

Service
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Service Manual



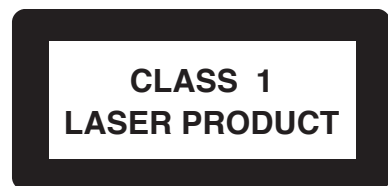
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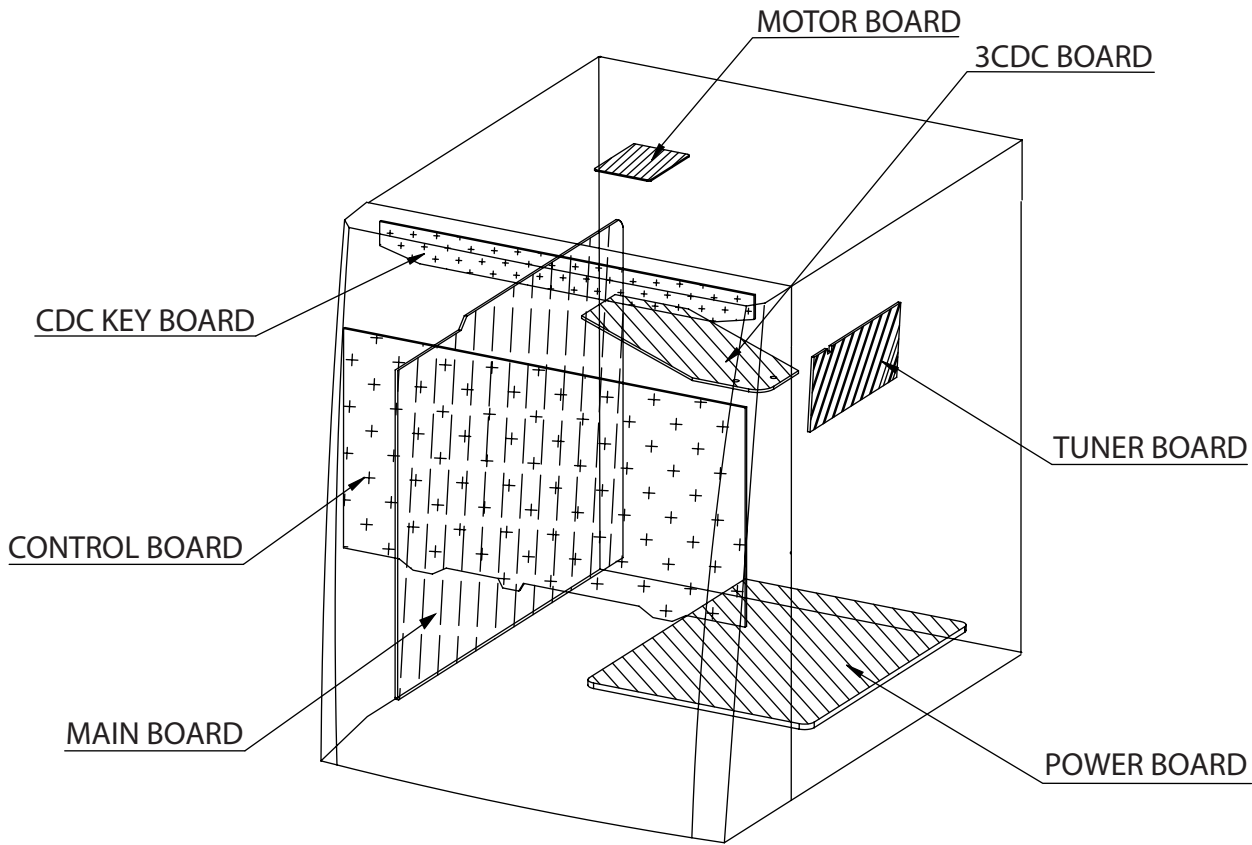
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Version 1.0



PHILIPS

LOCATION OF PC BOARDS



VERSION VARIATIONS:

Type /Versions:	FWD39		
	/21	/21M	30
Features & Board in used:			
Karaoke	x	x	x
RDS			
Rotary Encoder (volume control)	x	x	x
Jog Shuttle	x	x	x
Voltage Selector	x	x	
Aux Input	x	x	x
Digital Output	x	x	x
Headphone Socket	x	x	x
Line Output	x	x	x
Standby - FTD Clock Display	x	x	x
Tuner board - ECO6 System	x	x	x

SPECIFICATIONS

AMPLIFIER SECTION

Output power	1500 W PMPO
Stereo mode	50 W + 50 W RMS
Frequency Response	180 Hz - 14 kHz / ± 3 dB
Signal-to-Noise Ratio	> 62dB (A-weighted)
Input Sensitivity	
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 ≥ 55 dB
.....	MW ≥ 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 / ± 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)	≥ 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 - 240 V
.....	50/60HZ Switchable
Power Consumption	
Active	45 W
ECO Power Standby	<1 W
Dimensions (W x H x D)	265 x 310 x 367 (mm)
Weight	5.45 kg

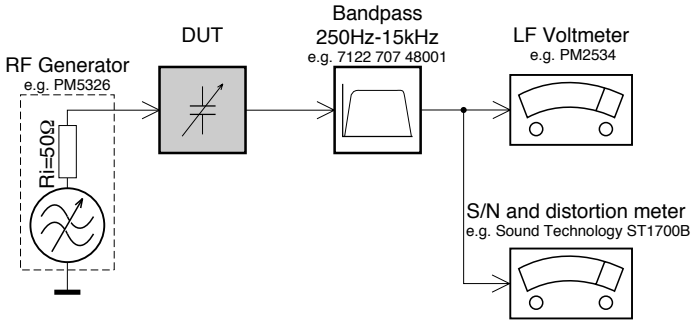
SPEAKERS

Front speakers	
System	3-way, Bass reflex
Impedance	6 Ω
Speaker drivers	6.5" woofer,
.....	2" tweeter
Frequency response	50 Hz – 20 kHz
Dimensions (W x H x D)	
.....	260 x 310 x 195 (mm)
Weight	3.77 kg/each

Specifications and external appearance are subject to change without notice.

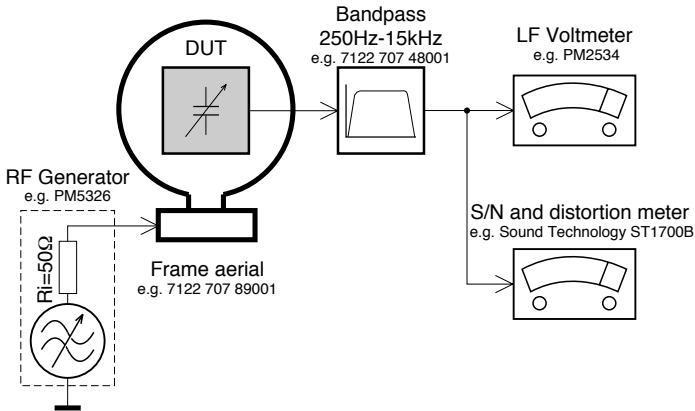
MEASUREMENT SETUP

Tuner FM



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

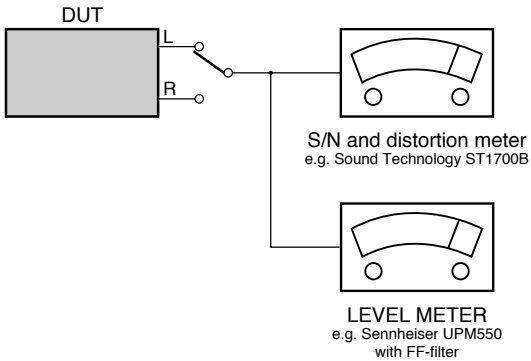
Tuner AM (MW,LW)



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).

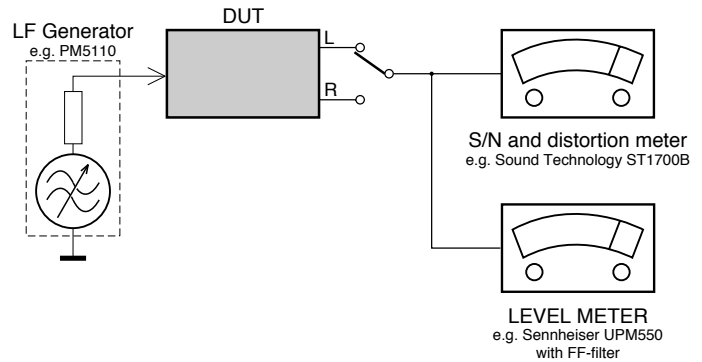
CD

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

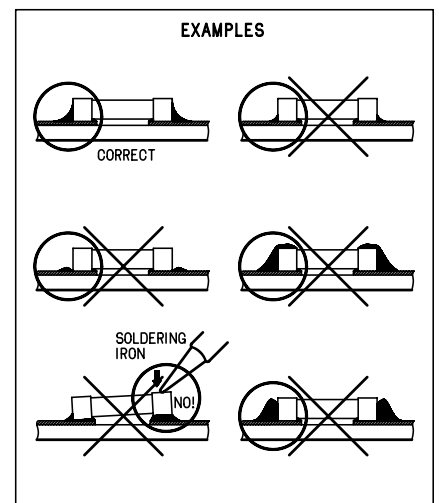
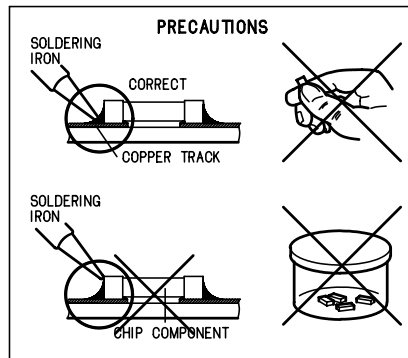
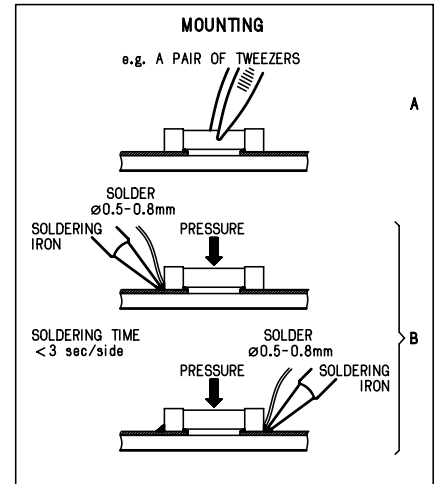
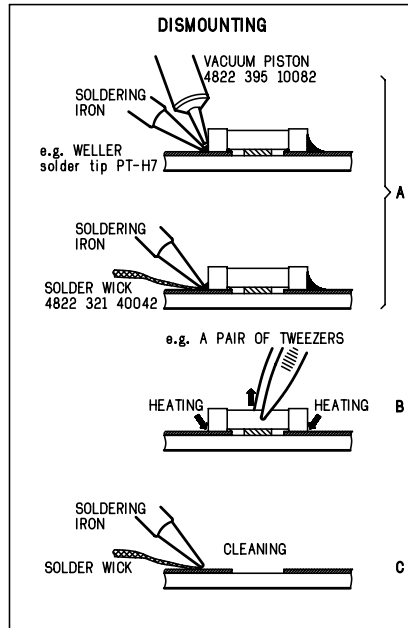
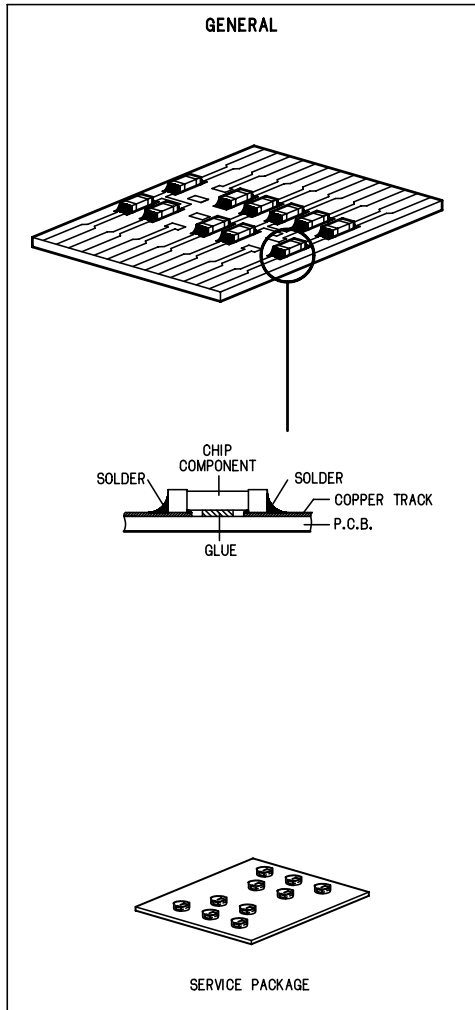
Compact Disc:

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 suoalukituksen ohitettaessa olet alltiina 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

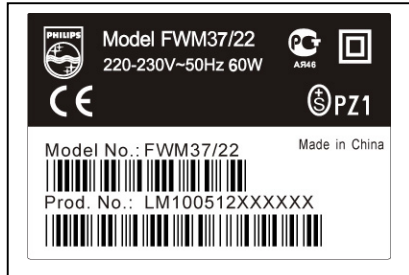
Philips CE is producing lead-free sets from 1.1.2005 onwards.

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".

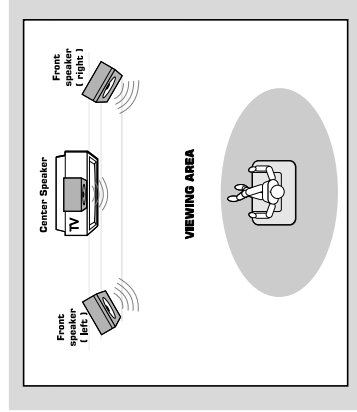
For additional questions please contact your local repair-helpdesk.

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.

Step 1: Placing speakers

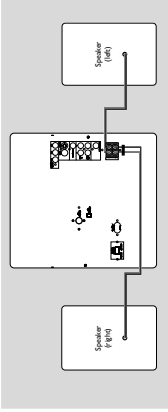


Place the front left and right speakers at equal distances from the TV set and at an angle of approximately 45 degrees from the listening position.

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	+	-	+
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.

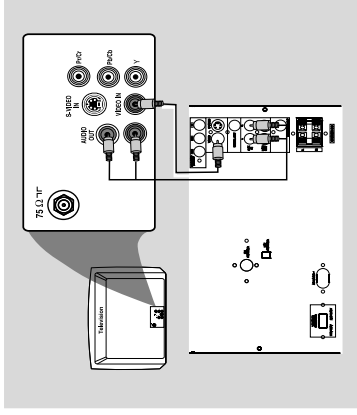
IMPORTANT!

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.

Step 3: Connecting TV set



IMPORTANT!

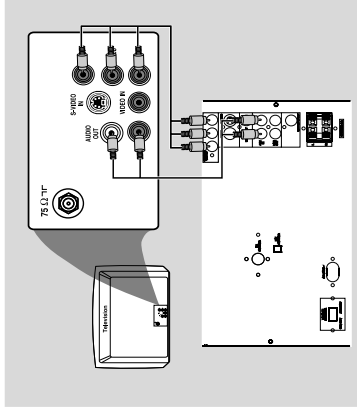
- You only need to make one video connection from the following options, according to the capabilities of your TV system.
- S-Video or Component Video connection provides higher picture quality. These options must be available on your TV set.
- Connect the system directly to the TV set.

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.

Deactivate Progressive Scan through SYSTEM MENU. See page 31, Using the Setup Menu- Using Progressive Scan to improve image quality.



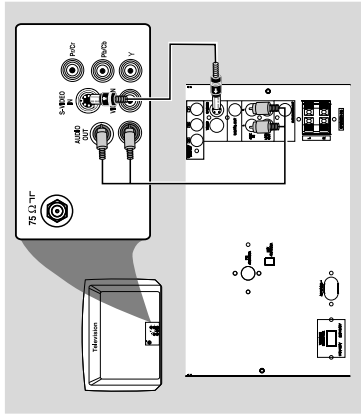
Using component Video In jack (Pr Pb Y)

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.

If you are using a Progressive Scan TV set (TV with Progressive Scan or ProScan capability), activate the PROGRESSIVE SCAN function through SYSTEM MENU.

Connections

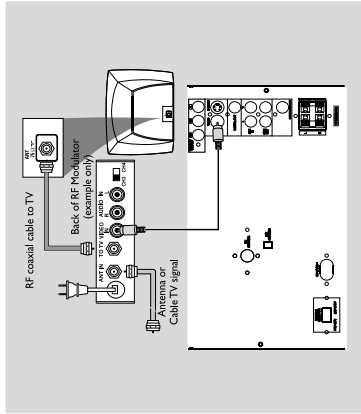


Using S-Video In Jack

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.

Deactivate Progressive Scan through **SYSTEM MENU**. See page 31. Using the Setup Menu-Using Progressive Scan to improve image quality.



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.

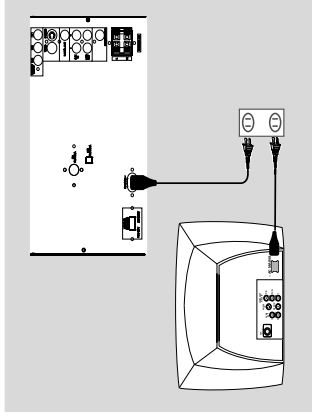
Using an accessory RF modulator

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. Deactivate Progressive Scan through **SYSTEM MENU**. See page 31. Using the Setup Menu-Using Progressive Scan to improve image quality.

Connections

Step 5: Connecting the power cord



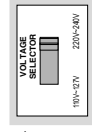
After everything is connected properly, plug in the AC power cord to the power outlet.

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

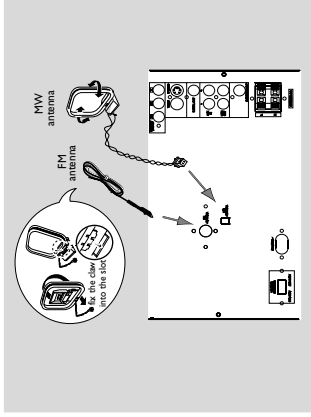
On the DVD Mini Hi-Fi System

"**RF**" **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 35, Tuner Operations- Presetting radio stations).

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



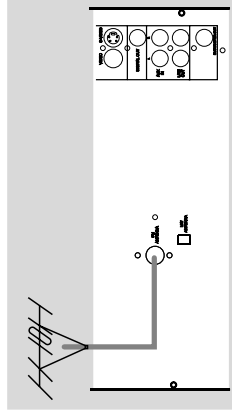
Step 4: Connecting FM/MW antennas



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.

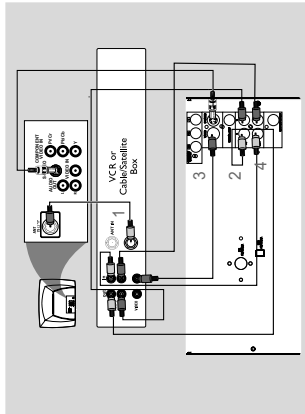


Notes:

- 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.

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** on the remote control to select "AUX" in order to activate the input source.

Using the VCR for recording DVDs

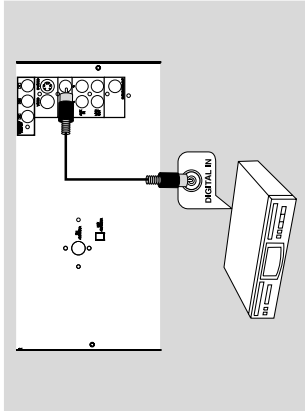
Some DVDs are copy-protected. You cannot record or dub protected discs using a VCR.

- 3 Connect the system's **VIDEO** jack to the **VIDEO IN** jack on the VCR.
- 4 Connect the system's **LINE OUT (R/L)** 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).

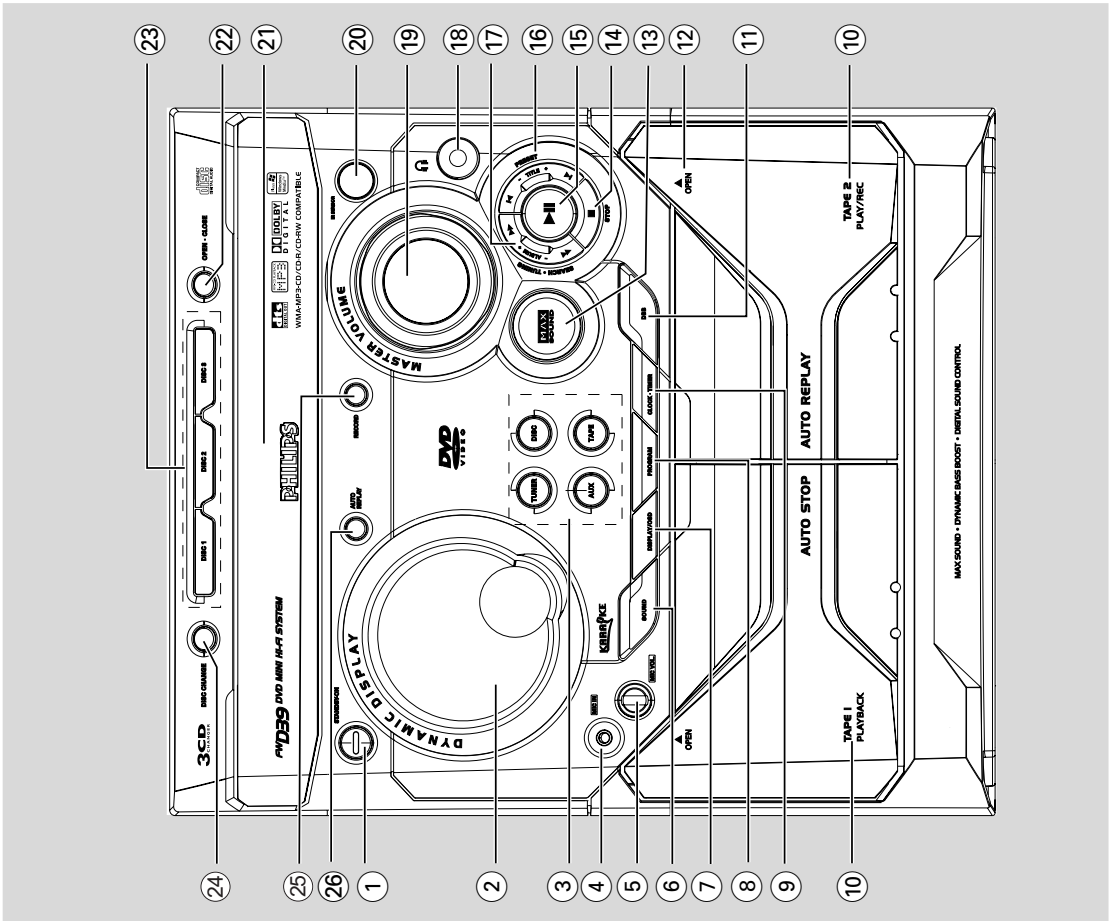
Before operation, set the **DIGITAL OUTPUT** according to the audio connection. (See Using the Setup Menu – Setting the digital output).

Functional Overview

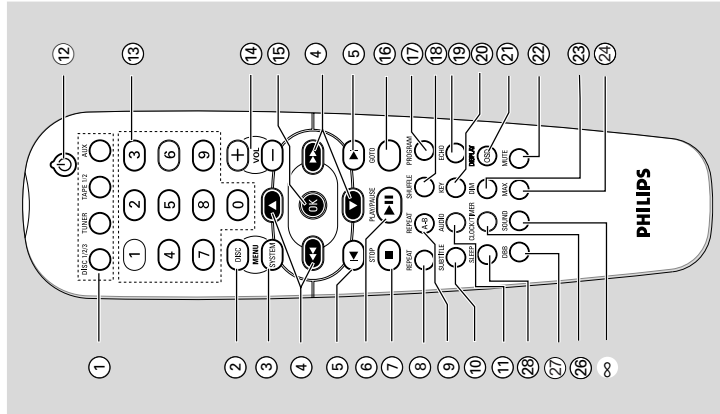
Controls on the system

- 1 **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** to select a connected external source: TV/CDR, AUX (auxiliary).
 - 4 **MIC IN** to connect microphone jack.
 - 5 **MIC VOL.** to adjust the mixing level for karaoke or microphone recording.
 - 6 **SOUND** to select various sound effect.
 - 7 **DISPLAY/OSD** to display disc information during disc playback.
 - 8 **PROGRAM** in disc mode, to program favorite tracks. in tuner mode, to program favorite stations.
 - 9 **CLOCK/TIMER** to view and set clock/ timer.
 - 10 **TAPE DECK 1/ 2**
 - 11 **DBB (Dynamic Bass Boost)** to select the desired DBB level (DBB 1, DBB 2, DBB3 or DBB OFF).
 - 12 **▲ OPEN** to open the tape deck door.
 - 13 **MAX SOUND** to activate or deactivate MAX sound.
 - 14 **STOP ■** for DISC to stop playback or to clear a programme. (in Standby or ECO power mode) to activate/deactivate demonstration. for PLUG&PLAY ... (on the system only) to exit plug&play mode.

