

Service
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Service Manual



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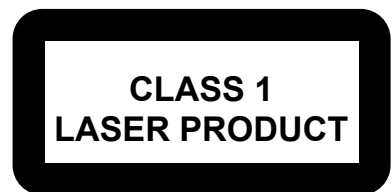
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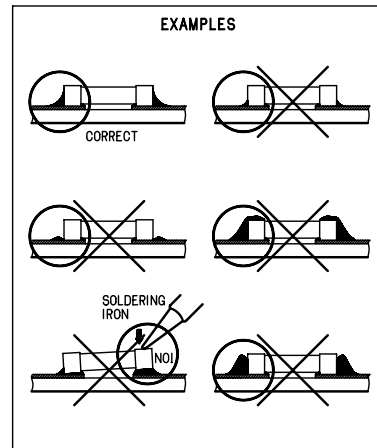
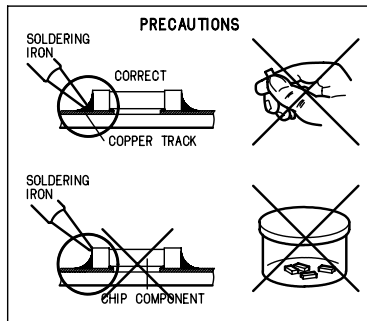
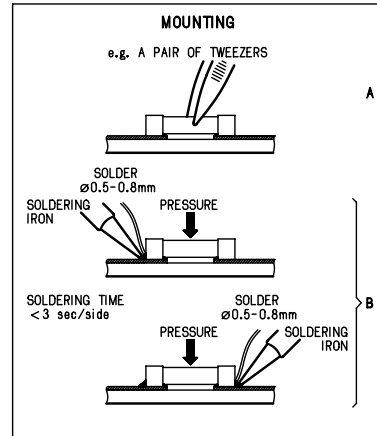
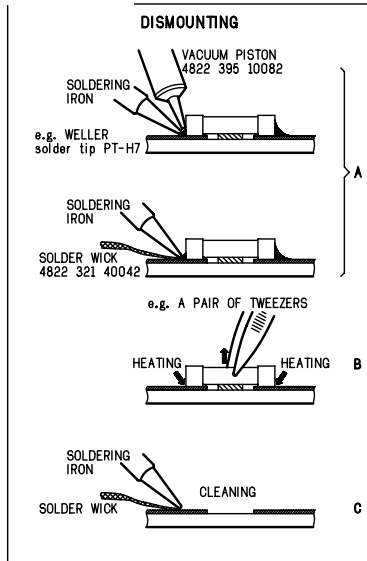
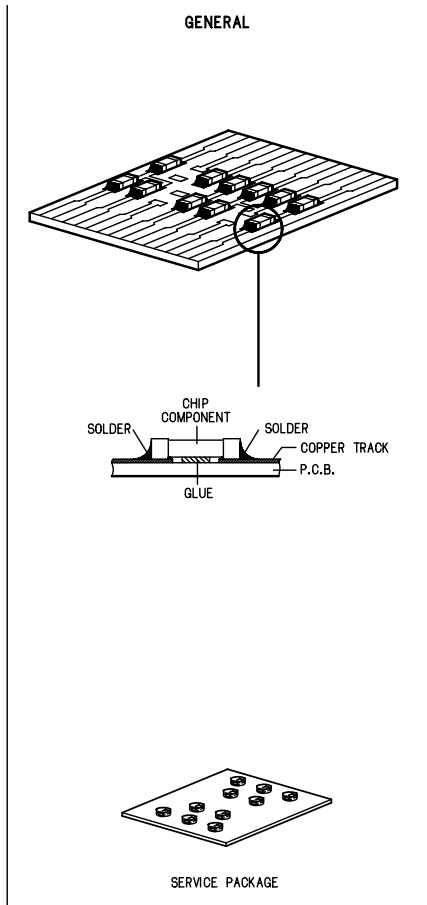
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Version 1.1



PHILIPS

HANDLING CHIP COMPONENTS



(GB) WARNING
 All ICs and many other semiconductors 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 wristband with resistance. Keep components and tools at this potential.



(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 sert d'une résistance de sécurité.
 Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

(D) WARNUNG
 Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD).
 Unvorsichtige Behandlung im Reparaturfall kann die Lebensdauer drastisch reduzieren.
 Sorgen Sie dafür, daß Sie im Reparaturfall über ein Puls-armband mit Widerstand mit dem Massepotential des Gerätes verbunden sind.
 Halten Sie Bauteile und Hilfsmittel ebenfalls auf diesem Potential.

(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
 Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.
 Safety components are marked by the symbol ▲



(F) Sécurité
 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.
 Les composants de sécurité sont marqués ▲

(D) Sicherheit
 Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Gerätes darf nicht verändert werden. Für Reparaturen sind Originalersatzteile zu verwenden.
 Sicherheitsbauteile sind durch das Symbol ▲ markiert.

(NL) Veiligheid
 Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.
 De Veiligheidsonderdelen zijn aangeduid met het symbool ▲

(I) Sicurezza
 Le norme di sicurezza estigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambio identici a quelli specificati.
 Componenti di sicurezza sono marcati con ▲

(GB) DANGER: Invisible laser radiation when open.
 AVOID DIRECT EXPOSURE TO BEAM.



(S) Varning !
 Osynlig laserstrålning när apparaten är öppnad och spårren är urkopplad. Betrakta ej strålen.

(DK) Advarsel !
 Usynlig laserstrålning ved åbning når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

(FIN) Varoitus !
 Avatussa laitteessa ja suojalukituksen ohitettaessa olet alltiina näkyvästi laserisäteilylle. Älä katso säteeseen !

(GB) Safety
 After servicing and before returning the set to customer perform a leakage current measurement test from all exposed metal parts to earth ground, to assure no shock hazard exists.
 The leakage current must not exceed 0.5mA.

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

INFORMATION ABOUT LEAD-FREE SOLDERING

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

IDENTIFICATION:

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



Example S/N:



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

So from 0501 onwards = from 1 Jan 2005 onwards

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

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

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

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

For additional questions please contact your local repair-helpdesk.

SERVICE INSTRUCTION

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

- Route the wire trees correctly and fix them with the mounted cable clamps.
- Check the insulation of the AC Power lead for external damage.
- Check the strain relief of the AC Power cord for proper function.
- Check the electrical DC resistance between the AC Power Plug and the secondary side (only for sets which have a AC Power isolated power supply):
 1. Unplug the AC Power cord and connect a wire between the two pins of the AC Power plug.
 2. Set the AC Power switch to the "on" position (keep the AC Power cord unplugged!).
 3. Measure the resistance value between the pins of the AC Power plug and the metal shielding of the tuner or the aerial connection on the set. The reading should be larger than 4.5 Mohm (For U.S. it should be between 4.2 Mohm and 12 Mohm).
 4. Switch "off" the set, and remove the wire between the two pins of the AC Power plug.
- Check the cabinet for defects, to avoid touching of any inner parts by the customer.

TECHNICAL SPECIFICATIONS

GENERAL

Mains voltage	MCD290 -/98 : 120 / 230 V MCD290 -/79 : 240 V MCD295 -/12 : 230 V MCD295 -/58: 230 V MCD295 -/05: 230 V
Mains frequency	MCD290 -/98 : 50 / 60 Hz MCD290 -/79 : 50 Hz MCD295 -/12 : 50 Hz MCD295 -/58 : 50 Hz MCD295 -/05 : 50 Hz
Battery	remote : 1.5 V (AA x 2)
Power consumption	normal : < 25 W Standby : 6 W
Dimension (W x H x D)	: 148 x 233 x 256 mm
Weight (excluding packing and batteries)	: 3.2 Kg

AMPLIFIER

Output power	mains : 2 x 15 W
Speaker impedance	: 2 x 4 ohm
Frequency response	: 63 Hz - 16 kHz (± 3 dB)

TUNER - FM SECTION

Tuning range	: 87.5 - 108 MHz
IF frequency	: 10.7 MHz \pm 0.02 MHz
Sensitivity	: < 22 dBf at 26dB
Selectivity	300kHz : > 33 dB
IF Rejection	: > 60 dB
Image Rejection	: > 25dB
Distortion	: < 3 %
Channel Separation -400/1k/5k	: 18/20/15dB (limit)
Tuning Grid	: 100KHz

SERVICE TOOLS

Audio signal disc SBC 429.....	4822 397 30184
Playability test disc SBC 444.....	4822 397 30245
Test disc 5 (disc without errors) +	
Test disc 5A (disc with dropout errors, black spots and fingerprints)	
SBC 426/426A.....	4822 397 30096
Burn in test disc (65 min. 1kHz signal at -30 dB level without "pause").....	4822 397 30155

AVAILABLE ESD PROTECTION EQUIPMENT

anti-static table mat large 1200x650x1.25mm	4822 466 10953
small 600x650x1.25m	4822 466 10958
anti-static wristband	4822 395 10223
connection box (3 press stud connections, 1M Ω)	4822 320 11307
extendible cable (2m, 2M Ω , to connect wristband to connection box)	4822 320 11305
connecting cable (3m, 2M Ω , to connect table mat to connection box)	4822 320 11306
earth cable (1M Ω , to connect any product to mat or to connection box)	4822 320 11308
KIT ESD3 (combining all 6 prior products - small table mat)	4822 310 10671
wristband tester	4822 344 13999

TUNER - AM SECTION

Tuning range	9kHz	: 531 - 1602 kHz
IF frequency		: 450 kHz \pm 1 kHz
Sensitivity		: \leq 3.25 mV/m at 26dB
Selectivity S9/300kHz		: > 20 dB
IF rejection		: > 24 dB
Distortion		: < 5%
Image rejection		: > 28 dB

AUDIO CASSETTE RECORDER

Speed Control		: Nom \pm 1.5%
Wow & flutter		: < 0.4 % (DIN)
Tape speed		: 4.76 cm/s
Fast wind/rewind C60		: < 39 dB
No of Tacks		: 2 Tacks (stereo)
Recording Level		: Auto

DVD PLAYER

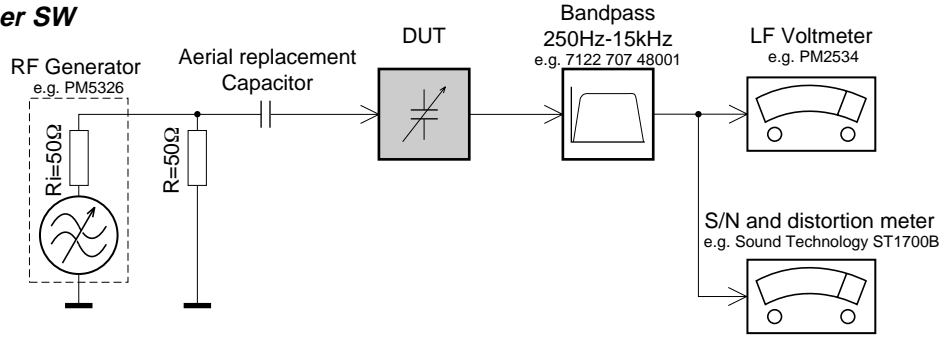
Frequency response		: 4 Hz – 20 kHz(44.1KHz) 4 Hz – 22 kHz(48KHz) 4 Hz – 44 kHz(96KHz)
Video S/N		: 56 dB(min)
Video decoding		: MPEG-2/MPEG-1
Channel Separation	1kHz:	: 40 dB
Video DAC		: 10bits

VIDEO PERFORMANCE

Video Format		: 4:3/16:9
Disc Diameter		: 12cm/8cm
Number of programmable tracks		: 16
Channel separation		: \geq 40dB (1KHz)
Signal to noise ratio		: \geq 65dBA

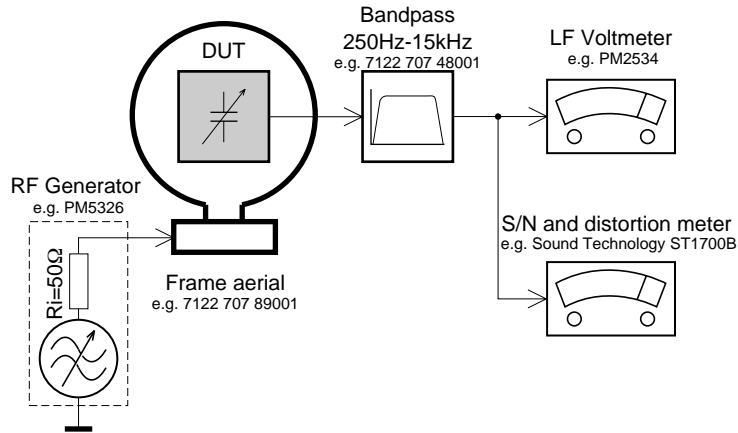
SERVICE MEASUREMENT

Tuner SW



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

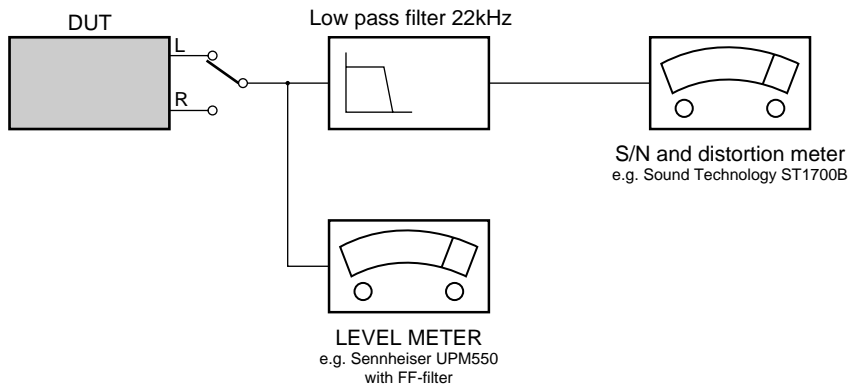
Tuner AM (MW,LW)

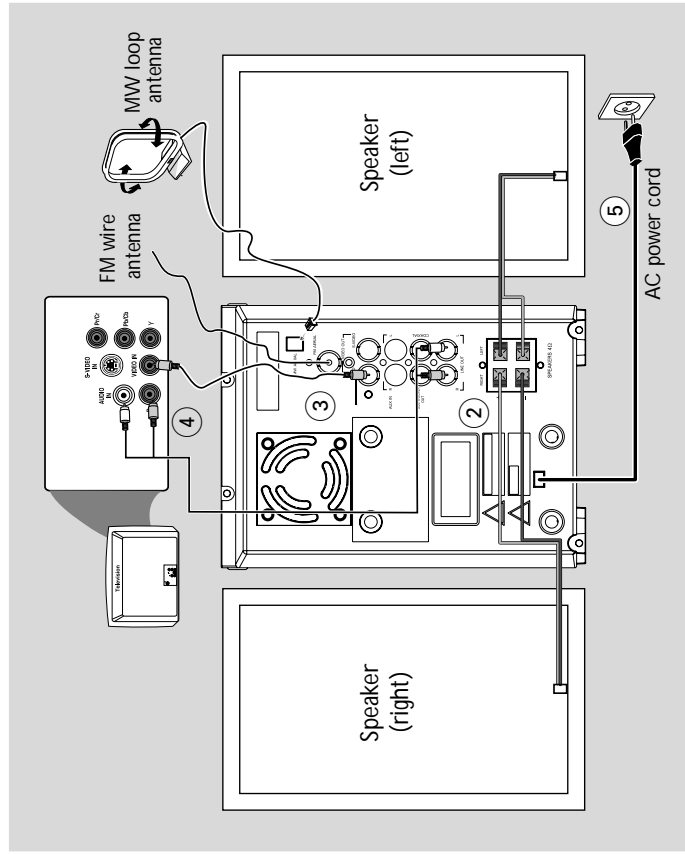


To avoid atmospheric interference all AM-measurements have to be carried out in a Faraday's cage.

CD

Use Audio Signal Disc SBC429 4822 397 30184 (replaces test disc 3)
L.P.F. = 13th order filter 4822 395 30204



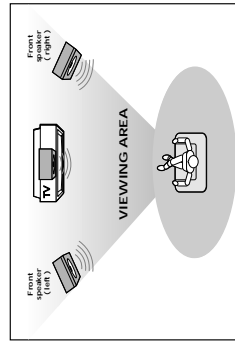


IMPORTANT!

- The type plate is located at the rear of the system.
- 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 voltage selector located at the bottom of this system is preset at 220V-240V from the factory. For countries that operate at 110V-127V, please adjust to 110V-127V before you switch on the system.

To avoid overheating of the system, a safety circuit has been built in. Therefore, your system may switch to Standby mode automatically under extreme conditions. If this happens, let the system cool down before reusing it (not available for all versions).

Step 1: Placing speakers



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

Notes:

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

Step 2: Connecting speakers



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

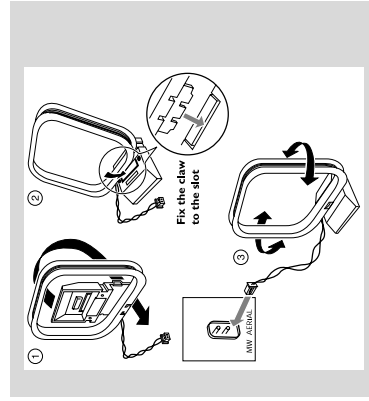
Notes:

- 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 terminals.
- Do not connect speakers with an impedance lower than the speakers supplied. Please refer to the SPECIFICATIONS section of this manual.

Step 3: Antenna connection

MW Antenna

Connect the supplied MW loop antenna to the "MW AERIAL" terminal. Adjust the position of the antenna for optimal reception.



Position the antenna as far as possible from a TV, VCR or other radiation source.

