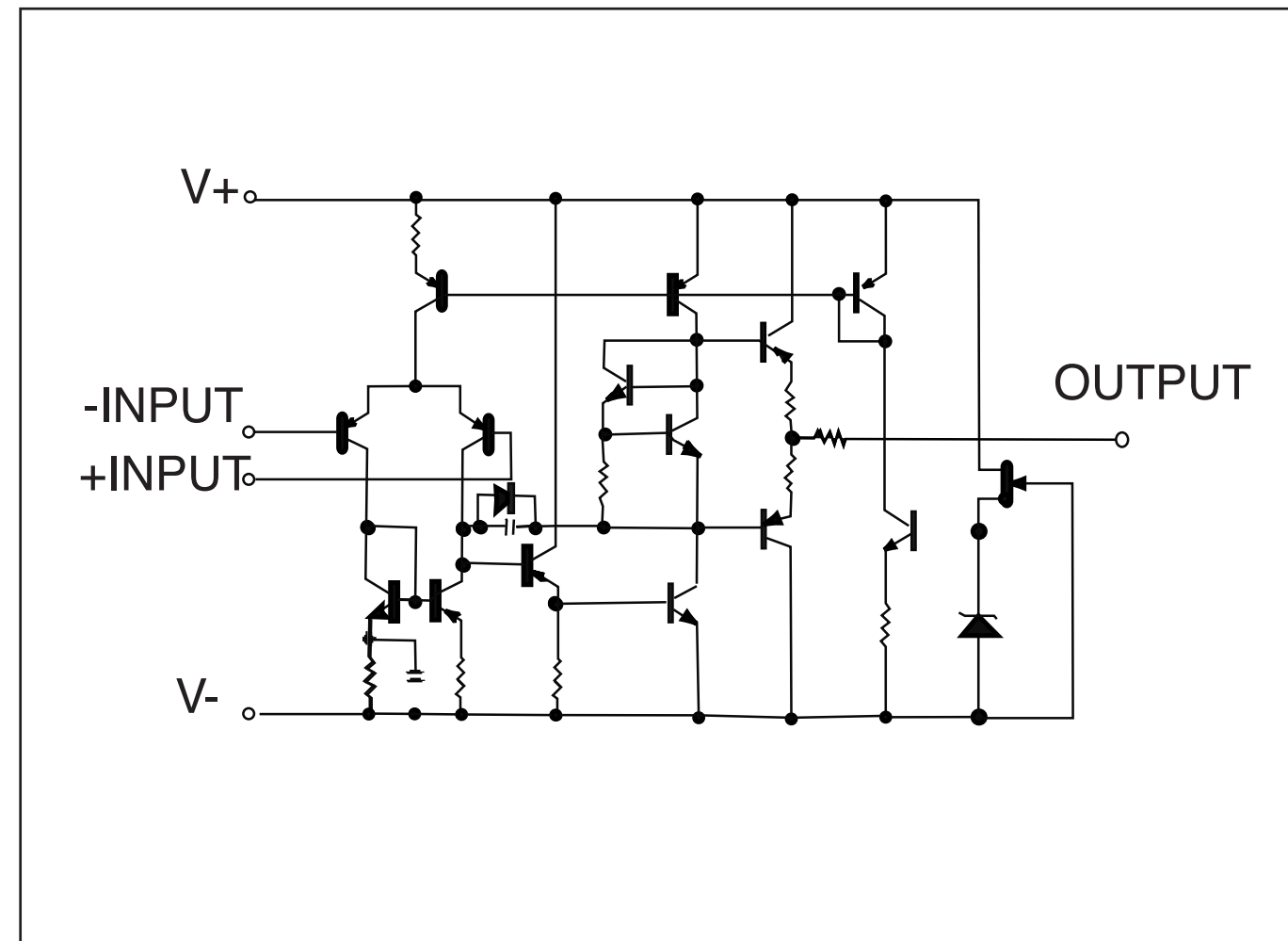


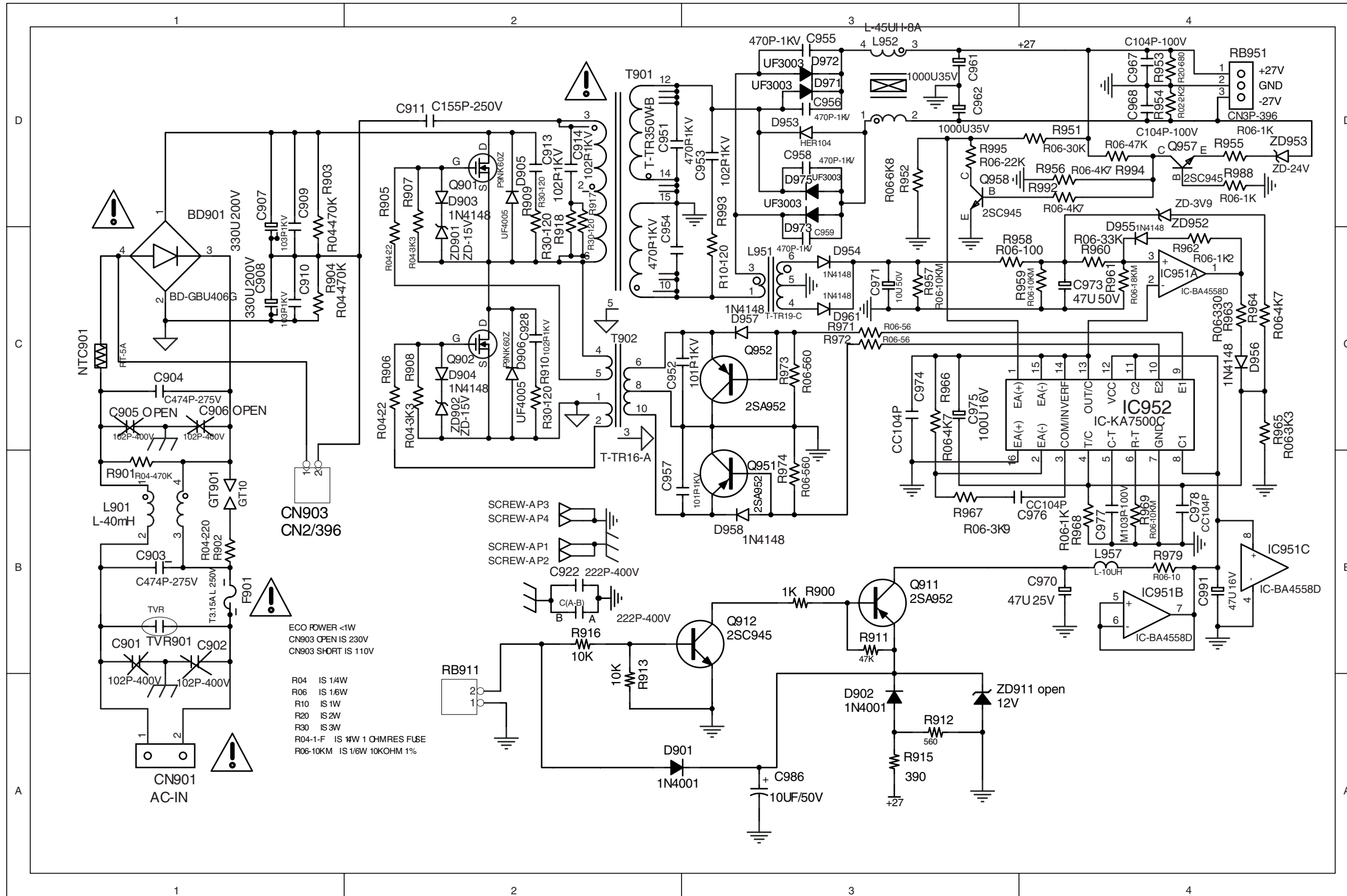
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IC-BA4558D INTERNAL IC DIAGRAM



