

Service
Service
Service



Service Manual



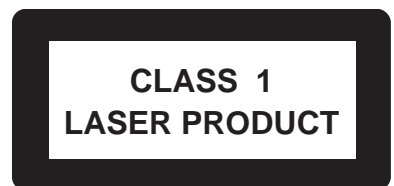
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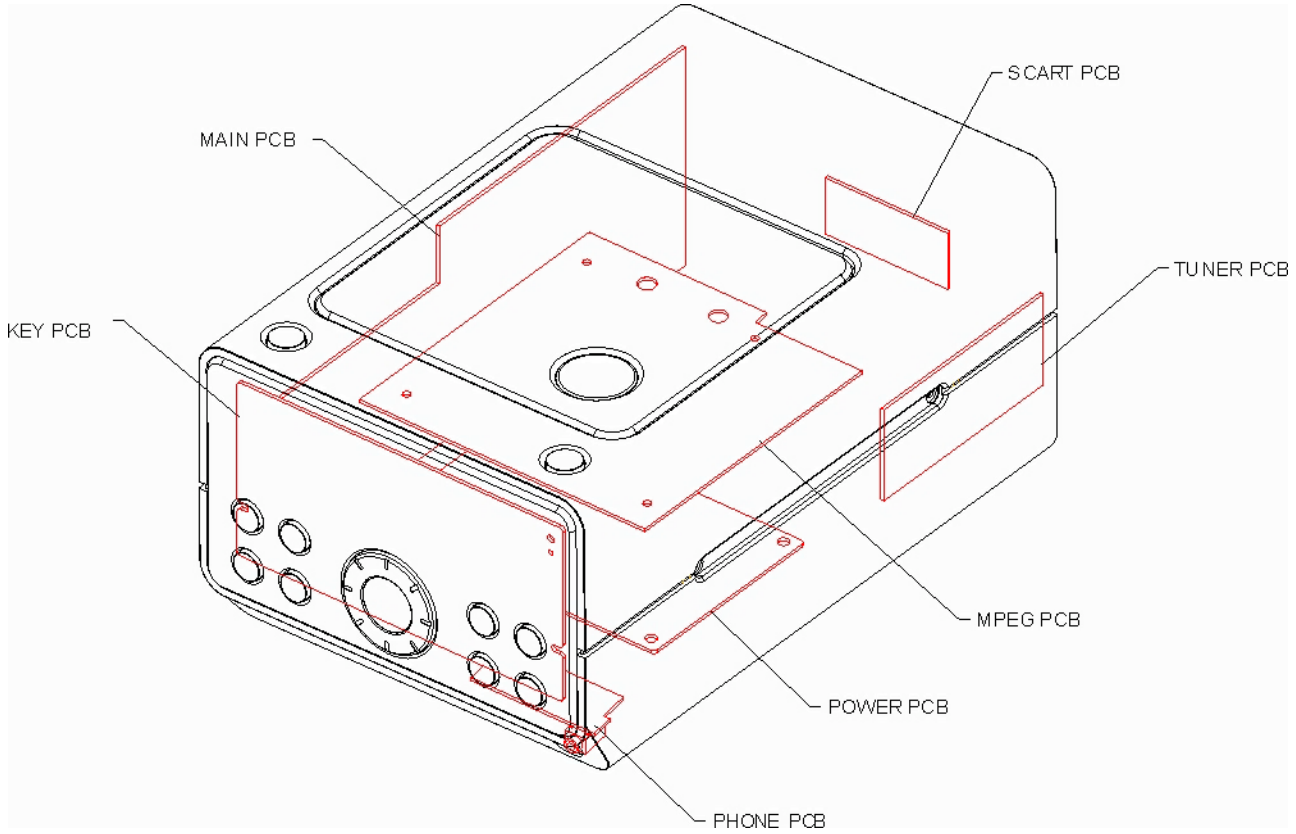
Version 1.0



3140 785 32560

PHILIPS

LOCATION OF PC BOARDS



SPECIFICATIONS

AMPLIFIER SECTION

Output power	
- Stereo mode (DIN)	2 x 23 W
Total Harmonic Distortion	10% at rated power (kHz)
Frequency Response	180 Hz - 14 kHz / ± 1 dB
Signal-to-Noise Ratio	> 65dB (CCIR)
Input Sensitivity	400 mV

TUNER SECTION

Tuning Range	FM 87.5 – 108 MHz
	AM (MW) 531 – 1602 kHz (9 kHz steps)
26 dB Quieting Sensitivity	FM 20 dB
26 dB Quieting Sensitivity	AM (MW) 5000 mV/m
Image Rejection Ratio	FM 25dB
	AM (MW) 28 dB
IF Rejection Ratio	FM 60 dB
	AM (MW) 24 dB
Signal-to-Noise Ratio	FM 55 dB
	AM (MW) 35 dB
AM Suppression Ratio	FM 30 dB
Harmonic Distortion	FM Mono 3 %
	FM Stereo 3 %
	AM (MW) 5 %
Frequency Response	FM 180 Hz – 10 kHz / ± 6 dB
Stereo Separation	FM 26 dB (1 kHz)
Stereo Threshold	FM 23.5 dB

DVD SECTION

Laser Type	Semiconductor
Disc Diameter	12cm / 8cm
Video Decoding	MPEG-2
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 W
S-Video Output	Y - 1.0 Vp-p, 75 W
	C - 0.286 Vp-p, 75 W
Audio DAC	Direct Digital Amplification
Frequency Response	4 Hz – 20 kHz (44.1 kHz)
	4 Hz – 22 kHz (48 kHz)
	4 Hz – 44 kHz (96 kHz)
Digital Output	SPDIF Coaxial

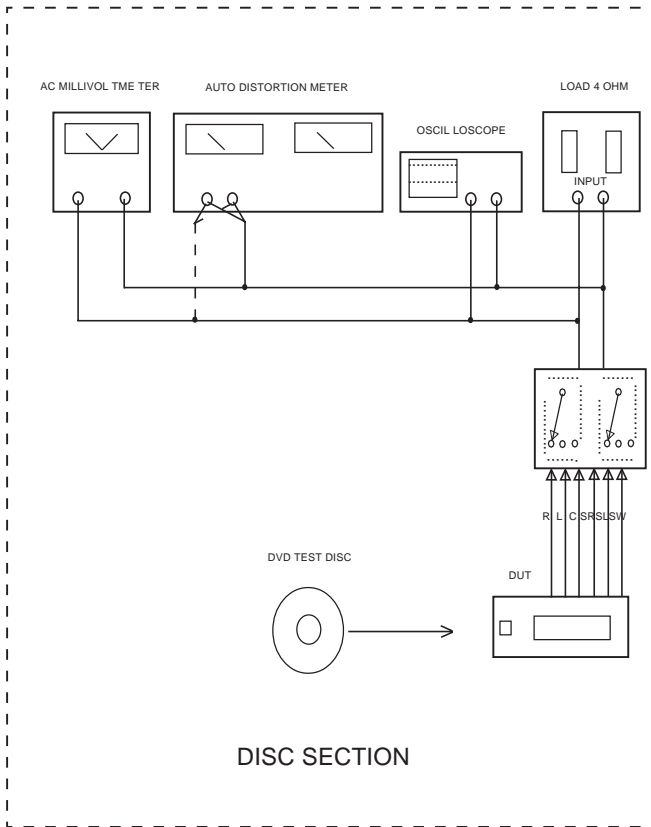
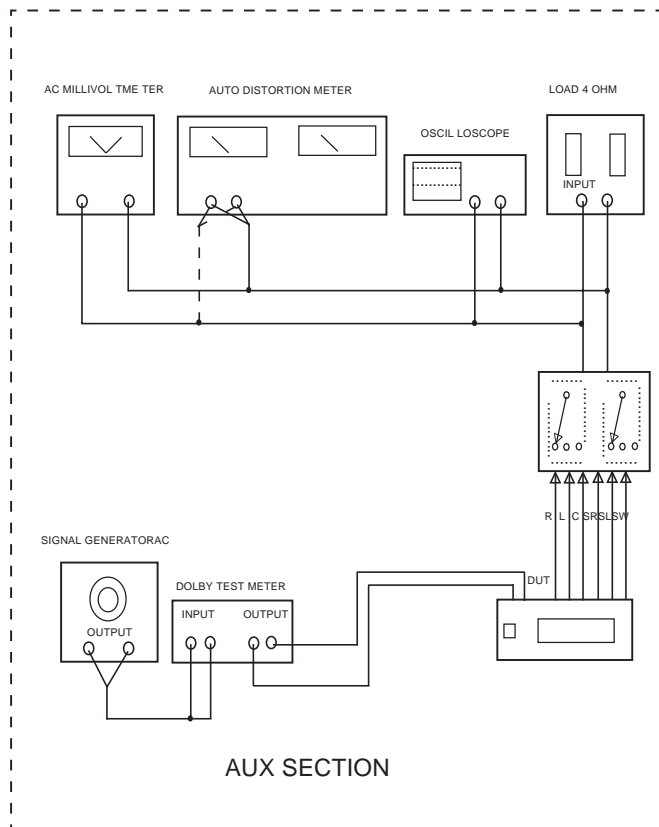
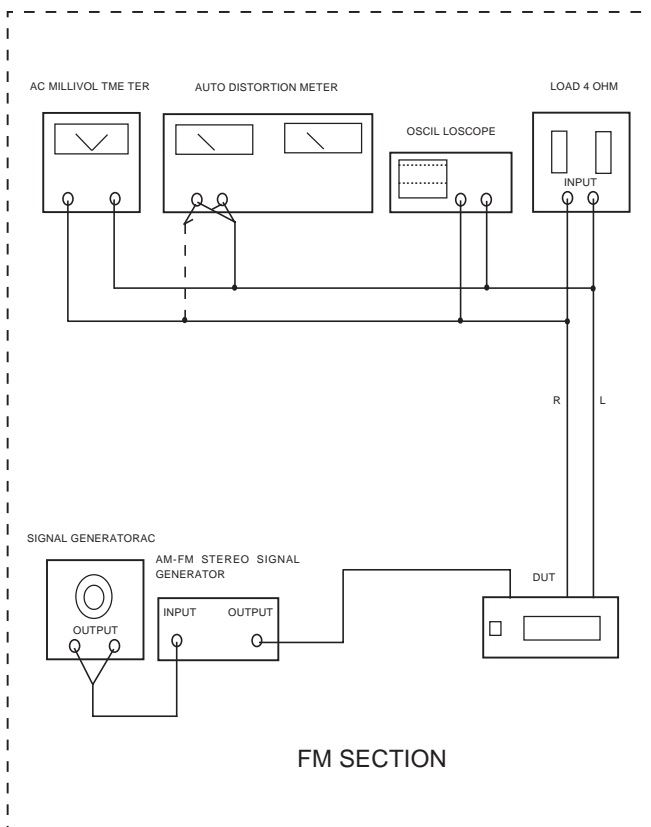
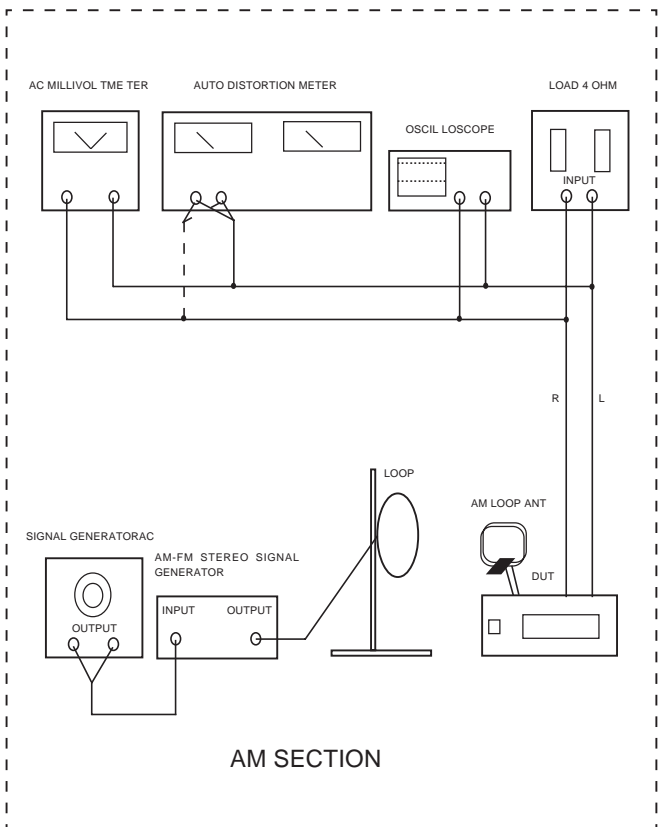
MISCELLANEOUS

Power Supply Rating	220-240V ~ 50 Hz
Power Consumption	80W
Dimensions (w x h x d)	180 mm x 132 mm x 283 mm
Weight	3.7 kg

SPEAKERS

Front Speakers	
System	2-way shielded
Impedance	8 W
Speaker drivers	2 x 2" woofer, 1.75" tw
Dimensions (w x h x d)	180 mm x 132 mm x 283 mm
Weight	1.75 kg

Specifications subject to change without prior notice



SERVICE AIDS

Service Tools:

Universal Torx driver holder	4822 395 91019
Torx bit T10 150mm	4822 395 50456
Torx driver set T6-T20	4822 395 50145
Torx driver T10 extended	4822 395 50423

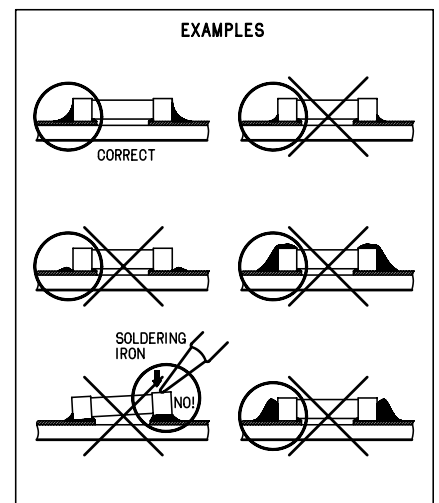
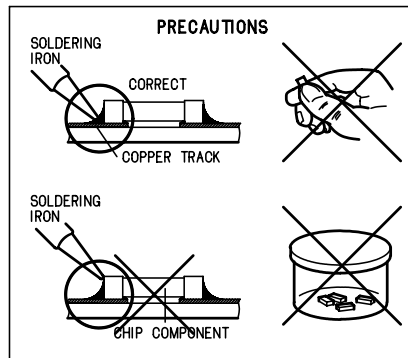
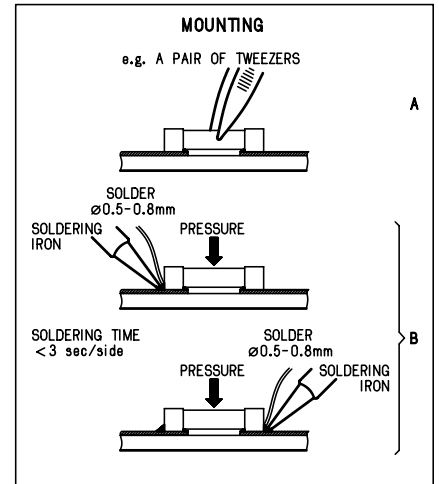
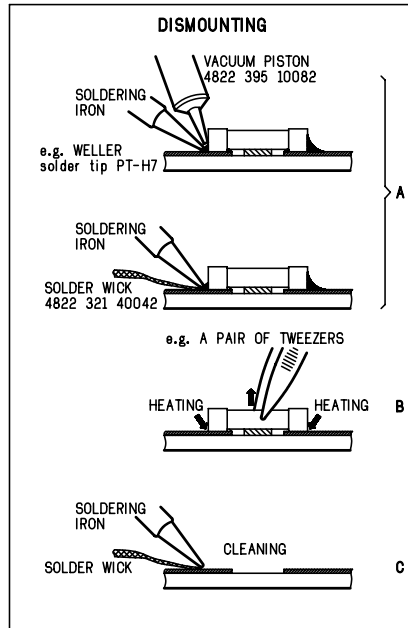
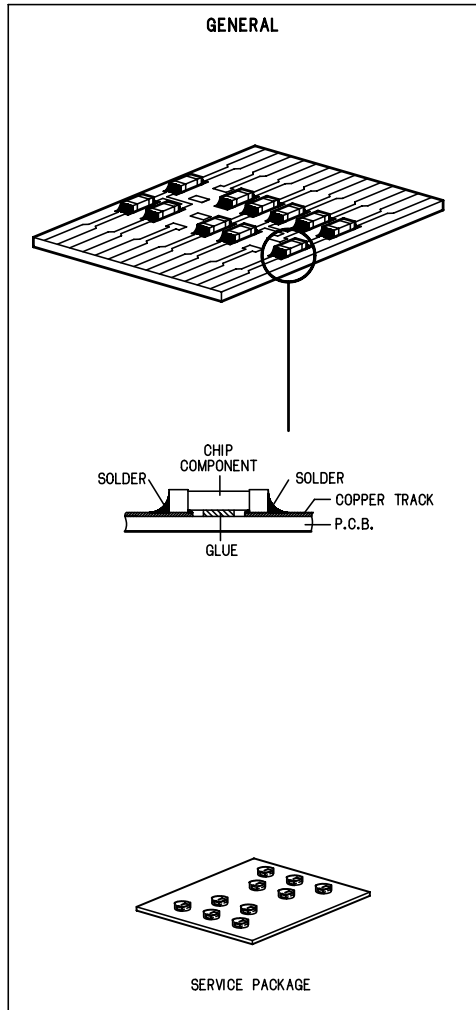
Compact Disc:

SBC426/426A Test disc 5 + 5A	4822 397 30096
SBC442 Audio Burn-in test disc 1kHz	4822 397 30155
SBC429 Audio Signals disc	4822 397 30184
Dolby Pro-logic Test Disc	4822 395 10216

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 ditzelfde 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).

Unvorsorgfältige Behandlung im Reparaturfall kann die Lebensdauer drastisch reduzieren.

Veranlassen Sie, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand verbunden sind mit dem gleichen Potential wie die Masse des Gerätes.

Bauteile und Hilfsmittel auch auf dieses gleiche Potential halten.

(I) AVVERTIMENTO

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

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

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

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

(GB)

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

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

(NL)

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

**(F)**

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

(GB) Warning !

Invisible laser radiation when open. Avoid direct exposure to beam.

(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.

(S) Varning !

Osynlig laserstrålning när apparaten är öppnad och spårren är urkopplad. Betrakta ej strålen.

(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.

(SF) Varoitus !

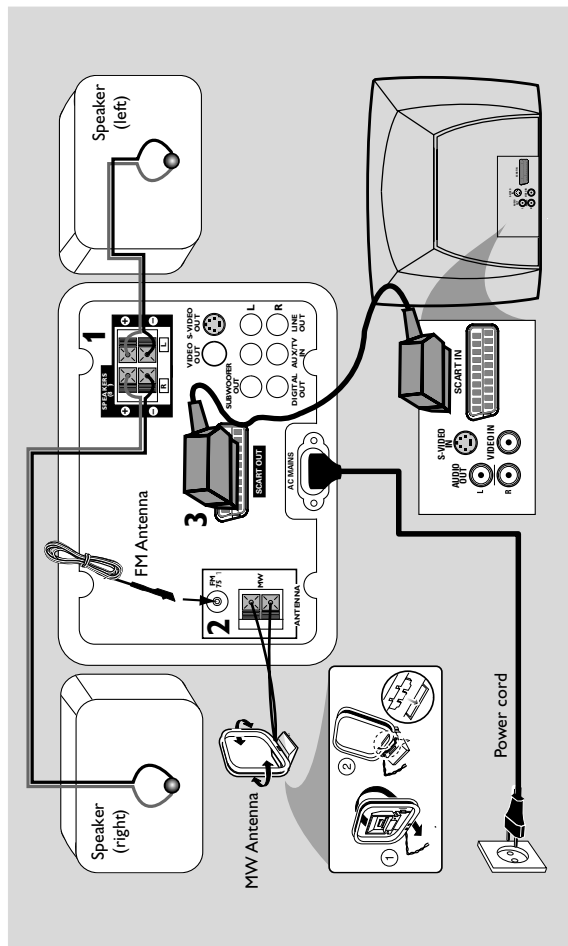
Avatussa laitteessa ja suojalukituksen ohitettaessa olet alltiina näkymättömälle laserisäteilylle. Älä katso säteeseen!

(DK) Advarse !

Usynlig laserstrålning ved åbning når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for strålning.

"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."

Connections

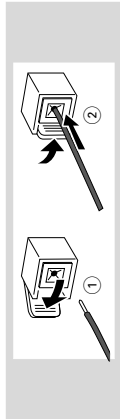


IMPORTANT!

- Before connecting the AC power cord to the wall outlet, ensure that all other connections have been made.
- Never make or change any connections with the power switched on.
- The type plate is located at the rear or bottom of the system.

1. Connecting the speakers

Connect the speaker cables to the SPEAKERS terminals. Right speaker to "R" and left speaker to "L", red (marked) wire to "+" and black (unmarked) wire to "-". Fully insert the stripped portion of the speaker wire into the terminal as shown.



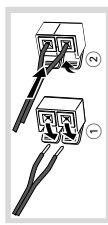
Helpful Hints:

- Ensure that the speaker cables are correctly connected. Improper connections may damage the system due to short-circuit.
- For optimal sound performance, use the supplied speakers.
- Do not connect more than one speaker to any one pair of + / - speaker jacks.
- Do not connect speakers with an impedance lower than the speakers supplied. Please refer to the SPECIFICATIONS section of this manual.

2. Connecting antennas

MW Indoor Loop Antenna

Connect the supplied MW (AM) loop antenna's wires to MW jack. Place the antenna on a shelf or attach it to a stand or wall.



FM Indoor Antenna

Connect the supplied FM antenna to the FM (75 Ω) jack. Extend the FM antenna and fix its ends to the wall.



For better FM stereo reception, connect an external FM antenna using an 75 ohm coaxial cable (not supplied).

Helpful Hints:

- Adjust the position of the antennas for optimal reception.
- Position the antennas as far as possible from your TV/VCR or other radiation source to prevent unwanted interference.

3. Connecting a TV

You must connect a TV to your DVD micro system in order to view the DVD/VCD playback.

IMPORTANT!

- There are various ways to connect the system to a TV. You only need to make one of the best connections, depending on the capabilities of your TV system.

Use the supplied Scart cable to connect SCART OUT jack to the corresponding SCART VIDEO IN jack on a TV.

If your TV is not equipped with a Euroconnector, you can select one of the following alternative connections :

Option 1

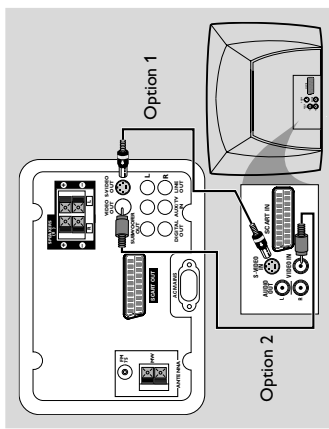
Connect the S-VIDEO OUT jack to the S-Video input jack on the TV using a S-Video cable (not supplied).

If S-Video jack is used for video connection, the system's VIDEO OUT setting will need to be set accordingly. Details are on page 11.

OR

Option 2

Connect the VIDEO OUT jack to the video input jack on the TV using a video cable (yellow).



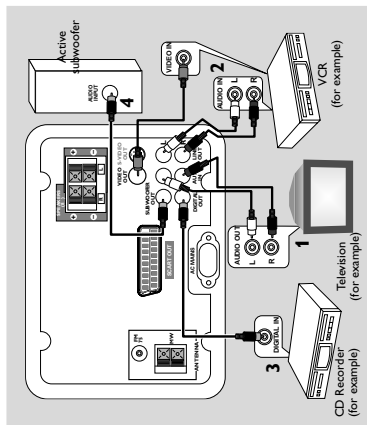
Helpful Hints:

- To avoid magnetic interference, do not position the front speakers too close to your TV.

Connecting additional equipment

IMPORTANT!

- Some DVDs are copy-protected. You cannot record the disc through a VCR or digital recording device.
- When making connections, make sure the colour of cables matches the colour of jacks.
- Always refer to the owner's manual of the other equipment for complete connection and usage details.



1) Viewing and listening to the playback of other equipment

Connect the system's AUX/TV IN (R/L) jacks to the AUDIO OUT jacks on the other audio/visual device (such as a TV, VCR, Laser Disc player or cassette deck).

Before starting operation, press AUX/TV on the remote in order to activate the input source.

2) Using the VCR for recording DVDs

Connect the system's VIDEO OUT jacks to the VIDEO IN jacks and LINE OUT (R/L) jacks to the AUDIO IN jacks on the VCR. This will allow you to make analogue stereo (two channel, right and left) recordings.

3) Recording (digital)

Connect the system's DIGITAL OUT jack to the DIGITAL IN jack on a digital recording device (such as DTS-Digital Theatre compatible, with Dolby Digital decoder).

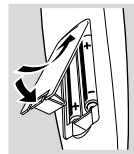
Before starting operation, set the DIGITAL OUTPUT according to the audio connection. (See page 11).

4) Connecting an active subwoofer

Connect the DVD micro system's SUBWOOFER OUT jack to the AUDIO INPUT jack on an active subwoofer (not supplied).

Preparations

Inserting batteries into the remote control



- 1 Open the battery compartment.
- 2 Place the batteries in the compartment with the correct polarity as indicated by "+", "-", and "—" symbols.
- 3 Close the cover.

CAUTION!

- Remove batteries if they are exhausted or if the remote is not to 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 off properly.

Switching on the system

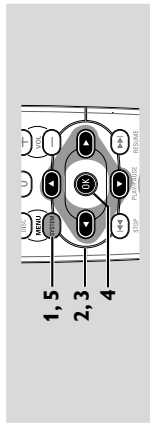
- 1 After completing all the connections, connect the AC power cord of the player to the power outlet.
- 2 Press **STANDBY ON** to switch on the last selected source.
- 3 Adjust the **SOURCE** button (or press **DISC TUNER** or **AUX/TV** on the remote) to select the input source.
→ The selected source will be displayed.
- **For viewing a DVD or VCD disc**, a TV set needs to be connected (refer to "Connections - Connecting a TV"). Switch on the TV and set to the correct video in channel (for example, EXT1, EXT2, AV1, AV2). Refer to your TV instruction manual for details.
→ The default screen appears on the TV.

System Setup (DVD)

The system setup is carried out via the TV, enabling you to customise the DVD micro system to suit your particular requirement. If the preferred options selected are not available on a disc, then the disc's own preference will be used.

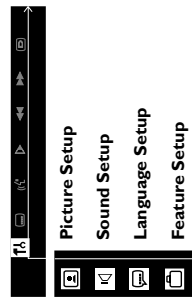
IMPORTANT!

To access the **System Setup** menu, **playback must be stopped**.



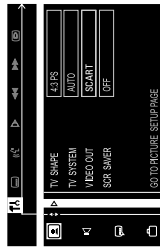
To enter System Setup menu

- 1 In disc mode, press **SYSTEM MENU** on the remote.
→ **TA** icon will be highlighted in the menu bar on the TV screen.
- 2 Press **▼** to activate the System Setup menu.
- 3 Use **▲▼** keys to select one of the setup menu options and press **▶** to enter the menu.



- 4 Press **OK** to confirm your selection.
- 5 To exit the System Setup menu, press **SYSTEM MENU** or **OK**.

Picture Setup

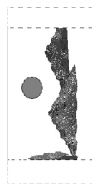


TV SHAPE

Select the aspect ratio of the TV to be connected. If your DVD is not encoded to allow you to change the aspect ratio, TV shape cannot be changed.

4:3 PS (panscan)

Select this if you have a conventional TV set and your DVD is not formatted for widescreen viewing, use this setting. A wide picture is displayed on the whole TV screen with a portion automatically cut off.



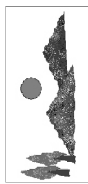
4:3 LB (letterbox)

Select this if you have a conventional TV set and your DVD is formatted for widescreen viewing, use this setting. Wide bands is displayed on the upper and lower portions of the TV screen.



16:9 (widescreen)

Select this if you have a widescreen TV set, use this setting (you must also set your widescreen TV to "full size").



TV SYSTEM

Allows you to select the colour system that corresponds to your TV.

AUTO

Select this if the connected TV is multi system, select this mode. The output format will be in accordance with the video signal of the disc.

NTSC

Select this if the connected TV is NTSC system, select this mode. It will change the video signal of a PAL disc and output to NTSC format.

PAL

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

VIDEO OUT

Set the Video Output according to your video connection. This setting is not required if you are using the VIDEO OUT jack (yellow) to connect the DVD micro system to your TV.

SCART

Select this if you have connected the DVD micro system to your TV using the Scart jack.

S-VIDEO

Select this if you have connected the DVD micro system to your TV using S-Video jack.

SCR SAVER (Screen Saver)

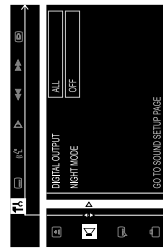
OFF

Select this to disable the screen saver function.

ON

Select this if you wish to dim the TV screen when the disc playback is stopped or paused for more than one minute. This will prevent your display device from becoming damaged.

Sound Setup



DIGITAL OUTPUT

Allows you to specify the type of digital output suitable for the optional audio equipment that connected through the DIGITAL OUT at the rear of your DVD micro system.

ALL

Select this if you have connected the digital output to a multichannel decoder receiver.

PCM 96K

Select this if the optional audio equipment is capable of processing digital signal input with sampling rates of 96 kHz.

PCM 48K

Select this if the optional audio equipment is incapable of processing 96 kHz digital signal input. The signal will then be converted to a standard signal with sampling rates of 48 kHz.

OFF

Select this to deactivate the digital output.

NIGHT MODE

Night function can also be accessed via the remote control.

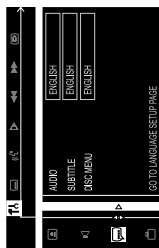
OFF

Select this when you want to enjoy the surround sound with its full dynamic range.

ON

Select this to level out the volume. High volume outputs will be softened and low volume outputs are brought up to an audible level. This feature is only available for movies with Dolby Digital mode.

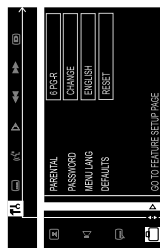
Language Setup



AUDIO / SUBTITLE / DISC MENU

Select your preferred language settings for your DVD (audio language, subtitle language and disc menus) so that the system will automatically switch to the selected language whenever you load a DVD. If the language selected is not available on the disc, the original language designated by each disc will be selected.

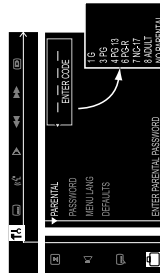
Features Setup



PARENTAL

Enables setting of playback limitation level. Some DVDs may have a parental level assigned to the complete disc or to certain scenes on the disc. The rating levels are from 1 to 8 and are country dependent. You can prohibit the playing of certain discs that are not suitable for your children or have certain discs played with alternative scenes.

- 1 Use the **numeric keypad (0-9)** to enter '1234' (default password) when you are asked to enter the four-digit password. You will have to enter the same code, exactly, twice.



- 2 Use **▲▼** keys to select a rating level.
- 3 Press **OK** to confirm.

Rating explanations

- NO PARENTAL** – It will play all discs.
- 8 ADULT** – Mature material should be viewed only by adults due to graphic sexual material, violence, or language.
- 7 NC-17** – No children under age 17; not recommended viewing for children under age 17.
- 6 PG-R** – Parental Guidance - Restricted; recommended that parents restrict children under 17 from viewing or allow to view only when supervised by a parent or adult guardian.
- 4 PG13** – Material is unsuitable for children under age 13.
- 3 PG** – Parental Guidance suggested.
- 1 G** – General Audience; recommended as acceptable for viewers of all ages.

Helpful Hints:

- Some DVDs are not encoded with a rating though the movie rating is printed on the disc jacket. The rating level feature does not work for such discs.
- If the player's parental level is set below 8, only discs with a lower or equal level will play. For example, if the player is set to 5, only discs with ratings of 5, 4, 3, 2 and 1 will be played.
- Higher rated scenes will not be played unless an alternative that has the same rating or lower is available on the disc. For example, consider a disc that generally is suitable for most audiences, and it is rated at level 2 for the most part. However, in the middle, there are also scenes rated at 5 (not suitable for children).

To enable playback of a higher rated disc or scene than the level set

Go to 'PARENTAL' and enter the four-digit cord before resetting the rating level to a higher number.

If you forget the 4-digit code

Press **■** four times when prompted for the password cord and the system will change back to the default password (1234).

PASSWORD

To set a new password for the parental control or to change the password.

CHANGE

If you are asked to enter the code for the first time, key in '1234' (default password). Then enter your new four-digit password code, twice.

MENU LANG (Menu language)

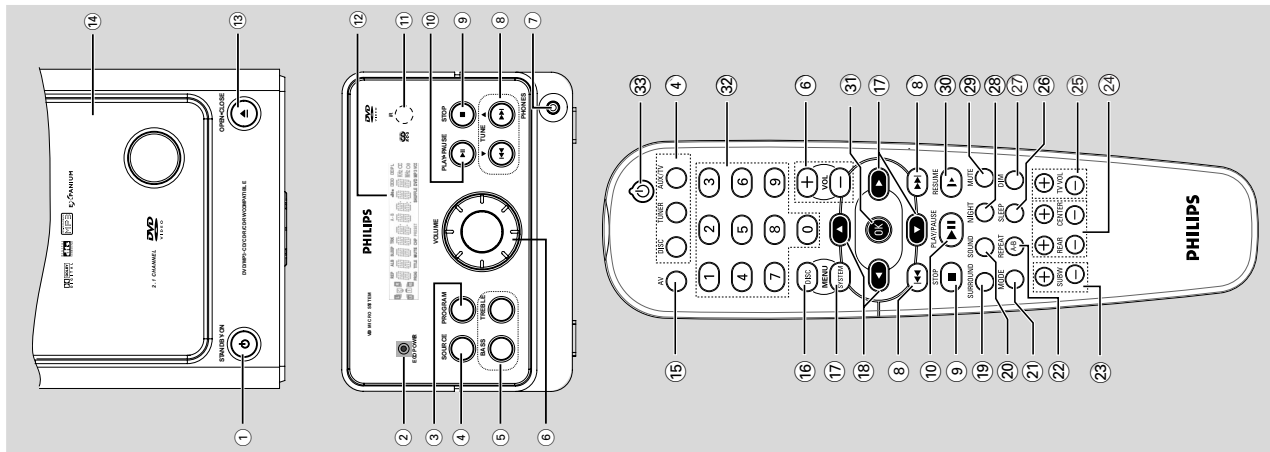
Select the language for on screen display.

DEFAULTS

RESET

Pressing **▶** on the remote will restore all the items in the setup menu to the original factory setting except for your Parental Control password.