FM Antenna

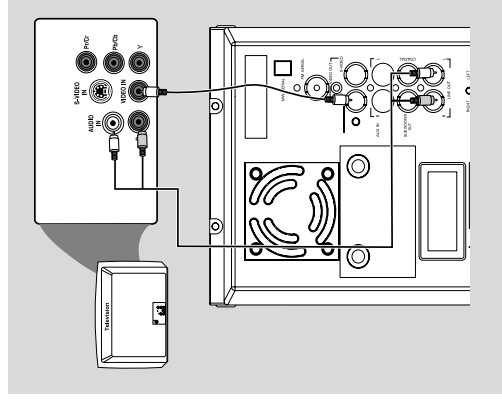
It is unnecessary to connect the FM digital antenna since it is fixed to the main unit. Adjust the FM antenna for optimal FM stereo reception.

Step 4: Connecting TV

IMPORTANT!

- You only need to make one video connection from the following options, depending on the capabilities of your TV system.
- Connect the DVD system directly to the TV.

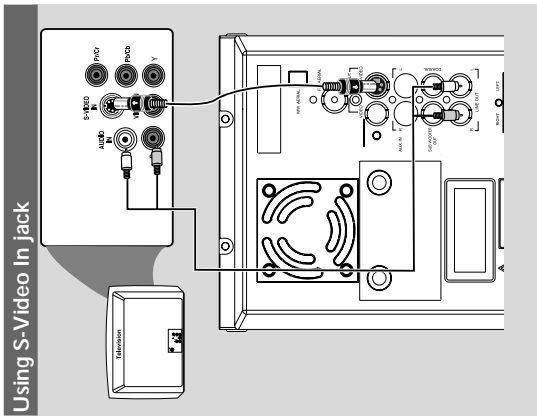
Using Video In Jack (CVBS)



- 1 Use the composite video cable (yellow) to connect the system's **VIDEO** jack to the video input jack (labelled as AV In, Video In, Composite or Baseband) on the TV set.
- 2 To hear the sound of this DVD Player through your TV, use the audio cables (white/red-not supplied) to connect **LINE OUT (L/R)** jacks of the DVD Player to the corresponding **AUDIO IN** jacks on the TV.

CONNECTION AND CONTROLS

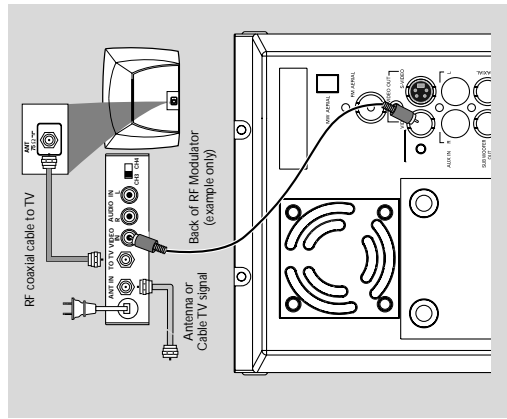
Connections



- 1 Use the S-Video cable (not supplied) to connect the system's **S-VIDEO** jack to the S-Video input jack (or labelled as Y/C or S-VHS) on the TV set.
- 2 To hear the sound of this DVD Player through your TV, use the audio cables (white/red-not supplied) to connect **LINE OUT (L/R)** jacks of the DVD Player to the corresponding **AUDIO IN** jacks on the TV.

Using an accessory RF modulator

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



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

Connections

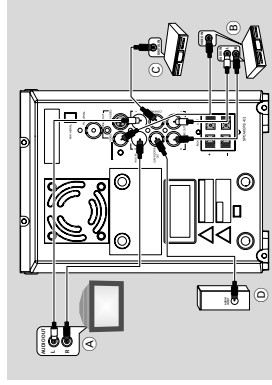
Step 5: Connecting the power cord

- IMPORTANT!**
- Never make or change any connection with the power switched on.

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

Optional: Connecting additional equipment

- IMPORTANT!**
- Some discs 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.



Viewing and listening to the playback of other equipment (A)

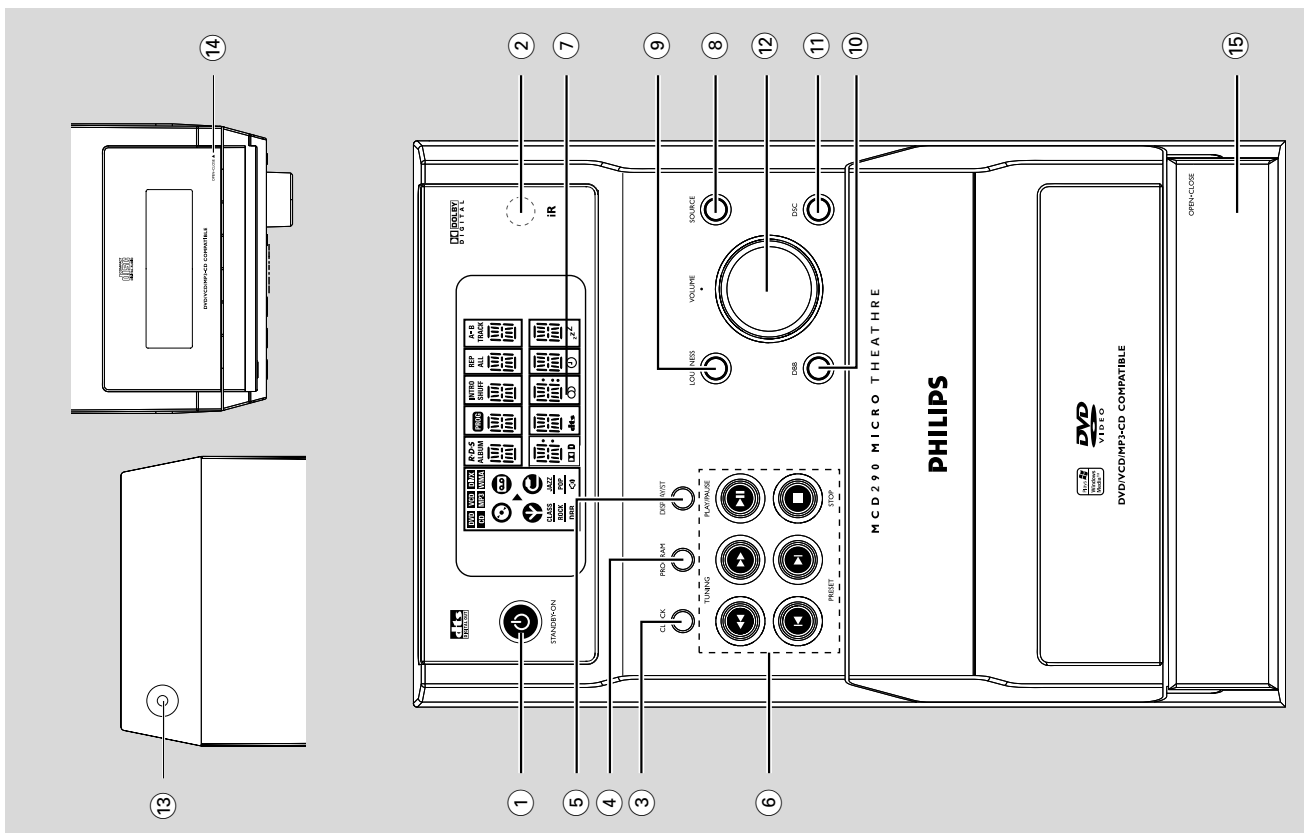
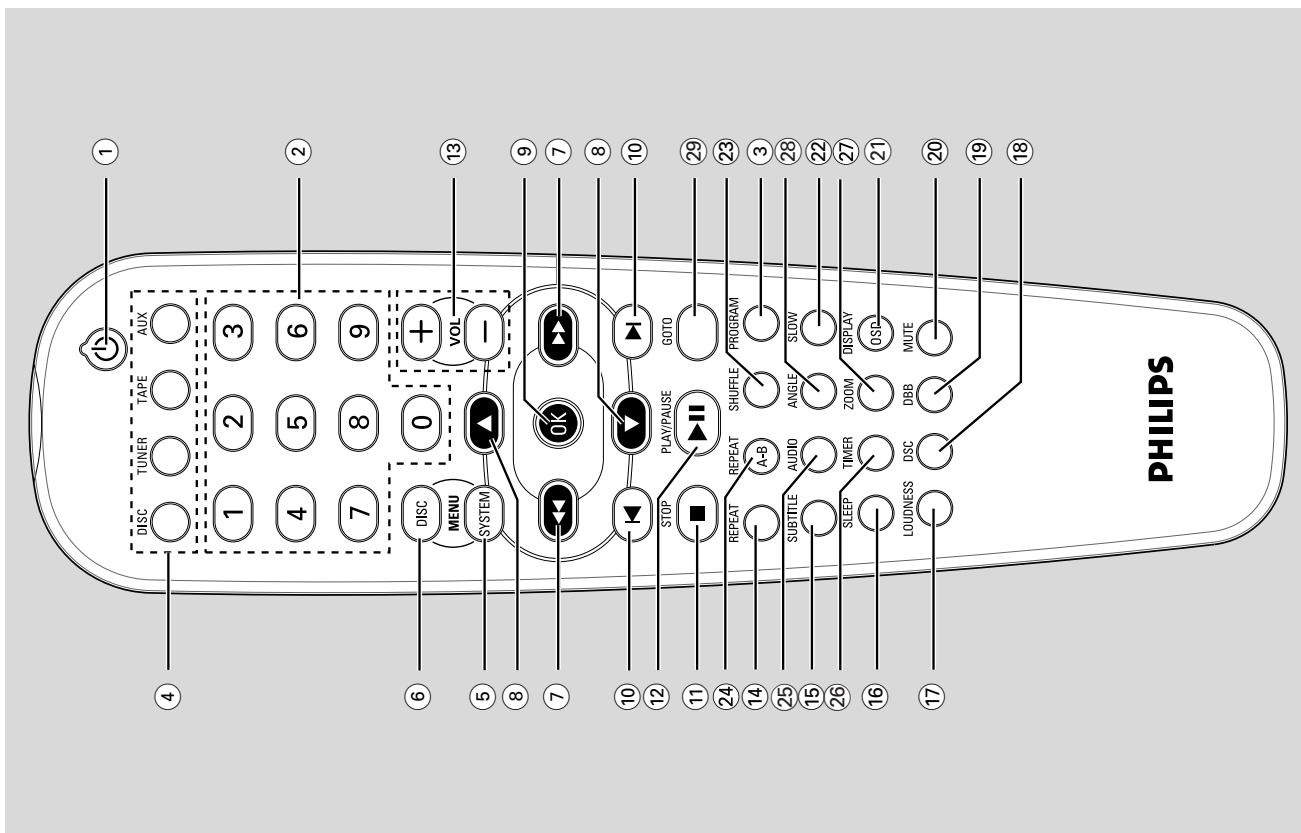
Connect the system's **AUX IN (R/L)** jacks to the **AUDIO OUT** jacks on the other audio/visual device (such as a TV, VCR, Laser Disc player or cassette deck).
Before starting operation, press **SOURCE** on the front panel to select **AUX** or press **AUX** on the remote in order to activate the input source.

Using the VCR for recording DVDs (B)
Connect one of the system's **VIDEO OUT** jacks to the corresponding **VIDEO IN** jack 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.

Recording (digital) (C)
Connect the system's **COAXIAL** 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 OUT** according to the audio connection. (See "DIGITAL OUT".)

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

CONNECTION AND CONTROLS



Troubleshooting

WARNING

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

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

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

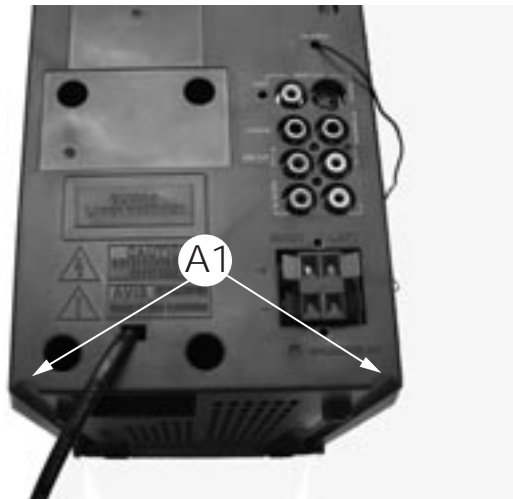
Troubleshooting

Problem	Solution
The language for the sound or subtitle cannot be changed when playing a DVD.	<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.
No image is output when a function is selected.	<ul style="list-style-type: none">Make sure the component is connected correctly.Press the correct function button for the input source.
Sound cannot be heard or is of poor quality	<ul style="list-style-type: none">Adjust the volume.Disconnect the headphones.Check that the speakers are connected correctly.Check if the stripped speaker wire is clamped.If the system is in pause, slow motion or fast forward/reverse mode, press PLA Y/PAUSE ► to resume the normal play mode.Make sure the MP3-CD was recorded within 32-256 kbps bit rate with sampling frequencies at 48 kHz, 44.1 kHz or 32 kHz.Ensure that the DTS disc also supports Dolby Digital output.
Poor radio reception.	<ul style="list-style-type: none">If the signal is too weak, adjust the antenna or connect an external antenna for better reception.Increase the distance between the System and your TV set or VCR.
Recording or playback cannot be made	<ul style="list-style-type: none">Clean deck parts, see "Maintenance".Use only NORMAL tape.Apply a piece of adhesive tape over the missing tab space.
Left and right sound outputs are reversed.	<ul style="list-style-type: none">Check the speaker connections and location.
The remote control does not function.	<ul style="list-style-type: none">Point the remote control at the remote control sensor of the unit.Reduce the distance to the player.Remove any possible obstacles.Replace the batteries with new ones.Check that the batteries are loaded correctly.
The timer is not working	<ul style="list-style-type: none">Set the clock correctly.If recording is in progress, stop it.
The Clock/Timer setting is erased	<ul style="list-style-type: none">Power has been interrupted or the power cord has been disconnected. Reset the clock/timer.

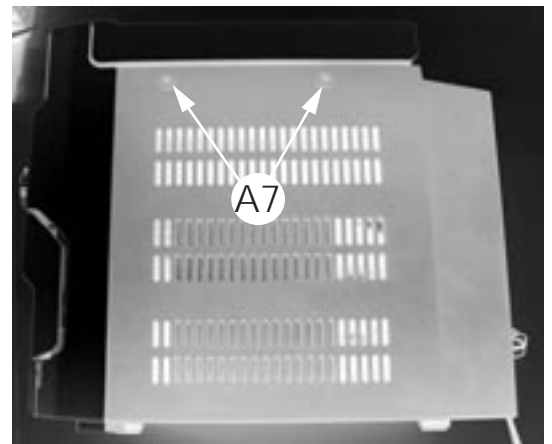
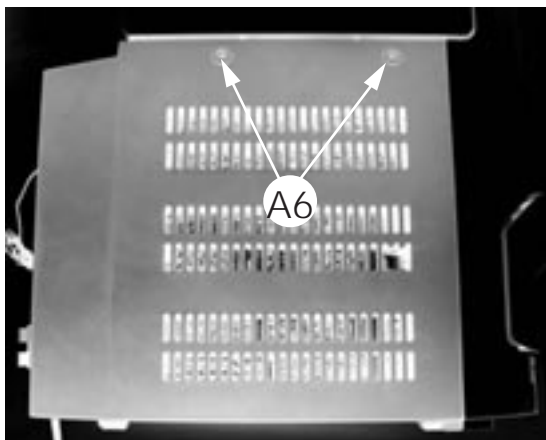
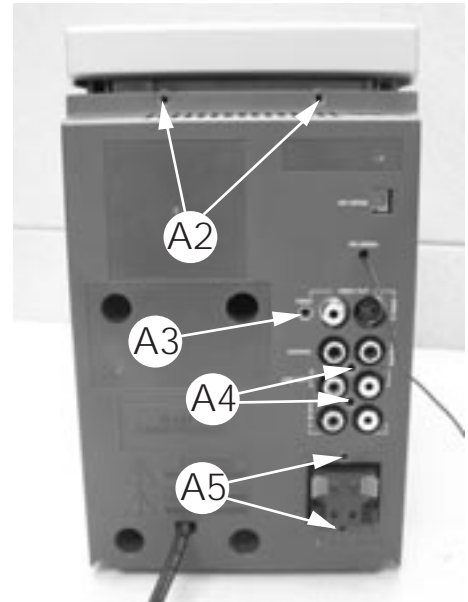
DISASSEMBLY DIAGRAMS

STEP A : Remove Rear Cabinet

- A1 : Remove 2 screws (SP3x12)
- A2 : Remove 4 screws (SP3x10)
- A3 : Remove 1 screws (SP3x10)
- A4 : Remove 2 screws (SP3x10)

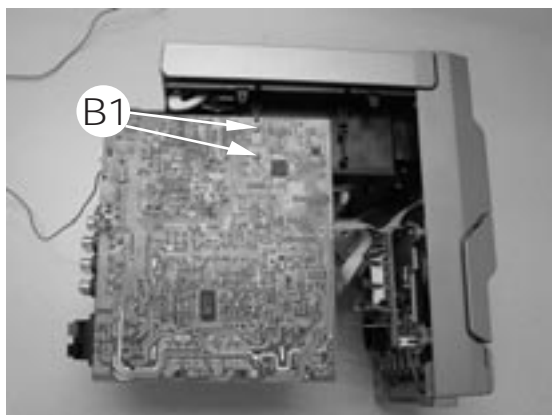


- A5 : Remove 2 screws (SP3x10)
- A6 : Remove 2 screws (K3x10)
- A7 : Remove 2 screws (K3x10)

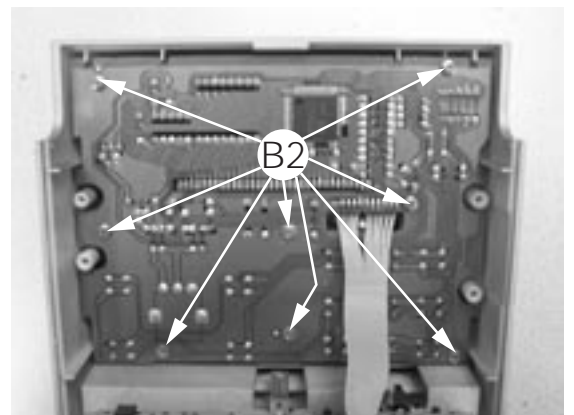


STEP B : Remove Main board and LCD board

- B1: Remove 2 screws (SP3x8)



