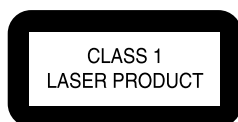


Service
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Service Manual



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PHILIPS

1. Technical Specifications

PLAYBACK SYSTEM

DVD Video
 Video CD & SVCD
 CD (CD-Recordable and CD-Rewritable)
 MP3 CD

TV STANDARD (PAL/50Hz) (NTSC/60Hz)

Number of lines	625	525
Playback	Multistandard	(PAL/NTSC)

VIDEO PERFORMANCE

Video output	1 Vpp into 75 ohm
S-Video output	Y: 1 Vpp into 75 ohm C: 0.3 Vpp into 75 ohm
Component video output	Y: 1 Vpp into 75 ohm Pb/Cb Pr/Cr: 0.7 Vpp into 75 ohm
Black Level Shift	On/Off
Video Shift	Left/Right

AUDIO FORMAT

Digital	MPEG	Compressed Digital
	Dolby Digital	16, 20, 24 bits
	PCM	fs, 44.1, 48, 96 kHz

Analogue Stereo Sound
 Dolby Surround-compatible downmix from Dolby Digital multi-channel sound
 3D Sound for virtual 5.1 channel sound on 2 speakers

AUDIO PERFORMANCE

DA Converter	24 bits	
DVD	fs 96 kHz	4 Hz - 44 kHz
DVD/SVCD	fs 48 kHz	4 Hz - 22 kHz
SVCD/VCD/CD	fs 44.1 kHz	4 Hz - 20 kHz
Signal-Noise (1kHz)		> 105 dB
Dynamic Range (1kHz)		> 105 dB
Crosstalk (1kHz)		> 105 dB
Distortion and Noise (1kHz)		> 92 dB
MPEG MP3	MPEG Audio L3	

CONNECTIONS

Y Output	Cinch (green)
Pb/Cb Output	Cinch (blue)
Pr/Cr Output	Cinch (red)
S-Video Output	Mini DIN, 4 pins
Video Output	Cinch (yellow)
Audio L+R output	Cinch (white/red)
Audio Subwoofer	Cinch (black)
Digital Output	1 coaxial, 1 optical
	IEC958 for CDDA / LPCM
	IEC1937 for MPEG1/2, Dolby Digital

CABINET

Dimensions (w x h x d)	420 x 270 x 50 mm
Weight	Approximately 4.0 Kg

* typical playing time for movie with 2 spoken languages and 3 subtitle languages

Specifications subject to change without prior notice

2. Safety Instructions, Warnings, Notes, and Service Hints

2.1 Safety Instructions

2.1.1 General Safety

Safety regulations require that during a repair:

- Connect the unit to the mains via an isolation transformer.
- Replace safety components, indicated by the symbol ▲, only by components identical to the original ones. Any other component substitution (other than original type) may increase risk of fire or electrical shock hazard.

Safety regulations require that after a repair, you must return the unit in its original condition. Pay, in particular, attention to the following points:

- Route the wires/cables correctly, and fix them with the mounted cable clamps.
- Check the insulation of the mains lead for external damage.
- Check the electrical DC resistance between the mains plug and the secondary side:
 1. Unplug the mains cord, and connect a wire between the two pins of the mains plug.
 2. Set the mains switch to the 'on' position (keep the mains cord unplugged!).
 3. Measure the resistance value between the mains plug and the front panel, controls, and chassis bottom.
 4. Repair or correct unit when the resistance measurement is less than 1 MΩ.
 5. Verify this, before you return the unit to the customer/user (ref. UL-standard no. 1492).
 6. Switch the unit 'off', and remove the wire between the two pins of the mains plug.

2.1.2 Laser Safety

This unit employs a laser. Only qualified service personnel may remove the cover, or attempt to service this device (due to possible eye injury).

Laser Device Unit

Type	: Semiconductor laser GaAlAs
Wavelength	: 650 nm (DVD) 780 nm (VCD/CD)
Output Power	: 20 mW (DVD+RW writing) 0.8 mW (DVD reading) 0.3 mW (VCD/CD reading)
Beam divergence	: 60 degree

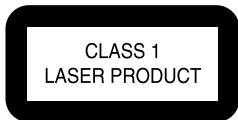


Figure 2-1

Note: Use of controls or adjustments or performance of procedure other than those specified herein, may result in hazardous radiation exposure. Avoid direct exposure to beam.

2.2 Warnings

2.2.1 General

- All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD, ⚡). Careless handling during repair can reduce life drastically. Make sure that, during repair, you are at the same potential as the mass of the set by a wristband with resistance. Keep components and tools at this same potential. Available ESD protection equipment:
 - Complete kit ESD3 (small tablemat, wristband, connection box, extension cable and earth cable) 4822 310 10671.
 - Wristband tester 4822 344 13999.
- Be careful during measurements in the live voltage section. The primary side of the power supply (pos. 1005), including the heatsink, carries live mains voltage when you connect the player to the mains (even when the player is 'off!'). It is possible to touch copper tracks and/or components in this unshielded primary area, when you service the player. Service personnel must take precautions to prevent touching this area or components in this area. A 'lightning stroke' and a stripe-marked printing on the printed wiring board, indicate the primary side of the power supply.
- Never replace modules, or components, while the unit is 'on'.

2.2.2 Laser

- The use of optical instruments with this product, will increase eye hazard.
- Only qualified service personnel may remove the cover or attempt to service this device, due to possible eye injury.
- Repair handling should take place as much as possible with a disc loaded inside the player.
- Text below is placed inside the unit, on the laser cover shield:

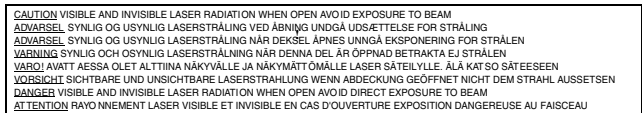


Figure 2-2

2.2.3 Notes

Dolby

Manufactured under licence from Dolby Laboratories. "Dolby", "Pro Logic" and the double-D symbol are trademarks of Dolby Laboratories. Confidential Unpublished Works. ©1992-1997 Dolby Laboratories, Inc. All rights reserved.

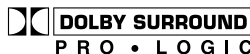


Figure 2-3

Trusurround

TRUSURROUND, SRS and symbol (fig 2-4) are trademarks of SRS Labs, Inc. TRUSURROUND technology is manufactured under licence from SRS labs, Inc.

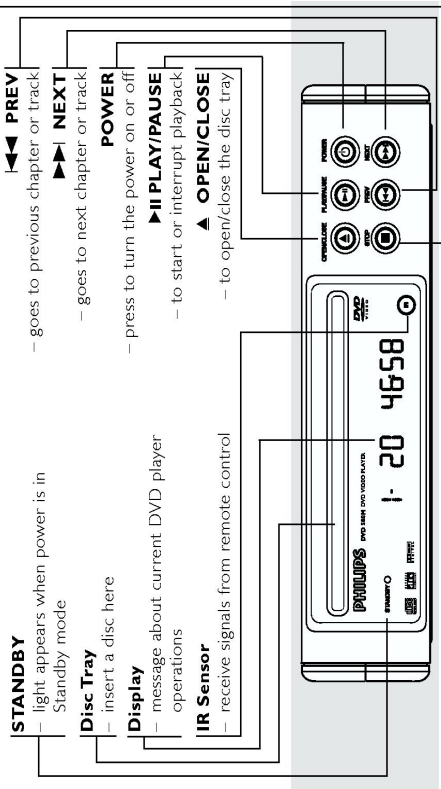


Figure 2-4

3. Directions for Use

Functional Overview

Front and Rear Panels



Caution: Do not touch the inner pins of the jacks on the rear panel. Electrostatic discharge may cause permanent damage to the unit.