Main unit and Remote control



- ① **STANDBY ON** Switches between power on and Eco power standby modes.
- ② **ECO POWER indicator** Lights up when the system is in Eco Power standby mode.
- ③ **PROGRAM** In Disc mode, to programme disc tracks. In Tuner mode, to programme preset radio stations.
- ④ **SOURCE** Selects the desired source or external input source (DISC, TUNER or AUX/TV).
- ⑤ **BASS / TREBLE** Selects bass or treble sound. Use the VOLUME control to select the desired enhancement level.
- ⑥ **VOLUME (VOL + -)** Adjusts the master volume.
- ⑦ **PHONES** Connect to headphones.
- ⑧ **TUNE $\nabla \blacktriangle$ ($\blacktriangleleft \blacktriangleright$)** In Disc mode, press to skip to the previous/next chapter/track. In Disc mode, hold down to fast reverse/forward the disc.
- ⑨ **STOP** In Tuner mode, tune to a lower or higher radio frequency.
- ⑩ **STOP ■** Stops playing the disc or erases a programme.
- ⑪ **PLAY-PAUSE $\blacktriangleright \parallel$** Starts or interrupts disc playback.
- ⑫ **iR** Points the remote control towards this sensor.
- ⑬ **Display screen**
- ⑭ **OPEN•CLOSE \blacktriangle** Opens or closes the disc tray.
- ⑮ **Disc compartment**

- ⑯ **AV (for Philips TV only)** Selects Philips television's AV (Audio/Video) channel.
- ⑰ **DISC MENU (disc mode only)** Enters or exits the disc contents menu.
- ⑱ **SYSTEM MENU (disc mode only)** Enters or exits the system menu bar.
- ⑲ **$\blacktriangle \blacktriangleright \blacktriangleleft \blacktriangleleft$** In Tuner mode, use \blacktriangleleft or \blacktriangleright to select a preset radio station. In Disc mode, to select movement direction in disc contents menu / system menu bar.
- ⑲ **SURROUND** Selects surround (Dolby Digital, DTS-Digital Theatre Systems or VSS-Virtual Surround Sound) or stereo sound effect.
- ⑲ **SOUND** Selects various sound effects : CONCERT, DRAMA, ACTION, SCI-FI, CLASSIC, JAZZ, ROCK or DIGITAL.
- ⑲ **MODE** During disc playback, to select various repeat modes. While playback stopped, to turn on/off shuffling mode.
- ⑲ **REPEAT A-B** Repeats a specific section on a disc.
- ⑲ **SUBW +/-** Adjusts the subwoofer's sound level (for optional active subwoofer that connected to this DVD micro system).
- ⑲ **REAR +/-, CENTER +/-** (Not applicable for this model)
- ⑲ **TV VOL +/-** Adjusts TV's volume (Philips TV only).
- ⑲ **SLEEP** Sets the sleep timer (auto-off) function.
- ⑲ **DIM** Selects different levels of brightness for the display screen.
- ⑲ **NIGHT (in Dolby Digital mode only)** Optimises the dynamics of the sound output.

- ⑲ **MUTE** Mutes or restores the volume.
 - ⑲ **RESUME** Continues disc playback after an interruption. When playing picture CD, to select different slide show mode.
 - ⑲ **OK** Exits or confirms the selection.
 - ⑲ **Numeric Keypad (0-9)** Enters a track/title number of the disc. Enters a number of a preset radio station.
 - ⑲ **\blacktriangleleft** Switches to standby mode.
- Notes for remote control:**
- 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 (\blacktriangle , \blacktriangleleft , \blacktriangleright , $\blacktriangleright\blacktriangleright$ for example).

Important Note

Important notes for users in the U.K.

Mains plug

This apparatus is fitted with an approved 13 Amp plug. To change a fuse in this type of plug proceed as follows:

- 1 Remove fuse cover and fuse.
- 2 Fix new fuse which should be a BS1362 5 Amp, A.S.T.A. or BSI approved type.
- 3 Refit the fuse cover:

If the fitted plug is not suitable for your socket outlets, it should be cut off and an appropriate plug fitted in its place.

If the mains plug contains a fuse, this should have a value of 5 Amp. If a plug without a fuse is used, the fuse at the distribution board should not be greater than 5 Amp.

Note: *The severed plug must be disposed of to avoid a possible shock hazard should it be inserted into a 13 Amp socket elsewhere.*

How to connect a plug

The wires in the mains lead are coloured with the following code: blue = neutral (N), brown = live (L).

- As these colours may not correspond with the colour markings identifying the terminals in your plug, proceed as follows:
 - Connect the blue wire to the terminal marked N or coloured black.
 - Connect the brown wire to the terminal marked L or coloured red.
 - Do not connect either wire to the earth terminal in the plug, marked E (or ⚡) or coloured green (or green and yellow).

Before replacing the plug cover, make certain that the cord grip is clamped over the sheath of the lead - not simply over the two wires.

Copyright in the U.K.

Recording and playback of material may require consent. See Copyright Act 1956 and The Performer's Protection Acts 1958 to 1972.

This product complies with the radio interference requirements of the European Community.

CAUTION

Use of controls or adjustments or performance of procedures other than herein may result in hazardous radiation exposure or other unsafe operation.

VAROITUS

Muiden kuin tässä esitettyjen toimintojen säädön tai asetusten muutto saattaa altistaa vaaralliselle säteilylle tai muille vaarallisille toiminnoille.

Italia

DICHIARAZIONE DI CONFORMITA'

Si dichiara che l'apparecchio MCD370 Philips risponde alle prescrizioni dell'art. 2 comma 1 del D.M. 28 Agosto 1995 n. 548.

Fatto a Eindhoven

Philips Consumer Electronics
Philips, Glaslaan 2
5616 JB Eindhoven, The Netherlands

Norge

Typeskilt finnes på apparatens underside.

Observer: Nettbryteren er sekundert innkoplet. Den innebygde nettdelen er derfor ikke frakoplet nettet så lenge apparatet er tilsluttet nettkontakten.

For å redusere faren for brann eller elektrisk støt, skal apparatet ikke utsettes for regn eller fuktighet.

DK

Advarsel: Usynlig laserstråling ved åbning når sikkerhedsafbrydere er ude af funktion. Undgå utsættelse for stråling.

Bemærk: Netafbryderen er sekundært indkoblet og afbryder ikke strømmen fra nettet. Den indbyggede netdel er derfor tilsluttet til lysnettet så længe netstikket sidder i stikkontakten.

S

Klass 1 laserapparat

Varning! Om apparaten används på annat sätt än i denna bruksanvisning specificerats, kan användaren utsättas för osynlig laserstrålning, som överskrider gränsen för laserklass 1.

Observera! Stömbrytaren är sekundärt kopplad och bryter inte strömmen från nätet. Den inbyggda nättdelen är därför ansluten till elnätet så länge stickproppen sitter i vägguttaget.

SF

Luokan 1 laserlaite

Varoitus! Laitteen käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyttäjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

Oikeus muutoksiin varataan. Laite ei saa olla alttiina tippu- ja roiskevedelle.

Huom. Toiminnanvalitsin on kytketty toisiopuolelle, eikä se kytke laitetta irti sähköverkosta. Sisäänrakennettu verkko-osa on kytketty sähköverkkoon aina silloin, kun pistoke on pistorasiasassa.

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 solve a problem by following these hints, consult your dealer or service centre.

Problem	Solution
No power.	<ul style="list-style-type: none"> – Check if the AC power cord is properly connected. – Press STANDBY ON on the top of the DVD micro system to turn on the power.
No picture.	<ul style="list-style-type: none"> – Check if the TV is switched on. – Check the video connection. – Press DISC on the remote. – Set your TV to the correct Video In channel. This channel is usually near channel 00. Or, you may have a button on the TV remote control that selects Auxiliary or A/V IN channel. See your TV owner's manual for details. Or, change channels at the TV until you see DVD screen on the TV.
Distorted or poor picture.	<ul style="list-style-type: none"> – Sometimes a small amount of picture distortion may appear. This is not a malfunction. – Clean the disc.
Completely distorted picture or black/white picture.	<ul style="list-style-type: none"> – TV has a colour system standard. If the disc's or DVD system's colour system is different than your TV's colour system, the picture may be distorted or colourless. Set to the correct 'TV SYSTEM' setting.
The aspect ratio of the screen cannot be changed even though you have set the TV shape.	<ul style="list-style-type: none"> – The aspect ratio is fixed on the DVD disc. – Depending on the TV, it may not be possible to change the aspect ratio.
No sound or distorted sound.	<ul style="list-style-type: none"> – Adjust the volume. – Check that the speakers are connected correctly. – Replace the speaker cables. – Disconnect the headphones. – The system is in pause, slow motion or fast forward/reverse mode, press PLAY to resume normal play mode.
The micro DVD player does not start playback.	<ul style="list-style-type: none"> – Insert a readable disc with the playback side facing down. – Check the disc type, colour system and regional code. Check for any scratches or smudges on the disc. – Press SYSTEM MENU to turn off the setup menu screen. – Cancel the parental control rating function or change the rating level. – Moisture has condensed inside the system. Remove the disc and leave the system turned on for about an hour.
The DVD micro system does not respond when the buttons are pressed.	<ul style="list-style-type: none"> – Disconnect the power plug from the outlet and insert again.
Cannot activate some features, such as Angles, Subtitles, or multi-language Audio.	<ul style="list-style-type: none"> – Multi-language sound or subtitle is not recorded on the DVD. – Changing the language for the sound or subtitle is prohibited on the DVD. – The features may not be available on the disc.
Considerable noise in radio broadcasts.	<ul style="list-style-type: none"> – Tune in to the correct frequency. – Connect the antennas. – Fully extend the FM wire antenna. Position for best reception and secure to a wall. – Connect an outdoor FM or MW antenna. – Adjust the direction and position for best reception. – Place the antenna farther away from any equipment that may be causing the noise. – Increase the distance between the system and your TV or VCR.
The remote control does not function.	<ul style="list-style-type: none"> – Select the correct source (DISC or TUNER, for example) before pressing the function button. – Point the remote control at the remote sensor of the unit. – Reduce the distance to the player. – Remove any possible obstacles. – Replace the batteries with new ones. – Check that the batteries are loaded correctly.
The display is dark.	<ul style="list-style-type: none"> – Press DIM again.
Low hum or buzz sound.	<ul style="list-style-type: none"> – Place the DVD micro system as far away as possible from electrical devices that may be causing interference.
Low bass response.	<ul style="list-style-type: none"> – Check all speakers for correct polarity.

System, Region code, Tuner, etc. setting procedure

1) System Reset

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

2) Region Code Change

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

Region Code

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

TV System

- | | |
|---|------|
| 1 | NTSC |
| 2 | PAL |
| 3 | AUTO |

Menu/ Audio Subtitle (AS) Language

- | | |
|---|---------|
| 1 | English |
| 2 | English |
| 3 | English |
| 4 | English |

AFS

- | | |
|-----|--------|
| 003 | MCD370 |
|-----|--------|

oem derivative

08

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

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

- "oem derivative" = 2 digit

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

Hence in total, reprograming 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 MCD370 /22 (Europe)

<PLAY> <159> <221> <003> <08> PLAY

For MCD370 /21M (APAC)

<PLAY> <159> <331> <003> <08> PLAY

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

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

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

CAUTION !

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

3) Region code change timer reset

Press below key to reset the timer :

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

4) Tuner area change

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

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

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

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

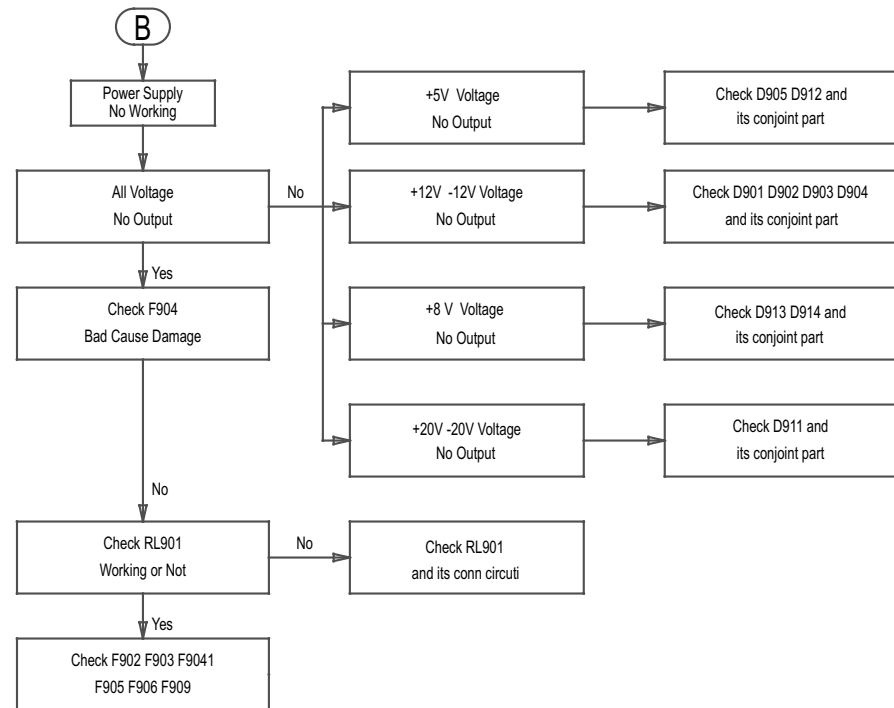
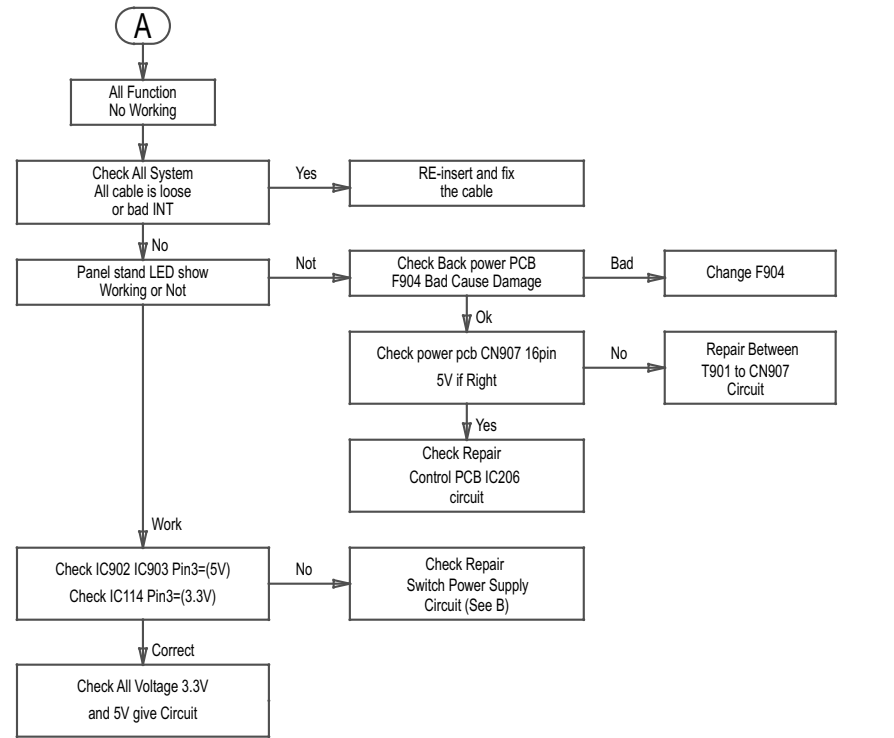
- Open the CD door.
- Press "123" and "OK" on the remote control.
- TV will show the version on screen.

8. Upgrading new software

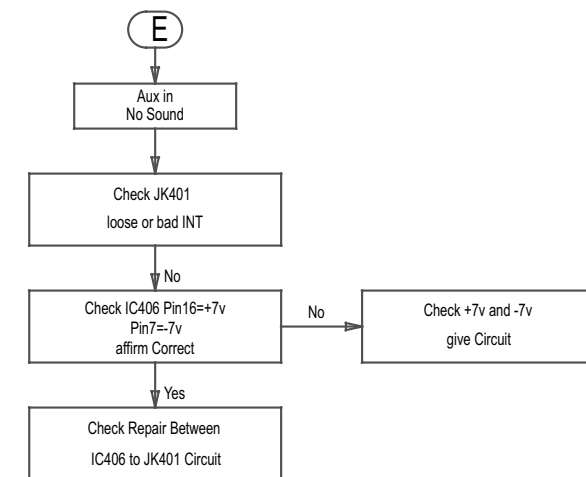
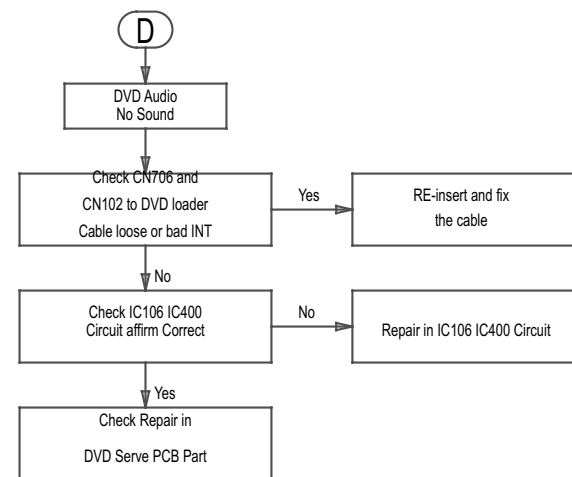
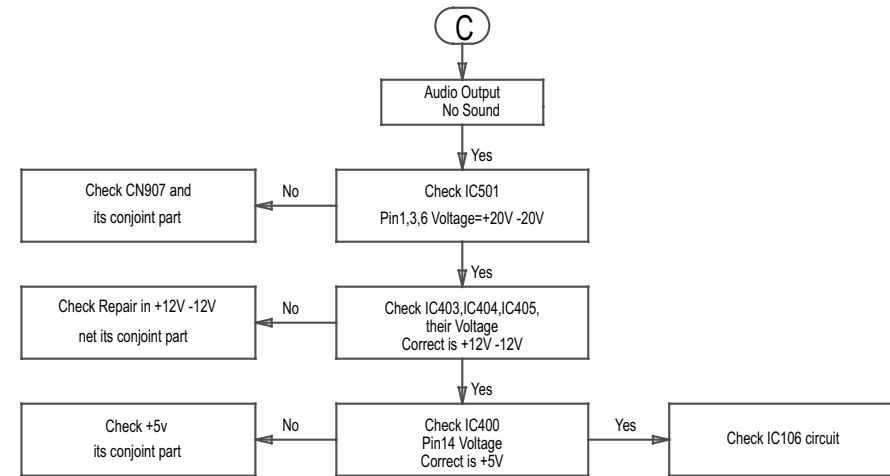
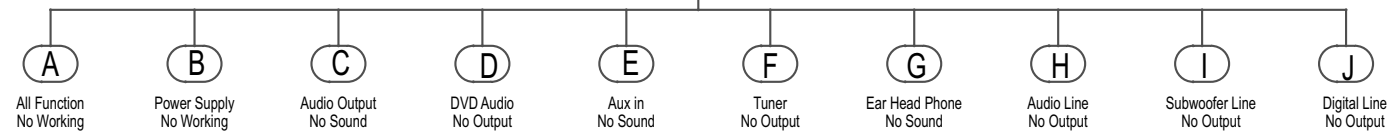
- Open the CD-door, then insert the CD-R program disc.
- Close the CD-door.
- TV will show:-
 - "disc loading"
 - "reading"
 - "writing" about 6 seconds.
 - "Done"
- The set open the CD-door automatically.
- The set goes to standby mode automatically.

* The latest upgraded is in version VER0527.

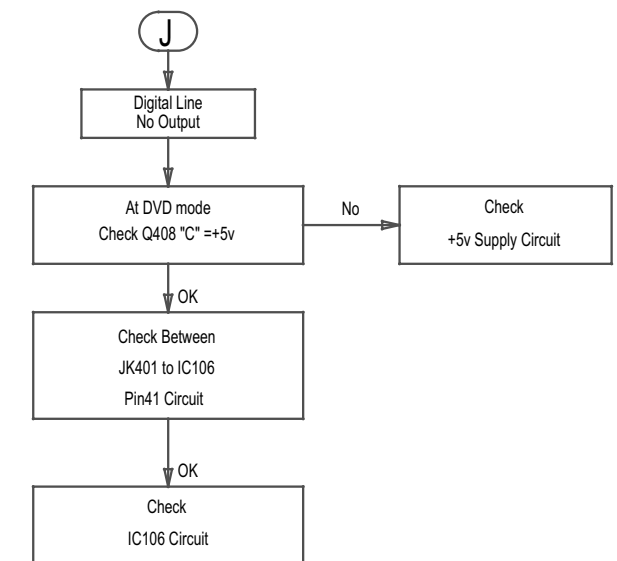
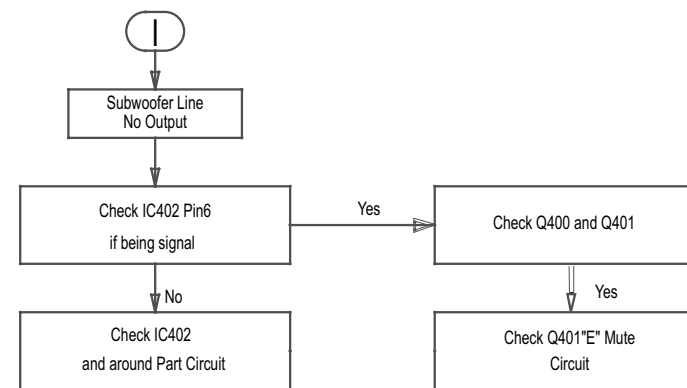
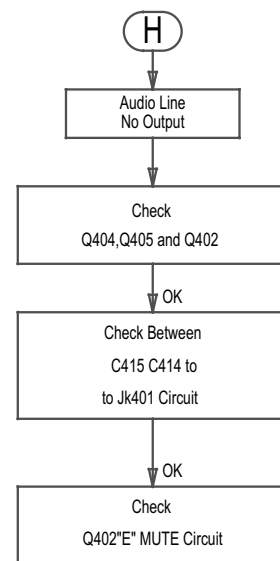
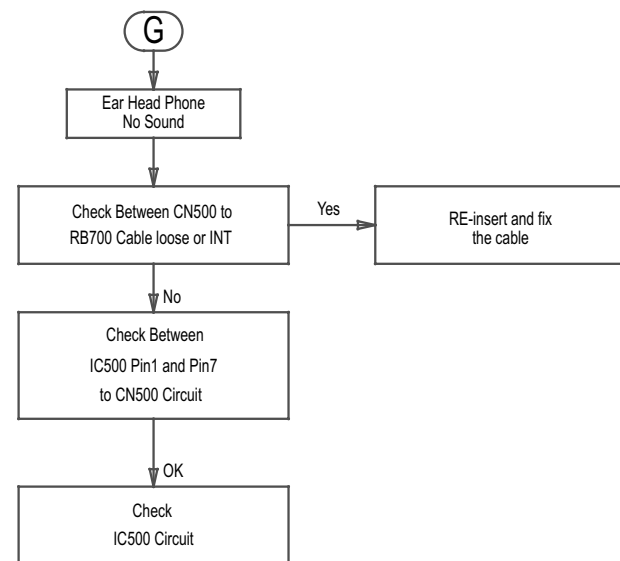
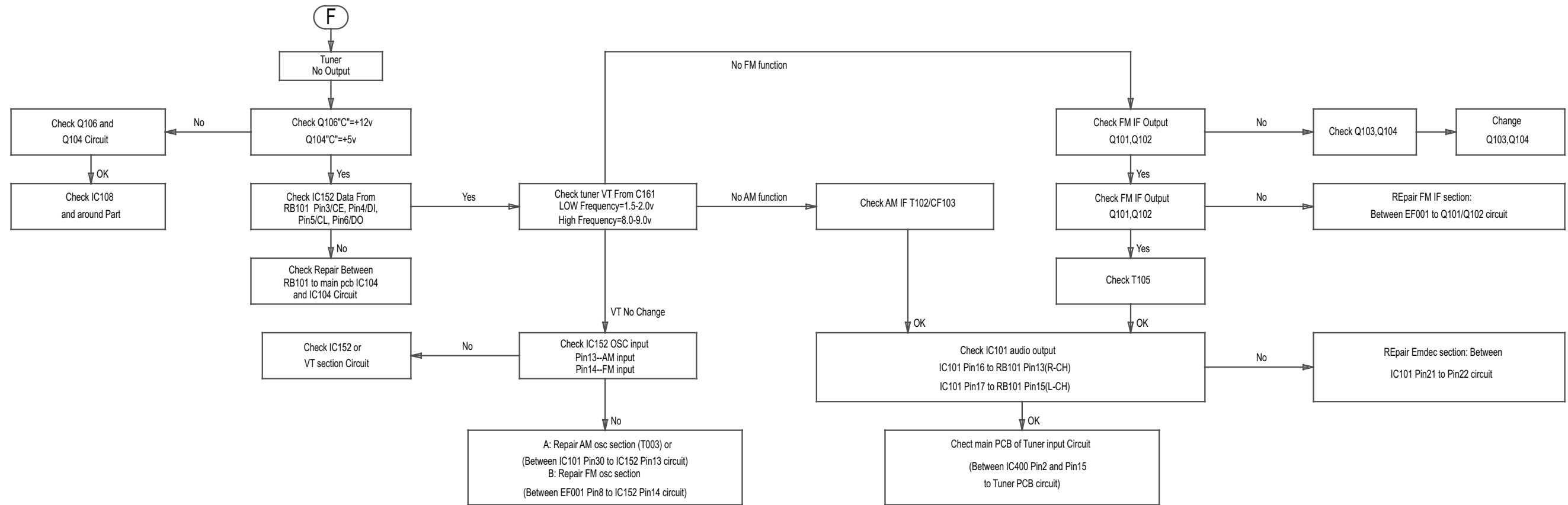
MC-D370 REPAIR INSTRUCTIONS (1 of 2)



MAIN UNIT REPAIR CHART



MC-D370 REPAIR INSTRUCTIONS (2 of 2)



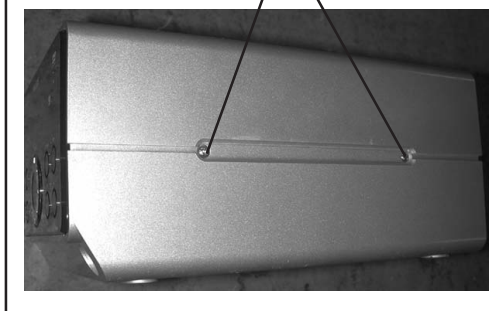
DISASSEMBLY INSTRUCTIONS

Dismantling of the Top Cover Assembly

- 1) Loosen the 4 screws on the left/right sides and the back panel of the set.
 - 4 screws "A" on the left and right side as shown in Figure 1.
 - 2 screws "B" on the back panel as shown in the Figure 2 .



Figure 1



A

B



K

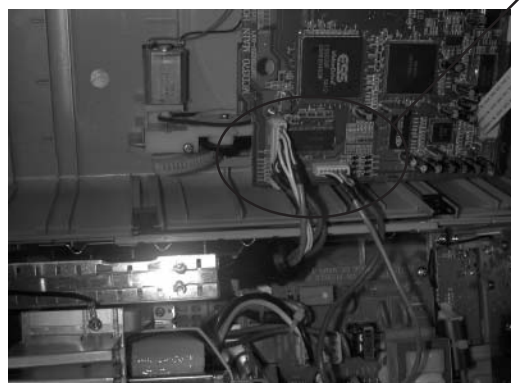
Figure 2

- 2) Shift the top cover from the bottom cover and remove all the cables "C" that connect to the Main(Servo) PBC board as shown in Figure 3.



Figure 3

C

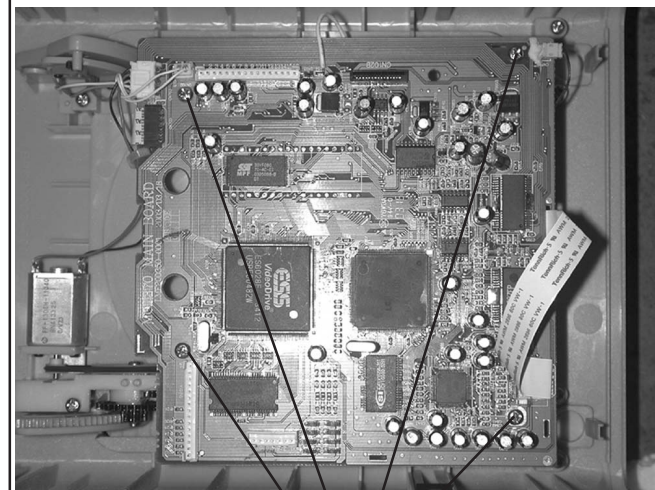


D

Figure 4

Dismantling of the Main(Servo) Board

- 1) Unplug all the cables from the servo board.
- 2) Loosen 4 screws "D" to remove the Servo Board from the top cover as shown in Figure 4.



Dismantling of the Front Panel from the Bottom bracket

- 1) Loosen 2 screws "E" on left/right sides of the bottom cover as shown in Figure 5.
- 2) Rip the label on the bottom side and loosen 1 screw "F" as shown in Figure 6.
- 3) Loosen 2 screws "G" as shown in Figure 7.
- 4) Unplug the 2 cables "H" connect Key board and the Amplify Board as shown in Figure 7.
- 5) Shift the front panel from the bottom bracket.



E

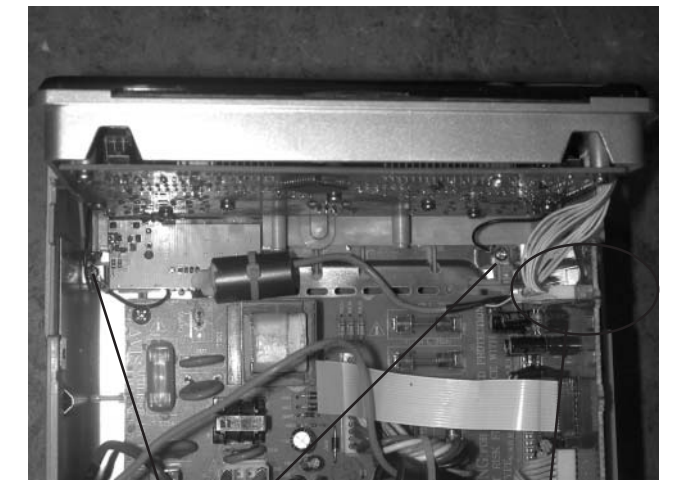


Figure 5



F

Figure 6



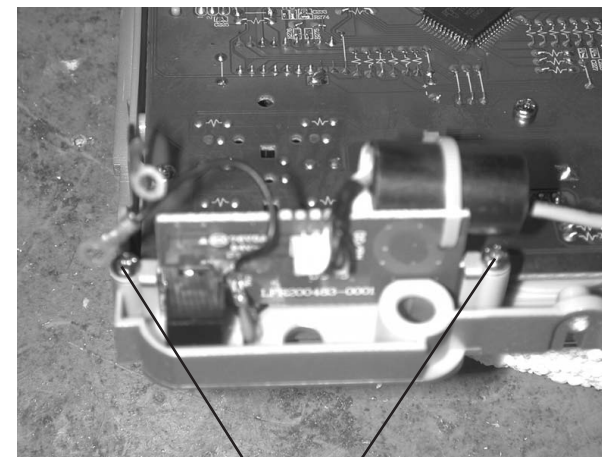
G

Figure 7

H

Dismantling of the Phone Board From the Front Panel

- 1) Loosen 2 screws "I" on the bottom cover as shown in Figure 8.

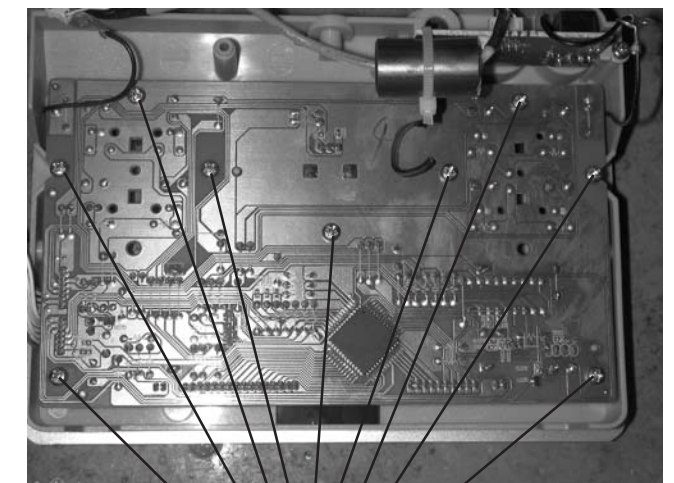


I

Figure 8

Dismantling of the Key Board From the Front Panel

- 1) Loosen 9 screws "J" on the bottom cover as shown in Figure 9.



J

Figure 9

Dismantling of the Amplify PCB

- 1) Loosen 2 screws "K" as shown in Figure 2.
- 2) Loosen 1 screw "L" on the heatsink as shown in Figure 10.
- 3) Unplug the connectors "M" that connect amplify board and power board as shown in Figure 11.
- 4) Shift the amplify board together with back panel from the bottom cover.

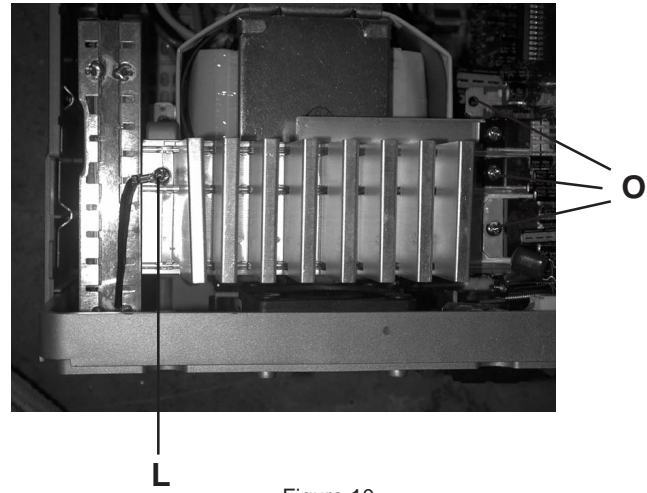


Figure 10

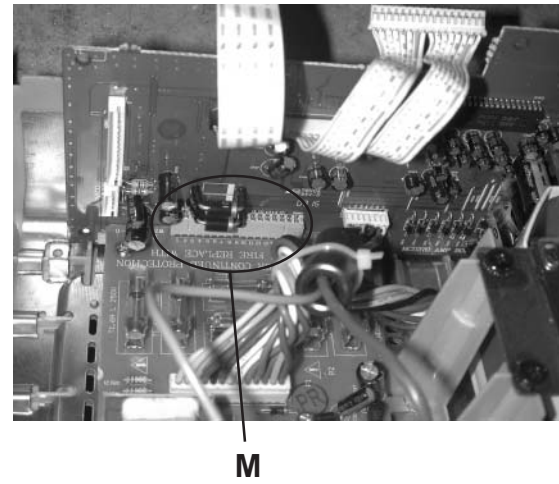


Figure 11

- 5) Loosen 5 screws "N" on the back panel as shown in Figure 12 from the back panel.
- 6) Loosen 3 screws "O" on the heatsink as shown in Figure 10. Remove the heatsink from the amplify board.