- B2: Remove 8 screws (SP2.5x8)

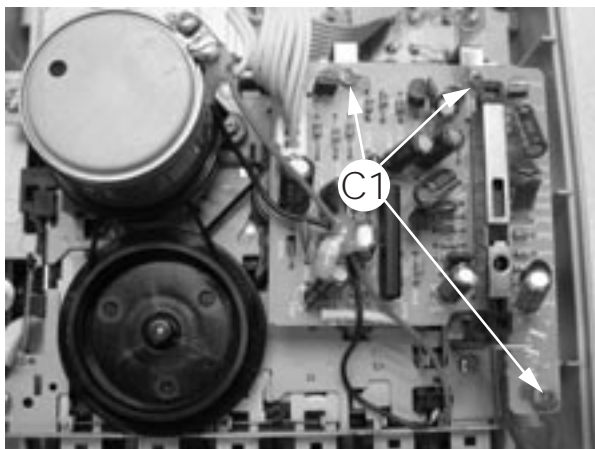


DISASSEMBLY DIAGRAMS

STEP C :

Remove Cassette PCB Assy

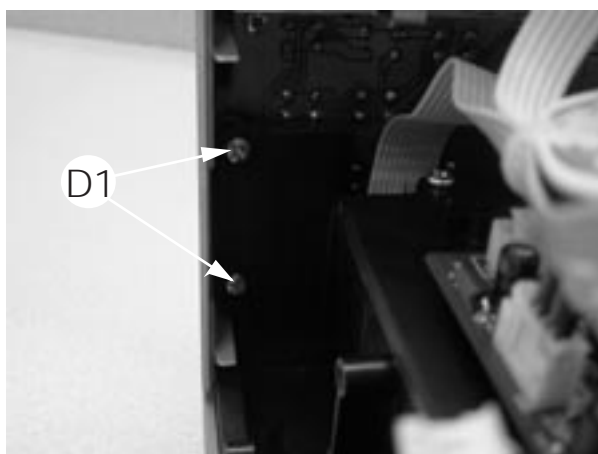
- Remove 3 screws (K2x5)



STEP D :

Remove CD tray

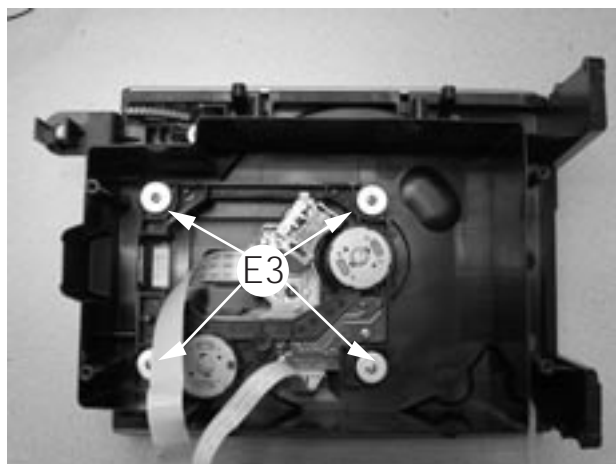
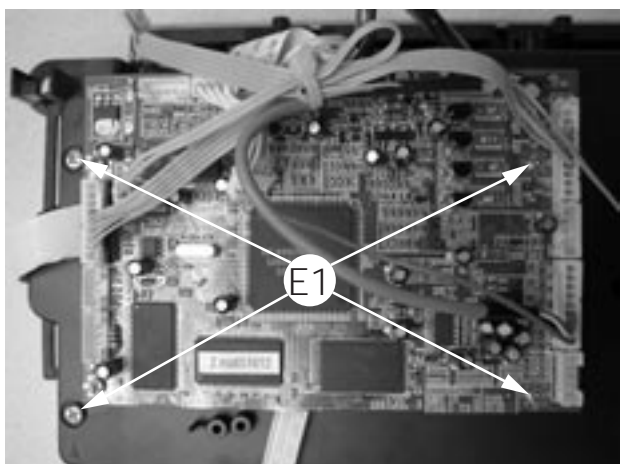
- Remove 4 screws (SP3x10)



STEP E :

Remove DVD Mechaniam

- Remove DVD PC board 4 screws (SP2.5x6)
- Remove CD tray cover 4 screws (SP3x8)
- Remove DVD Mechaniam 4 screws(M2.5x10)

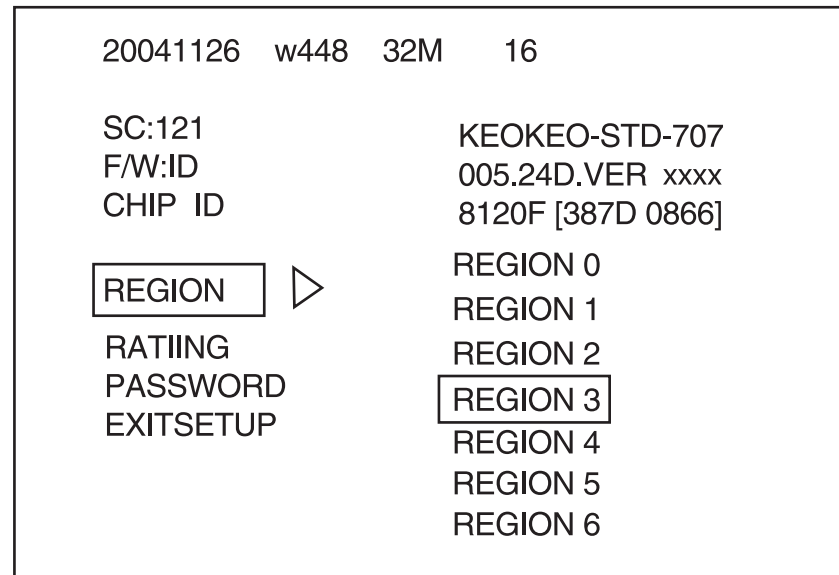


SOFTWARE VERSION AND CHECK

SOFTWARE VERSION AND UPGRATING

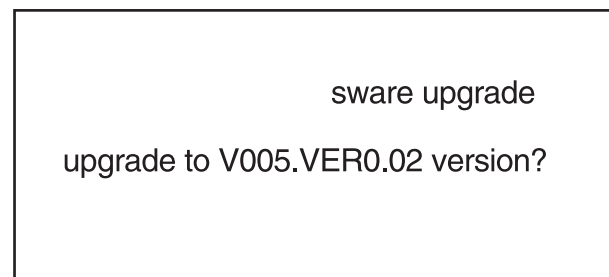
A.MPEG SOFTWARE VERSION CHECK

Enter the password "9735" (on the remote control),
TV Screen shows:



B. MPEG SOFTWARE UPGRATING

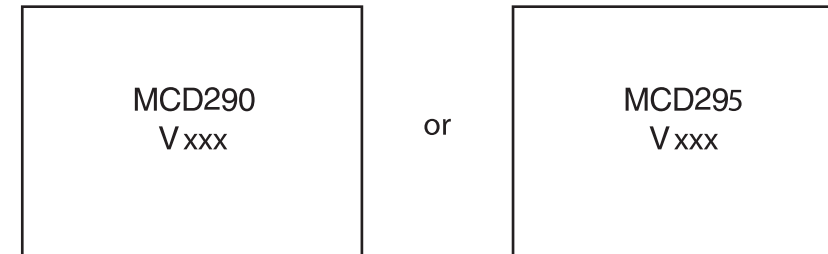
1. download the firmware from Philips support website
<http://www.philips.com/support>
2. Prepare a uploading CD
3. Put the CD in the CD tray
4. TV Screen shows



and upgrading will run automatically

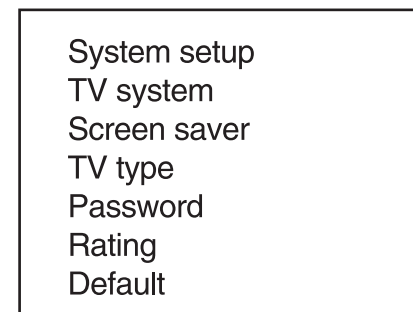
C.CPU VERSION CHECK

Keep PLAY/PAUSE and STOP buttons (on the set) depressed while pressing POWER on.
TV screen shows

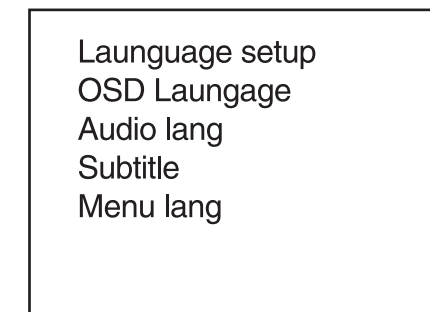


D. SETUP MENU

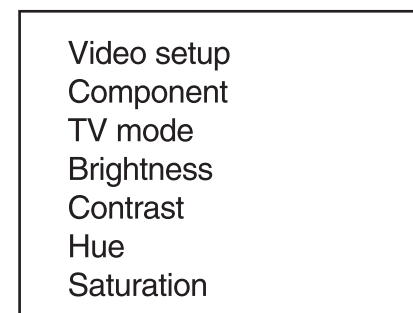
Press SYSTEM key to show chart1
Press the removal key to show chart2,chart3,chart4
TV screen shows



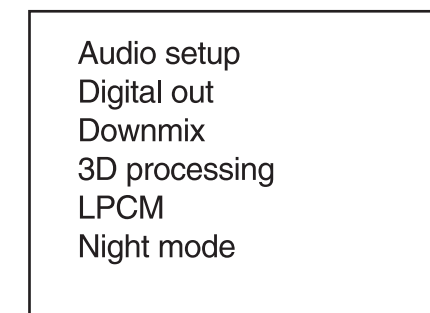
(chart1)



(chart2)

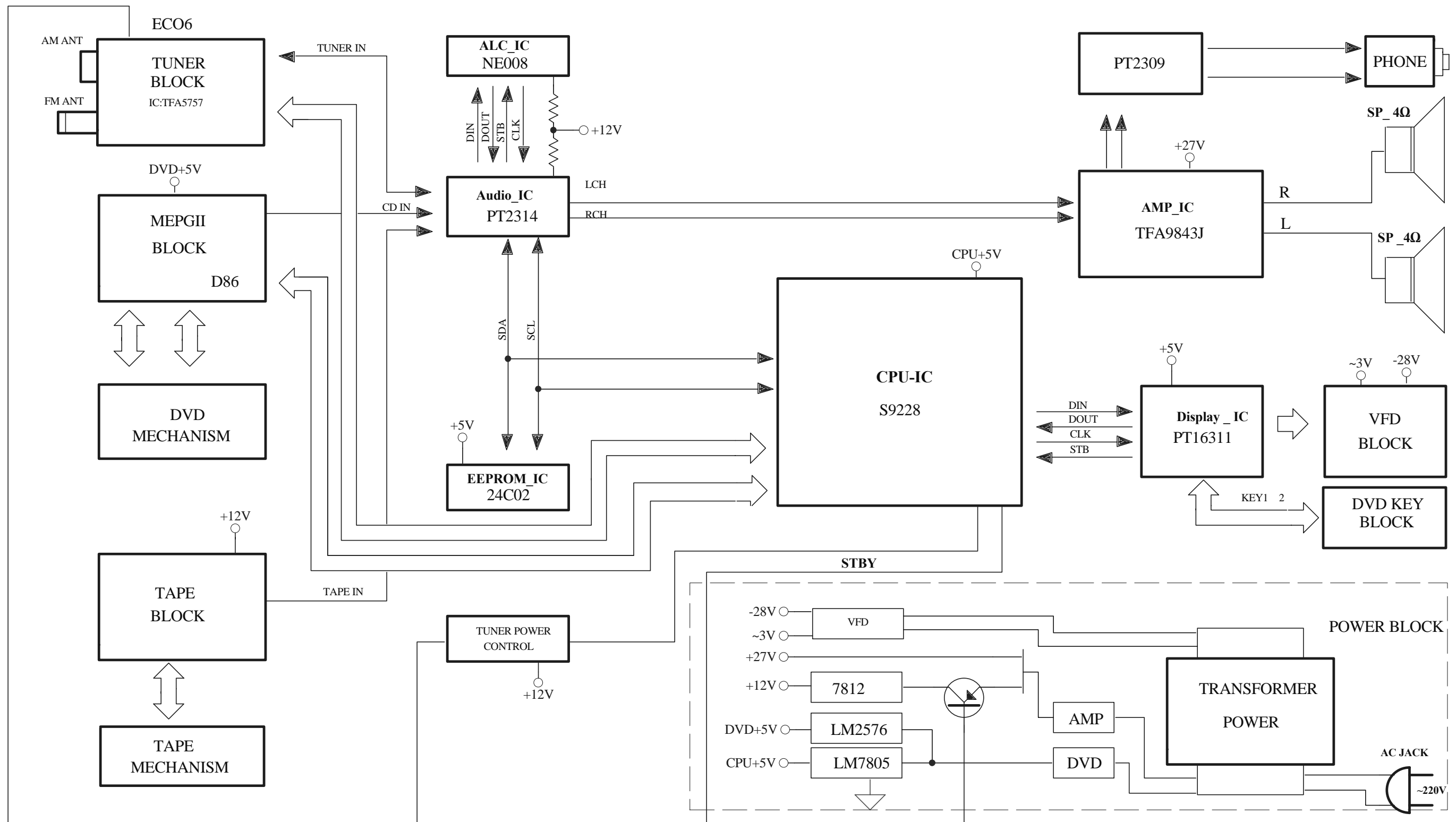


(chart3)

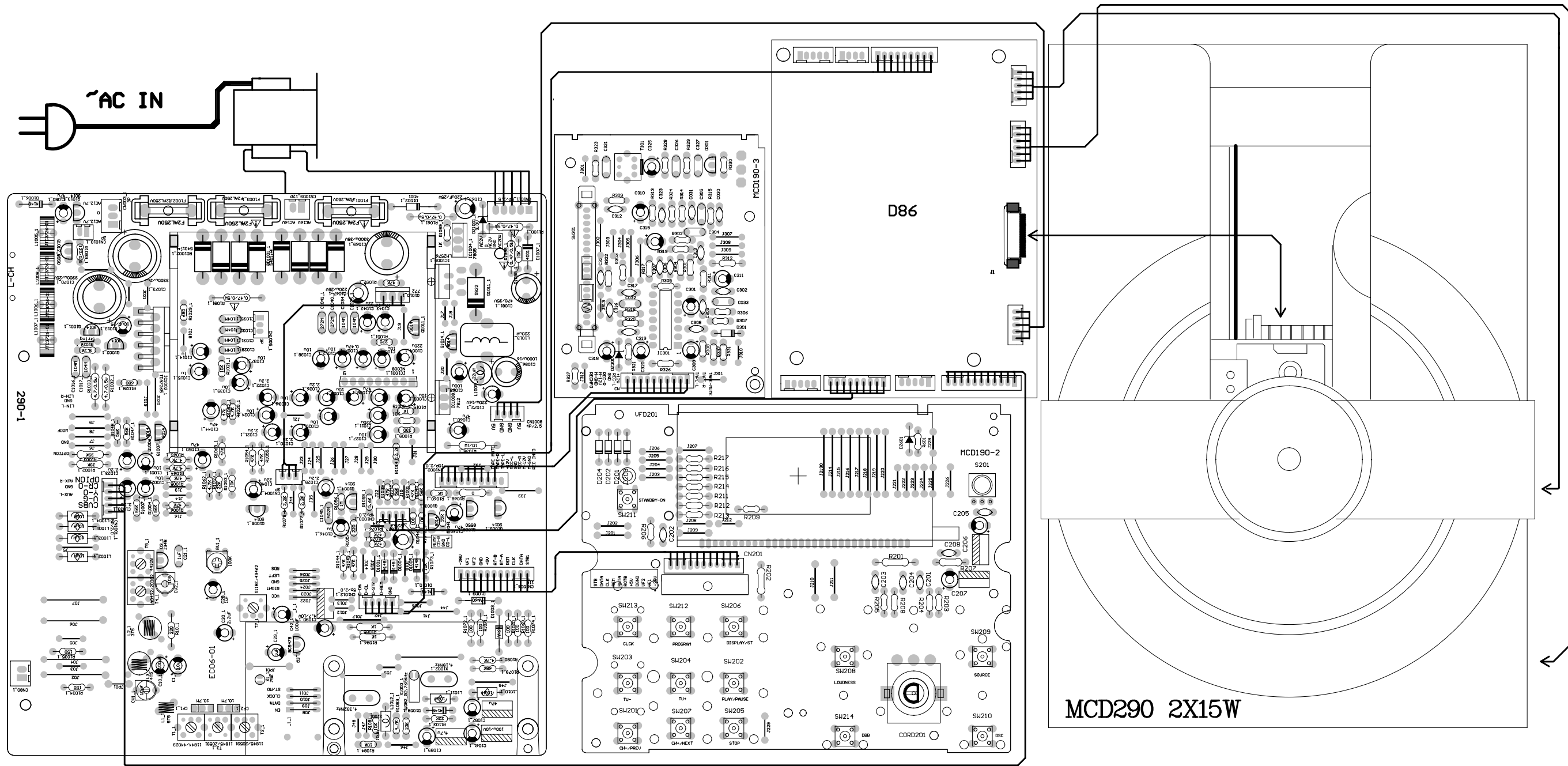


(chart4)