6

English

English

- In cabinet, allow about 2.5cm (1 inch) of free space all around the player for adequate ventilation.
- Do not expose your player to extreme of temperature or humidity.
- If the DVD player is brought directly from a cold to a warm location, or is placed in a very damp room, moisture may condense on the lens of the disc unit inside the DVD player. Should this occur, the DVD player would not operate normally. Leave the power on for about one hour with no disc in the DVD player until normal playback is possible.
- The mechanical parts of the set contain self-lubricating bearings and must not be oiled or lubricated.
- **When the DVD player is switched to Standby mode, it is still consuming some power. To disconnect the system from the power supply completely, remove the AC power plug from the wall socket.**

Symbols Used in this Manual

The below symbols appear in some headings and notes with the following meanings:

	— Description refers to playback of DVD-video discs
	— Description refers to playback of Video CDs
	— Description refers to playback of Audio CDs

Thank you for purchasing this Philips DVD player: This Owner's Manual explains the basic operation of this DVD player:

Environmental Information

All unnecessary packaging has been omitted. Packaging has been made easy to separate into three materials: cardboard (box), polystyrene foam (buffer) and polyethylene (bags, protective foam sheet).

Your DVD player consists of materials which can be recycled and reused if disassembled by a specialised company. Please observe the local regulations regarding the disposal of packaging materials, exhausted batteries and old equipment.

Supplied accessories

- Remote control
- Batteries (two AA size) for remote control
- Audio cable
- SCART cable (not available for all versions)
- CVBS cable
- Owner's Manual

Safety Information

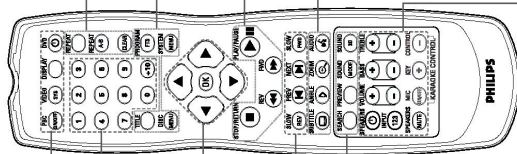
- Before operating the DVD player, check that the operating voltage indicated on the typeplate (or the voltage indication beside the voltage selector) is identical with the voltage of your local power supply. If not, please consult your dealer.
- Place the DVD player on a flat, hard and stable surface.
- There must be sufficient room in front of the player for the disc tray to be opened.

5

Functional Overview

Remote Control

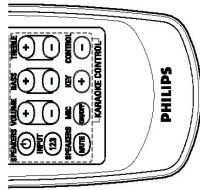
- PBC ON/OFF**
 - to switch on or off PBC mode
- VIDEO SYS**
 - to select between MULTIT/NTSC/PAL system
- DISPLAY**
 - to display time information during playback
- DVD**
 - switch DVD ON or go to standby-on mode.
- 0 to +10 numerical key pad**
 - select numbered items in a menu
- ◀ ▶**
 - (left/right/up/down) select an item in the menu
- OK**
 - acknowledge menu selection
- SLOW REV**
 - to go backward in slow motion
- PREV (◀)**
 - go to previous chapter or track
- NEXT (▶)**
 - go to next chapter or track
- SLOW FWD**
 - to go forward in slow motion
- SEARCH**
 - playback at any choosen time on CD or VCD
 - playback at any choosen chapter or time on DVD
- PREVIEW**
 - display the content of a track or whole disc
- SOUND MODE**
 - to select between left, right and stereo in CD/VCD mode
- SOUND 3D**
 - to select the desired sound effect.



- REPEAT**
 - repeat chapter, track, title, disc
 - REPEAT (A-B)**
 - repeat a specific segment
 - CLEAR**
 - to delete actions not needed
 - TITLE**
 - display title menu during playback
 - DISC MENU**
 - access menu of a DVD disc
 - SYSTEM MENU**
 - access or remove player's system menu
 - PROGRAM FTS**
 - to store your favourite tracks of a disc in the player memory.
 - STOP/RETURN (■)**
 - go back to previous menu / to stop playback
 - REV ◀◀ (REVERSE)**
 - to go backward in fast motion
 - FWD ▶▶ (FORWARD)**
 - to go forward in fast motion
 - PLAY/PAUSE (⏸)**
 - to start or interrupt playback
 - SUBTITLE**
 - subtitle language selector
 - ANGLE**
 - select DVD camera angle
 - ZOOM**
 - enlarge video image
 - AUDIO**
 - audio language selector
- For Speaker and Karaoke, see next page**

Preparation

Remote control (Speaker & Karaoke)



- For Speaker**
- SPEAKER**
 - switch speaker ON or go to standby-on mode
 - VOLUME (±)**
 - to increase or decrease the volume
 - BASS (±)**
 - to adjust the bass level
 - TREBLE (±)**
 - to adjust the treble level
 - INPUT 123**
 - to select speaker input 1, 2, 3
 - SPEAKERS MUTE**
 - to interrupt or resume sound
- For Karaoke Control**
- MIC ON/OFF**
 - to switch ON/OFF microphone
 - KEY CONTROL (±)**
 - changing key of vocal range

- Picture**
- 1 Use the CVBS Video Output for good picture quality.
 - 2 Use S-Video Output for the better picture quality.
 - 3 Use Component Video (Y CbPb CrPr) Output for best picture quality.
- Sound**
- 1 Digital audio connections provide the clearest sound. Connect the DVD player's DIGITAL AUDIO OUT (either COAXIAL or OPTICAL) to your amplifier or receiver. If digital connections are not possible, connect the DVD player's Front Left and Front Right AUDIO OUT to your amplifier, receiver, stereo or TV.
 - 2

- Warning!**
- Never make or change connections with the power switched on.
 - Connect the DVD player directly to your TV, instead of eg. a VCR, to avoid distortion because DVD video discs are copy protected.
 - Do not connect the DVD player AUDIO OUT to PHONO IN of your amplifier or receiver.

Basic Connections

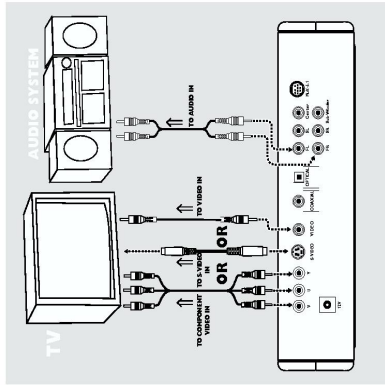
- Please refer to the instruction books of your TV, VCR, Stereo System or other devices as necessary to make the best connections.
- Make one of the following connections, depending on the capabilities of your existing equipment.

