

Service
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Service Manual



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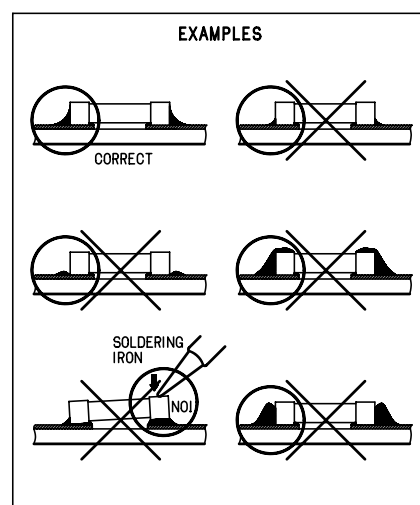
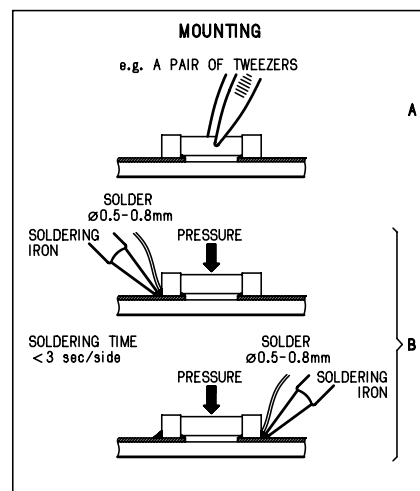
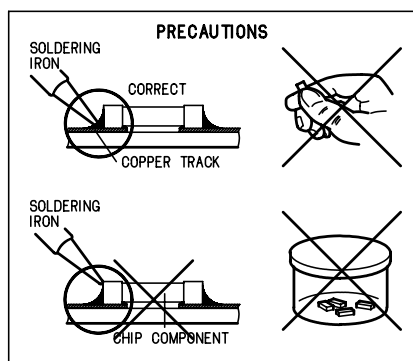
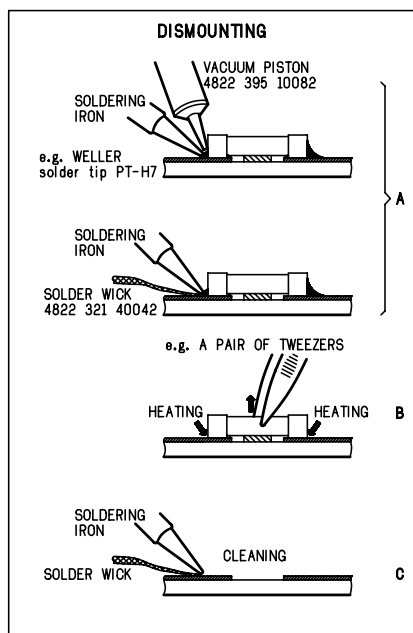
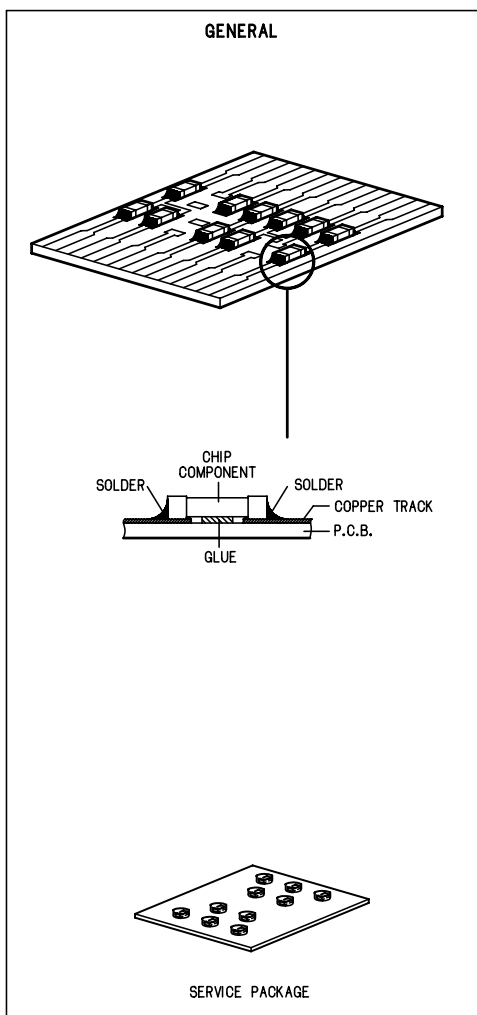
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HANDLING CHIP COMPONENTS



SERVICE TOOLS

- TORX T10 screwdriver with shaftlength 150mm.....4822 395 50423
- TORX screwdriver set SBC 163.....4822 295 50145
- 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
- Universal test cassette Fe SBC 420.....4822 397 30071

AVAILABLE ESD PROTECTION EQUIPMENT

- anti-static table mat large 1200x650x1.25mm 4822 466 10953
- small 600x650x1.25mm 4822 466 10958
- anti-static wristband 4822 395 10223
- connection box (3 press stud connections, 1MΩ) 4822 320 11307
- extendible cable (2m, 2MΩ, to connect wristband to connection box) 4822 320 11305
- connecting cable (3m, 2MΩ, to connect table mat to connection box) 4822 320 11306
- earth cable (1MΩ, 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

INFORMATION ABOUT LEAD-FREE SOLDERING

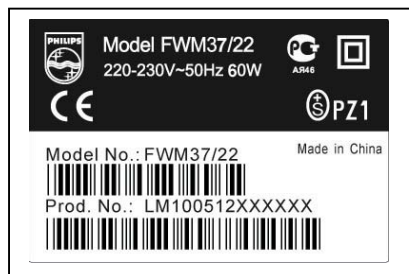
Philips CE is producing lead-free sets from 1.1.2005 onwards.

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 (lead-ed/ 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 lead-ed solder alloy / parts is possible but PHILIPS recommends strongly to avoid mixed solder alloy types (lead-ed 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 lead-ed 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.

SPECIFICATION

GENERAL

Mains voltage	-/55/96/98 : 120 / 230 V
	/93 : 220V
	/79 : 240V
	/37 : 120V
Mains frequency	-/55/96/98 : 50 / 60 Hz
	/79/93 : 50 Hz
	/37 : 60 Hz
Battery	for remote : 3V (R03, AAA x 2)
Power consumption	Max. : < 32 W (max.)
	Standby : < 5 W
Dimension (W x H x D)	
	DVD Part : 208 x 62 x 244 mm
	AMP Part : 208 x 57 x 244 mm
Weight	
	DVD Part : 1.4 Kg
	AMP Part : 2.4 Kg

AMPLIFIER

Output power	: 2 x 25 W RMS
	: 1000 W PMPO
Speaker impedance	: 2 x 8 ohm
Frequency response	: 100 Hz - 20 kHz (± 3 dB)
Aux input sensitivity	: 350 mV (600 ohm)

TUNER - FM SECTION

Tuning range	: 87.5 – 108 MHz
IF frequency	: 10.7 MHz \pm 0.2 MHz
Sensitivity	: 26 dBf at 46dB S/N
Selectivity	: 20 dB at 300kHz
IF rejection	: 50 dB
Image rejection	: 20 dB

TUNER - AM SECTION

Tuning range	MW(9 kHz) : 531 - 1602 kHz
	AM (10 kHz) : 530 – 1700 kHz
IF frequency	: 450 kHz \pm 3 kHz
Sensitivity	MW : 4000 μ V/m at 26dB S/N
Selectivity	MW : 16 dB
IF rejection	MW : 24 dB
Image rejection	MW : 20 dB

DVD / MP3 / CD

Laser Type	: Semiconductor
Disc Diameter	: 12cm / 8cm
Video Decoding	: MPEG-2 / MPEG-1
Signal System	: PAL / NTSC
Video S/N	: 53 dB (min.)
Composite Video Output	: 1.0 Vp-p, 75 Ω
S-Video Output	: Y - 1.0 Vp-p, 75 Ω
	C - 0.286 Vp-p, 75 Ω
Audio DAC	: 24 Bits / 96 kHz
Frequency Response	: 4 Hz - 20 kHz (44.1kHz)
	4 Hz - 22 kHz (48kHz)
	4 Hz - 44 kHz (96kHz)
Digital Output	: SPDIF (Sony Philips
	digital interface) Coaxial
No. of programmable tracks	: 20
Signal-to-noise ratio	: \geq 50 dBA
Channel separation	: \geq 40 dB (1 kHz)
Total harmonic distortion	: < 0.02% (1 kHz)

TFT LCD PANEL

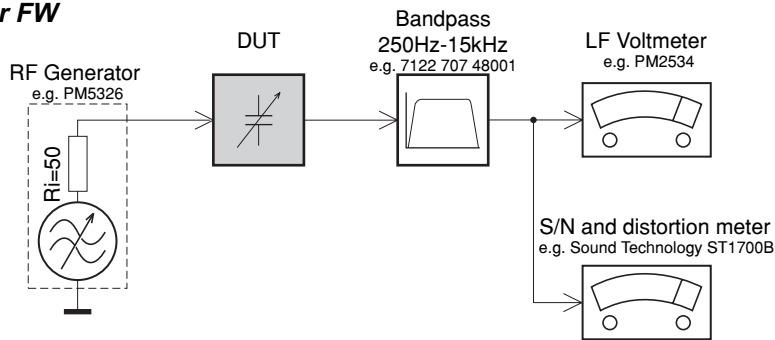
Number of pixels(HXV)	: 280x220
Brightness	dark room : >150cd/m ²
Contrast	dark room : 150 :1

LOUDSPEAKERS

2-way bass reflex system	
Dimension (W x H x D)	: 145 x 230 x 210 mm
Weight	: 2.4 Kg each

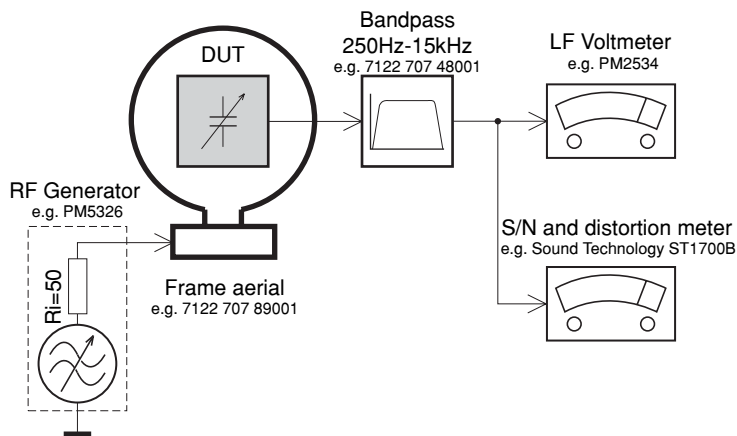
SERVICE MEASUREMENT

Tuner FW



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

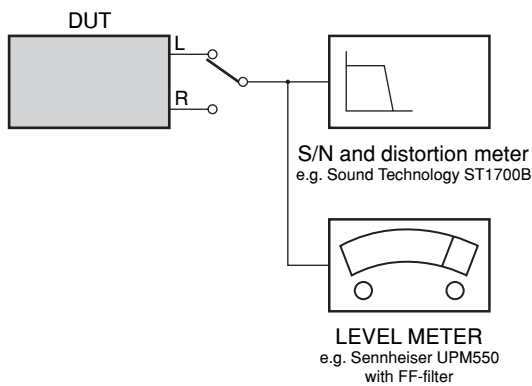
Tuner AM (MW,LW)



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

CD

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



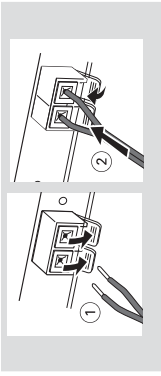
CONNECTION AND CONTROLS

Connections

Connecting antennas

Connect the supplied MW loop antenna and FM antenna to the respective terminals. Adjust the position of the antenna for optimal reception.

MW Indoor Loop Antenna



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

FM Indoor Antenna



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

Connecting the control cable

Connect the serial port marked "CONTROL CABLE" at the rear of the DVD player to the same port at the rear of the power amplifier with the supplied flat control cable.

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.
- If COMPONENT video output jacks or S-Video jack is used for video connection, the system's Component setting will need to be set accordingly. Details are shown under "Video Setup Page".

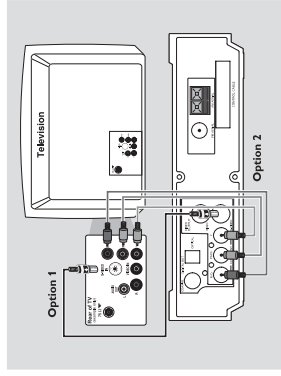
Connect the **VIDEO OUTPUT** jack to the video input jack on the TV using a video cable (yellow).

OR Option 1

Connect the **S-VIDEO** output jack to the S-Video input jack on the TV using an S-Video cable (not supplied).

OR Option 2

Use the component video cables (red/blue/green) to connect the DVD micro system's COMPONENT video output jacks to the corresponding component video input jacks (or labeled as **Pr/Cr Pb/CbY** or **YUV**) on the TV.



Note:

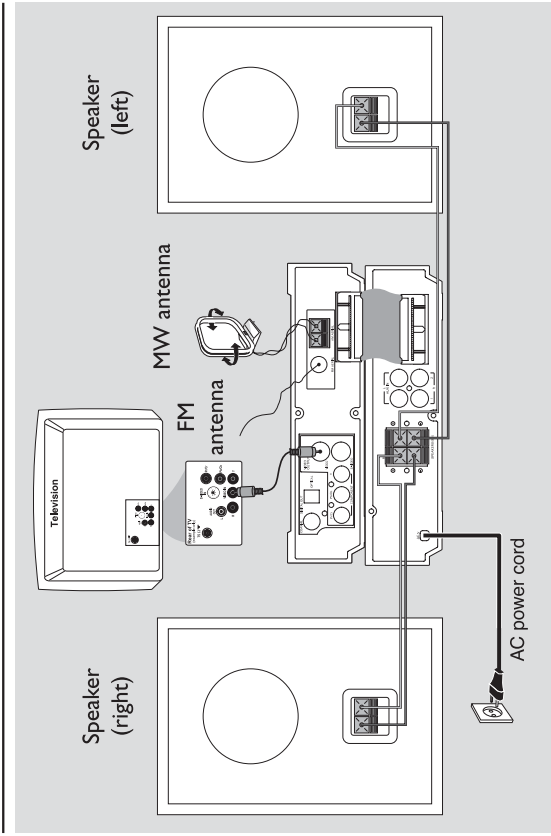
- To avoid magnetic interference, do not position the front speakers too close to your TV.

Connecting the power cord

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

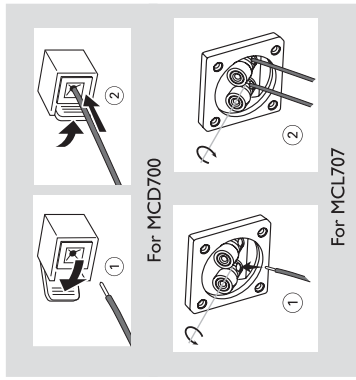
Never make or change any connection with the power switched on.

Connections



IMPORTANT!

- The type plate is located at the bottom of the system.
- 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.
- 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.



Connecting the speakers

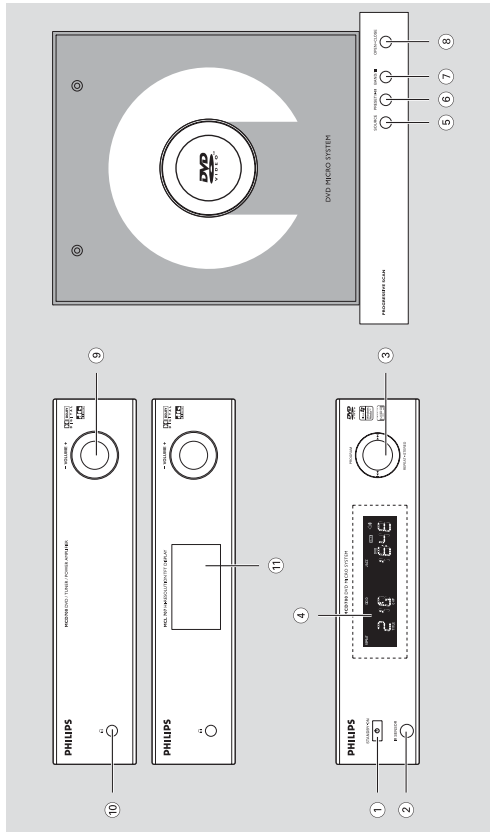
Connect the speakers to the SPEAKERS (8) terminals with two speaker cables. Right speaker to "R" and left speaker to "L"; red wire to "+" and silver wire to "-". Fully insert the stripped portion of the speaker wire into the terminal as shown.

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

CONNECTION AND CONTROLS

Functional Overview



DVD player and power amplifier

- 1 **STANDBY ON** \odot
 - switches the system on or to standby mode.
- 2 **IR SENSOR**
 - point the remote control towards this sensor:
- 3 **Control knob**
 - \blacktriangleleft / \blacktriangleright
 - Disc press the control knob to the left/right to skip to the previous/next chapter/title/track.
 - Tuner press the control knob to the left/right to tune to a higher/lower radio frequency.
 - press and hold, then release the key to start automatic search for a radio frequency downward/upward.
- PROGRAM**
 - DVD/WCD/CD press the control knob upward to enter the program menu.
 - MP3/WMA-CD press the control knob upward to add/delete a programmed track to/from the program list.

- Picture CD **during playback** press the control knob upward to select a slide show mode.
- Tuner press the control knob upward to program preset radio stations.
- REPEAT-STEREO**
 - Disc press the control knob downward to repeat a track or disc.
 - FM press the control knob downward to set stereo or mono sound mode.
- 4 **Display**
 - shows the current status of the DVD player.
- 5 **SOURCE**
 - selects the respective sound source: DVD/AUX1/AUX2/TUNER.
 - switches the system on.
- 6 **PRESET/** \blacktriangleright
 - Disc: starts or interrupts disc playback
 - TUNER: selects a preset radio station

Connections

Recording (digital)

Connect the system's **DIGITAL OUT (COAXIAL or OPTICAL)** 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 **SPDIF** according to the audio connection. (See **"SPDIF Setup"**).

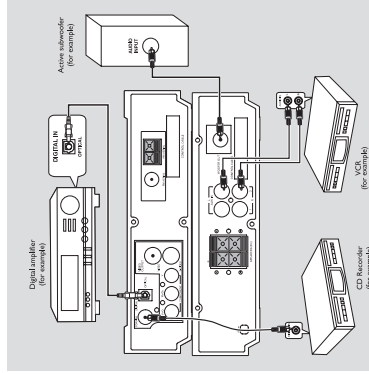
Connecting a digital amplifier

Connect the **DIGITAL OUT (COAXIAL or OPTICAL)** port to the coaxial/optical input jack of a digital amplifier with a coaxial/optical cable (not supplied) for superior digital sound effect.