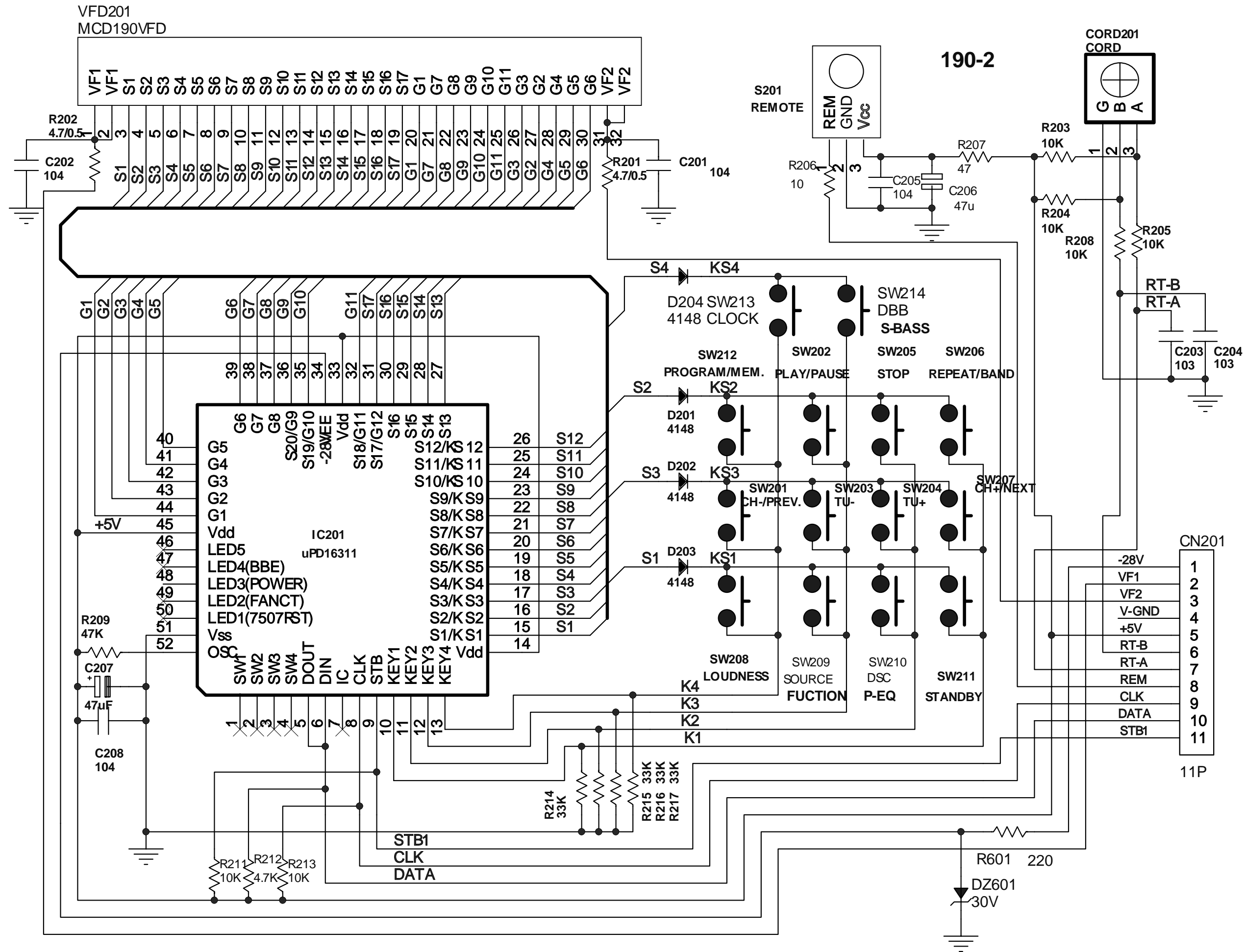
SET BLOCK DIAGRAM



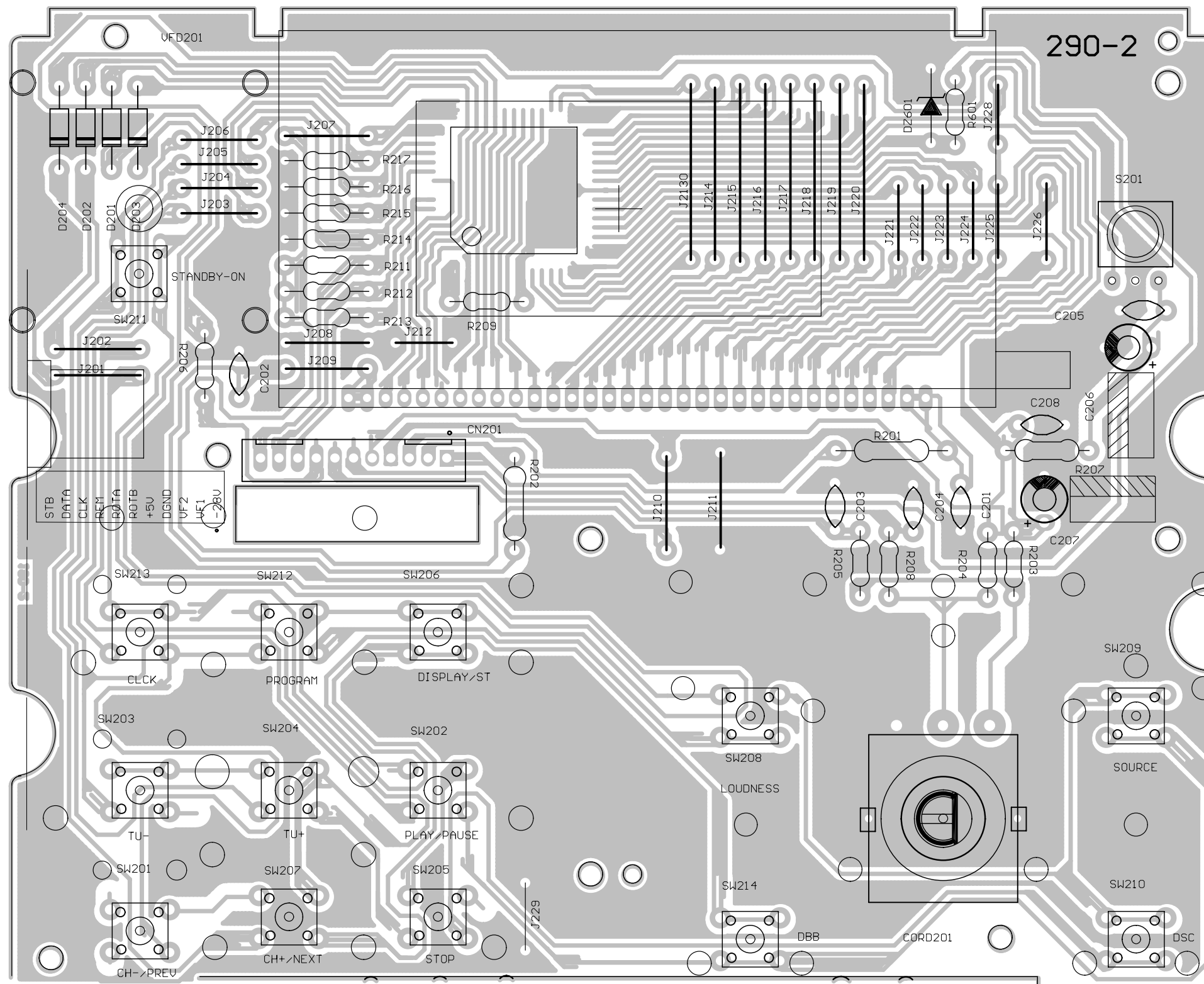
SET WIRING DIAGRAM



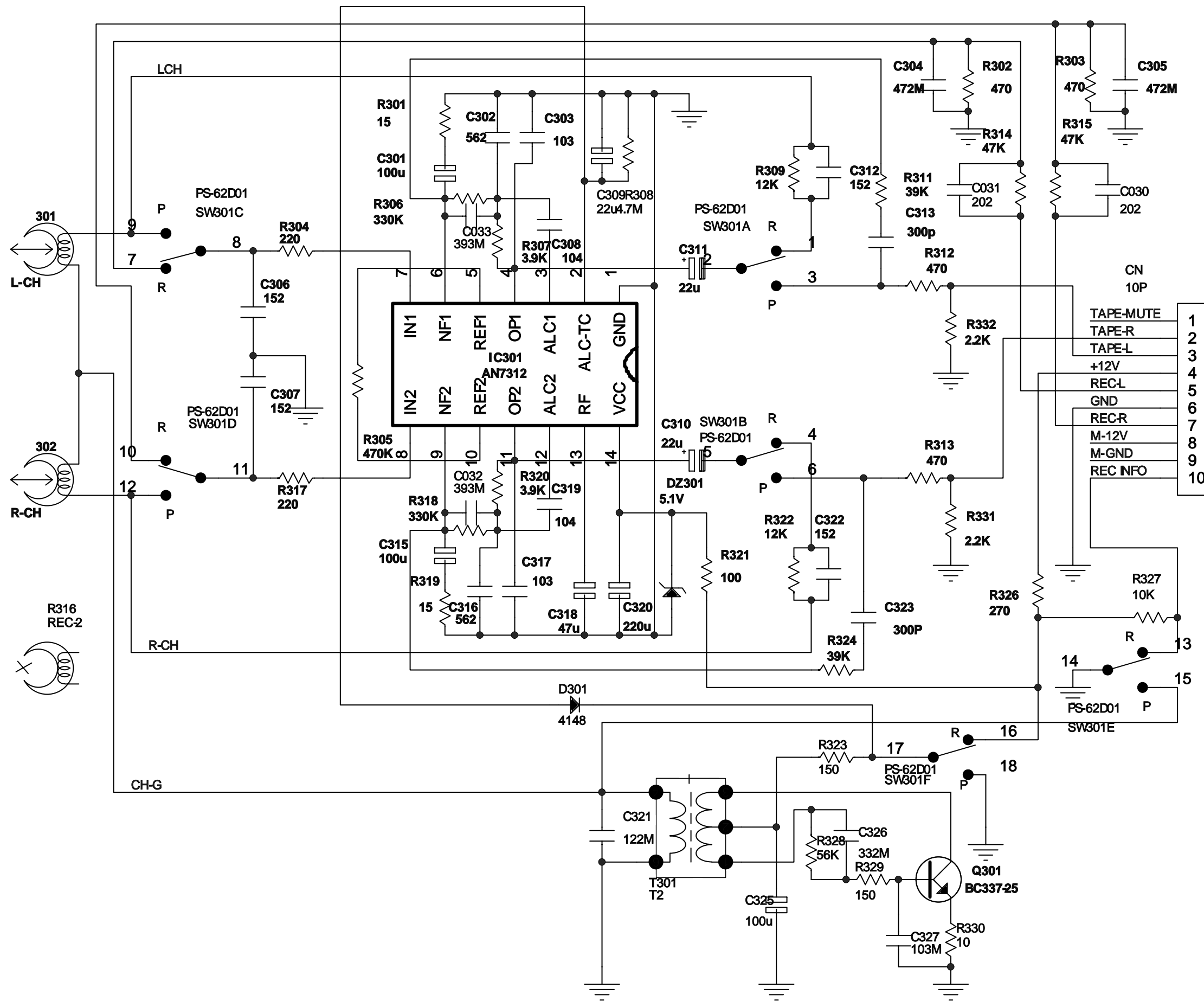
CIRCUIT DIAGRAM - DISPLAY BOARD



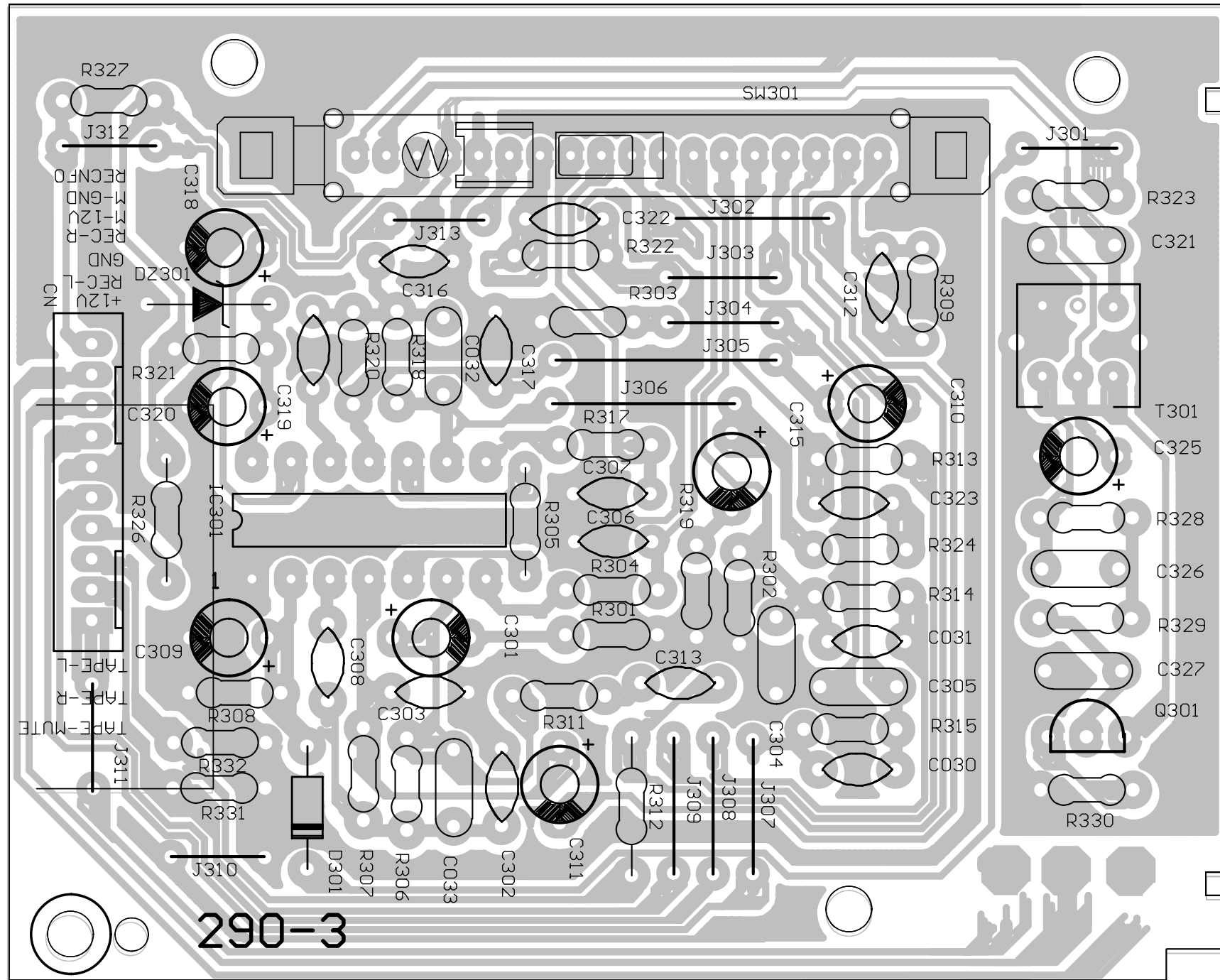
LAYOUT DIAGRAM - DISPLAY BOARD



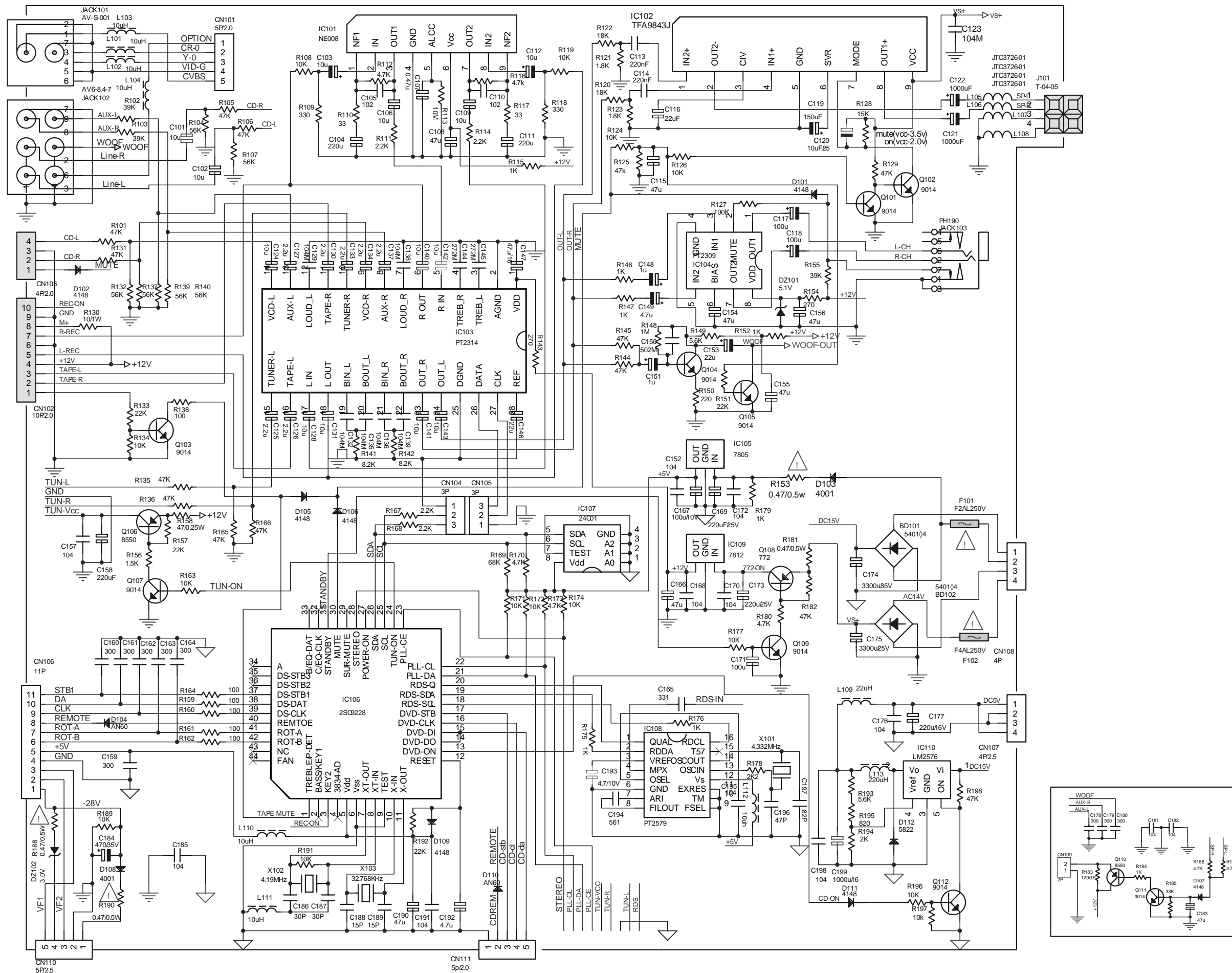
CIRCUIT DIAGRAM - CASSETTE BOARD



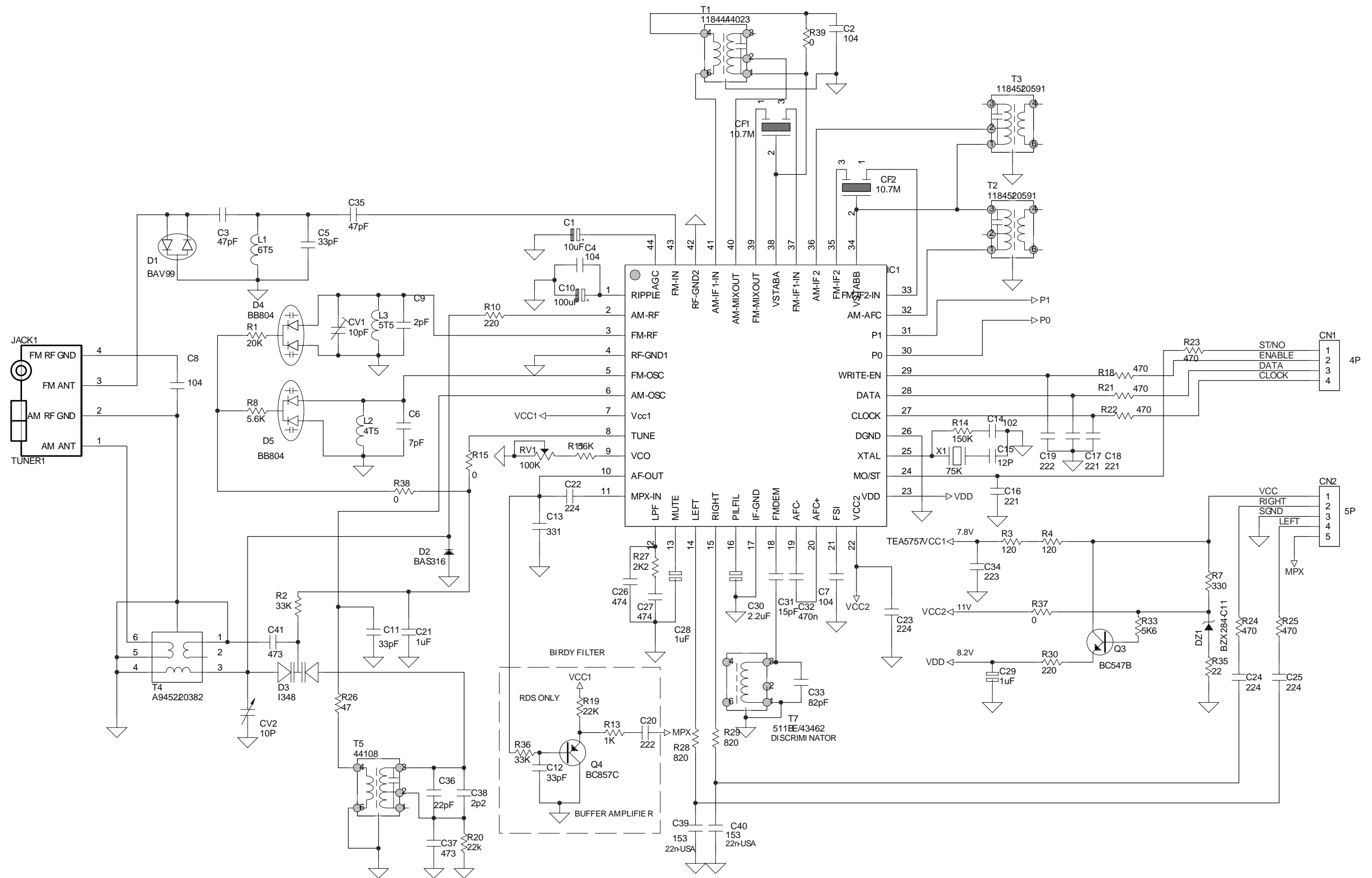
LAYOUT DIAGRAM - CASSETTE BOARD