The following guidelines are options for the best picture and sound quality available on your DVD player:

Preparation

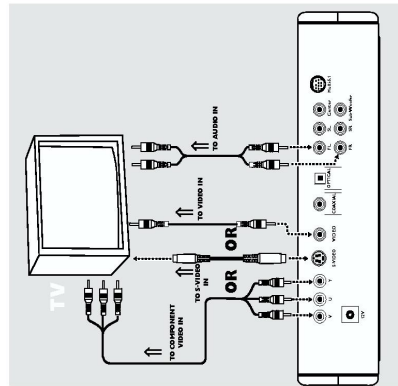
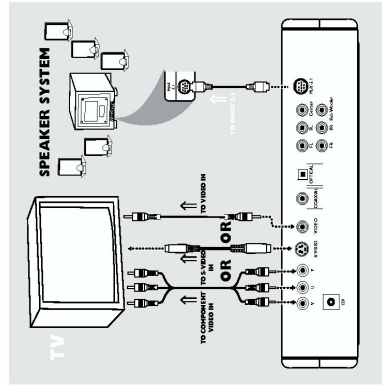
Connecting to a TV

- Make one of the following connections, depending on the capabilities of your existing equipment.
- If your TV has a Component Video (Y CbPb CrPr) input connector,**
- 1 Connect the Component VIDEO (Y CbPb CrPr) OUT on the DVD player to the Component VIDEO (Y CbPb CrPr) IN on the TV.
 - 2 Connect the Front Left and Front Right AUDIO OUT on the DVD player to the Left and Right AUDIO IN on the TV.
- If your TV has a Video input connector,**
- 1 Connect the VIDEO OUT on the DVD player to the VIDEO IN on the TV.
 - 2 Connect the Front Left and Front Right AUDIO OUT on the DVD player to the Left and Right AUDIO IN on the TV.
- If your TV has a S-Video input connector,**
- 1 Connect the S-VIDEO OUT on the DVD player to the S-VIDEO IN on the TV.
 - 2 Connect the Front Left and Front Right AUDIO OUT on the DVD player to the Left and Right AUDIO IN on the TV.



Connecting to Philips Speaker System

- Connect the MULTI 5.1 channel output on the DVD player to the dedicated Philips Speaker system (cable supplied with the speaker system).

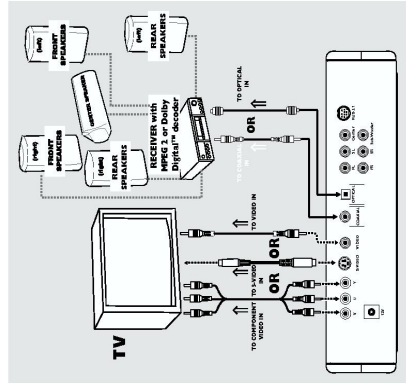


Connecting to Optional Equipment

- A digital component with a built-in MPEG 2 or Dolby Digital™ decoder allows you to enjoy the surround sound while producing the effect of being in a movie theater or a concert hall. The player outputs the surround sound signals from the DIGITAL OUT COAXIAL or OPTICAL connectors.

If your receiver has a MPEG 2 or Dolby Digital™ decoder,

- 1 Connect the COAXIAL or OPTICAL DIGITAL AUDIO OUT of the DVD player to the COAXIAL or OPTICAL DIGITAL AUDIO IN on your receiver.



Note:

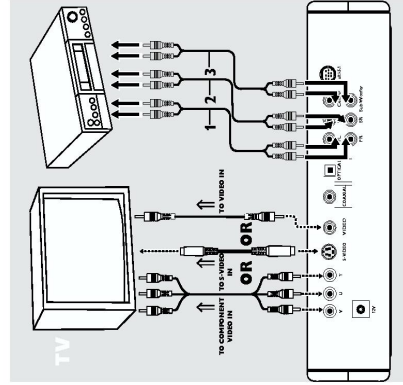
- If the audio format of the digital output does not match the capabilities of your receiver, the receiver will produce a strong, distorted sound or no sound at all.

Connecting to a Multi-channel Audio/Video receiver with 6 connectors

- This player contains a multi-channel decoder and it enables playback of DVDs recorded in Multi-channel.
- 1 Connect the audio Left and Right outputs for Front speaker connection (1) to the corresponding input sockets on your receiver using the audio cable supplied.
 - 2 Connect the audio Left and Right outputs for Surround speaker connection (2) to the corresponding inputs on your receiver using an optional audio cable.
 - 3 Connect the audio outputs for Center speaker and Subwoofer connection (3) to the corresponding inputs on your receiver using an optional audio cable.
 - 4 In the CHANNEL SETUP menu, select DOWNMIX to OFF.
 - 5 The 6CH function is now enable (see 'Setup Menu').

Note:

- If the subwoofer is equipped with its own amplifier, the Subwoofer connection should be connected directly to the subwoofer.



Operation

Basic Playback

- 1 Press POWER on the front panel to turn on the DVD player.
- 2 Insert the chosen disc in the tray, with the label facing up.
- 3 Disc playback starts automatically or press PLAY to start playback depending on the disc menu on the TV screen.

- Notes:**
- DVDs may have a region code. Your player will not play discs that have a region code different from the region code of your player.
 - If 'Disc Lock' is set to ON and the disc inserted is not authorised, the 4-digit code must be entered and/or the disc must be authorised (see 'Disc Lock').

General Features

- Note:**
- Unless stated, all operations described are based on remote control use. Some operations can be carried out using the menu bar on the TV screen.

Video Control during playback



- 1 **STOP/RETURN**
You can resume playback from the point where the playback was last stopped by pressing the STOP/RETURN key once.
→ The help line text appears: "Press PLAY to continue" will be displayed.
- 2 Playback will start from the beginning if you press STOP/RETURN key twice to stop playback.

PAUSE/PLAY

- 1 Press PAUSE/PLAY once.
→ Playback will pause.
- 2 To resume normal playback, press PAUSE/PLAY again.

NTSC/PAL Conversion

- This player is equipped with an NTSC/PAL conversion feature that converts the video output of the disc to match your TV system.
 - Allows you to select between PAL, NTSC and MULTI mode.
- The conversions supported are as follows:
Press VIDEO SYS on the remote control to access the preference video standard.

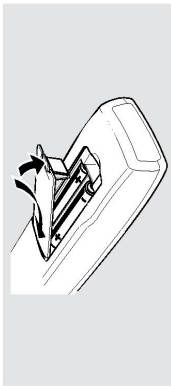
- Notes:**
- If you have a PAL only TV, ensure that your PAL/NTSC setting is PAL.
 - MULTI can only be selected when using a TV that has both the NTSC and PAL systems.
 - This setting is applicable for CVBS output on cinch and SCART only.
 - Slight picture distortions may occur due to this conversion. This is normal. Thus, the MULTI format is most suitable for the best picture quality.

Switching On

- 1 Connect the AC power cord to the power outlet.
- 2 Switch on the TV and DVD player.
- 3 Set the TV to the correct Video IN channel. (eg. EXT1, EXT2, AV1, AV2, AUDIO/VIDEO, etc.)
(Refer to your TV owner's manual for detail)
→ The player display lights up and the default screen appears on the TV.
- 4 If you are using an external equipment (eg. audio system or receiver), turn them on and select the appropriate input source that was used to connect to the DVD player output. Refer to the equipment owner's manual for detail.

Inserting batteries into the Remote Control

- 1 Open the battery cover.
- 2 Insert batteries (AA size) with the correct polarity as indicated by the + and - symbols inside the battery compartment.
- 3 Close the cover.



CAUTION!

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

Using the Remote Control

- Direct the remote control at the remote sensor of the DVD player.
- Do not drop the remote control.
- Do not leave the remote control near extremely hot or humid place.
- Do not spill water or put anything wet on the remote control.