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

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 **AUX** on the remote repeatedly in order to activate the input source (**AUX1** or **AUX2**).

Connecting an active subwoofer

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

For more information on operation instruction please visit Philips Audio internet site :

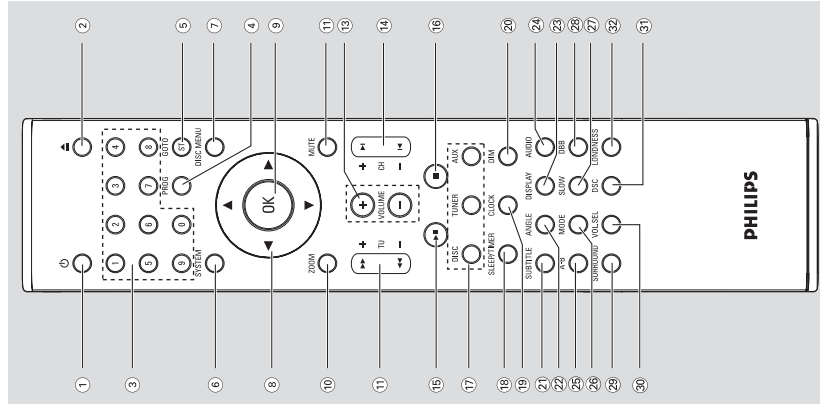
<http://www.audio.philips.com>

Functional Overview

- 12 **TU +/- (◀ / ▶)**
Tuner
- press to tune to a lower/higher radio frequency gradually.
- press and hold, then release the key to start automatic search for a radio frequency downward/upward.
- Disc**
- searches backward/forward in a disc at different speeds.
- 13 **VOLUME +/-**
- adjusts the volume upward/downward.
- adjusts the hours and minutes in clock/timer setting mode.
- switches the set timer ON or OFF.
- 14 **CH +/- (◀ / ▶)**
Disc: skips to the previous/next chapter/title/track
- Tuner: selects a preset radio station.
- 15 **▶ ||**
- starts or interrupts disc playback.
- 16 **■**
- stops disc playback or erases a program.
- 17 **DISC/TUNER/AUX**
- selects the respective sound source for DVD/TUNER/AUX1/AUX2.
- exits P-SCAN (progressive scan). (for **DISC** only)
- 18 **SLEEP/TIMER**
Standby mode
- sets a time for switching on the system automatically.
- Power-on mode**
- sets the sleep timer function (auto off).
- 19 **CLOCK**
Standby mode
- sets the system clock.
Playback mode
- displays the system clock.
- 20 **DIM**
- selects different levels of brightness for the display screen in standby mode.
- 21 **SUBTITLE**
- selects a subtitle language.
- 22 **ANGLE**
- selects a DVD camera angle.
- 23 **DISPLAY**
- displays information on TV screen during playback
- 24 **AUDIO**
for VCD
- sets Stereo, Mono-Left or Mono-Right sound mode.
- for DVD
- selects an audio language.
- 25 **A-B**
- repeats playback of a specific section on a disc.
- 26 **MODE**
- selects various repeat modes or the shuffle play mode for a disc.
- 27 **SLOW**
- selects different slow playback modes for a VCD/SVCD/DVD.
- 28 **DBB**
- enables or disables bass enhancement.
- 29 **SURROUND (unavailable for this version)**
- selects surround (Dolby Digital, DTS-Digital Theatre Systems or VSS-Virtual Surround Sound) or stereo sound effect.
- 30 **VOL-SEL (unavailable for this version)**
- selects different speaker modes.
- 31 **DISC**
- selects different types of preset sound equalizer settings (CLASSIC, JAZZ, POP or ROCK).
- 32 **LOUDNESS**
- enables or disables automatic loudness adjustment.

Functional Overview

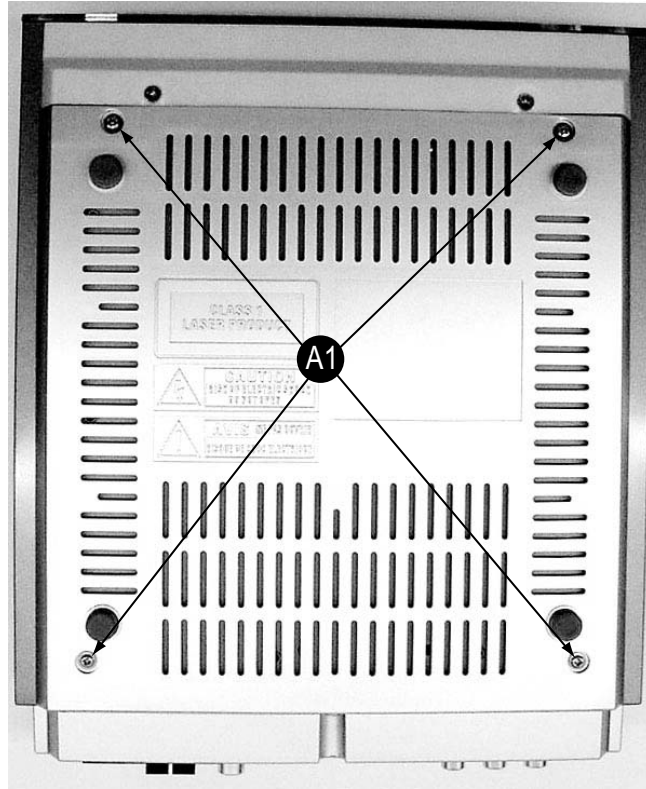
- 7 **BAND/■**
Disc: stops disc playback or erases a program.
- Tuner: switches between MW and FM.
- 8 **OPEN-CLOSE**
- opens or closes the disc compartment.
- 9 **VOLUME +/-**
- adjusts the volume upward/downward.
- adjusts the hours and minutes in clock/timer setting mode.
- switches the set timer ON or OFF.
- 10 **☎**
- connect a headphone
- 11 **TFT screen (for MCL707 only)**
- serves as a simple monitor not supporting OSD display and other functions.
- 1 **⏻**
- switches the system on/ off.
- 2 **▲**
- opens or closes the disc compartment
- 3 **Numeric Keypad (0-9)**
- inputs a track/title/chapter number of the disc.
- inputs the number of a preset radio station.
- 4 **PROG**
DVD/VCD/CD: enters the program menu.
MP3/WMA-CD: adds/deletes a programmed track to/from the program list.
Picture CD: during playback, to select a slide show mode.
- Tuner: programs preset radio stations.
- 5 **GOTO/ST**
Disc: fast searches in a disc by entering a time, title, chapter or track.
FM: sets stereo or mono sound mode.
- 6 **SYSTEM (disc mode only)**
- enters or exits the system menu.
- 7 **DISC MENU (disc mode only)**
DVD/VCD: enters or exits the disc contents menu.
VCD2.0: switches the playback control mode on or off.
MP3/WMA: switches between Album and Filelist.
- 8 **▼ / ▲ / ▶ / ◀**
- selects an item in a menu.
- moves an enlarged picture up/down/left/right.
- 9 **OK**
- confirms a selection.
- 10 **ZOOM**
DVD/VCD/Picture CD: enlarges or reduces a picture or active image on the TV screen.
- 11 **MUTE**
- disables or enables sound output.



DISASSEMBLY INSTRUCTION - DVD PART

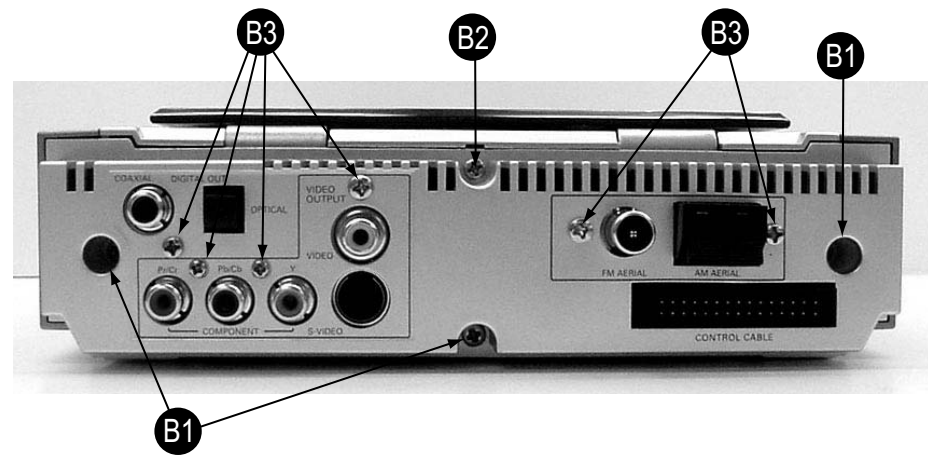
A. Remove Bottom Cover

A1 remove screws M2.5x4 (washer head) - 4 pcs.



B. Remove Back Panel

B1 remove screws M3x6 - 3 pcs.
 B2 remove screw ST 3x10 - 1 pc.
 B3 remove screws ST 3x10 - 6 pcs. (for jacks)



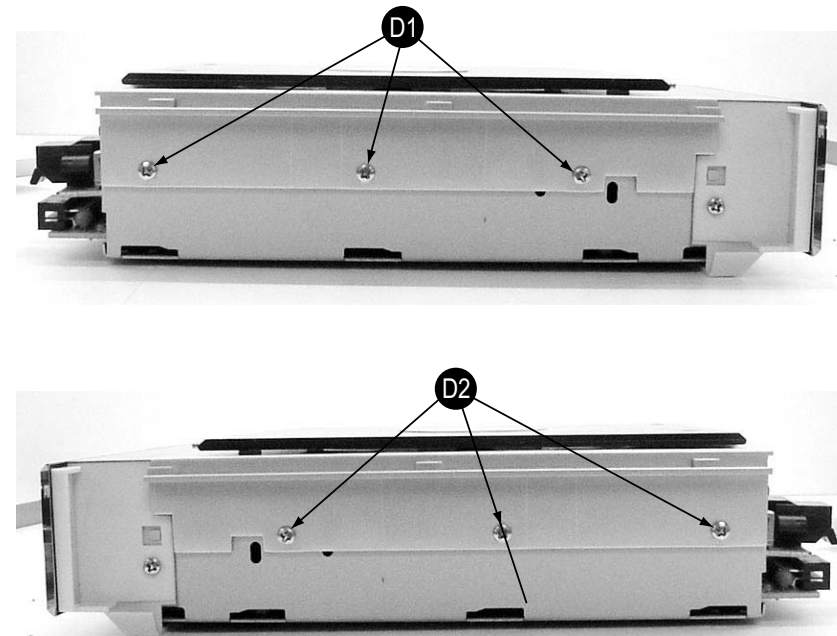
C. Remove Side Panel (L & R)

C1 Slide out the Side Panels.



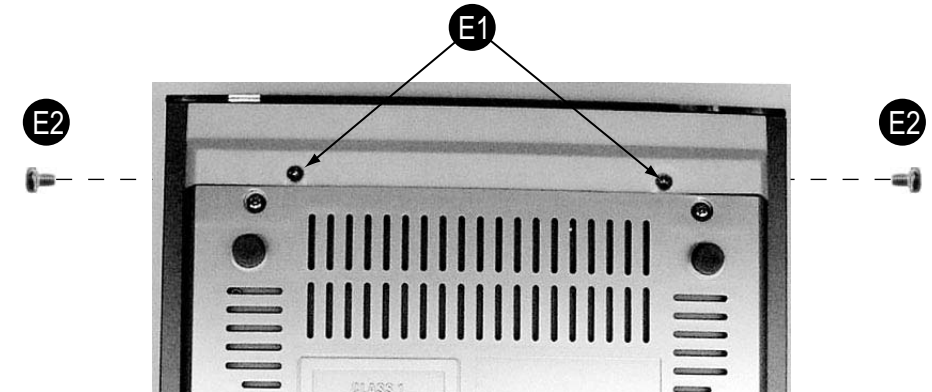
D. Remove Top Cabinet

D1 remove screws M3x6 - 3 pcs.
 D2 remove screws M3x6 - 3 pcs.



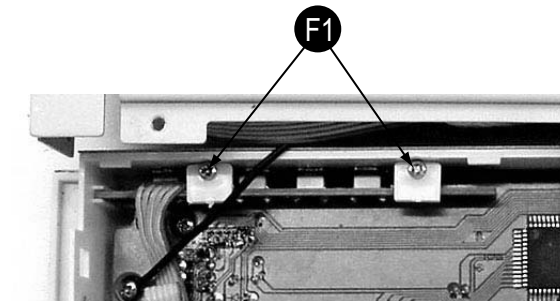
E. Remove Front Cabinet

E1 remove screws MK3x10 - 2 pcs.
 E2 remove screws M3x4 - 2 pcs.



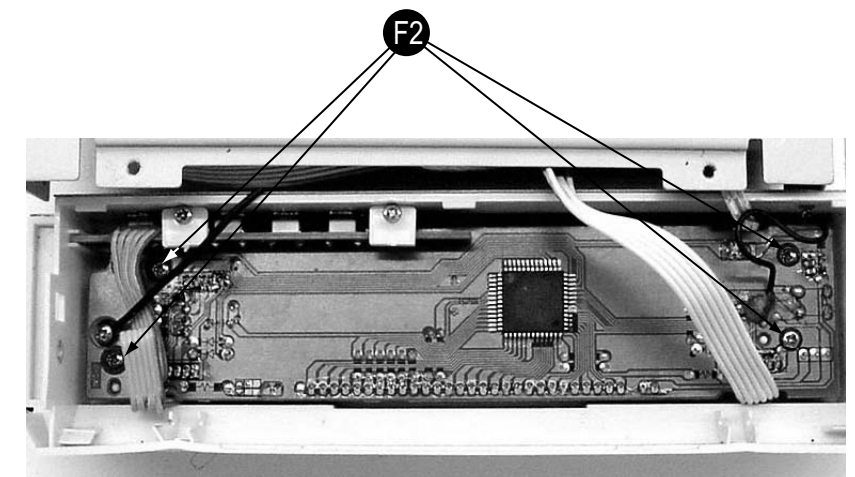
F. Remove Display Board Assembly

F1 remove screws ST 2.5x8 - 2 pcs.
 (take out Push Key PCB Assy)



F. Remove Display Board Assembly

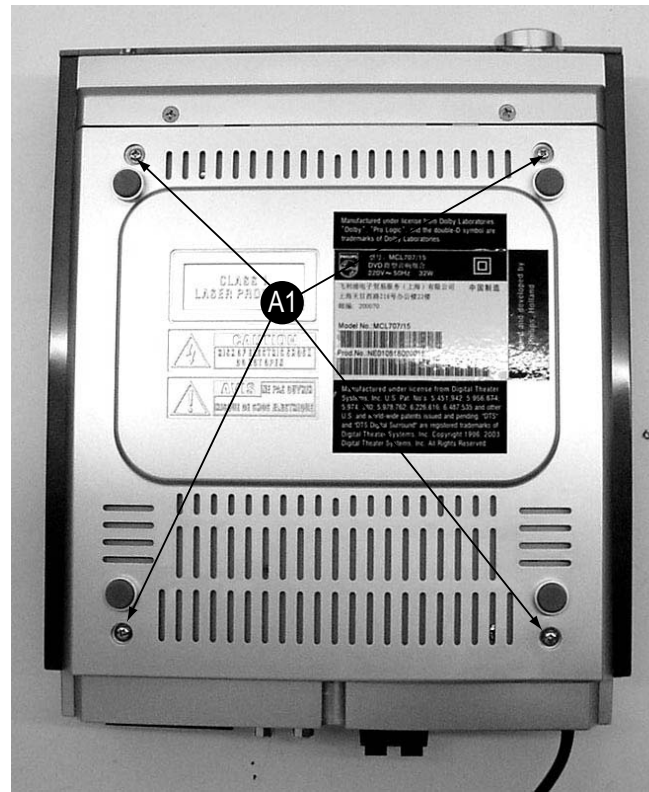
F2 remove screws ST 2.5x8 - 4 pcs.



DISASSEMBLY INSTRUCTION - AMP PART

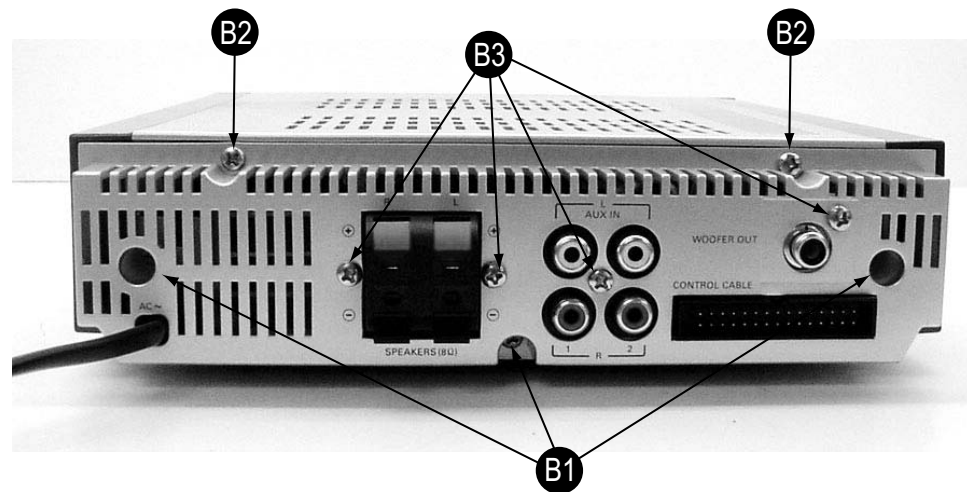
A. Remove Bottom Cover

A1 remove screws M2.5x4 (washer head) - 4 pcs.