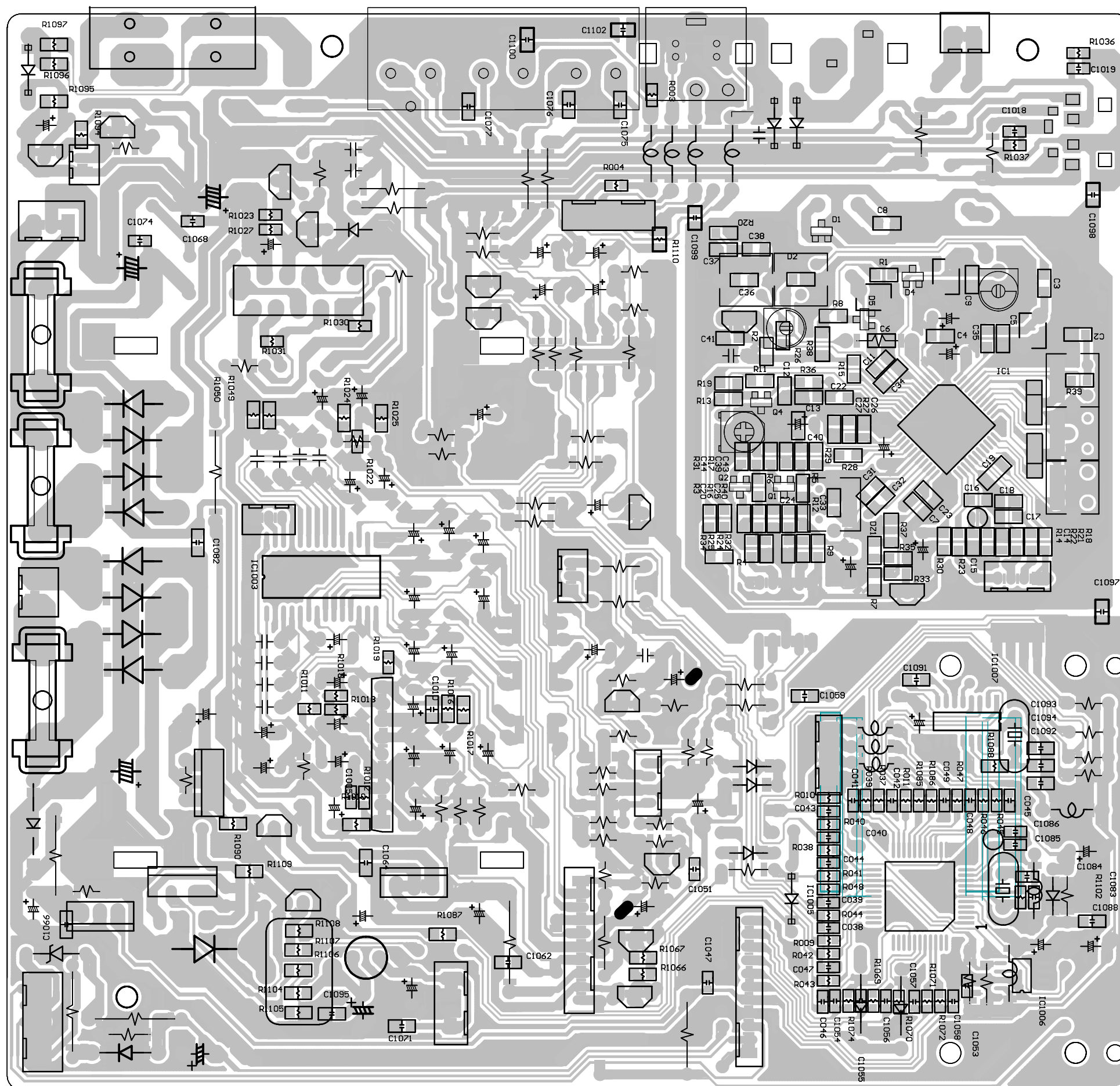
CIRCUIT DIAGRAM - MAIN BOARD (AMP PART) ONLY FOR MCD290



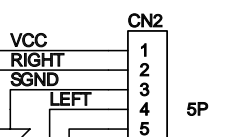
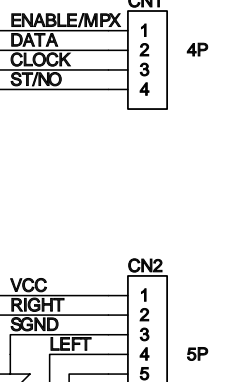
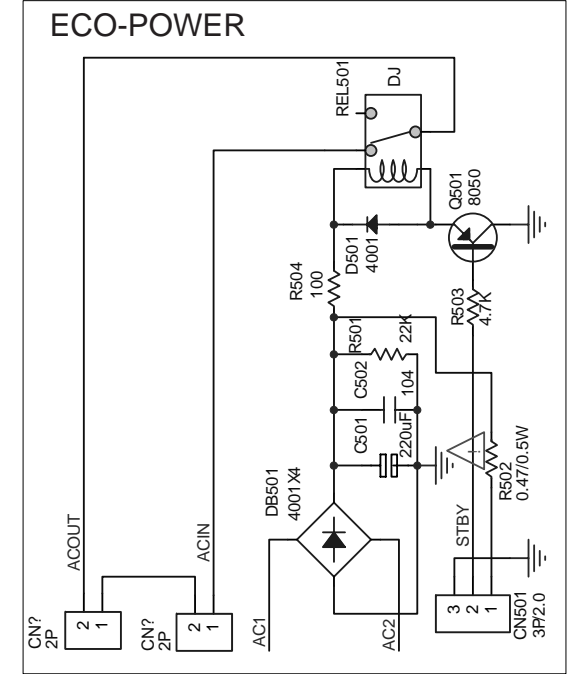
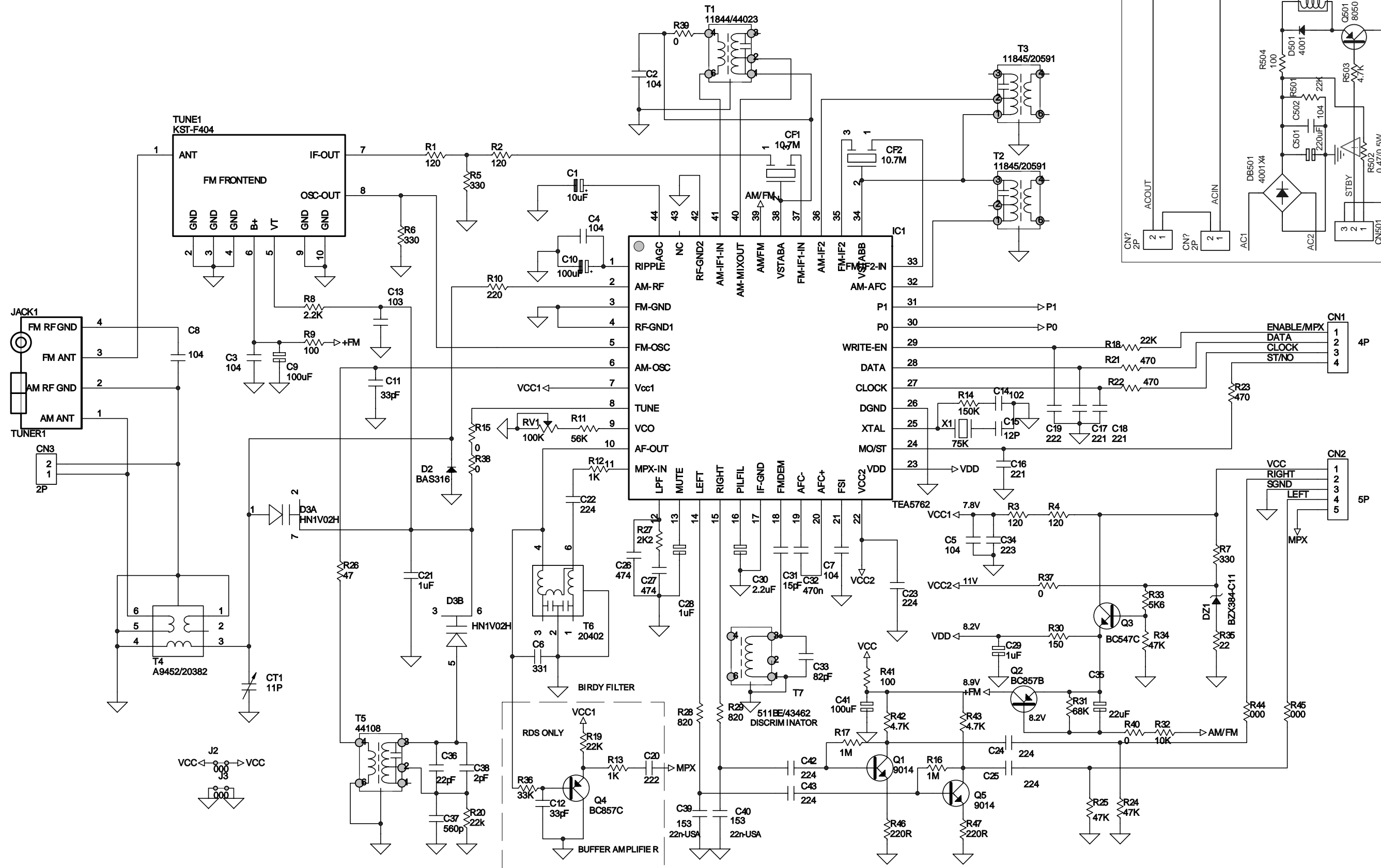
CIRCUIT DIAGRAM - MAIN BOARD (TUNER PART) ONLY FOR MCD290



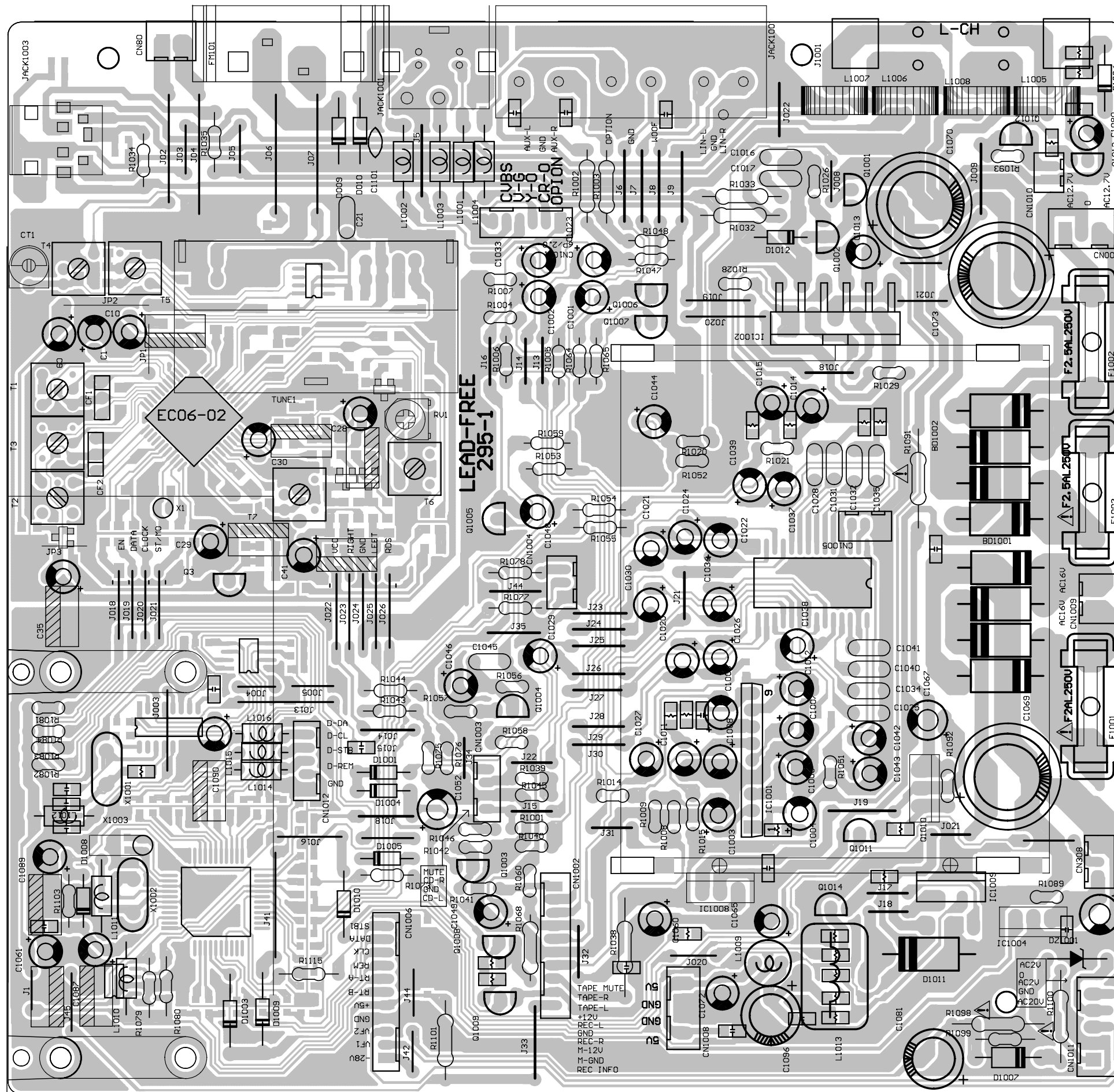
LAYOUT DIAGRAM - MAIN BOARD
ONLY FOR MCD290