PREV/NEXT

- 1 Press PREV/◀ to go to previous chapter or track.
- 2 Press NEXT ▶ to go to next chapter or track.

SLOW MOTION

- 1 Press SLOW (FWD) or SLOW (REV) repeatedly to get different playback slow forward/backward speed (1, 2, 3, OFF).
- 2 Press PLAY to return to normal playback.

REV/FWD

- 1 Press REV ◀◀ or FWD ▶▶ repeatedly to get different playback forward/backward speed (1, 2, 3, 4, OFF).

Audio Control during playback

SOUND MODE



DVD has two stereo audio channels which are used for playing karaoke or the audio language selection.

- 1 Press SOUND MODE repeatedly to get different audio channel.



XCD has only one stereo audio channel; mono left audio channel or mono right audio channel by pressing the SOUND MODE key on the remote control.

SOUND 3D (DVD, XCD)

The DVD player can reproduce with the maximum of 5 virtual surround sound effects. Sound 3D is available only when set to 'Karaoke mode'.

- 1 Press SOUND 3D repeatedly to switch for different sound effect.

English

English

Preparation

Operation

Title DVD

- 1 Press TITLE key to display the title menu on the screen.
- 2 Use the ◀▶▶▶ keys to move to the required title and OK to confirm.
- 3 You can also enter the numerical key pad to play the selected title.

Disc Menu DVD

- 1 Press DISC MENU key to display the chapters available on the DVD disc.
- 2 Use the ◀▶▶▶ keys to move to the required title and OK to confirm.
- 3 You can also enter the numerical key pad to play the selected chapter.

Zoom DVD YCD

The Zoom function allows you to enlarge the video image and to pan through the enlarged image.

- 1 Press ZOOM key on the remote control.
- 2 Select the required zoom factor: 1.5 or 2 or 4 or OFF using ◀▶▶▶ keys to pan across the screen.
- 3 Press ZOOM key again to return to the normal size.

Program FTS YCD CD

- 1 While playback is stopped, press PROGRAM FTS on the remote control.
- 2 The program FTS edit box appears. Enter the desired track using the numerical key pad on the remote control.
- 3 Press CLEAR on the remote control to erase the track number which is not needed.
- 4 Press PLAY/PAUSE to begin playback of the programmed track.

Note:

- For VCD disc, program FTS will be activated only during PBC OFF.
- Program FTS is not available on DVD/IMP3 discs.

English

English

Operation

YCD CD

- 1 Press SEARCH key to display the time edit box. Enter minutes and seconds from left to right in the time edit box using remote control numerical key pad (eg. 34:27).
- 2

Display DVD YCD CD

Information about the disc will be display by pressing the DISPLAY button on the remote control during disc playback.

DVD disc:

TITLE REMAIN / TIME ELAPSED
CHAPTER REMAIN
CHAPTER ELAPSED

YCD disc:

When PBC is set to ON; the following options will appear;

SINGLE ELAPSED
SINGLE REMAIN
TOTAL ELAPSED
TOTAL REMAIN
OFF

When PBC is set to OFF; the following options will appear;

TOTAL ELAPSED
TOTAL REMAIN

CD disc:

SINGLE ELAPSED
SINGLE REMAIN
TOTAL ELAPSED
TOTAL REMAIN
OFF

Repeat DVD

Repeat chapter/title/disc

- To repeat the current chapter, press REPEAT.
- To repeat the current title, press REPEAT a second time.
- To exit Repeat mode, press REPEAT a third time.

YCD CD

Repeat track/disc

- To repeat the current track, press REPEAT.
- To repeat the entire disc, press REPEAT a second time.
- To exit Repeat mode, press REPEAT a third time.

Repeat A-B DVD YCD CD

– DVD-Video Discs: repeat a sequence in a title

– Video and Audio CDs: repeat a sequence in a track

- 1 Press REPEAT A-B at your chosen starting point.
- 2 Press REPEAT A-B again at your chosen end point.
- 3 The playback of the repeat sequence begins.

→ To exit the sequence, press REPEAT A-B.

Search DVD

- 1 Press SEARCH key to display chapter edit box.
- 2 Enter the desired chapter number using remote control numerical key pad.
- 3 Press SEARCH second time to enter time selection mode.
- 4 Enter hours, minutes and seconds from left to right in the time edit box using remote control numerical key pad (eg. 00:34:27).
- 5 Press OK key to confirm.

Operation

Special VCD & SVCD Features

- Playback Control (PBC)**
- Load a Video CD with PBC and press PLAY.
- Press PBC key to switch to PBC ON or OFF mode.
- Press again the PLAY key to start playback.

Note:
 — When PBC is ON, playback will start from the beginning of the disc by pressing STOP key.

Preview VCD, SVCD

The Preview function allows you to reduce the picture of 9 tracks enough to display in a full screen.

- At stop mode and when PBC is set to OFF, press PREVIEW key on the remote control.
- Select the track number by using the numerical key pad on the remote control.
- Playback will start automatically on the selected track.

Karaoke DVD, VCD

- Load a karaoke disc into the DVD player.
- Select KARAOKE SETUP in the Setup menu.
- Karaoke menu bar appears.



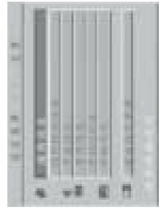
- Select to karaoke mode to activate the karaoke function.
- Adjust the KEY CONTROL (±) to change the key of vocal range.
- Adjust the volume knob at the side of the player to increase or decrease the microphone volume.

Note:
 — 3D options are available in Karaoke mode.

Setup Menu

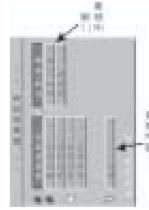
Basic Operations

- Press SYSTEM MENU to enter the Setup menu.
- Setup menu appears on the TV screen.
- Use the left and right arrow keys to toggle through the functions and select your preferred option.
- Press OK to confirm a highlighted selection.
- Press SYSTEM MENU again or move the EXIT key to EXIT SETUP MENU on the screen and press OK to quit.



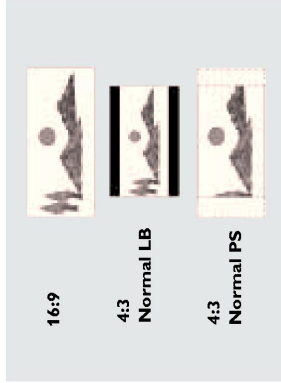
General Setup Menu

- Press the up arrow key to choose GENERAL SETUP menu.
- Press OK to confirm a selection.
- Setting for GENERAL SETUP appears on the TV screen.
- Select MAIN PAGE to exit to default screen.



TV Display

Select the aspect ratio of the TV to be connected.
16:9 (WIDE) → when you connect a wide-screen TV to the DVD player.
4:3 NORMAL/LB → when you connect a normal TV to the DVD player. Displays a wide picture with bands displayed on the upper and lower portions of the TV screen.
4:3 NORMAL/PS → when you connect a normal TV to the DVD player. Displays the wide picture on the whole TV screen with a portion automatically cut off.



PIC mode

In this menu, you can choose one picture mode to personalize the effect of the picture on your TV.
 Auto: Images are automatically set to standard settings.
 Hi-Res: Images are sharper and clearer to achieve a high quality resolution mode.
 N-Flicker: Images are set to flicker-less mode.