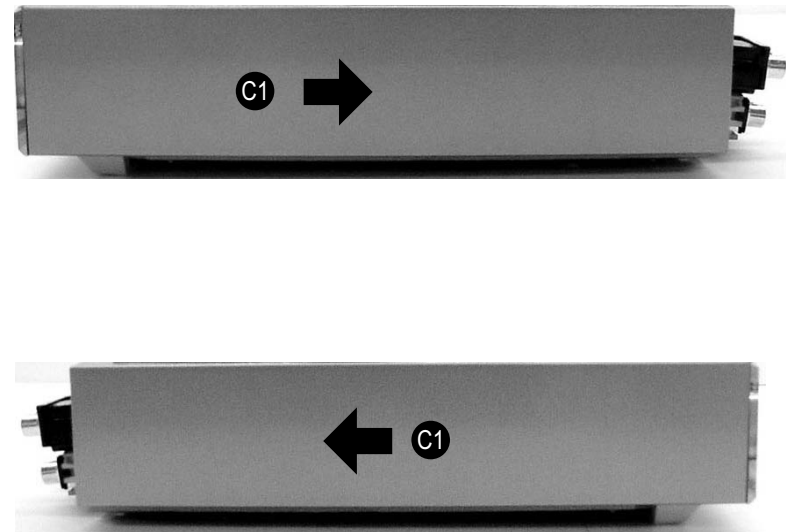
B. Remove Back Panel

B1 remove screws M3x6 - 3 pcs.
 B2 remove screw ST 3x10 - 2 pc.
 B3 remove screws ST 3x10 - 4 pcs. (for jacks)



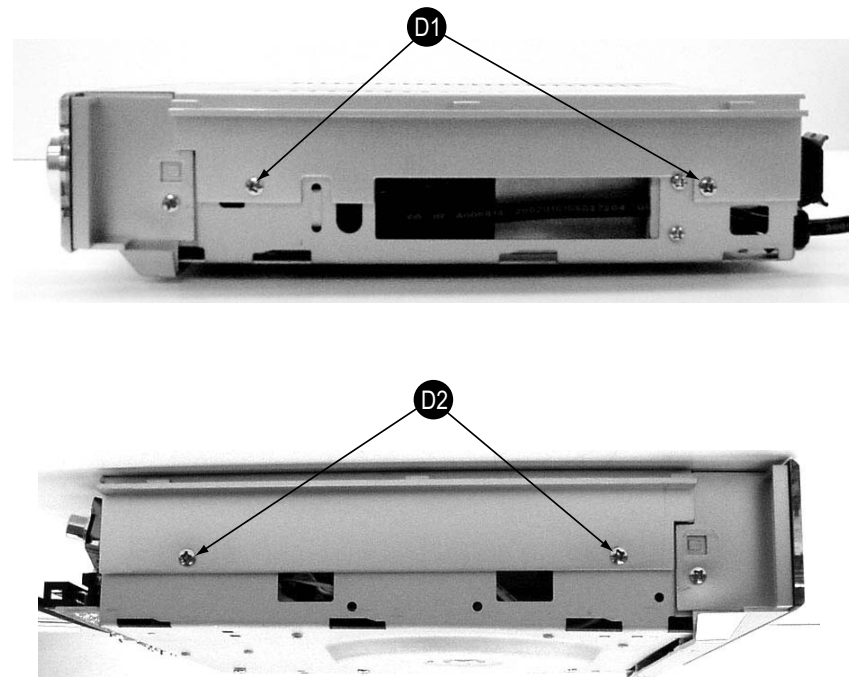
C. Remove Side Panel (L & R)

C1 Slide out the Side Panels.



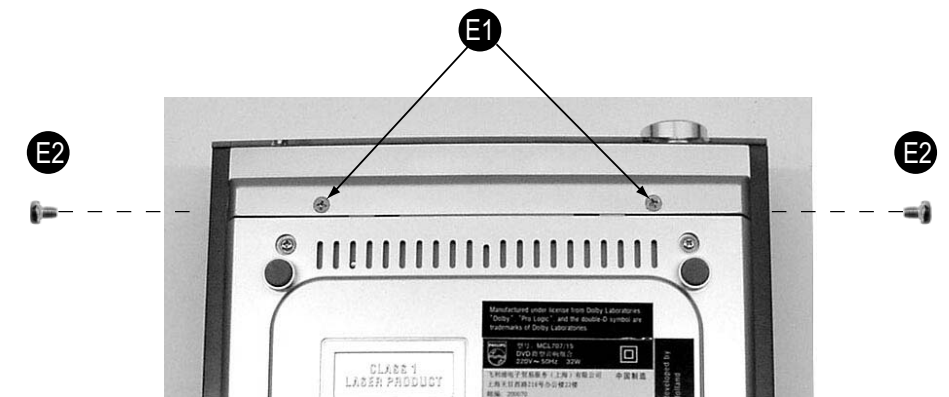
D. Remove Top Cabinet

D1 remove screws M3x6 - 2 pcs.
 D2 remove screws M3x6 - 2 pcs.



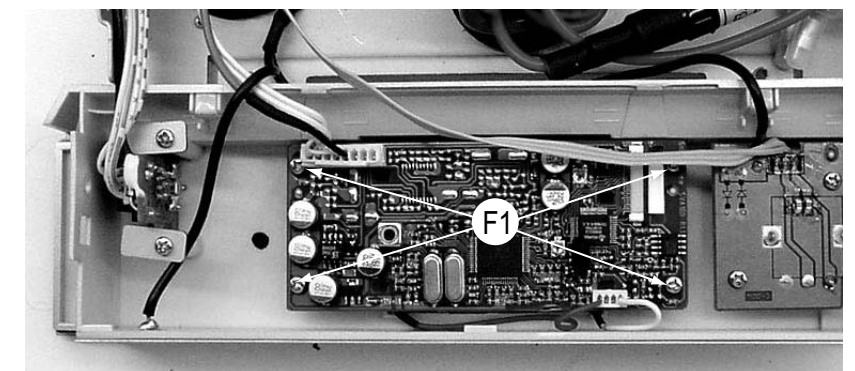
E. Remove Front Cabinet

E1 remove screws MK3x10 - 2 pcs.
 E2 remove screws M3x4 - 2 pcs.



F. Remove TFT Module (for MCL707 only)

F1 remove screws ST 2.5x8 - 4 pcs.



SOFTWARE VERSION AND UPGRADING

A. MPEG SOFTWARE VERSION CHECK

1. Press SYSTEM button (on the remote control) to enter general setting page.

TV Screen shows

```
TV Setting
OSD Lang.
Screen Saver
```

2. Press ► button (on the remote control) to select Preference Page.

TV Screen shows

```
TV set standard
Sound
Subtitle
Language chosen by disk
```

3. Press "811502" button (on the remote control).

TV Screen shows

```
Ver    MCD707/xx V1.1  /xx : /versiom
Date   mmm dd yyyy
Time   hh : mm : ss
Region code    3
```

3. Press ▲ or ▼ button (on the remote control) to change region.
Press OK to confirm.

B. CPU VERSION CHECK

1. Keep PLAY and STOP buttons (on the set) while plug in the power cord.

TV Screen shows

```
MCD700 V1.0
```

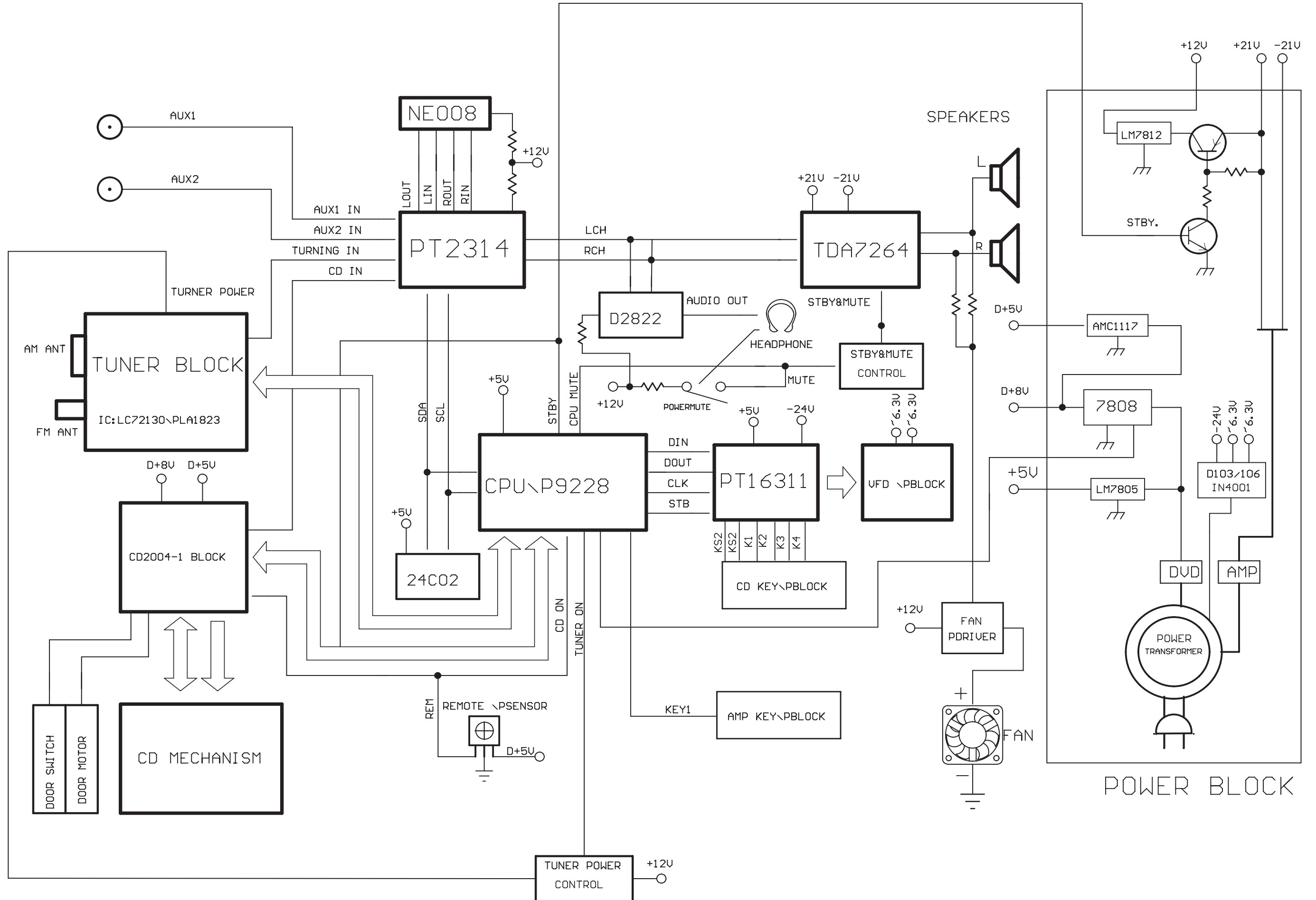
C. MPEG SOFTWARE UPGRADING:

1. Download the firmware for Philips support website
<http://www.philips.com/support>
2. Prepare as uploading CD.
3. Load the CD in the CD Tray.
4. TV Screen shows

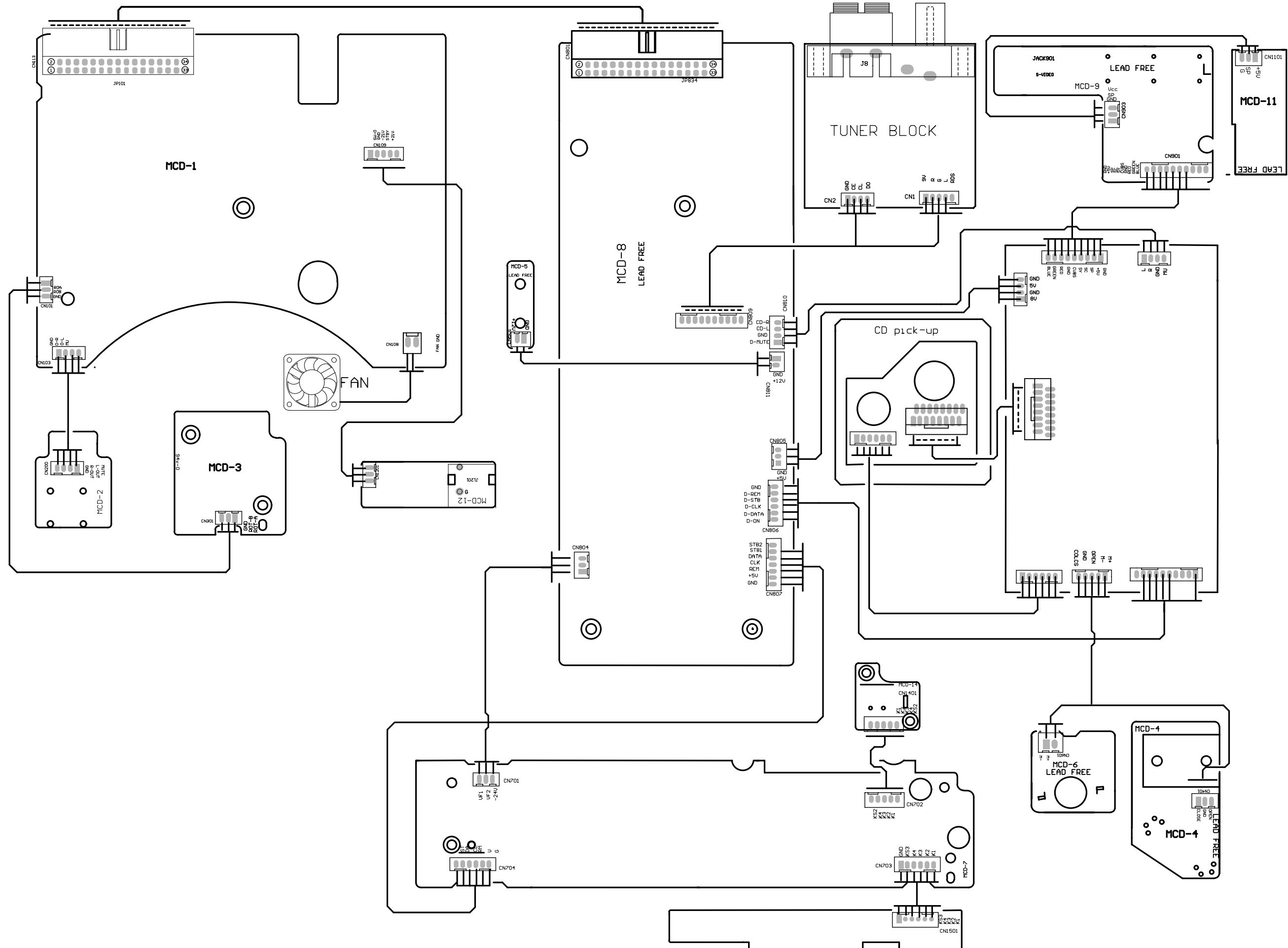
```
Upgrade file detected
Upgrade?
Press PLAY to start
Upgrading
```

and upgrading will run automatically

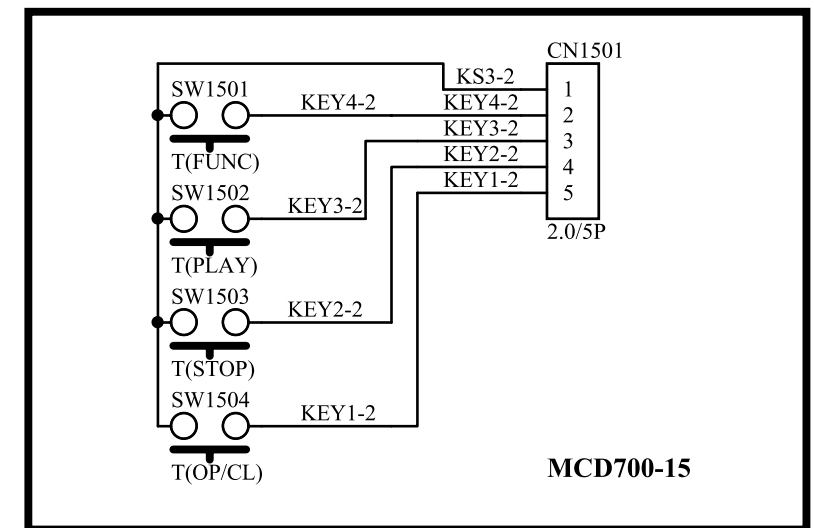
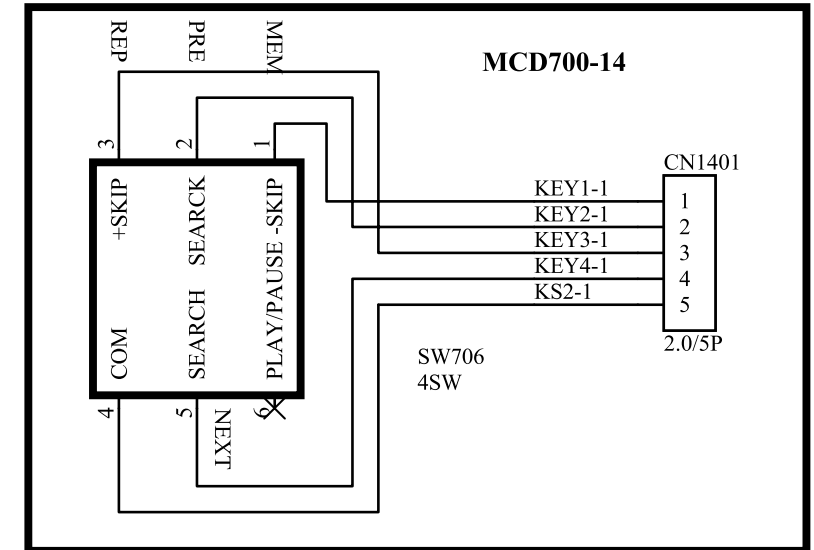
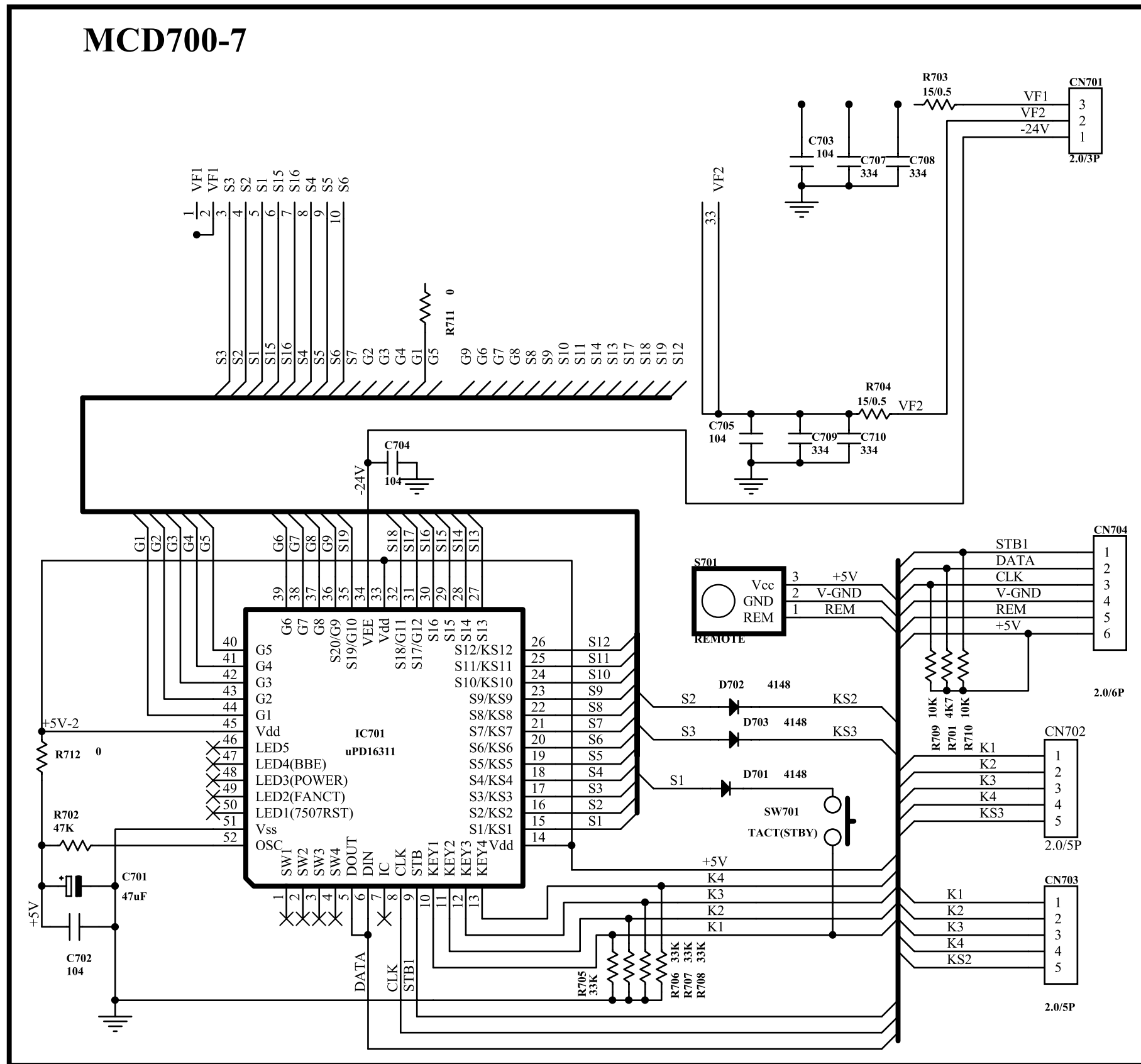
SET BLOCK DIAGRAM