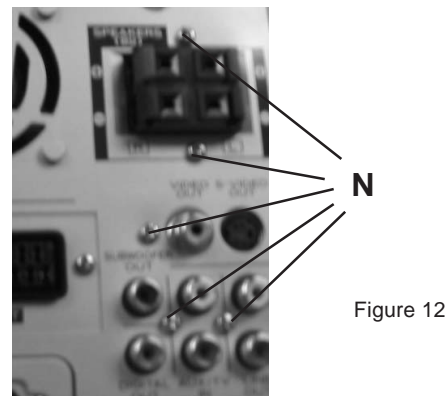


Figure 12

Dismantling of the Tuner PCB

- 1) Loosen 2 screws "P" as shown in Figure 13.
- 2) Separate the tuner module from the back panel.

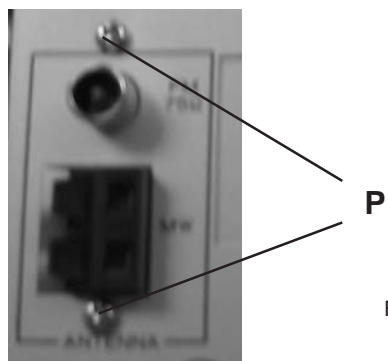


Figure 13

Dismantling of the Scart PCB

- 1) Loosen 2 screws "Q" as shown in Figure 14.
- 2) Separate the scart board from the back panel.

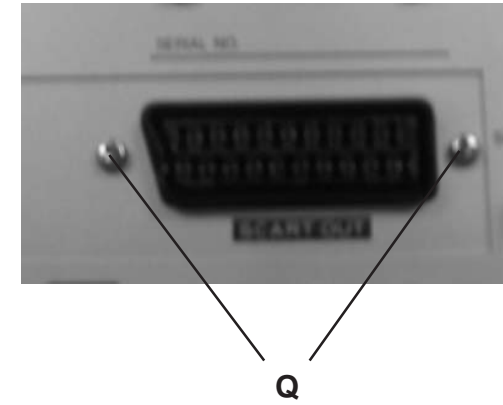


Figure 14

Dismantling of the Power PCB

- 1) Loosen 4 screws "R" as shown in Figure 15.
- 2) Remove the cables connect to power board.

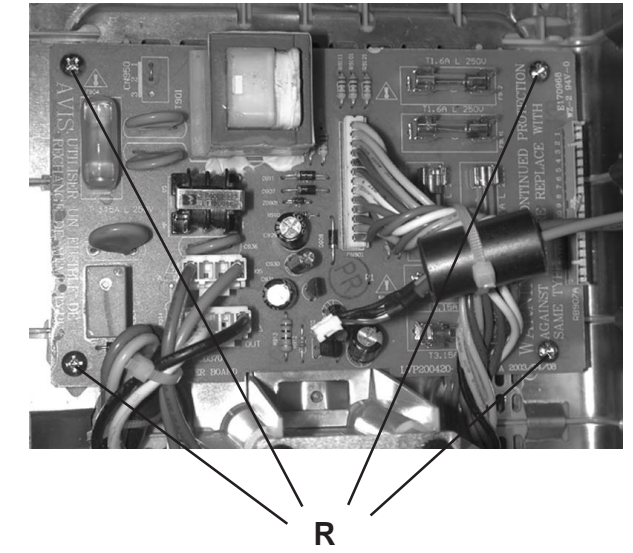


Figure 15

Dismantling of the Transformer

- 1) Loosen 4 screws "S" as shown in Figure 16.
- 2) Shift the transformer from the bracket.

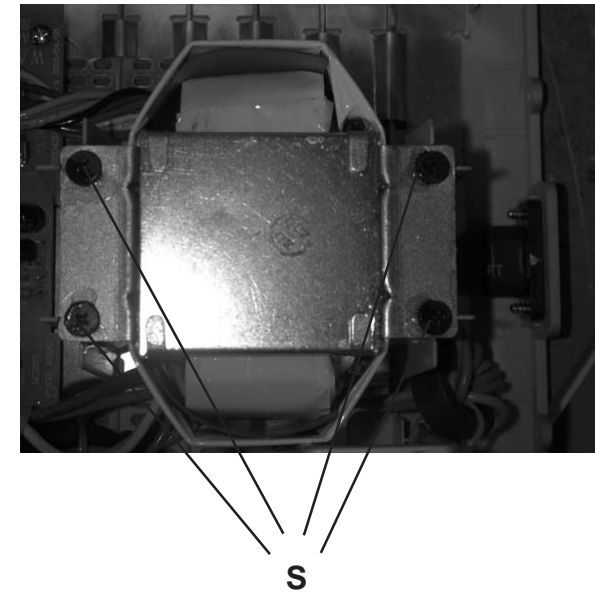
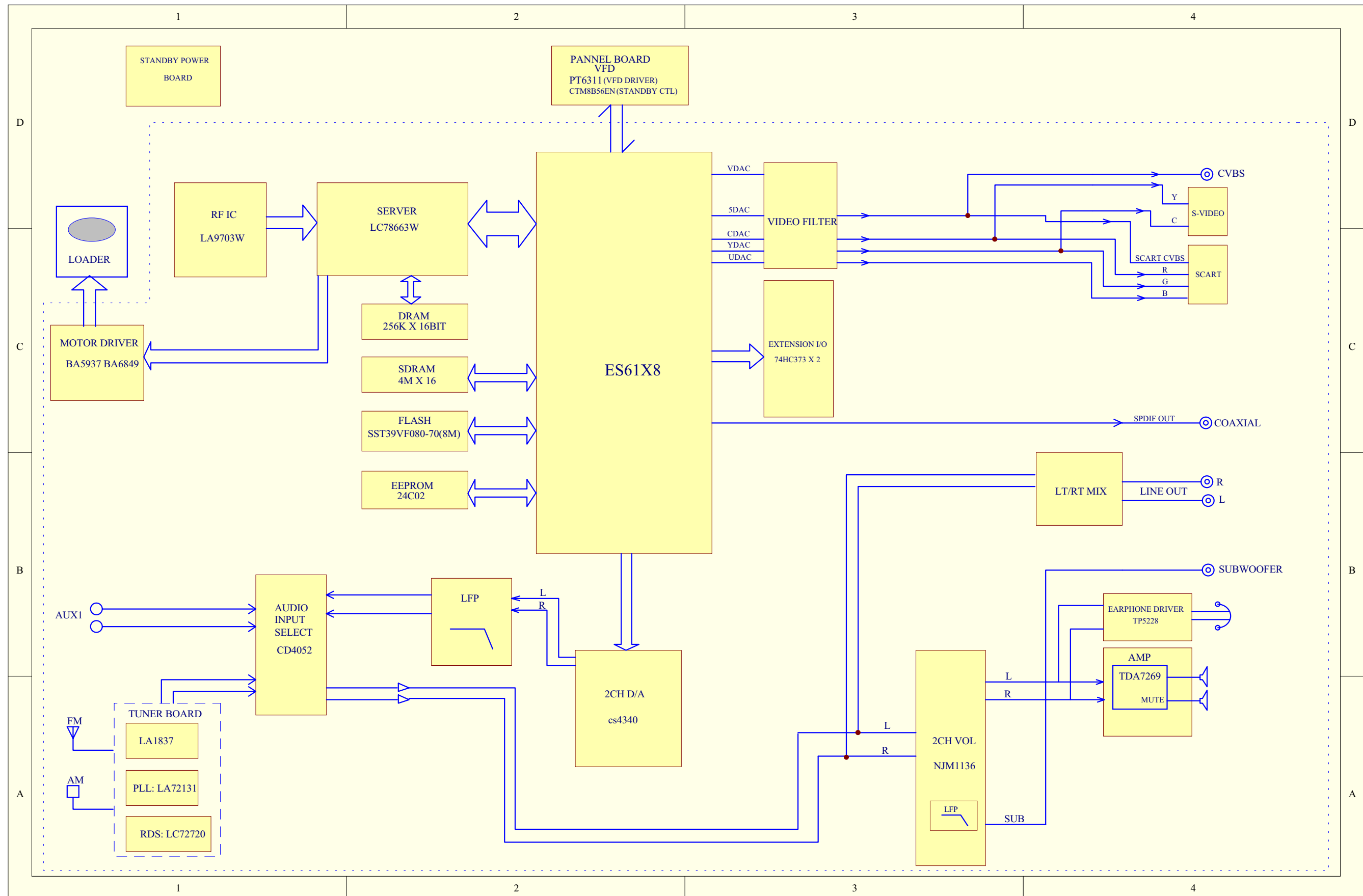
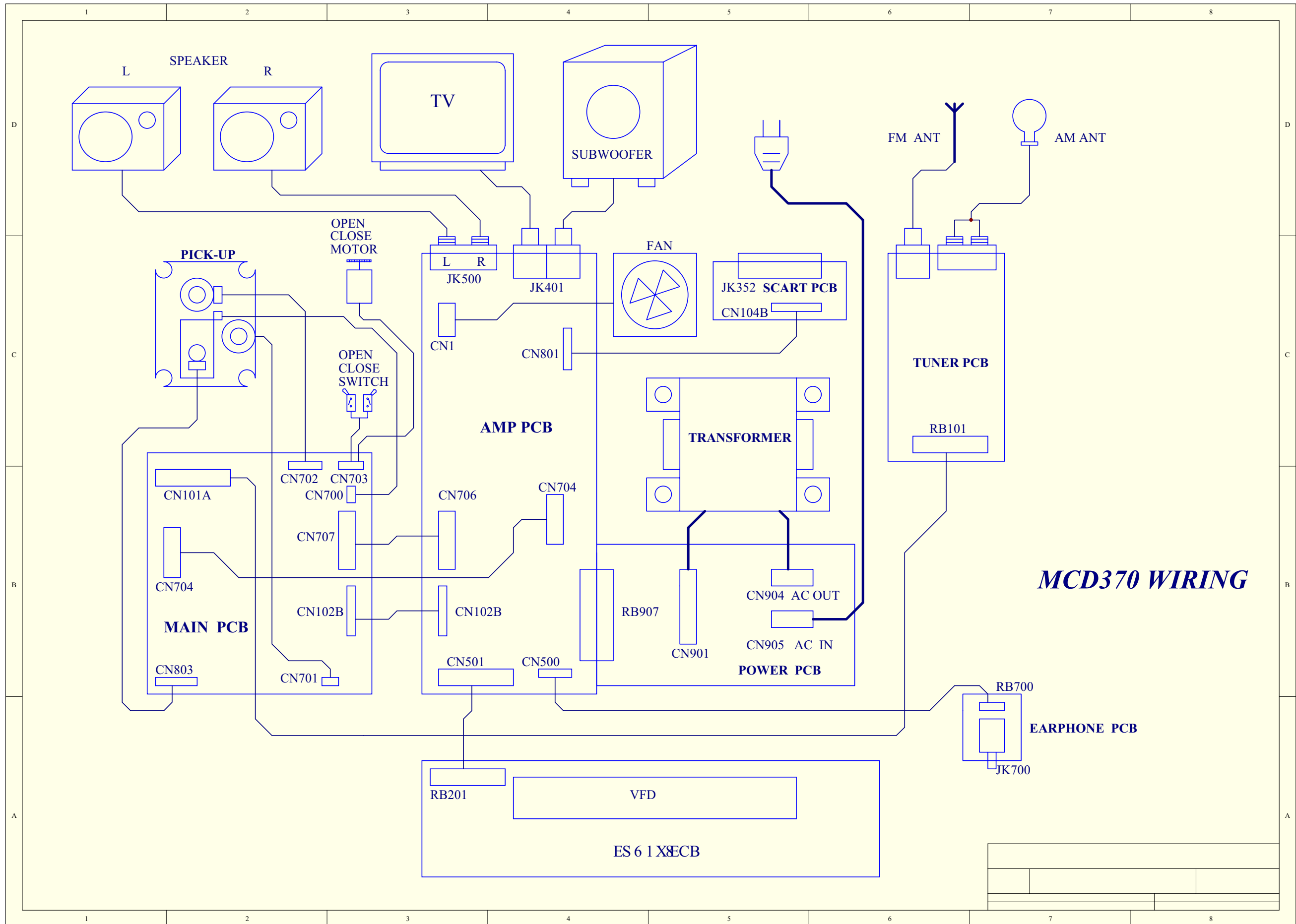


Figure 16

BLOCK DIAGRAM



WIRING DIAGRAM



CONTROL BOARD

MICROCONTROLLER AMPLIFIER EM78P156EL

FUNCTIONAL BLOCK DIAGRAM

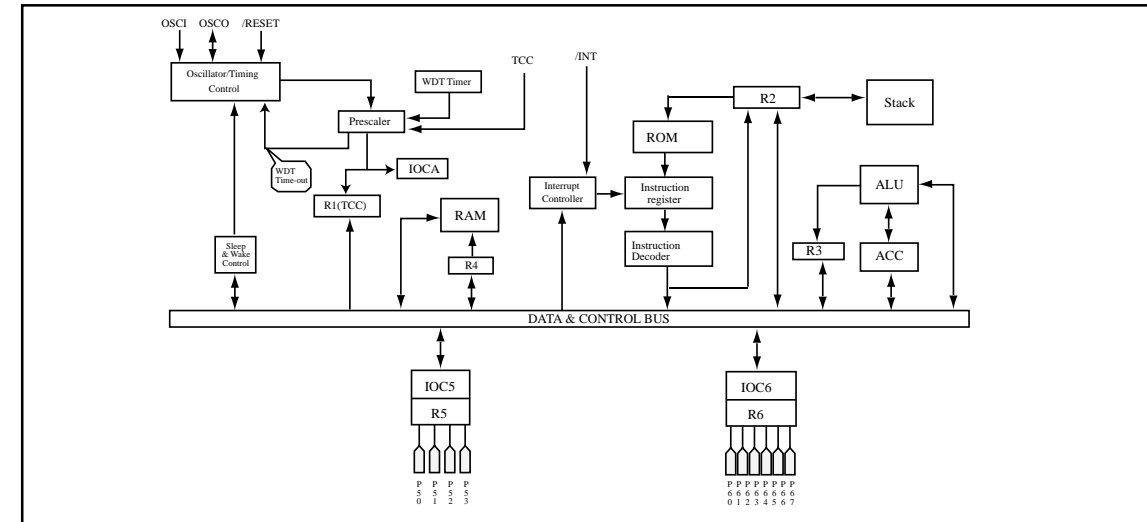


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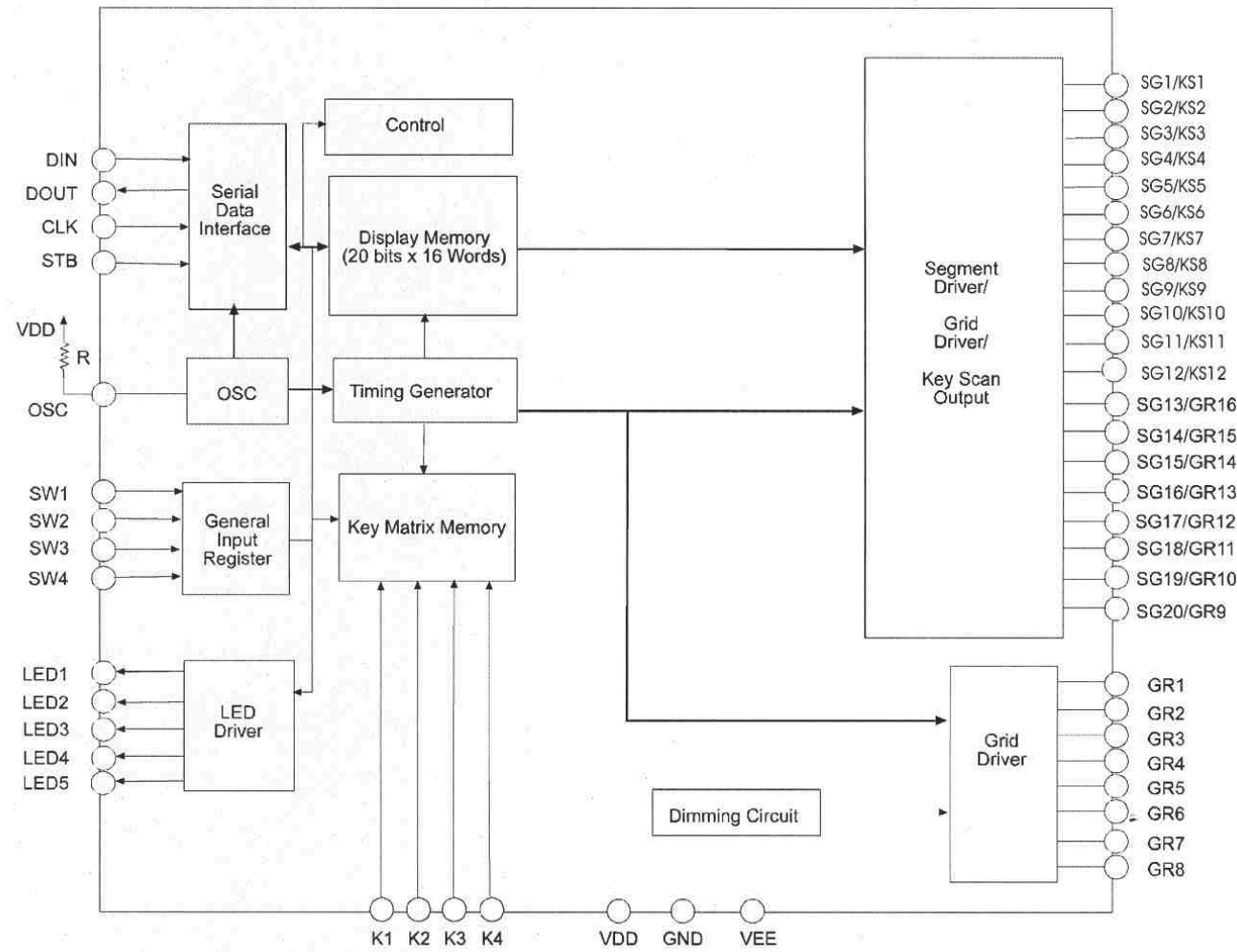
IC Internal Block Diagram	5-1to 5-4
Circuit Diagram	5-5
PCB Layout Top View	5-6
PCB Layout Bottom View	5-7
Electrical Parts List	5-8

PIN DESCRIPTION

Symbol	I/O	Function
OSCI	I	* XTAL type : Crystal input terminal or external clock input pin. * ERC type: RC oscillator input pin.
OSCO	I/O	* XTAL type: Output terminal for crystal oscillator or external clock input pin. * ERC type: Instruction clock output. * External clock signal input.
TCC	I	* Real time clock/counter with Schmitt trigger input pin, must be tied to V _{DD} or V _{SS} if not in use.
/RESET	I	* Input pin with Schmitt trigger. If this pin remains at logic low, the controller will keep in reset condition.
P50~P53	I/O	* P50~P53 are bi-directional I/O pins. P50 and P51 can also be defined as the R-option pins. P50~P52 can be pulled down by software .
P60~P67	I/O	* P60~P67 are bi-directional I/O pins. These can be pull-high or can be open-drain by software programming. In addition, P60~P63 can be pull-down also by software.
/INT	I	* External interrupt pin triggered by falling edge.
V _{DD}	-	* Power supply.
V _{SS}	-	* Ground.

VFD DRIVER
PT6311

BLOCK DIAGRAM



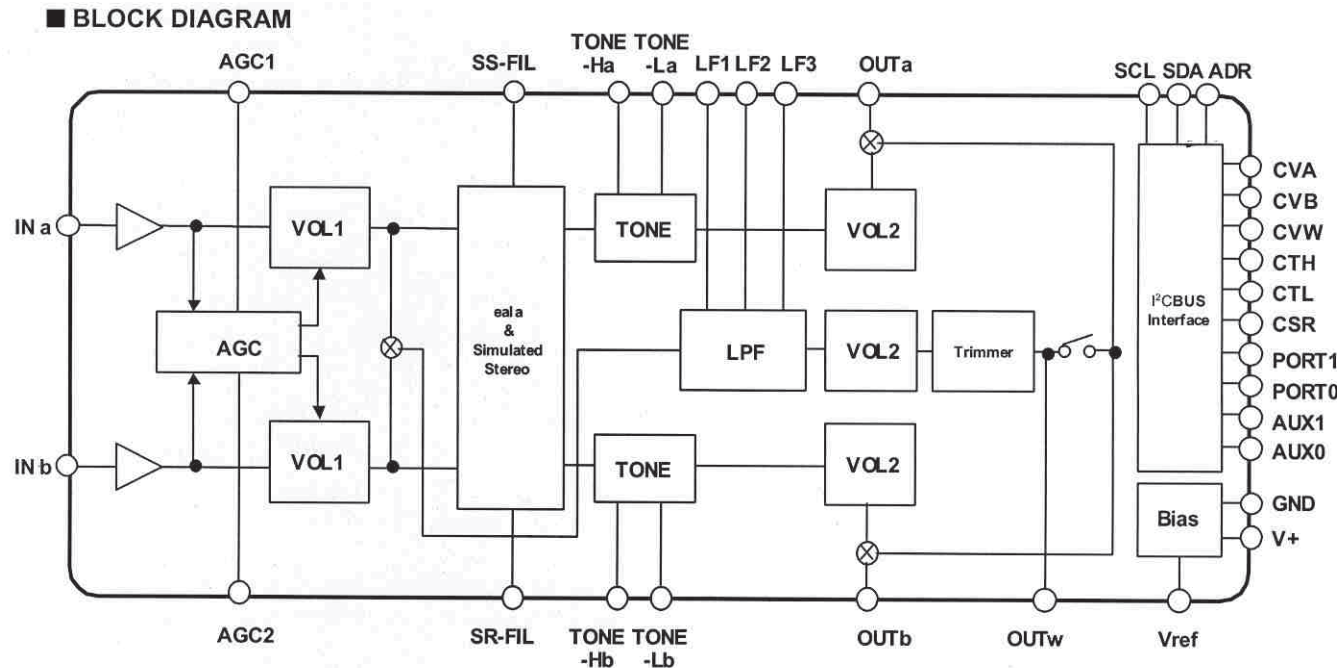
VFD DRIVER
PT6311

PIN DESCRIPTION

Pin Name	I/O	Description	Pin No.
SW1 to SW4	I	General Purpose Input Pins	1 to 4
DOUT	O	Data Output Pin (N-Channel, Open-Drain) This pin outputs serial data at the falling edge of the shift clock (starting from the lower bit).	5
DIN	I	Data Input Pin This pin inputs serial data at the rising edge of the shift clock (starting from the lower bit)	6
NC	-	No Connection	7
CLK	I	Clock Input Pin This pin reads serial data at the rising edge and outputs data at the falling edge.	8
STB	I	Serial Interface Strobe Pin The data input after the STB has fallen is processed as a command. When this pin is "HIGH", CLK is ignored.	9
K1 to K4	I	Key Data Input Pins The data inputted to these pins are latched at the end of the display cycle.	10 to 13
VDD	-	Logic Power Supply	14, 33, 45
SG1/KS1 to SG12/KS12	O	High-Voltage Segment Output Pins Also acts as the Key Source	15 to 26
SG20/GR9 to SG19/GR10 SG18/GR11 to SG13/GR16	O	High Voltage Segment/ Grid Output Pins	36 to 35 32 to 27
VEE	-	Pull-Down Level	34
GR1 to GR8	O	High-Voltage Grid Output Pins	44 to 37
LED1 to LED5	O	LED Output Pin	50 to 46
GND	-	Ground Pin	51
OSC	I	Oscillator Input Pin A resistor is connected to this pin to determine the oscillation frequency	52

**AUDIO PROCESSOR
NJW1136L**

INTERNAL BLOCK DIAGRAM



**AUDIO PROCESSOR
NJW1136L**

■ PIN CONFIGURATION



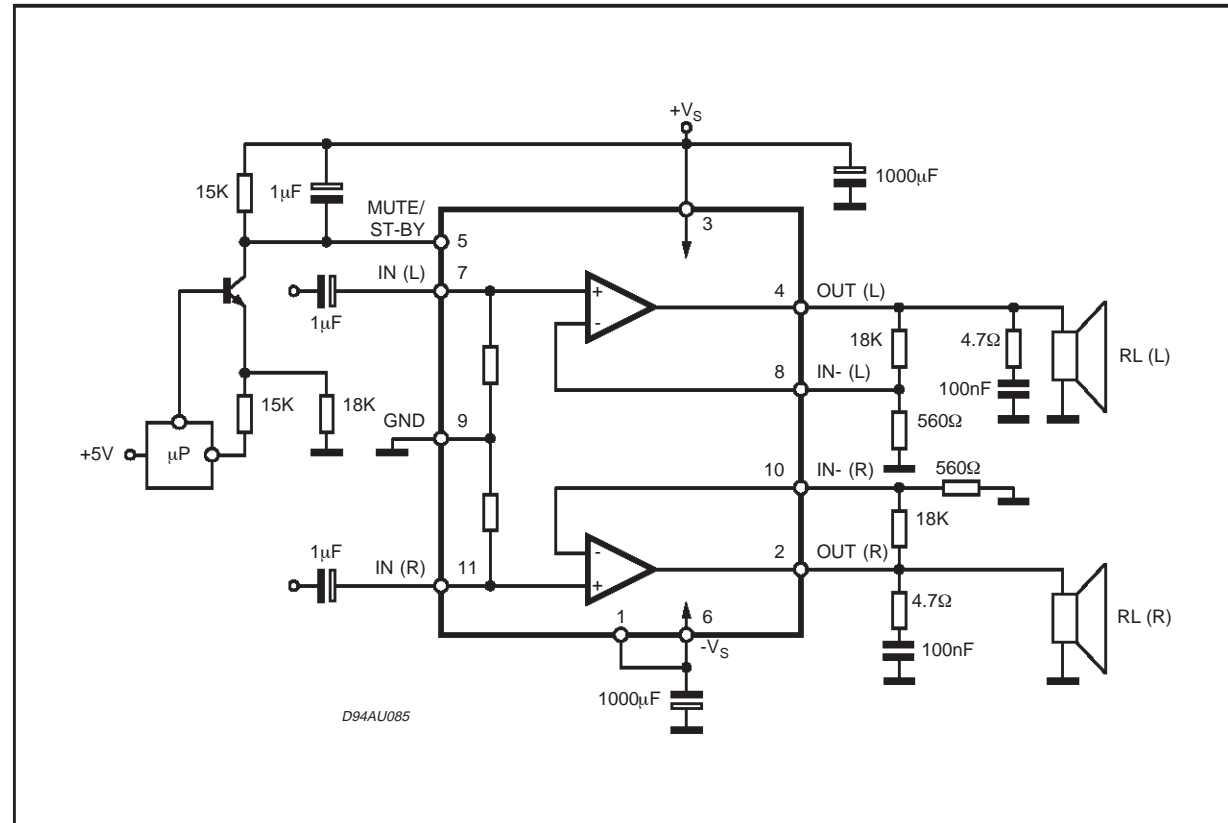
No.	Symbol	Function	No.	Symbol	Function
1	INa	Ach input terminal	17	V+	Supply voltage terminal
2	SR-FIL	Surround filter terminal	18	Vref	Reference voltage terminal
3	SS-FIL	Simulated stereo filter terminal	19	CSR	DAC output terminal for surround control
4	TONE-Ha	Ach tone control (treble) filter terminal	20	CTL	DAC output terminal for tone control (bass)
5	TONE-La	Ach tone control (bass) filter terminal	21	CTH	DAC output terminal for tone control (treble)
6	OUTw	Subwoofer output terminal	22	CVW	Bch DAC output terminal for LPF trimmer
7	OUTa	Ach output terminal	23	CVB	Bch DAC output terminal for volume and balance
8	AGC1	AGC attack and recovery time setting terminal	24	CVA	Ach DAC output terminal for volume and balance
9	AUX0 ^(*)	Auxiliary 3 values voltage output terminal (0.0V, 2.5V, 5V)	25	AGC2	AGC boost level setting terminal
10	AUX1	Auxiliary 2 values voltage output terminal (0.0V, V+)	26	OUTb	Bch output terminal
11	PORT0	Logic input terminal	27	TONE-Lb	Bch tone control (bass) filter terminal
12	PORT1	Logic input terminal	28	TONE-Hb	Bch tone control (treble) filter terminal
13	ADR	Slave address setting terminal	29	LF3	LPF filter3 terminal
14	SDA	I ² C data terminal	30	LF2	LPF filter2 terminal
15	SCL	I ² C clock terminal	31	LF1	LPF filter1 terminal
16	GND	Ground terminal	32	INb	Bch input terminal

^(*) The AUX0 terminal should be connected via the protection resistance to 5V device.