CIRCUIT DIRGRAM - POWER BOARD

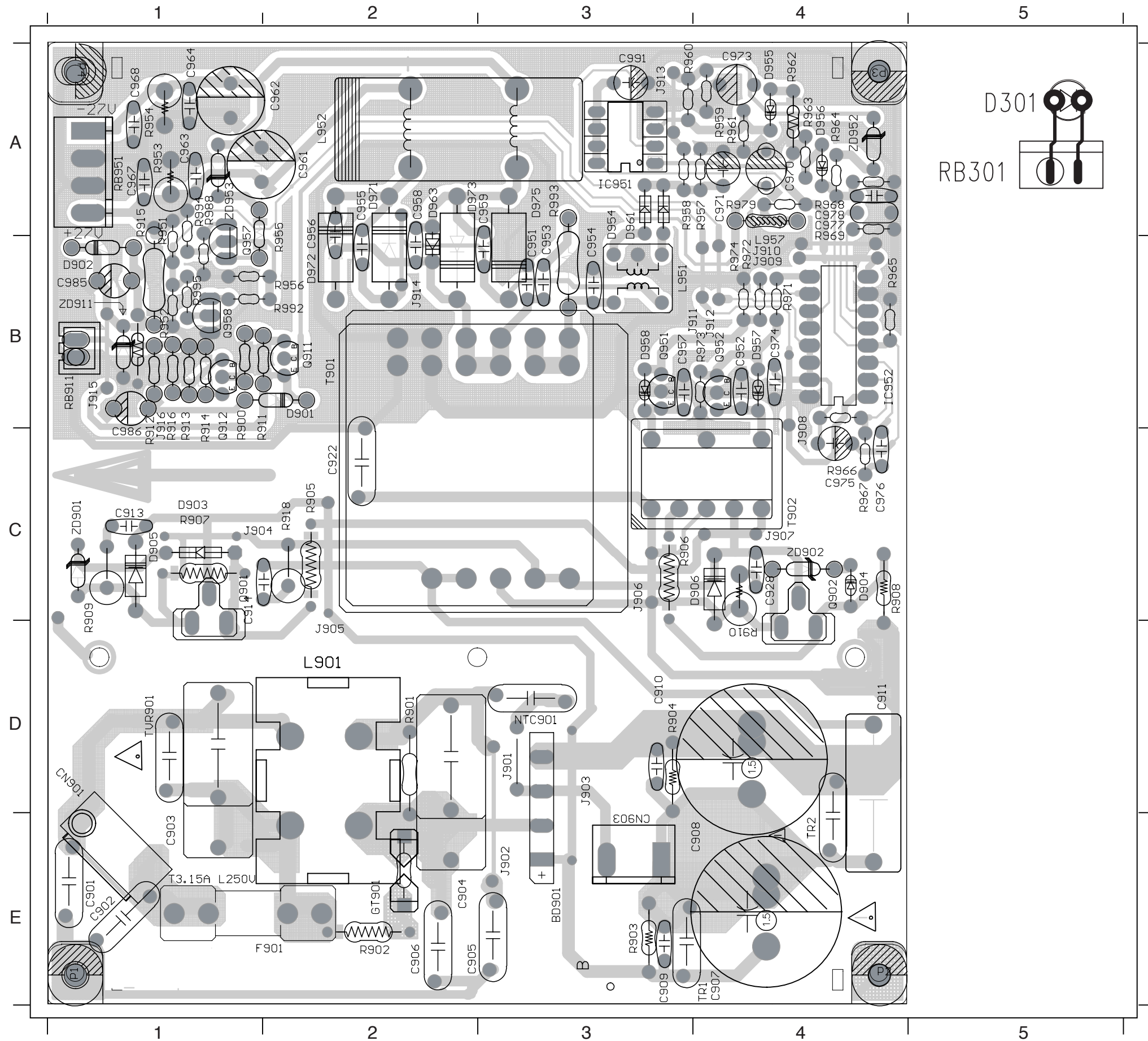


ECO POWER <1W
 CN903 OPEN IS 230V
 CN903 SHORT IS 110V

R04 IS 1/4W
 R06 IS 1/6W
 R10 IS 1W
 R20 IS 2W
 R30 IS 3W
 R04-1-F IS 1/4W 1 OHMRES FUSE
 R06-10KM IS 1/6W 10KOHM 1%

BD901	D1	NTC901	C1
C901	B1	Q901	D2
C902	B1	Q902	C2
C903	B1	Q911	B3
C904	C1	Q912	B3
C907	D1	Q951	B3
C908	C1	Q952	C3
C909	D1	Q957	D4
C910	C1	Q958	D3
C911	D2	R900	B3
C913	D2	R901	B1
C914	D2	R902	B1
C922	B2	R903	D1
C928	C2	R904	C1
C951	D2	R905	D2
C952	C2	R906	C2
C953	D3	R907	D2
C954	C2	R908	C2
C955	D3	R909	D2
C958	D3	R910	C2
C961	D3	R911	B3
C962	D3	R912	A3
C967	D4	R913	A2
C968	D4	R915	A3
C970	B4	R916	B2
C971	C3	R917	D2
C973	C4	R918	D2
C974	C3	R951	D4
C975	C3	R952	D3
C976	B4	R953	D4
C977	B4	R954	D4
C978	B4	R955	D4
C991	B4	R956	D4
CN901	A1	R957	C3
CN903	B1	R958	C4
D901	A2	R959	C4
D902	A3	R960	C4
D903	D2	R961	C4
D904	C2	R962	C4
D905	D2	R963	C4
D906	C2	R964	C4
D953	D3	R965	C4
D954	C3	R966	C3
D955	C4	R967	B3
D956	C4	R968	B4
D957	C3	R969	B4
D958	B3	R971	C3
D961	C3	R972	C3
D971	D3	R973	C3
D972	D3	R974	B3
D973	D3	R979	B4
D975	D3	R988	D4
F901	B1	R992	D4
GT901	B1	R993	D3
IC951A	C4	R994	D4
IC951B	B4	R995	D3
IC951C	B4	RB911	A2
IC952	C4	RB951	D4
L901	B1	T901	D2
L951	C3	T902	C2
L952	D3	TVR901	B1
L957	B4	ZD901	C2
		ZD902	C2
		ZD952	D4
		ZD953	D4