- 15 **▶ 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.
- 16 **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/TIMER .. to set the hour.
- 17 **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/TIMER .. to set the minute.
- 18 **fh** to connect headphones.
- 19 **MASTER VOLUME** to increase or decrease the volume.
- 20 **SENSOR** point the remote control towards this sensor.
- 21 **DISC TRAYS**
- 22 **OPEN•CLOSE** to open or close the disc tray
- 23 **DISC1/ DISC2/ DISC3** to select a disc tray for playback.
- 24 **DISC CHANGE** to change disc(s).
- ∞ **RECORD** to start recording on tape deck 2.
- 25 **AUTO REPLAY** In tape mode, to select continuous playback in either REPLAY or PLAY mode only.



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 ▶▶) for example).

① SOURCE

- to select the relevant active mode: DISC/1/2/3, TUNER, TAPE/1/2 or AUX.

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.

- ④ ◀◀ / ▶▶ / ▲ / ▼ – to select movement direction in disc contents menu/system menu bar.
- in 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 MAX

- To activate or deactivate MAX sound.

∞ SOUND

- to select various sound effect.

㉖ CLOCK/TIMER

- to view and set clock/ timer.

㉗ DBB (Dynamic Bass Boost)

- to select the desired DBB level (DBB 1, DBB 2, DBB3 or DBB OFF).

㉘ SLEEP

- to set the sleep (auto-off) timer function.

Preparations

IMPORTANT!

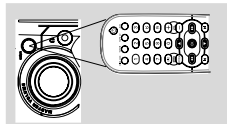
- Make sure to complete the preparation procedures before operating the system.

Step 1: Inserting batteries into the remote control



- 1 Open the battery compartment.
- 2 Place two batteries (Type R06 or AA) in the compartment with the correct polarity as indicated by “+” and “-” symbols.
- 3 Close the cover.

Using the remote control to operate the system



- 1 Point the remote control directly at the remote sensor (R) on the front panel.
- 2 Select the source you wish to control by pressing one of the source select buttons on the remote control (for example TAPE1/2, TUNER).
- 3 Then select the desired function (for example ►|| ◀ or ►|).

CAUTION!

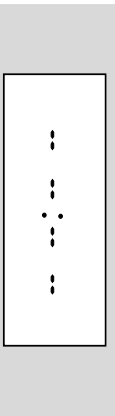
- Remove batteries if they are exhausted or will not be used for a long time.
- Do not use old and new or different types of batteries in combination.
- Batteries contain chemical substances, so they should be disposed of properly.

Preparations

Step 2: Setting the clock

The clock can be set in either 12-hour or 24-hour mode (“PM 00:00” or “00:00” for example).

- 1 The clock can be set in any source mode. If you have not set the clock, “--:--” will be shown on the display.



- 2 Press and hold **CLOCK/TIMER** until “SELECT CLOCK OR TIMER” is displayed. Press ◀ or ▶ to change the display to “CLOCK”. Press **CLOCK/TIMER** again to confirm.
- 3 Press ◀ or ▶ on the system to set the hours.
- 4 Press ◀◀ or ▶▶ on the system to set the minutes.
- 5 Press **CLOCK/TIMER** to confirm your setting. The system will store the setting automatically and go back to its previous status. The time setting becomes effective.

Note:

- In AUX mode, setting clock using remote control is not possible.

To exit the setting without storing (in standby mode)

- Press ■ on the system to exit. “EFFECT.” will appear on the display. Press **STANDBY ON** to exit setting mode and go into **ECO POWER** mode.

CHANGE, OPEN/CLOSE to exit setting mode and go into disc mode.

- The system will also exit setting mode and go to TUNER, TAPE or AUX mode when you press the corresponding source button.

Viewing the clock in any source mode

- When you have set the clock, press **CLOCK/TIMER** to view clock. Press **DISPLAY** on the system to toggle between 12-hour and 24-hour modes.

The time will be displayed for 5 seconds and then go back to its previous status.

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 its previous status.

Step 3: Setting the TV set

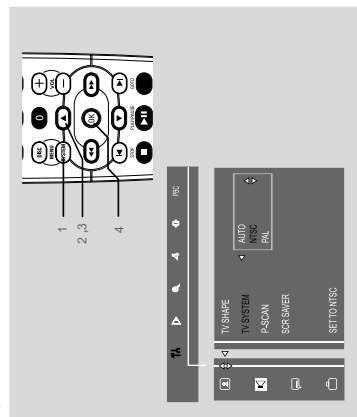
IMPORTANT!

- 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.

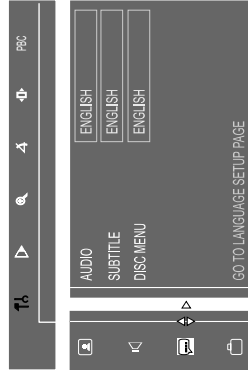
- 4 Select an item and press **OK**.

To remove the menu

Press **SYSTEM MENU**.

Step 4: 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.



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

To remove the menu

Press **SYSTEM MENU**.

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.	<p>Check if the AC power cord is properly connected.</p> <p>Check if the disc is inserted upside down.</p> <p>Wait until the moisture condensed at the lens has cleared.</p> <p>Replace or clean the disc, see "Maintenance".</p> <p>Use a readable disc or correctly recorded format MP3-CD.</p>
No picture.	<p>Select the appropriate video input mode on the TV set.</p> <p>Check if the TV set is switched on.</p> <p>Check the video connection.</p> <p>Check if the system is securely connected.</p> <p>Sometimes a slight picture distortion may appear. This is not a malfunction.</p> <p>Clean the disc.</p> <p>Connect the system to the S-video input of your TV set.</p>
Distorted or poor picture.	<p>The aspect ratio is fixed on the DVD disc.</p> <p>The aspect ratio may not be changed for some TV systems.</p>
The DVD player does not start playback.	<p>Insert a readable disc.</p> <p>Check the disc type, color-system and region code.</p> <p>Clean the disc.</p> <p>Place the disc with the playback side down.</p> <p>Press SYSTEM MENU to turn off the setup menu.</p> <p>Cancel the parental control rating function or change the rating level.</p> <p>Moisture has condensed inside the system.</p> <p>Remove the disc and leave the system turned on for about an hour.</p> <p>Disconnect the power plug from the jack, and insert again.</p>
The system does not respond when the buttons are pressed.	

Troubleshooting

Problem	Solution
The language for the sound or subtitle cannot be changed when playing a DVD.	<p>Multi-language sound or subtitle is not recorded on the DVD.</p> <p>Changing the language for the sound or subtitle is prohibited on the DVD.</p> <p>Make sure the component is connected correctly.</p> <p>Press the correct function button for the input source.</p> <p>Adjust the volume.</p> <p>Disconnect the headphones.</p> <p>Check that the speakers are connected correctly.</p> <p>Check if the stripped speaker wire is clamped.</p> <p>If the system is in pause, slow motion or fast forward/reverse mode, press ▶ to resume the normal play mode.</p> <p>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.</p> <p>If the signal is too weak, adjust the antenna or connect an external antenna for better reception.</p> <p>Increase the distance between the System and your TV set or VCR.</p>
No image is output when a function is selected.	
Sound cannot be heard or is of poor quality	
Poor radio reception.	<p>Clean deck parts, see "Maintenance".</p> <p>Use only NORMAL tape.</p> <p>Apply a piece of adhesive tape over the missing tab space.</p> <p>Remove and reconnect the AC power plug and switch on the system again.</p> <p>Check the speaker connections and location.</p> <p>Point the remote control at the remote control sensor of the unit.</p> <p>Reduce the distance to the player.</p> <p>Remove any possible obstacles.</p> <p>Replace the batteries with new ones.</p> <p>Check that the batteries are loaded correctly.</p> <p>Press DIM again.</p> <p>Set the clock correctly.</p> <p>If recording is in progress, stop it.</p> <p>Power has been interrupted or the power cord has been disconnected. Reset the clock/timer.</p>
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	

System, Region code, Tuner, etc. setting procedure

1) System Reset

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

2) Region Code Change

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

Region Code

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

TV System

1	NTSC
2	PAL
3	AUTO

Menu/ Audio Subtitle (AS) Language

1	English
2	English
3	English
4	English

AFS

001	LX3000D/LX3500D /MRD200
002	MX3600D/MX3800
003	LX3700D/LX3750W
005	MRD210
006	MX3660D
008	FW-D550/FWD570/FWD39

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 digits

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

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

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

For FWD39 /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 reaches 25, you will not be able to further change the code until you reset the timer by the Region Code timer reset procedure

CAUTION !

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

3) Region code change timer reset

Press below key to reset the timer :

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

4) Tuner area change

- Press the "OPEN/CLOSE" button to open the set's door
- Press "1" "5" "9" button by using R/C.
- TV Show "TUNER AREA"
- 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.

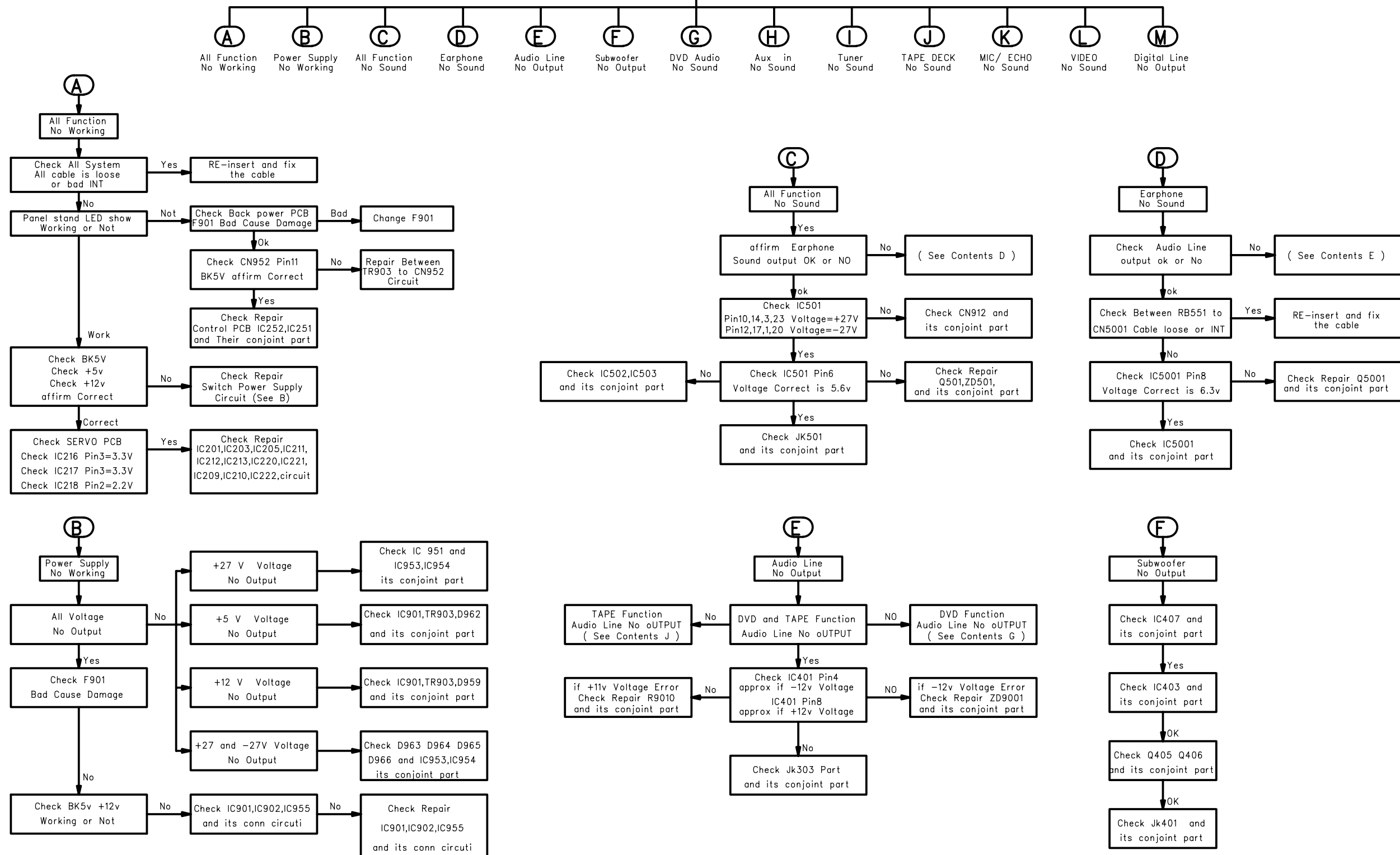
8. Upgrading new software

- 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



DISMANTLING INSTRUCTIONS

Dismantling of the Cassette Cover

- 1) Loosen 16 screws '1' to remove the Rear Panel figure 1.

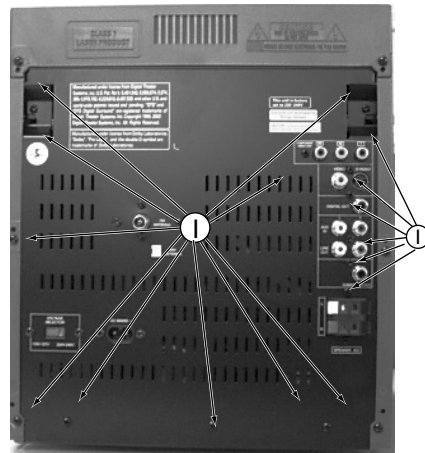


Figure 1

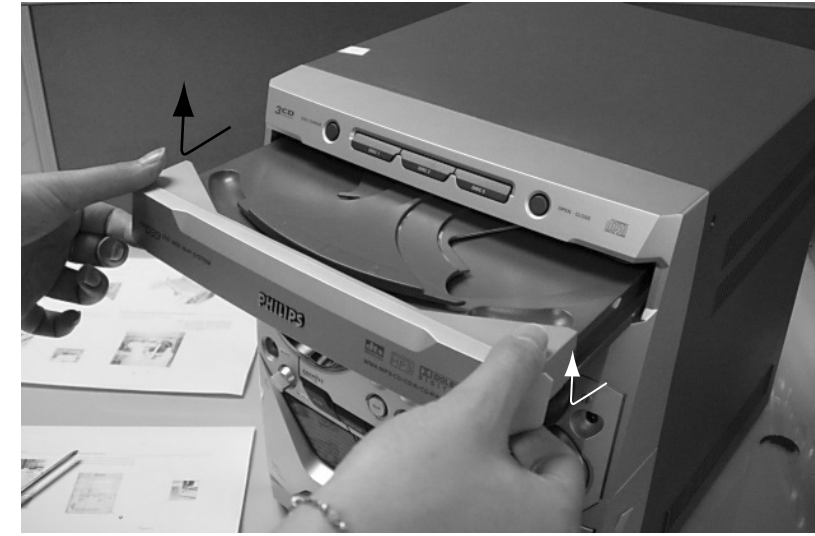


Figure 3

Dismantling the 3CDC Module

- 1) Loosen the 4 screws, slide Cover top towards the rear and remove it upwards.
- 2) Push the gear slowly towards the front as shown in figure 2 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) Remove the Cover Tray as shown in figure 3.
- 4) Loosen 4 screws A to remove the CDC Module as shown in figure 2.

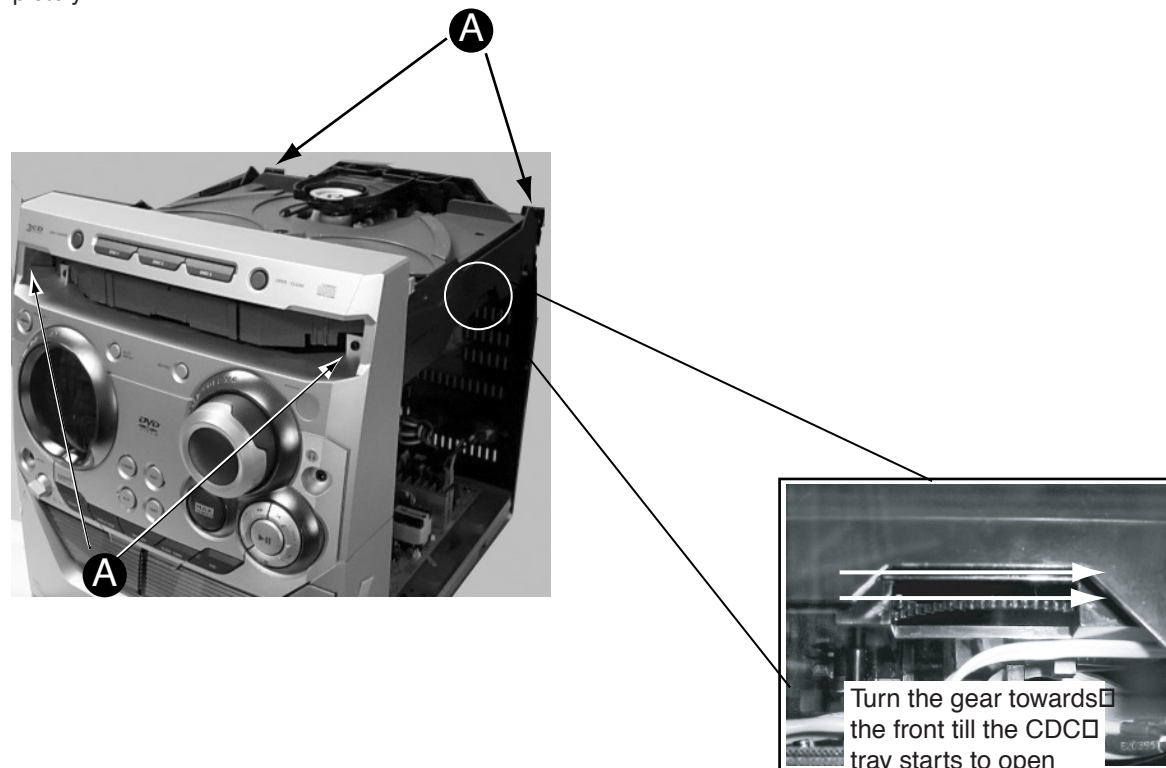


Figure 2

Dismantling of the Cover Front Display and Cover Front Ornamental

- 1) Remove the Volume knobs as stated in Dismantling the Cover Front Display in Figure 4.

Note: *There is nothing are sandwiched between the Front Cabinet and Cover Front Display but it has to be removed in order to reach the catches for the Cover Front Ornamental.*



Figure 4

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

- 1) Loosen 2 screws 'D' at the bottom of the Front Cabinet on both sides of the set and pull the Front Cabinet assembly out of the Bottom plate.
- 2) Release 5 screws 'A', 7 catches 'B' and 2 screws 'c' to free the Main board from the Back Panel +Bottom Panel as shown in figure 5.

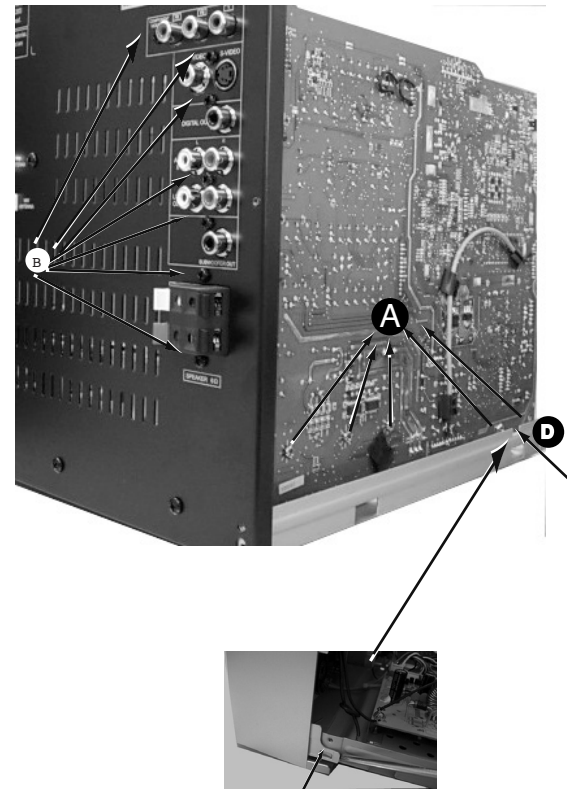
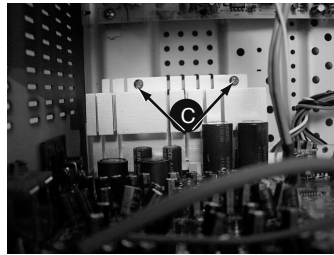


Figure 5

Dismantling of the Control Board and Cassette module

- 1) Loosen 4 screws 'E' to remove the Key board as shown in figure 6.
- 2) Loosen 10 screws 'F' to remove the Control board figure 6.

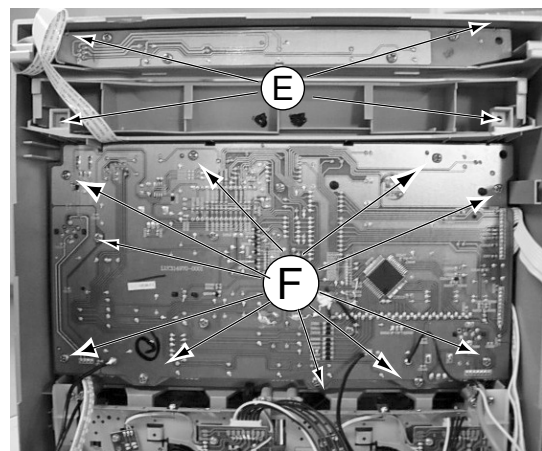


Figure 6

- 3) Loosen 8 screws 'H' to remove the Cassette Module figure 7.

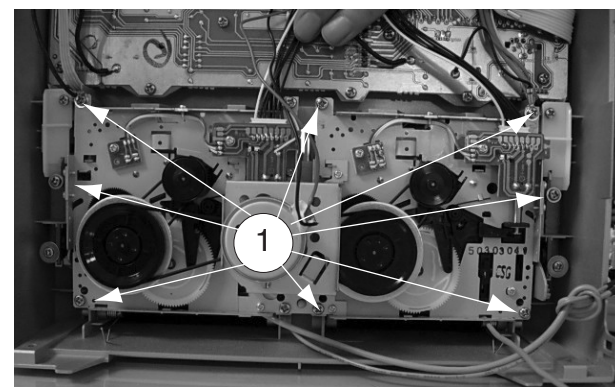


Figure 7

Dismantling of the Rear Panel

- 1) Remove the dust cover.
- 2) Release the spring.
- 3) Pull out the bracket as shown direction in figure 8.
- 4) Pull out the cassette deck as shown in figure 9.

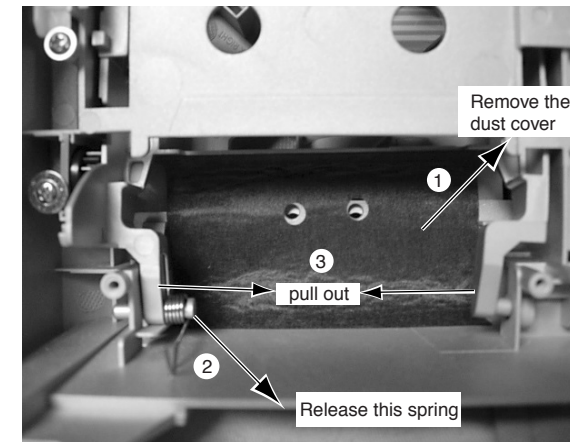


Figure 8

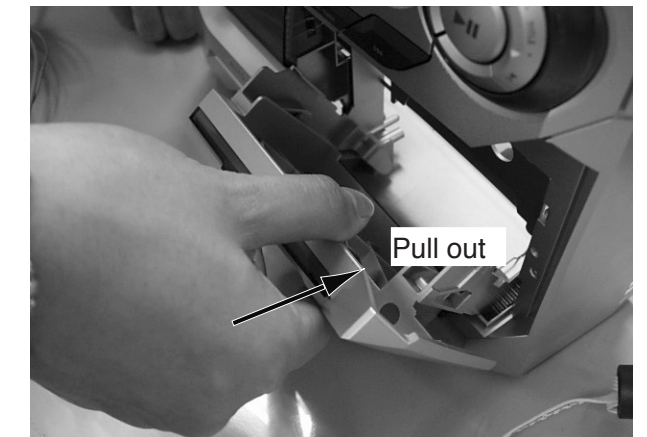


Figure 9

Dismantling of the Power Board

- 1) Loosen 4 screws 'J' to remove the Power Board figure 10.