SET WIRING DIAGRAM

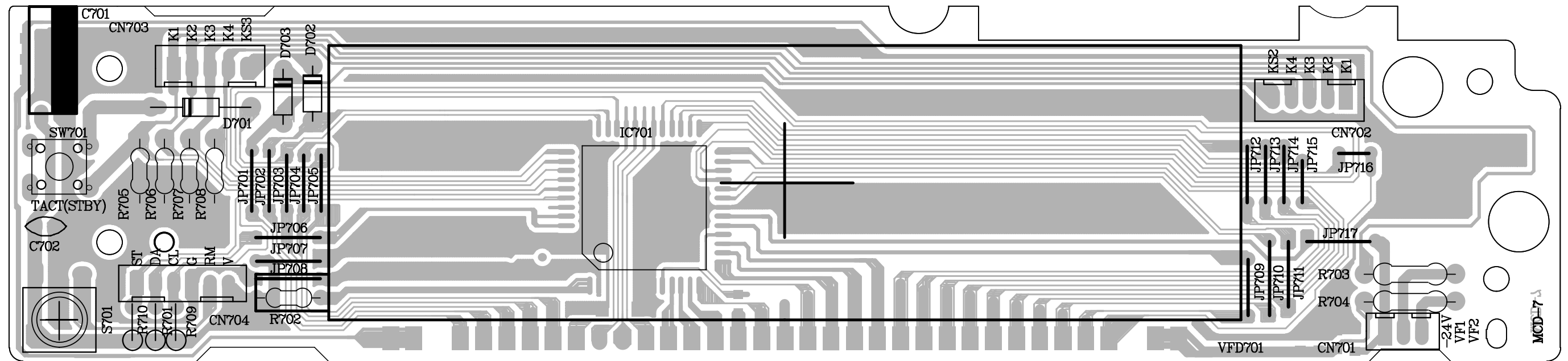
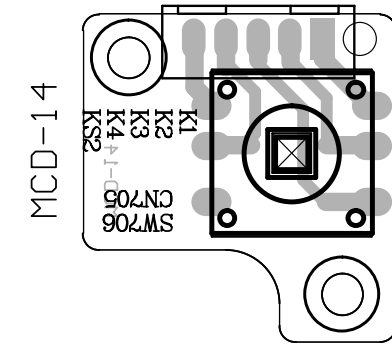
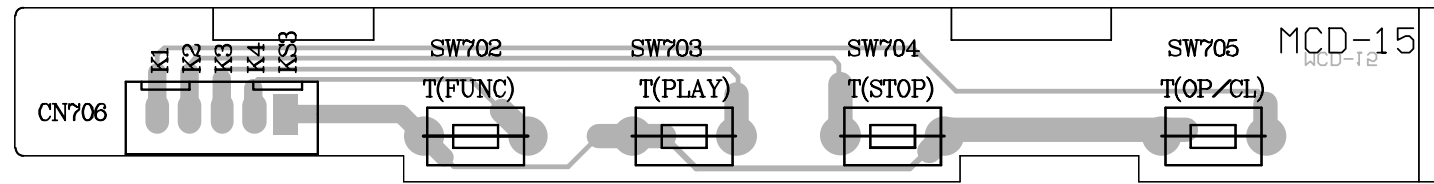


CIRCUIT DIAGRAM - VFD / KEY BOARD ASSEMBLY

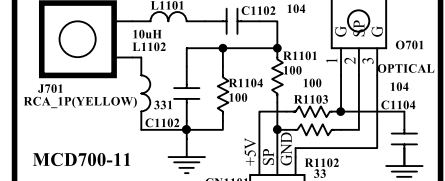
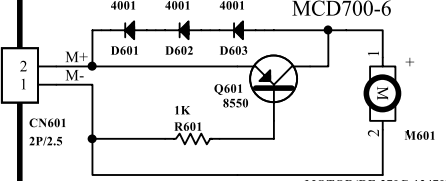
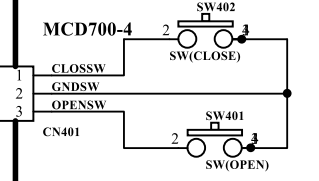
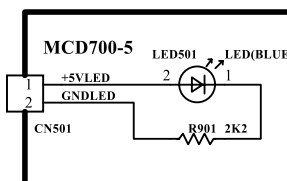
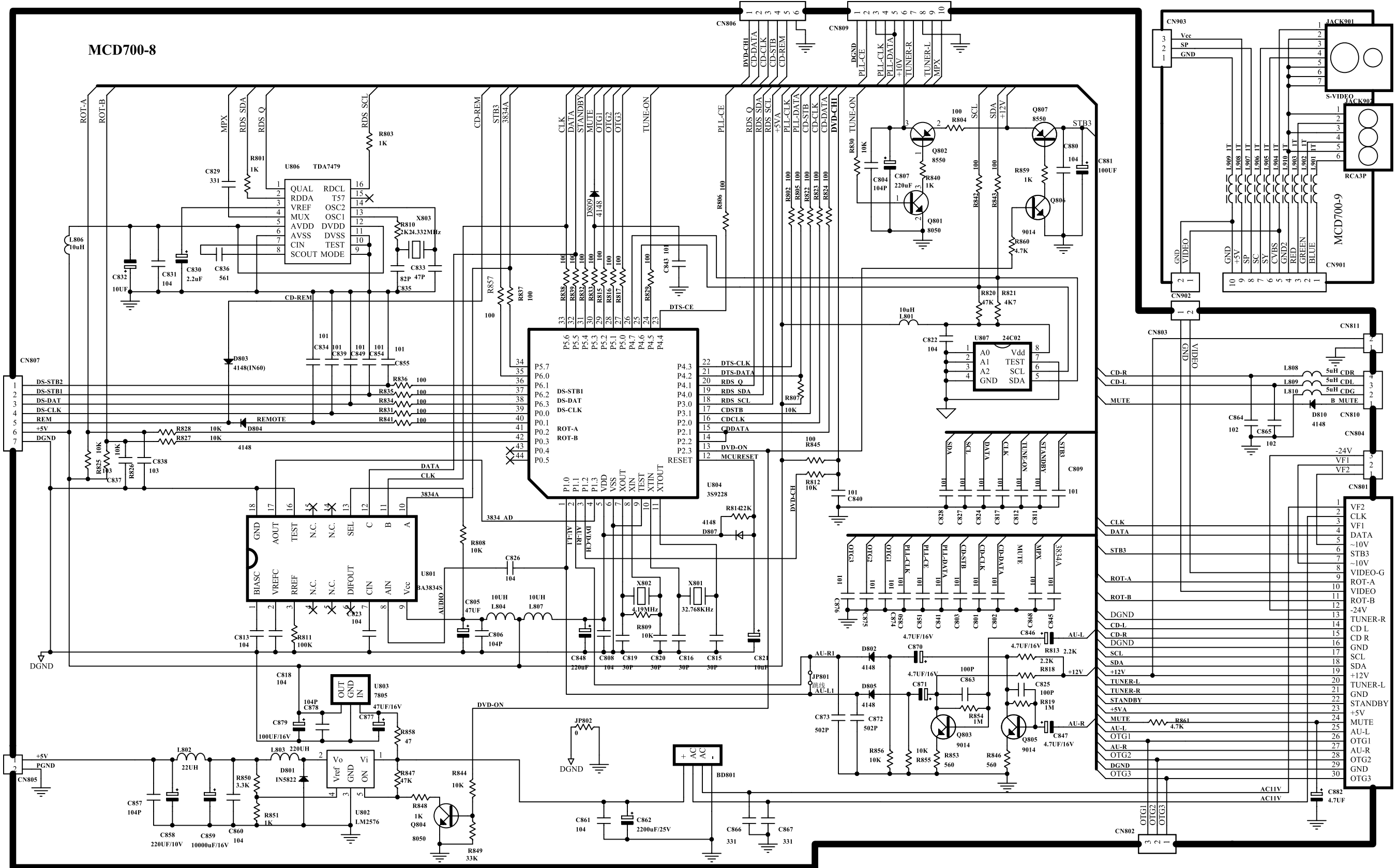


LAYOUT DIAGRAM - VFD / KEY BOARD ASSEMBLY

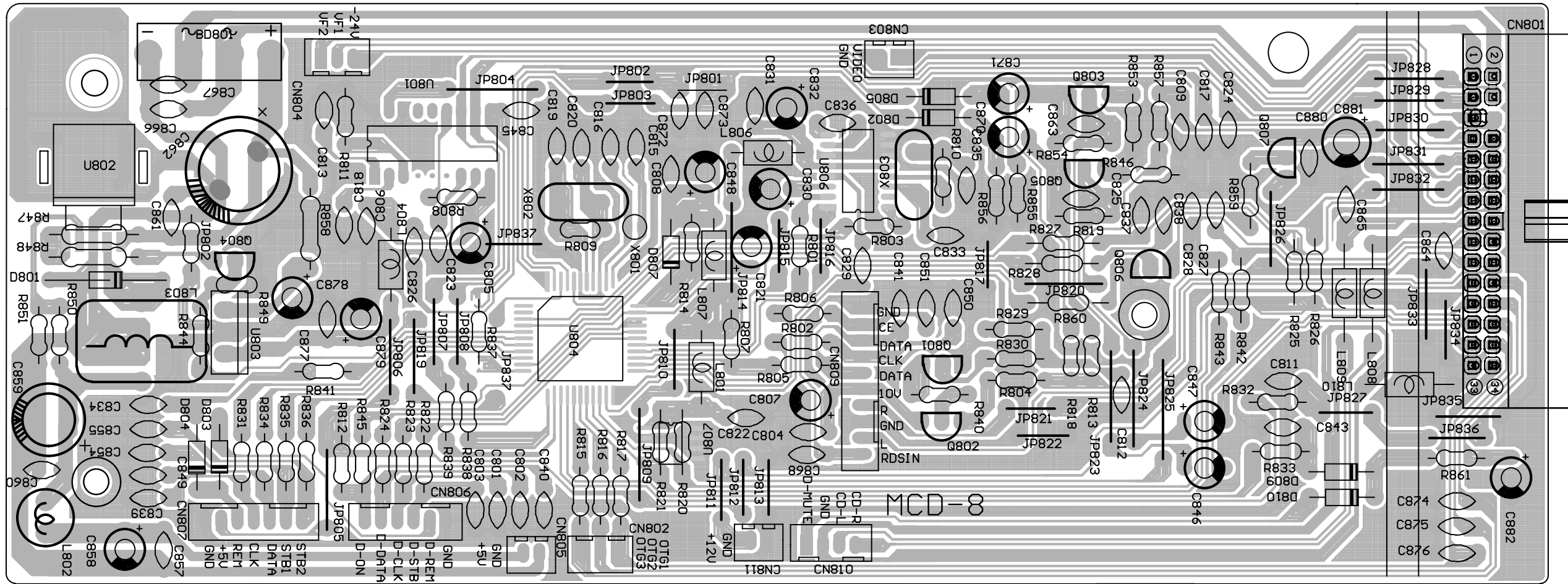
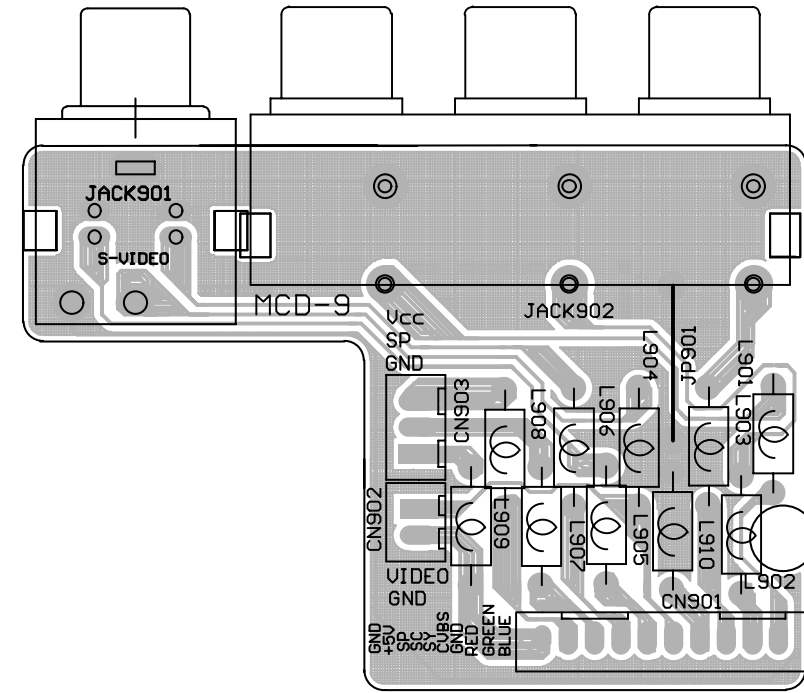
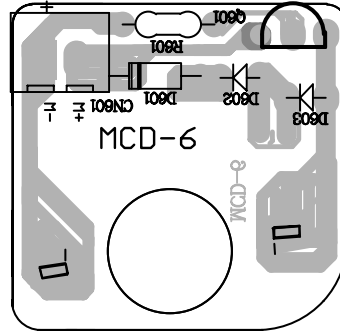
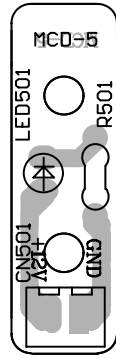
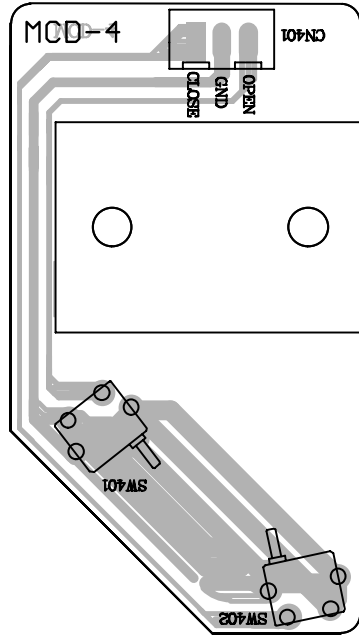
COMPONENT SIDE