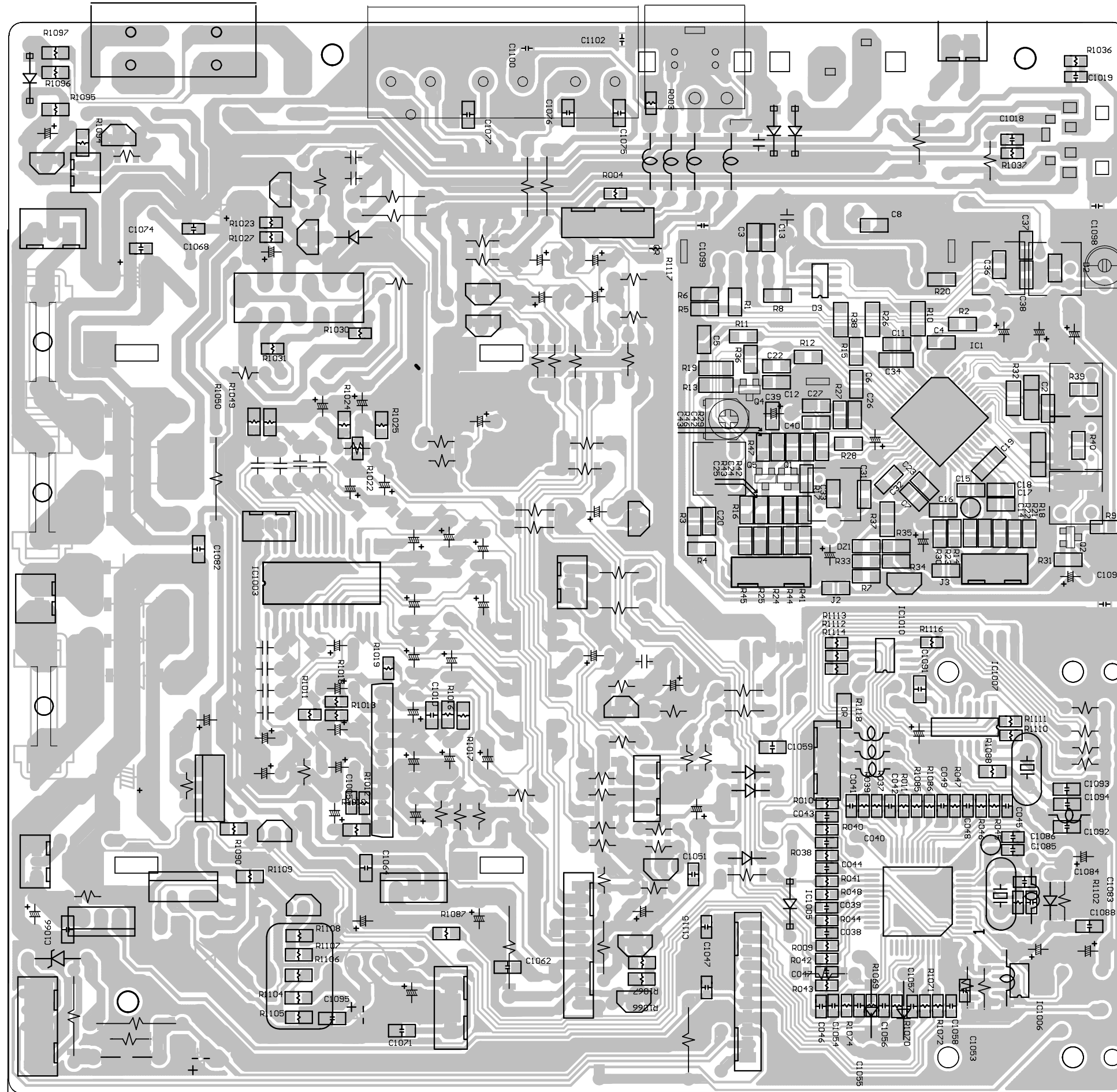
CIRCUIT DIAGRAM - MAIN BOARD (TUENR PART) ONLY FOR MCD295



LAYOUT DIAGRAM - MAIN BOARD
ONLY FOR MCD295

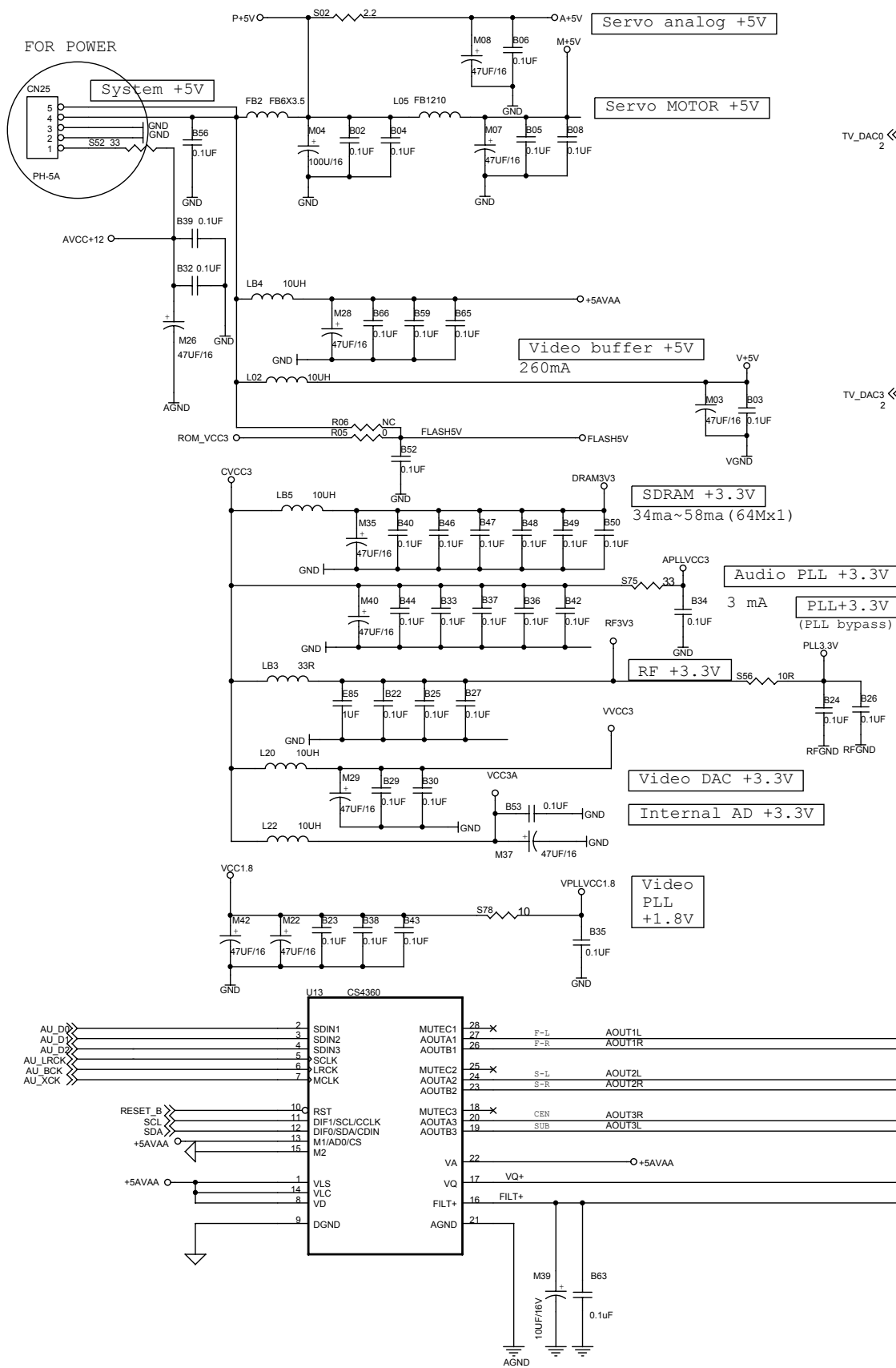


LAYOUT DIAGRAM - MAIN BOARD
ONLY FOR MCD295



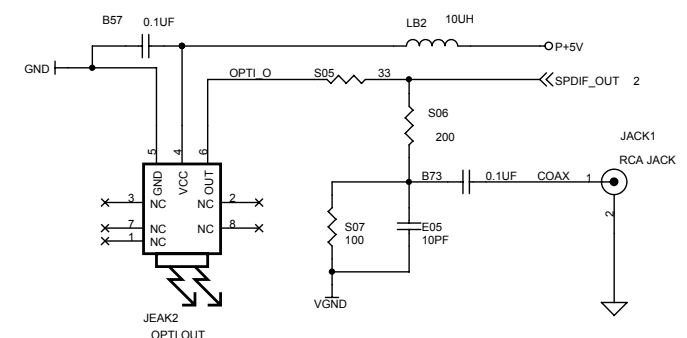
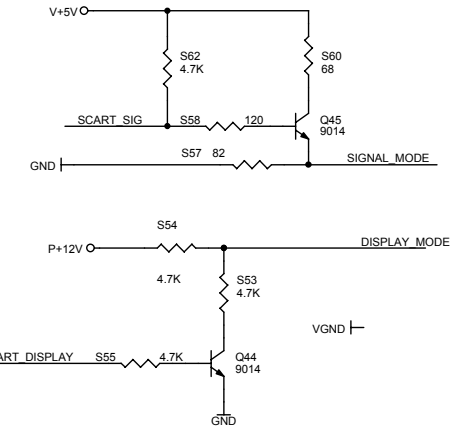
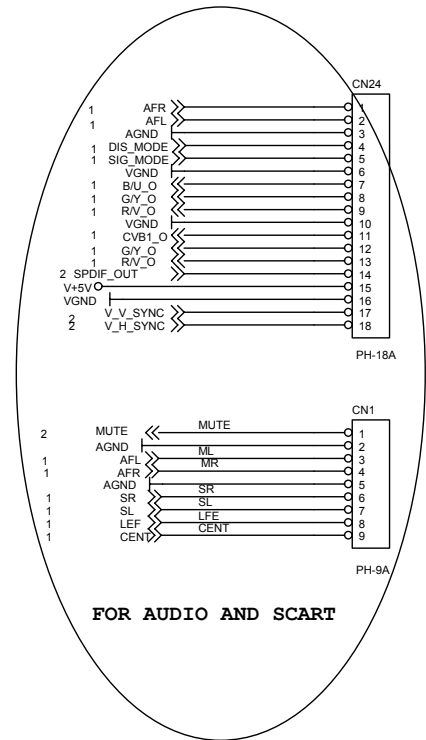
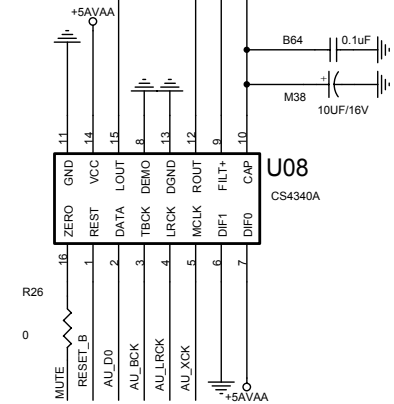
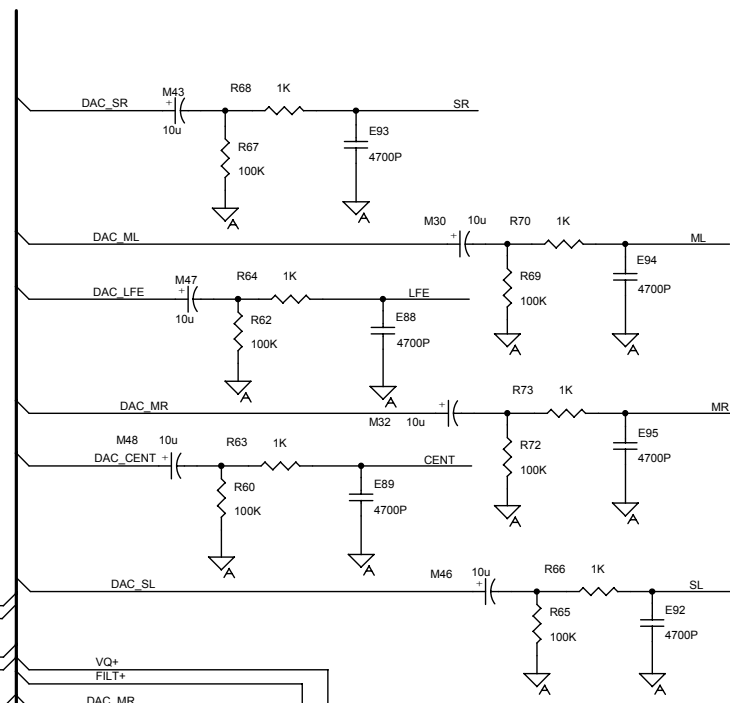
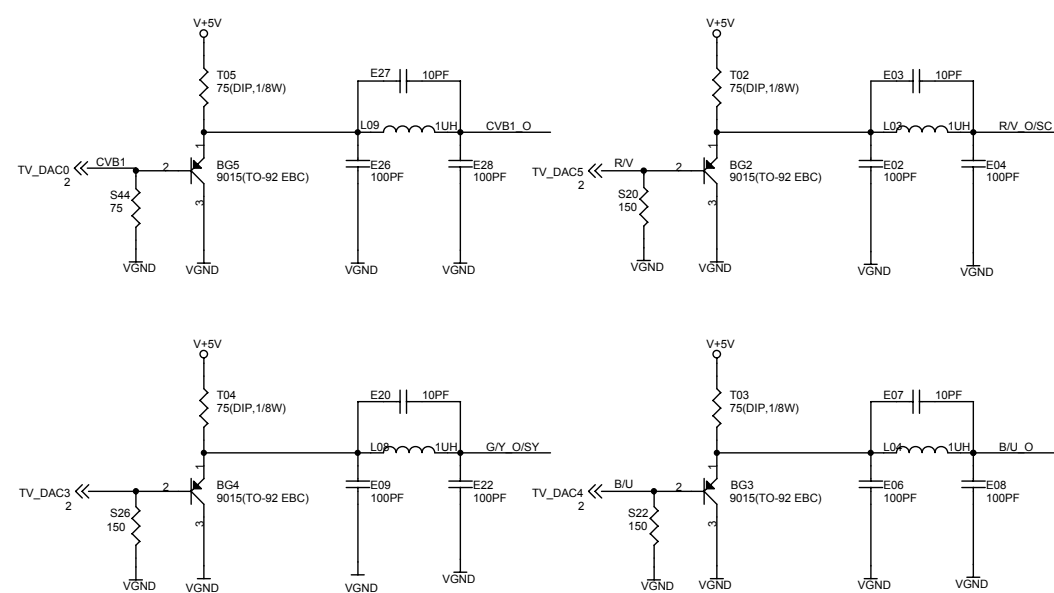
CIRCUIT DIAGRAM - DVD MPEG BOARD

MPEG board is not repaired, program for reference only.



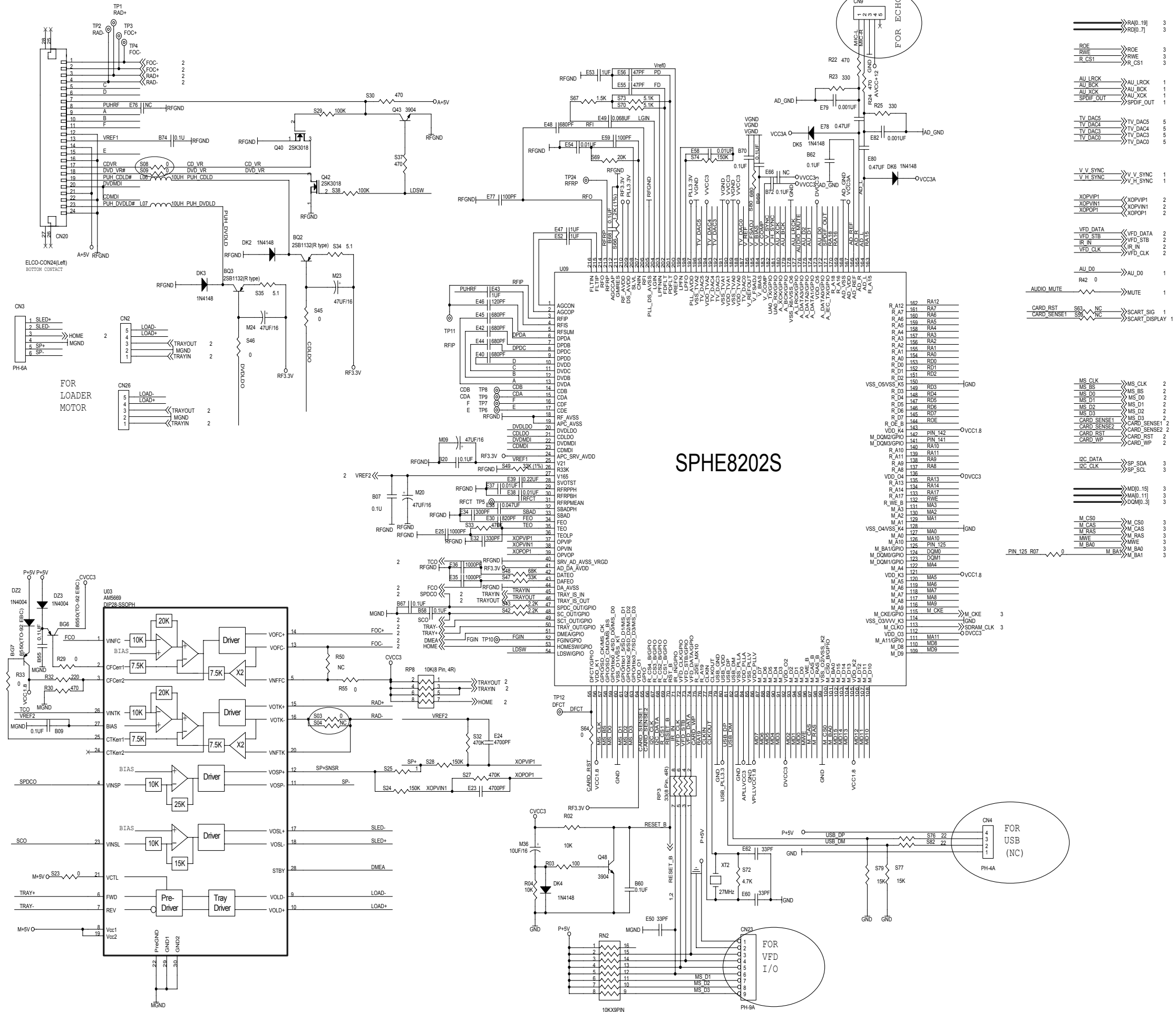
TV0	TV3	TV4	TV5
CVB	Y	Cb	Cr
CVB	Y	CVB	C
CVB	(S-Video)	CVB	(S-Video)
CVB	G	B	R