English

English

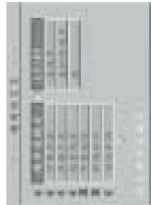
Setup Menu

English

English

Channel setup

This menu contains setup options for your speaker system to reproduce high quality surround sound.



Angle Mark

ON: Current angle setting will be display on the right hand side of the screen.
OFF: Disable the current angle setting display.

OSD Lang

There are two options available for information display on the TV screen.
ENGLISH: OSD information will be displayed in English.
CHINESE: OSD information will be displayed in Chinese.

Screen Saver

This function is used to turn on or off the screen saver.
ON: At stop mode, screen saver will turn on within 2 seconds.
OFF: Screen is disable.

Video Out Setup



Video Out

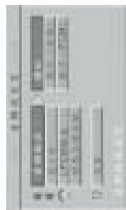
S-Video: Video signal will send an output from the S-Video on the rear panel of the DVD player to the TV.
YCbCr: If your TV is equipped with YCbCr input, choose this feature to obtain higher picture quality.

Setup Menu

English

English

Audio Setup



Audio Out

Analog: Analog output selection enables you to specify the type of analog output to match your DVD player's playback capability.
SPDIF (RAW): Original digital signals output from coaxial and optical terminals.
SPDIF (PCM): Convert to PCM signals output.

Note:

– When SPDIF (RAW) and SPDIF (PCM) is set, analog output will be disable.

Dual mono

Stereo: Left mono sound will send output signals to Left speaker and Right mono sound will send output signals to Right speaker.

L-mono: Left and Right mono sound will send output signals to Left speaker only.
R-mono: Left and Right mono sound will send output signals to Right speaker only.
Mix-mono: Left and Right mixed mono sound will send output signals to Left and Right speakers.

LPCM output

To set a sampling rate to decode LPCM audio.
LPCM 96k: Detect the disc for appropriate sampling rate, if the disc is not 96kHz, select LPCM 48k: to decode the process under the sampling rate of 48kHz.

Dynamic

To optimised the dynamic sound output. High volume outputs are softened, enabling you to watch your favourite action movie without disturbing others.

The levels for dynamic selection:
1/8, 2/8, 3/8, 4/8, 5/8, 6/8, 7/8, 8/8 and OFF.

Karaoke Setup



Karaoke mode

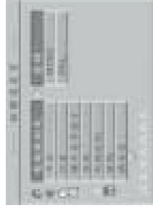
OFF: Disable the karaoke mode.
Karaoke: Enable the karaoke mode.

Note:

– When Karaoke mode is set to ON, individual speaker in Channel setting manual will not be activated.

Preferences

Preferences features can be selected only when the player is under "No disc." condition.



TV Type

This player is equipped with an NTSC/PAL settings to ensure that the DVD player system matches your TV.
MULTI: video output is depending on the format of the disc.
NTSC: DVD player will output only NTSC system.
PAL: DVD player will output only PAL system.

Note:

– When TV system selection did not match between the DVD player and the disc, the picture may appear distorted.

Setup Menu

Audio / Subtitle / Disc menu

DVD discs are available for multi-audio / subtitle / disc menu languages. Use these settings to choose your preferred default language.
 Audio: English, French, Spanish, Chinese, ...etc.
 Subtitle: English, French, Spanish, Chinese, ... etc.
 Disc menu: English, French, Spanish, Chinese, ... etc.

Notes:
 - This feature is subject to availability of the disc.
 - If the language selected is not available on the disc, the default language designated by each disc will be selected.

Parental

Parental feature allows you to prevent discs from being played by your children or to have certain discs played with alternative scenes. If you set a rating for the player, all scenes with the same rating or lower will be played. The rating levels for selection: 1, 2, 3, 4, 5, 6, 7, 8 and No Parental.

Password

You can change the setup of parental setting with a recognise password. Enter your password when required by the DVD player.

- 1 Enter the current 4 digit code.
 - 2 Move to NEW PASSWORD using the ▼ key.
 - 3 Enter the new 4-digit code.
 - 4 Enter the code a second time to reconfirm.
 - 5 Press PLAY key to exit the menu.
- The new 4 digit code will be take effect.



Note:

- If you forget the password, you can enter the default password 3308 and replace your password after logging in.

Default

Use DEFAULT feature if problems occur during setting the DVD player. This feature will reset all settings to factory and all the personal settings will be erase.

JPEG Picture and MP3 Playback

This DVD player can playback JPEG format pictures and MP3 files.



Notes:

- The disc reading time may exceed 10 seconds due to the large number of songs compiled onto one disc.
- Playback of multi-session disc is supported for the first 10 sessions with the same format.
- For multi-session discs with different formats, only the first session will be available.

JPEG Features

Zoom

- 1 During playback, press zoom to display the picture with different scales.
- 2 Press FWD to enlarge picture scale.
- 3 Press REV to reduce picture scale.
- 4 ◀▶▶▶ keys can also be used to move to different position on the TV screen.

Multi-angles

When displaying one picture on TV screen, press the ◀▶▶▶ keys to get different angle effects.
 ▶ key: flip the picture vertically
 ▶ key: flip the picture horizontally
 ◀ key: rotate the picture anti-clockwise
 ▶ key: rotate the picture clockwise

Preview

- 1 During playback, press PREVIEW.
 → 9 reduced pictures will be displayed on the TV screen.
- 2 Press ◀▶▶▶ keys to highlight one of the picture and OK to display in full screen.

- 1 After loading a JPEG format/MP3 files disc, root menu will be displayed on the screen automatically.
- 2 Press ▶▶ to scroll through the previous or next Album.
- 3 Press ◀▶ to scroll through the Album or next Track.
- 4 You can also select the desired album/track number directly using the numeric keys on the remote control.

Note:

- In STOP mode: numbers are used for ALBUM selection.
- In PLAY mode: numbers are used for TRACK selection.

- Only the following functions are possible for MP3 discs:
 - STOP/RETURN PLAY/PAUSE
 - SKIP NEXT / PREVIOUS
 - REPEAT (TRACK / ALBUM / DISC)



MP3 Discs - Album/Track/Disc

- REPEAT TRACK - to repeat a track playback in all sequences.
- REPEAT ALBUM - to repeat an album playback in all sequences.
- ALBUM PLAYBACK - shuffle playback images in the selected folder within the first 10 seconds of each album/track on the disc.
- SKIP NEXT / PREVIOUS - use NEXT/PREV or numerical key pads to select your desired album/track. During playback, use FWD/REV to skip forward/backward of the current track/album.

English

English

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 service centre.