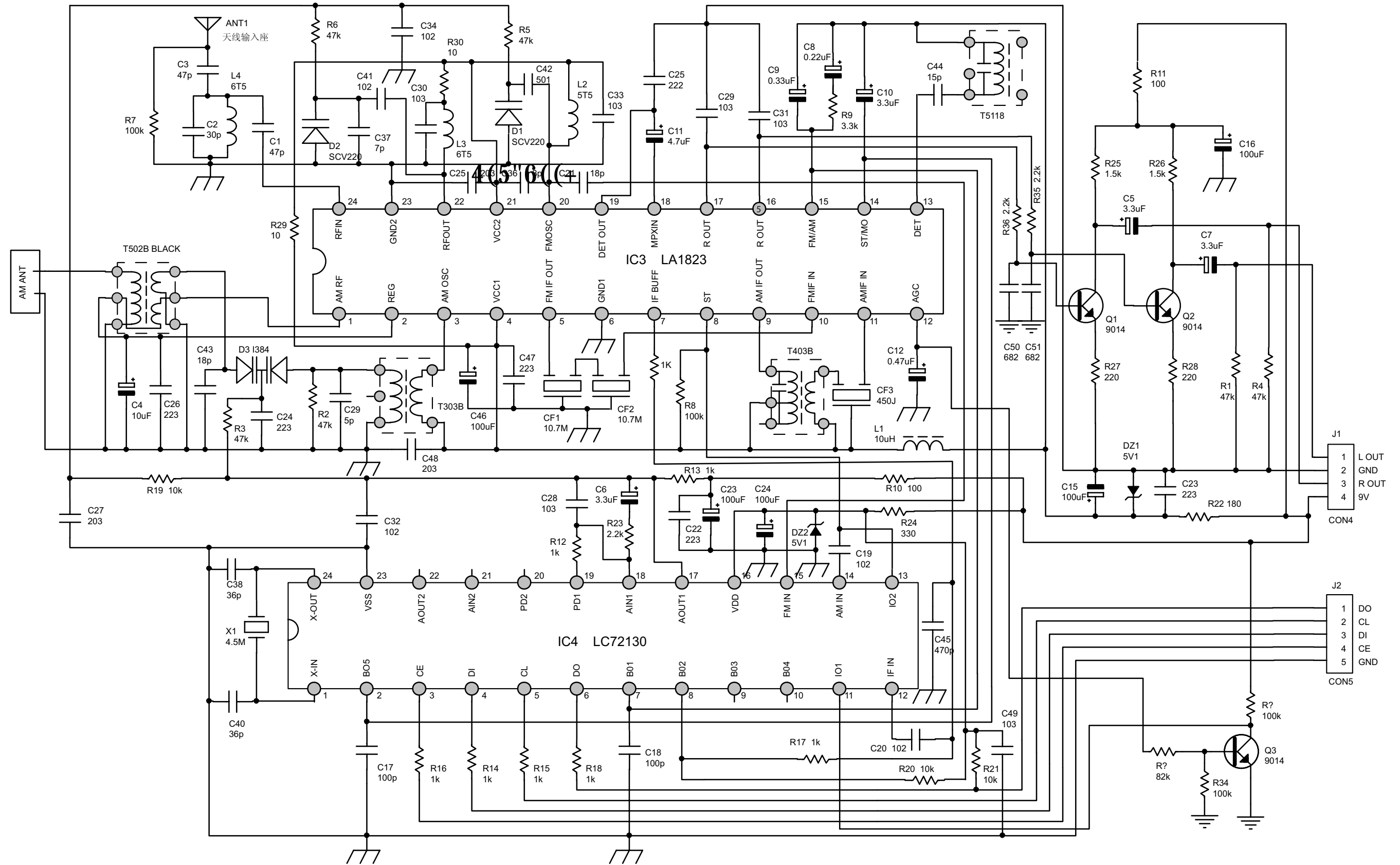
CIRCUIT DIAGRAM - DVD BLOCK



LAYOUT DIAGRAM - DVD BLOCK

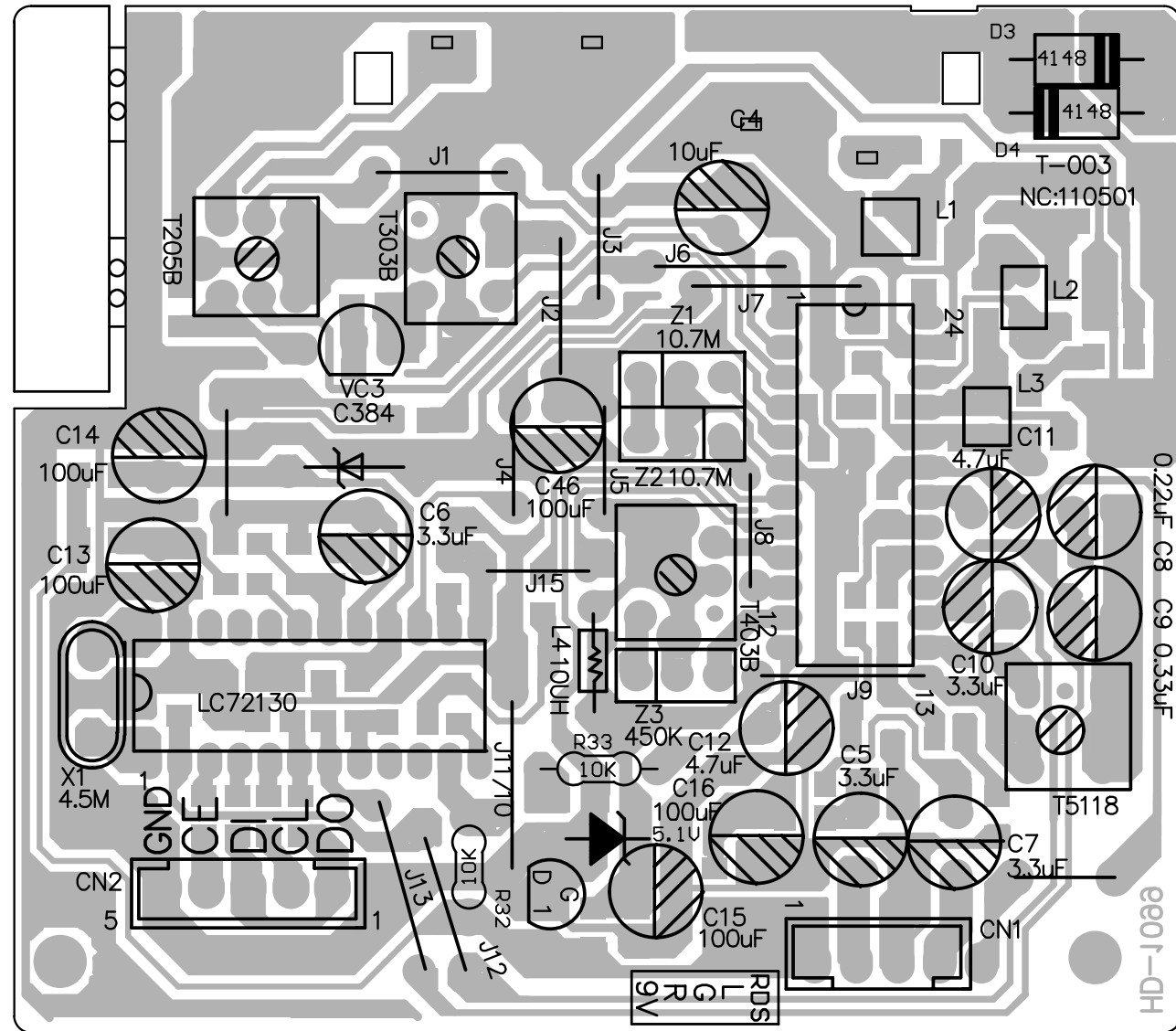


CIRCUIT DIAGRAM - TUNER BOARD

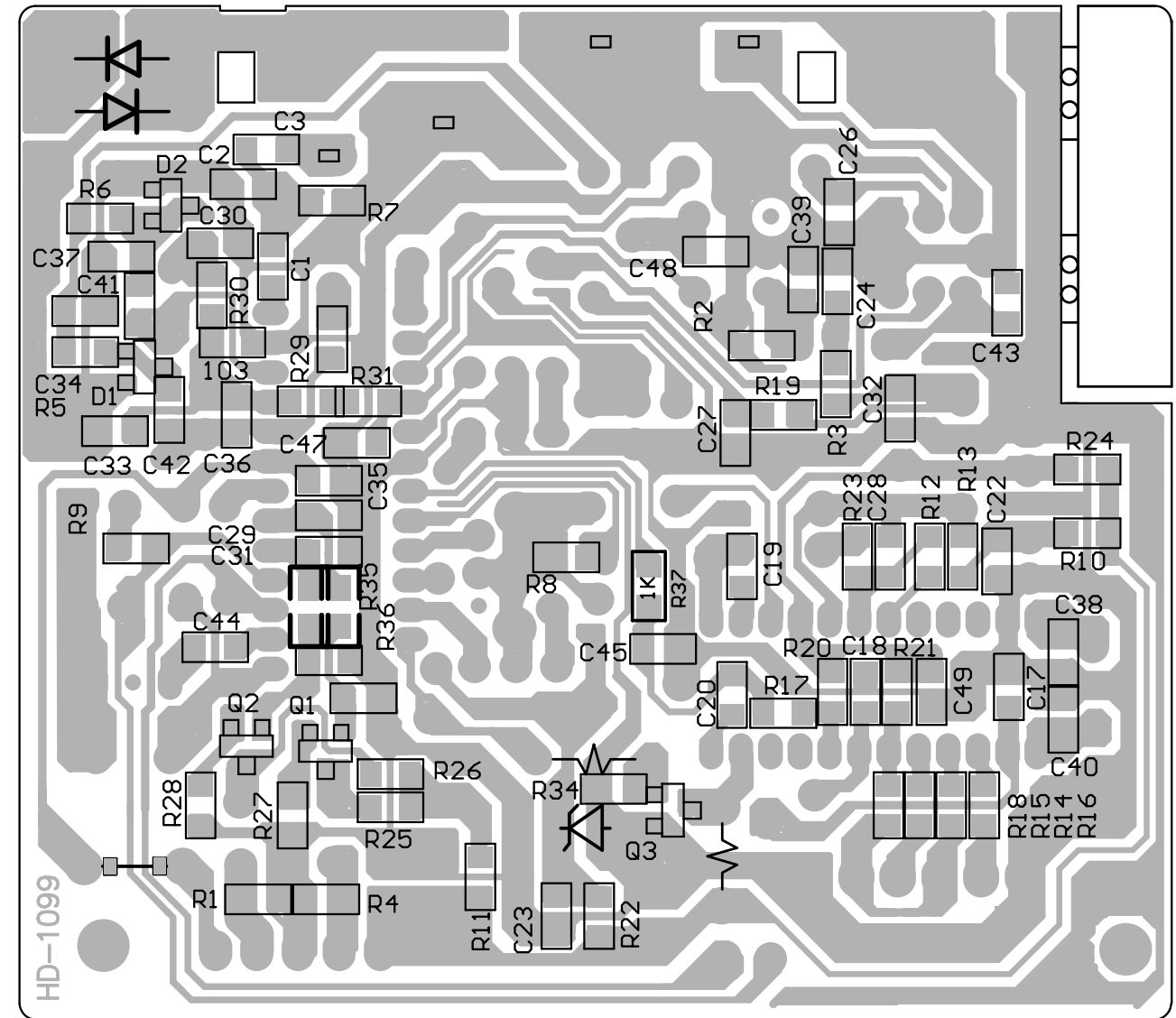


LAYOUT DIAGRAM - TUNER BOARD

SIDE A



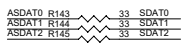
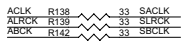
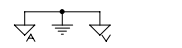
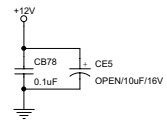
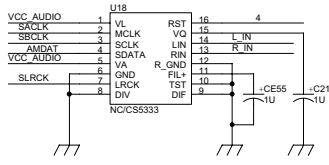
SIDE B



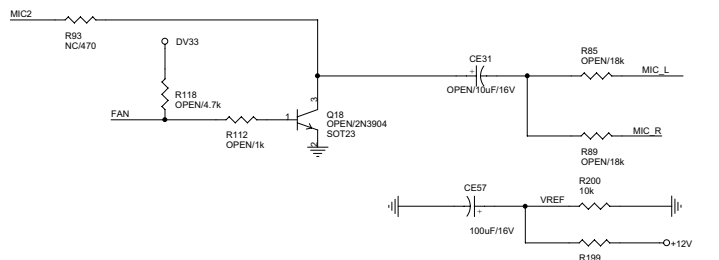
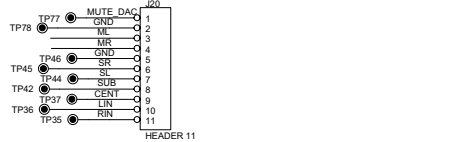
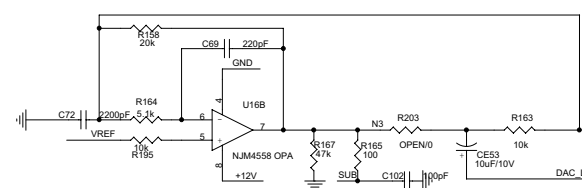
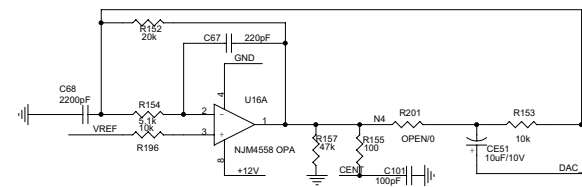
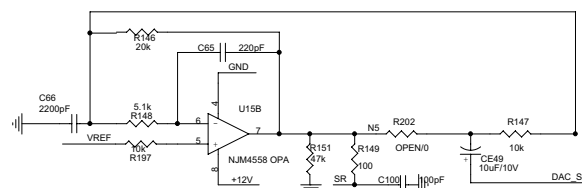
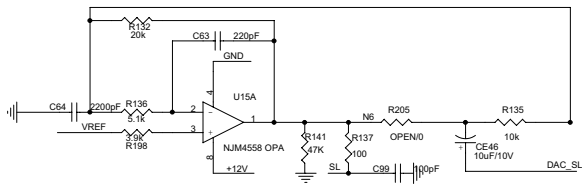
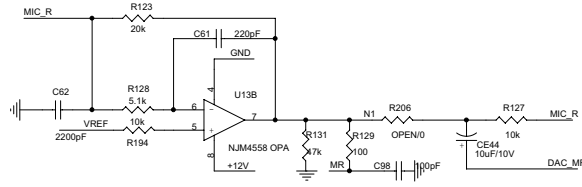
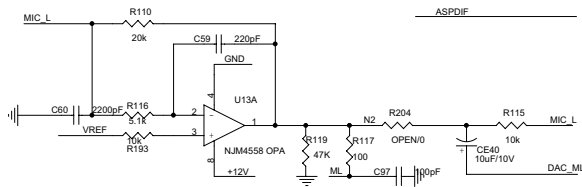
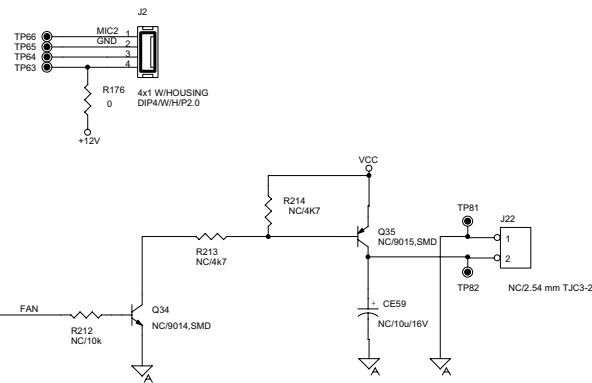
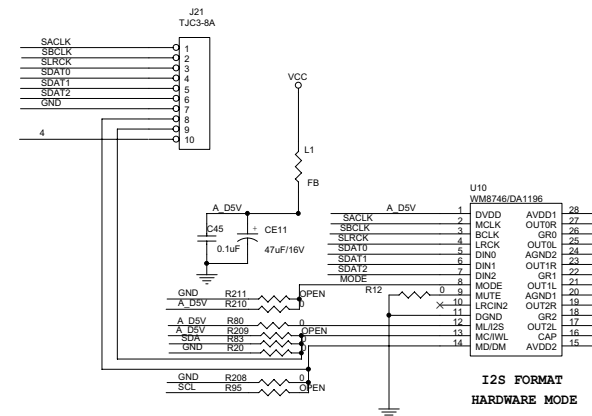
CIRCUIT DIAGRAM - DVD MPEG BOARD

(MPEG board is not repaired. diagram for reference only)

- [1] +12V >> +12V
- [1] -12V >> -12V
- [1] +12V1 >> DV33
- [1] DV33 >> DV33
- [1] VCC >> VCC
- [1] VCC_AUDIO >> VCC_AUDIO
- [1,2,3,5] GND >> GND
- [1] MIC1 >> MIC1
- [1,2] MIC_EN >> MIC_EN
- [2] ASPDIF >> ASPDIF
- [2] ASDAT0_2I >> ASDAT0_2I
- [2] ACLK >> ACLK
- [2] ABCK >> ABCK
- [2] ALRCK >> ALRCK
- [2] MUTE_DAC >> MUTE_DAC
- [2] RESET# >> RESET#
- [4] ML >> ML
- [4] MR >> MR
- [2] DEMP >> DEMP
- [2] AMDAT >> AMDAT
- [2] REST_CS >> REST_CS
- [2,3] SCL >> SCL
- [2,3] SDA >> SDA
- [2] VSCK >> VSCK
- [2] VSDA >> VSDA
- [2] FAN >> FAN

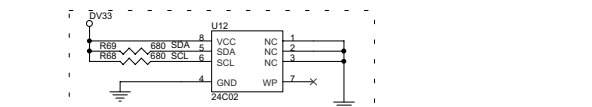
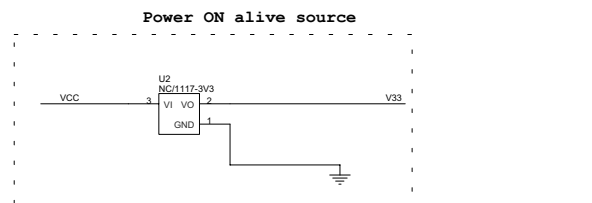
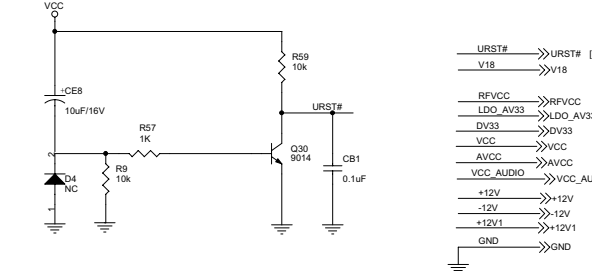
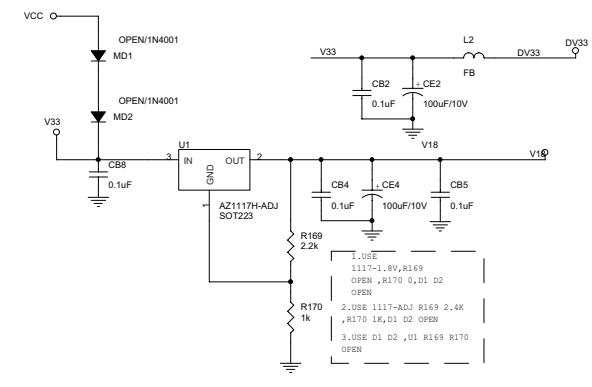
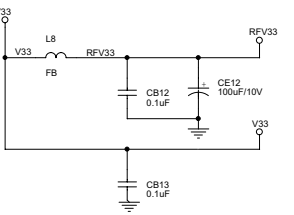
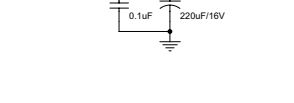
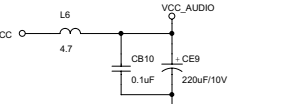
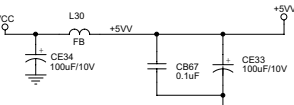
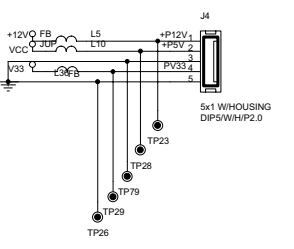


1:15/A CE2746 (U2.4)
 R126, R123, R145, R142, R141, R204, R205, R206, R207, R208, CE71, CE46 (OPB3) R209+0, R129+10, R198+R199+33, CE40+100uF/10V
 R10/A SB119V/RNF14 (U2.1)
 R209, R142, R199, R129, R207, R208, CE71, CE46 (OPB3), R128+10 R210+R145+R204+R205+R206+0, CE40+100uF/10V



- 1 INDEX & POWER, RESET
- 2 RF, SERVO & MPEG - MT1389E
- 3 MEMORY - SDRAM, FLASH/EEPROM
- 4 VIDEO OUT
- 5 AUDIO DAC WMA8746&WMA8720 AND AUDIO OUT