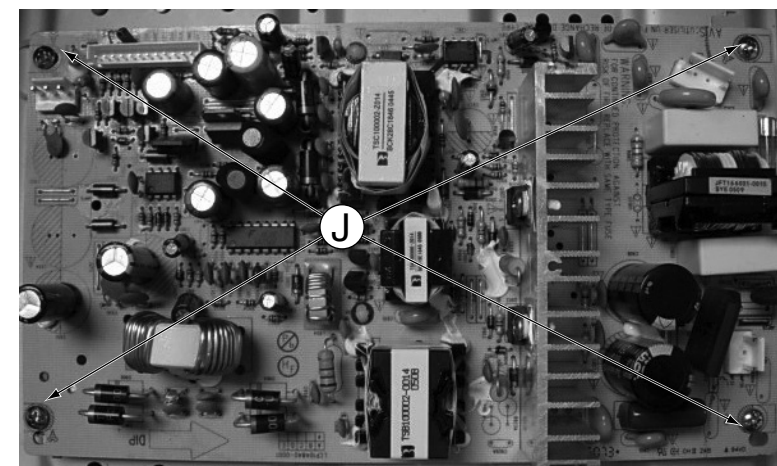


Figure 10

Service positions

Service position A



Service position B

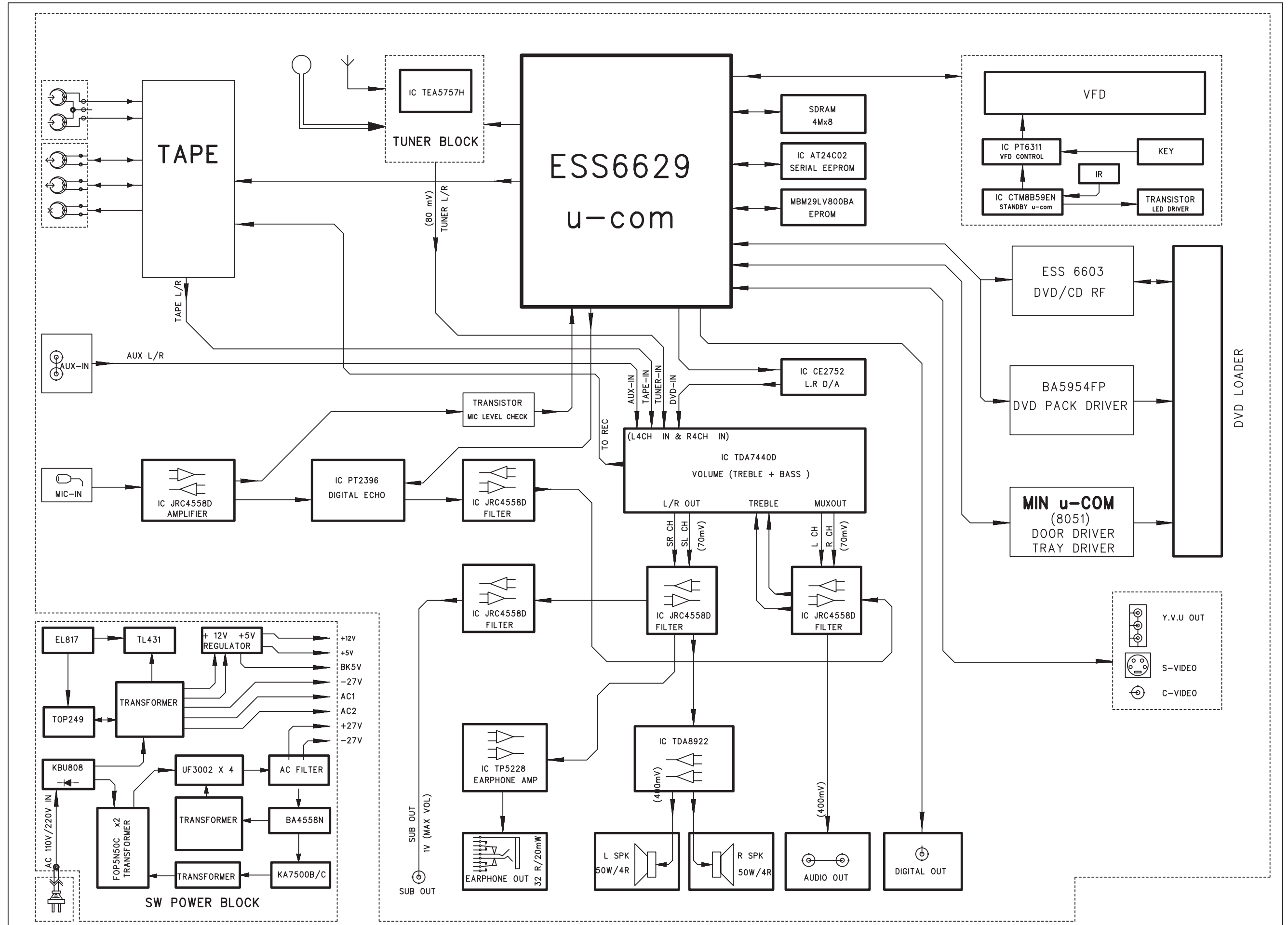


Note: After re-assembly, it is very important to ensure the wires are properly inserted into their respective sockets and routed not to touch or obstruct any moving parts.

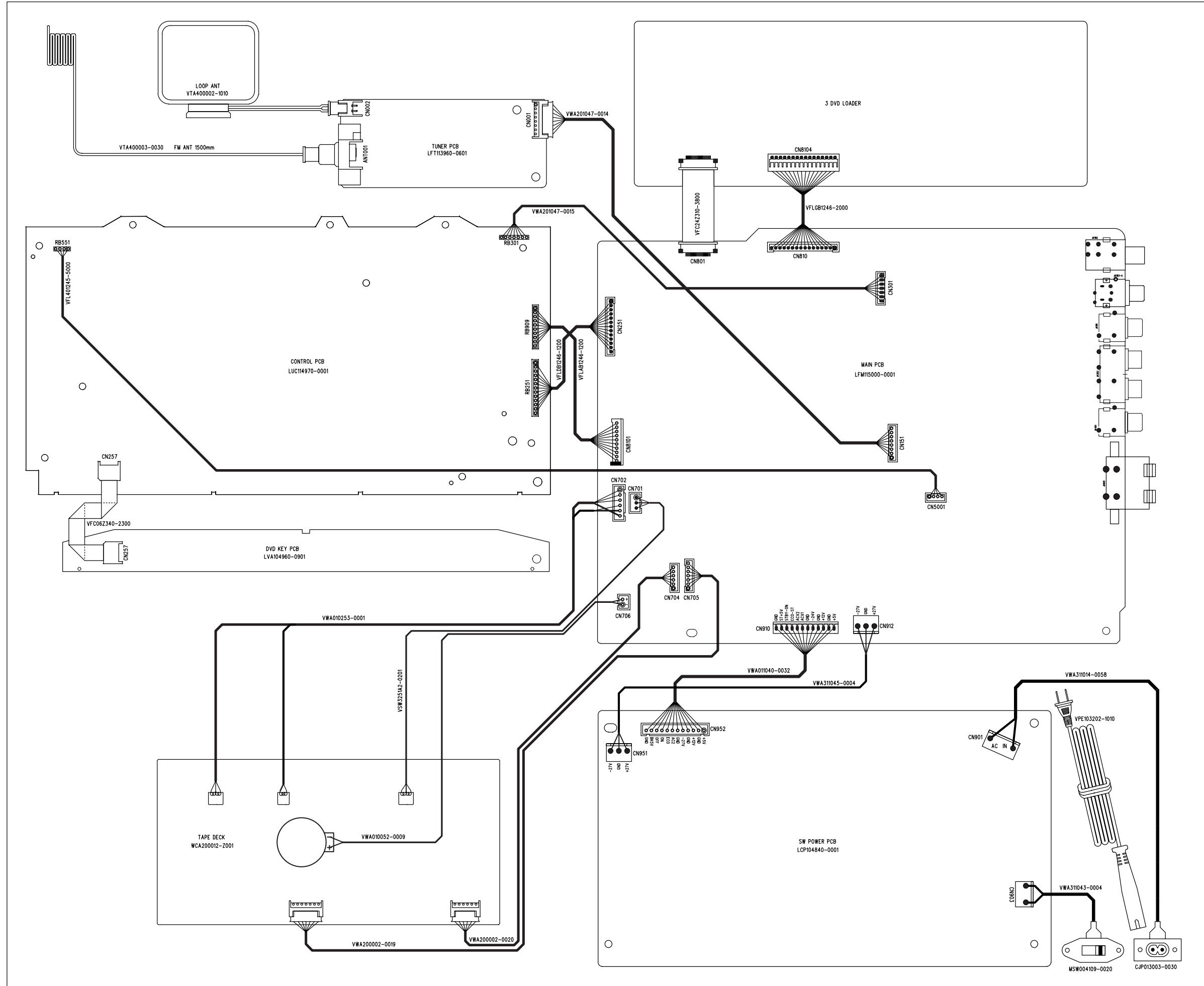
Service position C



BLOCK DIAGRAM



WIRING DIAGRAM

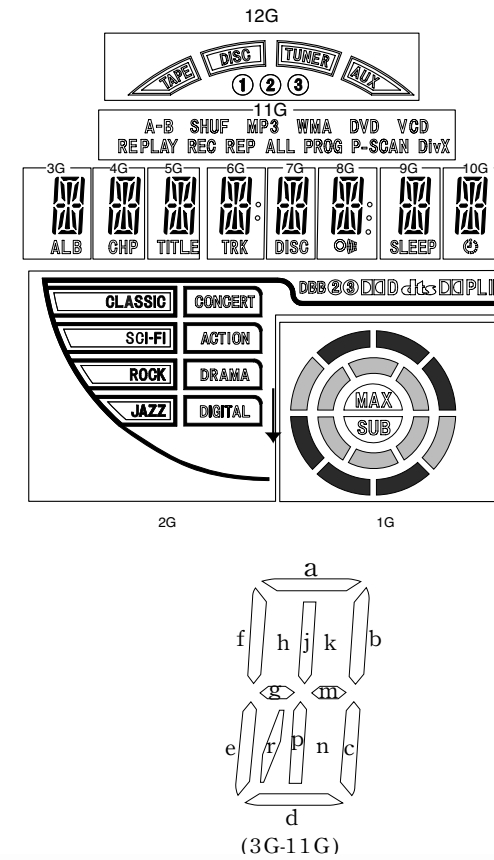


KEY / VIDEO / SENSOR / PHONE / VOL / VU BOARD

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FTD DISPLAY PIN ASSIGNMENT



ANODE CONNECTION

	1G	2G	3G	4G	5G	6G	7G	8G	9G	10G	11G	12G
P1	S7	CONCERT	a	a	a	a	a	a	a	a	DivX	AUX
P2	S14	ACTION	h	h	h	h	h	h	h	h	P-SCAN	DISC
P3	S1	DRAMA	j,p	j,p	j,p	j,p	j,p	j,p	j,p	j,p	MP3	③
P4	S2	DIGITAL	k	k	k	k	k	k	k	k	WMA	TAPE
P5	S8	CLASSIC	b	b	b	b	b	b	b	b	PROG	T
P6	S13	SCH-FI	f	f	f	f	f	f	f	f	V	TUNER
P7	MAX	ROCK	m	m	m	m	m	m	m	m	CD	②
P8	SUB	JAZZ	g	g	g	g	g	g	g	g	DVD	①
P9	S3	W	c	c	c	c	c	c	c	c	REP	
P10	S9	DBB	e	e	e	e	e	e	e	e	ALL	
P11	S6	②	r	r	r	r	r	r	r	r	REC	
P12	S5	③	n	n	n	n	n	n	n	n	SHUF	
P13	S4	DDD	d	d	d	d	d	d	d	d	A	
P14	S10	dts					col		col		-B	
P15	S11	DDDPL							Dp		RE	
P16	S12		ALB	CHP	TITLE	TRK	DISC	Ⓞ	SLEEP	Ⓞ	PLAY	

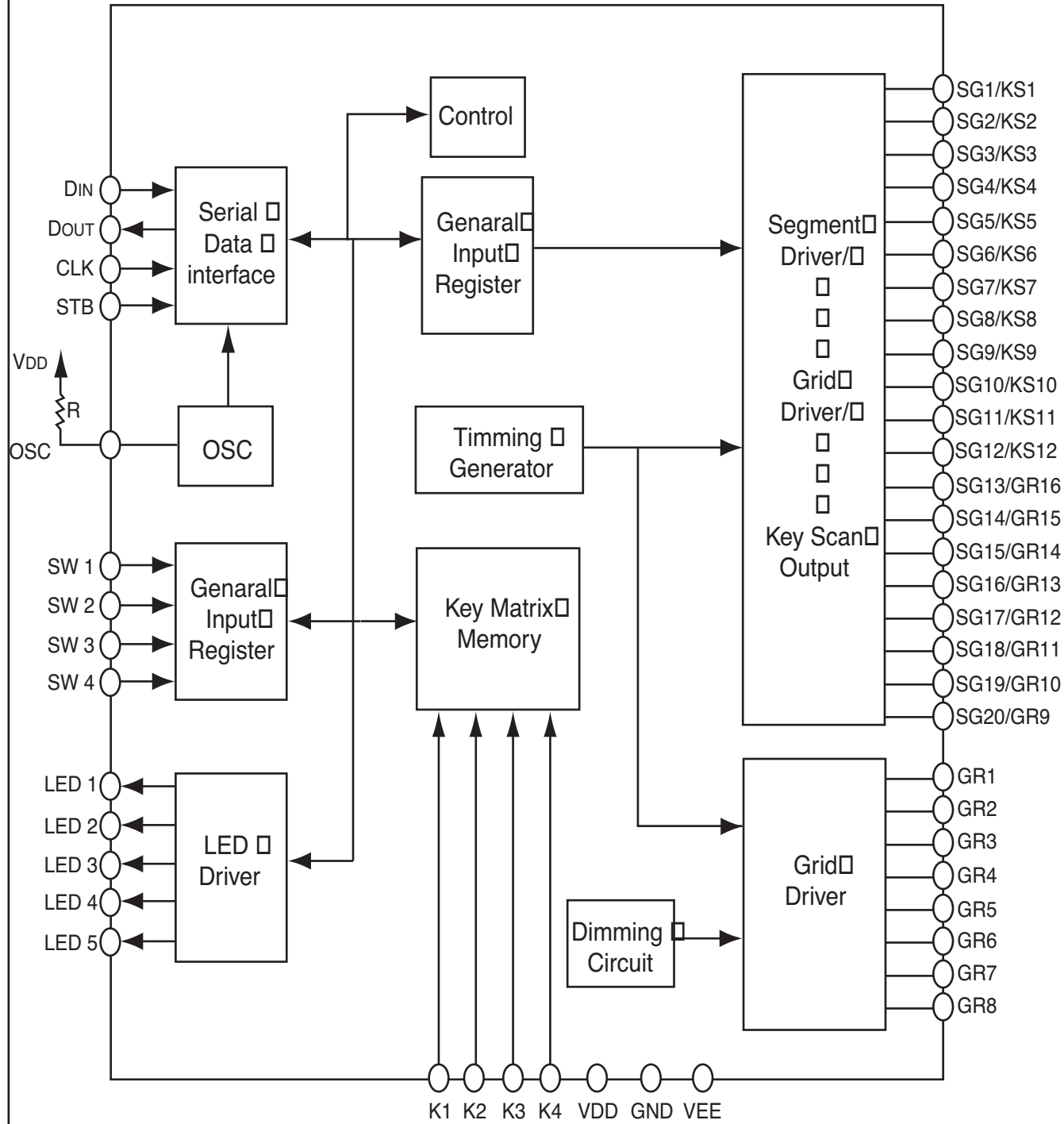
PIN CONNECTION

PIN NO.	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22-16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
CONNECTION	F2	NP	F2	NP	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15	P16	NX	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G	NP	FI	NP	FI

Note

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

TP6311 INTERNAL IC DIAGRAM



VOLTAGES

IC2501 (TP6311)

PIN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
VOLTAGE	0	5	0	5	4.5	4.5	0	5	4.9	0	0	0	0	0	5	-15.4	-22.2	-20	-26.5	-17.9	-17.8
PIN	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	
VOLTAGE	-21.8	-22.2	-17.7	-20	-24.3	-22.2	-15.8	-26.6	-24.5	-26.7	-24.7	-24.7	5	27	-24.6	-24.6	-24.6	-24.6	-24.6	-24.6	
PIN	41	42	43	44	45	46	47	48	49	50	51	52									
VOLTAGE	-24.6	-24.6	-25	-24.7	5	0	5	0	5	0	0	2.8									

IC2502 (EM78P447)

PIN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
VOLTAGE	0	5.1	0	0	5.1	4.5	4.9	5	5.1	0	5	2.8	0.8	5	0	0	0	5.1	0	5.1
PIN	21	22	23	24	25	26	27	28												
VOLTAGE	5.1	5.1	5.1	5.1	5.1	2.5	2.5	5.1												

Q2502 (2N7002LT1)

PIN	1	2	3
VOLTAGE	4.2	4.4	3.1

Q2503 (2N7002LT1)

PIN	1	2	3
VOLTAGE	4.2	4.4	3.1

Q2504 (2SC1623)

PIN	1	2	3
VOLTAGE	0	0	4.5

Q2505 (2SC1623)

PIN	1	2	3
VOLTAGE	0	0	0

Q2506 (2SA812)

PIN	1	2	3
VOLTAGE	0	0	3.16

Q2507 (2N7000)

PIN	1	2	3
VOLTAGE	-6.3	-20	-20.4

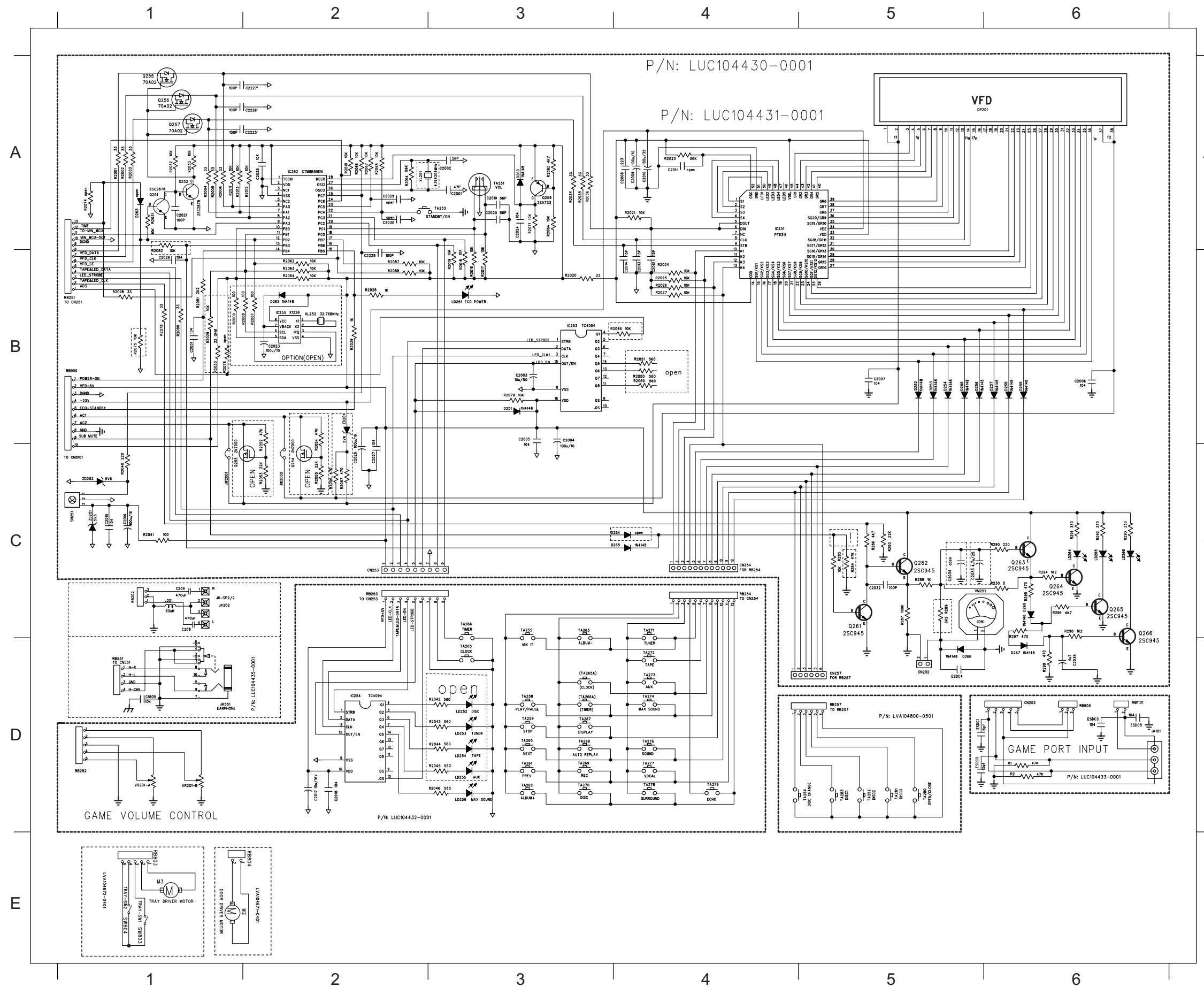
Q2508 (2N7000)

PIN	1	2	3
VOLTAGE	-6.4	-20	-20.4

Q2509 (2SC1623)