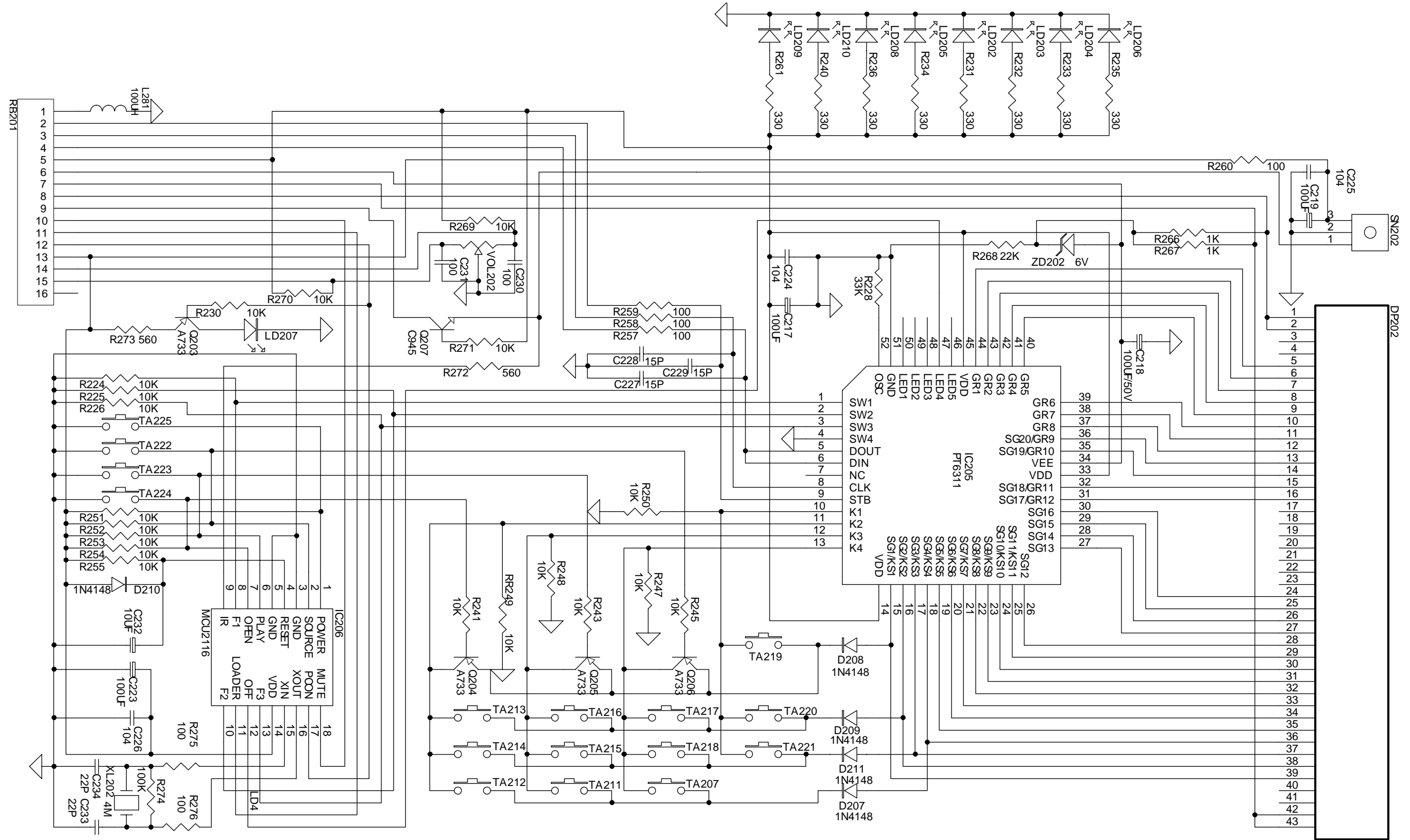
STEREO AMPLIFIER TDA7265

INTERNAL BLOCK DIAGRAM

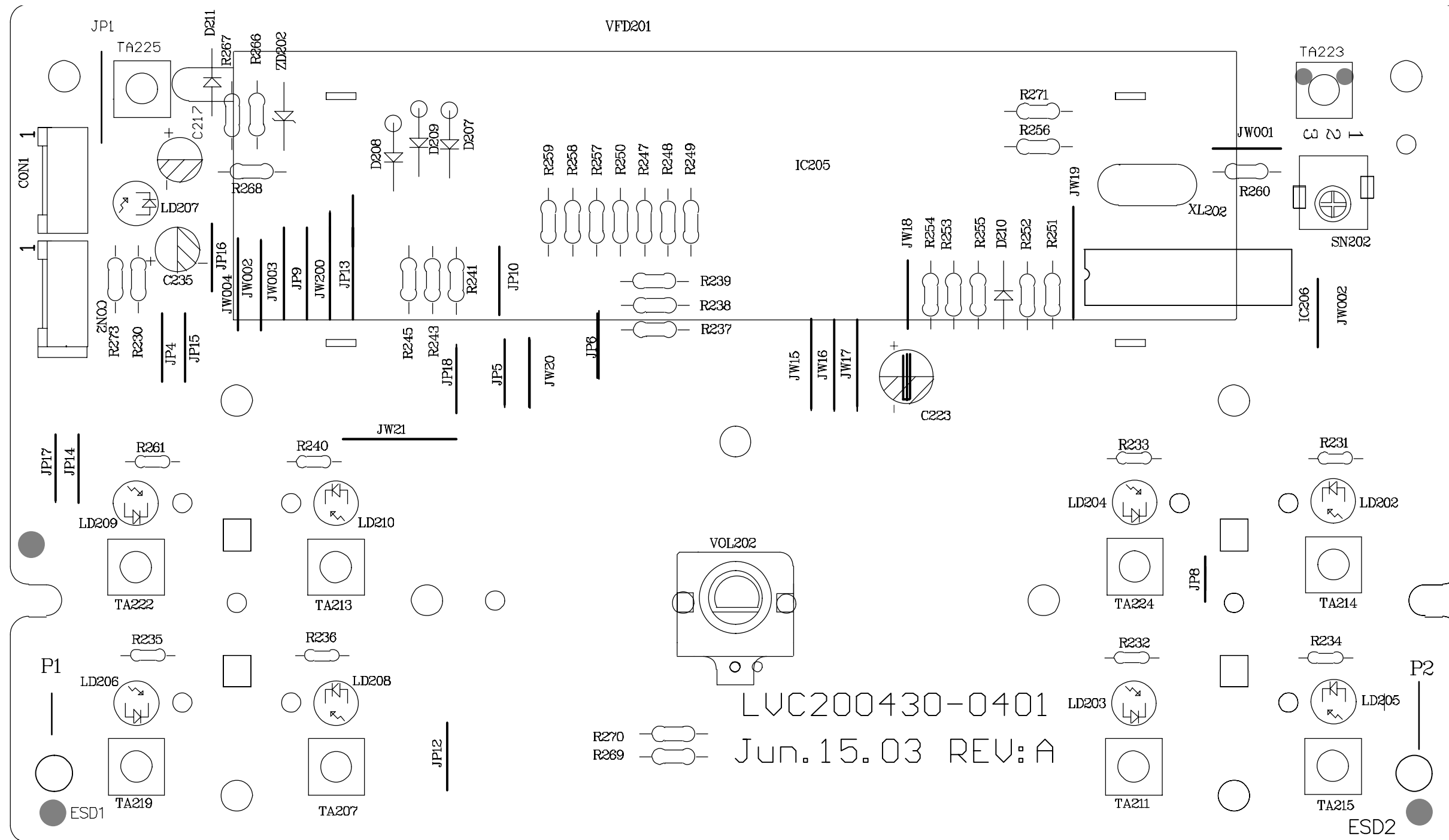
Figure 1: Typical Application Circuit



CIRCUIT DIAGRAM

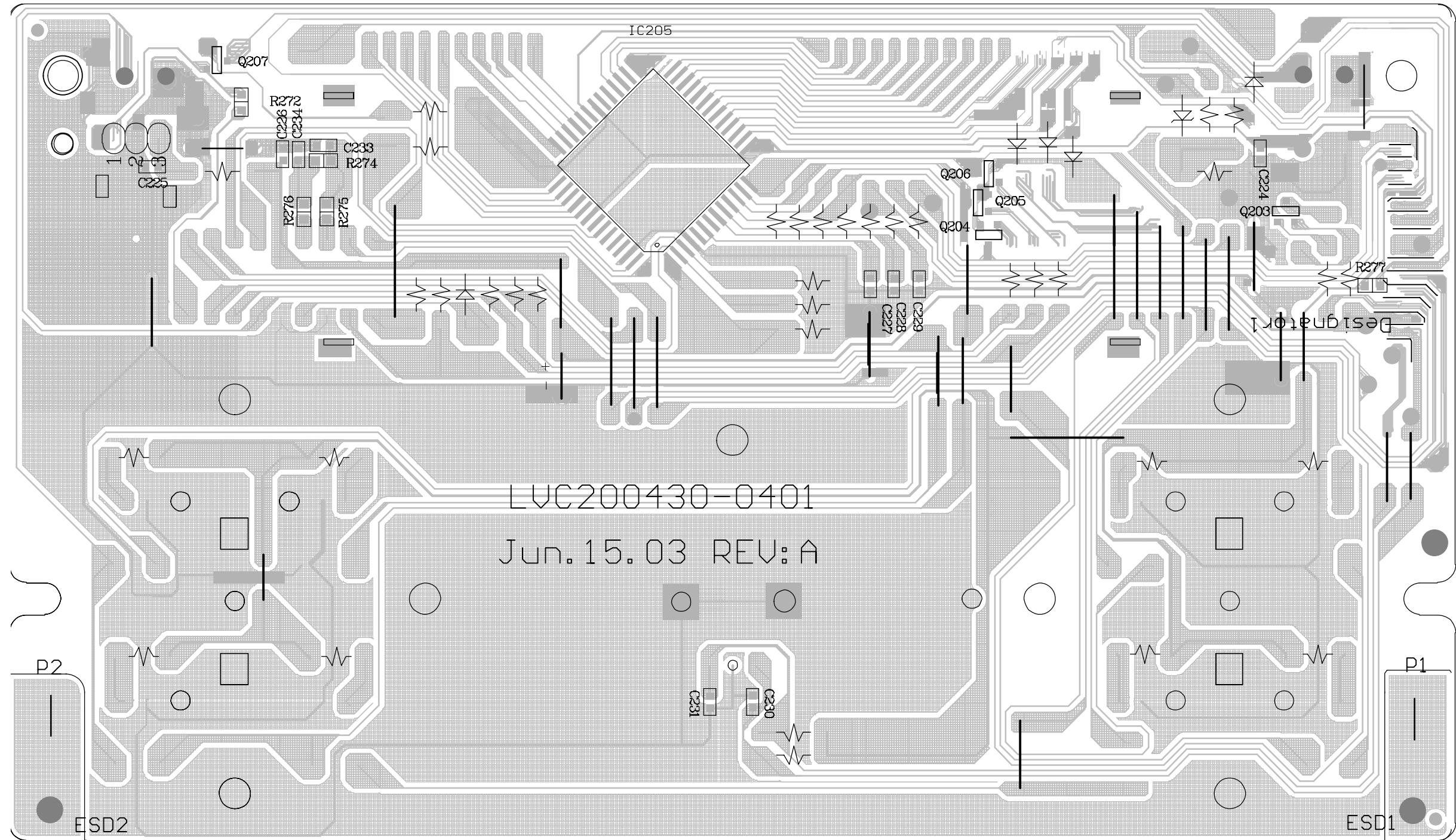


PCB LAYOUT TOP VIEW



LVC200430-0401
 Jun. 15. 03 REV: A

PCB LAYOUT BOTTOM VIEW



ELECTRICAL PARTSLIST - CONTROL BOARD**- MISCELLANEOUS -**

CON1	9965 000 19402	CONNECTOR 7P
CON2	9965 000 19403	CONNECTOR 8P
SN202	9965 000 15935	IRT SENSOR RIM B38F
TA207	4822 276 13648	TACT SWITCH
TA211	4822 276 13648	TACT SWITCH
TA213	4822 276 13648	TACT SWITCH
TA214	4822 276 13648	TACT SWITCH
TA215	4822 276 13648	TACT SWITCH
TA219	4822 276 13648	TACT SWITCH
TA222	4822 276 13648	TACT SWITCH
TA223	4822 276 13648	TACT SWITCH
TA224	4822 276 13648	TACT SWITCH
TA225	4822 276 13648	TACT SWITCH
VFD1	9965 000 19406	VFD HNV-10MM28
VOL202	9965 000 19408	SWITCH ROTARY

- COILS & FILTERS -

XL202	9965 000 19407	CRYSTAL 4.5000MHZ 30PPM
-------	----------------	-------------------------

- DIODES -

D207	4822 130 30621	1N4148
D208	4822 130 30621	1N4148
D209	4822 130 30621	1N4148
D210	4822 130 30621	1N4148
D211	4822 130 30621	1N4148
LD207	9965 000 19404	LED RED ROUND /22
LD207	9965 000 20649	LED /21
LD209	9965 000 19405	LED
ZD202	9965 000 12554	ZENER 3.8-4.0V 0.5W

- IC & TRANSISTORS -

IC205	9965 000 12550	PT6311(PTC) /22
IC205	9965 000 20647	IC 52PIN TP6311QH /21
IC206	9965 000 15934	IC CTM8B56EN /22
IC206	9965 000 20648	IC 18PIN EM78P156-0003 /21
Q203	9965 000 14175	2SA733Q,P
Q204	9965 000 14175	2SA733Q,P
Q205	9965 000 14175	2SA733Q,P
Q206	9965 000 14175	2SA733Q,P
Q207	9965 000 17448	XISTR NPN 2SC945 /22
Q207	9965 000 20650	XISTR NPN 2SC1009A /21

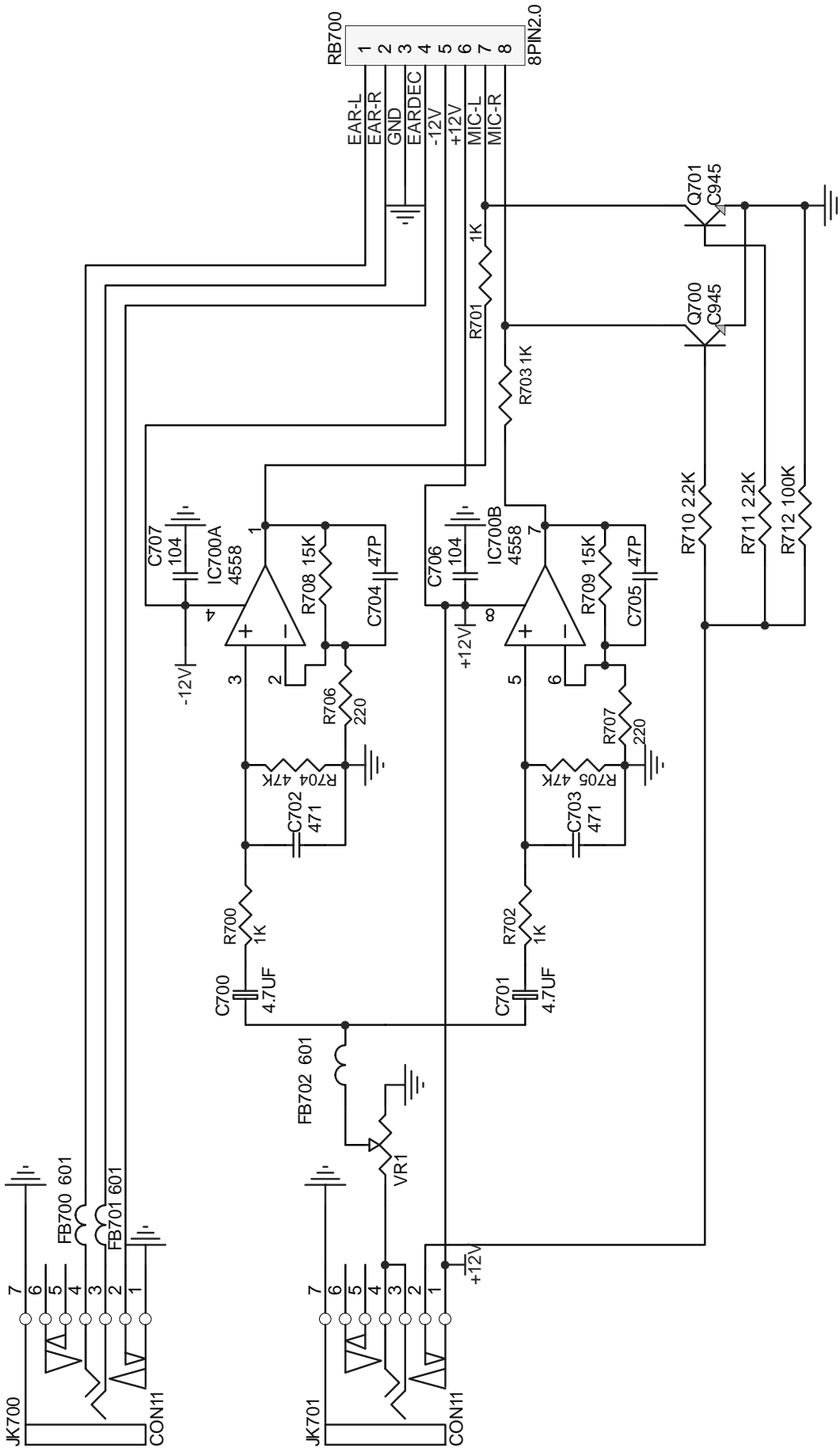
Note: Only these parts mentioned in the list are normal service parts.

EARPHONE BOARD

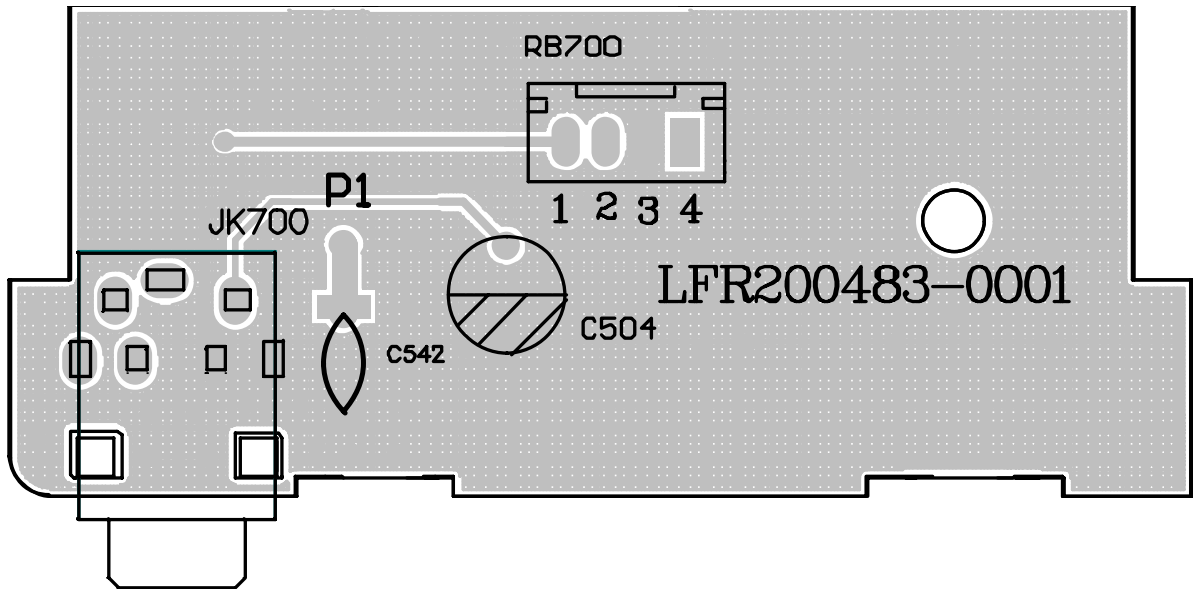
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Electrical Parts List	6-4

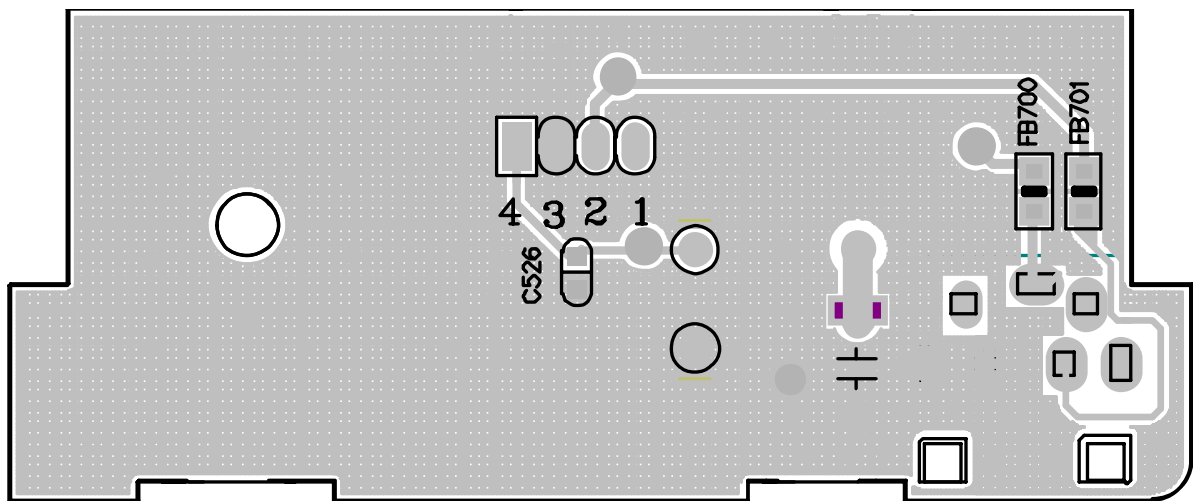
CIRCUIT DIAGRAM



PCB LAYOUT TOP VIEW



PCB LAYOUT BOTTOM VIEW



ELECTRICAL PARTSLIST - PHONES BOARD**- MISCELLANEOUS -**

JK700	9965 000 19435	PHONE JACK 7P D3.5
JK701	9965 000 19435	PHONE JACK 7P D3.5 /21
RB700	9965 000 19436	SHIELD CABLE 4P 160MM /22
RB700	9965 000 20658	CON/WIRE 9P 160MM /21
VR1	9965 000 20659	ROTARY /21

- COILS & FILTERS -

FB700	9965 000 12471	BEAD FERITE 600Ω at 100MHZ
FB701	9965 000 12471	BEAD FERITE 600Ω at 100MHZ
FB702	9965 000 12471	BEAD FERITE 600Ω at 100MHZ /21

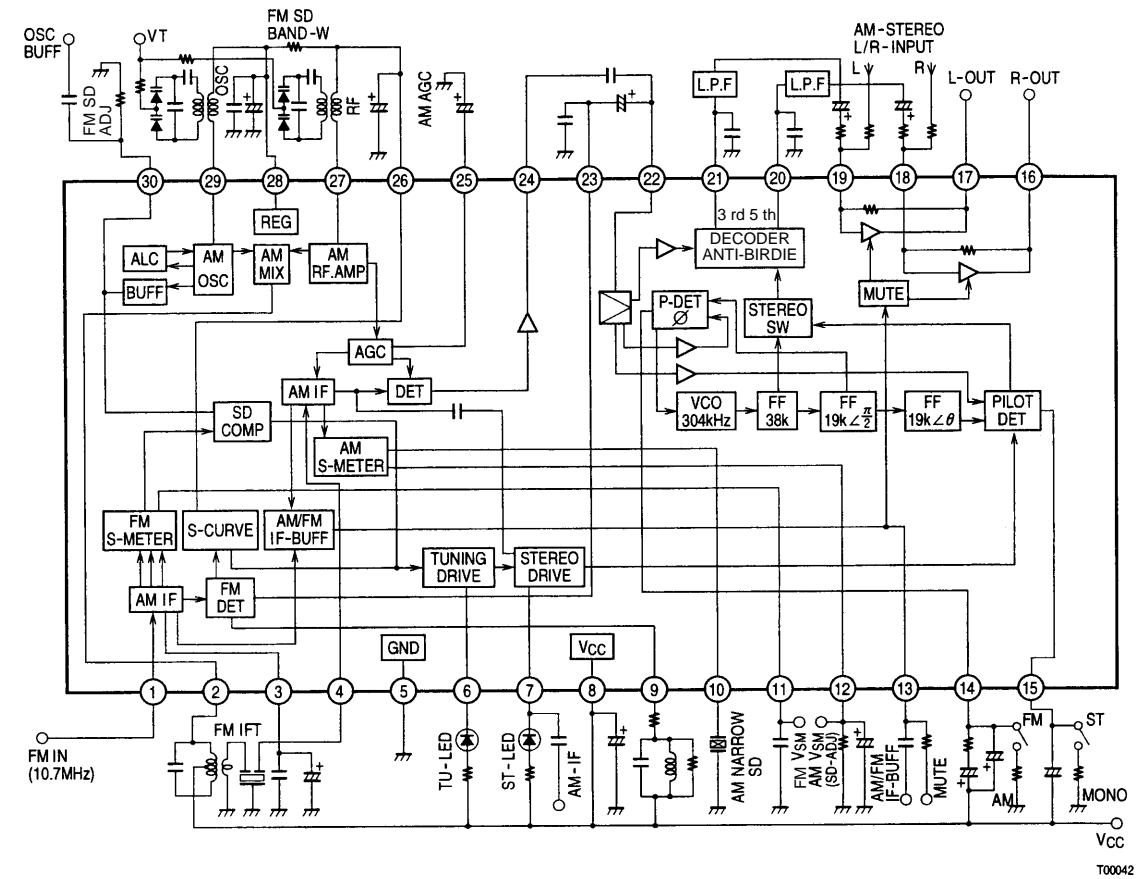
- IC & TRANSISTORS -

IC700	9965 000 15886	IC RC4558D /21
Q700	9965 000 20268	XISTR NPN 2SC1623 /21
Q701	9965 000 20268	XISTR NPN 2SC1623 /21

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

AM / FM IF / MPX IC
LA1837

Block Diagram

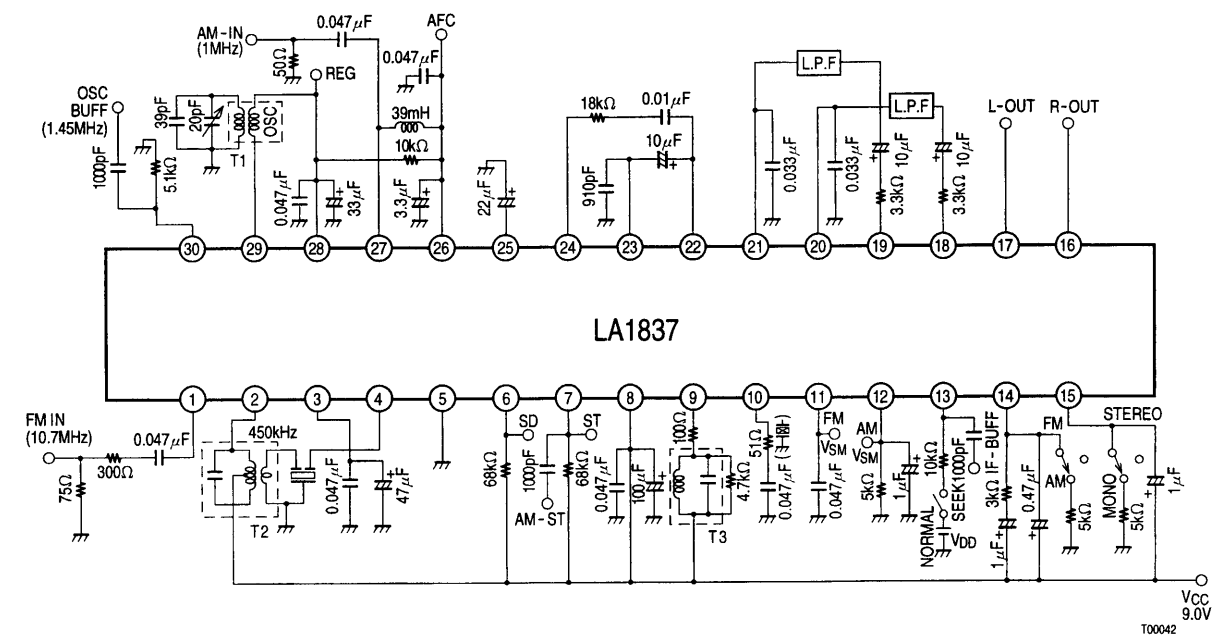


TUNER BOARD

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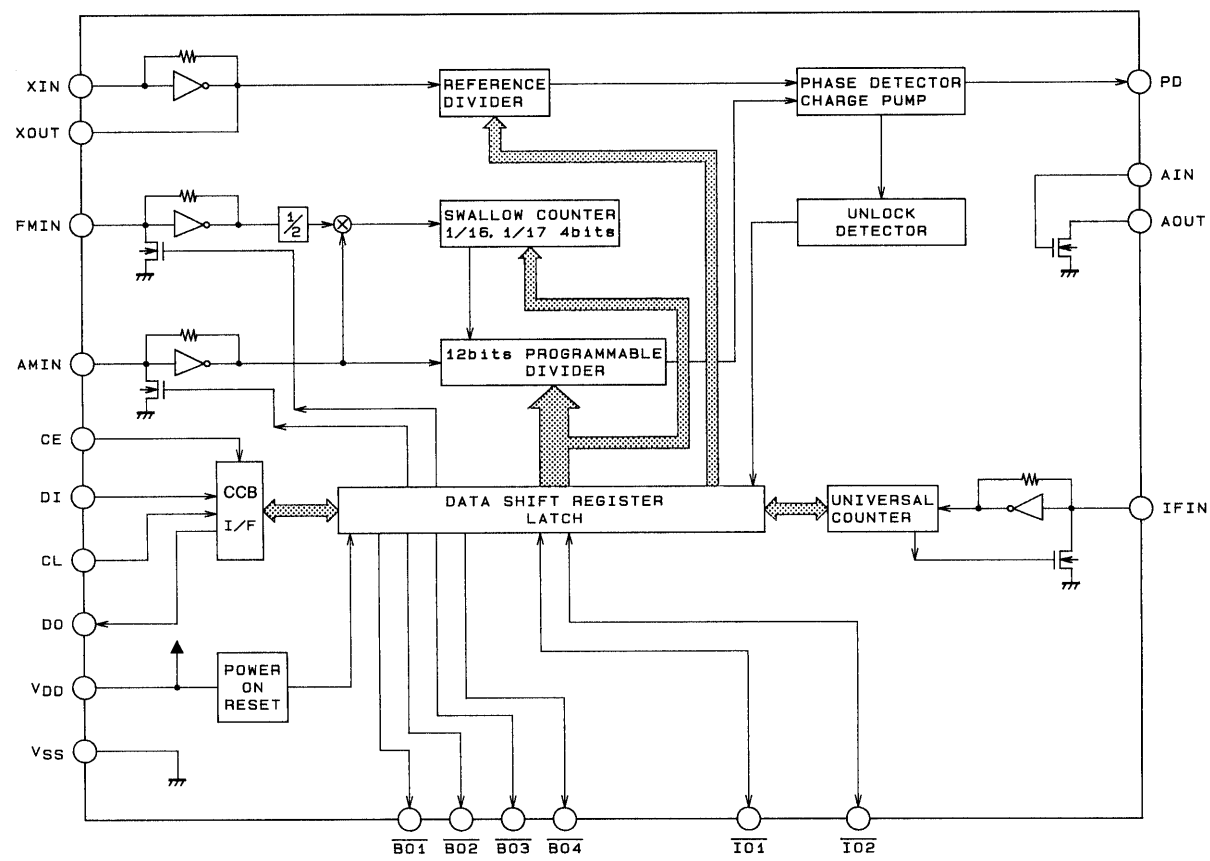
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Test Circuit Diagram



AM / FM PLL FREQUENCY SYNTHESIZER
LC72131M

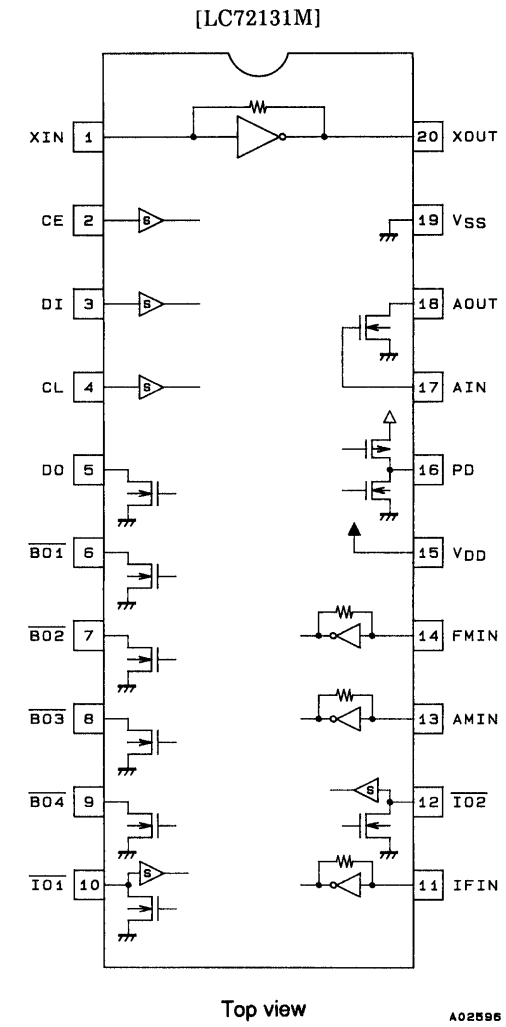
Block Diagram



A02597

AM / FM PLL FREQUENCY SYNTHESIZER
LC72131M

Pin Assignments

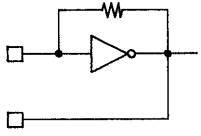
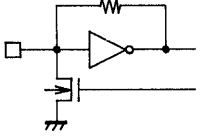
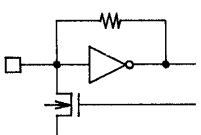


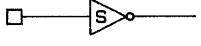
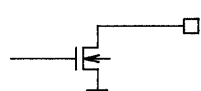


Top view

A02596

AM / FM PLL FREQUENCY SYNTHESIZER LC72131M

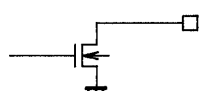
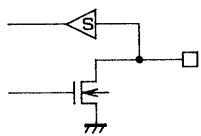
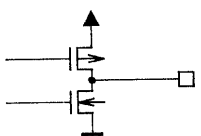
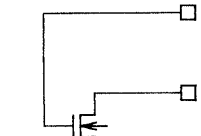
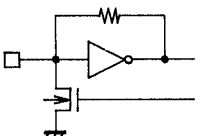
Pin Functions

Symbol	Pin No. (MFP pin Nos. are in parentheses.)	Type	Functions	Circuit configuration
XIN XOUT	1 (1) 22 (20)	Xtal OSC	<ul style="list-style-type: none"> Crystal resonator connection (4.5/7.2 MHz) 	 A02598
FMIN	16 (14)	Local oscillator signal input	<ul style="list-style-type: none"> FMIN is selected when the serial data input DVS bit is set to 1. The input frequency range is from 10 to 160 MHz. The input signal passes through the internal divide-by-two prescaler and is input to the swallow counter. The divisor can be in the range 272 to 65535. However, since the signal has passed through the divide-by-two prescaler, the actual divisor is twice the set value. 	 A02599
AMIN	15 (13)	Local oscillator signal input	<ul style="list-style-type: none"> AMIN is selected when the serial data input DVS bit is set to 0. When the serial data input SNS bit is set to 1: <ul style="list-style-type: none"> The input frequency range is 2 to 40 MHz. The signal is directly input to the swallow counter. The divisor can be in the range 272 to 65535, and the divisor used will be the value set. When the serial data input SNS bit is set to 0: <ul style="list-style-type: none"> The input frequency range is 0.5 to 10 MHz. The signal is directly input to a 12-bit programmable divider. The divisor can be in the range 4 to 4095, and the divisor used will be the value set. 	 A02599
CE	3 (2)	Chip enable	Set this pin high when inputting (DI) or outputting (DO) serial data.	 A02600
CL	5 (4)	Clock	Used as the synchronization clock when inputting (DI) or outputting (DO) serial data.	 A02600
DI	4 (3)	Data input	Inputs serial data transferred from the controller to the LC72131.	 A02600
DO	6 (5)	Data output	Outputs serial data transferred from the LC72131 to the controller. The content of the output data is determined by the serial data DOC0 to DOC2.	 A02601
V _{DD}	17 (15)	Power supply	<ul style="list-style-type: none"> The LC72131 power supply pin (V_{DD} = 4.5 to 5.5 V) The power on reset circuit operates when power is first applied. 	

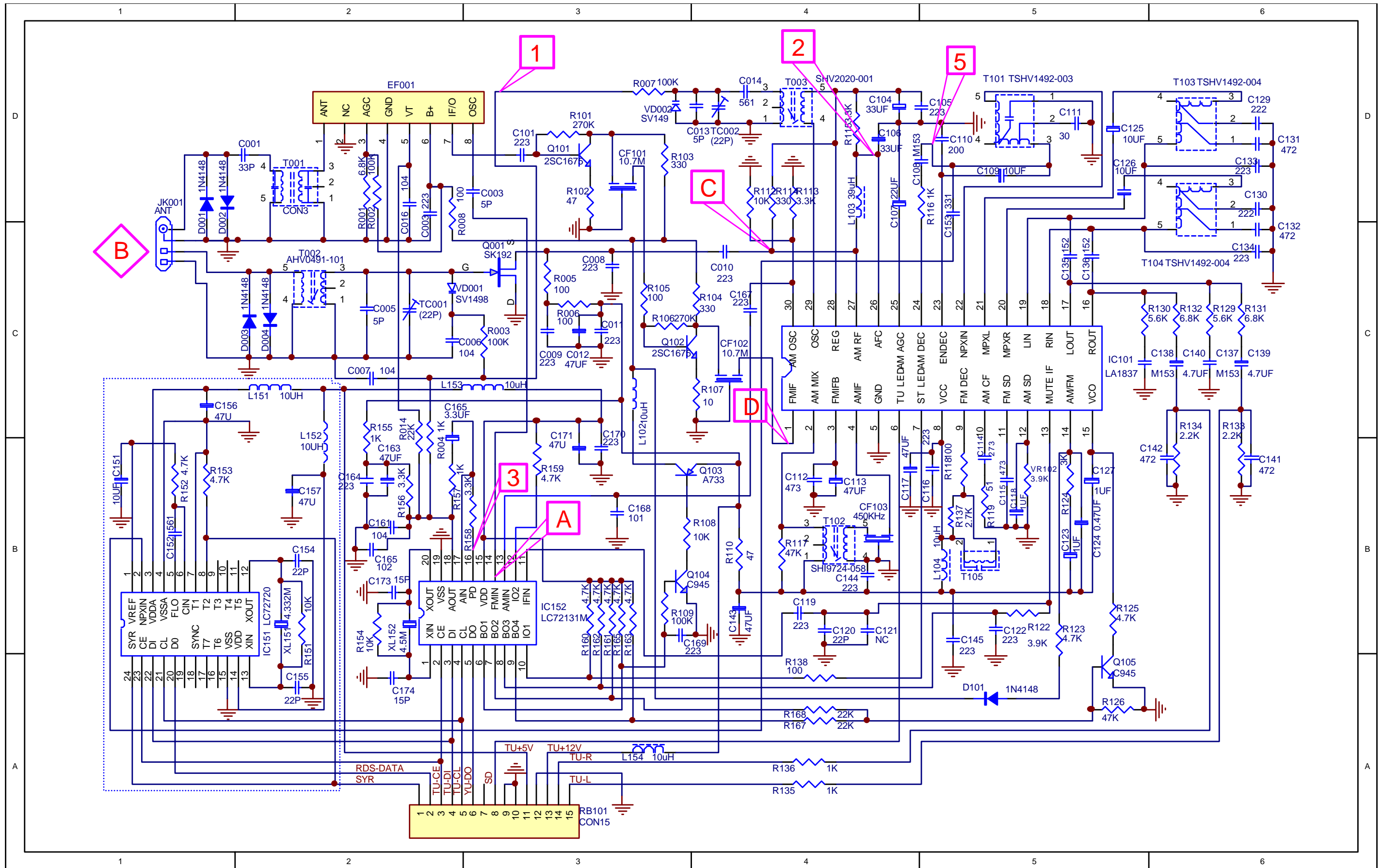
Continued on next page.

AM / FM PLL FREQUENCY SYNTHESIZER LC72131M

Continued from preceding page.