Problem	Solution
No power	<ul style="list-style-type: none"> Check if the AC power cord is properly connected. Press Standby-On key on the DVD player.
No picture	<ul style="list-style-type: none"> Check if the TV is switched on. Check the video connection.
Distorted picture	<ul style="list-style-type: none"> Sometimes a small amount of picture distortion may appear. This is not a malfunction.
Completely distorted picture or black/white picture with DVD or-Video CD	<ul style="list-style-type: none"> Make sure the NTSC/PAL setting at the DVD player matches the video signal of your television. (See TV Type)
No sound or distorted sound	<ul style="list-style-type: none"> Adjust the volume. Check that the speakers are connected correctly.
No audio at digital output	<ul style="list-style-type: none"> Check the digital connections. Check the settings menu to make sure the digital output is set to ALL or PCM. Check if the audio format of the selected audio language matches your receiver capabilities.
No sound and picture	<ul style="list-style-type: none"> Check that the video out cable is connected to the correct device. (See Connecting to a TV) Select another audio language (if available on the DVD disc)
Disc can't be played	<ul style="list-style-type: none"> Ensure the disc label is facing up. Check if the disc is defective by trying another disc.
No return to start-up screen when disc is removed	<ul style="list-style-type: none"> Reset the unit by switching the player off, then on again.
The player does not respond to the remote control	<ul style="list-style-type: none"> Aim the remote control directly at the sensor on the front of the player. Reduce the distance to the player. Replace the batteries in the remote control. Re-insert the batteries with their polarities (+/-) signs as indicated.
Buttons do not work or player stops responding	<ul style="list-style-type: none"> To completely reset the player, unplug the AC cord from the AC outlet for 5-10 seconds.
Player does not respond to some operating commands during playback.	<ul style="list-style-type: none"> Operations may not be permitted by the disc. Refer to the instructions of the disc.
DVD Video player cannot read CDs/DVDs	<ul style="list-style-type: none"> Use a commonly available cleaning CD/DVD to clean the lens before sending the DVD player for repair.

English

English

Specifications

AUDIO PERFORMANCE

DA Converter	24 bits
DVD	fs 96 kHz
DVDSVCD	fs 48 kHz
SVCD/MCD/CD	fs 44.1 kHz
Signal Noise (1kHz)	> -105 dB
Dynamic Range (1kHz)	> -105 dB
Crosstalk (1kHz)	> -105 dB
Distortion and Noise (1kHz)	> -92 dB
MPEG MP3	MPEG Audio L3

CONNECTIONS

Y Output	Cinch (green)
Pb/Cb Output	Cinch (blue)
Pr/Cr Output	Cinch (red)
S-Video Output	Mini DIN, 4 pins
Video Output	Cinch (yellow)
Audio L+R output	Cinch (white/red)
Audio Subwoofer	Cinch (black)
Digital Output	1 coaxial, 1 optical
	IEC938 for CDDA / LPCM
	IEC1937 for MPEG1/2, Dolby Digital

CABINET

Dimensions (w x h x d)	420 x 270 x 50 mm
Weight	Approximately 4.0 Kg

* typical playing time for movie with 2 spoken languages and 2 subtitle languages

Specifications subject to change without prior notice

PLAYBACK SYSTEM

DVD Video	
Video CD & SVCD	
CD (CD-Recordable and CD-Rewritable)	
MP3 CD	
TV STANDARD (PAL/50Hz) (NTSC/60Hz)	
Number of lines	525
Playback	Multistandard (PAL/NTSC)

VIDEO PERFORMANCE

Video output	1 Vpp into 75 ohm
S-Video output	Y: 1 Vpp into 75 ohm
	C: 0.3 Vpp into 75 ohm
Component video output	Y: 1 Vpp into 75 ohm
	Pb/Cb Pr/Cr: 0.7 Vpp into 75 ohm
Black Level Shift	On/Off
Video Shift	Left/Right

AUDIO FORMAT

Digital	MPEG Compressed
	Digital
	Dolby Digital
	16, 20, 24 bits
	PCM
	fs, 44.1, 48, 96 kHz
Analogue Stereo Sound	
Dolby Surround-compatible downmix from Dolby Digital multi-channel sound	
3D Sound for virtual 5.1 channel sound on 2 speakers	

Maintenance

Cleaning the Cabinet

- Use a soft cloth slightly moistened with a mild detergent solution. Do not use a solution containing alcohol, spirits, ammonia or abrasives.

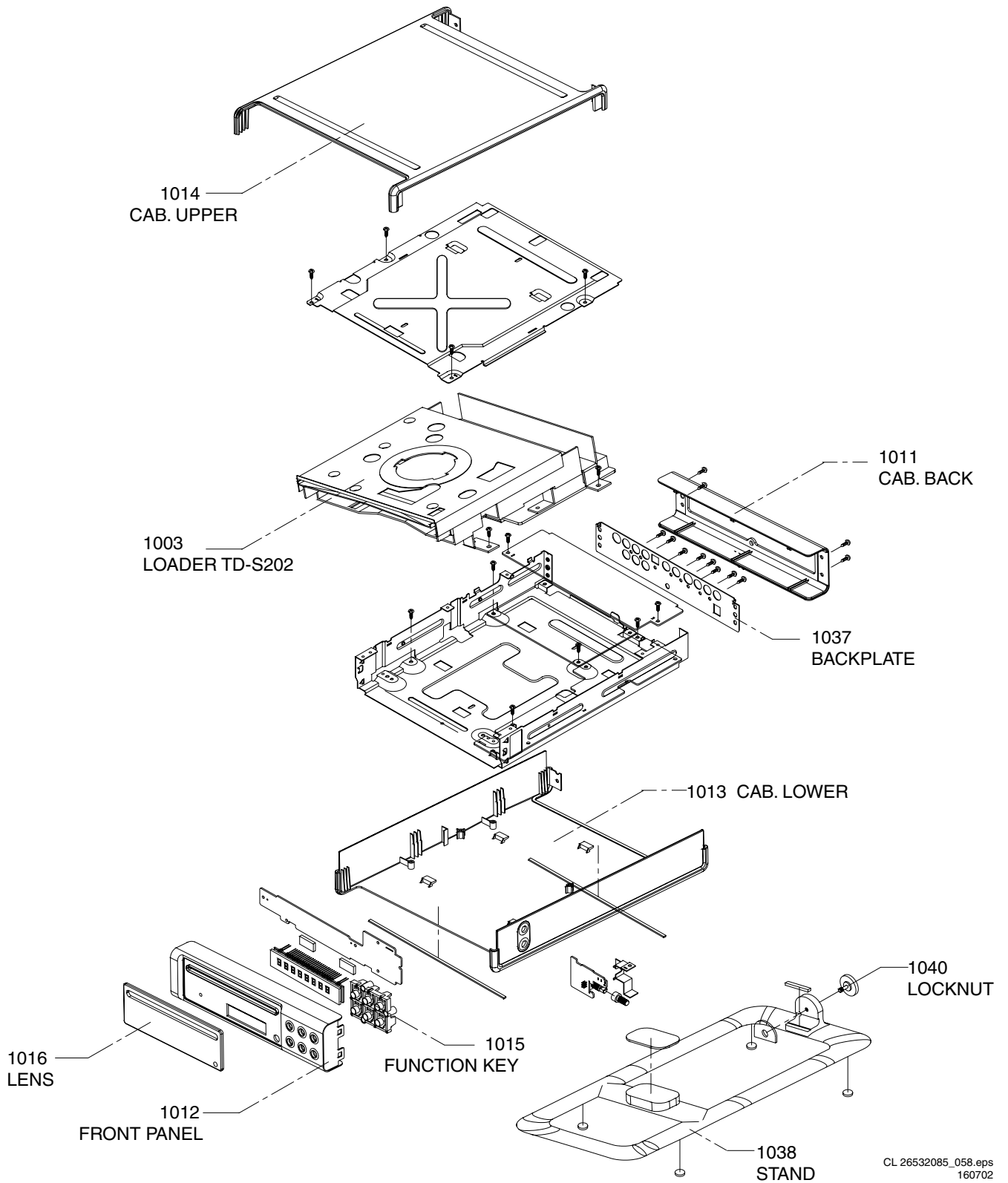
Cleaning Discs

- When a disc becomes dirty, clean it with a cleaning cloth. Wipe the disc from the centre out. Do not wipe in a circular motion.
- Do not use solvents such as benzene, thinner, commercially available cleaners, or antistatic spray intended for analogue records.