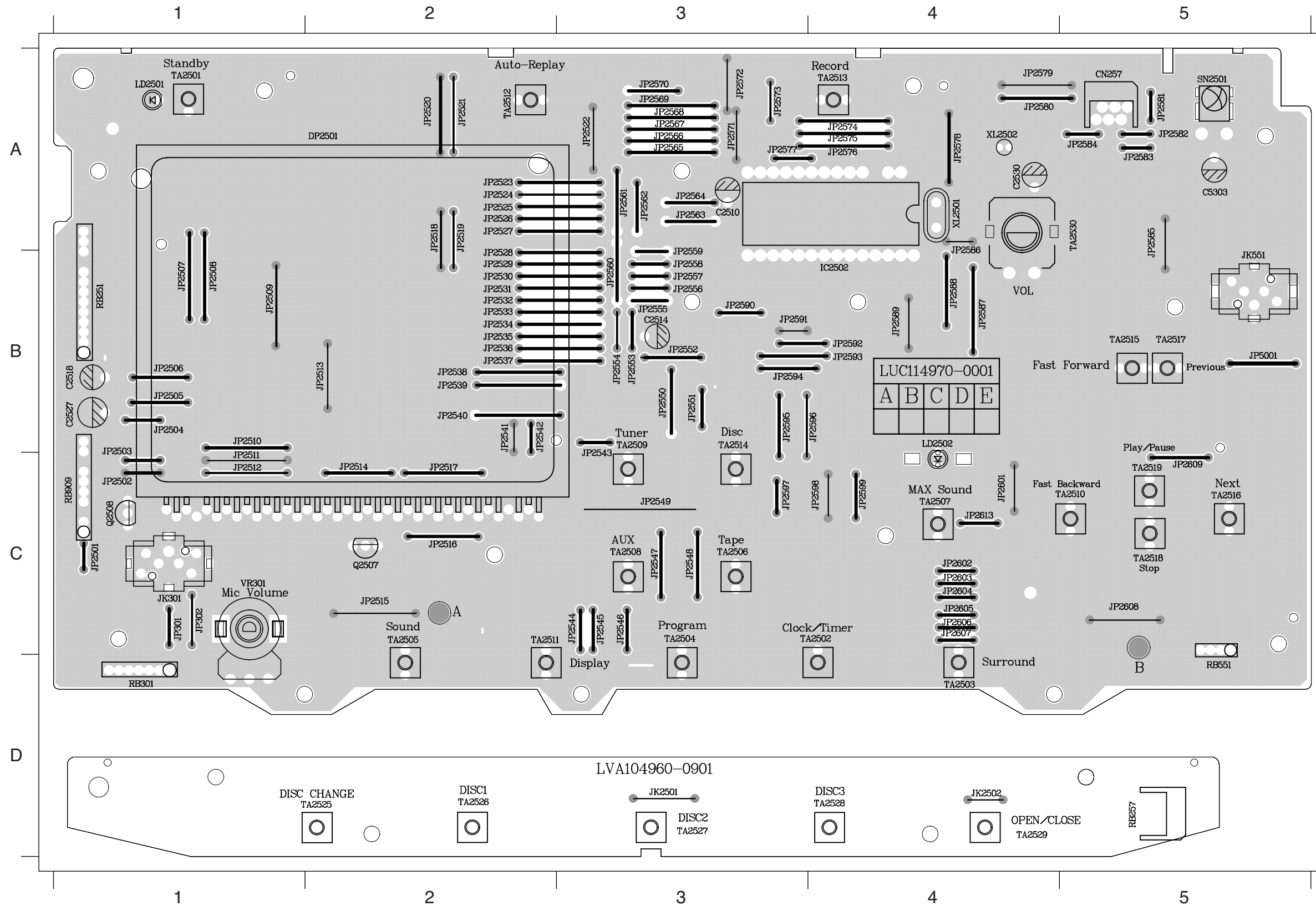
PIN	1	2	3
VOLTAGE	0	0	4.5

CIRCUIT DIAGRAM - KEY BOARD



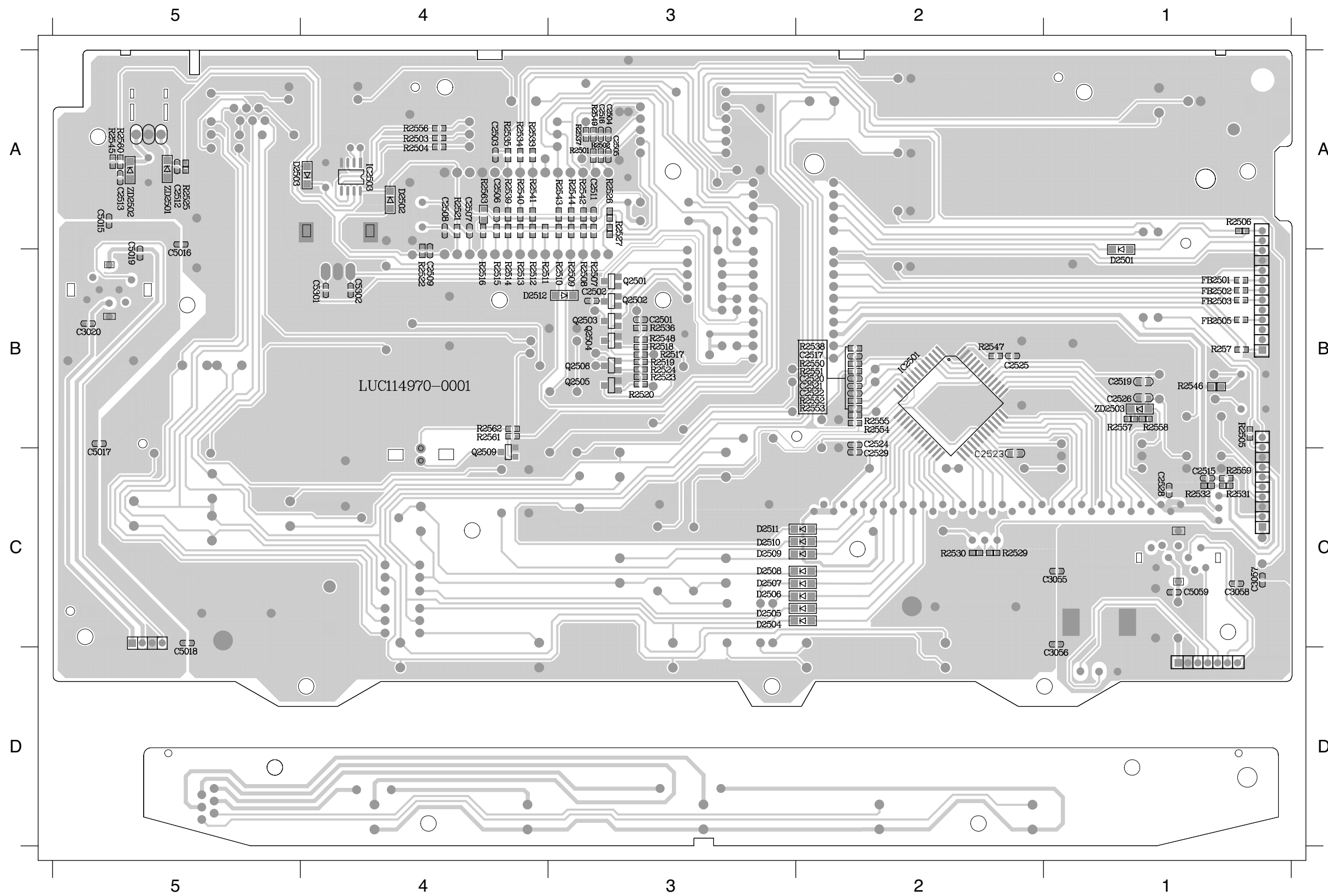
C1805	D10	R284	C5	SW803	E1
C2001	A3	R285	C5	SW804	E1
C2002	A3	R286	C5	TA251	A3
C2003	B3	R287	C5	TA253	A3
C2004	B3	R288	C5	TA255	C3
C2005	B3	R289	C5	TA258	D3
C2006	B6	R291	C6	TA259	D3
C2007	B5	R292	C6	TA260	D3
C2008	A4	R293	C6	TA261	D3
C2009	A4	R294	C6	TA262	D3
C2010	A4	R295	C6	TA263	C3
C2012	B4	R296	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)



- C2510□ A3□ JP2568□A3I
- C2514□ B3□ JP2569□A3I
- C2518□ B1□ JP2570□A3I
- C2527□ B1□ JP2571□A3I
- C2530□ A4□ JP2572□A3I
- C5303□ A5□ JP2573□A3I
- CN257□ A5□ JP2574□A4I
- DP2501□A2□ JP2575□A4I
- IC2502□B4□ JP2576□A4I
- JK2501□D3□ JP2577□A3I
- JK2502□D4□ JP2578□A4I
- JK301□ C1□ JP2579□A4I
- JK551□ B5□ JP2580□A4I
- JP301□ C1□ JP2581□A5I
- JP302□ C1□ JP2582□A5I
- JP2501□C1□ JP2583□A5I
- JP2502□C1□ JP2584□A5I
- JP2503□B1□ JP2585□A5I
- JP2504□B1□ JP2586□B4I
- JP2505□B1□ JP2587□B4I
- JP2506□B1□ JP2588□B4I
- JP2507□B1□ JP2589□B4I
- JP2508□B1□ JP2590□B3I
- JP2509□B1□ JP2591□B3I
- JP2510□B1□ JP2592□B4I
- JP2511□C1□ JP2593□B4I
- JP2512□C1□ JP2594□B3I
- JP2513□B2□ JP2595□B3I
- JP2514□C2□ JP2596□B4I
- JP2515□C2□ JP2597□C3I
- JP2516□C2□ JP2598□C4I
- JP2517□C2□ JP2599□C4I
- JP2518□A2□ JP2601□C4I
- JP2519□A2□ JP2602□C4I
- JP2520□A2□ JP2603□C4I
- JP2521□A2□ JP2604□C4I
- JP2522□A3□ JP2605□C4I
- JP2523□A2□ JP2606□C4I
- JP2524□A2□ JP2607□C4I
- JP2525□A2□ JP2608□C5I
- JP2526□A2□ JP2609□C5I
- JP2527□A2□ JP2613□C4I
- JP2528□B2□ JP5001□B5I
- JP2529□B2□ LD2501□A1I
- JP2530□B2□ LD2502□B4I
- JP2531□B2□ Q2507□ C2I
- JP2532□B2□ Q2508□ C1I
- JP2533□B2□ RB251□ B1I
- JP2534□B2□ RB257□ D5I
- JP2535□B2□ RB301□ D1I
- JP2536□B2□ RB551□ D5I
- JP2537□B2□ RB909□ C1I
- JP2538□B2□ SN2501□A5I
- JP2539□B2□ TA2501□A1I
- JP2540□B2□ TA2502□C4I
- JP2541□B2□ TA2503□D4I
- JP2542□B2□ TA2504□C3I
- JP2543□B3□ TA2505□C2I
- JP2544□C3□ TA2506□C3I
- JP2545□C3□ TA2507□C4I
- JP2546□C3□ TA2508□C3I
- JP2547□C3□ TA2509□B3I
- JP2548□C3□ TA2510□C5I
- JP2549□C3□ TA2511□C2I
- JP2550□B3□ TA2512□A2I
- JP2551□B3□ TA2513□A4I
- JP2552□B3□ TA2514□B3I
- JP2553□B3□ TA2515□B5I
- JP2554□B3□ TA2516□C5I
- JP2555□B3□ TA2517□B5I
- JP2556□B3□ TA2518□C5I
- JP2557□B3□ TA2519□C5I
- JP2558□B3□ TA2525□D2I
- JP2559□B3□ TA2526□D2I
- JP2560□B3□ TA2527□D3I
- JP2561□A3□ TA2528□D4I
- JP2562□A3□ TA2529□D4I
- JP2563□A3□ TA2530□A5I
- JP2564□A3□ VR301□ C1I
- JP2565□A3□ XL2501□A4I
- JP2566□A3□ XL2502□A4I
- JP2567□A3

PCB LAYOUT - KEY BOARD (BOTTOM)



- C2501 B3
- C2502 B3
- C2503 A4
- C2504 A3
- C2505 A3
- C2506 A4
- C2507 A4
- C2508 A4
- C2509 B4
- C2511 A3
- C2512 A5
- C2513 A5
- C2515 C1
- C2516 A3
- C2517 B2
- C2519 B1
- C2520 B2
- C2521 B2
- C2522 B2
- C2523 C2
- C2524 B2
- C2525 B2
- C2526 B1
- C2528 C1
- C2529 C2
- C3020 B5
- C3055 C1
- C3056 D1
- C3057 C1
- C3058 C1
- C5015 A5
- C5016 B5
- C5017 C5
- C5018 D5
- C5019 B5
- C5059 C1
- C5301 B4
- C5302 B4
- D2501 B1
- D2502 A4
- D2503 A5
- D2504 C3
- D2505 C3
- D2506 C3
- D2507 C3
- D2508 C3
- D2510 C3
- D2511 C3
- D2512 B4
- FB2501 B1
- FB2502 B1
- FB2503 B1
- FB2505 B1
- IC2501 B2
- IC2503 A4
- Q2501 B3
- Q2502 B3
- Q2503 B3
- Q2504 B3
- Q2505 B3
- Q2506 B3
- Q2509 C4
- R257 B1
- R2501 A3
- R2502 A3
- R2503 A4
- R2504 A4
- R2505 B1
- R2506 A1
- R2507 B3
- R2508 B3
- R2509 B3
- R2510 B3
- R2511 B4
- R2512 B4
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- R2540 A5
- R2541 A5
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- R2544 A5
- R2545 A5
- R2546 B1
- R2547 B2
- R2548 B3
- R2549 A3
- R2550 B2
- R2551 B2
- R2552 B2
- R2553 B2
- R2554 B2
- R2555 B2
- R2556 A4
- R2557 B1
- R2558 B1
- R2559 A5
- R2560 A5
- R2561 B4
- R2562 B4
- R2563 A4
- ZD2501 A5
- ZD2502 A5
- ZD2503 B1

ELECTRICAL PARTS - CONTROL BOARD

DP2501 9940 000 01557 VFD 38P HNA-12LS12T
 IC2501 9940 000 01564 IC 52P PT6311
 IC2502 9940 000 01565 IC 28P CTM8B59EN
 JK301 9940 000 01558 KARAOKE JACK 7P Φ 3.5MM
 JK551 9940 000 01559 PHONE JACK Φ 3.5MM 8P

LD2501 9940 000 00878 LED Φ 3 RED ROUND
 LD2502 9940 000 01561 LED Φ 3 SUPER RED LENS
 Q2501 9940 000 00914 FET 2N7002LT1
 Q2502 9940 000 00914 FET 2N7002LT1
 Q2503 9940 000 00914 FET 2N7002LT1

Q2507 9940 000 00886 MOS FET 2N7000 60V 200MA
 Q2508 9940 000 00886 MOS FET 2N7000 60V 200MA
 SN2501 9940 000 01562 IRT SENSOR 38KHZ
 TA2501 9940 000 00872 TACT SW 50MA 12V
 TA2502 9940 000 00872 TACT SW 50MA 12V

TA2503 9940 000 00872 TACT SW 50MA 12V
 TA2504 9940 000 00872 TACT SW 50MA 12V
 TA2505 9940 000 00872 TACT SW 50MA 12V
 TA2506 9940 000 00872 TACT SW 50MA 12V
 TA2507 9940 000 00872 TACT SW 50MA 12V

TA2508 9940 000 00872 TACT SW 50MA 12V
 TA2509 9940 000 00872 TACT SW 50MA 12V
 TA2510 9940 000 00872 TACT SW 50MA 12V
 TA2511 9940 000 00872 TACT SW 50MA 12V
 TA2512 9940 000 00872 TACT SW 50MA 12V

TA2513 9940 000 00872 TACT SW 50MA 12V
 TA2514 9940 000 00872 TACT SW 50MA 12V
 TA2515 9940 000 00872 TACT SW 50MA 12V
 TA2516 9940 000 00872 TACT SW 50MA 12V
 TA2517 9940 000 00872 TACT SW 50MA 12V

TA2518 9940 000 00872 TACT SW 50MA 12V
 TA2519 9940 000 00872 TACT SW 50MA 12V
 TA2530 9940 000 00881 ENCODER

VR301 9940 000 01563 CNTL ROTARY 50KR
 XL2501 9940 000 00966 CRYSTAL 4.194304MHZ

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

ELECTRICAL PARTS - CDC KEY BOARD

TA2525 9940 000 00872 TACT SW 50MA 12V
 TA2526 9940 000 00872 TACT SW 50MA 12V
 TA2527 9940 000 00872 TACT SW 50MA 12V
 TA2528 9940 000 00872 TACT SW 50MA 12V
 TA2529 9940 000 00872 TACT SW 50MA 12V

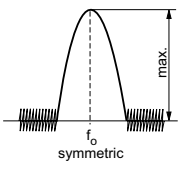
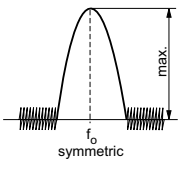
Note: Only these parts mentioned in the list are normal service parts.

TUNER ADJUSTMENT TABLE

TUNER BOARD (9940 000 00873)

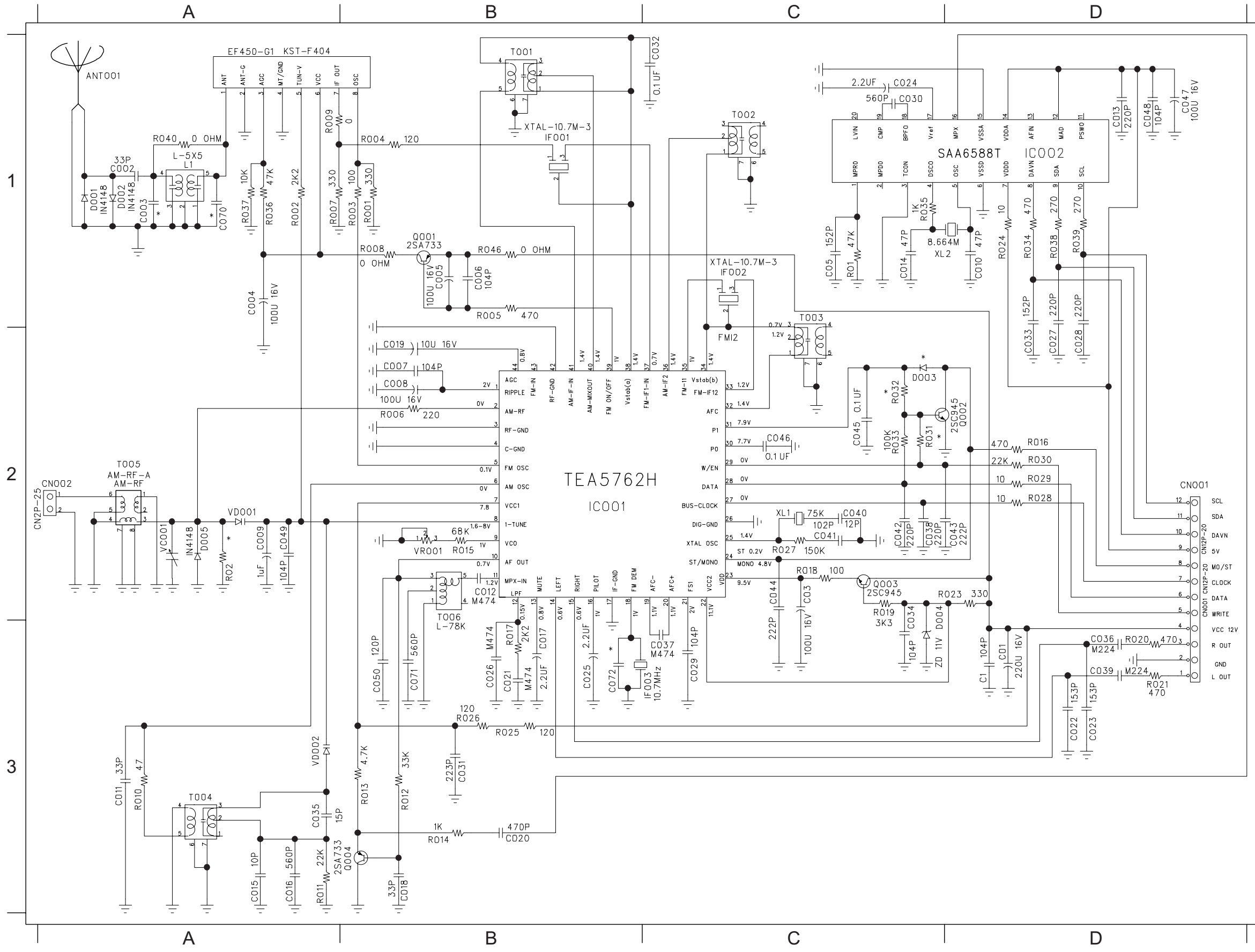
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Tuner Adjustment Table 6-1
 Circuit Diagram 6-2
 PCB Layout Top View 6-3
 PCB Layout Bottom View 6-4

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!

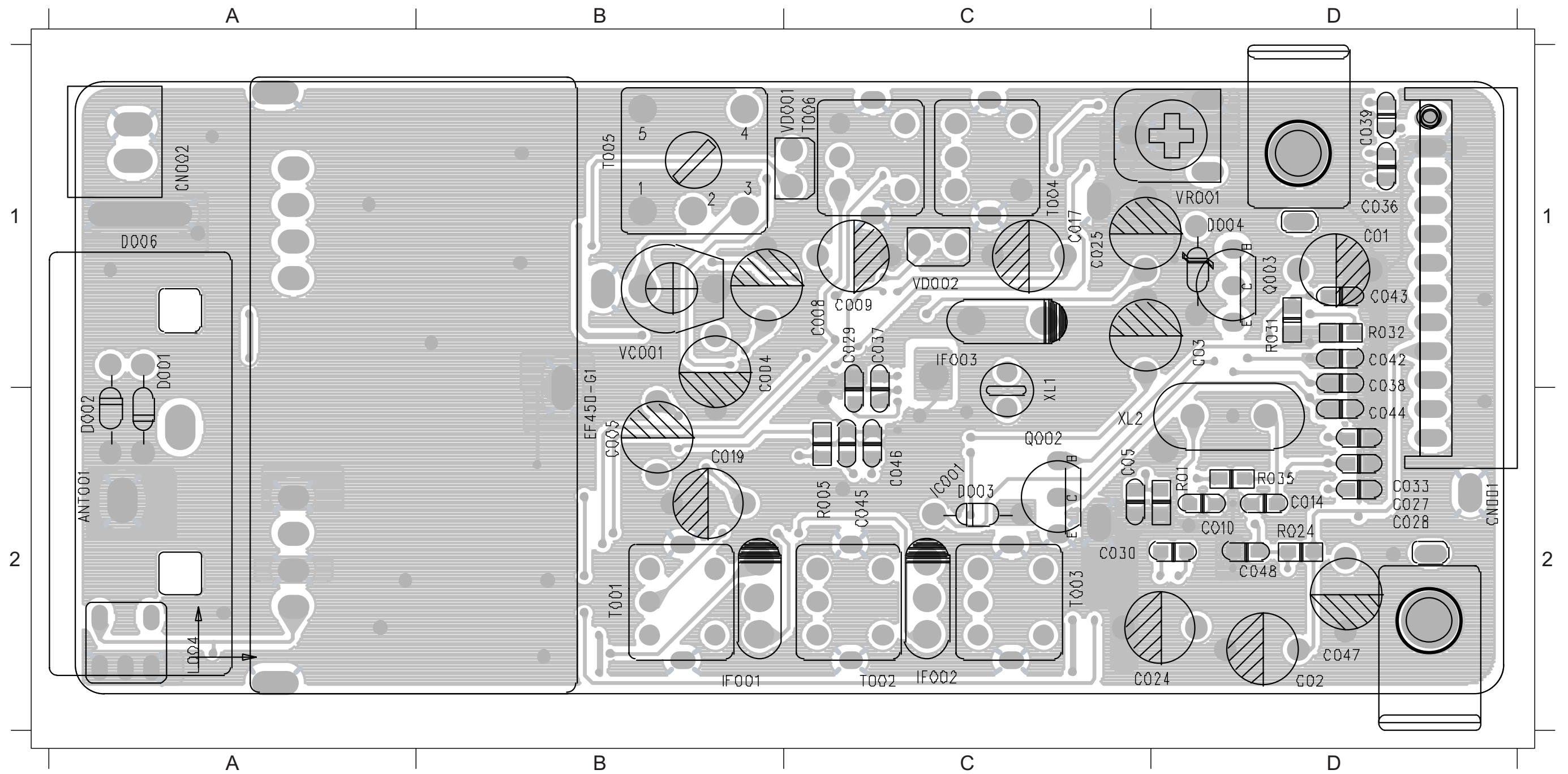
TUNER ADJUSTMENT TABLE



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		

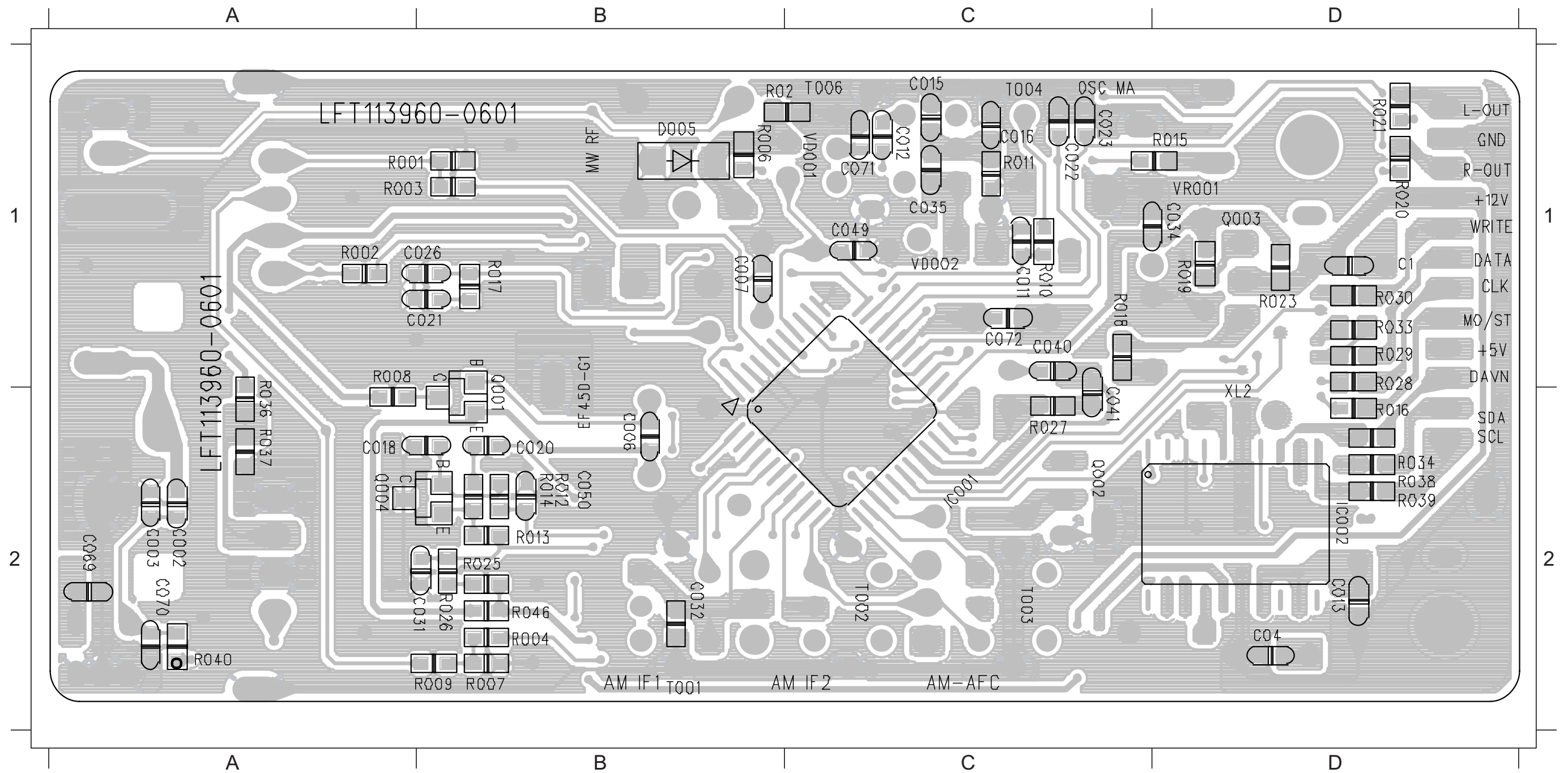
CIRCUIT DIAGRAM - TUNER BOARD (TOP VIEW)