Symbol	Pin No. (MFP pin Nos. are in parentheses.)	Type	Functions	Circuit configuration
V _{SS}	21 (19)	Ground	<ul style="list-style-type: none"> The LC72131 ground 	—
$\overline{\text{BO1}}$ $\overline{\text{BO2}}$ $\overline{\text{BO3}}$ $\overline{\text{BO4}}$	7 (6) 8 (7) 9 (8) 10 (9)	Output port	<ul style="list-style-type: none"> Dedicated output pins The output states are determined by $\overline{\text{BO1}}$ to $\overline{\text{BO4}}$ bits in the serial data. Data: 0 = open, 1 = low A time base signal (8 Hz) can be output from the $\overline{\text{BO1}}$ pin. (When the serial data TBC bit is set to 1.) Care is required when using the $\overline{\text{BO1}}$ pin, since it has a higher impedance than the other output ports (pins $\overline{\text{BO2}}$ to $\overline{\text{BO4}}$). All output ports are set to the open state following a power on reset. 	 A02601
$\overline{\text{IO1}}$ $\overline{\text{IO2}}$	11 (10) 13 (12)	I/O port	<ul style="list-style-type: none"> I/O dual-use pins The direction (input or output) is determined by bits IOC1 and IOC2 in the serial data. Data: 0 = input port, 1 = output port When specified for use as input ports: The state of the input pin is transmitted to the controller over the DO pin. Input state: low = 0 data value, high = 1 data value When specified for use as output ports: The output states are determined by the IO1 and IO2 bits in the serial data. Data: 0 = open, 1 = low These pins function as input pins following a power on reset. 	 A02602
PD	18 (16)	Charge pump output	<ul style="list-style-type: none"> PLL charge pump output When the frequency generated by dividing the local oscillator frequency by N is higher than the reference frequency, a high level is output from the PD pin. Similarly, when that frequency is lower, a low level is output. The PD pin goes to the high impedance state when the frequencies match. 	 A02603
AIN AOUT	19 (17) 20 (18)	LPF amplifier transistor	<ul style="list-style-type: none"> The n-channel MOS transistor used for the PLL active low-pass filter. 	 A02604
IFIN	12 (11)	IF counter	<ul style="list-style-type: none"> Accepts an input in the frequency range 0.4 to 12 MHz. The input signal is directly transmitted to the IF counter. The result is output starting the MSB of the IF counter using the DO pin. Four measurement periods are supported: 4, 8, 32, and 64 ms. 	 A02599

CIRCUIT DIAGRAM - TUNER BOARD



TUNER ADJUSTMENT TABLE (FM/MW - versions with AM-frame aerial)

Waverange	Input frequency	Input	Tuned to	Adjust	Output	Scope/Voltmeter
FM 85.7-108MHZ			108MHz	TC102	1	7.26V
			87.5MHz	T003		1.46V
MW 531-1602KHz			1602kHz	TC001		7.95V
			531kHz	T002		1.30V
FM IN						
FM	10.7MHz continuous wave	D	IC101(1)	T105	2	MAX
FM RF						
FM	108-87.5MHz	A	EF001(1)	Check	5	0.10V
MW IN						
MW	98MHz continuous wave	C	IC101(27)	T102	2	MAX
MW RF						
MW	1602KHz	B	Q 001(G)	TC001	3	1602KHz max
	531KHz			T002		531KHz max

ELECTRICAL PARTSLIST - TUNER BOARD**- MISCELLANEOUS -**

EF001	9965 000 19410	TUNER PACK KST-F404HA-IA
JACK1	9965 000 19411	ANT+RF JACK W/SPRING

- CAPACITORS -

TC001	9965 000 15865	COND TRIM 3 - 10 PF NP0
TC002	9965 000 15866	COND TRIM 4.2 - 20 PF N450

- COILS & FILTERS -

CF101	9965 000 17368	10.7 MHZ
CF102	9965 000 15868	CER FILTER 10.7 MHZ
CF103	9965 000 15869	CER FILTER 450 KHZ
L102	9965 000 15871	INDUCTOR 10 µH 10%
L103	9965 000 15872	COIL 39 MH
L104	9965 000 15871	INDUCTOR 10 µH 10%
L151	9965 000 15871	INDUCTOR 10 µH 10% /22
L152	9965 000 15871	INDUCTOR 10 µH 10% /22
L153	9965 000 15871	INDUCTOR 10 µH 10%
L154	9965 000 15871	INDUCTOR 10 µH 10%
T001	9965 000 15880	OSC COIL SUMIDA S-8N
T002	9965 000 15874	ANT OSC AM 4-6:10T 1-3:86T
T003	9965 000 17370	108µH (796 KHZ) COIL
T101	9965 000 15877	BIAS COIL 78 KHZ
T102	9965 000 15875	AM IFT 455KHZ Q=130
T103	9965 000 15878	BIAS COIL 16 KHZ
T104	9965 000 15878	BIAS COIL 16 KHZ
T105	9965 000 15879	FM IFT 10.7MHZ Q=60 MIN
XL151	9965 000 19414	CRYSTAL 4.332MHZ /22
XL152	9965 000 19415	CRYSTAL 4.5000MHZ

- DIODES -

D001	9965 000 19409	DIODE CHIP BAV16W/IN4148W
D002	9965 000 19409	DIODE CHIP BAV16W/IN4148W
D003	9965 000 19409	DIODE CHIP BAV16W/IN4148W
D004	9965 000 19409	DIODE CHIP BAV16W/IN4148W
D101	4822 130 30621	1N4148
VD001	4822 130 81673	1SV149
VD002	4822 130 81673	1SV149

- IC & TRANSISTORS -

IC101	9965 000 01369	LA1837 FM/AM IF/MPX IC
IC151	9965 000 17382	IC LC72720NM /22
IC152	4822 209 15778	LC72131M
Q001	4822 130 63173	2SK192AY
Q101	9965 000 20650	XISTR NPN 2SC1009A /21
Q101	9965 000 19413	XISTR NPN KTC3876 /22
Q102	9965 000 20650	XISTR NPN 2SC1009A /21
Q102	9965 000 19413	XISTR NPN KTC3876 /22

- IC & TRANSISTORS -

Q103	9965 000 14175	2SA733Q,P
Q104	9965 000 20268	XISTR NPN 2SC1623 /21
Q104	9965 000 17448	XISTR NPN 2SC945 /22
Q105	9965 000 20268	XISTR NPN 2SC1623 /21

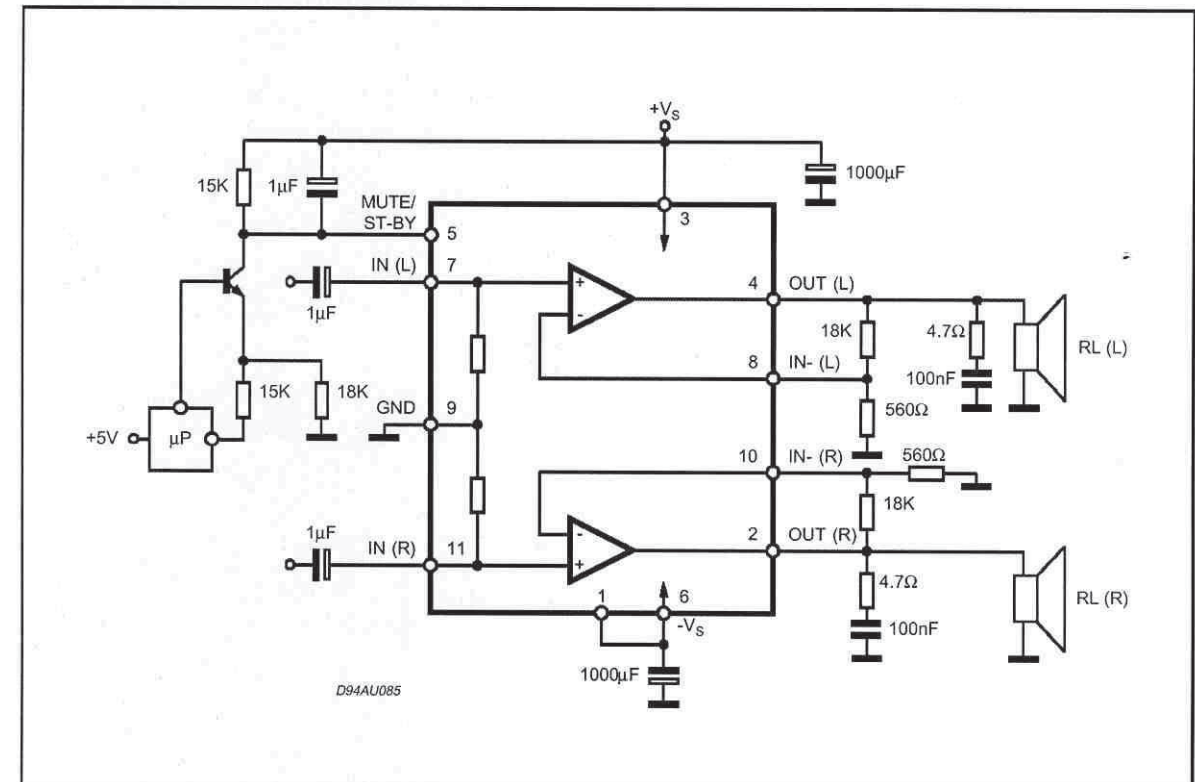
Note: Only these parts mentioned in the list are normal service parts.

**25+25W STEREO AMPLIFIER w/MUTE & ST-BY
TDA7265**

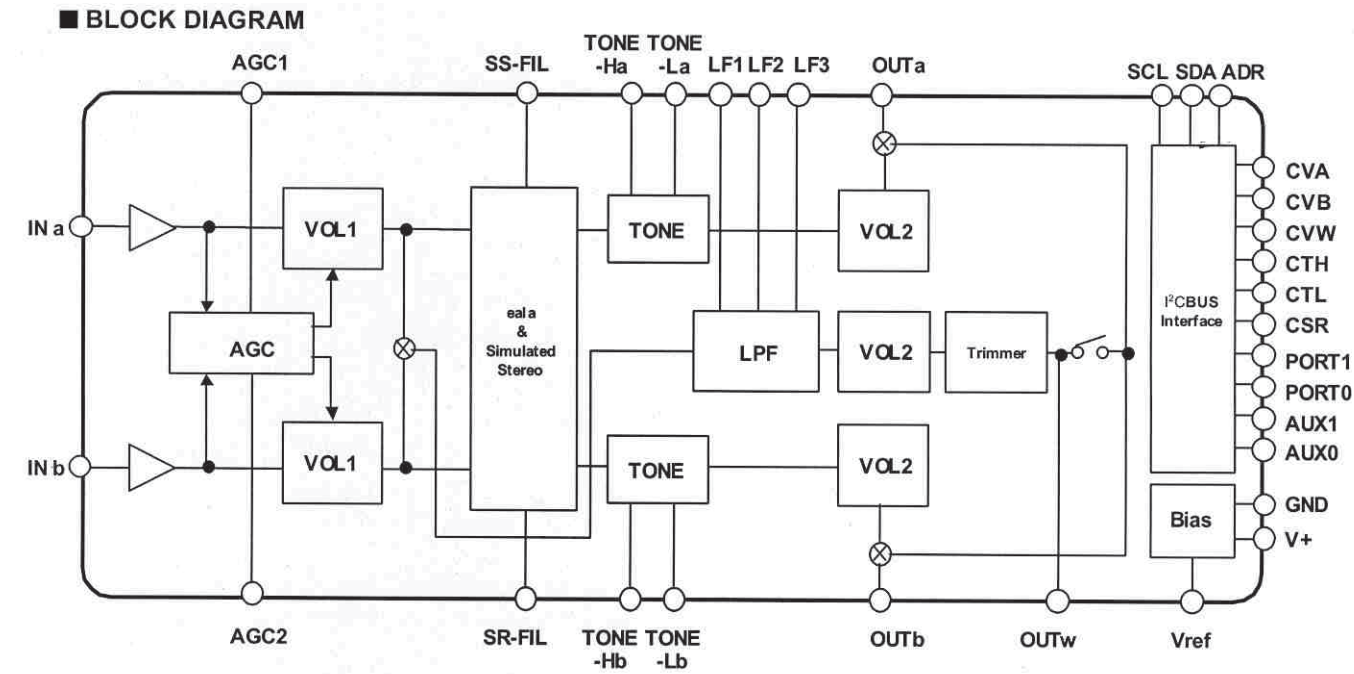
AMPLIFIER BOARD

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AUDIO PROCESSOR NJW1136L



AUDIO PROCESSOR NJW1136L

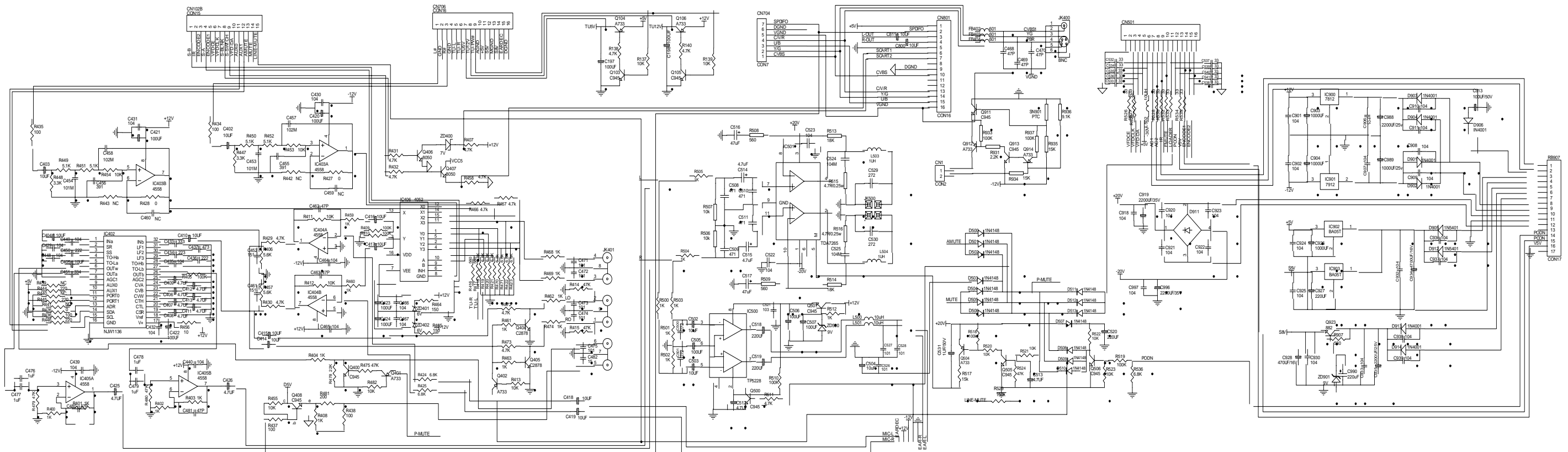
■ PIN CONFIGURATION

1	INa	INb	32
2	SR-FIL	LF1	31
3	SS-FIL	LF2	30
4	TONE-Ha	LF3	29
5	TONE-La	TONE-Hb	28
6	OUTw	TONE-Lb	27
7	OUTa	OUTb	26
8	AGC1	AGC2	25
9	AUX0	CVA	24
10	AUX1	CVB	23
11	PORT0	CVW	22
12	PORT1	CTH	21
13	ADR	CTL	20
14	SDA	CSR	19
15	SCL	Vref	18
16	GND	V+	17

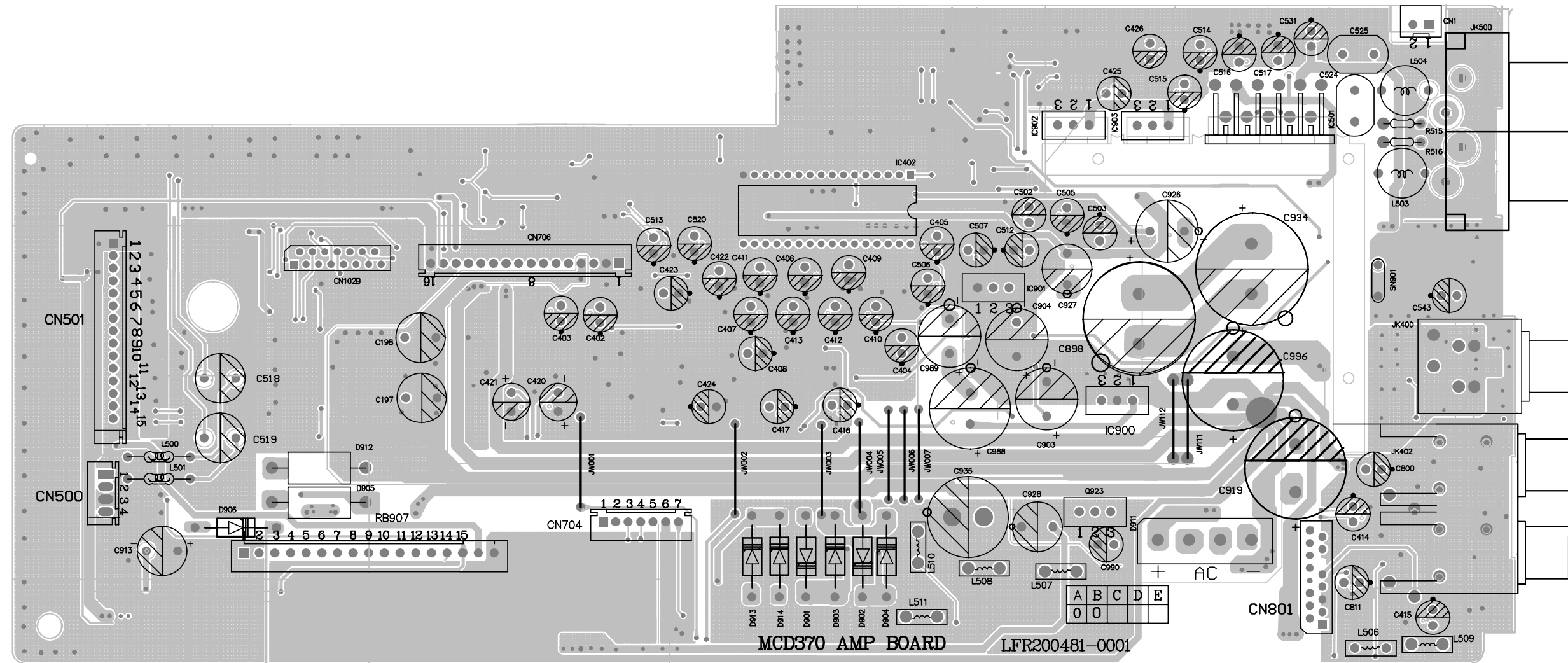
No.	Symbol	Function	No.	Symbol	Function
1	INa	Ach input terminal	17	V+	Supply voltage terminal
2	SR-FIL	Surround filter terminal	18	Vref	Reference voltage terminal
3	SS-FIL	Simulated stereo filter terminal	19	CSR	DAC output terminal for surround control
4	TONE-Ha	Ach tone control (treble) filter terminal	20	CTL	DAC output terminal for tone control (bass)
5	TONE-La	Ach tone control (bass) filter terminal	21	CTH	DAC output terminal for tone control (treble)
6	OUTw	Subwoofer output terminal	22	CVW	Bch DAC output terminal for LPF trimmer
7	OUTa	Ach output terminal	23	CVB	Bch DAC output terminal for volume and balance
8	AGC1	AGC attack and recovery time setting terminal	24	CVA	Ach DAC output terminal for volume and balance
9	AUX0 ^(*)	Auxiliary 3 values voltage output terminal (0.0V, 2.5V, 5V)	25	AGC2	AGC boost level setting terminal
10	AUX1	Auxiliary 2 values voltage output terminal (0.0V, V+)	26	OUTb	Bch output terminal
11	PORT0	Logic input terminal	27	TONE-Lb	Bch tone control (bass) filter terminal
12	PORT1	Logic input terminal	28	TONE-Hb	Bch tone control (treble) filter terminal
13	ADR	Slave address setting terminal	29	LF3	LPF filter3 terminal
14	SDA	I ² C data terminal	30	LF2	LPF filter2 terminal
15	SCL	I ² C clock terminal	31	LF1	LPF filter1 terminal
16	GND	Ground terminal	32	INb	Bch input terminal

(*) The AUX0 terminal should be connected via the protection resistance to 5V device.

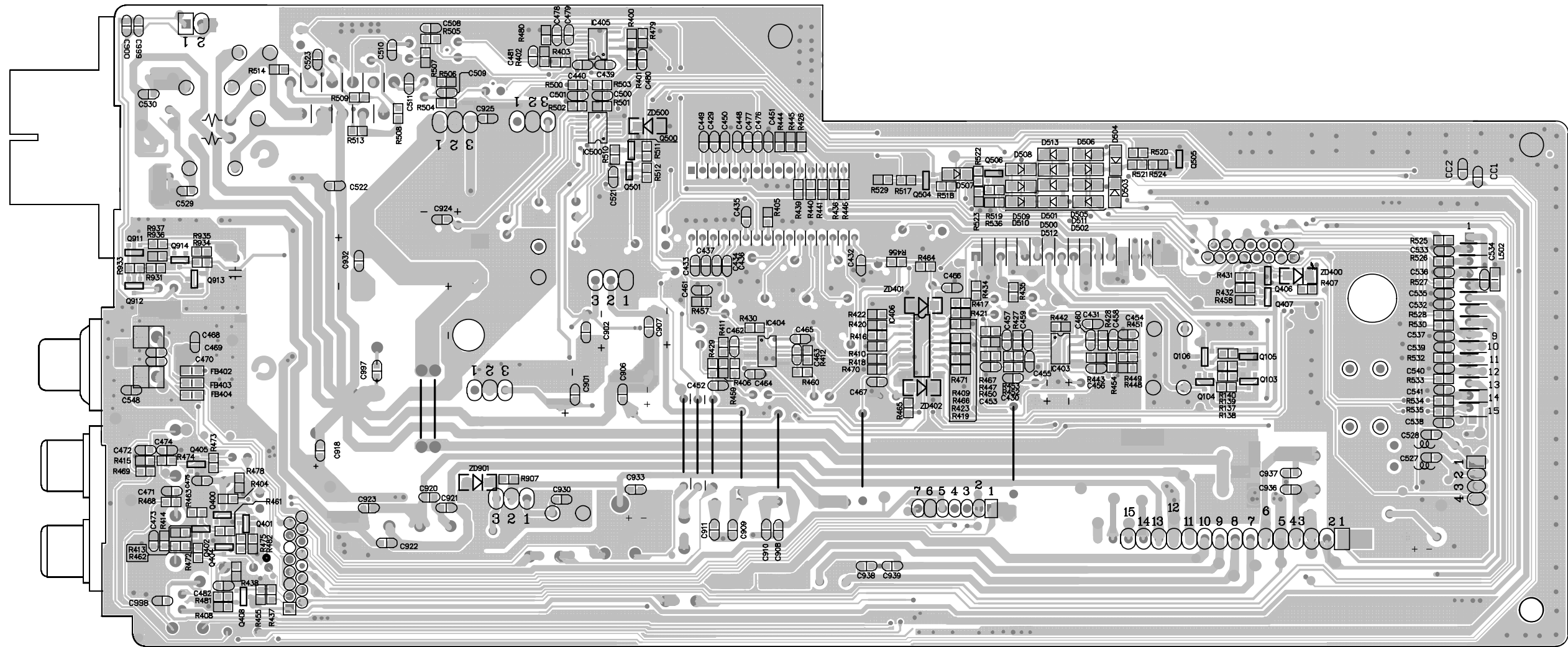
CIRCUIT DIAGRAM - AMPLIFIER BOARD



LAYOUT DIAGRAM - AMPLIFIER BOARD COMPONENT SIDE



LAYOUT DIAGRAM - AMPLIFIER BOARD SMD SIDE



ELECTRICAL PARTSLIST - AMPLIFIER BOARD**ELECTRICAL PARTSLIST - AMPLIFIER BOARD****- MISCELLANEOUS -**

CN1	9965 000 15862	CONNECTOR B2B-XH-A 2P
CN101A	9965 000 17357	CONNECTOR 15P /21
CN102B	9965 000 19416	CONNECTOR 15P /22
CN401	9965 000 20651	CON/WIRE 8P 260MM /21
CN404	9965 000 15922	CONNECTOR 9PIN /21
CN405	9965 000 20652	COND/WIRE 6P 120MM /21
CN407	9965 000 17357	CONNECTOR 15P /21
CN500	9965 000 15859	CONNECTOR 4PIN /22
CN501	9965 000 17357	CONNECTOR 15P /22
CN706	9965 000 19417	FLAT CABLE 16P 100MM /22
CN801	9965 000 19418	CONNECTOR 16P /22
CN801	9965 000 20272	CONNECTOR 6P /21
JK400	9965 000 19422	RCA+DIN JK 4P /22
JK400	9965 000 20654	RCA+DIN JK 1P RCA+4P /21
JK401	9965 000 19423	RCA JACK 6P /21
JK402	9965 000 19423	RCA JACK 6P /22
JK500	9965 000 19424	SPK JACK 4P
RB907	9965 000 19429	HOUSING 17P P=2.5MM

- RESISTORS -

SN901	9965 000 19430	TC 10KΩ 5% PA-5D-103J
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- COILS & FILTERS -

FB402	9965 000 12471	BEAD FERITE 600R at 100MHZ
FB403	9965 000 12471	BEAD FERITE 600R at 100MHZ
FB404	9965 000 12471	BEAD FERITE 600R at 100MHZ
L500	9965 000 15871	INDUCTOR 10 μH 10%
L501	9965 000 15871	INDUCTOR 10 μH 10%
L502	9965 000 19426	CHIP INDUCTOR 10μH 10%
L503	9965 000 19427	IND 1μH 10% 7.9MHZ /22
L503	9965 000 20655	RF COIL 1μH /21
L504	9965 000 19427	IND 1μH 10% 7.9MHZ /22
L504	9965 000 20655	RF COIL 1μH /21

- DIODES -

D414	9965 000 19409	BAV16W/IN4148W /21
D500	9965 000 19409	BAV16W/IN4148W /22
D501	9965 000 19409	BAV16W/IN4148W /22
D502	9965 000 19409	BAV16W/IN4148W /22
D503	9965 000 19409	BAV16W/IN4148W
D504	9965 000 19409	BAV16W/IN4148W
D505	9965 000 19409	BAV16W/IN4148W
D506	9965 000 19409	BAV16W/IN4148W
D507	9965 000 19409	BAV16W/IN4148W
D508	9965 000 19409	BAV16W/IN4148W
D509	9965 000 19409	BAV16W/IN4148W
D510	9965 000 19409	BAV16W/IN4148W
D511	9965 000 19409	BAV16W/IN4148W

- DIODES -

D512	9965 000 19409	BAV16W/IN4148W
D513	9965 000 19409	BAV16W/IN4148W
D514	9965 000 19409	BAV16W/IN4148W /21
D515	9965 000 19409	BAV16W/IN4148W /21
D901	4822 130 31438	1N4001G
D902	4822 130 31438	1N4001G
D903	4822 130 31438	1N4001G
D904	4822 130 31438	1N4001G
D905	9965 000 19419	RETCTIFIER DIODE 1N5401
D906	4822 130 31438	1N4001G
D911	4822 130 70035	RS402L
D912	9965 000 19419	RETCTIFIER DIODE 1N5401
D913	4822 130 31438	1N4001G
D914	4822 130 31438	1N4001G
D914	4822 130 31438	1N4001G
ZD400	9965 000 19431	ZENER 7.5V 5% 0.5W /22
ZD401	9965 000 19431	ZENER 7.5V 5% 0.5W /22
ZD402	9965 000 19431	ZENER 7.5V 5% 0.5W /22
ZD404	9965 000 20656	ZENER 6.8V 5% 0.5W /21
ZD405	9965 000 20656	ZENER 6.8V 5% 0.5W /21
ZD500	9965 000 19432	ZENER 9.1V 5% 0.5W
ZD901	9965 000 19432	ZENER 9.1V 5% 0.5W

- IC & TRANSISTORS -

IC401	9965 000 15886	IC RC4558D /21
IC402	9965 000 19421	IC 32P NJW1136L DIP /22
IC402	9965 000 15886	IC RC4558D /21
IC403	9965 000 15886	IC RC4558D
IC404	9965 000 15886	IC RC4558D
IC405	9965 000 15886	IC RC4558D /22
IC405	9965 000 12510	TC4052BFN /21
IC406	9965 000 12510	TC4052BFN /22
IC406	9965 000 15886	IC RC4558D /21
IC407	9965 000 15886	IC RC4558D /21
IC408	9965 000 12492	TC4053BFN /21
IC409	9965 000 20653	IC 30PIN NJW1150M /21
IC412	9965 000 15886	IC RC4558D /21
IC413	9965 000 15886	IC RC4558D /21
IC500	9965 000 17384	IC TP5228
IC501	9965 000 15892	IC TDA7265 SGS
IC900	4822 209 70084	NJM7812A
IC901	5322 209 81856	LM7912CT
IC902	9965 000 12512	BA05T ROHM
IC903	9965 000 12512	BA05T ROHM
Q103	9965 000 17448	XISTR NPN 2SC945 /22
Q104	9965 000 14175	2SA733Q,P /22
Q105	9965 000 17448	XISTR NPN 2SC945 /22
Q106	9965 000 14175	2SA733Q,P /22
Q400	9965 000 17448	XISTR NPN 2SC945 /22

- IC & TRANSISTORS -

Q401	9965 000 14175	2SA733Q,P
Q402	9965 000 14175	2SA733Q,P /22
Q402	9965 000 20268	XISTR NPN 2SC1623 /21
Q403	9965 000 20268	XISTR NPN 2SC1623 /21
Q404	9965 000 17448	XISTR NPN 2SC945 /22
Q404	9965 000 14175	2SA733Q,P /21
Q405	9965 000 17448	XISTR NPN 2SC945 /22
Q406	9965 000 17448	XISTR NPN 2SC945 /22
Q407	9965 000 17448	XISTR NPN 2SC945 /22
Q408	9965 000 17448	XISTR NPN 2SC945 /22
Q408	9965 000 20268	XISTR NPN 2SC1623 /21
Q409	9965 000 14175	2SA733Q,P /21
Q410	9965 000 14175	2SA733Q,P /21
Q412	9965 000 20268	XISTR NPN 2SC1623 /21
Q413	9965 000 20268	XISTR NPN 2SC1623 /21
Q421	9965 000 20268	XISTR NPN 2SC1623 /21
Q422	9965 000 14175	2SA733Q,P /21
Q423	9965 000 20268	XISTR NPN 2SC1623 /21
Q424	9965 000 20268	XISTR NPN 2SC1623 /21
Q425	9965 000 20268	XISTR NPN 2SC1623 /21
Q426	9965 000 20268	XISTR NPN 2SC1623 /21
Q500	9965 000 17448	XISTR NPN 2SC945 /22
Q500	9965 000 20268	XISTR NPN 2SC1623 /21
Q501	9965 000 17448	XISTR NPN 2SC945 /22
Q501	9965 000 20268	XISTR NPN 2SC1623 /21
Q504	9965 000 14175	2SA733Q,P
Q505	9965 000 17448	XISTR NPN 2SC945 /22
Q505	9965 000 20268	XISTR NPN 2SC1623 /21
Q506	9965 000 17448	XISTR NPN 2SC945 /22
Q506	9965 000 20268	XISTR NPN 2SC1623 /21
Q911	9965 000 17448	XISTR NPN 2SC945 /22
Q911	9965 000 20268	XISTR NPN 2SC1623 /21
Q912	9965 000 14175	2SA733Q,P
Q913	9965 000 17448	XISTR NPN 2SC945 /22
Q913	9965 000 20268	XISTR NPN 2SC1623 /21
Q914	9965 000 14175	2SA733Q,P
Q923	4822 130 42306	2SD882Q

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

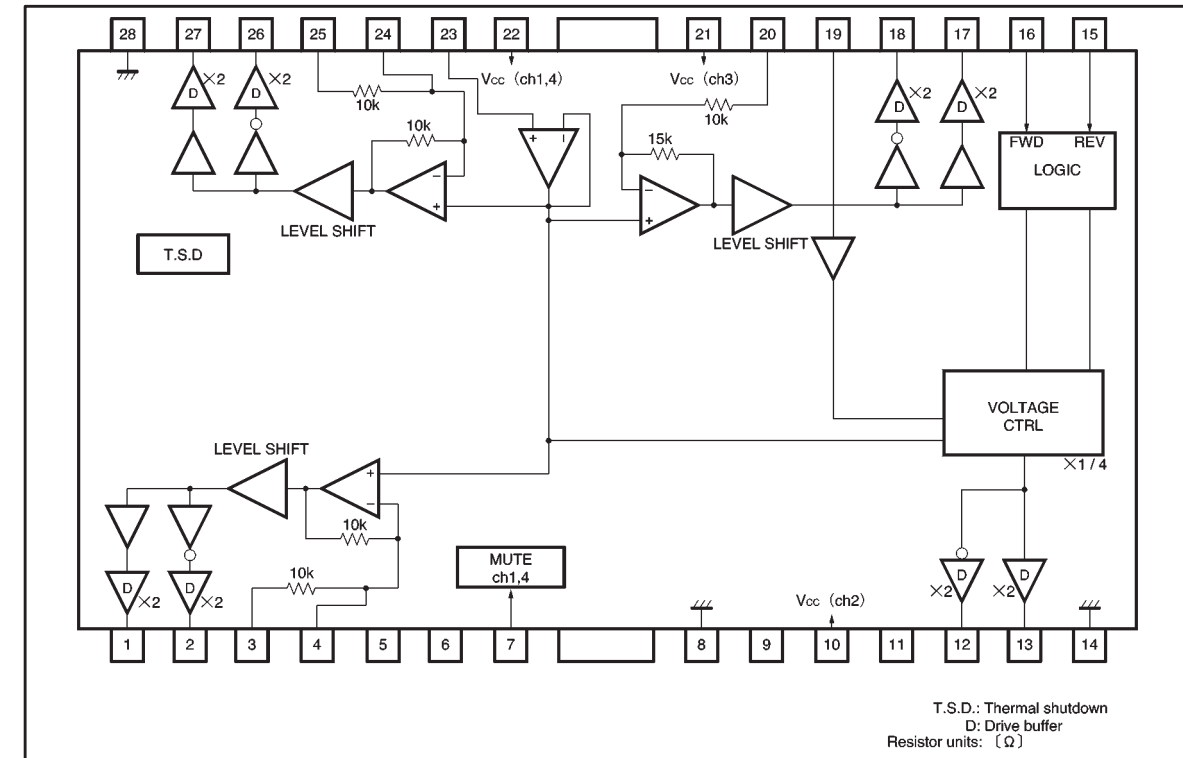
4-CHANNEL BTL DRIVER BA5937AFP

MAIN BOARD

TABLE OF CONTENTS

IC Block Diagram 9-1 to 9-11
 Circuit Diagram 9-12 to 9-13
 Layout Diagram-Component Side 9-14
 Layout Diagram-SMD Side 9-15
 Electrical parts list 9-16