Cleaning the disc lens

- After prolonged use, dirt or dust may accumulate at the disc lens. To ensure good playback quality, clean the disc lens with Philips CD Lens Cleaner or any commercially available cleaner. Follow the instructions supplied with the cleaner.

4. Mechanical- and Dismantling Instructions



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Figure 4-1 Exploded View

4.1 Dismantling Instruction

In this paragraph some tips are given to dismantle the DVD580M player. For item number, refer to the exploded view.

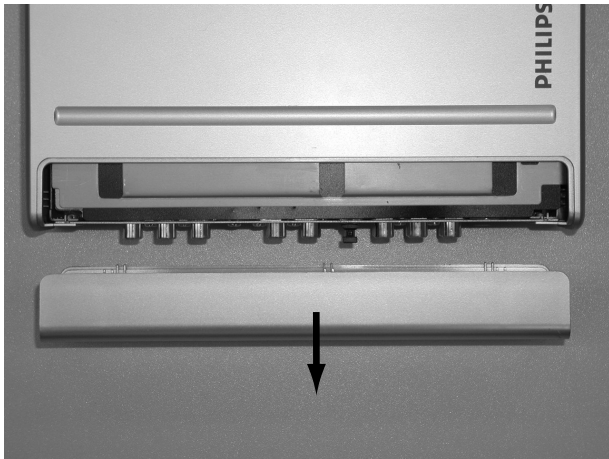
4.1.1 Remove 4 screws at the rear cover (1011)



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Figure 4-2 Back View

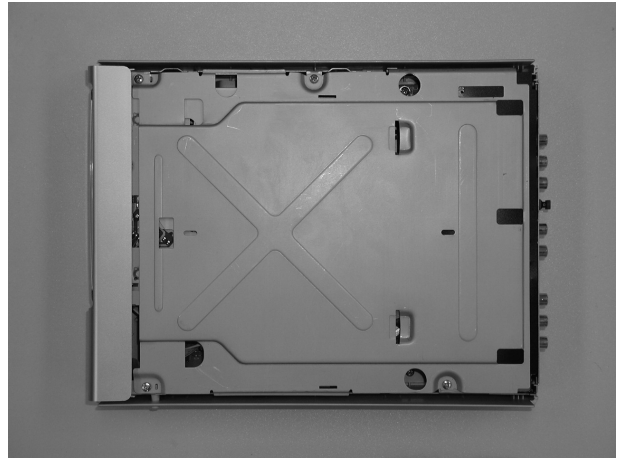
4.1.2 Push the top cover(1014) toward the rear.



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Figure 4-3 Back Panel Detached

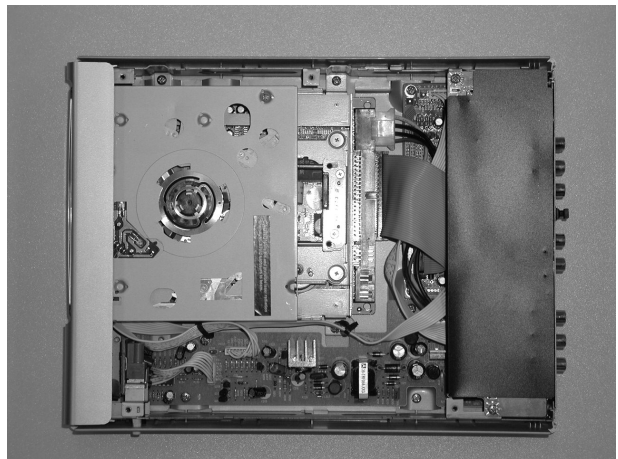
4.1.3 Inner metal plate will be seen after removing the top cover.



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Figure 4-4 Remove Top Cover

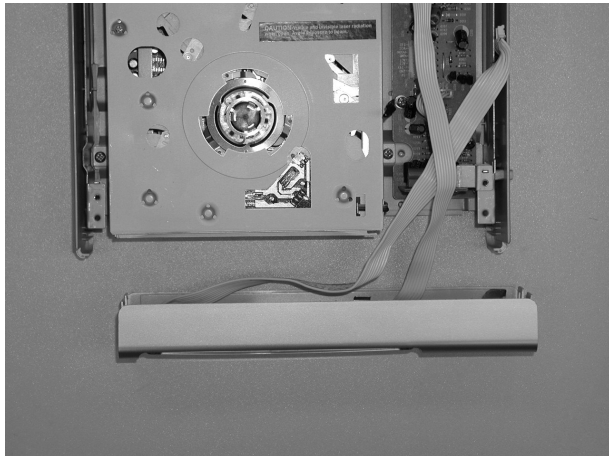
4.1.4 Remove the metal plate, the loader (1003) and other modules will be visible.



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Figure 4-5 Remove Inter Top

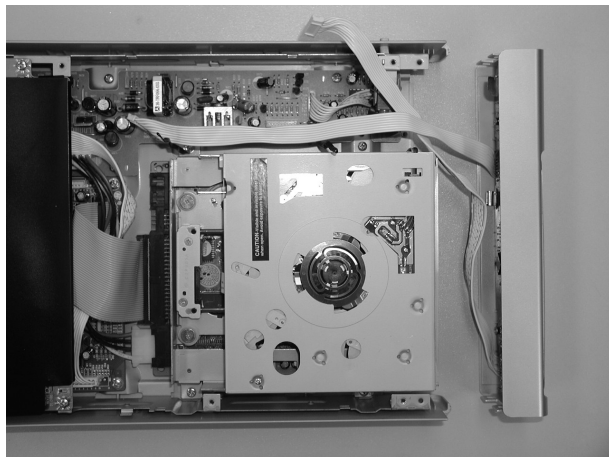
- 4.1.5 Use a small flat tip screw driver to release the snaps on the front panel (1012) and gently pull the panel out from the set.



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Figure 4-6 Remove Front Panel

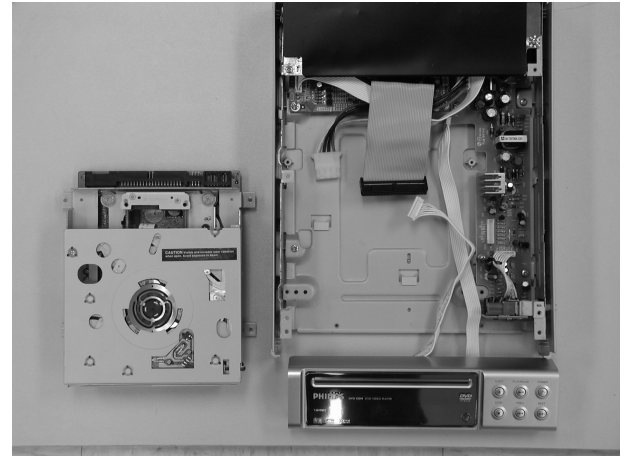
- 4.1.6 Remove 4 screws at both sides of the loader (1003) and disconnect 2 wire connections.