PCB LAYOUT - POWER + LED BOARD



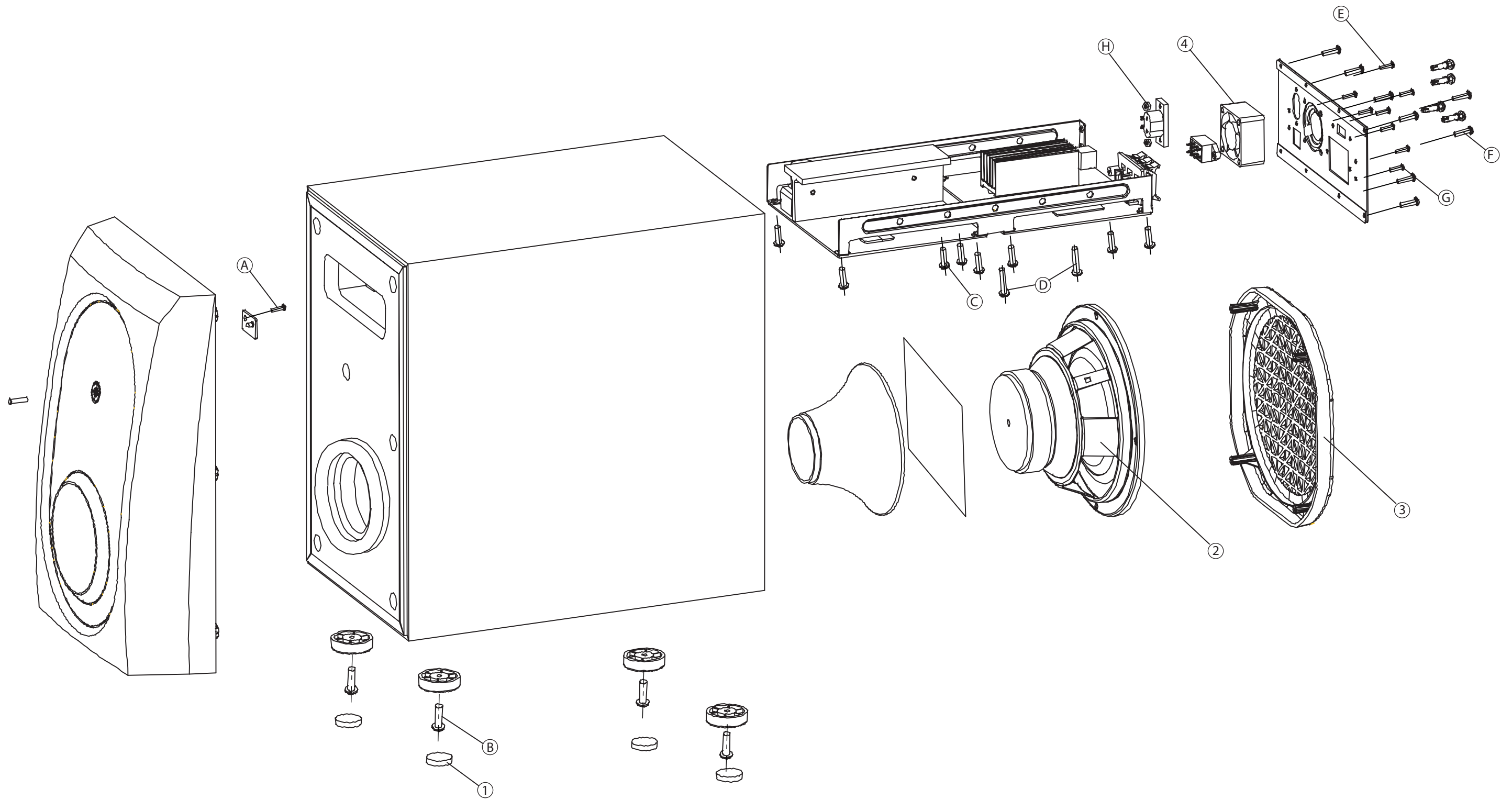
- | | | | | | |
|-------|------|--------|------|--------|------|
| BD901 | RB30 | J911 | BB40 | T902 | CC4 |
| C901 | EE10 | J912 | BB40 | TR1 | EE4I |
| C902 | E10 | J913 | AA30 | TR2 | EE4I |
| C903 | EE10 | J914 | BB20 | TVR901 | DD |
| C904 | EE20 | J915 | BB10 | ZD901 | DD1 |
| C907 | EE40 | J916 | BB10 | ZD902 | DD4 |
| C908 | EE40 | L901 | DD20 | ZD952 | AA4I |
| C909 | EE30 | L951 | BB30 | ZD953 | BB1 |
| C910 | DD30 | L952 | AA20 | | |
| C911 | DD40 | L957 | BB40 | | |
| C913 | CC10 | NTC901 | D30 | | |
| C914 | CC10 | Q901 | CC10 | | |
| C922 | CC20 | Q902 | CC40 | | |
| C928 | CC40 | Q911 | BB20 | | |
| C951 | BB30 | Q912 | BB10 | | |
| C952 | BB40 | Q951 | BB30 | | |
| C953 | BB30 | Q952 | BB40 | | |
| C954 | BB30 | Q957 | BB10 | | |
| C955 | AA20 | Q958 | BB10 | | |
| C956 | AA20 | R900 | BB10 | | |
| C958 | AA20 | R901 | DD20 | | |
| C959 | AA30 | R902 | DD20 | | |
| C961 | AA20 | R903 | DD30 | | |
| C962 | AA20 | R904 | DD30 | | |
| C964 | AA10 | R905 | CC20 | | |
| C966 | AA10 | R906 | CC30 | | |
| C968 | AA10 | R907 | CC10 | | |
| C970 | AA40 | R908 | CC40 | | |
| C971 | AA40 | R909 | CC10 | | |
| C973 | AA40 | R910 | CC40 | | |
| C974 | BB40 | R911 | BB10 | | |
| C975 | CC40 | R912 | BB10 | | |