Block diagram

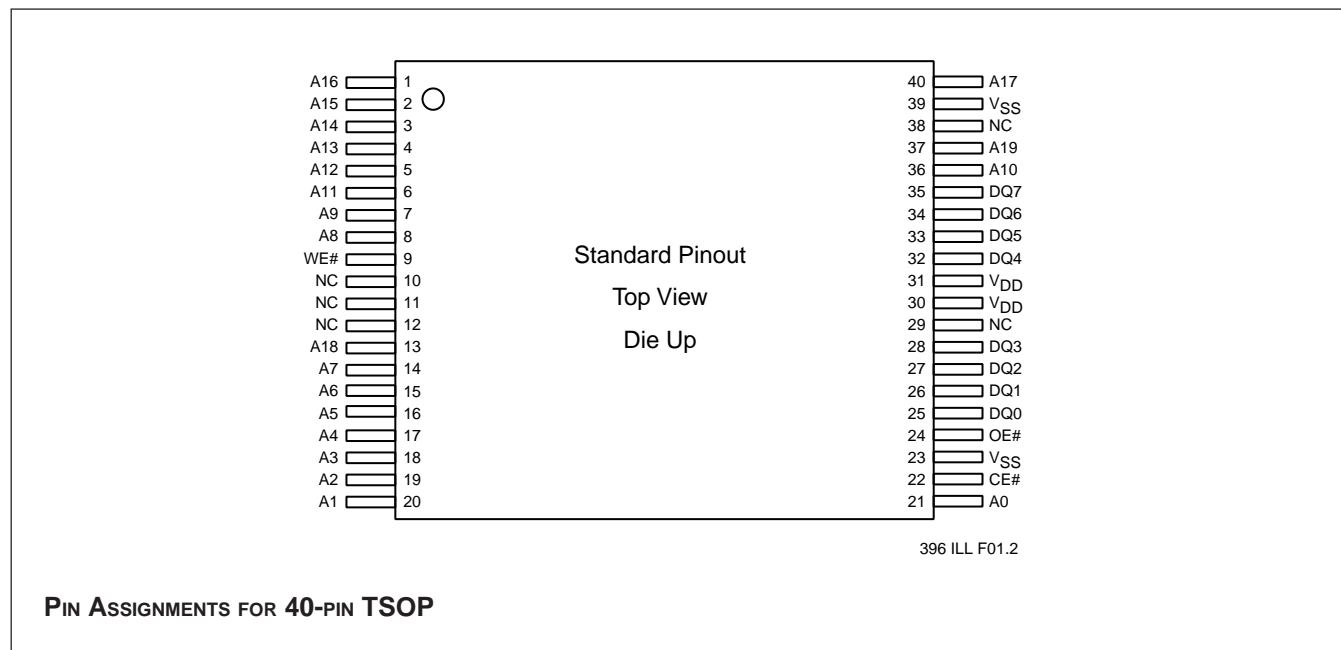
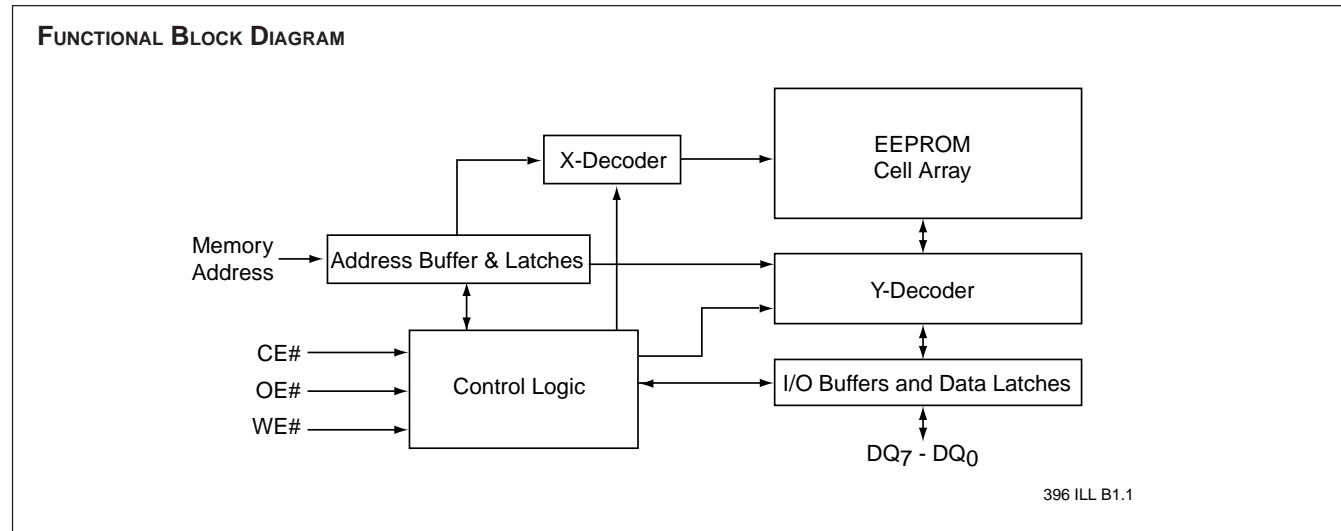


Pin descriptions

Pin No.	Pin name	Function	Pin No.	Pin name	Function
1	OUT1-1	Channel 1 negative output	15	REV	Loading motor reverse input
2	OUT1-2	Channel 1 positive output	16	FWD	Loading motor forward input
3	IN1-1	Channel 1 input	17	OUT3-1	Channel 3 negative output
4	IN1-2	Input for channel 1 gain adjustment	18	OUT3-2	Channel 3 positive output
5	N.C.	N.C.	19	LDIN	Loading motor input
6	N.C.	N.C.	20	IN3	Channel 3 input
7	MUTE	Mute control for channels 1 and 4	21	Vcc3	Vcc (channel 3)
8	GND	GND	22	Vcc1	Vcc (channels 1 and 4)
9	N.C.	N.C.	23	VrefIN	Bias amplifier input
10	Vcc2	Vcc (channel 2)	24	IN4-2	Input for channel 4 gain adjustment
11	N.C.	N.C.	25	IN4-1	Channel 4 input
12	OUT2-2	Loading motor positive output	26	OUT4-2	Channel 4 positive output
13	OUT2-1	Loading motor negative output	27	OUT4-1	Channel 4 negative output
14	GND	Substrate GND	28	GND	Substrate GND

Note 1: Positive output and negative output are the polarities with respect to the input.
 Note 2: Loading positive output and loading negative output are the polarities with respect the mode.

8M bit MULTI-PURPOSE FLASH SST39VF080

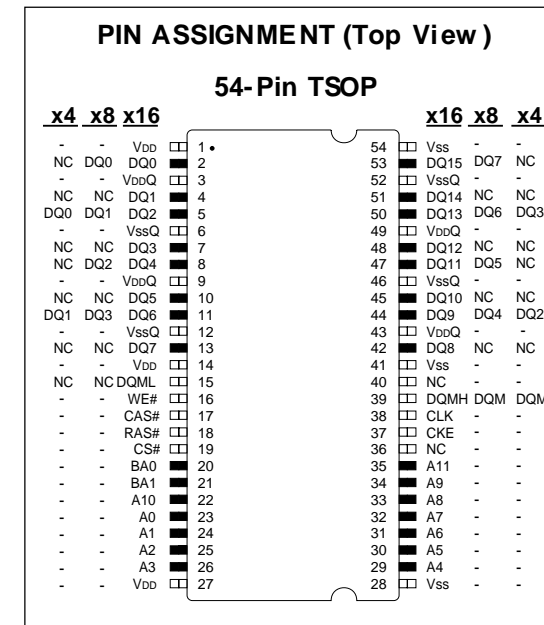


PIN DESCRIPTION

Symbol	Pin Name	Functions
A _{MS} -A ₀	Address Inputs	To provide memory addresses. During Sector-Erase A _{MS} -A ₁₂ address lines will select the sector. During Block-Erase A _{MS} -A ₁₆ address lines will select the block.
DQ ₇ -DQ ₀	Data Input/output	To output data during Read cycles and receive input data during Write cycles. Data is internally latched during a Write cycle. The outputs are in tri-state when OE# or CE# is high.
CE#	Chip Enable	To activate the device when CE# is low.
OE#	Output Enable	To gate the data output buffers.
WE#	Write Enable	To control the Write operations.
V _{DD}	Power Supply	To provide power supply voltage: 3.0-3.6V for SST39LF080/016 2.7-3.6V for SST39VF080/016
V _{SS}	Ground	
NC	No Connection	Unconnected pins.

Note: A_{MS} = Most significant address
A_{MS} = A₁₉ for SST39LF/VF080 and A₂₀ for SST39LF/VF016.

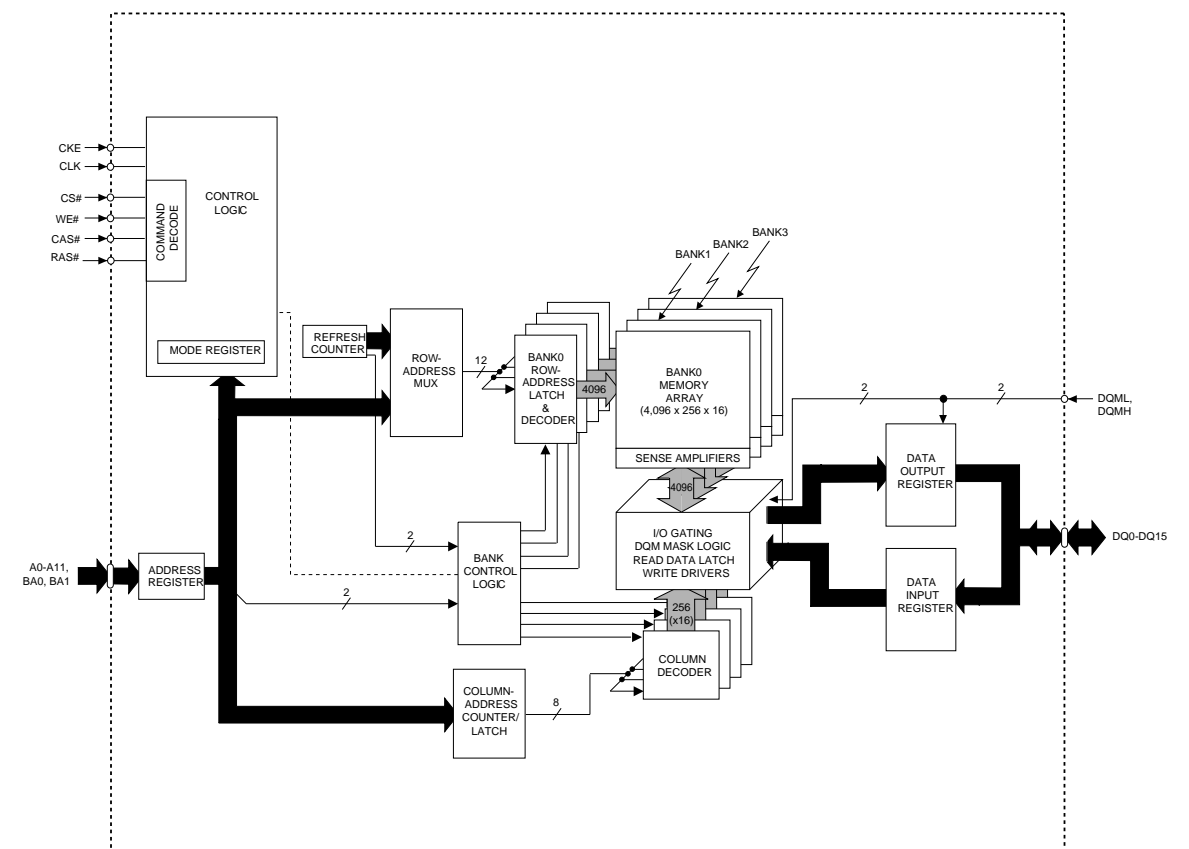
SYNCHRONOUS DRAM 4MX16Y3VTW



Note: The # symbol indicates signal is active LOW. A dash (-) indicates x8 and x4 pin function is same as x16 pin function.

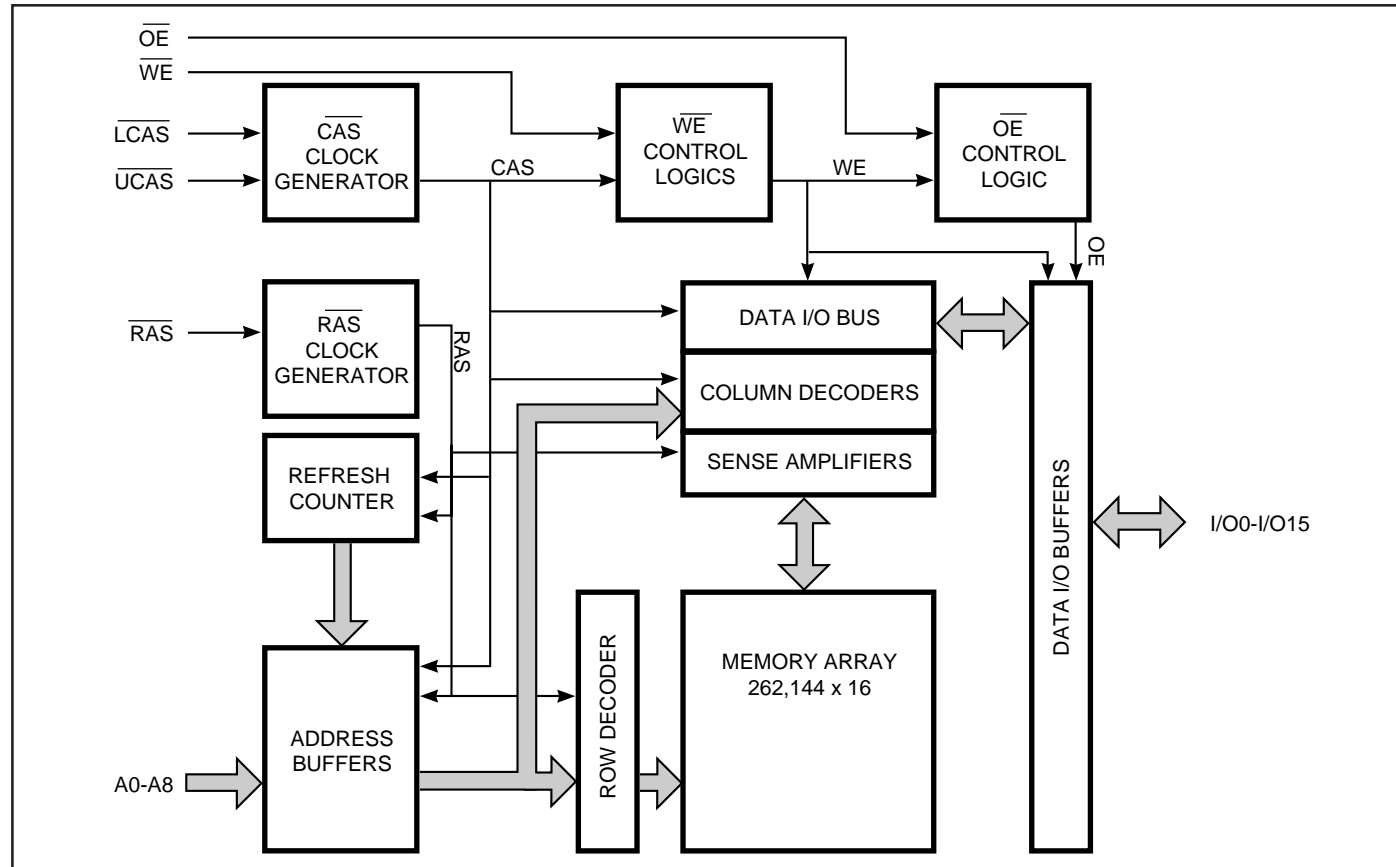
	16 Meg x 48	Meg x 84	Meg x 16
Configuration	4 Meg x 4 x 4 banks	2 Meg x 8 x 4 banks	1 Meg x 16 x 4 banks
RefreshCount	4K	4K	4K
RowAddressing	4K(A0-A11)	4K(A0-A11)	4K(A0-A11)
BankAddressing	4(BA0,BA1)	4(BA0,BA1)	4(BA0,BA1)
ColumnAddressing	1K(A0-A9)	512(A0-A8)	256(A0-A7)

FUNCTIONAL BLOCK DIAGRAM 4 Meg x 16 SDRAM



**256Kx16(4Mbit) DYNAMIC RAM
IC41LV16256**

FUNCTIONAL BLOCK DIAGRAM

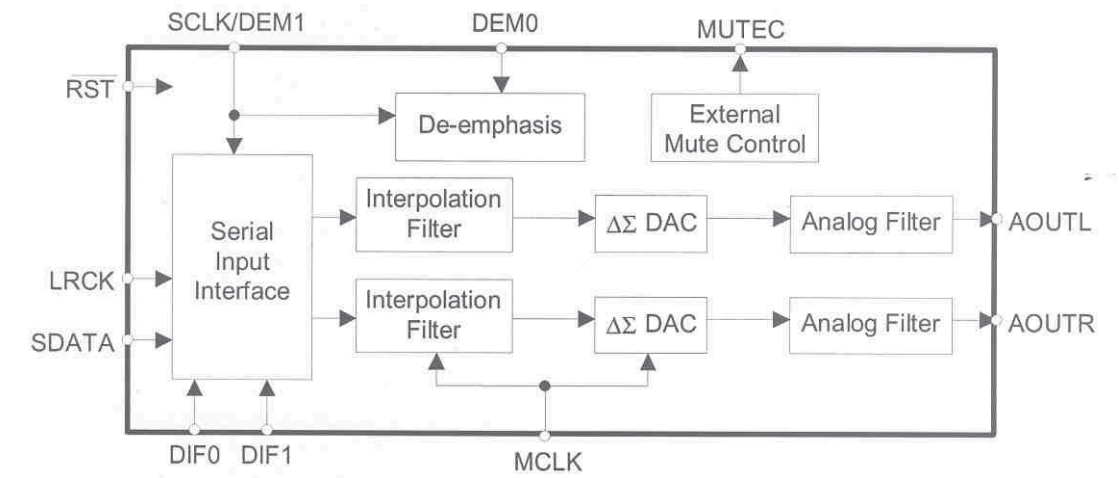


PIN DESCRIPTIONS

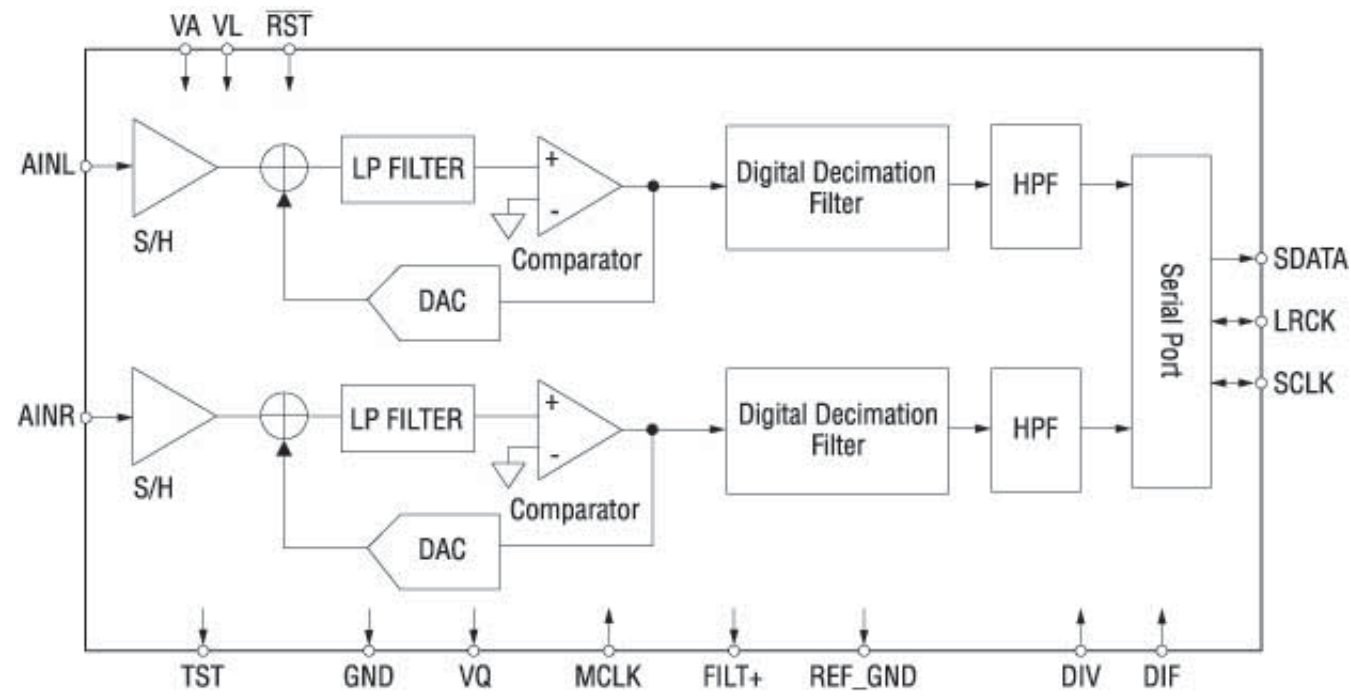
A0-A8	Address Inputs
I/O0-15	Data Inputs/Outputs
WE	Write Enable
OE	Output Enable
RAS	Row Address Strobe
UCAS	Upper Column Address Strobe
LCAS	Lower Column Address Strobe
Vcc	Power
GND	Ground
NC	No Connection

**24Bit, 192KHz 6CHANNEL D/A CONVERTER
CS4340**

BLOCK DIAGRAM



**24Bit, 96KHz STEREO A/D CONVERTER
CS5333**



**OCTAL D-TYPE FLIP-FLOP; POSITIVE EDGE-TRIGGER; 3-STATE
74HC/HCT374**

PIN DESCRIPTION

PIN NO.	SYMBOL	NAME AND FUNCTION
1	\overline{OE}	3-state output enable input (active LOW)
2, 5, 6, 9, 12, 15, 16, 19	Q_0 to Q_7	3-state flip-flop outputs
3, 4, 7, 8, 13, 14, 17, 18	D_0 to D_7	data inputs
10	GND	ground (0 V)
11	CP	clock input (LOW-to-HIGH, edge-triggered)
20	V_{CC}	positive supply voltage

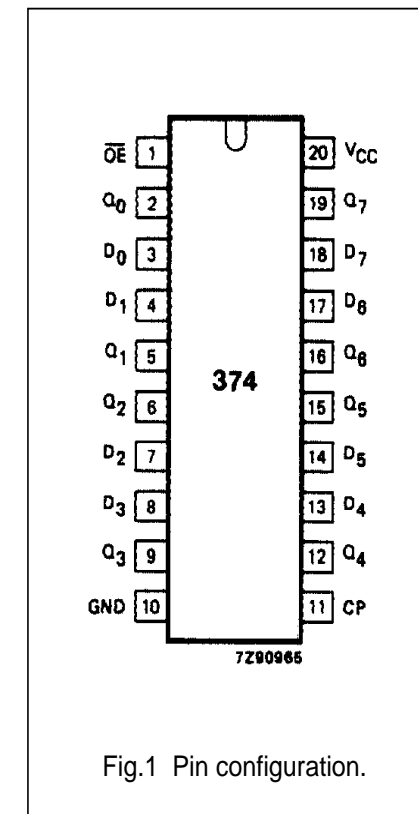


Fig.1 Pin configuration.

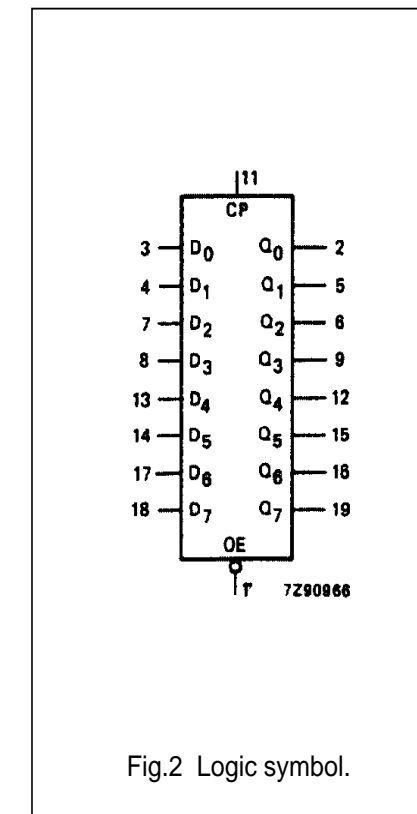


Fig.2 Logic symbol.

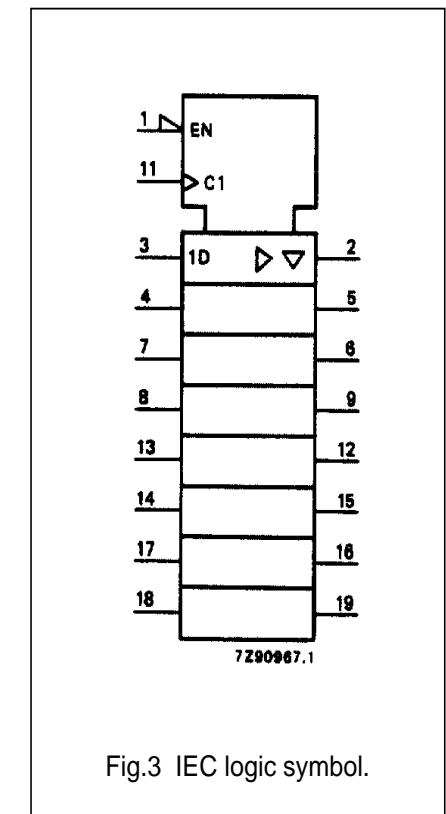
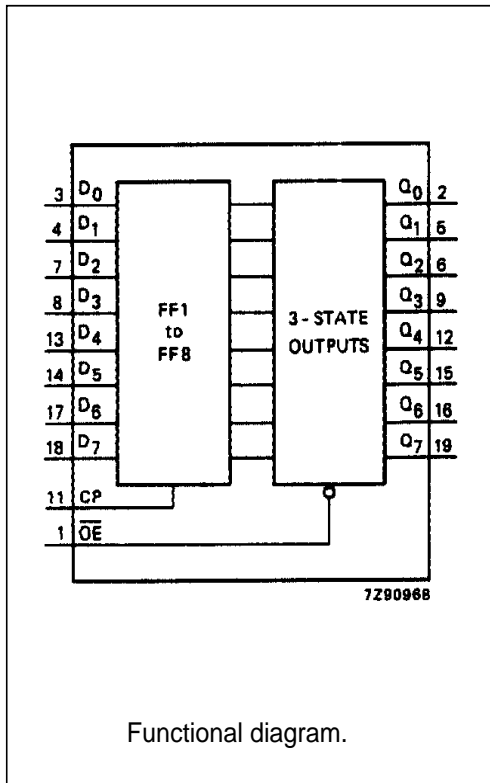


Fig.3 IEC logic symbol.

OCTAL D-TYPE FLIP-FLOP; POSITIVE EDGE-TRIGGER; 3-STATE 74HC/HCT374

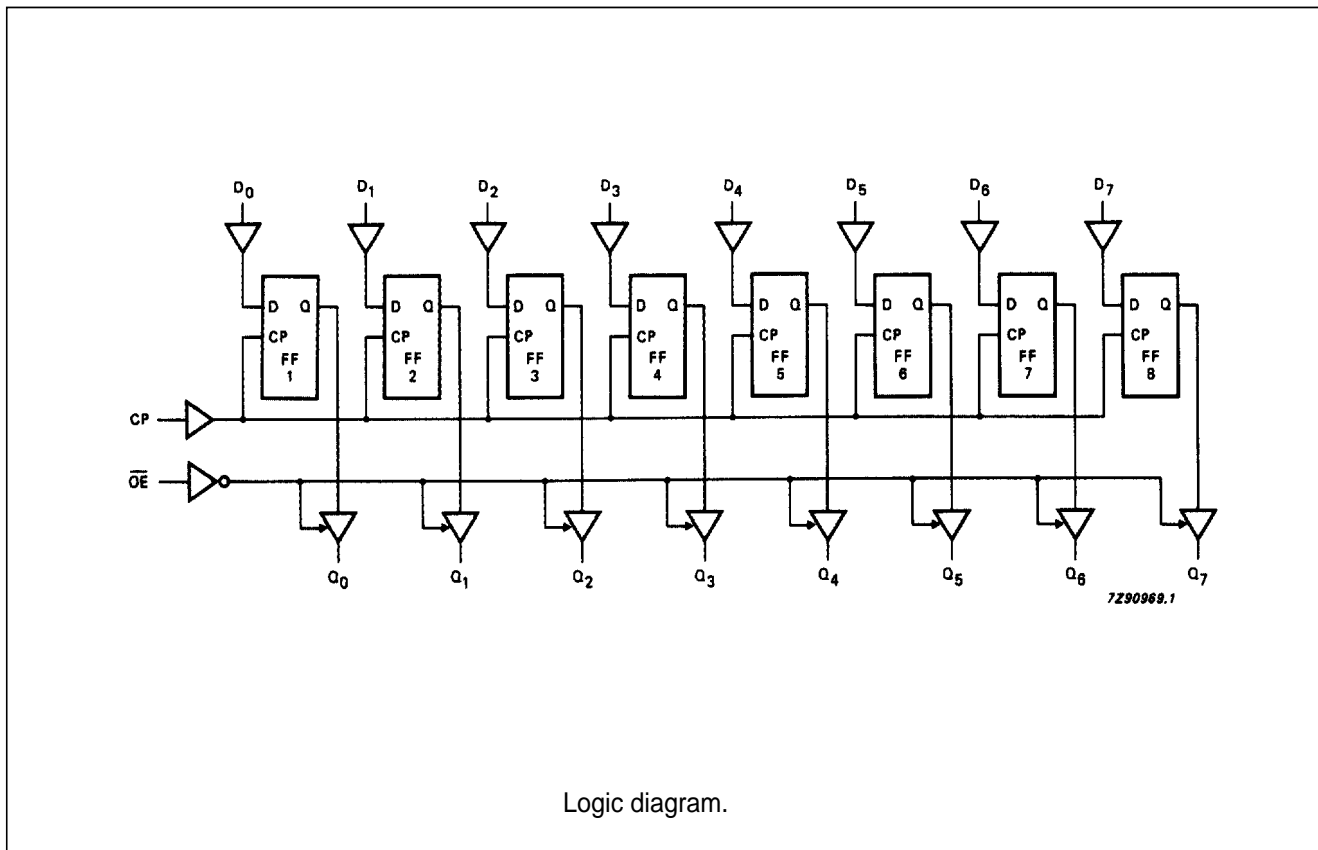


FUNCTION TABLE

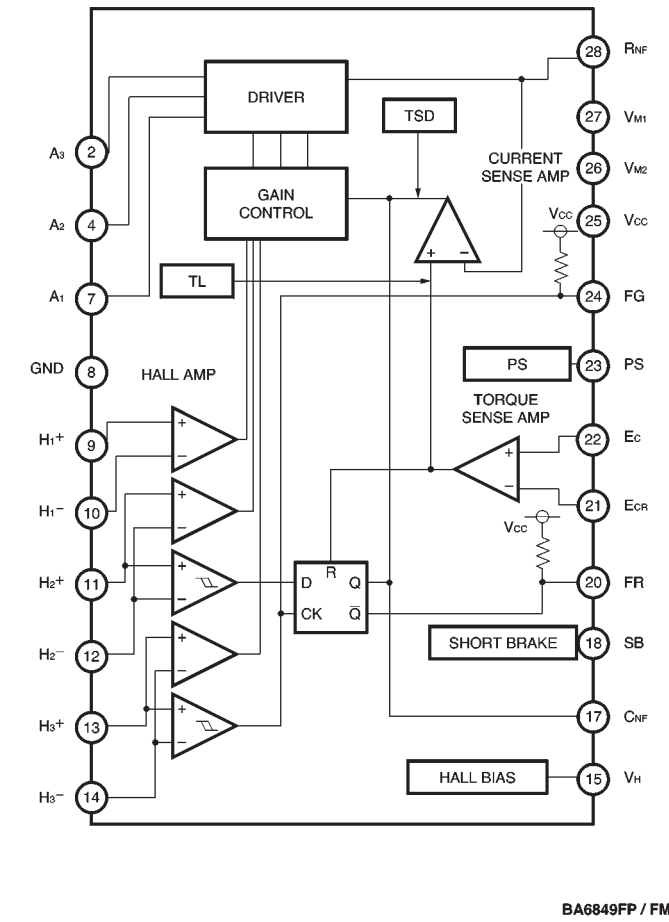
OPERATING MODES	INPUTS			INTERNAL FLIP-FLOPS	OUTPUTS Q ₀ to Q ₇
	\overline{OE}	CP	D _n		
load and read register	L	↑	l	L	L
	L	↑	h	H	H
load register and disable outputs	H	↑	l	L	Z
	H	↑	h	H	Z

Notes

- H = HIGH voltage level
h = HIGH voltage level one set-up time prior to the LOW-to-HIGH CP transition
L = LOW voltage level
l = LOW voltage level one set-up time prior to the LOW-to-HIGH CP transition
Z = high impedance OFF-state
↑ \square LOW-to-HIGH CP transition



3-PHASE MOTOR DRIVER IC W49FP(BA6849)



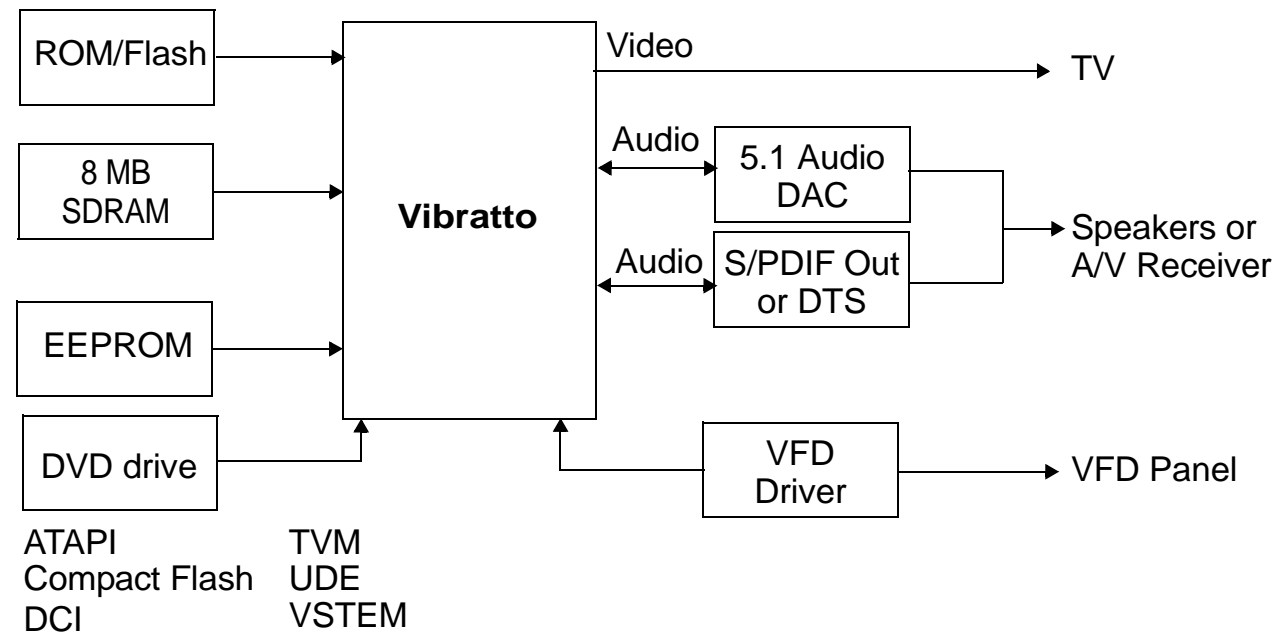
Pin descriptions

Pin No.	Pin Name	Function
2	A ₃	Output
4	A ₂	Output
7	A ₁	Output
8	GND	GND
9	H ₁ ⁺	Hall signal input
10	H ₁ ⁻	Hall signal input
11	H ₂ ⁺	Hall signal input
12	H ₂ ⁻	Hall signal input
13	H ₃ ⁺	Hall signal input
14	H ₃ ⁻	Hall signal input
15	V _H	Hall bias
17	C _{NF}	For connection of phase compensation capacitor
18	SB	Short brake
20	FR	Rotation direction detection
21	E _{CR}	Output voltage control reference
22	E _C	Output voltage control
23	PS	Power save
24	FG	FG signal output
25	V _{CC}	Power supply
26	V _{M2}	Motor power supply 2
27	V _{M1}	Motor power supply 1
28	R _{NF}	For connection of output current detection resistor
FIN	—	SUB GND

* * Missing pin numbers are N.C.