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		

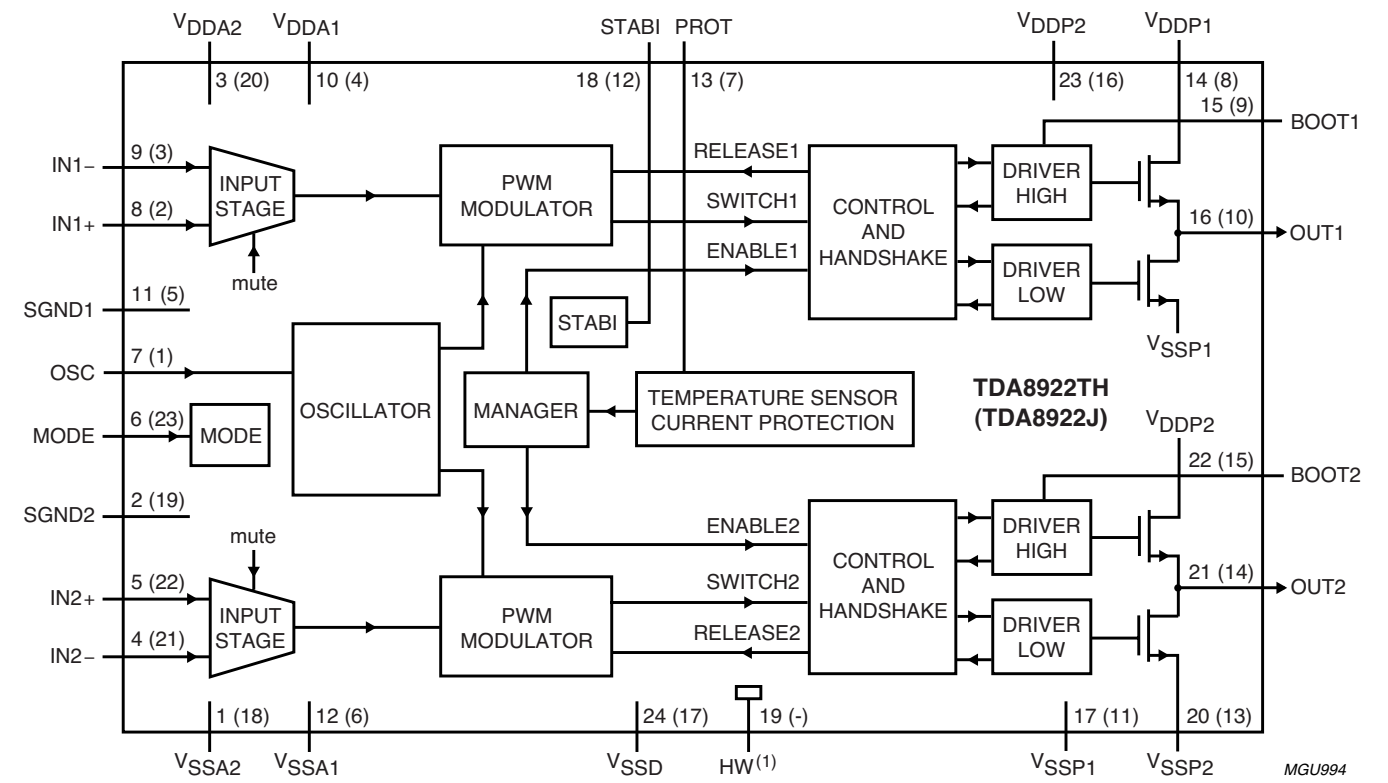


PCB LAYOUT - TUNER BOARD (BOTTOM VIEW)

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		



**IC INTERNAL BLOCK DIAGRAM - POWER AMPLIFIER
TDA8922**

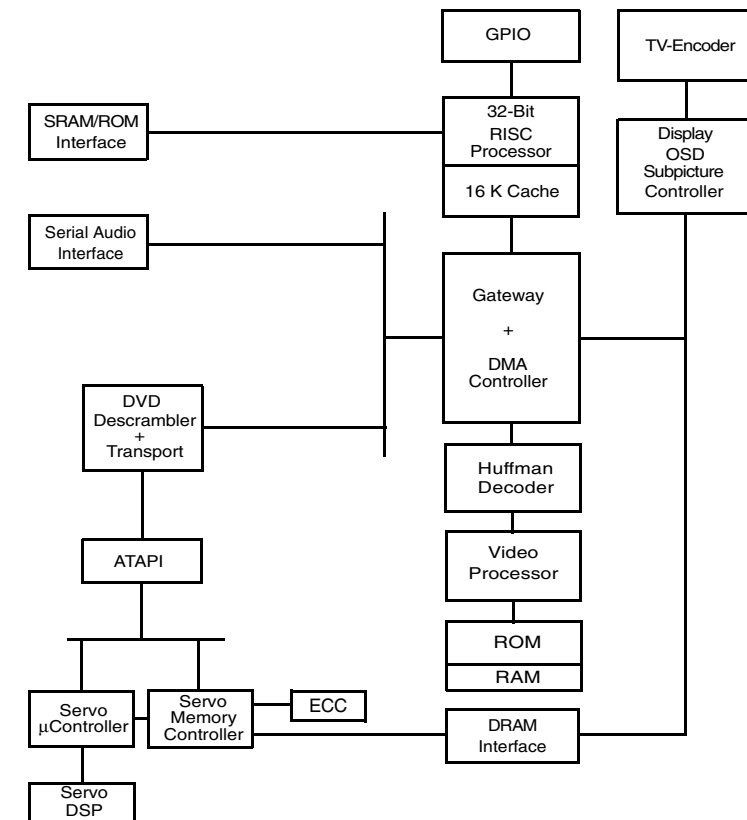


MAIN BOARD

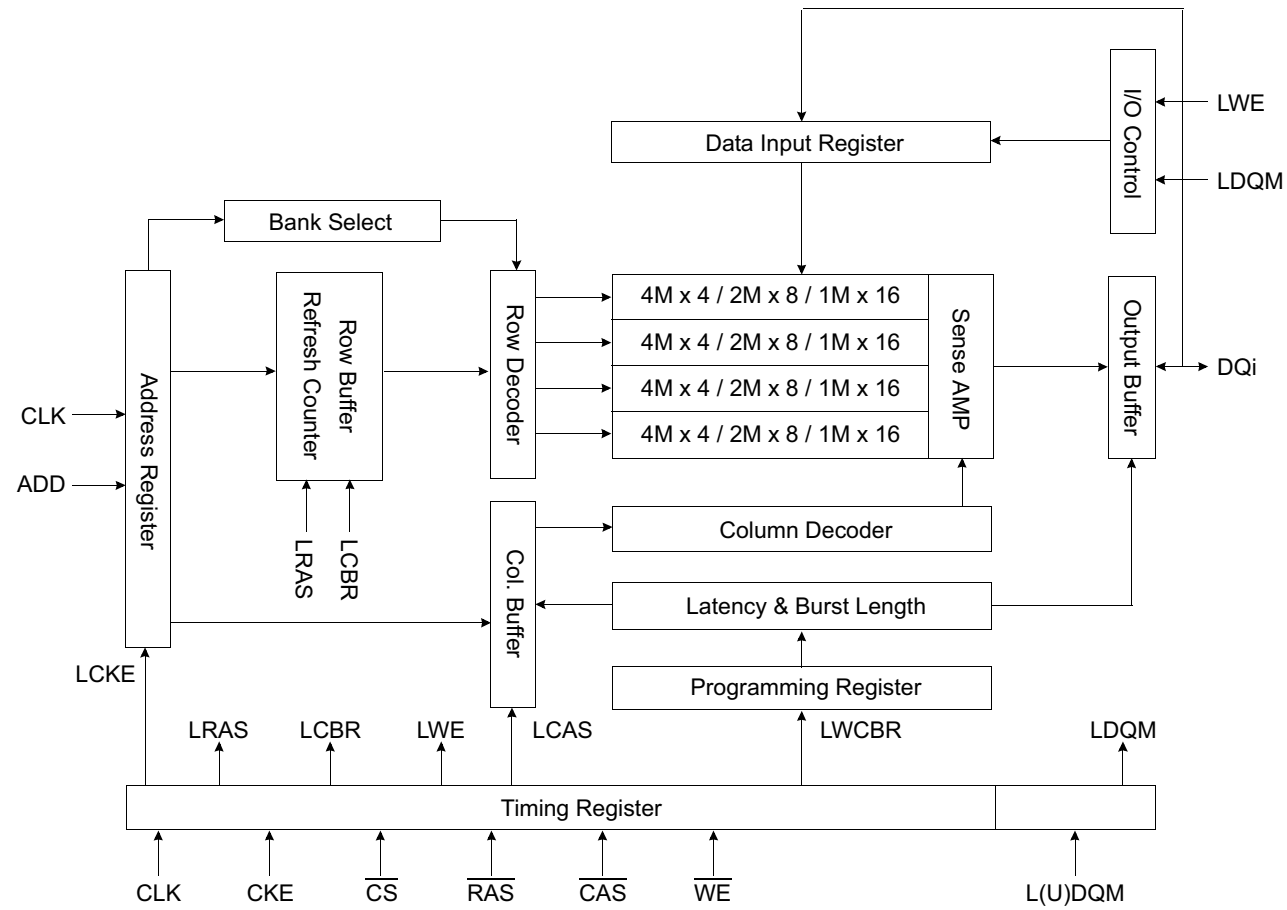
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**IC INTERNAL BLOCK DIAGRAM - DVD PROCESSOR
ES6629**

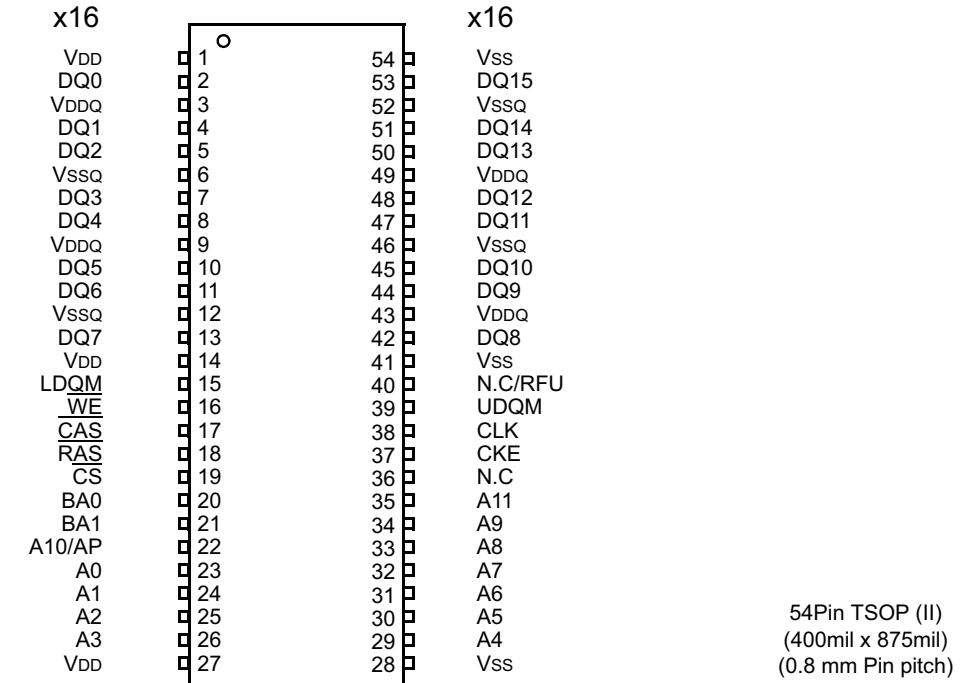


**IC INTERNAL BLOCK DIAGRAM - CMOS SDRAM
K4S641632H-UC60**



**IC DESCRIPTION - CMOS SDRAM
K4S641632H-UC60**

PIN CONFIGURATION (Top view)

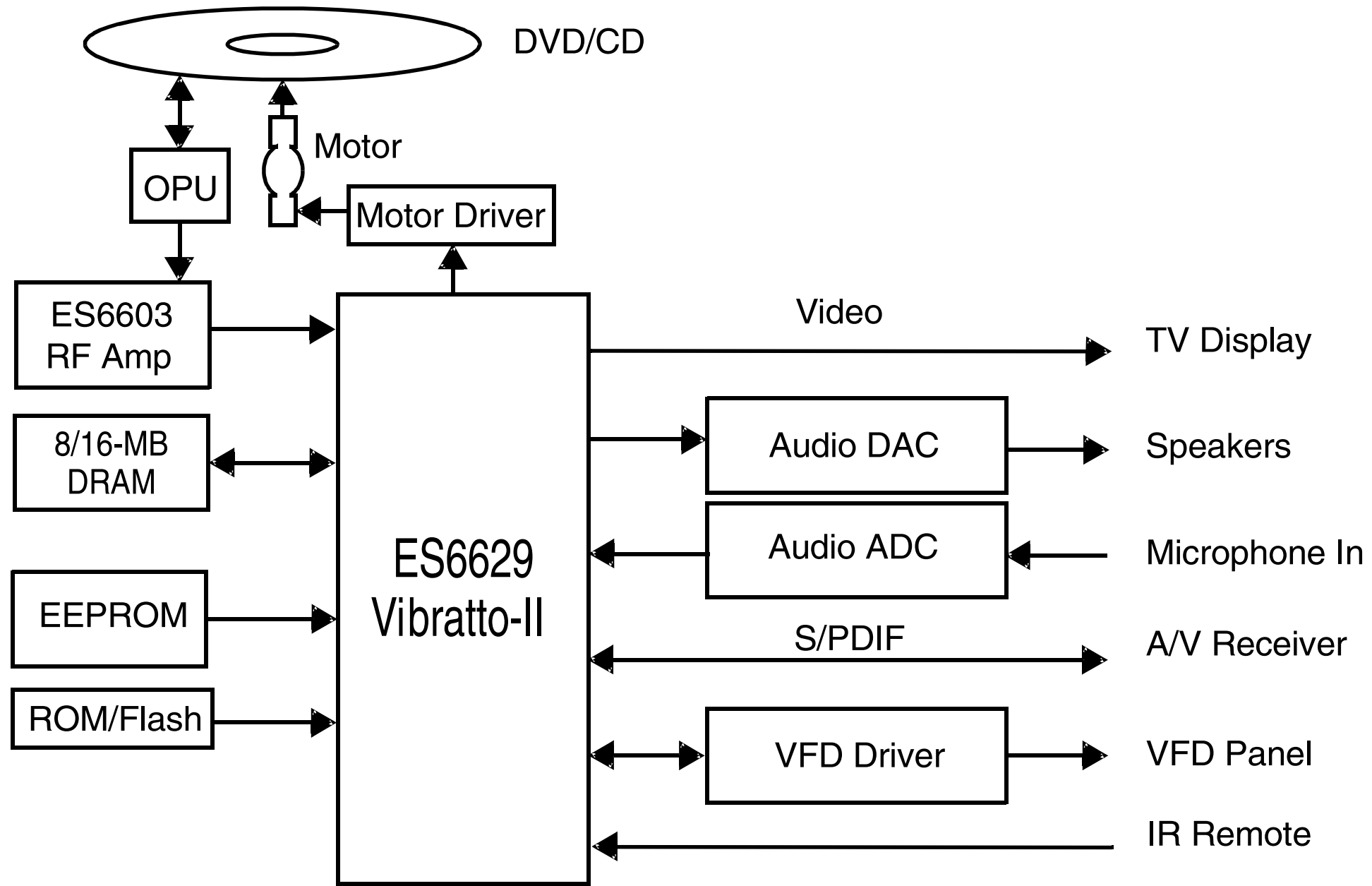


54Pin TSOP (II)
(400mil x 875mil)
(0.8 mm Pin pitch)

PIN FUNCTION DESCRIPTION

Pin	Name	Input Function
CLK	System clock	Active on the positive going edge to sample all inputs.
\overline{CS}	Chip select	Disables or enables device operation by masking or enabling all inputs except CLK, CKE and DQM
CKE	Clock enable	Masks system clock to freeze operation from the next clock cycle. CKE should be enabled at least one cycle prior to new command. Disable input buffers for power down in standby.
A0 ~ A11	Address	Row/column addresses are multiplexed on the same pins. Row address : RA0 ~ RA11, Column address : (x4 : CA0 ~ CA9, x8 : CA0 ~ CA8 , x16 : CA0 ~ CA7)
BA0 ~ BA1	Bank select address	Selects bank to be activated during row address latch time. Selects bank for read/write during column address latch time.
\overline{RAS}	Row address strobe	Latches row addresses on the positive going edge of the CLK with \overline{RAS} low. Enables row access & precharge.
\overline{CAS}	Column address strobe	Latches column addresses on the positive going edge of the CLK with \overline{CAS} low. Enables column access.
\overline{WE}	Write enable	Enables write operation and row precharge. Latches data in starting from \overline{CAS} , \overline{WE} active.
DQM	Data input/output mask	Makes data output Hi-Z, tSHZ after the clock and masks the output. Blocks data input when DQM active.
DQ0 ~ x15	Data input/output	Data inputs/outputs are multiplexed on the same pins.
VDD/VSS	Power supply/ground	Power and ground for the input buffers and the core logic.
VDDQ/VSSQ	Data output power/ground	Isolated power supply and ground for the output buffers to provide improved noise immunity.
N.C/RFU	No connection /reserved for future use	This pin is recommended to be left No Connection on the device.