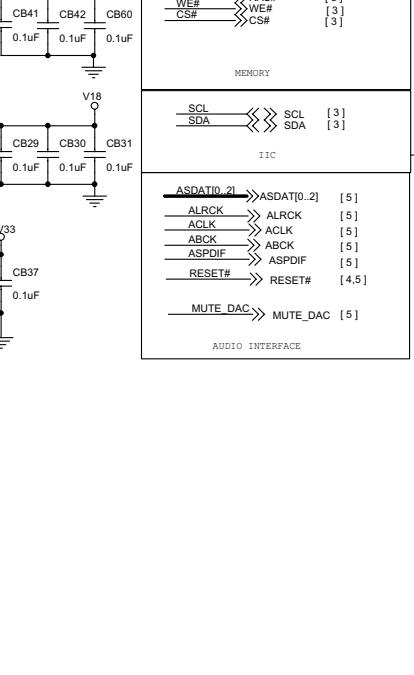
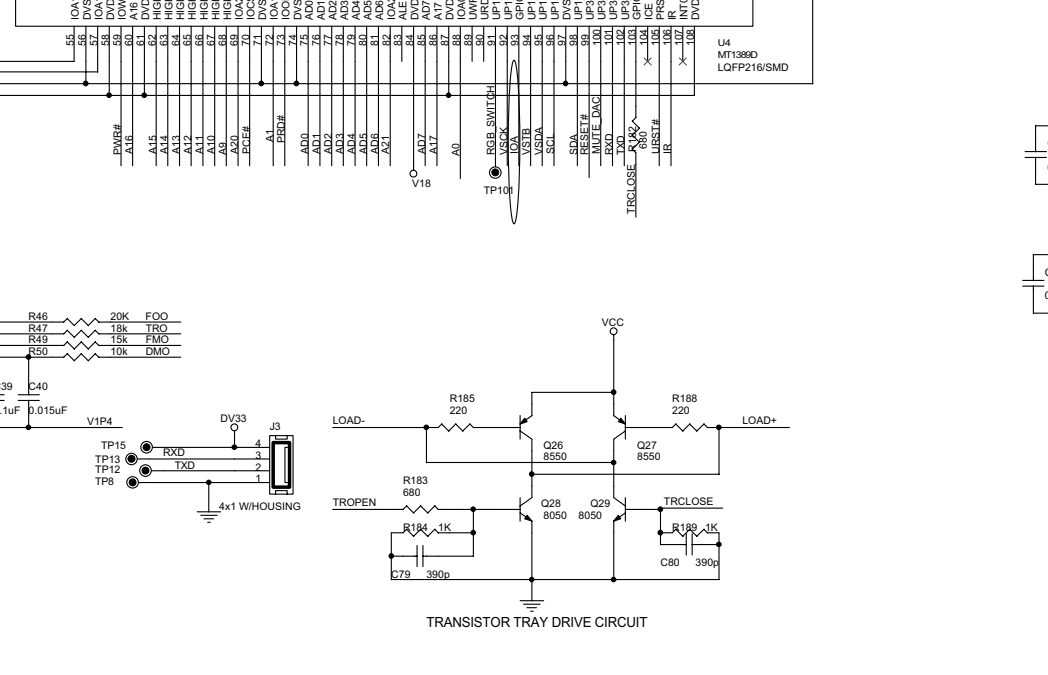
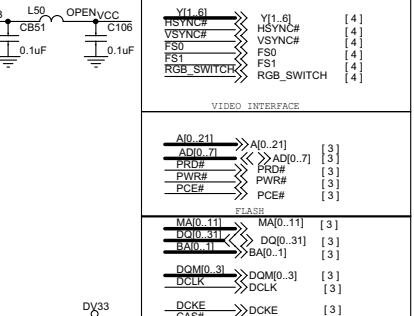
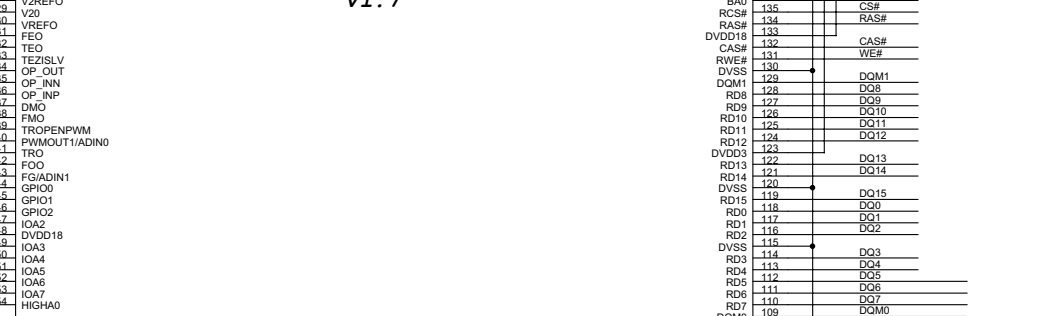
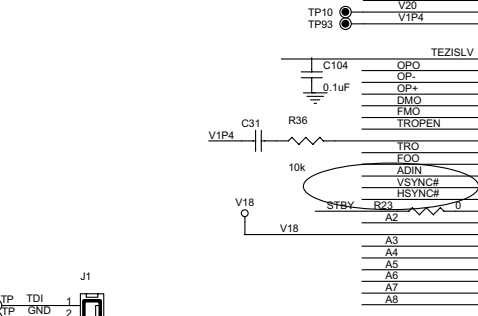
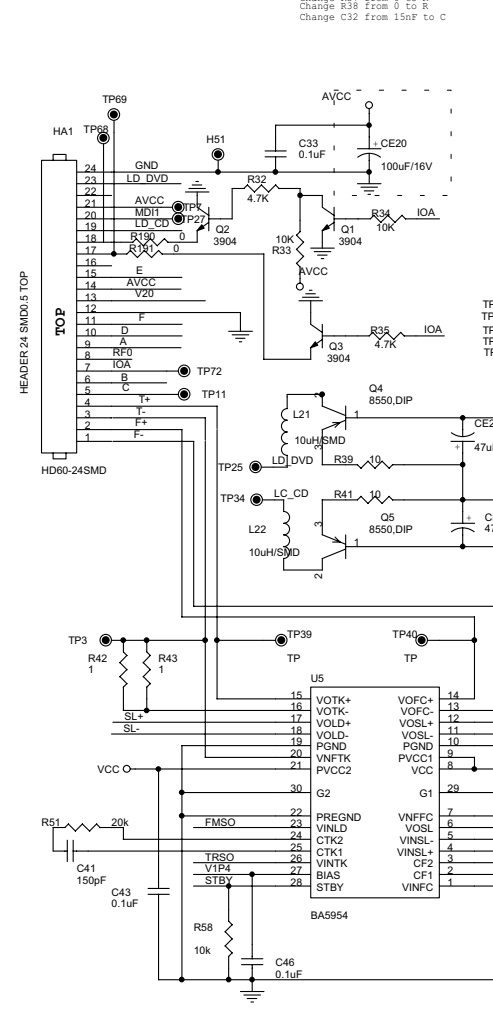
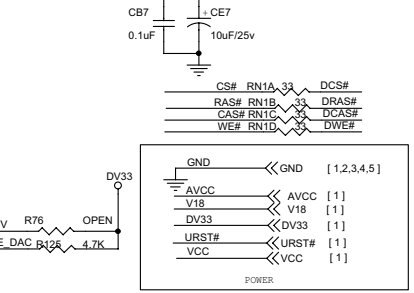
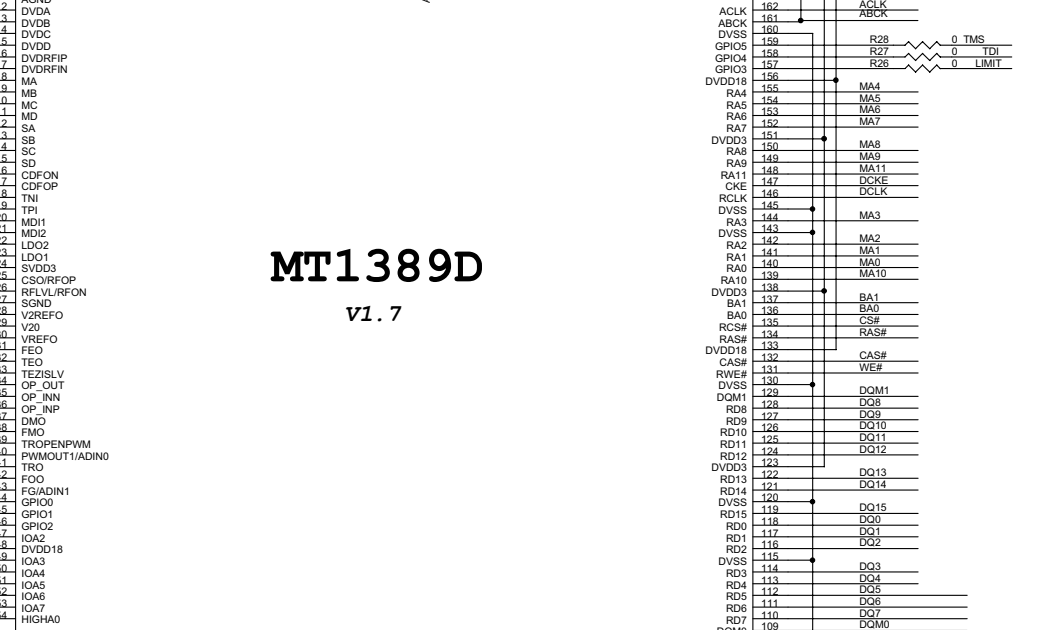
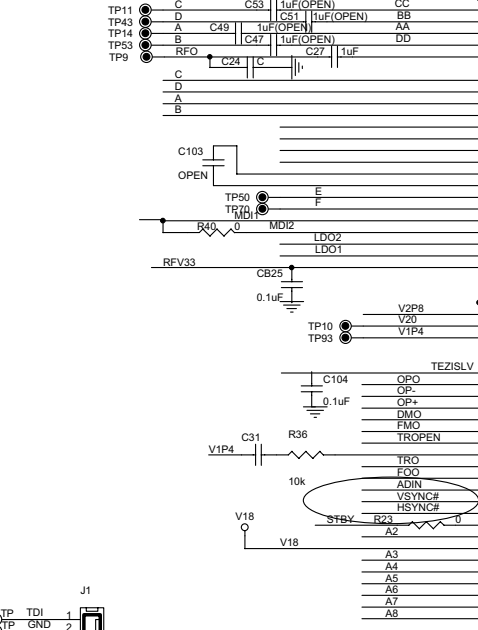
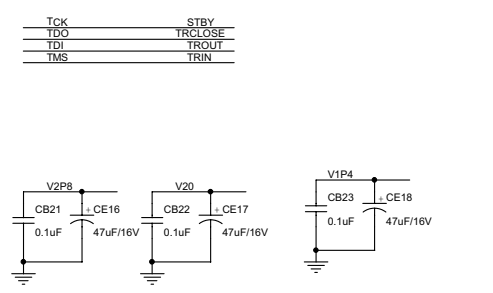
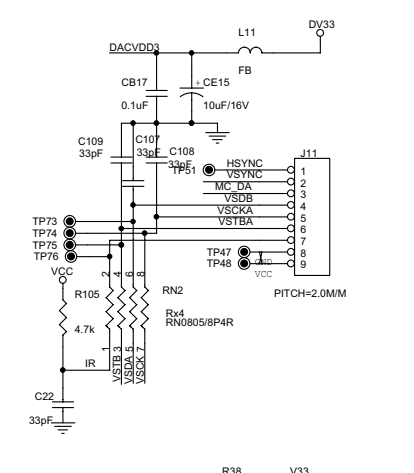
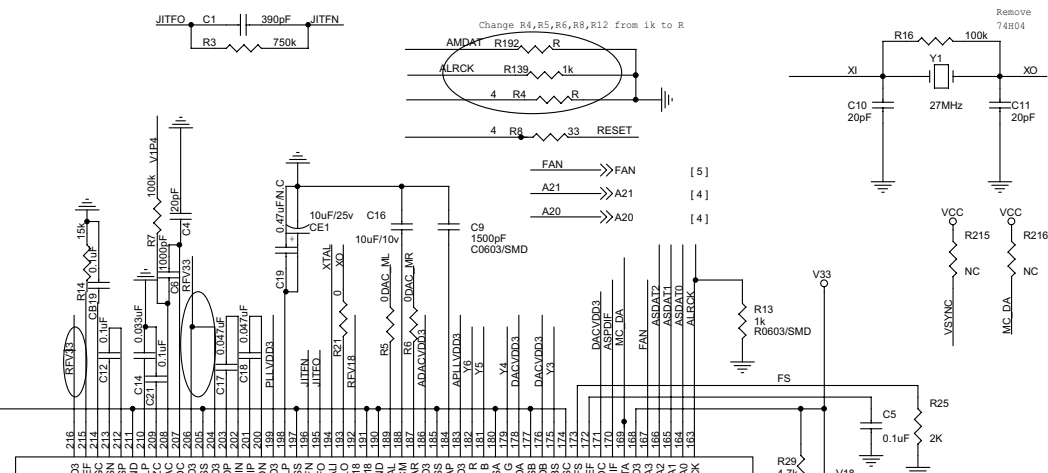
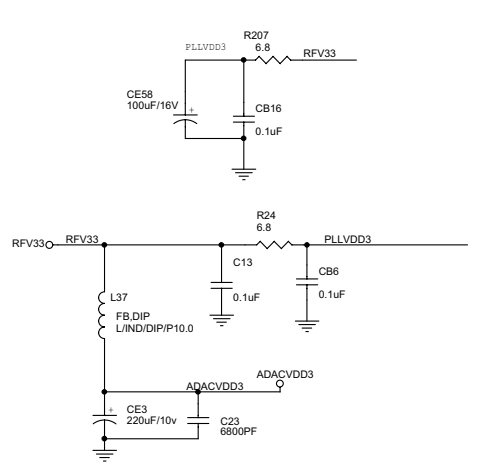
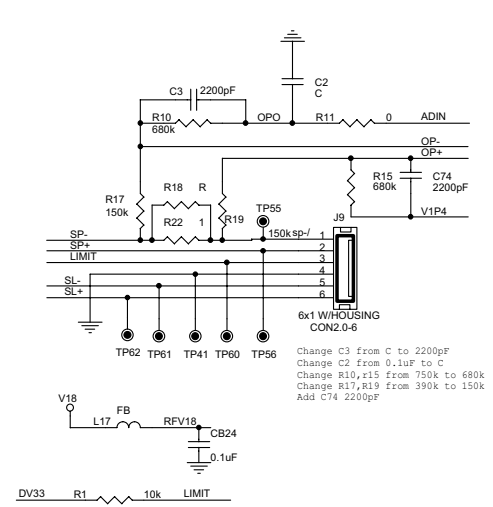
NAME	TYPE	DEVICE
VCC	Digital 5V	SUPPLY
DV33	Digital 3.3V	MT1389E
RFV33	Servo 3.3V	MT1389E
LDO_AV33	Laser Diode 3.3V	MT1389E
AVCC	RF 5V	PICKUP HEADER
V18	Digital 1.8V	MT1389E
SD33	Digital 3.3V	SDRAM
+12V	Audio +12V	OP AMP.
-12V	Audio -12V	OP AMP.
AVDD	Audio 5V	Audio DAC
DVDD	Audio 5V	Audio DAC



- URST# >> URST# [2]
- V18 >> V18 [2]
- RFVCC >> RFVCC [2]
- LDO_AV33 >> LDO_AV33 [2]
- DV33 >> DV33 [2,3,4,5]
- VCC >> VCC [2,3,4,5]
- AVCC >> AVCC [2]
- VCC_AUDIO >> VCC_AUDIO [5]
- +12V >> +12V [4,5]
- 12V >> -12V [4,5]
- +12V1 >> +12V1 [5]
- GND >> GND [2,3,4,5]
- POWER_STB >> POWER_STB [2]
- MIC2 >> MIC2 [5]
- MIC_EN >> MIC_EN [2,5]

CIRCUIT DIAGRAM - DVD MPEG BOARD

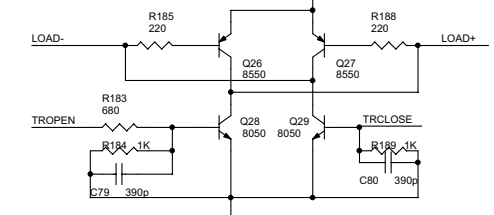
(MPEG board is not repaired. diagram for reference only)



MT1389D V1.7

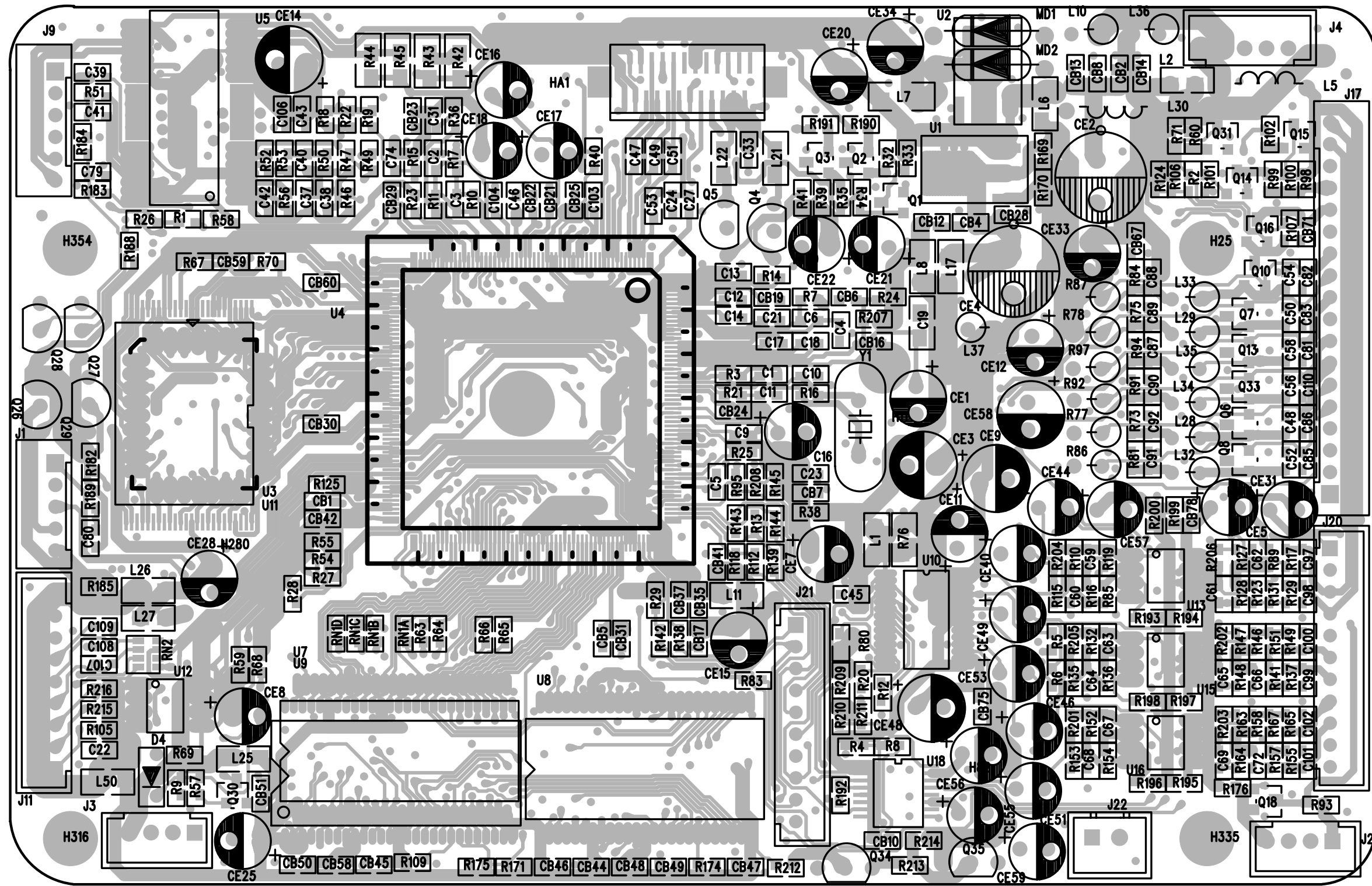
AVCC	<<>>	AVCC	[1]
V18	<<>>	V18	[1]
DV33	<<>>	DV33	[1]
URST#	<<>>	URST#	[1]
VCC	<<>>	VCC	[1]
POWER			
Y1[6]	<<>>	Y1[6]	[4]
HSYNC#	<<>>	HSYNC#	[4]
VSYNC#	<<>>	VSYNC#	[4]
FS0	<<>>	FS0	[4]
FS1	<<>>	FS1	[4]
RGB_SWITCH	<<>>	RGB_SWITCH	[4]
VIDEO INTERFACE			
AIO[2:1]	<<>>	AIO[2:1]	[3]
ADIO[7]	<<>>	ADIO[7]	[3]
PRD#	<<>>	PRD#	[3]
PWR#	<<>>	PWR#	[3]
PCE#	<<>>	PCE#	[3]
FLASH			
MA[0:11]	<<>>	MA[0:11]	[3]
DO[0:31]	<<>>	DO[0:31]	[3]
BA[0:1]	<<>>	BA[0:1]	[3]
DO[0:3]	<<>>	DO[0:3]	[3]
DCLK	<<>>	DCLK	[3]
MEMORY			
SCL	<<>>	SCL	[3]
SDA	<<>>	SDA	[3]
IIC			
ASDAT[0:2]	<<>>	ASDAT[0:2]	[5]
ALRCK	<<>>	ALRCK	[5]
ACLK	<<>>	ACLK	[5]
ABCK	<<>>	ABCK	[5]
ASPDF	<<>>	ASPDF	[5]
RESET#	<<>>	RESET#	[4,5]
AUDIO INTERFACE			
MUTE_DAC	<<>>	MUTE_DAC	[5]