| C976 | CC40 | R913 | BB10 | | |
| C977 | AA40 | R914 | BB10 | | |
| C978 | AA40 | R915 | AA10 | | |
| C986 | BB10 | R916 | BB10 | | |
| C991 | AA30 | R918 | CC20 | | |
| CN901 | DD | R951 | AA10 | | |
| CN903 | EE30 | R952 | BB10 | | |
| D301 | AA50 | R953 | AA10 | | |
| D901 | BB20 | R954 | AA10 | | |
| D902 | BB10 | R955 | AA20 | | |
| D903 | CC10 | R956 | BB20 | | |
| D904 | CC40 | R957 | AA40 | | |
| D905 | CC10 | R958 | AA30 | | |
| D906 | CC40 | R959 | AA40 | | |
| D954 | AA30 | R960 | AA30 | | |
| D955 | AA40 | R961 | AA40 | | |
| D956 | AA40 | R962 | AA40 | | |
| D957 | BB40 | R963 | AA40 | | |
| D958 | BB30 | R964 | AA40 | | |
| D961 | AA30 | R965 | BB40 | | |
| D963 | AA20 | R966 | CC40 | | |
| D971 | AA20 | R967 | CC40 | | |
| D972 | BB20 | R968 | AA40 | | |
| D973 | AA20 | R969 | AA40 | | |
| D975 | AA30 | R971 | BB40 | | |
| F901 | EE20 | R972 | BB40 | | |
| IC951 | AA30 | R973 | BB40 | | |
| IC952 | BB40 | R974 | BB40 | | |
| J901 | DD30 | R979 | AA40 | | |
| J902 | EE30 | R988 | AA10 | | |
| J903 | DD30 | R992 | BB20 | | |
| J904 | CC10 | R993 | AA30 | | |
| J905 | DD20 | R994 | AA10 | | |
| J906 | CC30 | R995 | BB10 | | |
| J907 | CC40 | RB301 | BB50 | | |
| J908 | CC40 | RB911 | BB10 | | |
| J909 | BB40 | RB951 | BB10 | | |
| J910 | BB4 | T901 | BB2 | | |