SYSTEM BLOCK DIAGRAM

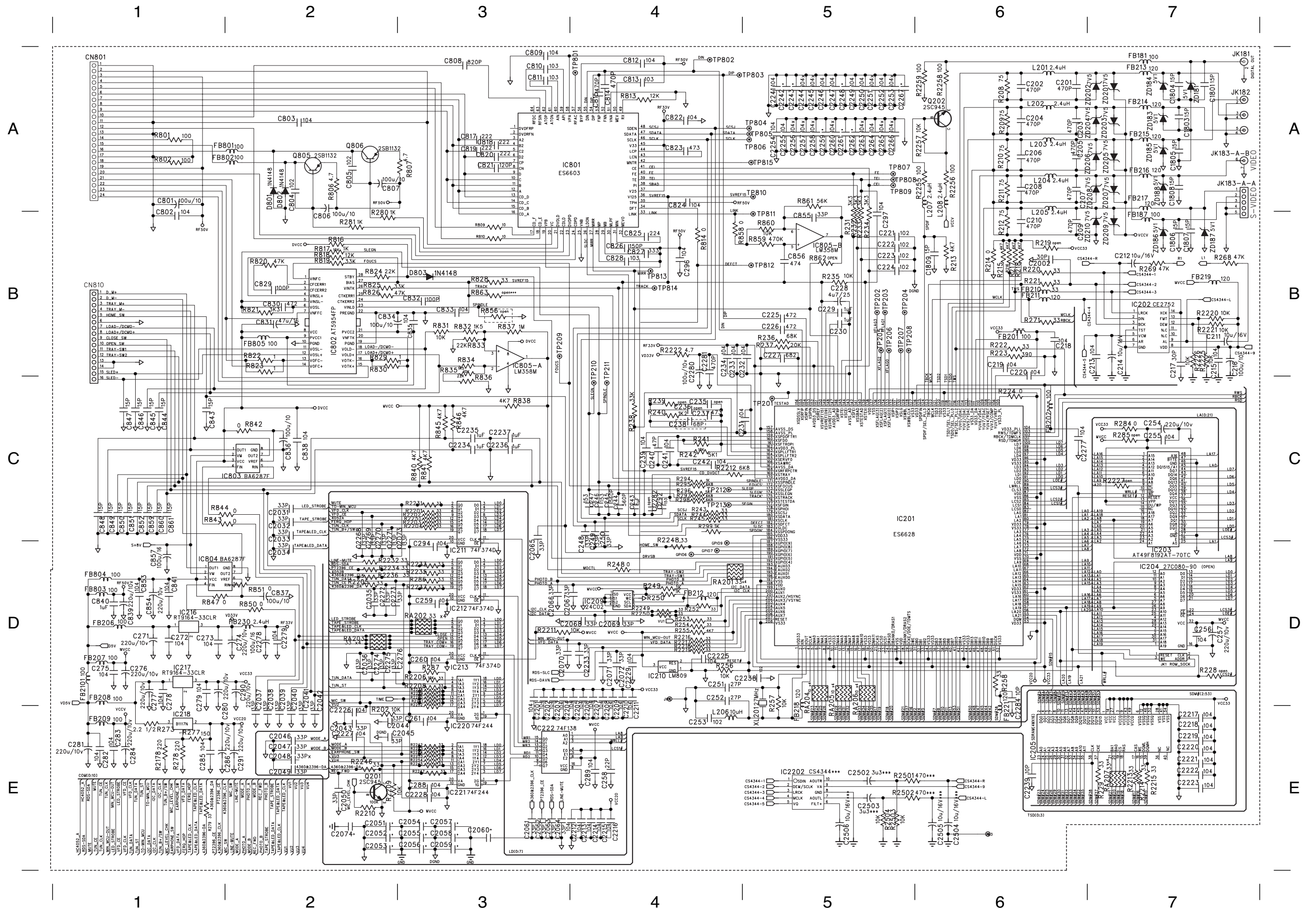


CIRCUIT DIAGRAM MAPPING - MAIN BOARD

C301	A1	C452	E5	C5007	C5	IC503-C	E4	R367	C1	R526	E3
C302	A1	C453	E5	C5008	D5	IC503-D	E4	R368	C1	R1501	C1
C303	A1	C454	E5	C5009	D6	IC3501	B3	R369	C1	R1502	C1
C304	A1	C455	E5	C5010	D6	IC5001	C6	R370	C1	R3001	D1
C305	A2	C456	E6	C5011	C6	JK303-A	A6	R371	C1	R3002	D1
C306	A2	C457	E6	C5012	C6	JK303-B	C1	R372	C2	R3003	D1
C307	A2	C458	E6	C5013	C6	JK401	B6	R373	A3	R3004	D1
C308	A2	C459	E6	C5014	C6	JK501	D6	R377	B2	R3005	D1
C309	A2	C460	E6	C9001	E3	L301	A1	R378	B2	R3006	D2
C310	A2	C461	E6	C9002	E3	L501	D6	R381	A4	R3007	D1
C312	A2	C462	E6	C9003	E3	L502	D6	R382	A4	R3501	B3
C313	A2	C463	E6	C9004	E3	L551	C6	R383	A4	R3502	B3
C314	A2	C464	E6	C9005	E3	L552	C6	R384	A4	R3504	C4
C315	A3	C467	B5	C9006	E3	Q301	A2	R385	A4	R3505	C4
C316	A3	C468	B5	C9007	E3	Q302	A2	R386	A4	R3506	C5
C317	A3	C469	A5	C9011	E3	Q303	A3	R401	A5	R3509	B5
C318	A2	C470	A5	C9012	E3	Q304	A3	R402	A5	R3510	B5
C319	A2	C503	E4	C9013	E3	Q305	A3	R403	A5	R3511	B5
C320	B1	C504	D4	C9014	E3	Q306	A3	R404	A5	R3512	B5
C321	B1	C505	E5	C9015	E2	Q401	A6	R405	A5	R5001	C5
C322	B1	C506	D5	C9016	E2	Q402	A6	R406	A5	R5002	C5
C323	B1	C507	E5	C9017	D2	Q403	A6	R407	A5	R5003	C5
C324	B1	C508	D5	C9018	D2	Q404	A6	R408	A5	R5004	C6
C325	B2	C509	D5	C9019	E2	Q405	B6	R409	A5	R5005	C6
C326	B2	C510	D5	C9020	E2	Q406	C6	R410	A5	R5006	D5
C327	B2	C511	D5	C9021	E2	Q407	D3	R411	A6	R5007	D6
C328	B2	C512	D5	C9022	E2	Q408	D3	R412	A6	R5008	C6
C329	B2	C513	D5	C9023	E2	Q409	D3	R413	A6	R5102	E5
C330	B2	C514	D6	C9024	E2	Q410	D3	R414	A6	R5102	D6
C331	B2	C515	D6	C9025	E2	Q461	B5	R415	A6	R9001	E3
C332	B2	C517	E5	C9026	E2	Q462	B6	R416	A5	R9002	E3
C333	B2	C518	E5	C9027	E3	Q463	B6	R417	A6	R9003	E2
C334	B2	C519	E5	C9028	E3	Q464	B6	R418	A6	R9007	D3
C335	B2	C520	E6	C9029	E2	Q465	B6	R419	A6	R9008	D3
C336	A3	C521	E6	C9030	D3	Q466	A5	R420	A6	R9009	D3
C337	A3	C523	E6	CF501	E4	Q501	D4	R421	D4	R9010	D2
C338	A3	C524	D6	CF502	E4	Q3001	D1	R422	D4	R9011	D2
C339	A4	C525	E6	CN1	C1	Q3002	D1	R423	D4	R9012	E2
C340	A3	C526	D6	CN151	C1	Q3003	D1	R424	D4	R9014	E3
C341	A3	C527	E6	CN251	E1	Q5001	C6	R425	D3	R9015	E1
C342	A3	C528	D6	CN301	A1	Q5002	C6	R426	D3	R9016	E2
C343	A3	C529	E6	CN910	E2	Q9001	D2	R427	D3	R9017	E2
C344	B2	C530	D6	CN912	E3	Q9002	D3	R428	D3	R9018	D3
C345	B2	C531	E6	CN5001	C6	Q9003	D3	R429	D4	R9019	D3
C346	B2	C532	D6	CN8101	D1	R301	A2	R430	D4	R9020	D3
C347	B3	C533	E6	D301	A2	R302	A2	R431	D4	R9021	D3
C348	B3	C534	D6	D302	A2	R303	A2	R432	D4	R9022	D3
C350	B3	C540	D5	D303	A3	R304	A2	R435	C5	RA1501D1	
C351	B3	C551	E5	D461	B5	R305	A2	R436	C5	RD440	C5
C352	B3	C552	E4	D462	B5	R306	A2	R437	C5	XL301	B1
C353	C1	C553	E4	D463	B6	R307	A2	R438	B5	ZD301	A2
C354	C1	C554	E4	D464	B6	R309	A2	R439	B5	ZD302	C2
C355	C2	C555	E4	D465	B6	R310	A2	R441	C6	ZD303	C2
C356	C2	C556	E4	D466	B6	R311	A2	R442	B6	ZD461	B5
C357	C2	C557	E3	D3001	D1	R312	A2	R443	B6	ZD501	D5
C358	C2	C558	D4	D3002	D2	R313	A2	R444	C6	ZD810	E2
C359	B1	C569	D5	D3002	C2	R314	A2	R445	C6	ZD3501B5	
C360	B1	C1501	C1	D3003	C2	R315	A3	R446	B6	ZD5001C6	
C381	A4	C1502	D1	D3004	C2	R316	A2	R447	C6	ZD9001E3	
C382	A4	C1503	D1	D3005	C2	R317	A2	R449	C5	ZD9002E3	
C383	A4	C1504	D1	D3006	C2	R318	A2	R453	B5	ZD9003E2	
C384	A4	C2601	E1	D3007	C2	R319	A2	R454	B5	ZD9004E3	
C385	A4	C2602	E1	D3008	C2	R320	A2	R455	B5		
C386	A4	C2603	E1	D3009	D2	R321	A3	R456	B5		
C387	A4	C2604	E1	D3010	D2	R323	B2	R457	B5		
C388	A4	C2605	E1	D3011	D2	R324	B2	R458	B6		
C401	A5	C2606	E1	D3012	D2	R325	B2	R460	B6		
C402	A5	C2607	E1	D3013	D2	R326	B2	R461	B6		
C403	A5	C2608	E1	D3014	D2	R327	B2	R462	B6		
C404	A5	C3001	D1	D3015	D2	R328	B2	R463	B6		
C405	A5	C3002	D1	D3016	D2	R329	B2	R464	B6		
C406	A5	C3003	D2	D3017	D2	R330	B2	R465	B6		
C407	A5	C3004	D2	D3018	D2	R331	B1	R466	B6		
C408	A5	C3005	D2	D3019	D2	R332	B1	R467	B6		
C409	A5	C3501	B3	D3020	D2	R334	B1	R468	B6		
C410	A5	C3502	B3	D3021	D2	R337	A3	R469	B6		
C411	A6	C3503	B4	D3023	D1	R338	A3	R471	A4		
C412	A6	C3504	B3	D3024	C2	R339	A3	R472	A4		
C413	A6	C3505	B4	D3501	B5	R340	A3	R473	A5		
C414	A6	C3506	B3	D9001	E2	R341	A3	R474	A5		
C415	A6	C3507	B4	D9002	D2	R343	A3	R475	B5		
C416	A6	C3508	B3	FB501	D6	R345	A3	R476	B5		
C417	A6	C3509	B4	FB9001	E3	R346	A3	R501	D4		
C422	D4	C3510	B3	FB9002	E3	R347	A3	R502	D4		
C423	D4	C3511	B3	IC301-A	A2	R348	A3	R503	E4		
C424	D4	C3512	B3	IC301-B	A2	R349	A3	R504	D4		
C425	D4	C3513	B4	IC302	B2	R350	A4	R505	E5		
C426	D4	C3514	B4	IC303-A	B3	R351	A3	R506	D5		
C427	D4	C3515	B4	IC303-B	B2	R352	A4	R506	D5		
C428	D4	C3516	B5	IC304-A	A4	R353	B2	R507	D5		
C429	D4	C3517	B5	IC304-B	A4	R354	B2	R509	E6		
C430	D4	C3519	B4	IC305	C2	R355	B2	R511	E6		
C431	C5	C3520	B4	IC401-A	A6	R356	B2	R512	D6		
C432	C5	C3521	B4	IC401-B	A6	R357	B3	R513	E6		
C433	B5	C3522	B4	IC403-A	B5	R358	B3	R514	D6		
C434	C5	C3523	B4	IC403-B	B6	R359	B3	R515	D4		
C435	B6	C3524	B4	IC407-A	D4	R360	B3	R516	D4		
C436	C5	C5001	C5	IC407-B	D4	R361	B1	R517	D4		
C437	C6	C5002	C5	IC501	D5	R362	B1	R521	E5		
C438	B6	C5003	C5	IC502-A	E4	R363	C1	R522	E4		
C439	C6	C5004	C5	IC502-B	E4	R364	C1	R523	E4		
C440	B6	C5005	C6	IC503-A	E4	R365	C1	R524	E4		
C451	E5	C5006	C6	IC503-B	E4	R366	C1	R525	E3		

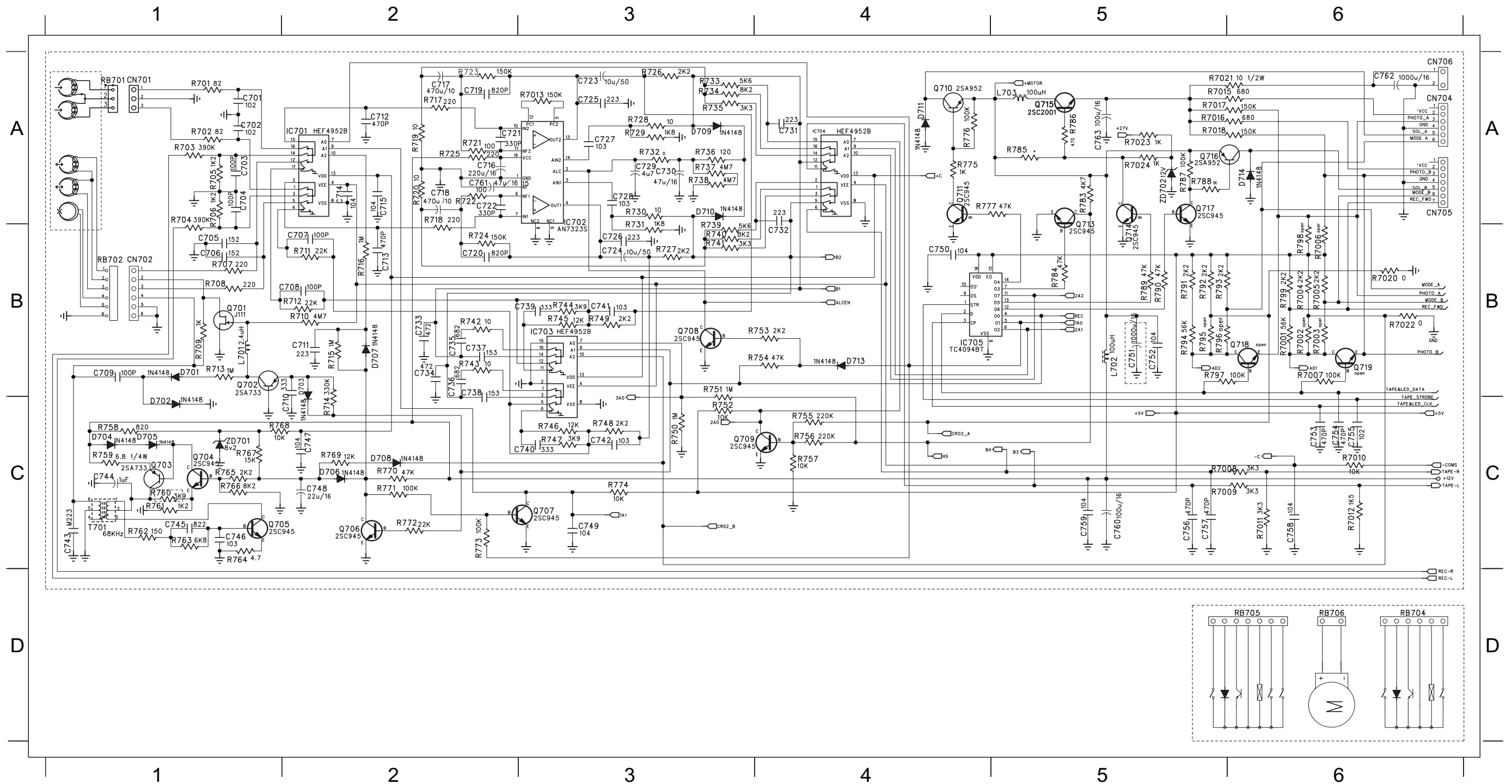
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C202	A6	C825	B4	C2233	D4	L207	A6	R858	B4
C203	A6	C826	B4	C2234	C3	L208	A6	R859	B5
C204	A6	C827	B4	C2235	C3	Q201	E2	R860	B5
C205	A6	C828	B4	C2236	C3	Q202	A6	R861	A5
C206	A6	C829	B2	C2237	C3	Q805	A2	R178	E1
C207	A6	C830	B2	C2238	D5	Q806	A2	R2201	C3
C208	A6	C831	B2	C2239	E6	R202	E2	R2202	C3
C209	B6	C832	B3	C2241	A5	R208	A6	R2203	C3
C210	B6	C833	B3	C2244	A5	R209	A6	R2204	C3
C211	B7	C834	B2	C2245	A5	R210	A6	R2205	D2
C212	B7	C835	B3	C2246	A5	R211	A6	R2206	D3
C213	B7	C836	C2	C2247	A5	R212	B6	R2208	D3
C214	B7	C837	D2	C2249	A5	R213	B6	R2209	E2
C215	B7	C838	C2	C2250	A5	R214	B6	R2210	E2
C216	B7	C839	D1	C2251	A5	R215	B6	R2211	D3
C217	B7	C840	D1	C2252	A5	R216	B6	R2212	C4
C218	B6	C841	D1	C2253	A5	R217	B6	R2213	E7
C219	B6	C843	C1	C2255	A5	R218	B6	R2214	E7
C220	B6	C844	C1	C2256	A5	R220	B6	R2215	E7
C221	B5	C845	C1	C2257	A5	R221	B6	R2216	D4
C222	B5	C846	C1	C2258	A5	R222	B6	R2217	D4
C223	B5	C847	C1	C2260	A5	R223	B6	R2218	D4
C224	B5	C848	C1	C2263	A5	R224	C6	R2219	D4
C225	B5	C849	C1	C2264	A5	R229	E7	R2220	B7
C226	B5	C850	C1	C2265	A5	R231	B5	R2221	B7
C227	B5	C851	C1	C2266	A5	R232	B5	R2222	B4
C228	B5	C852	C1	C2268	C2	R233	B5	R2225	B7
C229	B5	C853	D1	C2269	C2	R234	B5	R2226	B7
C230	B5	C854	D1	C2270	C2	R235	B5	R2231	C3
C231	C4	C855	B5	C2271	C2	R236	B5	R2232	D2
C232	B4	C856	B5	C2272	D2	R237	B5	R2233	D3
C233	B4	C857	D1	C2273	D2	R238	C4	R2234	D2
C234	B4	C859	C1	C2274	D2	R240	C4	R2235	D3
C237	C4	C860	C1	C2275	D2	R241	C4	R2236	D2
C239	C4	C861	C1	C2277	C6	R242	C4	R2237	D3
C240	C4	C1801	A7	C2278	D2	R243	C4	R2238	D3
C241	C4	C1803	A7	C2279	D2	R244	C4	R2239	D3
C242	C4	C1804	A7	C2280	B4	R245	C4	R2240	D3
C243	C4	C1805	A7	C2281	B4	R248	D4	R2241	D3
C244	C4	C1806	B7	C2282	C4	R249	D4	R2242	E3
C245	C4	C1807	B7	C2284	E6	R250	D4	R2243	E3
C246	C4	C1808	A7	CN801	A1	R252	D4	R2244	E3
C247	C4	C1809	B6	CN810	B				

CIRCUIT DIAGRAM - MAIN BOARD SERVO PART

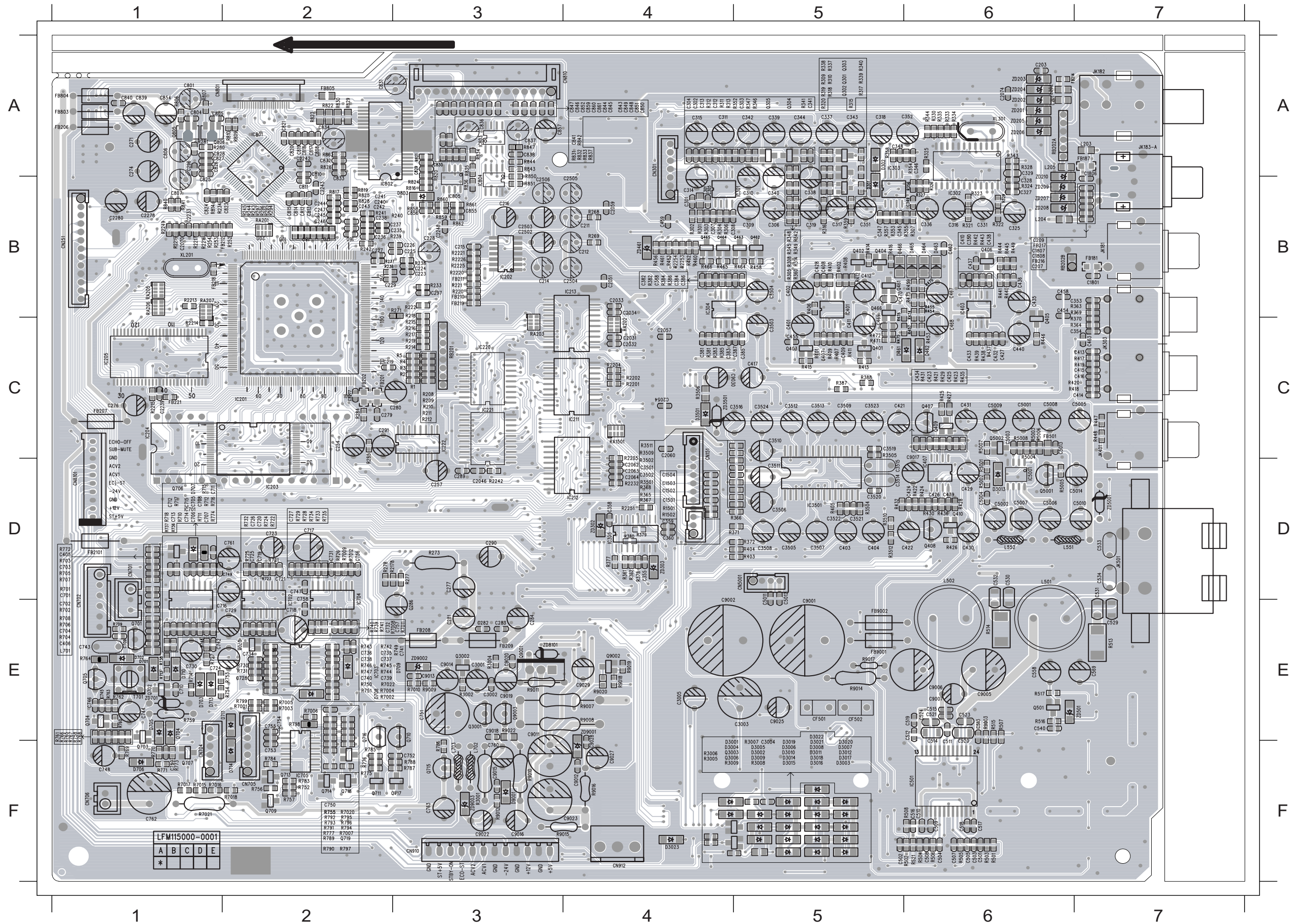


CIRCUIT DIAGRAM - MAIN BOARD

C701 A1 C719 A2 C737 B2 C756 C5 D706 C2 Q703 C1 R705 A1 R724 B2 R742 B2 R761 C1 R753 B4 R772 C2 R796 B5 R7021 A5
 C702 A1 C720 B2 C738 B2 C757 C5 D707 B2 Q704 C1 R706 A1 R725 A2 R743 B2 R761 C1 R754 B4 R773 C2 R797 B5 R7022 B6
 C703 A1 C721 A2 C739 B3 C758 C6 D708 C2 Q705 C1 R707 B1 R726 A3 R744 B3 R762 C1 R755 C4 R774 C3 R799 B6 R7023 A5
 C704 A1 C722 A2 C740 C3 C759 C5 D709 A3 Q706 C2 R708 B1 R727 B3 R745 B3 R763 C1 R756 C4 R775 A4 R7001B6 R7024 A5
 C705 B1 C723 A3 C741 B3 C760 C5 D710 A3 Q707 C3 R709 B1 R728 A3 R746 C3 R764 C1 R757 C4 R776 A4 R7004B6 RB701A1
 C706 B1 C724 B3 C742 C3 C761 A2 D711 A4 Q708 B3 R710 B2 R729 A3 R747 C3 R765 C1 R758 C1 R777 A4 R7005B6 RB702B1
 C707 B2 C725 A3 C743 C1 C762 A6 D713 B4 Q709 C3 R711 B2 R730 A3 R748 C3 R766 C1 R759 C1 R783 A5 R7007B6 RB704D6
 C708 B2 C726 B3 C744 C1 C763 A5 D714 A6 Q710 A4 R712 B2 R731 A3 R749 B3 R768 C1 R761 C1 R784 B5 R7008C5 RB705D6
 C709 B1 C727 A3 C745 C1 CN701 A1 IC701 A2 Q711 A4 R713 B1 R732 A3 R750 C3 R769 C2 R761 C1 R786 A5 R7009C5 RB706D6
 C710 C2 C728 A3 C746 C1 CN702 B1 IC702 A3 Q713 B5 R714 C2 R733 A3 R751 B3 R770 C2 R762 C1 R787 A5 R7010C6 T701 C1
 C711 B2 C729 A3 C747 C2 CN704 A6 IC703 B3 Q714 B5 R715 B2 R734 A3 R752 C3 R771 C2 R763 C1 R788 A5 R7011C6 ZD701 C1
 C712 A2 C730 A3 C748 C2 CN705 A6 IC704 A4 Q715 A5 R716 B2 R735 A3 R753 B4 R772 C2 R764 C1 R789 B5 R7012C6 ZD702 A5
 C713 B2 C731 A4 C749 C3 CN706 A6 IC705 B4 Q716 A5 R718 A2 R736 A3 R754 B4 R773 C2 R765 C1 R790 B5 R7013A3
 C714 A2 C732 B4 C750 B4 D701 B1 L701 B1 Q717 A5 R719 A2 R737 A3 R755 C4 R748 C3 R766 C1 R791 B5 R7015A5
 C715 A2 C733 B2 C752 B5 D702 C1 L702 B5 R701 A1 R720 A2 R738 A3 R756 C4 R749 B3 R768 C1 R792 B5 R7016A5
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 C718 A2 C736 B2 C755 C6 D705 C1 Q702 B1 R704 A1 R723 A2 R741 B3 R759 C1 R752 C3 R771 C2 R795 B5 R7020B6



PCB LAYOUT - MAIN BOARD (TOP VIEW)