DVD PROCESSOR ES6028F

SYSTEM BLOCK DIAGRAM

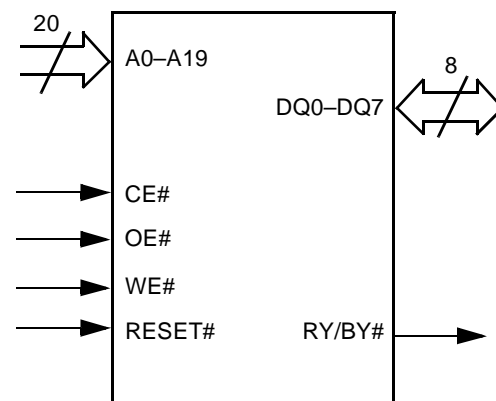


Vibratto System Block Diagram

PIN CONFIGURATION

- A0–A19 = 20 Addresses
- DQ0–DQ7 = 8 Data Inputs/Outputs
- CE# = Chip Enable
- WE# = Write Enable
- OE# = Output Enable
- RESET# = Hardware Reset Pin, Active Low
- RY/BY# = Ready/Busy Output
- V_{CC} = +5.0 V single power supply
(see Product Selector Guide for device speed ratings and voltage supply tolerances)
- V_{SS} = Device Ground
- NC = Pin Not Connected Internally

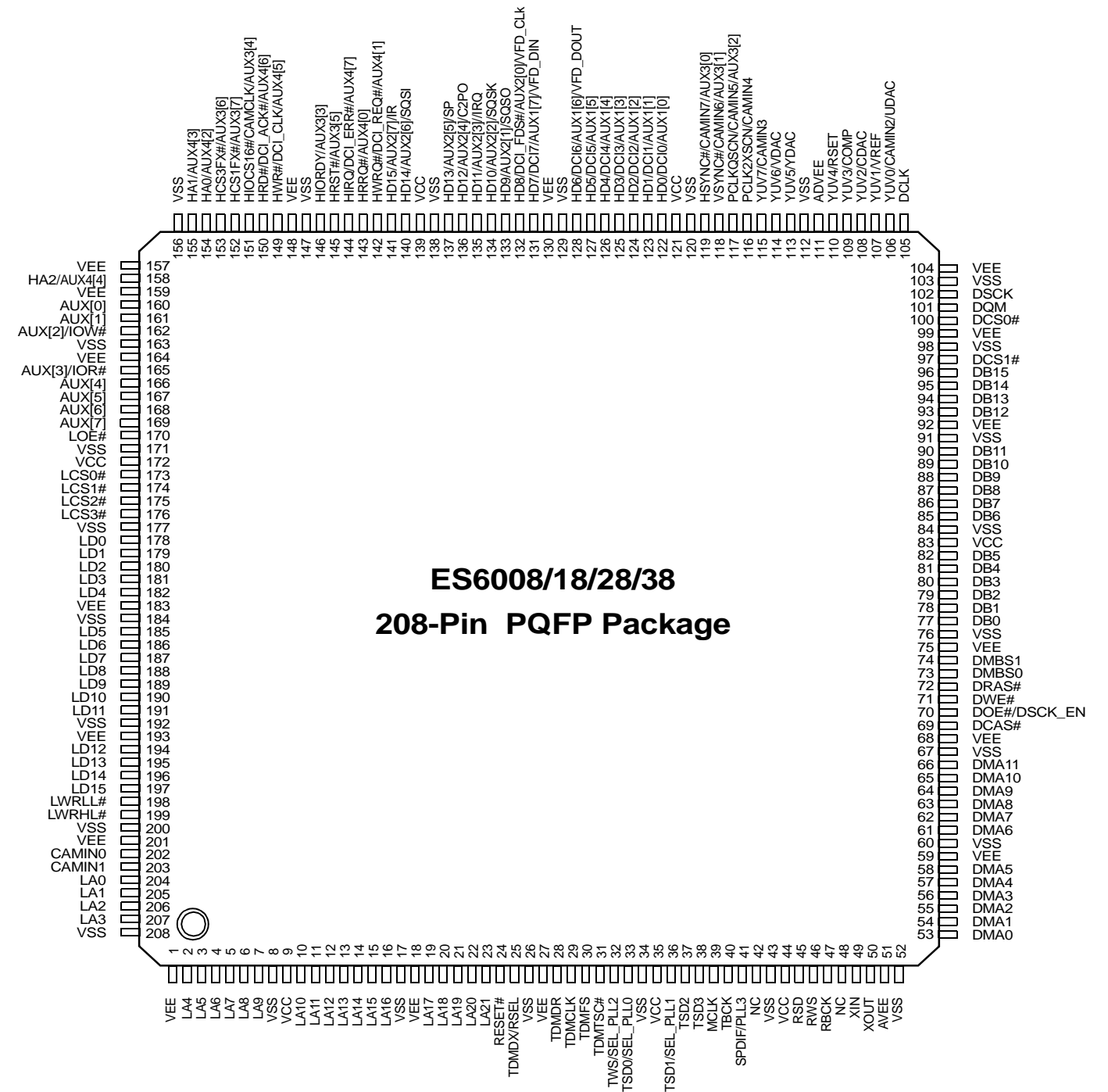
LOGIC SYMBOL



DVD PROCESSOR ES6028F

ES60X8 PINOUT DIAGRAM

The identical device pinouts for the ES6008, ES6018, ES6028 and ES6038 are shown in Figure 2.



ES60x8 Pinout

DVD PROCESSOR ES6028F

ES60x8 Pin Description (Continued)

Name	Number	I/O	Definition																									
MCLK	39	I/O	Audio master clock for audio DAC.																									
TBCK	40	O	Audio transmit bit clock.																									
SPDIF		O	S/PDIF output.																									
SEL_PLL3	41	I	Clock source select. <table border="1"> <thead> <tr> <th>SEL_PLL3</th> <th>Clock Source</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Crystal oscillator</td> </tr> <tr> <td>1</td> <td>DCLK input</td> </tr> </tbody> </table>	SEL_PLL3	Clock Source	0	Crystal oscillator	1	DCLK input																			
SEL_PLL3	Clock Source																											
0	Crystal oscillator																											
1	DCLK input																											
NC	42, 48		No connect pins. Leave open.																									
RSD	45	I	Audio receive serial data.																									
RWS	46	I	Audio receive frame sync.																									
RBCK	47	I	Audio receive bit clock.																									
XIN	49	I	Crystal input.																									
XOUT	50	O	Crystal output.																									
AVEE	51	I	Analog power for PLL.																									
DMA[11:0]	66:61, 58:53	O	DRAM address bus [11:0].																									
DCAS#	69	O	DRAM column address strobe.																									
DOE#	70	O	DRAM output enable.																									
DSCK_EN		O	DRAM clock enable.																									
DWE#	71	O	DRAM write enable.																									
DRAS#	72	O	DRAM row address strobe.																									
DMBS0	73	O	SDRAM bank select 0.																									
DMBS1	74	O	SDRAM bank select 1.																									
DB[15:0]	96:93, 90:85, 82:77	I/O	DRAM data bus [15:0].																									
DCS[1:0]#	97,100	O	SDRAM chip select [1:0].																									
DQM	101	O	Data input/output mask.																									
DSCK	102	O	Output clock to SDRAM.																									
DCLK	105	I	27 MHz clock input to PLL.																									
YUV0		O	YUV0 pixel output data.																									
CAMIN2		I	Camera input 2.																									
UDAC	106	O	Video DAC output. <table border="1"> <thead> <tr> <th>Mode</th> <th>YDAC</th> <th>UDAC</th> <th>VDAC</th> <th>CDAC</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>Y</td> <td>C</td> <td>Composite</td> <td>C</td> </tr> <tr> <td>B</td> <td>Y</td> <td>Composite</td> <td>Composite</td> <td>C</td> </tr> <tr> <td>C</td> <td>Y</td> <td>U</td> <td>Composite</td> <td>V</td> </tr> <tr> <td>D</td> <td>Y</td> <td>U</td> <td>C</td> <td>V</td> </tr> </tbody> </table> <p>Y: Luma component for YUV and Y/C processing. C: Chrominance signal for Y/C processing. U: Chrominance component signal for YUV mode. V: Chrominance component signal for YUV mode.</p>	Mode	YDAC	UDAC	VDAC	CDAC	A	Y	C	Composite	C	B	Y	Composite	Composite	C	C	Y	U	Composite	V	D	Y	U	C	V
Mode	YDAC	UDAC	VDAC	CDAC																								
A	Y	C	Composite	C																								
B	Y	Composite	Composite	C																								
C	Y	U	Composite	V																								
D	Y	U	C	V																								

DVD PROCESSOR ES6028F

ES60x8 Pin Description (Continued)

Name	Number	I/O	Definition
YUV1	107	O	YUV1 pixel output data.
VREF		I	Internal voltage reference to video DAC. Bypass to ground with 0.1 μ F capacitor.
YUV2		O	YUV2 pixel output data.
CDAC	108 _O		Video DAC output. Refer to description and matrix for UDAC pin 106.
YUV3	109	O	YUV3 pixel output data.
COMP		I	Compensation input. Bypass to ADVEE with 0.1 μ F capacitor.
YUV4	110	O	YUV4 pixel output data.
RSET		I	DAC current adjustment resistor input.
ADVEE	111	I	Analog power for video DAC.
YUV5	113	O	YUV5 pixel output data.
YDAC		O	Video DAC output. Refer to description and matrix for UDAC pin 106.
YUV6	114	O	YUV6 pixel output data.
VDAC		O	Video DAC output. Refer to description and matrix for UDAC pin 106.
YUV7	115	O	YUV7 pixel output data.
CAMIN3		I	Camera YUV 3.
PCLK2XSCN	116	I/O	27-MHz video output pixel clock.
CAMIN4		I	Camera YUV 4.
PCLKQSCN	117	O	13.5-MHz video output pixel clock.
CAMIN5		I	Camera YUV 5.
VSYNC#	118	I/O	Vertical sync, active low.
CAMIN6		I	Camera YUV 6.
HSYNC#	119	I/O	Horizontal sync, active low.
CAMIN7		I	Camera YUV 7.
HD[5:0]		I/O	Host data I/O [5:0].
DCI[5:0]	127:122	I/O	DVD channel data I/O [5:0].
AUX1[5:0]		I/O	Aux1 data I/O [5:0].
HD[6]		I/O	Host data I/O [6].
DCI[6]		I/O	DVD channel data I/O [6].
AUX1[6]	128	I/O	Aux1 data I/O [6].
VFD_DOUT		I	VFD data output.
HD[7]		I/O	Host data I/O [7].
DCI[7]		I/O	DVD channel data I/O [7].
AUX1[7]	131	I/O	Aux1 data I/O [7:0].
VFD_DIN		I	VFD data input.
HD[8]		I/O	Host data bus 8.
DCI_FDS#		I/O	DVD input sector start.
AUX2[0]	132	I/O	Aux2 data I/O 0.
VFD_CLK		I	VFD clock input.
HD[9]		I/O	Host data bus line 9.
AUX2[1]	133	I/O	Aux2 data I/O [1] when selected.
SQSQ		I	Subcode-Q data.
HD[10]		I/O	Host data bus line10.
AUX2[2]	134	I/O	Aux2 data I/O [2] when selected.
SQSK		I	Subcode-Q clock.

DVD PROCESSOR ES6028F

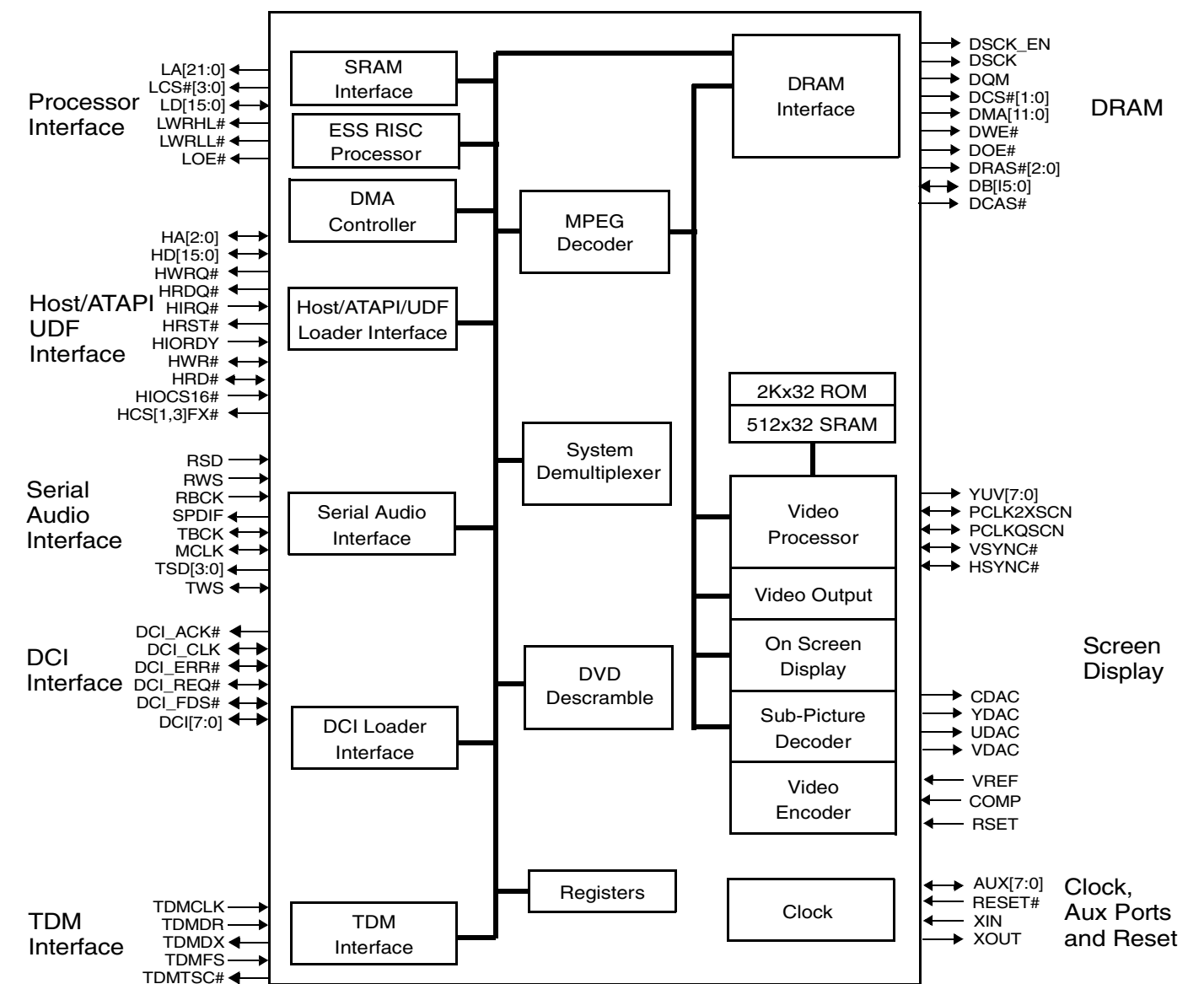
ES60x8 Pin Description (Continued)

Name	Number	I/O	Definition
HD[11]	135	I/O	Host data bus line11.
AUX2[3]		I/O	Aux2 data I/O [3] when selected.
IRQ		O	IRQ output.
HD[12]	136	I/O	Host data bus line12.
AUX2[4]		I/O	Aux2 data I/O [4] when selected.
C2PO		I	C2PO error correction flag from CD-ROM.
HD[13]	137	I/O	Host data bus line13.
AUX2[5]		I/O	Aux2 data I/O [5] when selected.
SP		I	16550 UART serial port input.
HD[14]	140	I/O	Host data bus line14.
AUX2[6]		I/O	Aux2 data I/O [6] when selected.
SQSI		I	Subcode-Q sync.
HD[15]	141	I/O	Host data bus line15.
AUX2[7]		I/O	Aux2 data I/O [7] when selected.
IR		I	IR remote control input.
HWRQ#	142	O	Host write request.
DCI_REQ#		O	DVD control interface request.
AUX4[1]		I/O	Aux4 data I/O 1.
HRRQ#	143	O	Host read request.
AUX4[0]		I/O	Aux4 data I/O 0.
HIRQ	144	I/O	Host interrupt.
DCI_ERR#		I/O	DVD channel data error.
AUX4[7]		I/O	Aux4 data I/O 7.
HRST#	145	O	Host reset.
AUX3[5]		I/O	Aux3 data I/O 5.
HIORDY	146	I	Host I/O ready.
AUX3[3]		I/O	Aux3 data I/O 3.
HWR#	149	I/O	Host write.
DCI_CLK		I/O	DVD channel data clock.
AUX4[5]		I/O	Aux4 data I/O 5.
HRD#	150	O	Host read.
DCI_ACK#		O	DVD channel data valid.
AUX4[6]		I/O	Aux4 data I/O 6.
HIOCS16#	151	I	Device 16-bit data transfer.
CAMCLK		I	Camera port pixel clock input.
AUX3[4]		I/O	Aux3 data I/O 4.
HCS1FX#	152	O	Host select 1.
AUX3[7]		I/O	Aux3 data I/O 7.
HCS3FX#	153	O	Host select 3.
AUX3[6]		I/O	Aux3 data I/O 6.
HA[2:0]	158, 155:154	I/O	Host address bus.
AUX4[4:2]		I/O	Aux4 data I/Os [4:2].
AUX[1:0]	160	I/O	Auxiliary ports 1:0.

DVD PROCESSOR ES6028F

ES60x8 Pin Description (Continued)

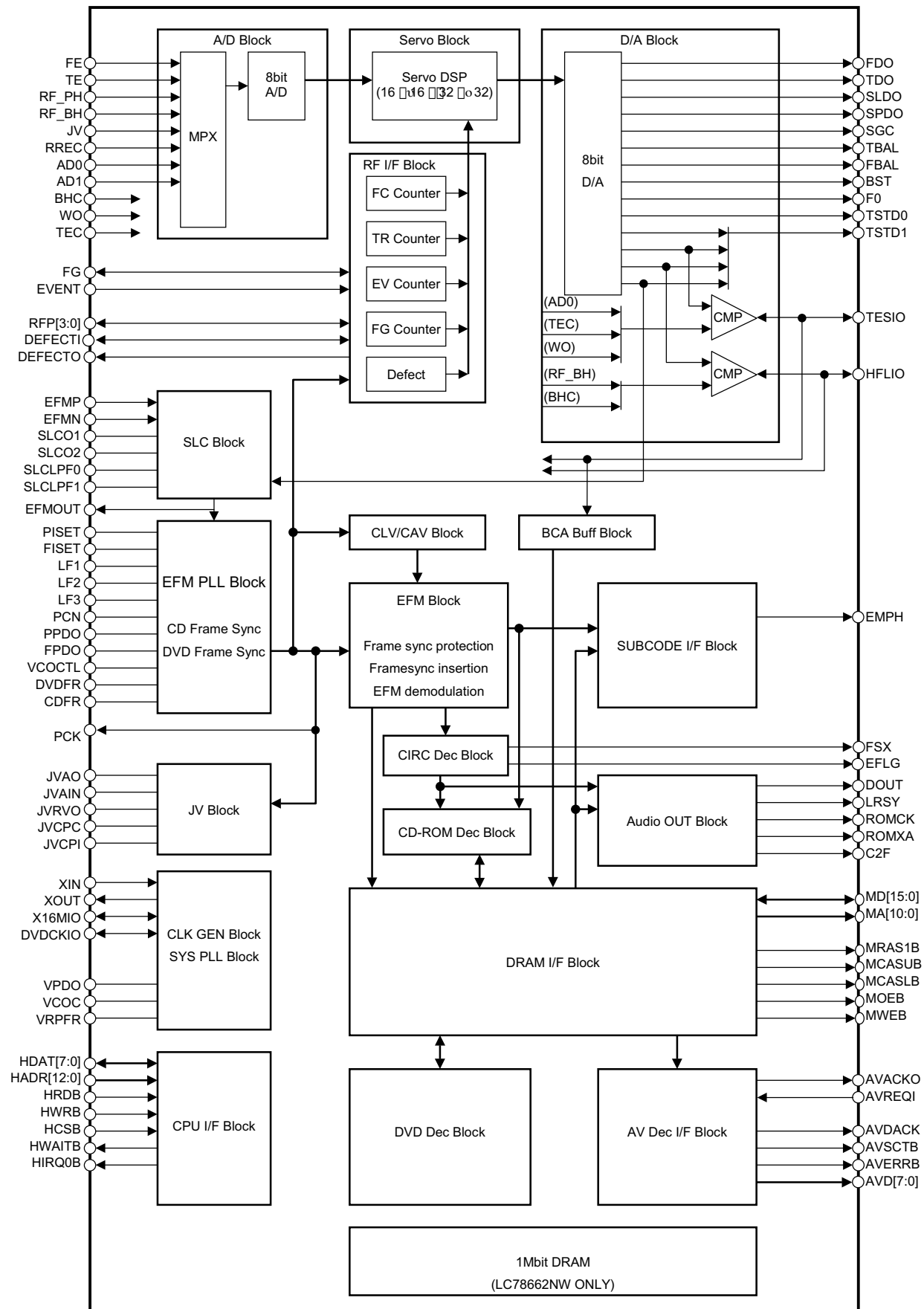
Name	Number	I/O	Definition
AUX[2]	162	I/O	Auxiliary port 2.
IOW#		O	I/O Write strobe.
AUX[3]	165	I/O	Auxiliary port 3.
IOR#		O	I/O Read strobe.
AUX[7:3]	169:166	I/O	Auxiliary ports 7:3.
LOE#	170	O	Device output enable.
LCS[3:0]#	176:173	O	Chip select [3:0].
LD[15:0]	197:194, 191:185, 182:178	I/O	EPROM device data bus.
LWRL#	198	O	Device low-byte write enable.
LWRHL#	199	O	Device high-byte write enable.
CAMIN0	202	I	Camera YUV 0.
CAMIN1	203	I	Camera YUV 1.



Vibratto Block Diagram

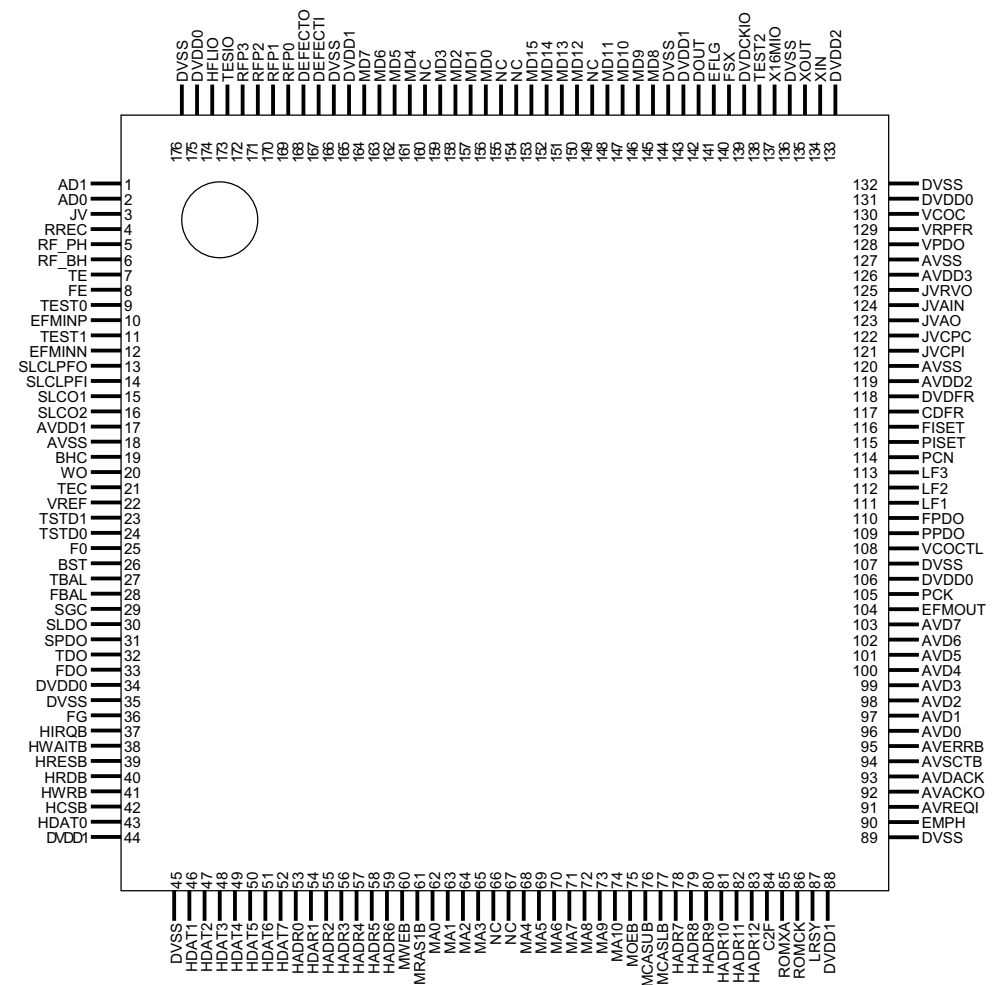
DVD FRONT END IC LC78663NRW

Block Diagram



DVD FRONT END IC LC78663NRW

Pin Assignment



- DVDD0: □ Digital system 2.5 V □
- DVDD1,3: □ Digital system 3.3 V □
- DVDD2 (x'tal): □ Digital system 3.3 V □
- AVDD1,2: □ Analog system 3.3 V □
- AVDD3: □ Analog system 2.5 V □
- DVSS: □ Digital system ground □
- AVSS: □ Analog system ground □

**DVD FRONT END IC
LC78663NRW
Pin Functions**

Pin Functions - 1

Block	No.	Pin	I/O	Supplement
A/D	1	AD1	I	Servo A/D converter – AD1
	2	AD0	I	Servo A/D converter –AD0
	3	JV	I	Servo A/D converter –JV
	4	PREC	I	Servo A/D converter –RREC
	5	RF_PH	I	Servo A/D converter –RF_PH
	6	RF_BH	I	Servo A/D converter –RF_BH
	7	TE	I	Servo A/D converter –TE
	8	FE	I	Servo A/D converter –FE
Test pin	9	TEST0	I	Test input 0 (Must be tied low during normal operation.)
SLC	10	EFMINP	I	EFM/EFM+ input
Test pins	11	TEST1	I	Test input 1 (Must be tied low during normal operation.)
	12	EFMINN	I	EFM- input
	13	SLCLPFO	-	SLC
	14	SLCLPFI	-	SLC
	15	SLCO1	-	SLC
	16	SLCO2	-	SLC
Power supply	17	AVDD1	-	A/D, D/A converter, and SLC power supply [Analog 3.3 V]
	18	AVSS	-	Analog system ground
CMP	19	BHC	I	Comparator input (Capacitor coupled to RF_BHH)
	20	WO	I	Comparator input
	21	TEC	I	Comparator input (Capacitor coupled to TE)
D/A	22	VREF	O	Servo D/A converter reference voltage
	23	TSTD1	O	Servo D/A converter
	24	TSTD0	O	Servo D/A converter: TSTD0
	25	FO	O	Servo D/A converter: F0
	26	BST	O	Servo D/A converter: BST
	27	TBAL	O	Servo D/A converter: TBAL
	28	FBAL	O	Servo D/A converter: FBAL
	29	SGC	O	Servo D/A converter: SGC
	30	SLDO	O	Servo D/A converter: SLDO
	31	SPDO	O	Servo D/A converter: SPD0
	32	TDO	O	Servo D/A converter: TD0
	33	FDO	O	Servo D/A converter: FDO
	Power supply	34	DVDDO	-
35		DVSS	-	Digital system ground
RF I/F	36	FG	I/O	FG counter input General-purpose port I/O pin 1
Microcontroller interface	37	HIRQB	O	Interrupt signal output
	38	HWAITB	O	Wait signal output
	39	HRESB	I	Servo reset input
	40	HRDB	I	Read signal input
	41	HWRB	I	Write signal input
	42	HCSB	I	Chip select signal input
Power supply	43	HDAT0	I/O	Data bus 0
	44	DVDD1	-	I/O system power supply [Digital 3.3 V]

**DVD FRONT END IC
LC78663NRW**

Pin Functions – 2

Block	No.	Pin	I/O	Supplement
Microcontroller interface	45	DVSS	-	Digital system ground
	46	HDAT1	I/O	Data bus 1
	47	HDAT2	I/O	Data bus 2
	48	HDAT3	I/O	Data bus 3
	49	HDAT4	I/O	Data bus 4
	50	HDAT5	I/O	Data bus 5
	51	HDAT6	I/O	Data bus 6
	52	HDAT7	I/O	Data bus 7
	53	HADR0	I	Address 0
	54	HADR1	I	Address 1
	55	HADR2	I	Address 2
	56	HADR3	I	Address 3
	57	HADR4	I	Address 4
58	HADR5	I	Address 5	
59	HADR6	I	Address 6	
DRAM I/F	60	MWEB	O	WE output
	61	MRAS1B	O	RAS output 1
	62	MA0	O	DRAM address bus 0
	63	MA1	O	DRAM address bus 1
	64	MA2	O	DRAM address bus 2
65	MA3	O	DRAM address bus 3	
Power supply	66	NC	-	No Connect pin
	67	NC	-	No Connect pin
DRAM I/F	68	MA4	O	DRAM address bus 4
	69	MA5	O	DRAM address bus 5
	70	MA6	O	DRAM address bus 6
	71	MA7	O	DRAM address bus 7
	72	MA8	O	DRAM address bus 8
	73	MA9	O	DRAM address bus 9
	74	MA10	O	DRAM address bus 10
	75	MOEB	O	OE output
	76	MCASUB	O	CAS output (upper byte)
	77	MCASLB	O	CAS output (lower byte)
Microcontroller interface	78	HADR7	I	Address 7
	79	HADR8	I	Address 8
	80	HADR9	I	Address 9
	81	HADR10	I	Address 10
	82	HADR11	I	Address 11
	83	HADR12	I	Address 12 Buffer memory access select [MCSB]
CD data	84	C2F	O	C2 flag output Monitor pin 4
	85	ROMXA	O	CD data output Monitor pin 3
	86	ROMCK	O	CD data output shift clock output Monitor pin 2
	87	LRSY	O	CD data output L/R clock output Monitor pin 1
Power supply	88	DVDD1	-	I/O system power supply [Digital 3.3 V]
	89	DVSS	-	Digital system ground
CD data	90	EMPH	O	Deemphasis monitor Monitor pin 0

DVD FRONT END IC LC78663NRW

Pin Functions - 3

Block	No.	Pin	I/O	Supplement
AV data I/F	91	AVREQI	I	AV data request flag input
	92	AVACKO	O	AV data read strobe output
	93	AVDACK	O	AV data read output
	94	AVSCTB	O	AV output sector synchronization output
	95	AVERRB	O	AV data reliability flag output
	96	AVD0	O	AV data bus 0
	97	AVD1	O	AV data bus 1
	98	AVD2	O	AV data bus 2
	99	AVD3	O	AV data bus 3
	100	AVD4	O	AV data bus 4
	101	AVD5	O	AV data bus 5
	102	AVD6	O	AV data bus 6
	103	AVD7	O	AV data bus 7
RF I/F	104	EFMOUT	O	EFM binarized signal output
	105	PCK	O	EFM playback signal shift clock output
Power supply	106	DVDDO	-	Internal logic system power supply [Digital 2.5 V]
	107	DVSS	-	Digital system ground
EFM PLL	108	VCOCTL	-	VCO filter connection
	109	PPDO	-	Phase comparator filter connection
	110	FPDO	-	Frequency comparator filter connection
	111	LF1	-	Filter connection 1
	112	LF2	-	Filter connection 2
	113	LF3	-	Filter connection 3
	114	PCN	-	Voltage monitor (Phase comparator charge pump PCH control voltage)
	115	PISET	-	Phase comparator constant current charge pump current setting
	116	FISET	-	Frequency comparator constant current charge pump current setting
	117	CDFR	-	EFM data recovery PLL VCO oscillator range setting [CD]
118	DVDFR	-	EFM data recovery PLL VCO oscillator range setting [DVD]	
Power supply	119	AVDD2	-	EFM PLL JV power supply [Analog 3.3 V]
	120	AVSS	-	Analog system ground
JV	121	JVCPI	-	JV
	122	JVCPC	-	JV
	123	JVAO	O	EFM data recovery PLL clock jitter output
	124	JVAIN	-	JV
	125	JVRVO	-	JV
Power supply	126	AVDD3	-	System PLL power supply [Analog 2.5 V]
	127	AVSS	-	Analog system ground
SYSTEM CLK	128	VPDO	-	System PLL filter connection
	129	VRPFR	-	System PLL VCO oscillator range setting
	130	VCOC	-	System PLL filter connection
Power supply	131	DVDDO	-	Internal logic system power supply [Digital 2.5 V]
	132	DVSS	-	Digital system ground
	133	DVDD2	-	Oscillator circuit power supply [Digital 3.3 V]
SYSTEM CLK	134	XIN	I	Oscillator circuit input
	135	XOUT	O	Oscillator circuit output
Power supply	136	DVSS	-	Digital system ground
SYSTEM CLK	137	X16MIO	I/O	External 16 MHz I/O
	138	TEST2	I	Test input 2 (This input must be tied low.)
	139	DVDCKIO	I/O	Internal DVD clock I/O
Monitor	140	FSX	O	CD single frame sync signal Monitor pin 6
	141	EFLG	O	Error correction C1 and C2 correction state monitor Monitor pin 5
CD data	142	DOUT	O	Audio EIAJ data output Monitor pin 7
Power supply	143	DVDD1	-	I/O system power supply [Digital 3.3 V]
	144	DVSS	-	Digital system ground