AU_D0 >>> AU_D0 2
 AU_BCK >>> AU_LRCK 2
 AU_XCK >>> AU_BCK 2
 AU_XCK >>> AU_XCK 2
 AUDIO_MUTE >>> AUDIO_MUTE 2



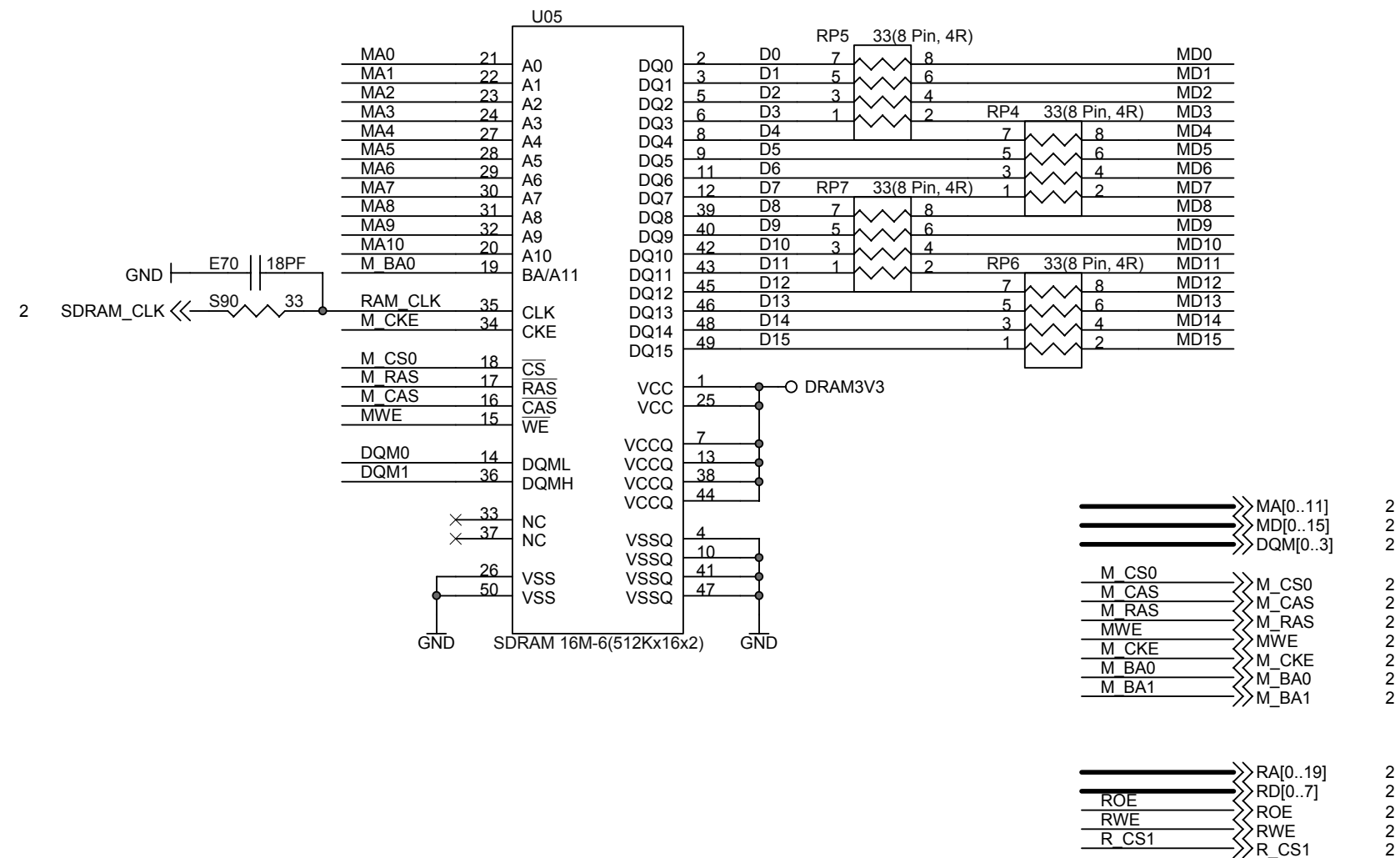
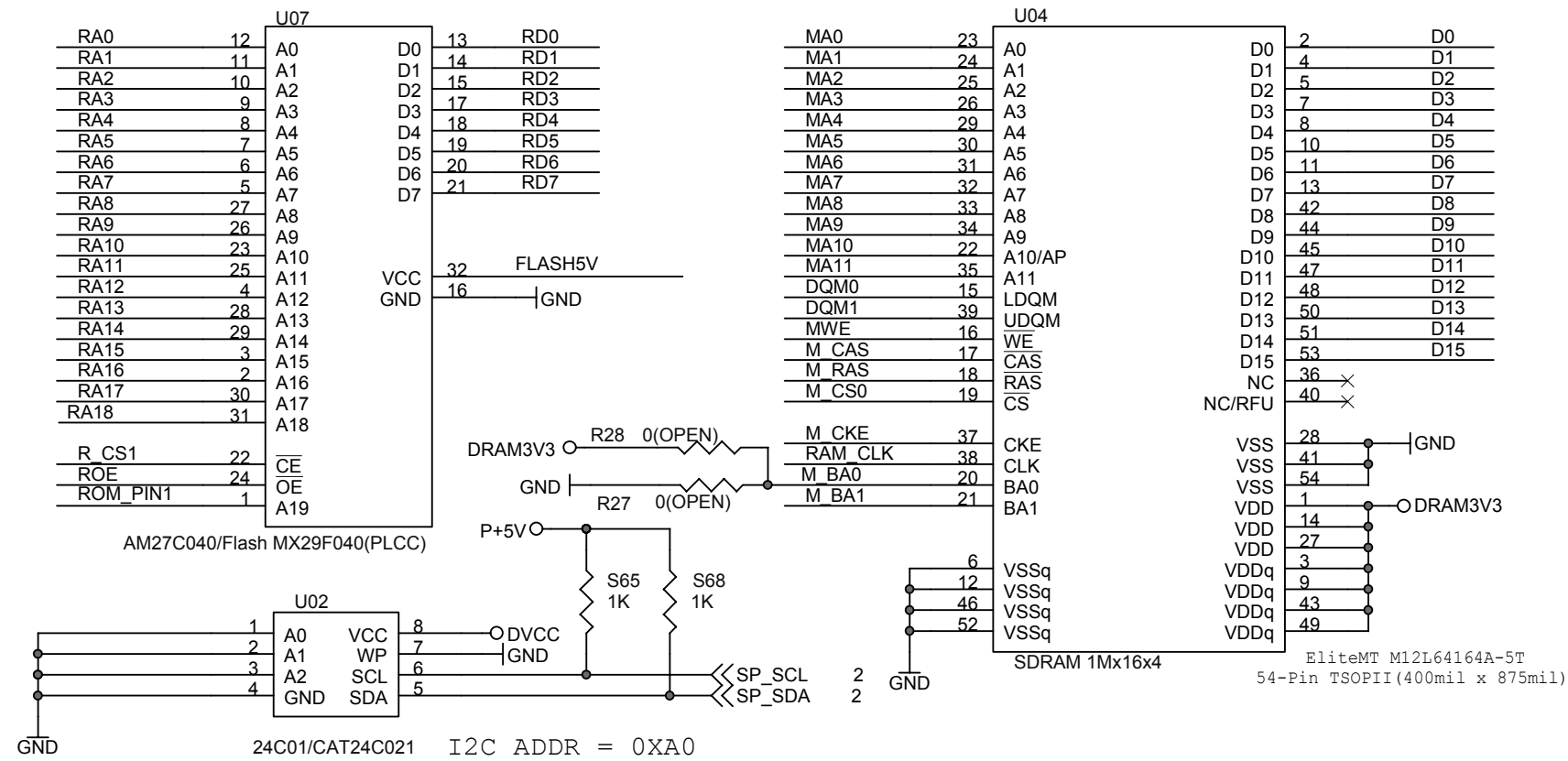
CIRCUIT DIAGRAM - DVD MPEG BOARD

MPEG board is not repaired, program for reference only.



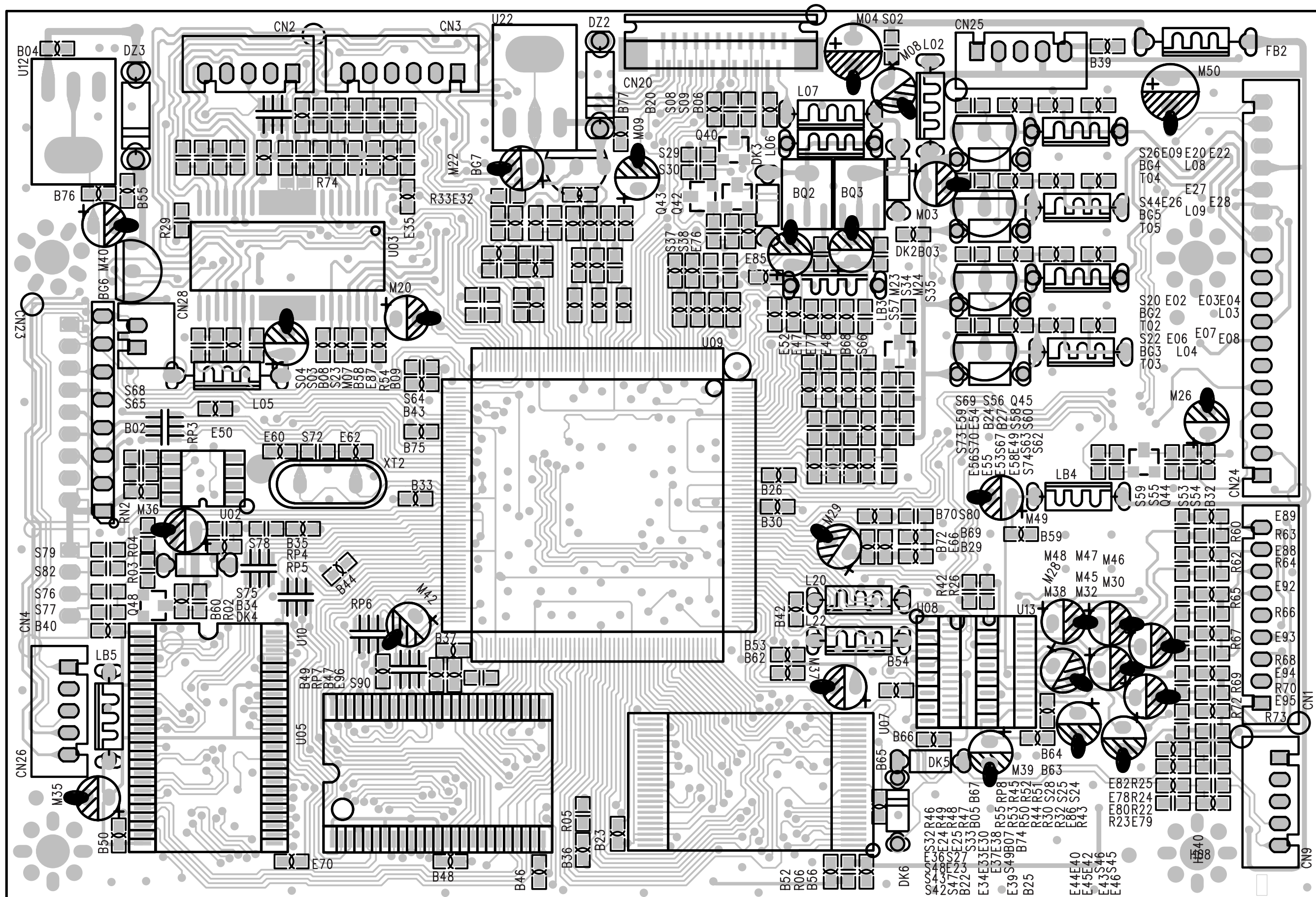
CIRCUIT DIAGRAM - DVD MPEG BOARD

MPEG board is not repaired, program for reference only.

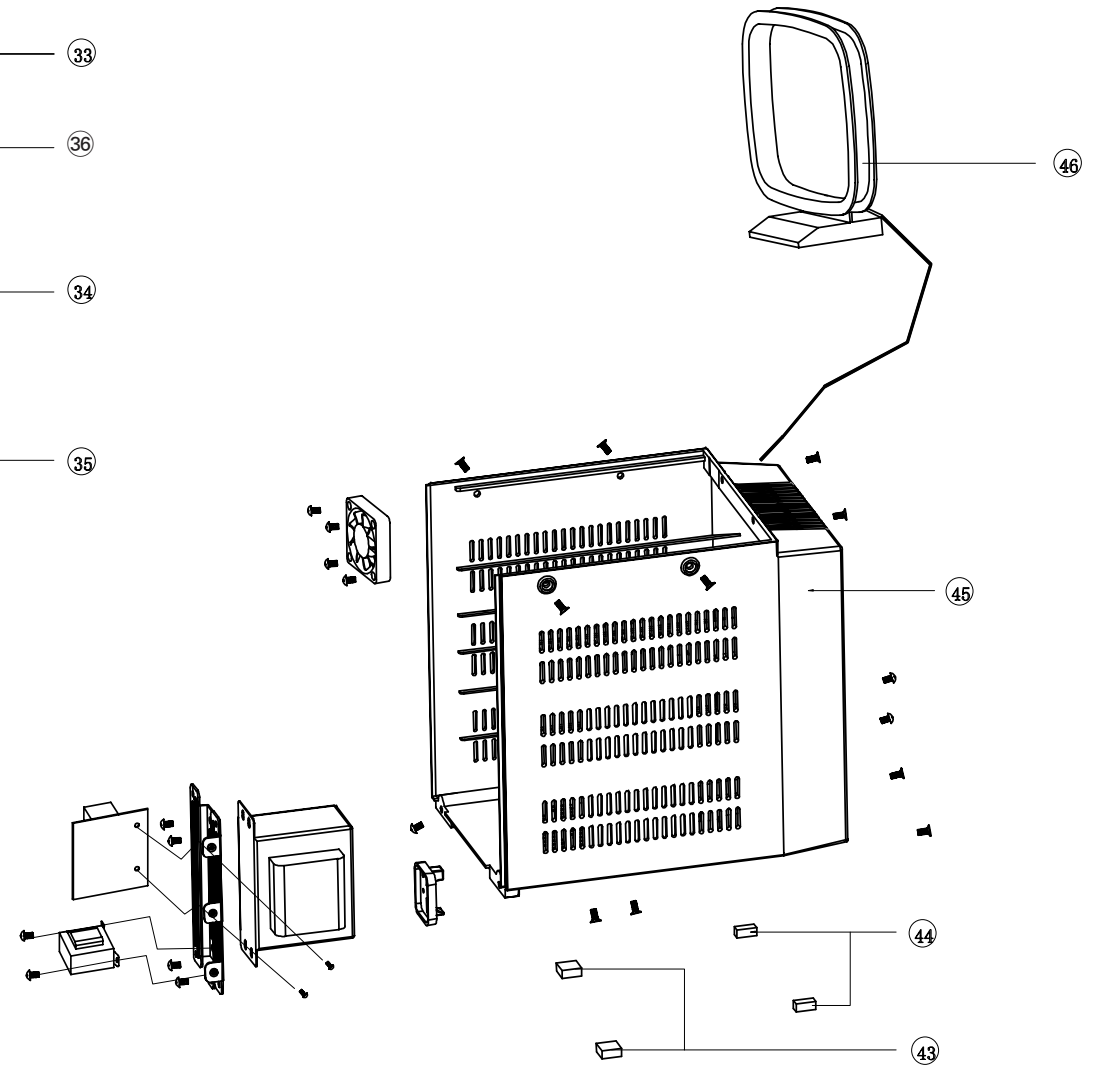
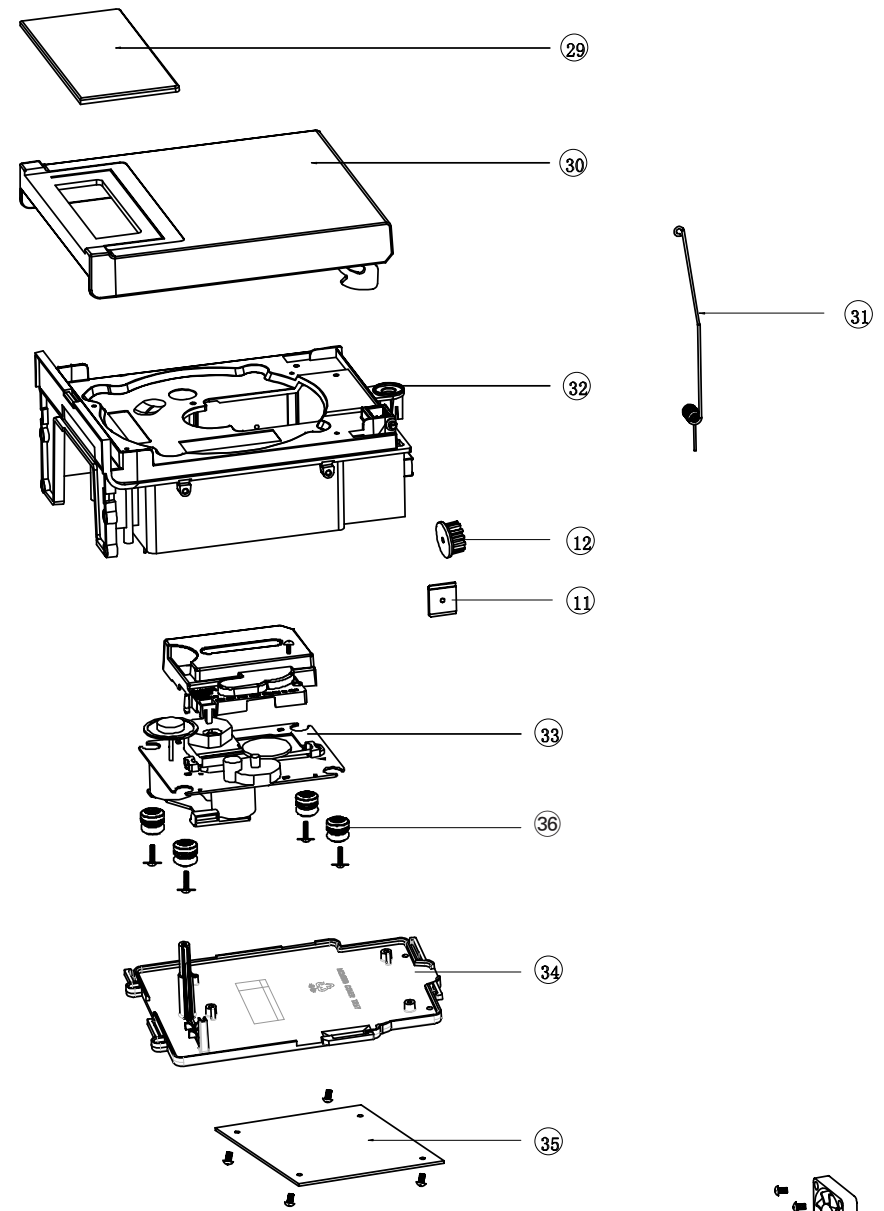
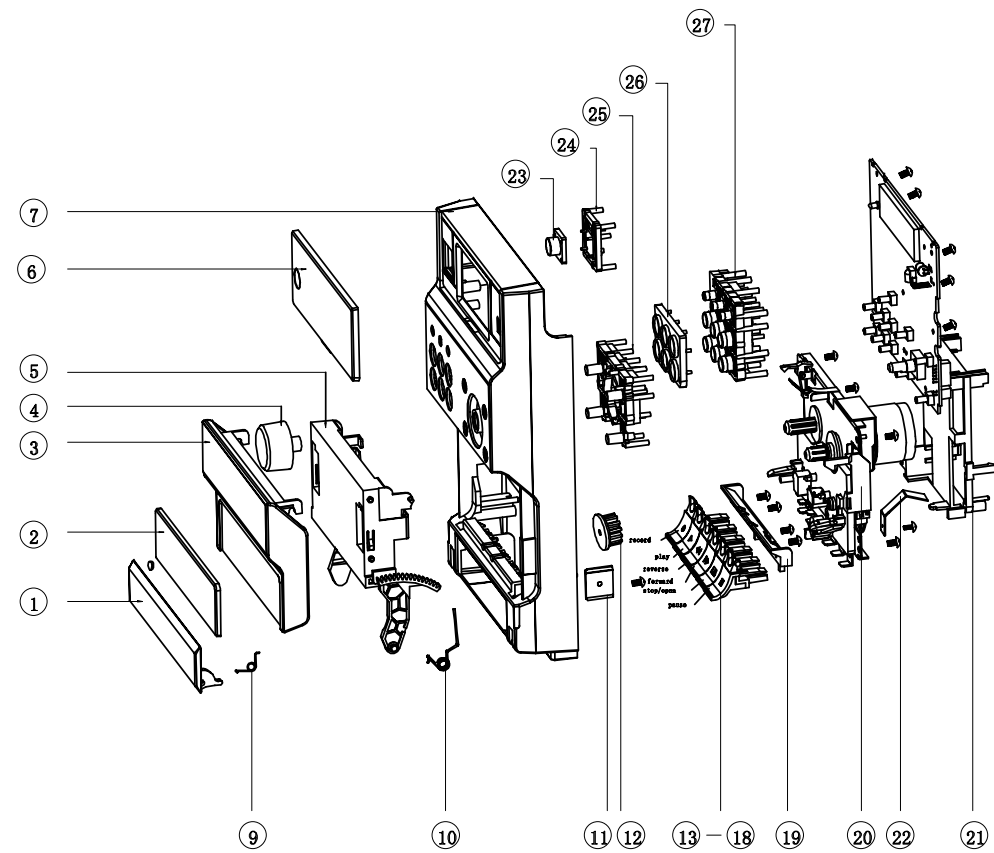