LAYOUT DIAGRAM MAPPING - MAIN BOARD

C203 A6 C225 B3 C242 B2 C277 D3 C296 A1 C310 B5 C327 B6 C343 A5 C354 C7 C387 C5 C410 B6 C424 D6 C435 B6 C463 C7 C509 F6 C520 F6 C558 E6 C710 E1 C723 D2 C735 E2 C745 E1 C758 D2 C806 A1 C819 A2 C832 A2 C845 A4 C857 A3 C1808 B6 C2062 D4 C2278 B1 C3005 E4
C207 B6 C226 B3 C243 B2 C279 C2 C297 B3 C311 A4 C328 B6 C344 A5 C355 D4 C388 B4 C411 C5 C425 C6 C436 B6 C467 B6 C510 F6 C521 E6 C569 E7 C711 D1 C724 E1 C736 E2 C746 E1 C757 E3 C807 B1 C820 A2 C833 B2 C846 A4 C859 A4 C2031 C4 C2063 D4 C2280 B1 C3501 D4
C209 B6 C227 B2 C244 B2 C280 C3 C301 B4 C312 A4 C329 A6 C345 B5 C358 D4 C401 C5 C412 B5 C426 D6 C437 B6 C468 C6 C511 F6 C523 E6 C701 D1 C712 D1 C725 D2 C737 E2 C747 D2 C758 D2 C808 A2 C821 A2 C834 A2 C847 A4 C860 A4 C2032 C4 C2064 D4 C2502 B3 C3502 D4
C211 B4 C228 B3 C245 B2 C281 E3 C302 A4 C313 A4 C331 B6 C346 A6 C359 D4 C402 B5 C413 C7 C427 C6 C438 B6 C470 B5 C512 E6 C524 E6 C702 E1 C713 D1 C726 D2 C738 E2 C748 F1 C759 F1 C810 A2 C823 B2 C836 A3 C848 A4 C861 A4 C2033 B4 C2070 B1 C2503 B3 C3503 C5
C212 B4 C229 B2 C246 B2 C282 E3 C303 A5 C314 B4 C336 B6 C347 B5 C360 D4 C403 D5 C414 C7 C428 B5 C439 D6 C501 F6 C513 E6 C529 E7 C703 D1 C714 D1 C727 D2 C739 E2 C749 D2 C760 F3 C811 B2 C824 B1 C837 A3 C849 A4 C1501 D4 C2034 B4 C2074 A6 C2504 B4 C3504 B5
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C3511 D5 FB206 A1 Q3006 F4 R368 D4 R718 D1 R2178 D2 CN706 F1 L201 A6 R305 B5 R444 B6 R783 F2 R7015 F1 C3512 C5 FB207 C1 Q5001 D6 R369 B7 R721 D2 R2201 C4 CN801 A1 L202 A6 R306 B4 R445 B6 R784 F2 R7016 F1 C3513 C5 FB208 E3 Q5002 C6 R370 C7 R722 D2 R2202 C4 CN810 A4 L203 A7 R307 B6 R446 C6 R785 F2 R7017 F1 C3514 D5 FB209 E3 Q9001 E3 R371 D5 R723 D2 R2204 C4 CN910 F3 L204 B6 R308 B5 R447 C7 R786 F3 R7018 F2 C3515 D5 FB210 B3 Q9002 E4 R372 D5 R724 D2 R2205 D4 CN912 F4 L205 A6 R309 A5 R448 C7 R787 F3 R7020 F2 C3516 C5 FB211 B3 Q9003 E3 R377 D4 R725 D2 R2213 B1 CN5001D5 L301 B4 R310 A5 R449 B6 R788 F3 R7021 F1 C3519 C5 FB212 B2 R1 C3 R378 D4 R726 D2 R2214 C1 CN8101D1 L501 D6 R311 A4 R453 C6 R789 F2 R7022 E2 C3520 D5 FB214 A6 R2 C3 R379 D4 R727 E1 R2215 C1 D301 B5 L502 D6 R312 A4 R454 B6 R790 F2 R9003 E6 C3521 D5 FB216 B6 R3 C3 R380 D4 R728 D2 R2216 B1 D302 A5 L551 D6 R313 A4 R455 B6 R791 F2 R9007 E4 C3522 D5 FB217 B6 R4 C3 R381 C4 R729 D2 R2217 B1 D461 C5 L552 D6 R314 B5 R456 B4 R792 F2 R9008 E4 C3523 C5 FB218 B1 R5 C3 R382 B4 R730 E2 R2219 B1 D462 C6 L701 E1 R315 A5 R457 C6 R793 F2 R9009 E3 C3524 C5 FB219 B3 R208 C3 R383 C4 R731 E2 R2220 B3 D463 B6 L702 F3 R316 B5 R458 B5 R794 F2 R9010 F3 C5001 C6 FB221 C1 R209 C3 R384 B4 R732 D2 R2221 B3 D464 B6 L703 F3 R317 A5 R459 B6 R795 F2 R9011 E3 C5002 D6 FB501 C6 R210 C3 R385 C4 R733 D2 R2225 B3 D465 B6 Q301 A5 R318 A5 R460 B4 R796 F2 R9012 F3 C5003 C6 FB803 A1 R211 C3 R386 B4 R734 D2 R2226 B3 D466 B5 Q302 A5 R319 A5 R461 B4 R797 F2 R9012 F3 C5004 D6 FB804 A1 R212 C3 R387 C5 R735 D2 R2232 D4 D701 E1 Q303 A5 R320 A5 R462 B4 R798 E2 R9014 E5 C5005 C7 FB805 A2 R214 C3 R388 C5 R736 D1 R2242 D3 D702 E1 Q304 A5 R321 B6 R463 B4 R799 E2 R9015 F3 C5006 D6 FB2101 D1 R215 C3 R401 C5 R737 D1 R2249 B1 D703 E1 Q305 A5 R322 B6 R464 B5 R806 A1 R9016 F4 C5007 D6 FB9001 E5 R216 C3 R402 B5 R738 E1 R2251 D4 D704 E1 Q401 C5 R323 B6 R465 B4 R807 A1 R9017 E5 C5008 C6 FB9002 E5 R217 C3 R403 D5 R739 E2 R2253 B4 D705 E1 Q402 B5 R324 B6 R466 B4 R809 A2 R9018 E4 C5009 C6 IC201 C2 R218 B3 R404 D5 R740 E2 R2254 B4 D706 F1 Q403 C5 R325 A6 R470 B6 R810 A2 R9019 E4 C5010 D7 IC202 B3 R219 C3 R405 D5 R741 E2 R3001 F3 D707 D1 Q404 B5 R326 B6 R471 C5 R814 B1 R9020 E4 C5011 D5 IC203 D2 R220 B3 R406 B5 R742 E2 R3002 E3 D708 E2 Q405 C6 R327 B6 R472 C5 R816 B3 R9022 E3 C5012 D5 IC204 C1 R221 B3 R407 C5 R743 E2 R3004 E3 D709 E3 Q406 B6 R328 A6 R473 B6 R817 B2 RA201 B2 C5013 D6 IC205 C1 R222 B3 R408 B5 R744 E2 R3005 F4 D710 E1 Q407 C6 R329 B6 R474 B6 R819 B2 RA202 C4 C5014 D7 IC211 C4 R233 B3 R409 C5 R745 E2 R3006 F4 D711 E2 Q408 D6 R330 A6 R475 C5 R820 A3 RA203 C3 C9001 E5 IC212 D4 R234 B1 R410 B5 R746 E2 R3007 F5 D713 E1 Q409 C6 R333 A6 R476 B5 R821 A3 RA205 B1 C9002 E4 IC213 B4 R236 B2 R411 C5 R747 E2 R3008 F5 D714 F2 Q410 D6 R334 A6 R501 F6 R822 A2 RA206 B1 C9005 E6 IC220 C3 R237 B2 R412 B5 R748 E1 R3009 F4 D803 B5 Q461 B5 R335 A6 R502 F6 R823 A2 RA207 B1 C9006 E6 IC221 C3 R238 B3 R413 C5 R749 E3 R3501 D4 D3001 F4 Q462 B5 R337 A5 R503 F6 R824 B3 RA1501C4 C9007 E6 IC222 C3 R239 B3 R414 B5 R750 E2 R3502 D4 D3002 F5 Q463 B5 R338 A5 R504 F6 R825 B2 RB201 C3 C9011 E3 IC301 B5 R240 B3 R415 C5 R751 E2 R3504 D5 D3003 F5 Q464 B4 R339 A5 R505 F6 R826 A2 RB202AA6 C9012 F4 IC302 B6 R241 B2 R416 B5 R752 F2 R3505 C5 D3004 F4 Q465 B4 R340 A5 R506 F6 R828 B2 RB202BB6 C9013 E3 IC303 A5 R242 B2 R417 C7 R753 E2 R3506 C4 D3005 F5 Q466 B5 R341 A5 R507 E6 R829 A2 T701 E1 C9014 E3 IC304 B4 R243 B2 R418 C7 R754 E2 R3509 C4 D3006 F5 Q501 E6 R342 B5 R508 F6 R830 A2 XL201 B1 C9015 F3 IC305 D4 R244 B2 R419 C7 R755 F2 R3510 D5 D3007 F5 Q701 E1 R343 A6 R513 E7 R831 A4 XL301 A6 C9016 F3 IC401 B5 R245 B2 R420 C7 R756 F2 R3511 C4 D3008 F5 Q702 E1 R344 A6 R514 E6 R832 A4 ZD201 A6 C9017 C6 IC403 B6 R252 B2 R421 C6 R757 F2 R3512 D5 D3009 F5 Q703 F1 R345 B5 R515 E6 R833 A4 ZD202 A6 C9018 E3 IC407 D6 R253 B1 R422 D6 R758 E1 R5001 D6 D3010 F5 Q704 E1 R346 A5 R516 E6 R834 A3 ZD203 A6 C9019 E3 IC501 F6 R254 B1 R423 C6 R759 E1 R5002 D6 D3011 F5 Q705 E1 R347 A5 R517 E6 R835 A3 ZD204 A6 C9020 E3 IC701 D1 R268 B4 R424 D6 R760 E1 R5003 C6 D3012 F5 Q706 D1 R348 B5 R521 F6 R836 B3 ZD205 A6 C9022 F3 IC702 E2 R269 B4 R425 C6 R761 E1 R5004 C6 D3013 D6 Q707 F1 R349 B5 R701 D1 R837 A4 ZD206 A6 C9023 F4 IC703 E2 R271 B3 R426 D6 R762 E1 R5005 D6 D3014 F5 Q708 E2 R352 A5 R702 E1 R840 B1 ZD207 B6 C9025 E5 IC704 E2 R273 D3 R427 C6 R763 E1 R5006 C6 D3015 F5 Q709 F2 R353 B5 R703 D1 R841 B1 ZD208 B6 C9027 F4 IC705 F2 R277 D3 R428 D6 R764 E1 R5007 C6 D3016 F5 Q710 E3 R354 A6 R704 E1 R842 A4 ZD209 B6 C9028 F4 IC801 A2 R278 D2 R429 C6 R765 E1 R5008 C6 D3017 F5 Q711 F2 R355 B6 R705 D1 R843 A3 ZD210 B6 C9029 E4 IC802 B2 R280 A1 R430 D6 R766 E1 R7001 E2 D3018 F5 Q713 F2 R356 B6 R706 E1 R844 A3 ZD302 D4 C9030 C5 IC803 A3 R281 A1 R431 C6 R767 E1 R7002 E2 D3019 F5 Q714 F2 R357 B5 R707 D1 R847 A3 ZD303 D4 CF501 E5 IC804 B3 R284 C2 R432 D5 R768 E1 R7003 E2 D3020 F5 Q715 F3 R358 A5 R708 E1 R850 A3 ZD461 B4 CF502 E5 IC805 B3 R285 D2 R435 C6 R769 F1 R7004 E2 D3021 F5 Q716 E2 R359 B5 R709 E1 R851 B3 ZD501 E7 CN151 C4 IC3501 D5 R294 B2 R436 D6 R770 F1 R7005 E2 D3022 E5 Q717 F3 R360 B5 R710 D1 R858 B3 ZD701 E1 CN251 B1 IC5001 D6 R295 B2 R437 C6 R771 F1 R7006 E2 D3023 F4 Q718 F2 R361 D4 R711 D1 R859 B3 ZD3501C4 CN301 A4 JK181 B7 R296 B2 R438 C6 R772 D1 R7007 F2 D3501 C4 Q719 F2 R362 D4 R712 D1 R860 B3 ZD5001D7 CN701 D1 JK182 A7 R297 B2 R439 C6 R773 F1 R7008 E2 D9001 F3 Q805 A1 R363 B7 R713 E1 R861 B3 ZD8101E3 CN702 D1 JK183-A7 R301 B4 R440 B6 R774 D1 R7009 D2 FB181 B7 Q806 A1 R364 C7 R714 E1 R862 B3 ZD9001E4 CN704 F1 JK303 C7 R302 B4 R441 B6 R775 F2 R7010 E3 FB187 A7 Q3001 E3 R365 D4 R715 D1 R863 A2 ZD9002E3 CN705 F2 JK401 C7 R303 B4 R442 B6 R776 F2 R7011 E3 FB201 C2 Q3002 E3 R366 D5 R716 D1 R1501 D4 ZD9003F3 CN705 F2 JK501 D7 R304 B4 R443 B6 R777 F2 R7012 D2 FB202 C2 Q3003 F4 R367 D4 R717 D1 R1502 D4

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ELECTRICAL PARTS - MAIN BOARD

CF501	9940 000 00822	RESONATOR 2PIN 600KHZ	IC702	9940 000 01585	IC 16P AN7323S
CF502	9940 000 00823	RESONATOR 2PIN 700KHZ	IC703	9940 000 01584	IC 16P HEF4952BT
JK181	9965 000 25156	RCA JACK 1PIN	IC704	9940 000 01584	IC 16P HEF4952BT
JK182	9940 000 00857	RCA JACK 3P R-B-G	IC705	9940 000 01587	IC 16P HEF4094BT
JK183	9965 000 25153	RCA+DIN JK 1RCA+4P	IC801	9940 000 00853	IC 64PIN ES6603S
JK303	9940 000 00859	RCA JACK 4P AUDIO IN	IC802	9940 000 00854	IC 28PIN D5954
JK401	9940 000 01576	RCA JACK 1P BLACK	IC803	9940 000 00855	IC 8PIN BA6287FE2
JK501	9940 000 00862	SPK JACK 4P	IC804	9940 000 00855	IC 8PIN BA6287FE2
RA1501	9940 000 01577	RES ARRAY 4X33Ω 1/10W 5%	IC805	9940 000 00856	IC 8PIN LM358MX NS
RA201	9940 000 01577	RES ARRAY 4X33Ω 1/10W 5%	Q701	9940 000 00864	FET J111TO92 40V 20MA
RA202	9940 000 01577	RES ARRAY 4X33Ω 1/10W 5%			
RA203	9940 000 01577	RES ARRAY 4X33Ω 1/10W 5%			
RA204	9940 000 00858	CHIP ARRAY 10ΩX4 1/10 W 5%			
RA205	9940 000 00858	CHIP ARRAY 10ΩX4 1/10 W 5%			
RA206	9940 000 00858	CHIP ARRAY 10ΩX4 1/10 W 5%			
RA207	9940 000 01577	RES ARRAY 4X33Ω 1/10W 5%			
T701	9940 000 00866	OSC COIL REC 3MH			
IC201	9940 000 01578	IC 208P ES6629F W/O DTS			
IC202	9940 000 01579	IC 14P CE2752 24BIT 192KHZ			
IC203	9965 000 26936	IC 48 PIN MX26LV800BTC			
IC205	9940 000 00831	IC 54PIN K4S641632H-UC			
IC209	9940 000 00833	IC 8PIN M24C04-WMN6T EEPROM			
IC210	9940 000 00834	IC 3PIN LM809			
IC211	9940 000 00835	IC 20PIN 74F374D			
IC212	9940 000 00835	IC 20PIN 74F374D			
IC213	9940 000 00835	IC 20PIN 74F374D			
IC216	9965 000 26932	IC 3PIN RT9164-33PLR			
IC217	9965 000 26932	IC 3PIN RT9164-33PLR			
IC218	9940 000 00837	IC 3PIN LD1117 ADJ			
IC220	9940 000 00838	IC 20PIN 74F244			
IC221	9940 000 00838	IC 20PIN 74F244			
IC222	9940 000 00839	IC 16PIN 74F138D			
IC301	9940 000 00842	IC 8PIN JRC4558M			
IC302	9940 000 00844	IC 24PIN PT2396S			
IC303	9940 000 00842	IC 8PIN JRC4558M			
IC304	9940 000 00842	IC 8PIN JRC4558M			
IC305	9940 000 00841	IC 16PIN TC4052BFN			
IC3501	9940 000 01582	IC 28P TDA7440D			
IC401	9940 000 00842	IC 8PIN JRC4558M			
IC403	9940 000 00842	IC 8PIN JRC4558M			
IC407	9940 000 00842	IC 8PIN JRC4558M			
IC5001	9940 000 00849	IC 8PIN TP5228 DRIVER W/MUTE			
IC501	9940 000 01583	IC 24P TDA8922B			
IC502	5322 209 14477	HEF4013BT			
IC503	9940 000 00848	IC 14PIN HEF4011BT(D)			
IC701	9940 000 01584	IC 16P HEF4952BT			

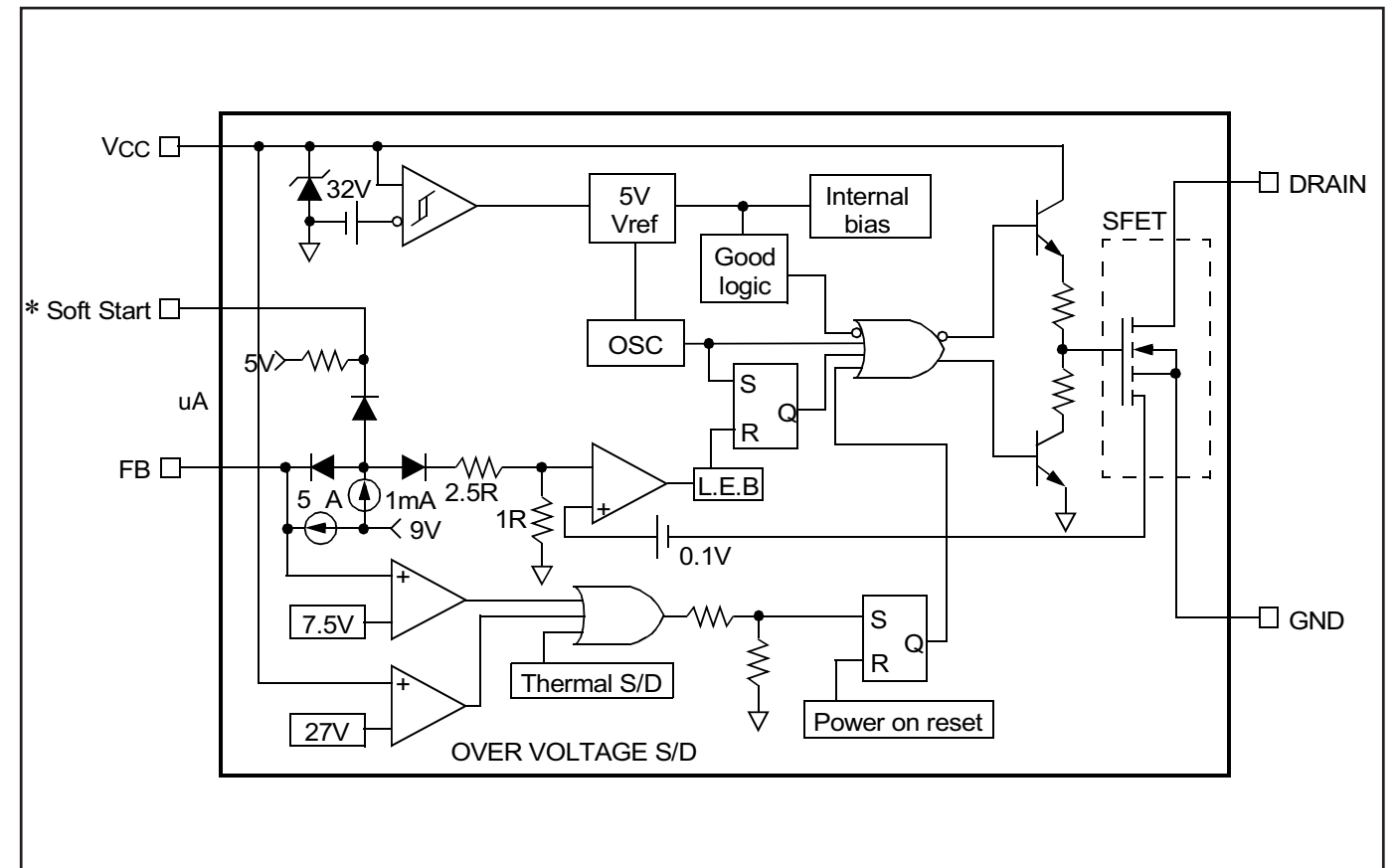
Note: Only these parts mentioned in the list are normal service parts.

POWER BOARD

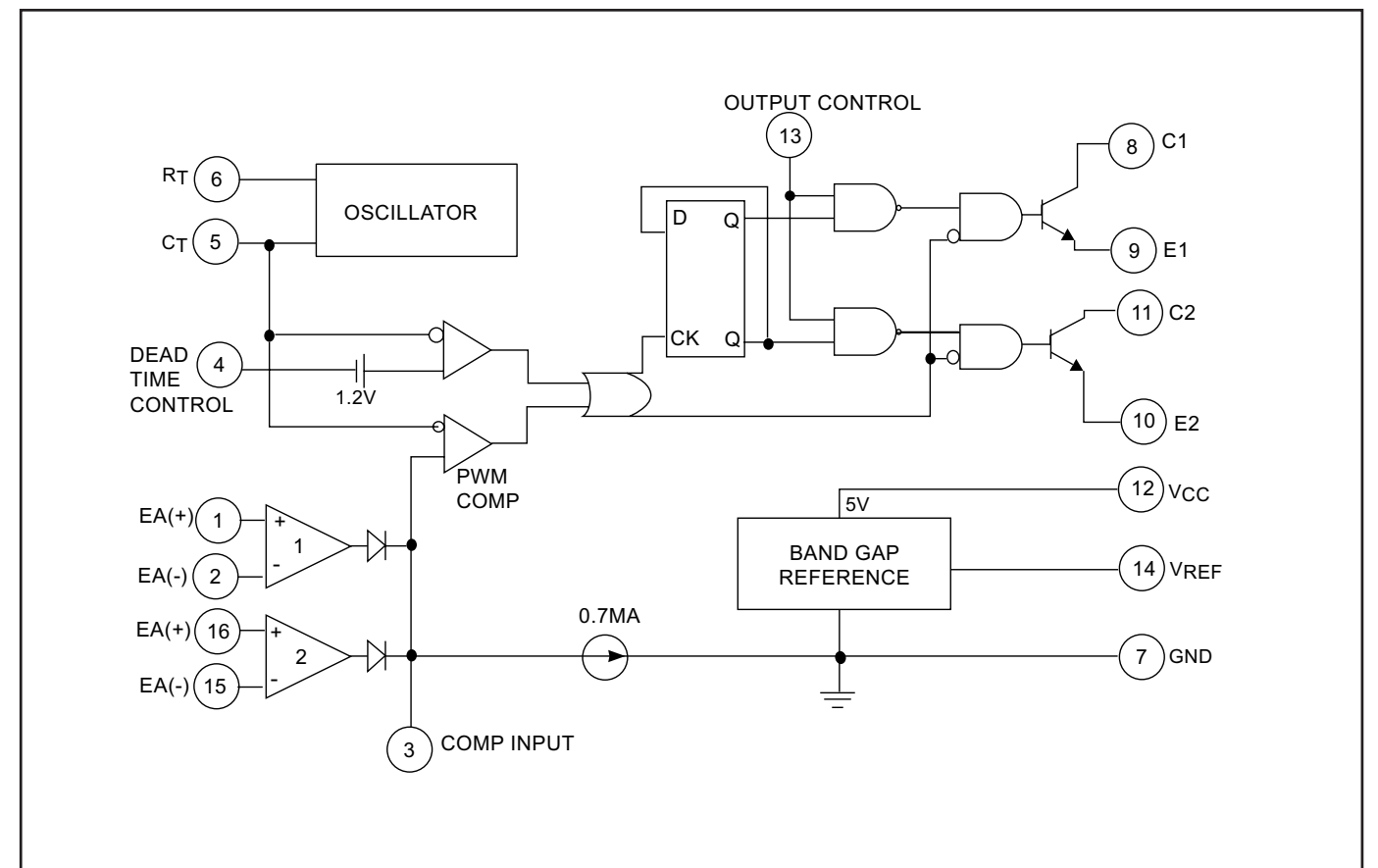
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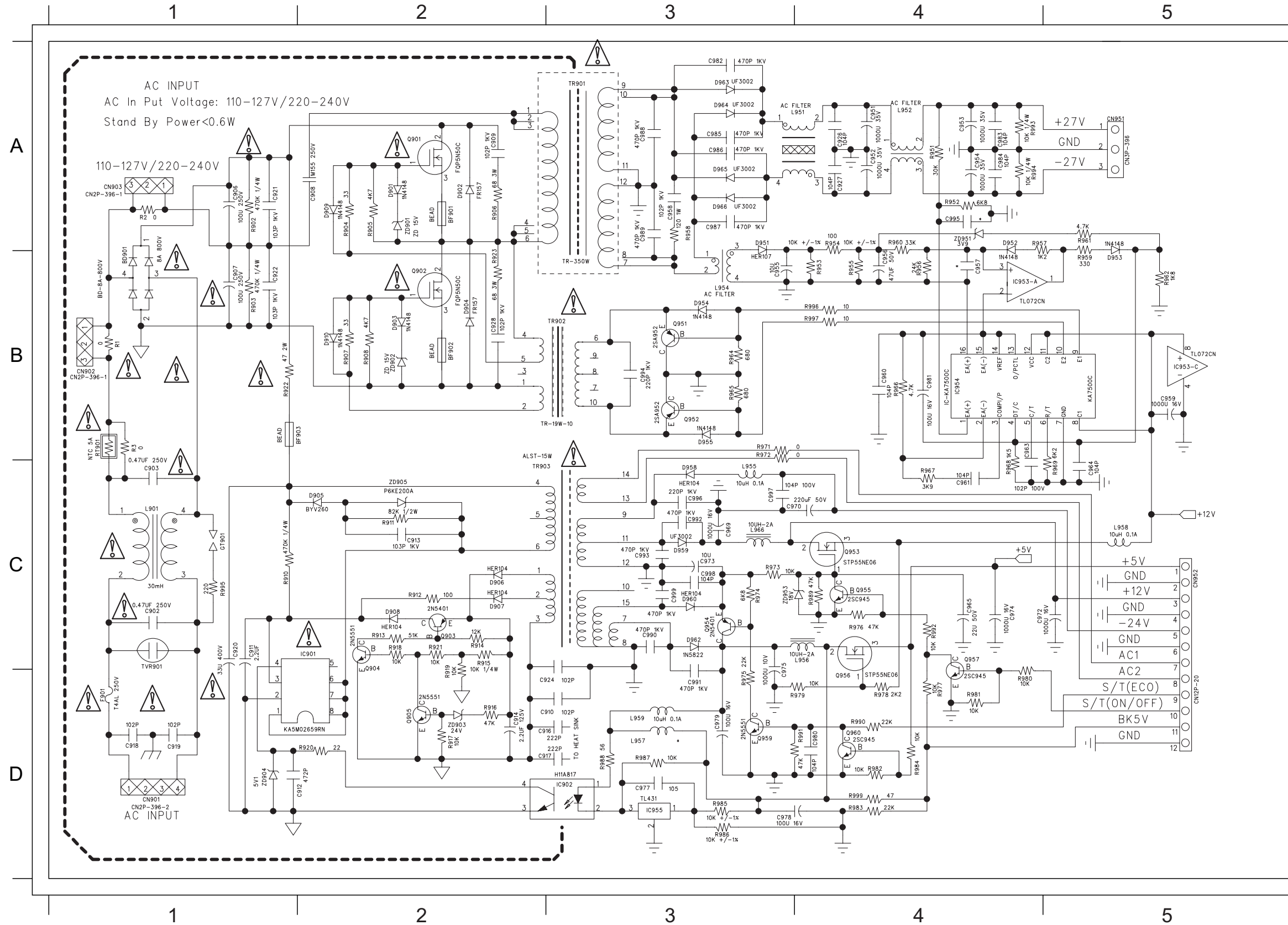
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KA7500C INTERNAL BLOCK DIAGRAM