TRANSISTOR TRAY DRIVE CIRCUIT

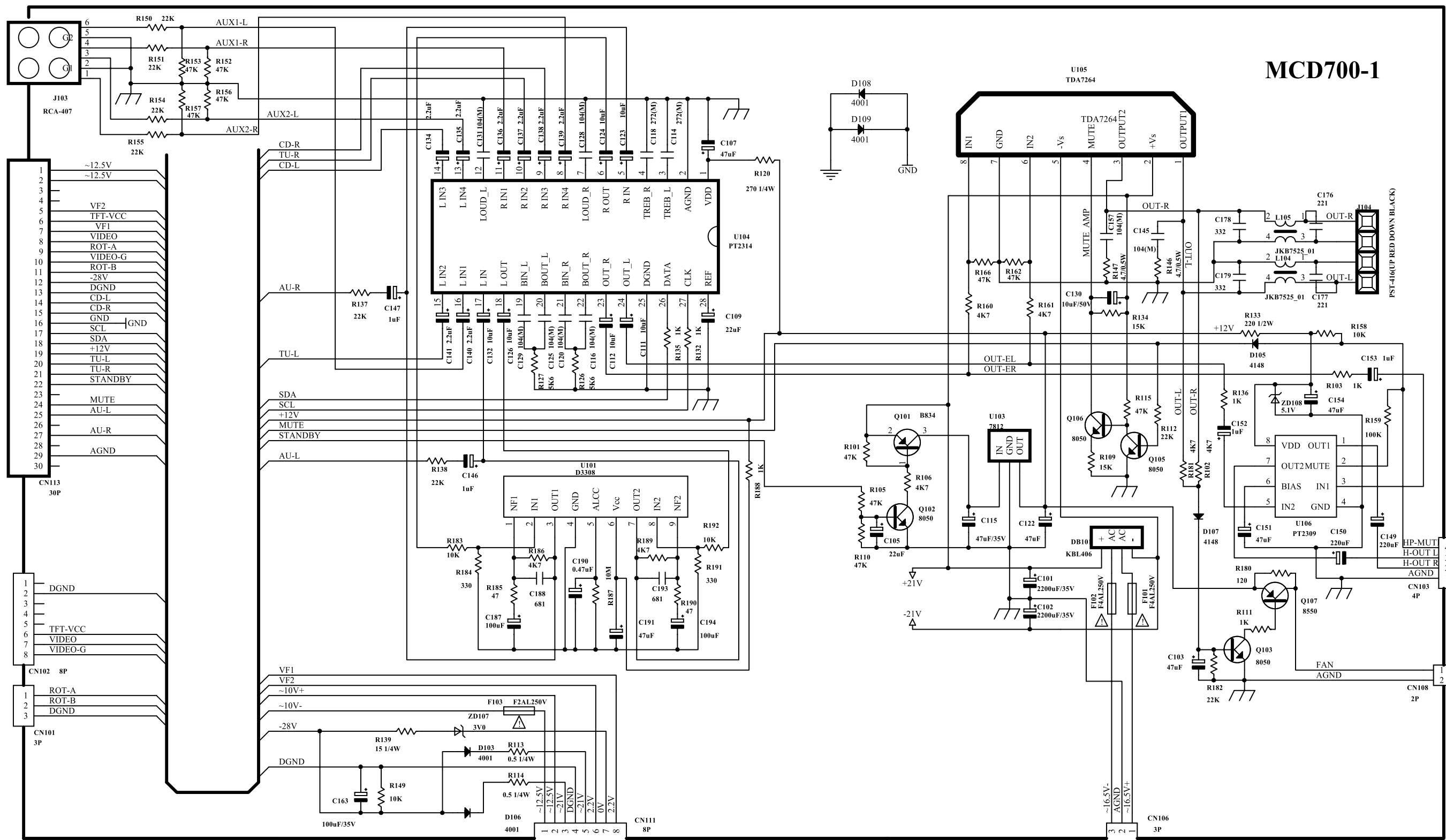


LAYOUT DIAGRAM - DVD MPEG BOARD

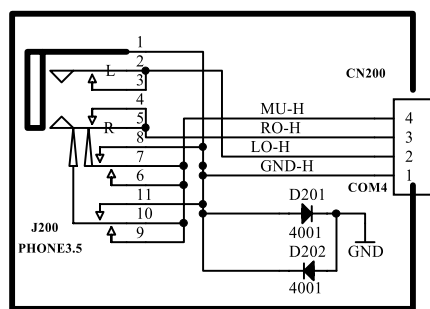
(MPEG board is not repaired. diagram for reference only)



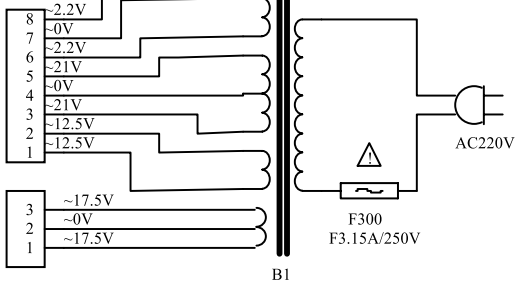
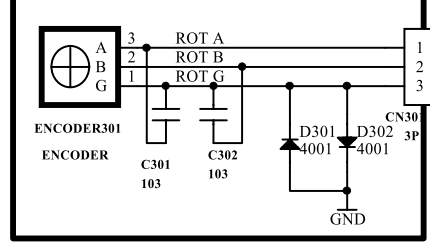
CIRCUIT DIAGRAM - AMP BLOCK



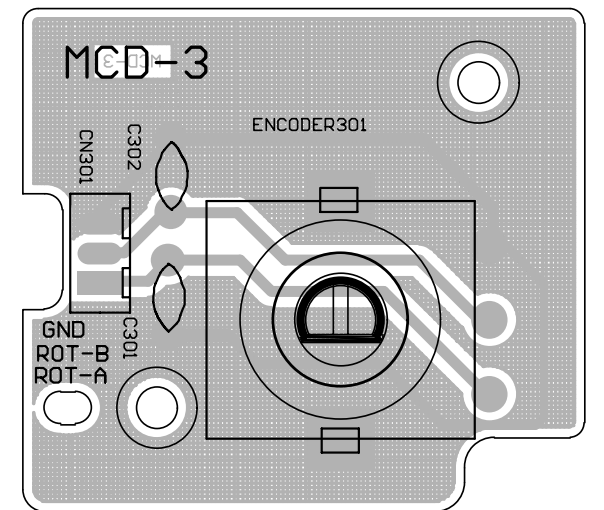
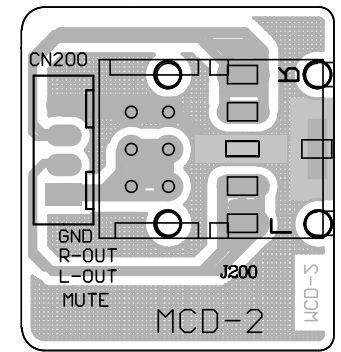
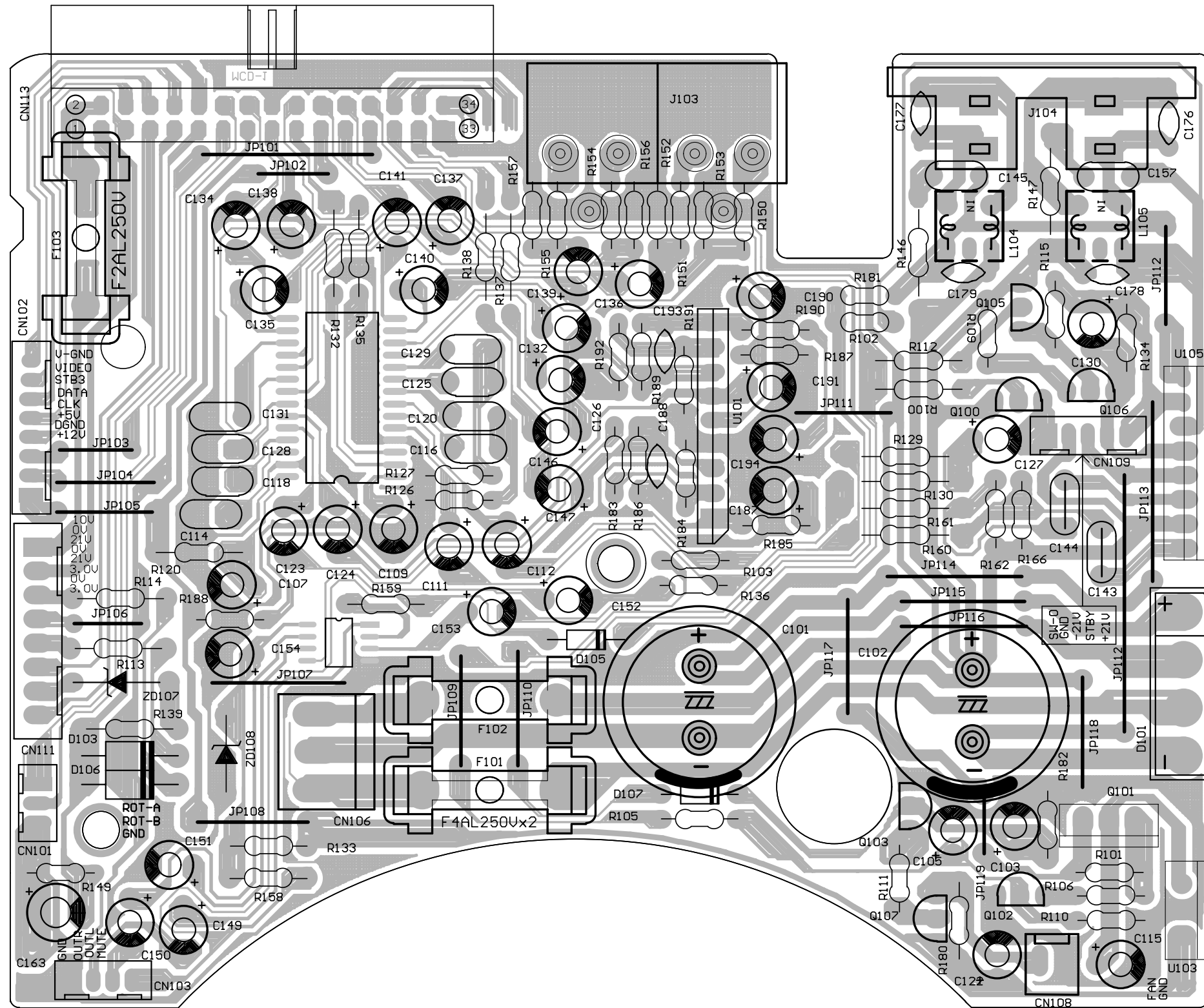
MCD700-2



MCD700-3

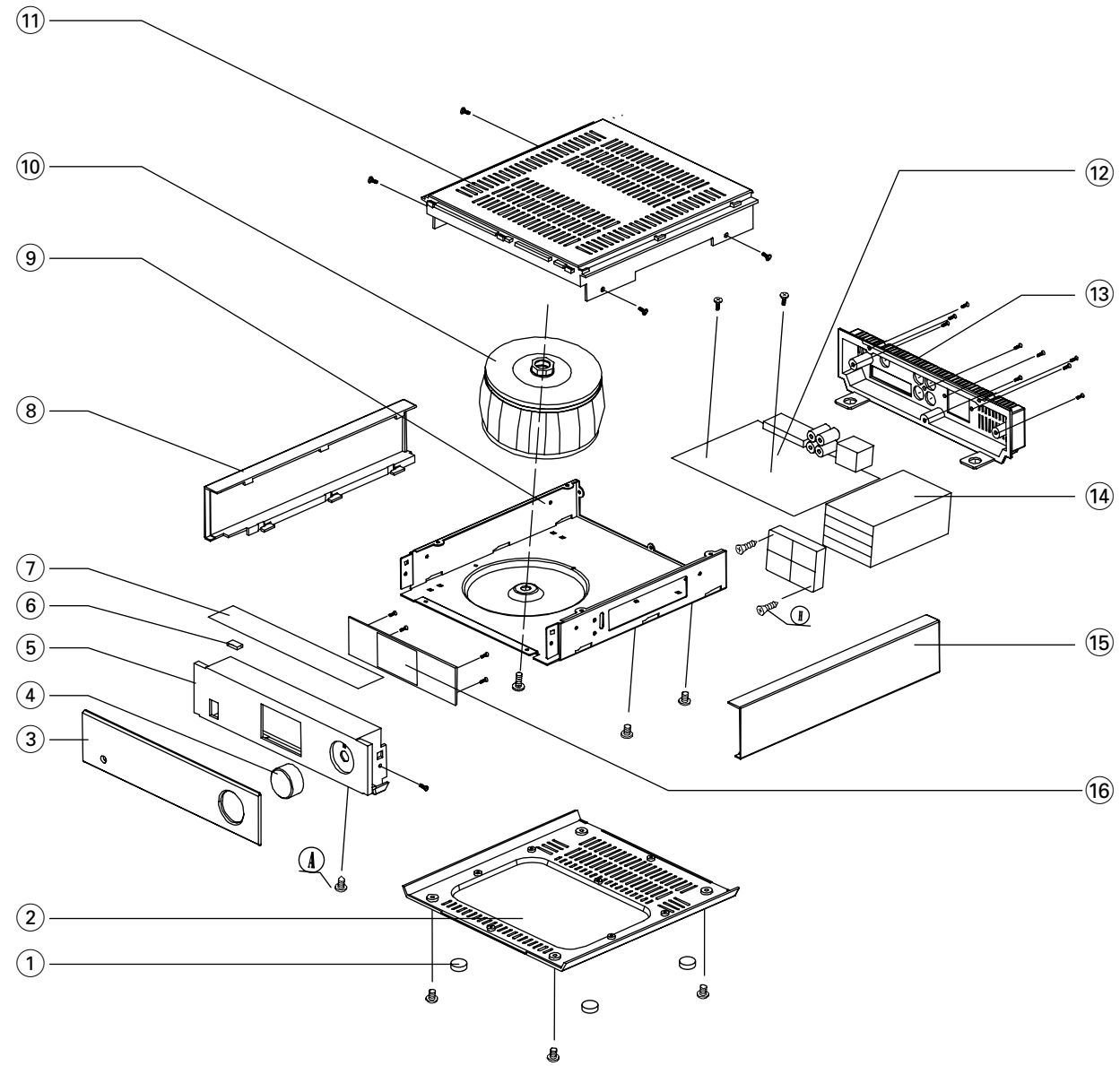


LAYOUT DIAGRAM - AMP BLOCK

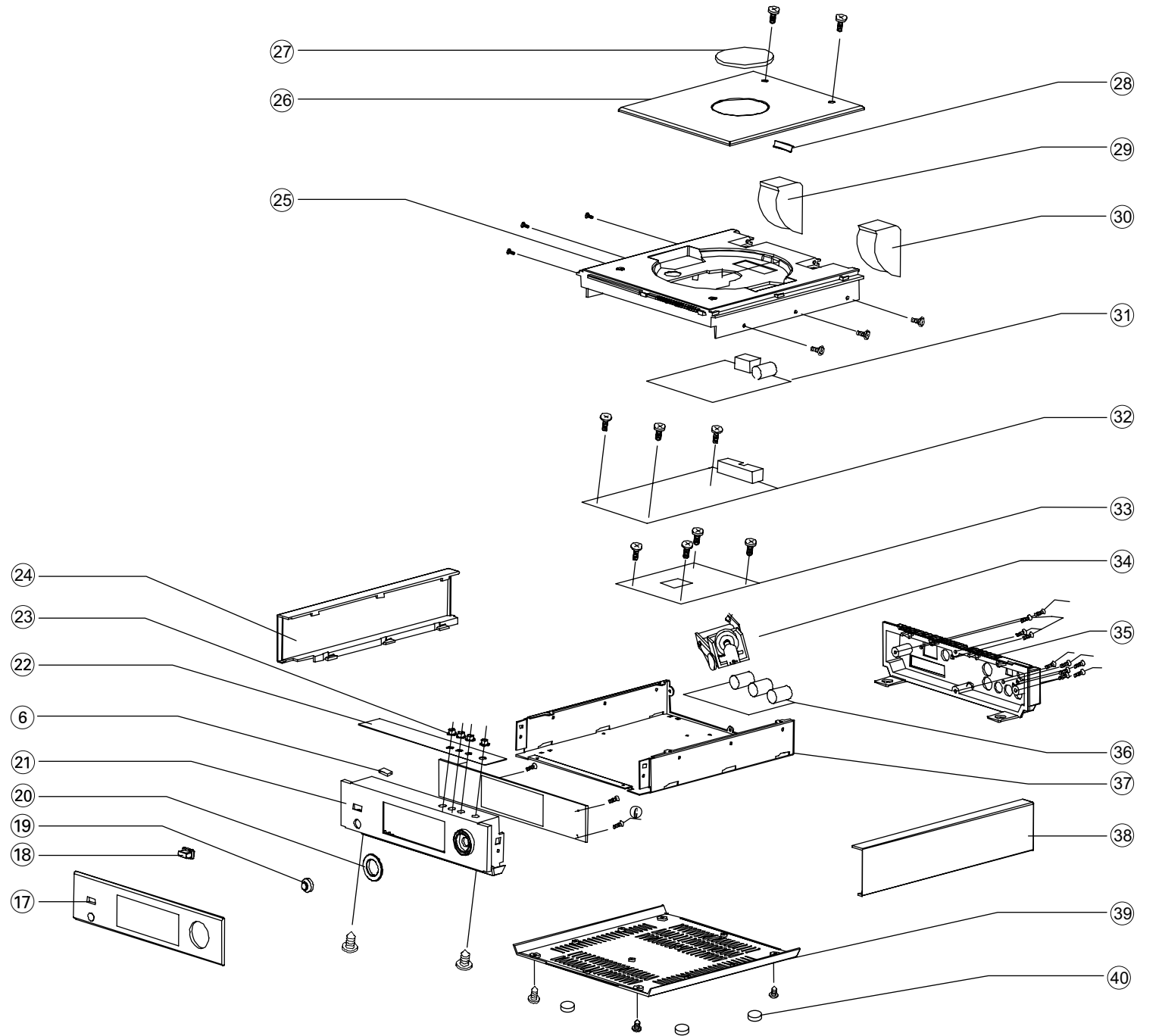


EXPLODED VIEW DIAGRAM

AMP PART



DVD PART



ACCESSORIES

9940 000 02562	AM ANTENNA	
9940 000 02508	VIDEO WIRE(BLK) 1.5M W/PLUG	
9940 000 02512	REMOTE CONTROL ASS'Y	
9940 000 02507	MCD700 SPEAKER BOX ASS'Y	
9940 000 03071	MCD700 SPEAKER BOX ASS'Y	(MCD700/37 only)
9940 000 03083	MCD702 SPEAKER BOX ASS'Y	
9940 000 02572	MCL707 SPEAKER BOX ASS'Y	
9940 000 03069	SPEAKER PLASTIC GRILLE	
9940 000 03091	SPEAKER GRILLE FIXER	