LAYOUT DIAGRAM - DVD MPEG BOARD

MPEG board is not repaired, program for reference only.



EXPLODED VIEW DIAGRAM



MECHANICAL PARTSLIST

1	9965 000 38619	COVER CASSETTE KEY
2	9965 000 38620	LENS CASSETTE
3	9965 000 38616	DOOR CASSETTE
4	9940 000 03123	KNOB VOLUME
5	9940 000 03111	BRACKET CASSETTE DOOR
6	9965 000 38622	LENS DISPLAY
7	9965 000 38615	CABINET FRONT
9	9940 000 03136	CASSETTE KEY COVER SPRING
10	9940 000 03137	CASSETTE DOOR SPRING
11	9940 000 03113	DAMPER GEAR BRACKET
12	9940 000 03142	DAMPER GEAR
13	9940 000 03127	KEY CASSETTE PAUSE
14	9940 000 03122	KEY CASSETTE STOP/OPEN
15	9940 000 03124	KEY CASSETTE FORWARD
16	9940 000 03125	KEY CASSETTE REVERSE
17	9940 000 03132	KEY CASSETTE PLAY
18	9940 000 03129	KEY CASSETTE RECORD
19	9940 000 03117	CLAMPER CASSETTE KEY
20	9940 000 03138	SINGLE CASSETTE MECHANISM
21	9940 000 03114	CASS PCB BKT.
22	9940 000 03774	RECORDING CONTACT PLATE
23	9940 000 03131	BUTTON POWER
24	9965 000 38618	BRACKET POWER KNOB
25	9940 000 03128	BUTTON PROGRAM
26	9940 000 03116	RING-CD FUNCTION BUTTON
27	9940 000 03126	BUTTON CD FUNCTION
29	9965 000 38621	LENS CD DOOR
30	9965 000 38617	DOOR CD (for MCD295)
30	9940 000 03777	DOOR CD (for MCD290)
31	9940 000 03135	CD DOOR SPRING
32	9940 000 03107	TRAY CD
33	9940 000 02563	DVD MECHANISM IDM520A
34	9940 000 03141	TRAY CD COVER
35	9965 000 38623	DVD MPEG DECODER CARD ASS'Y
36	9940 000 03185	DVD VIBRATION CUSHION
43	9940 000 03133	RUBBER FOOT A
44	9940 000 03134	RUBBER FOOT B
45	9940 000 03106	CABINET REAR

ACCESSORIES


9965 000 38624	SPEAKER BOX ASS'Y
9940 000 02562	AM ANTENNA HOLDER
9940 000 05533	JUMPER WIRE(26#) 5.5M BLACK
9940 000 05532	1P WIRE(26#) 1.8M (FM ANT.)
9940 000 03144	REMOTE HANDSET
9965 000 38625	POWER PLUG ADAPTOR (not for -/12)

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

ELETRICAL PARTSLIST (ONLY FOR MCD290)**- MAIN BOARD -**

T1	994000003446	I.F.T. COIL 44023
T2	994000003447	I.F.T. COIL 20591
T3	994000003447	I.F.T. COIL 20591
T4	994000003448	I.F.T. COIL 20382
T5	994000003449	I.F.T. COIL 44108
T7	994000003451	I.F.T. COIL 43462
CF1	994000003153	FM CER. FILTER FREQ. 10.7MHz
CF2	994000003153	FM CER. FILTER FREQ. 10.7MHz
D1001	994000002515	ZENER DIODE 3V
DZ1	994000003761	CHIP ZENER DIODE BZX384-C11
D1	994000003764	DIODE BAV99
D3	994000003762	VARIODE DIODE I348
D4	994000003763	VARIODE DIODE BB804
D5	994000003763	VARIODE DIODE BB804
Q1	994000003156	CHIP TRANSISTOR 9014
Q1001	994000002545	TRANSISTOR 9014C
Q1002	994000002545	TRANSISTOR 9014C
Q1003	994000002545	TRANSISTOR 9014C
Q1004	994000002545	TRANSISTOR 9014C
Q1005	994000002545	TRANSISTOR 9014C
Q1006	994000002545	TRANSISTOR 9014C
Q1007	994000002545	TRANSISTOR 9014C
Q1008	994000002519	TRANSISTOR 8550C
Q1009	994000002545	TRANSISTOR 9014C
Q1010	994000002517	TRANSISTOR 2SB772
Q1011	994000002545	TRANSISTOR 9014C
Q1012	994000002519	TRANSISTOR 8550C
Q1013	994000002545	TRANSISTOR 9014C
Q1014	994000002545	TRANSISTOR 9014C
Q2	994000003156	CHIP TRANSISTOR 9014
Q3	994000003438	TRANSISTOR BC547B
IC1009	994000003157	2576-ADJPB TO-220B
IC1	994000003421	TEA5757H
IC1002	994000003767	TDA7265 STEREO POWER
IC1006	994000002547	AT24C02-PC27
IC1003	994000002525	PT2314 PRINCETON
IC1004	994000002548	LM7805/LM340T5 7805
IC1008	994000002526	I.C.7812
IC1005	994000003162	CPU U252
X1003	994000002551	CRYSTAL OSC FREQ.32,768KHz
X1002	994000003768	CRYSTAL 4,194304 MHz
X1	994000003452	QUARTZ CRYSTAL 75KHz
JK1003	994000003164	HEADPHONE JACK
J1001	994000003165	SPEAKER TERMINAL
JK1002	994000003769	6 PINS RCA SOCKET

ELETRICAL PARTSLIST (ONLY FOR MCD290)**- MAIN BOARD -**

JACK1	994000003435	ANT.TERMINAL WP2-4B
JK1001	994000003416	RCA SOCKET+S-VIDEO
F1001	 994000002529	FUSE F2AL250V
F1002	 994000002529	FUSE F2AL250V
F1003	 994000002529	FUSE F2AL250V





- DISPLAY BOARD -

IC201	994000002539	PT6311 / SC16311 / CD16311
VFD201	994000003171	VFD DISPLAY NE-190D-2-WR
S201	994000002542	IR SENSOR
SW211	994000003167	LIGHT TOUCH SWITCH
SW201	994000003168	LIGHT TOUCH SWITCH
SW202	994000003168	LIGHT TOUCH SWITCH
SW203	994000003168	LIGHT TOUCH SWITCH
SW204	994000003168	LIGHT TOUCH SWITCH
SW205	994000003168	LIGHT TOUCH SWITCH
SW206	994000003168	LIGHT TOUCH SWITCH
SW207	994000003168	LIGHT TOUCH SWITCH
SW208	994000003168	LIGHT TOUCH SWITCH
SW209	994000003168	LIGHT TOUCH SWITCH
SW210	994000003168	LIGHT TOUCH SWITCH
SW212	994000003168	LIGHT TOUCH SWITCH
SW213	994000003168	LIGHT TOUCH SWITCH
SW214	994000003168	LIGHT TOUCH SWITCH
COD201	994000003173	ROT ENCODER

- CASSETEE BOARD -




T301	994000003174	BAIS I.F.T.COIL T1245
DZ301	994000002516	ZENER DIODE 5V1
Q301	994000003771	TRANSISTOR BC337-25
IC301	994000003176	AN7312
SW301	994000003177	SWITCH 6P2T PS-62D01

- MISCELLANEOUS-

	994000002508	VIDEO WIRE
	994000003179	DOOR LATCH SWITCH
	994000003184	24P FLAT FELX CABLE
	994000003085	AC LINE CORD SAA (-/79)
	994000002566	AC CHANGE SWITCH (-/98)
	994000003181	AC LINE CORD 1.95M (-/98)
	994000003784	POWER TRANSFORMER 120V/230V (-/98)
	994000003772	POWER TRANSFORMER 240V/50HZ (-/79)

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

ELECTRICAL PARTSLIST (ONLY FOR MCD295)**- MAIN BAORD -**

T1	9940 000 05141	I.F.T. COIL BROWN 6298
T2	9940 000 05139	I.F.T. COIL BROWN 6298
T3	9940 000 05139	I.F.T. COIL BROWN 6298
T4	9940 000 05142	I.F.T. COIL BROWN 6299
T5	9940 000 05138	I.F.T. COIL BROWN 6296
T7	9940 000 05137	I.F.T. COIL BROWN 6295
CF1	9940 000 03153	FM CER. FILTER FREQ. 10.7MHZ
CF2	9940 000 03153	FM CER. FILTER FREQ. 10.7MHZ
DZ1001	9940 000 02515	ZENER DIODE 3V
DZ1	9940 000 03761	ZENER DIODE BZX384-C11 11V
D3	9940 000 03796	VARIODE DIODE HN1V02H SOP8
D2	9940 000 03759	DIODE BAS316
Q1	9940 000 03156	CHIP TRANSISTOR 9014
Q5	9940 000 03156	CHIP TRANSISTOR 9014
Q2	9940 000 05144	CHIP TRANSISTOR BC857B
Q1010	9940 000 02517	TRANSISTOR 2SB772
Q3	9940 000 03438	TRANSISTOR BC547B
Q1008	9940 000 02519	TRANSISTOR 8550C
Q1012	9940 000 02519	TRANSISTOR 8550C
Q1001	9940 000 02545	TRANSISTOR 9014C
Q1002	9940 000 02545	TRANSISTOR 9014C
Q1003	9940 000 02545	TRANSISTOR 9014C
Q1004	9940 000 02545	TRANSISTOR 9014C
Q1005	9940 000 02545	TRANSISTOR 9014C
Q1006	9940 000 02545	TRANSISTOR 9014C
Q1007	9940 000 02545	TRANSISTOR 9014C
Q1009	9940 000 02545	TRANSISTOR 9014C
Q1011	9940 000 02545	TRANSISTOR 9014C
Q1013	9940 000 02545	TRANSISTOR 9014C
Q1014	9940 000 02545	TRANSISTOR 9014C
IC1009	9940 000 03157	2576-ADJPB
IC1	9940 000 03797	IC TEA5762
IC1002	9940 000 03767	IC TDA7265 STEREO POWER IC
IC1006	9940 000 02547	IC AT24C02-PC27(2.7V)
IC1003	9940 000 05066	I.C.PT2314 PRINCETON
IC1004	9940 000 02548	IC LM7805
IC1007	9940 000 03798	IC PT2579-SN SMALL
IC1008	9940 000 05067	IC 7812
IC1005	9940 000 03162	CPU U252
IC1010	9940 000 03512	CHIP IC AC6811
X1003	9940 000 02551	CRYSTAL OSC FREQ. 32.768 KHZ
X1002	9940 000 03768	CRYSTAL 4.194304 MHZ
X1001	9940 000 04962	CRYSTAL 4.332MHZ /12
X1	9940 000 03452	QUARTZ CRYSTAL 75KHZ D3.0
JK1003	9940 000 03164	HEADPHONE JACK
J11001	9940 000 03165	SPEAKER TERMINAL
JK1002	9940 000 03166	6P RCA SOCKET
JACK1	9940 000 04941	FM OUTPUT SOCKET
JK1001	9940 000 03416	RCA SOCKET S - VIDEO
F1001	 9940 000 02529	FUSE F2AL250V
F1002	 9965 000 38626	FUSE F2.5AL250V
F1003	 9965 000 38626	FUSE F2.5AL250V




ELECTRICAL PARTSLIST (ONLY FOR MCD295)**- DISPLAY BAORD -**

IC201	9940 000 02539	IC PT6311
VFD201	9940 000 03171	VFD DISPLAY
S201	9940 000 02542	IR SENSOR
SW211	9940 000 03167	LIGHT TOUCH SWITCH
SW201	9940 000 03168	LIGHT TOUCH SWITCH
SW202	9940 000 03168	LIGHT TOUCH SWITCH
SW203	9940 000 03168	LIGHT TOUCH SWITCH
SW204	9940 000 03168	LIGHT TOUCH SWITCH
SW205	9940 000 03168	LIGHT TOUCH SWITCH
SW206	9940 000 03168	LIGHT TOUCH SWITCH
SW207	9940 000 03168	LIGHT TOUCH SWITCH
SW208	9940 000 03168	LIGHT TOUCH SWITCH
SW209	9940 000 03168	LIGHT TOUCH SWITCH
SW210	9940 000 03168	LIGHT TOUCH SWITCH
SW212	9940 000 03168	LIGHT TOUCH SWITCH
SW213	9940 000 03168	LIGHT TOUCH SWITCH
SW214	9940 000 03168	LIGHT TOUCH SWITCH
COD201	9940 000 03173	ROT ENCODER

- CASSETTE BOARD -

T301	9940 000 03174	BAIS I.F.T.COIL T1245
DZ301	9940 000 02516	ZENER DIODE 5V1
Q301	9940 000 03771	TRANSISTOR BC337-25
IC301	9940 000 03176	AN7312
SW301	9940 000 03177	SWITCH 6P2T

- MISCELLANEOUS -

	9940 000 03799	POWER TRANSFORMER EI-228
	9940 000 03795	POWER TRANSFORMER EI-223
	9940 000 03179	DOOR LATCH SWITCH
	9965 000 38627	AC LINE CORD 1.95 VDE
	9940 000 05078	AUDIO SINGLE WIRE 1.5M
RELAY1	9940 000 03509	RELAY 10A 240V AC/30VDC

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

REVISION LIST

Version 1.0 (3141 785 30660)

- Initial Release

Version 1.1 (3141 785 30661)

- New version MCD295 /58/05 are introduced.
- Pages 10-2 : Mechanical parts list adapted.
- Pages 11-3 and 11-4 : Electrical parts list adapted.