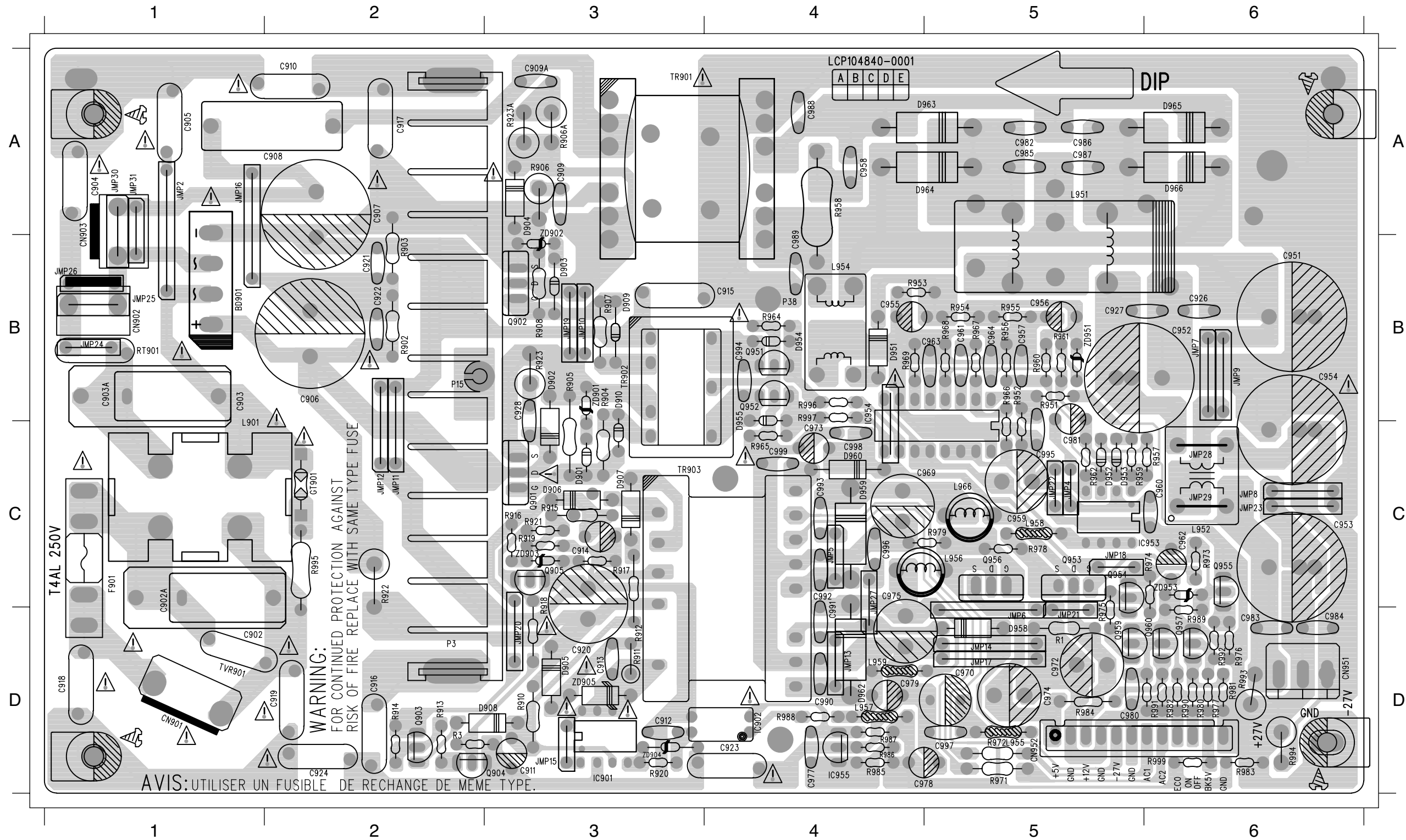
CIRCUIT DIAGRAM - POWER BOARD



- BD901 □ B1 □ D902 □ A2 □ R920 □ D2
- BF901 □ A2 □ D903 □ B2 □ R921 □ C2
- BF902 □ B2 □ D904 □ B2 □ R922 □ B1
- BF903 □ B1 □ D905 □ C2 □ R923 □ B2
- C902 □ C1 □ D906 □ C2 □ R951 □ A4
- C903 □ C1 □ D907 □ C2 □ R952 □ A4
- C906 □ A1 □ D908 □ C2 □ R953 □ B4
- C907 □ B1 □ D909 □ A2 □ R954 □ A4
- C908 □ A2 □ D910 □ B2 □ R955 □ B4
- C909 □ A2 □ D951 □ A3 □ R956 □ B4
- C910 □ D3 □ D952 □ A4 □ R957 □ A4
- C911 □ C1 □ D953 □ B5 □ R958 □ A3
- C912 □ D2 □ D954 □ B3 □ R959 □ B5
- C913 □ C2 □ D955 □ B3 □ R960 □ A4
- C914 □ D2 □ D958 □ C3 □ R961 □ A5
- C916 □ D3 □ D959 □ C3 □ R962 □ B5
- C917 □ D3 □ D960 □ C3 □ R964 □ B3
- C918 □ D1 □ D962 □ C3 □ R965 □ B3
- C919 □ D1 □ D963 □ A3 □ R966 □ B4
- C920 □ C1 □ D964 □ A3 □ R967 □ C4
- C921 □ A1 □ D965 □ A3 □ R968 □ C4
- C922 □ B1 □ D966 □ A3 □ R969 □ C5
- C924 □ D3 □ F901 □ D1 □ R971 □ B3
- C926 □ A4 □ GT901 □ C1 □ R972 □ B3
- C927 □ A4 □ IC901 □ C2 □ R973 □ C3
- C928 □ B2 □ IC902 □ D3 □ R974 □ C3
- C951 □ A4 □ IC953-A □ B4 □ R975 □ D3
- C952 □ A4 □ IC953-C □ B5 □ R976 □ C4
- C953 □ A4 □ IC954 □ B4 □ R977 □ D4
- C954 □ A4 □ IC955 □ D3 □ R978 □ D4
- C955 □ B3 □ L901 □ C1 □ R979 □ D4
- C956 □ B4 □ L951 □ A4 □ R980 □ D4
- C958 □ A3 □ L952 □ A4 □ R981 □ D4
- C959 □ B5 □ L954 □ B3 □ R982 □ D4
- C960 □ B4 □ L955 □ C3 □ R983 □ D4
- C961 □ C4 □ L956 □ C4 □ R984 □ D4
- C963 □ B4 □ L958 □ C5 □ R985 □ D3
- C964 □ C5 □ L959 □ D3 □ R986 □ D3
- C965 □ C4 □ L966 □ C3 □ R987 □ D3
- C969 □ C3 □ Q901 □ A2 □ R988 □ D3
- C970 □ C4 □ Q902 □ B2 □ R989 □ C4
- C972 □ C4 □ Q903 □ C2 □ R990 □ D4
- C973 □ C3 □ Q904 □ C2 □ R991 □ D4
- C974 □ C4 □ Q905 □ D2 □ R992 □ C4
- C975 □ C3 □ Q951 □ B3 □ R993 □ A4
- C977 □ D3 □ Q952 □ B3 □ R994 □ A4
- C978 □ D3 □ Q953 □ C4 □ R995 □ C1
- C979 □ D3 □ Q954 □ C3 □ R996 □ B4
- C980 □ D4 □ Q955 □ C4 □ R997 □ B4
- C981 □ B4 □ Q956 □ D4 □ R999 □ D4
- C982 □ A3 □ Q957 □ C4 □ RT901 □ B1
- C983 □ A4 □ Q959 □ D3 □ TR901 □ A3
- C984 □ A4 □ Q960 □ D4 □ TR902 □ B3
- C985 □ A3 □ R1 □ B1 □ TR903 □ C2
- C986 □ A3 □ R2 □ A1 □ TVR901 □ C1
- C987 □ A3 □ R3 □ B1 □ ZD901 □ A2
- C989 □ A3 □ R903 □ B1 □ ZD903 □ D2
- C990 □ C3 □ R904 □ A2 □ ZD904 □ D1
- C991 □ D3 □ R905 □ A2 □ ZD905 □ C2
- C992 □ C3 □ R906 □ A2 □ ZD951 □ A4
- C993 □ C3 □ R907 □ B2 □ ZD953 □ C3
- C994 □ B3 □ R908 □ B2 □
- C996 □ C3 □ R910 □ C1 □
- C997 □ C3 □ R911 □ C2 □
- C998 □ C3 □ R912 □ C2 □
- C999 □ C3 □ R913 □ C2 □
- CN901 □ D1 □ R914 □ C2 □
- CN902 □ B1 □ R915 □ C2 □
- CN903 □ A1 □ R916 □ D2 □
- CN951 □ A5 □ R917 □ D2 □
- CN952 □ C5 □ R918 □ C2 □
- D901 □ A2 □ R919 □ D2

PCB LAYOUT - POWER BOARD

BD901	B1	C913	D3	C953	C6	C970	D5	C988	A4	CN951	D6	D954	B4	IC955	D4	JMP17	D5	L901	C1	Q951	B4	R906	A3	R921	C3	R962	C5	R979	C5	R994	D6	ZD951	B5
C902	D1	C914	C3	C951	B6	C972	D5	C989	B4	CN952	D5	D955	B4	JMP2	A1	JMP18	C5	L951	A5	Q952	B4	R906A	A3	R922	C2	R964	B4	R980	D6	R995	C2	ZD953	C6
C902A	C1	C915	B4	C952	B6	C973	C4	C990	D4	D901	C3	D958	D5	JMP4	C5	JMP19	B3	L952	C6	Q953	C5	R907	B3	R923	B3	R965	C4	R981	D6	R996	B4		
C903	B1	C916	D2	C953	C6	C974	D5	C991	D4	D902	B3	D959	C4	JMP5	C4	JMP20	D3	L954	B4	Q954	C5	R908	B3	R923A	A3	R966	B5	R982	D6	R997	B4		
C903A	B1	C917	A2	C954	B6	C975	C4	C992	D4	D903	B3	D960	C3	D964	A5	JMP6	D5	JMP21	D5	L955	D5	Q955	C6	R910	D3	R951	B5	R967	B5	R983	D6	R999	D6
C904	A1	C918	D1	C955	B4	C977	D4	C993	C4	D904	A3	D962	D4	JMP7	B6	JMP22	C5	L956	C5	Q956	C5	R911	D3	R952	B5	R968	B5	R984	D5	RT901	B1		
C905	A1	C919	D2	C956	B5	C979	D4	C994	B4	D905	D3	D963	A5	JMP8	C6	JMP23	C6	L957	D4	Q957	D6	R912	D3	R953	B4	R969	B4	R985	D4	TR901	A3		
C906	B2	C920	D3	C957	B5	C980	D5	C995	C5	D906	C3	D964	A5	JMP9	B6	JMP24	B1	L958	C5	Q959	D5	R913	D2	R954	B5	R971	D5	R986	D4	TR902	B3		
C907	A2	C921	B2	C958	A4	C981	C5	C996	C4	D907	C3	D965	A6	JMP10	B3	JMP25	B1	L959	D4	Q960	D6	R914	D2	R955	B5	R972	D5	R987	D4	TR903	C3		
C908	A2	C922	B2	C959	C5	C982	A5	C997	D5	D908	D3	D966	A6	JMP11	C2	JMP26	B1	L966	C5	R1	D5	R915	C3	R956	B5	R973	C6	R988	D4	TVR901	D1		
C909	A3	C923	D4	C960	C6	C983	D6	C998	C4	D909	B3	F901	C1	JMP12	C2	JMP27	C4	Q901	C3	R3	D2	R916	C3	R957	C6	R974	C6	R989	D6	ZD901	B3		
C909A	A3	C924	D2	C961	B5	C984	D6	C999	C4	D910	B3	GT901	C2	JMP13	D4	JMP28	C6	Q902	B3	R902	B2	R917	C3	R958	A4	R975	D5	R990	D6	ZD902	A3		
C910	A2	C926	B6	C962	C6	C985	A5	CN901	D1	D951	B4	IC901	D3	JMP14	D5	JMP29	C6	Q903	D2	R903	B2	R918	C3	R959	C5	R976	D6	R991	D6	ZD903	C3		
C911	D3	C927	B5	C963	B5	C986	A5	CN902	B1	D952	C5	IC902	D4	JMP15	D3	JMP30	A1	Q904	D3	R904	B3	R919	C3	R960	B5	R977	D6	R992	D6	ZD904	D3		
C912	D3	C928	B3	C964	B5	C987	A5	CN903	B1	D953	C5	IC954	B4	JMP16	A1	JMP31	A1	Q905	C3	R905	B3	R920	D3	R961	B5	R978	C5	R993	D6	ZD905	D3		

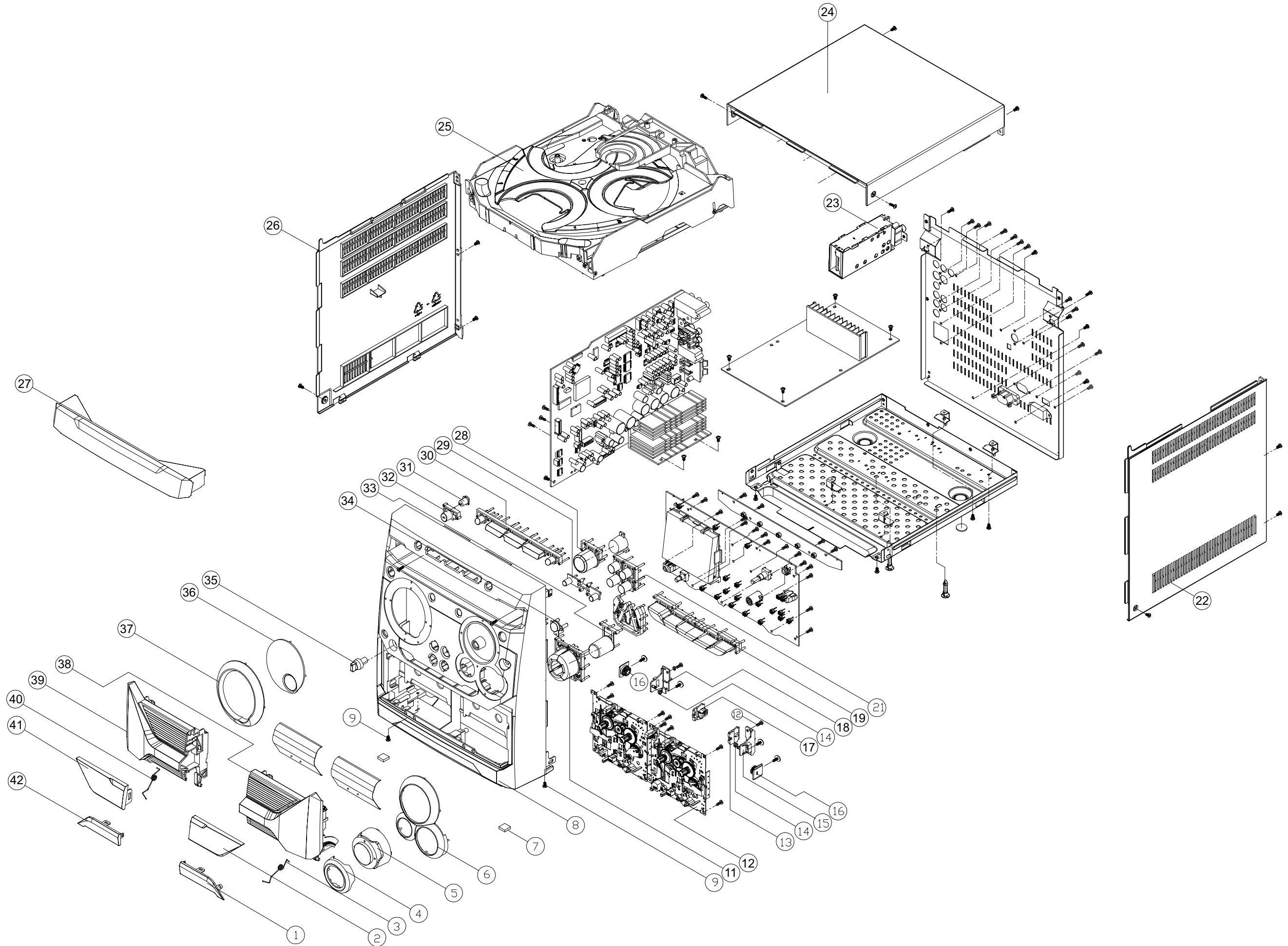


ELECTRICAL PARTS - POWER BOARD

BD901	4822 130 10741	GBU6J	RT901	9940 000 00957	NTC 5Ω 5A
C902	△ 9940 000 00932	COND SAFTY 0.47μF 275V 10%	TR901	△ 9940 000 01569	SW. MODEL TRANSFORMER
C903	△ 9940 000 00932	COND SAFTY 0.47μF 275V 10%	TR902	△ 9940 000 00959	SW. MODEL TRANSFORMER
C909	9940 000 01085	COND DISC 0.001μF 1KV 20%	TR903	△ 9940 000 00961	SW. MODEL TRANSFORMER
C913	9940 000 01086	COND DISC 0.01μF 1KV 20%	TVR901	9940 000 00962	PTC THERMISTOR 50A 561V
C915	△ 9940 000 00934	COND SAFTY 0.0022μF 400V 20%			
C916	△ 9940 000 00934	COND SAFTY 0.0022μF 400V 20%			
C917	△ 9940 000 00934	COND SAFTY 0.0022μF 400V 20%			
C918	△ 9940 000 00935	COND SAFTY 0.001μF 250V 20%			
C919	△ 9940 000 00935	COND SAFTY 0.001μF 250V 20%			
C920	9940 000 01086	COND DISC 0.01μF 1KV 20%			
C921	9940 000 01086	COND DISC 0.01μF 1KV 20%			
C922	9940 000 01086	COND DISC 0.01μF 1KV 20%			
C923	△ 9940 000 00935	COND SAFTY 0.001μF 250V 20%			
C926	9940 000 01086	COND DISC 0.01μF 1KV 20%			
C927	9940 000 01086	COND DISC 0.01μF 1KV 20%			
C928	9940 000 01085	COND DISC 0.001μF 1KV 20%			
C958	9940 000 01085	COND DISC 0.001μF 1KV 20%			
C982	9940 000 00936	COND DISC 470PF 1KV 10%			
C985	9940 000 00936	COND DISC 470PF 1KV 10%			
C986	9940 000 00936	COND DISC 470PF 1KV 10%			
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			
D951	9940 000 01571	DIODE FR107 1A 1000V			
F901	△ 9940 000 01567	FUSE 4A 250V			
IC901	9940 000 00945	IC 8PIN KA5M02659RN			
IC902	9940 000 00946	OPTICAL SENSOR 4P			
IC953	9940 000 00949	IC 8PIN JRC4558D			
IC954	9940 000 00951	IC 16PIN KA7500C			
IC955	9940 000 01572	IC 3P TL431			
L901	9940 000 00953	AC FILTER 25MH			
L954	9940 000 01568	TOROID COIL S1=2TS			
Q901	9940 000 01573	MOSFET STP9NK50Z			
Q902	9940 000 01573	MOSFET STP9NK50Z			
Q956	9940 000 01575	FET STP16NF06 16A 60V			

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

MECHANICAL EXPLODED VIEW



MECHANICAL & ACCESSORIES PARTS

1	9940 000 01531	CASS LENS BOTTOM RIGHT	9940 000 01548	MAIN SPEAKER ASS'Y 50WX2
2	9940 000 01529	CASS LENS TOP RIGHT	9940 000 01549	LOOP ANT W/2P 2.5MM
3	9940 000 01267	SPRING-RIGHT	9940 000 01551	FM ANTENNA 1000MM
4	9940 000 01522	VOL KNOB GRIP	9940 000 01553	REMOTE CONTROL 45 KEY
5	9940 000 01543	VOL KNOB RING	9940 000 01554	PICK UP ASS'Y HITACHI
6	9940 000 01544	COMESTIC RING	9965 000 23267	RCA CABLE 1200MM OD2.6X5.2
7	9940 000 01546	FOOT RUBBER	9965 000 23580	RCA CABLE 1500MM OD2.6X5.2
8	9940 000 01514	CABINET FRONT	9940 000 00924	RCA CABLE 1500MM OD2.6x7.8
11	9940 000 01518	CD CONTROL KEY	△ 9940 000 01054	LINE CORD 2P 2000MM /21/21M
12	9940 000 01552	TAPE DECK VALLEYWOOD	△ 9940 000 01929	LINE CORD 2P 2000MM /30
13	9940 000 01538	PUSH-CATCH RIGHT		
14	9940 000 01268	SPRING COMPRESSION		
15	9940 000 01515	BRACKET RIGHT		
16	9940 000 01547	DAMPER-ASSY-MODULE-0.8		
17	9940 000 01539	PUSH CATCH-LEFT		
18	9940 000 01516	BRACKET LEFT		
19	9940 000 01524	MODE KEY		
21	9940 000 01527	SOURCE KEY		
22	9940 000 01541	PANEL RIGHT		
23	9940 000 00873	TUNER MODULE		
24	9940 000 01509	COVER TOP		
25	9940 000 00874	3 CDC MODULE		
26	9940 000 01542	PANEL LEFT		
27	9940 000 01511	CDC TRAY DOOR		
28	9940 000 01525	DBB KEY		
29	9940 000 01523	AUTO KEYS		
30	9940 000 01521	CD DISC KEY		
31	9940 000 01532	STANDBY LENS		
32	9940 000 01528	STANDBY KEY		
33	9940 000 01517	CD PLAY KEY		
34	9940 000 01534	IR LENS		
35	9940 000 01526	MIC KNOB		
36	9940 000 01533	DISPLAY LENS		
37	9940 000 01545	DISPLAY RING		
38	9940 000 01513	CASSET BOX RIGHT		
39	9940 000 01512	CASSET BOX LEFT		
40	9940 000 01266	SPRING-LEFT		
41	9940 000 01536	CASS LENS TOP LEFT		
42	9940 000 01537	CASS LENS BOTTOM LEFT		

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