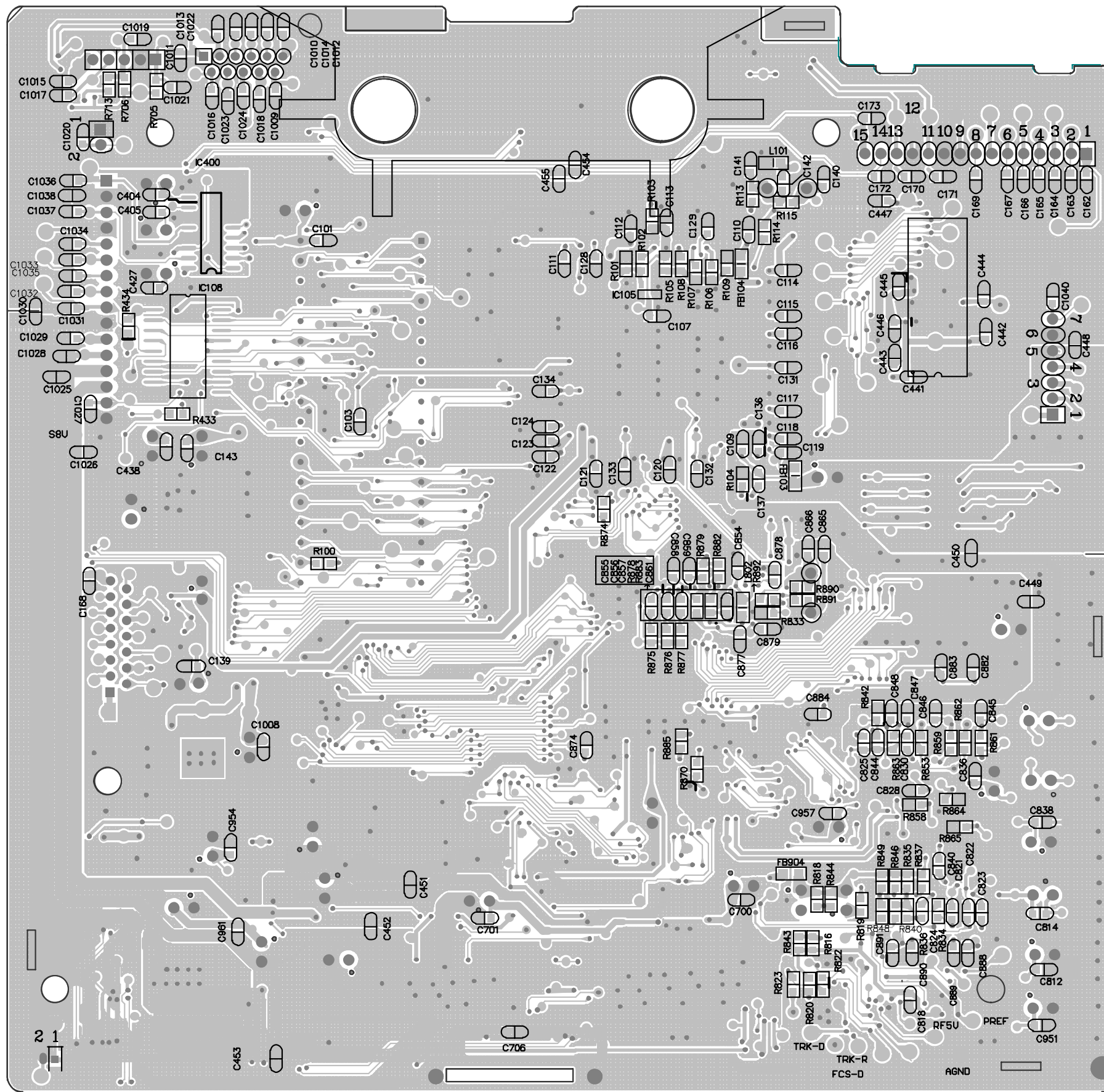
DVD FRONT END IC LC78663NRW

Pin Functions - 4

Block	No.	Pin	I/O	Supplement
DRAM I/F	145	MD8	I/O	DRAM data bus 8
	146	MD9	I/O	DRAM data bus 9
	147	MD10	I/O	DRAM data bus 10
	148	MD11	I/O	DRAM data bus 11
Power supply	149	NC	-	No Connect pin
DRAM I/F	150	MD12	I/O	DRAM data bus 12
	151	MD13	I/O	DRAM data bus 13
	152	MD14	I/O	DRAM data bus 14
	153	MD15	I/O	DRAM data bus 15
Power supply	154	NC	-	No Connect pin
	155	NC	-	No Connect pin
DRAM I/F	156	MD0	I/O	DRAM data bus 0
	157	MD1	I/O	DRAM data bus 1
	158	ND2	I/O	DRAM data bus 2
	159	MD3	I/O	DRAM data bus 3
Power supply	160	NC	-	No Connect pin
	161	MD4	I/O	DRAM data bus 4
DRAM I/F	162	MD5	I/O	DRAM data bus 5
	163	MD6	I/O	DRAM data bus 6
	164	MD7	I/O	DRAM data bus 7
	Power supply	165	DVDD1	-
166		DVSS	-	Digital system ground
	167	DEFECT1	I/O	Defect signal input General-purpose port I/O pin 0
	168	DEFECT0	O	Defect signal output
RF I/F	169	RFP0	I/O	General-purpose RF I/O 0 WRQ output
	170	RFP1	I/O	General-purpose RF I/O 1
	171	RFP2	I/O	General-purpose RF I/O 2 HBUSYB output
	172	RFP3	I/O	General-purpose RF I/O 3 HFBUSYB output Event counter input
	173	TEST0	I/O	Tracking error signal I/O
	174	HFLI0	I/O	Mirror detection signal I/O
Power supply	175	DVDD0	-	Internal logic system power supply [Digital 2.5 V]
	176	DVSS	-	Digital system ground

DVDD0: 4 pins: Digital system 2.5 V power supply: Logic block
 DVDD1: 4 pins: Digital system 3.3 V power supply: I/O pin power supply
 DVDD2: 1 pin: Digital system 3.3 V power supply: Oscillator circuit power supply
 AVDD1: 1 pin: Analog system 3.3 V power supply: A/D and D/A converters, SLC
 AVDD2: 1 pin: Analog system 3.3 V power supply: EFM PLL and JV
 AVDD3: 1 pin: Analog system 2.5 V power supply: System PLL
 DVSS: 12 pins: Digital system ground
 AVSS: 3 pins: Analog system ground

LAYOUT DIAGRAM - MAIN BOARD SMD SIDE



ELECTRICAL PARTSLIST - MAIN BOARD**- MISCELLANEOUS -**

CN101A	9965 000 17357	CONNECTOR 15P
CN700	9965 000 15898	CONNECTOR 2PIN
CN701	9965 000 19381	CONNECTOR 2P
CN702	9965 000 19382	CONNECTOR 11P
CN703	9965 000 18028	CONNECTOR 5P /21
CN704	9965 000 17358	CONNECTOR 7P /22
CN705	9965 000 19382	CONNECTOR 11P /22
CN706	9965 000 15901	CONNECTOR 6P /21
CN707	9965 000 15858	CONNECTOR 16P /22
CN803	9965 000 19383	CONNECTOR 24P

- RESISTORS -

RA101	△ 9965 000 12486	RES ARRAY 4*33Ω 1/10W 5%
RA102	△ 9965 000 12486	RES ARRAY 4*33Ω 1/10W 5%
RA103	△ 9965 000 12486	RES ARRAY 4*33Ω 1/10W 5%
RA104	△ 9965 000 12487	RES ARRAY 4*10Ω 1/10W 5%
RA105	△ 9965 000 12487	RES ARRAY 4*10Ω 1/10W 5%
RA106	△ 9965 000 12487	RES ARRAY 4*10Ω 1/10W 5%
RA107	△ 9965 000 12486	RES ARRAY 4*33Ω 1/10W 5% /21
RA117	△ 9965 000 12488	RES ARRAY 4*4.7KΩ 1/10W 5%
RA118	△ 9965 000 12488	RES ARRAY 4*4.7KΩ 1/10W 5%
RA801	△ 9965 000 12487	RES ARRAY 4*10Ω 1/10W 5%
RA802	△ 9965 000 12487	RES ARRAY 4*10Ω 1/10W 5%
RA803	△ 9965 000 12487	RES ARRAY 4*10Ω 1/10W 5%

- COILS & FILTERS -

FB101	9965 000 12471	BEAD FERITE 600Ω at 100MHz
FB102	9965 000 12471	BEAD FERITE 600Ω at 100MHz
FB103	9965 000 12471	BEAD FERITE 600Ω at 100MHz
FB104	9965 000 12471	BEAD FERITE 600Ω at 100MHz
FB105	9965 000 12471	BEAD FERITE 600Ω at 100MHz /21
FB400	9965 000 12471	BEAD FERITE 600Ω at 100MHz
FB401	9965 000 12471	BEAD FERITE 600Ω at 100MHz
FB402	9965 000 12471	BEAD FERITE 600Ω at 100MHz /21
FB901	9965 000 12471	BEAD FERITE 600Ω at 100MHz
FB902	9965 000 12471	BEAD FERITE 600Ω at 100MHz
FB903	9965 000 12471	BEAD FERITE 600Ω at 100MHz
FB904	9965 000 12471	BEAD FERITE 600Ω at 100MHz
L102	9965 000 18025	2.4 μH 5%
L103	9965 000 18025	2.4 μH 5%
L104	9965 000 18025	2.4 μH 5%
L105	9965 000 18025	2.4 μH 5%
L802	9965 000 12471	BEAD FERITE 600Ω at 100MHz
XL101	9965 000 17371	27.0000MHZ HC-49US +/-20PPM
XL801	9965 000 19396	CRYSTAL 16.9344MHZ +/-20PPM

- DIODES -

ZD101	9965 000 19397	CHIP ZENER 5.6V 5% 0.5W
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- DIODES -

ZD102	9965 000 19397	CHIP ZENER 5.6V 5% 0.5W
ZD103	9965 000 19397	CHIP ZENER 5.6V 5% 0.5W
ZD104	9965 000 19397	CHIP ZENER 5.6V 5% 0.5W
ZD105	9965 000 19397	CHIP ZENER 5.6V 5% 0.5W
ZD106	9965 000 19397	CHIP ZENER 5.6V 5% 0.5W
ZD107	9965 000 19397	CHIP ZENER 5.6V 5% 0.5W
ZD108	9965 000 19397	CHIP ZENER 5.6V 5% 0.5W

- IC & TRANSISTORS -

IC101	9965 000 19384	IC 40P SST39VF080 3.3V
IC102	9965 000 12494	74HC374 /21
IC103	9965 000 12494	74HC374
IC104	9965 000 20294	IC 16PIN SN74F157A
IC105	9965 000 15890	IC IMP809 SOT23 2.93V
IC106	9965 000 18026	IC 208P ES6028FW
IC107	9965 000 15884	IC AT24C02N-10SI-2.7
IC108	9965 000 12494	74HC374
IC110	9965 000 12490	CS4360KZ /21
IC114	9965 000 15887	IC RT9164-33CLR
IC115	9965 000 19385	IC 4P B1117N
IC400	9965 000 19386	IC 16P CS4340 /22
IC401	9965 000 12499	SYNCHRO. DRAM 4MX16Y3V
IC402	9322 190 52668	IC SM CS5333-KZ /21
IC700	9965 000 19387	IC 64P LA9703W SQFP
IC803	9965 000 19388	IC 176P LC78663NRW
IC804	9965 000 19389	IC 40P IC41LV16256-35T
IC807	9965 000 19390	IC 14P 74HC32D SOT108
IC808	9965 000 19391	IC 14P SN74HC14NS
IC810	9965 000 19392	IC 3P REG1117 3.3V /22
IC810	9965 000 15887	IC RT9164-33CLR /21
Q403	9965 000 17448	XISTR NPN 2SC945 /22
Q700	9965 000 19393	XISTR NPN 2SC2812N 2204
Q701	9965 000 19393	XISTR NPN 2SC2812N 2204
Q702	9965 000 19393	XISTR NPN 2SC2812N 2204
Q801	9965 000 19394	XISTR PNP 2SA1179N 2204
Q802	9965 000 19394	XISTR PNP 2SA1179N 2204
Q803	9965 000 19393	XISTR NPN 2SC2812N 2204
Q804	9965 000 19393	XISTR NPN 2SC2812N 2204
Q805	9965 000 19393	XISTR NPN 2SC2812N 2204
Q806	9965 000 19393	XISTR NPN 2SC2812N 2204
Q808	9965 000 19393	XISTR NPN 2SC2812N /21
Q903	9965 000 17448	XISTR NPN 2SC945 /22
Q903	9965 000 20268	XISTR NPN 2SC1623 /21
U700	9322 187 64668	IC SM BA6849FP /22
U701	9965 000 19395	IC 28P BA5937AFP

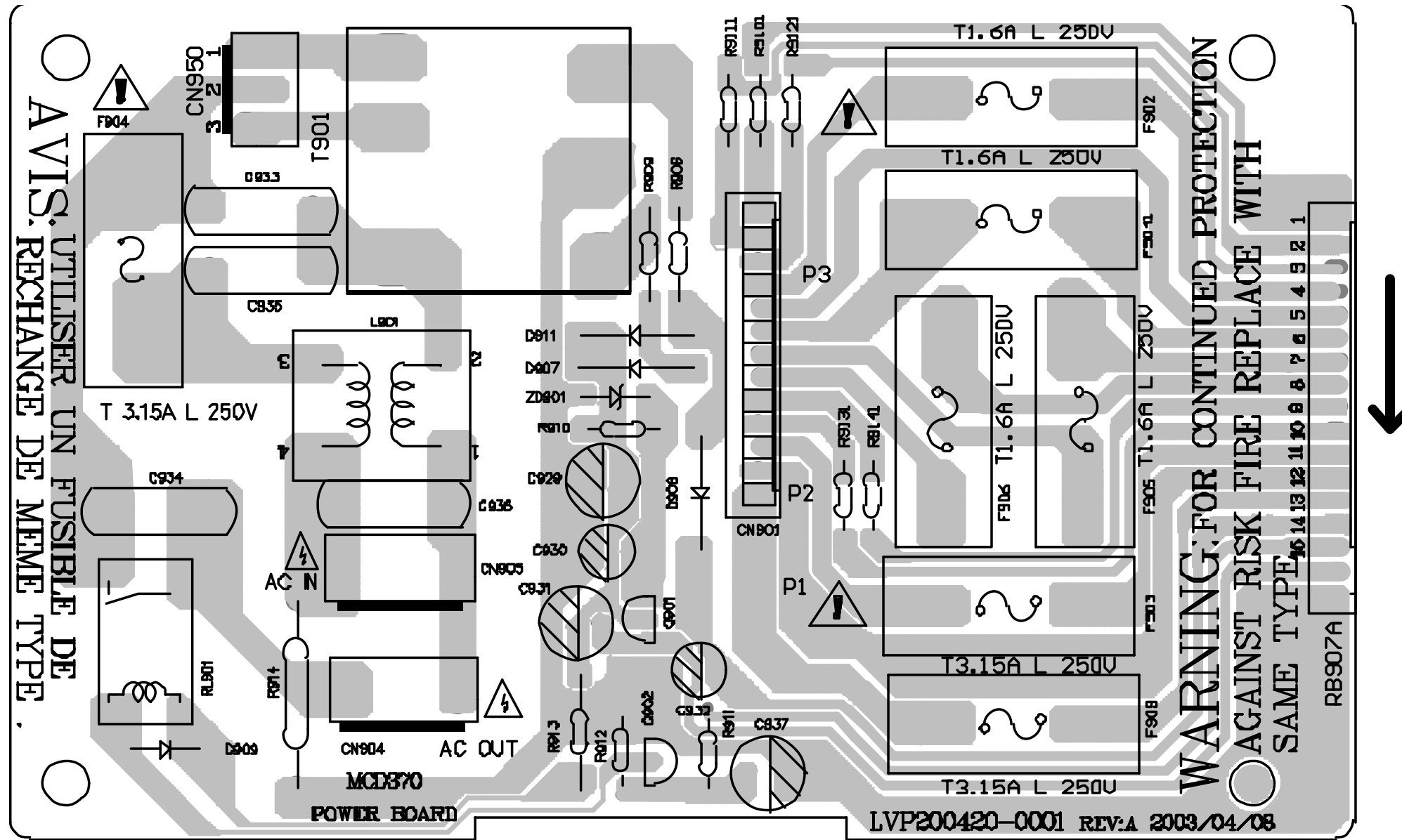
Note: Only these parts mentioned in the list are normal service parts.

POWER BOARD

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POWER PCB LAYOUT



ELECTRICAL PARTSLIST - POWER BOARD**- MISCELLANEOUS -**

CN901	9965 000 19398	CONNECTOR B13B-XH-A 13P
CN904	9965 000 15936	CONNECTOR 4PIN P=3.96MM
CN905	9965 000 15936	CONNECTOR 4PIN P=3.96MM
CN950	9965 000 19399	CONNECTOR 3P CL3962WVO
F902	△ 9965 000 19400	FUSE T1.6A L250V
F903	△ 9965 000 17388	FUSE 3.15A 250V SLOW
F904	△ 9965 000 17388	FUSE 3.15A 250V SLOW
F9041	△ 9965 000 19400	FUSE T1.6A L250V
F905	△ 9965 000 19400	FUSE T1.6A L250V
F906	△ 9965 000 19400	FUSE T1.6A L250V
F909	△ 9965 000 17388	FUSE 3.15A 250V SLOW
RB907A	9965 000 19401	CONNECTOR 17P P2.5MM
RL901	9965 000 15937	RELAY
T901	△ 9965 000 16342	PWR TRANS. 230V /22
T901	△ 9965 000 20646	PWR TRANS. 115/230V /21

- CAPACITORS -

C933	△ 9965 000 15941	COND SAFTY 0.01μF 250V 20%
C934	△ 9965 000 15941	COND SAFTY 0.01μF 250V 20%
C935	△ 9965 000 15941	COND SAFTY 0.01μF 250V 20%
C936	△ 9965 000 15941	COND SAFTY 0.01μF 250V 20%

- RESISTORS -

R906	△ 9965 000 12521	1Ω 1/4W 5%
R909	△ 9965 000 12521	1Ω 1/4W 5%
R9101	△ 9965 000 12521	1Ω 1/4W 5%
R9111	△ 9965 000 12521	1Ω 1/4W 5%
R9121	△ 9965 000 12521	1Ω 1/4W 5%
R9131	△ 9965 000 12521	1Ω 1/4W 5%
R9141	△ 9965 000 12521	1Ω 1/4W 5%

- COILS & FILTERS -

L901	9965 000 15943	AC FILTER 2X39MH
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- DIODES -

D907	4822 130 31438	1N4001G
D908	4822 130 31438	1N4001G
D909	4822 130 31438	1N4001G
D911	4822 130 31438	1N4001G
ZD901	9965 000 15944	DIODE ZENR 5.6-5.9V 0.5W

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

- IC & TRANSISTORS -

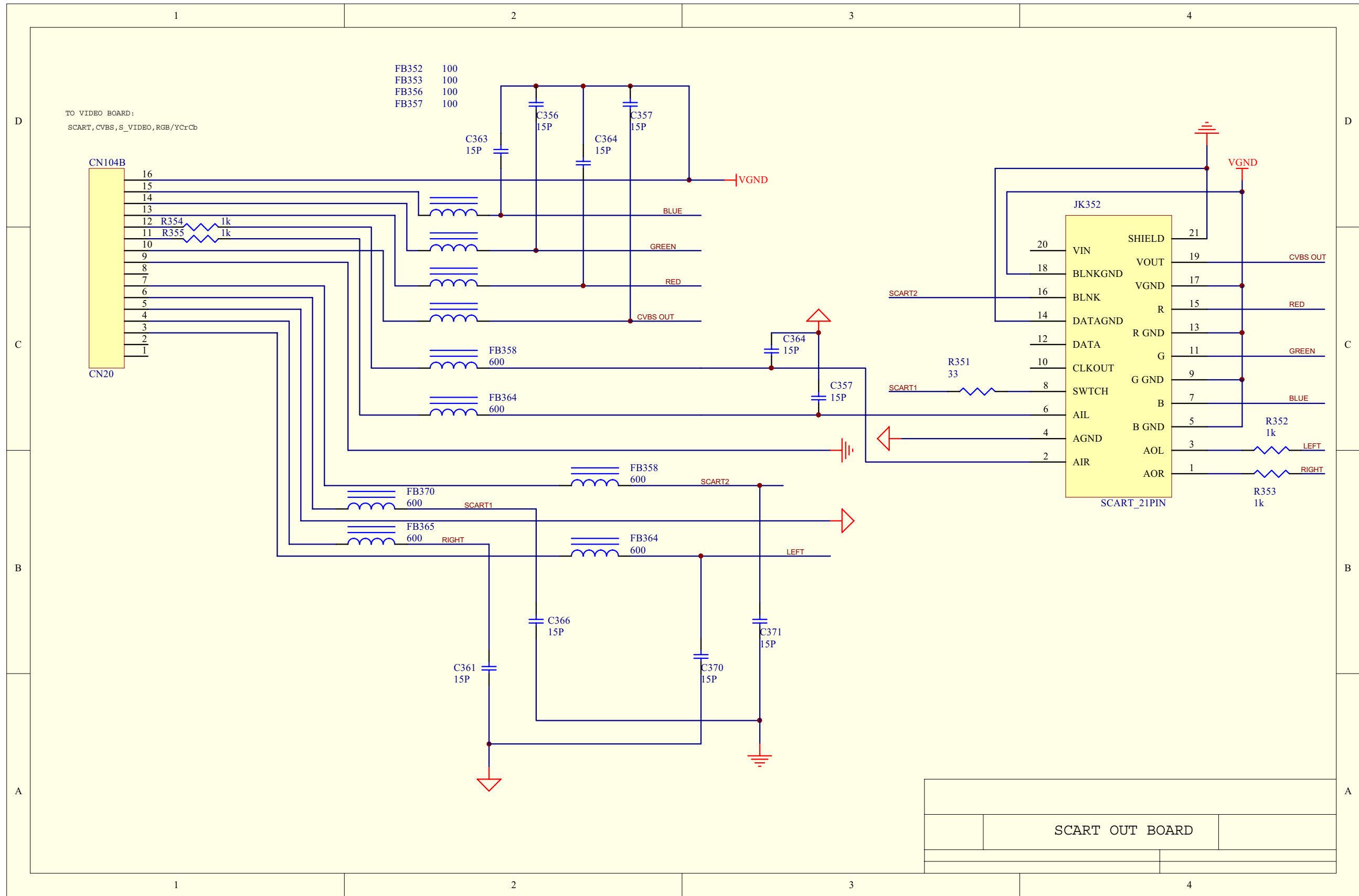
Q901	4822 130 41198	2SC945P
Q902	4822 130 41198	2SC945P

SCART BOARD

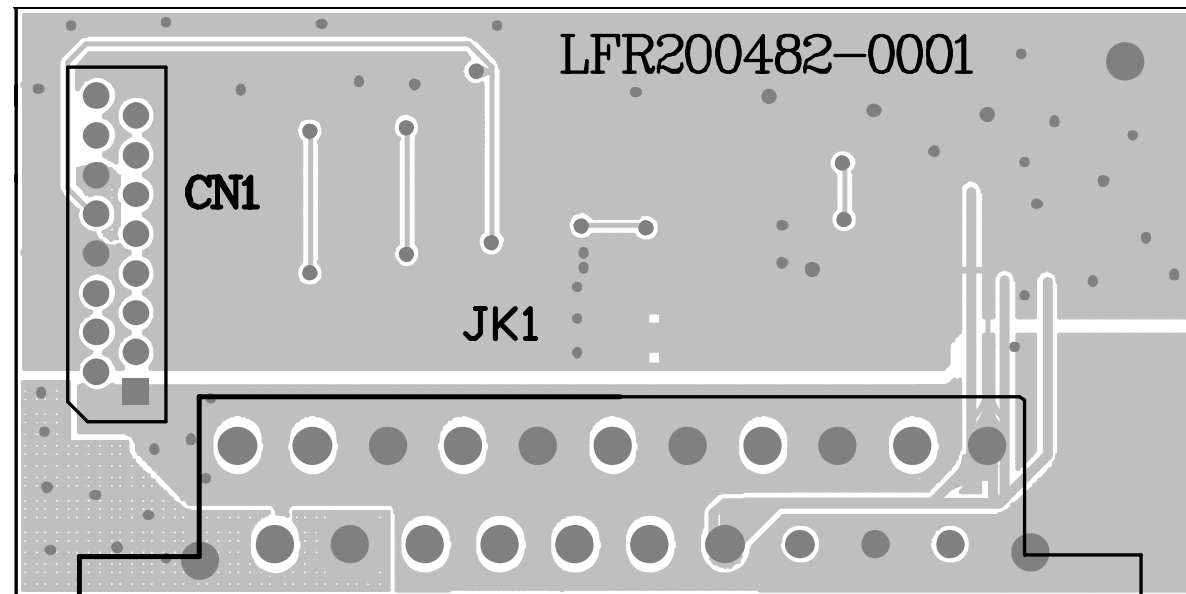
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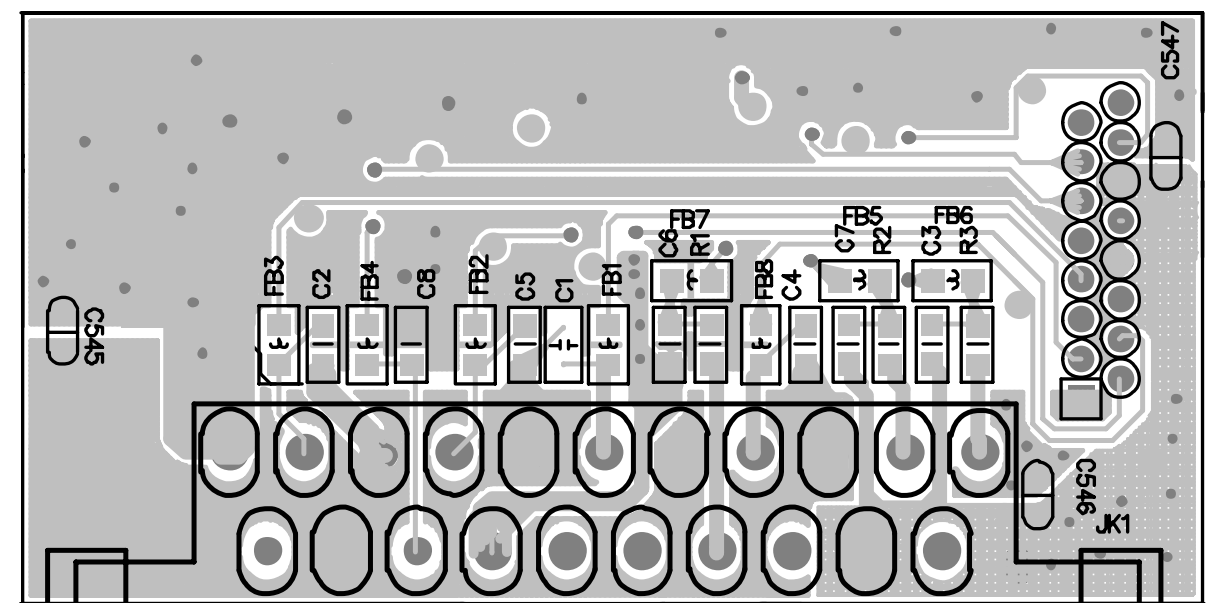
CIRCUIT DIAGRAM



POWER PCB LAYOUT
COMPONENT SIDE



POWER PCB LAYOUT
SMD SIDE



ELECTRICAL PARTSLIST - SCART BOARD

- MISCELLANEOUS -

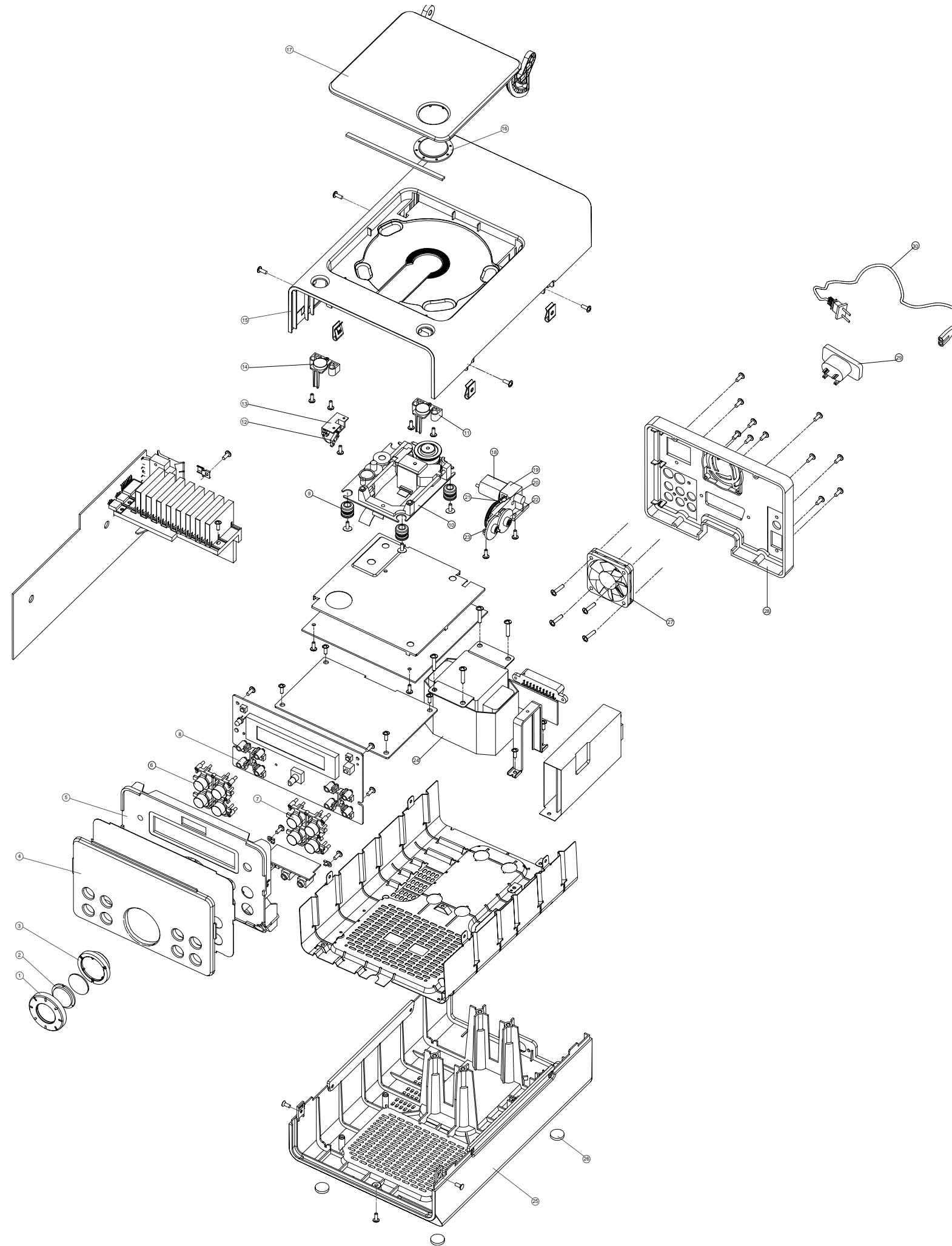
CN1	9965 000 19433	CONNECTOR 16P
JK1	9965 000 19434	SCART SOCKET 21P

- COILS & FILTERS -

FB1	9965 000 12471	BEAD FERITE 600Ω at 100MHZ
FB2	9965 000 12471	BEAD FERITE 600Ω at 100MHZ
FB3	9965 000 12471	BEAD FERITE 600Ω at 100MHZ
FB4	9965 000 12471	BEAD FERITE 600Ω at 100MHZ
FB5	9965 000 12471	BEAD FERITE 600Ω at 100MHZ
FB6	9965 000 12471	BEAD FERITE 600Ω at 100MHZ
FB7	9965 000 12471	BEAD FERITE 600Ω at 100MHZ
FB8	9965 000 12471	BEAD FERITE 600Ω at 100MHZ

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

SET EXPLODED DRAWING



MECHANICAL & ACCESSORIES PARTSLIST

1	9965 000 19361	VOLUME ROTARY
2	9965 000 19348	VOLUME ROTARY CAP
3	9965 000 19355	VOLUME ROTARY HOLDER
4	9965 000 19362	LENS
5	9965 000 19350	FRONT CABINET
6	9965 000 19357	SOURCE KEY
7	9965 000 19358	FUNC KNOB
8	9965 000 19356	LED COVER
9	9965 000 19369	RUBBER CUSHION
10	△ 9965 000 19377	DVD-KDA537SR
11	9965 000 19360	OPEN/CLOSE KNOB
12	9965 000 19374	SW LEAF KFC-101
13	9965 000 19354	SWITCH HOLDER
14	9965 000 19359	POWER KEY
15	9965 000 19347	TOP CABINET
16	9965 000 19363	CD DOOR LENS
17	9965 000 19349	CD DOOR
18	9965 000 19373	MOTOR DC 4V
19	9965 000 19353	GEAR HOLDER
20	9965 000 19364	PULLEY MOTOR
21	9965 000 19367	BELT
22	9965 000 19351	GEAR DRIVE
23	9965 000 19352	GEAR TURN
24	△ 9965 000 19375	PWR TRANS EI-66 115/230V
25	9965 000 19223	BOTTOM CABINET
26	9965 000 19366	RUBBER FOOT
27	9965 000 19372	DC FAN 12V
28	9965 000 19365	BACK CABINET
29	△ 9965 000 17353	AC SOCKET
30	△ 9965 000 15983	MAINS CORD
	9965 000 14632	FM ANTENNA
	9965 000 15830	LOOP ANT SHINTA PS-100
	9965 000 19371	SPK ASSY 8R 25WX2
	9965 000 19376	REMOTE CONTROL
	9965 000 19378	OWNER MANUAL
	9965 000 19379	FFC CABLE 15P 100MM
	9965 000 19380	FFC WIRE 24P 150MM

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