ELECTRICAL PARTS - POWER & LED BOARD

BD901	9940 000 02065	RECTIFIER GBU4J 4A 600V
C903	△ 9940 000 00932	COND SAFTY 0.47μF 275V 125' 10%
C904	△ 9940 000 00932	COND SAFTY 0.47μF 275V 125' 10%
C909	9940 000 01086	COND DISC 0.01μF 1KV 20%
C910	9940 000 01086	COND DISC 0.01μF 1KV 20%
C913	9940 000 01085	COND DISC 0.001μF 1KV 20%
C914	9940 000 01085	COND DISC 0.001μF 1KV 20%
C928	9940 000 01085	COND DISC 0.001μF 1KV 20%
C951	9940 000 00936	COND DISC 470pF 1KV 10%
C953	9940 000 01085	COND DISC 0.001μF 1KV 20%
C954	9940 000 00936	COND DISC 470pF 1KV 10%
C955	9940 000 00936	COND DISC 470pF 1KV 10%
C958	9940 000 00936	COND DISC 470pF 1KV 10%
C959	9940 000 00936	COND DISC 470pF 1KV 10%
D301	9940 000 00878	LED φ3 RED ROUND
D971	9940 000 00943	DIODE UF3003 3A 200V
D972	9940 000 00943	DIODE UF3003 3A 200V
D973	9940 000 00943	DIODE UF3003 3A 200V
D975	9940 000 00943	DIODE UF3003 3A 200V
F901	△ 9965 000 17388	FUSE 3.15A 250V
IC951	9940 000 00949	IC 8P NJM4558D
IC952	9940 000 00951	IC 16P KA7500C
L901	9940 000 02066	LINE FILTER 4P 42.0mH +/-30%
L951	9965 000 27102	TOROID COIL S1=1TS φ0.65mmx2
Q901	9965 000 27140	MOSFET STP9NK60Z 7A 600V
Q902	9965 000 27140	MOSFET STP9NK60Z 7A 600V
RT901	△ 9940 000 00957	NTC 5R 5A φ13mm
T901	△ 9965 000 27112	SW. TRANSFORMER
T902	△ 9940 000 01057	SW. MODEL TRANSFORMER
TR1	9965 000 27114	VARISTOR FOR SURGE VOLT.
TR2	9965 000 27114	VARISTOR FOR SURGE VOLT.
TVR901	9940 000 00962	PTC THERMISTOR 50A 561V
ZD901	9940 000 02067	DIODE ZENR 14.5-15.1V 0.5W
ZD902	9940 000 02067	DIODE ZENR 14.5-15.1V 0.5W
ZD952	9965 000 27138	DIODE ZENR 3.8-4.0V 0.5W
ZD953	9965 000 27139	DIODE ZENR 23.6-24.7V 0.5W

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

MECHANICAL EXPLODED VIEW



MECHANICAL & ACCESSORIES PARTS

01	9940 000 02072	RUBBER PAD OD20XT4
02	9940 000 02074	SPK DRIVER 61/2" 100W 3Ω
03	9965 000 15949	GRILLE
04	9940 000 02073	DC FAN 12V 70MA 0.8W
	9940 000 02075	RIGHT SURR. SPK 6Ω 50W
	9940 000 02076	LEFT SURR. SPK 6Ω 50W
	9940 000 02077	CENTER SPK 3Ω 100W 2WAY

ELECTRICAL PARTS - MISCELLANEOUS

	9940 000 00918	FFC 14P P=1.27MM 220MM
	9940 000 00919	FFC 24P P=0.5MM 380MM
	△ 9940 000 01052	FUSE 6.3A 250V
	△ 9940 000 01053	FUSE 6.3A 250V
	9940 000 01056	LED φ3 BLUE LENS
	9940 000 02071	DC VU METER 650R
	△ 9940 000 01057	SW. MODEL TRANSFORMER
	9940 000 00872	TACT SW 50MA 12V
	9940 000 00871	TACT SW φ1.7MM

SCREW LIST

A	SCREW T3xL8xP1.06
B	SCREW T3.5xP1.4xL20
C	SCREW M3xP0.5xL6
D	SCREW T3xL12xP1.06
E	SCREW M3xL10xP0.5
F	SCREW T3xL8xP1.06
G	SCREW M3xL8xP0.5
H	NUT M3xP0.5

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

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