MECHANICAL PARTSLIST**AMP PART**

1	9940 000 02509	MCD700 RUBBER FOOT	
2	9940 000 02483	MCD700 AMP CABINET BOTTOM	
3	9940 000 02492	MCD700 AMP DISPLAY LENS	MCD700
3	9940 000 02569	MCL707 AMP DISPLAY LENS	MCL707
4	9940 000 02496	MCD700 VOL KNOB	
5	9940 000 02476	MCD700 AMP CABINET FRONT	
5	9940 000 03072	MCD700 AMP CABINET FRONT	(USA version only)
6	9940 000 03089	CONDUCTIVE SPONGE 5×3×1MM	
7	9940 000 02502	MCD700 AMP UNIT TOP PLATE	
8	9940 000 02498	MCD700 SIDE PLATE(L)	
8	9940 000 03075	MCD700 SIDE PLATE(L)	(USA version only)
10	9940 000 02559	TOROIDAL TRANSFORMER W/JTH	
11	9940 000 02478	MCD700 AMP CABINET TOP	
11	9940 000 03073	MCD700 AMP CABINET TOP	(USA version only)
12		AMP PCB ASSY	(see electrical partslist)
13	9940 000 02481	MCD700 AMP CABINET BACK	
13	9940 000 03074	MCD700 AMP CABINET BACK	(USA version only)
15	9940 000 01499	MCD700 SIDE PLATE(R)	
15	9940 000 03076	MCD700 SIDE PLATE(R)	(USA version only)
16	9940 000 02568	1.8" TFT DRIVER PCB ASS'Y	(MCL707 only)

MECHANICAL PARTSLIST

DVD PART

17	9940 000 02493	MCD700 DVD DISPLAY LENS	MCD700
17	9940 000 02571	MCL707 DVD DISPLAY LENS	MCL700
18	9940 000 02497	MCD700 POWER KNOB	
19	9940 000 02506	OVERLAY FOR FUNCTION KNOB	
20	9940 000 02505	FUNCTION KNOB METAL RING	
21	9940 000 02477	MCD700 DVD CABINET FRONT	
21	9940 000 03079	MCD700 DVD CABINET FRONT	(USA version only)
22	9940 000 02503	DVD UNIT PUSH KEY PLATE	
23	9940 000 02494	CAB. TOP PUSH KEY KNOB	
24	9940 000 02498	MCD700 SIDE PLATE(L)	
24	9940 000 03075	MCD700 SIDE PLATE(L)	(USA version only)
25	9940 000 02479	MCD700 DVD CABINET TOP	
25	9940 000 03081	MCD700 DVD CABINET TOP	(USA version only)
26	9940 000 02485	MCD700 DVD DOOR	
27	9940 000 02504	CD DOOR DECORATIVE SHEET	
28	9940 000 02486	LAMP-CHIMNEY (WHITE)	
29	9940 000 02488	CD DOOR (LEFT) BRACKET	
30	9940 000 02489	CD DOOR (RIGHT) BRACKET	
31	9940 000 02513	TUNER PCB ASS'Y	
32		CPU PCB ASSY	(see electrical partslist)
33		DVD DECODER CARD ASS'Y	(see electrical partslist)
34	9940 000 02487	WORM & WORM WHEEL BRACKET	
35	9940 000 02482	MCD700 DVD CABINET BACK	
35	9940 000 03082	MCD700 DVD CABINET BACK	(USA version only)
38	9940 000 01499	MCD700 SIDE PLATE(R)	
38	9940 000 03076	MCD700 SIDE PLATE(R)	(USA version only)
39	9940 000 02484	MCD700 DVD CABINET BOTTOM	
40	9940 000 02509	MCD700 RUBBER FOOT	
	9940 000 02491	WORM & WORM WHEEL	
	9940 000 02511	LEATHER BELT	

ELECTRICAL PARTS LIST - DVD PART**DIODES**

D801	9940 000 02544	RECTIFIER DIODE IN5822
LED501	9940 000 02537	LED (BLUE) 3R4CB71D-2B-208

TRANSISTORS

Q801	9940 000 02518	TRANSISTOR 8050C
Q802	9940 000 02519	TRANSISTOR 8550C
Q804	9940 000 02518	TRANSISTOR 8050C
Q806	9940 000 02545	TRANSISTOR 9014C
Q807	9940 000 02519	TRANSISTOR 8550C
BD801	9940 000 02521	THYRISTOR RS406(4A)

INTEGRATE CIRCUIT

U802	9940 000 02546	IC YD2576-ADJ	
U803	9940 000 02548	IC LM7805	
U804	9940 000 02549	CPU U252(3P9228) MCD700V1.0	MCD700/all except /37
U804	9940 000 02978	CPU U252(3P9228) MCD700V2.0	MCD700/37
U804	9940 000 02979	CPU U252(3P9228) MCD702V2.0	MCD702/37
U804	9940 000 02981	CPU U252(3P9228) MCL707V1.0	MCL707/93/98
U807	9940 000 02547	IC AT24C02-PC27(2.7V)	
IC701	9940 000 02539	IC PT6311	

SWITCHES

SW701	9940 000 02543	LIGHT TOUCH SWITCH
SW706	9940 000 02557	SWITCH(4-DIRECTIONS)
SW1501	9940 000 02555	LIGHT TOUCH SWITCH
SW1502	9940 000 02555	LIGHT TOUCH SWITCH
SW1503	9940 000 02555	LIGHT TOUCH SWITCH
SW1504	9940 000 02555	LIGHT TOUCH SWITCH
SW1505	9940 000 02555	LIGHT TOUCH SWITCH

MISCELLANEOUS

X801	9940 000 02551	CRYSTAL OSC FREQ. 32.768 KHZ	
S701	9940 000 02542	IR SENSOR	
VFD701	9940 000 02541	VFD DISPLAY NE-700D-3.WR	
M601	9940 000 02538	MOTOR RF-370C-14370	
CN801	9940 000 02552	PIN CONNECTOR 30P	
J1101	9940 000 02556	OPTICAL & COAXIAL SOCKET	
JACK902	9940 000 02553	3PINS RCA SOCKET(R/B/G)	
JACK901	9940 000 02554	S-VIDEO SINGLE RCA SOCKET	
	9940 000 02513	TUNER PCB ASS'Y	
	9940 000 02563	DVD MECHANISM IDM520A	
	9940 000 02514	DVD MPEG CARD MCD700/93V1.1	MCD700/93
	9940 000 02982	DVD MPEG CARD MCD700/98V1.1	MCD700/98
	9940 000 02983	DVD MPEG CARD MCD700/55V1.1	MCD700/55
	9940 000 02984	DVD MPEG CARD MCD700/37V2.0	MCD700/37
	9940 000 02995	DVD MPEG CARD MCD700/79V1.1	MCD700/79
	9940 000 02996	DVD MPEG CARD MCD700/96V1.1	MCD700/96
	9940 000 02985	DVD MPEG CARD MCD702/37V2.0	MCD702/37
	9940 000 02986	DVD MPEG CARD MCL707/93V1.1	MCL707/93
	9940 000 02987	DVD MPEG CARD MCL707/98V1.1	MCL707/98

ELECTRICAL PARTS LIST - AMP PART**DIODES**

D101	9940 000 02521	THYRISTOR RS406(4A)
ZD107	9940 000 02515	ZENER DIODE 3V
ZD108	9940 000 02516	ZENER DIODE 5V1

TRANSISTORS

Q100	9940 000 02518	TRANSISTOR 8050C
Q101	9940 000 02517	TRANSISTOR 2SB772
Q102	9940 000 02518	TRANSISTOR 8050C
Q103	9940 000 02518	TRANSISTOR 8050C
Q105	9940 000 02518	TRANSISTOR 8050C
Q106	9940 000 02518	TRANSISTOR 8050C
Q107	9940 000 02519	TRANSISTOR 8550C
Q1201	9940 000 02545	TRANSISTOR 9014C

INTEGRATE CIRCUIT

U101	9940 000 02522	IC D3308
U103	9940 000 02526	IC 7812
U104	9940 000 02525	IC PT2314 PRINCETON
U105	9940 000 02523	IC TDA7264
U106	9940 000 02524	IC PT2309-S(L)

MISCELLANEOUS

CN113	9940 000 02533	PIN CONNECTOR 30P	
CODER301	9940 000 02535	VOLUME ENCODER	
J103	9940 000 02528	4PINS RCA SOCKET	
J104	9940 000 02527	SPEAKER SOCKET PST-416	
J1201	9940 000 02558	SINGLE RCA SOCKET	
J200	9940 000 02534	HEADPHONE JACK 3.5MM	
SW401	9940 000 02536	SWITCH TC-V030A	
SW402	9940 000 02536	SWITCH TC-V030A	
	9940 000 02573	FERRITE CORE JTH16	
	9940 000 02532	MINI FAN RDM4010S DC12V	
	9940 000 02567	1.8" TFT LCD	MCD707 only
	9940 000 02568	1.8" TFT DRIVER PCB ASS'Y	MCD707 only
F101	⚠ 9940 000 02531	FUSE F4AL250V	
F102	⚠ 9940 000 02531	FUSE F4AL250V	
F103	⚠ 9940 000 02529	FUSE F2AL250V	
	⚠ 9940 000 02566	VOLTAGE SWITCH (110/220V)	/55, /96, /98
	⚠ 9940 000 02559	TRANSFORMER W/JTH	/93
	⚠ 9940 000 03077	TRANSFORMER 120V UL	/37
	⚠ 9940 000 03084	TRANSFORMER 240V	/79
	⚠ 9940 000 03086	TRANSFORMER 120/230V	/55, /96, /98
	⚠ 9940 000 02561	AC LINE CORD 1.95M	/93
	⚠ 9940 000 02561	AC LINE CORD 1.95M	/55, /98
	⚠ 9940 000 03078	AC LINE CORD 1.95M UL	/37
	⚠ 9940 000 03085	AC LINE CORD 1.95M SAA	/79
	⚠ 9940 000 03087	AC LINE CORD 1.95M	/96

PART LIST FOR MCL707/61

14-1

ACCESSORIES PARTS

9965 000 41615	ANTENNA HOLDER ASS'Y AM
9940 000 02562	AM ANTENNA HOLDER
9965 000 41022	BRACKET ASS'Y PH MCD700
9965 000 42476	SPEAKER BOX ASS'Y MCL707
9965 000 41023	REMOTE CONTROL ASS'Y PRC502-02

MECHNICAL&MISCELLANEOUS PARTS FOR DVD

	9965 000 42060	MCD700 DVD METAL BOTTOM
21	9965 000 41986	DVD CABINET FRONT
25	9965 000 41988	DVD CABINET TOP
35	9940 000 02482	MCD700 DVD CABINET BACK
39	9965 000 42055	MCD700 DVD CABINET BOTTOM
26	9940 000 02485	MCD700 DVD DOOR
	9965 000 41989	NE1300 CD DOOR LEFT BRACKET
	9965 000 41990	NE1300 CD DOOR RIGHT BRACKET
17	9965 000 42478	DVD UNIT LENS DISPLAY (MCL707)
3	9940 000 02492	MCD700 AMP UNIT DISPLAY LENS
23	9940 000 02494	CAB. TOP PUSH KEY KNOB
	9940 000 02495	MCD700 SWITCH PUSH KNOB
24	9965 000 42075	SIDE PLATE-L ASH
38	9965 000 42076	SIDE PLATE-R ASH
40	9965 000 42472	RUBBER FOOT MCD700 ZJ-162
	9965 000 42468	DVD MECHANISM ASS'Y MCD700/61
	9965 000 42479	MCU PARTS ASSY MCL707/61
33	9965 000 42480	DECODER CARD ASS'Y MCL707/61
31	9965 000 42471	TUNER BD ASS'Y RDS MCD705/61

MECHNICAL&MISCELLANEOUS PARTS FOR AMP

5	9965 000 42061	MCD700 AMP CABINET FRONT
11	9965 000 42061	MCD700 AMP CABINET TOP
13	9940 000 02481	MCD700 AMP CABINET BACK
2	9965 000 41980	CABINET BOTTOM
4	9940 000 02496	MCD700 VOL KNOB
18	9940 000 02497	MCD700 POWER KNOB
8	9965 000 42075	SIDE PLATE-L ASH
15	9965 000 42076	SIDE PLATE-R ASH
1	9965 000 42472	RUBBER FOOT MCD700 ZJ-162
10	9965 000 42063	TRANSFOR. 368AD 220V
	9965 000 39115	AC LINE CORD 1.95m KS
16	9965 000 42481	DISPLAY PCB ASS'Y PH-MCL707 1.8"TFT

PART LIST FOR MCL707/61

14-2

ELECTRICAL PARTS - DISPLAY PCB

IC701	9940 000 02539	IC PT6311/SC16311/CD16311
	9965 000 41321	VFD DISPLAY
S701	9940 000 02542	IR SENSOR
SW701	9940 000 02543	LIGHT TOUCH SWITCH

ELECTRICAL PARTS - DOOR SWITCH PCB

SW401	9940 000 02536	SPECIAL SWITCH TC-V030A
SW402	9940 000 02536	SPECIAL SWITCH TC-V030A

ELECTRICAL PARTS - OPTICAL TERMINAL PCB

J1101	9940 000 02556	OPTICAL & COAXIAL SOCKET
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ELECTRICAL PARTS - OUTPUT PCB

JACK902	9940 000 02553	3PINS RCA SOCKET(R/B/G)
JACK901	9940 000 02554	S-Video + SINGLE RCA SOCKET

ELECTRICAL PARTS - CPU PCB

D801	9940 000 02544	RECTIFIER DIODE IN5822
Q801	9940 000 02518	TRANSISTOR 8050C
Q804	9940 000 02518	TRANSISTOR 8050C
Q802	9940 000 02519	TRANSISTOR 8550C
BD801	9940 000 02521	THYRISTOR RS406(4A)
U802	9940 000 02546	IC YD2576-ADJ
U807	9940 000 02547	IC AT24C02-PC27(2.7V)
U803	9940 000 02548	IC LM7805
X801	9940 000 02551	CRYSTAL OSC FREQ. 32.768 KHz
CN806	9965 000 41002	SPEAKER SOCKET DJ-270-DH-03
CN807	9965 000 41002	SPEAKER SOCKET DJ-270-DH-03
JP818	9940 000 03412	FUSE F1.5A/125V

ELECTRICAL PARTS - PUSH KEY PCB

SW1501	9940 000 02555	LIGHT TOUCH SWITCH
SW1502	9940 000 02555	LIGHT TOUCH SWITCH
SW1503	9940 000 02555	LIGHT TOUCH SWITCH
SW1504	9940 000 02555	LIGHT TOUCH SWITCH

PART LIST FOR MCL707/61

14-3

ELECTRICAL PARTS - SWITCH PCB

SW706 9940 000 02557 SWITCH(4-DIRECTIONS)

ELECTRICAL PARTS - AMP PCB

ZD107 9940 000 02515 ZENER DIODE 3V
ZD108 9965 000 42069 ZENER DIODE IN5231B
Q101 9940 000 02517 TRANSISTOR 2SB772
D101 9940 000 02521 THYRISTOR RS406(4A)
U101 9940 000 03427 IC NE008

U105 9940 000 04976 IC TDA7264
U106 9940 000 02524 IC PT2309-S(L)
U104 9940 000 05066 I.C. PT2314 PRINCETON
U103 9940 000 05067 IC 7812
J104 9940 000 02527 4PINS SPEAKER SOCKET PST-416

J103 9940 000 02528 4 PINS RCA SOCKET RCA-407
F103 9940 000 02529 FUSE F2AL250V
F101 9940 000 02531 FUSE F4AL250V
F102 9940 000 02531 FUSE F4AL250V
9940 000 02532 MINI FAN RDM4010S DC12V

ELECTRICAL PARTS - HEADPHONE PCB

J200 9940 000 02534 HEADPHONE JACK 3.5MM

ELECTRICAL PARTS - AMP LAMP PCB

LED 9940 000 02537 LED (BLUE) 3R4CB71D-2B-208

ELECTRICAL PARTS - WOOFER OUTPUT PCB

J1201 9940 000 02558 SINGLE RCA SOCKET

ELECTRICAL PARTS - VOLUME PCB

CODER301 9940 000 02535 VOLUME CODER ED-1612-00-F15

ELECTRICAL PARTS - MOTOR PCB

34 9965 000 42482 DOOR SW. MOTORRF-370C-14410
994000002487 WORM & WORM WHEEL BRACKET
9965 000 42483 SINGLE MOTOR WHEEL WHITE
9940 000 02511 LEATHER BELT

REVISION LIST

Version 1.0 (3141 785 30430)

- Initial Release

Version 1.1 (3141 785 30431)

- New versions /37, /79 and /96 are introduced.
- Pages 12-1 and 12-2 : Mechanical parts list adapted.
- Pages 13-1 and 13-2 : Electrical parts list adapted.

Version 1.2 (3141 785 30432)

- New versions MCL707/61.
- Pages 14-1 ---- 14-3 part list f or MCL707/61.