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Figure 4-7 Remove Loader

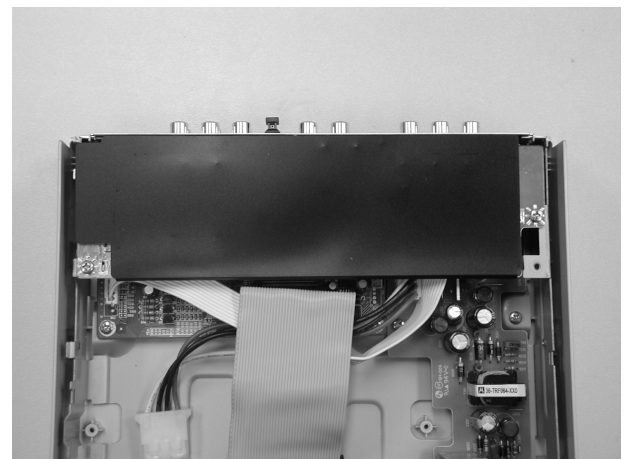
Now the loader(1003) is removed.



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Figure 4-8 LP Separate

- 4.1.7 Remove the AV board by removing 2 screws and the cover plate (1037).

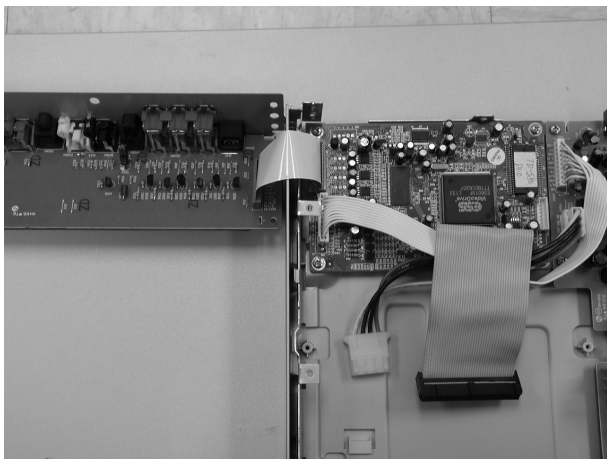


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Figure 4-9 Output Board Top View

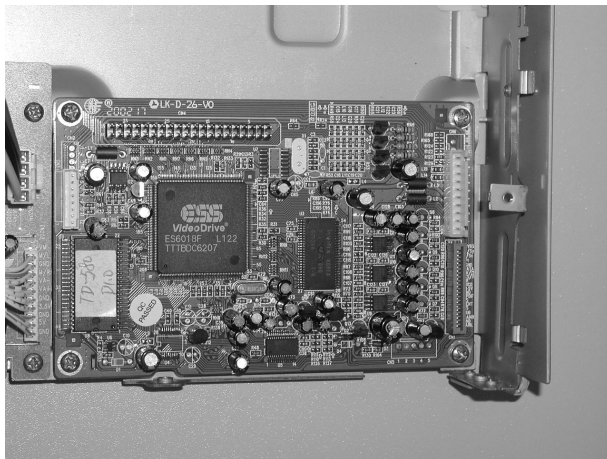
When the AV board is removed, the decoder board will be visible.

Decoder board



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Figure 4-10 Output PCB open



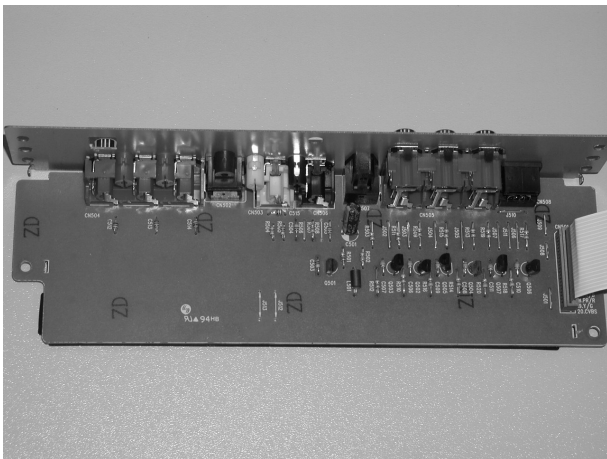
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Figure 4-12 Decoder Board

4.1.8 Pictures below view on the modules.

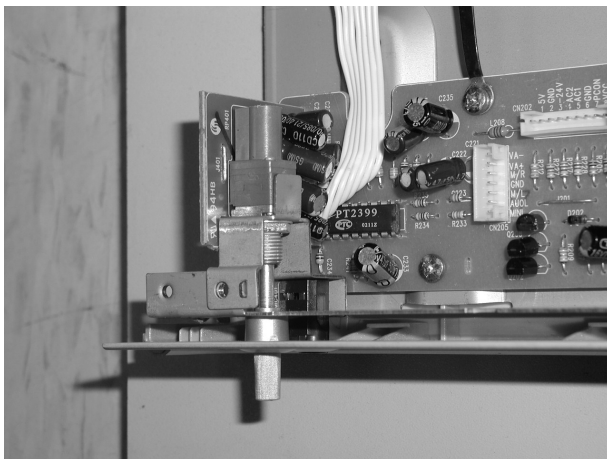
AV board

Karaoke



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Figure 4-11 Video Board



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Figure 4-13 Karaoke Board

5. Diagnostic Software, Trouble Shooting and Test Instructions

5.1 Service Hints

5.1.1 Repair Tips

DVD Engine

The DVD Engine is a non-repairable unit and in case of failure, it has to be replaced with a complete Engine.

Encoder, Switched Mode Power Supply, Karaoke, and Front Display Board

All the boards have to be repaired down to component level.

5.1.2 Change of Region Code

The region code can be change according to the following procedure:

1. Press **STOP** button on the front of the player.
2. Enter the 4-digit code <1> <3> <5 <6> on the remote control.
3. Enter one of the keys below to change the software setting.
REGION CODE:
 - USA ==> 1
 - EUROPE ==> 2
 - AP ==> 3
 - LATAM ==> 4
 - INDIA / RUSSIA ==> 5
 - CHINA ==> 6
4. Press **STOP** button on the remote control for 5 times.
5. The change should effect immediatly with information indicated on TV screen.

5.1.3 Software Upgrade via Download Disc

The application software can be flashed into the DVD player by means of a CD-ROM disc. The CD-ROM disc has to be made with a CD writer.

Note: Ensure the filename used for making the CDR must be identical to the application software file name as display in the player.

Application Software

1. Insert the DOWNLOAD DISC into the player.
2. The upgrading operation will start automatically.
3. Once the DOWNLOAD DISC is recognized, the player will display the filename on the TV screen.
4. The word **UPGRADING** will flash on the TV screen indicates the progress.
5. Once when the upgrading is completed, the word **COMPLETE** will display momentary on the TV screen.
6. The TV screen will become BLUE and the player will goes into standby mode.

5.1.4 Verify Setting

To check that the setting has change successfully.

1. Press **STOP** button on the front of the player.
2. Press **STOP** button on the remote control while display shown EJECT.
3. Two lines text will appear on the TV screen. That is how it looks like.
 - TD580A.00B
 - TDDVD580V02-ES
4. In the text, the following numbers refer to:
 - TD580A.00B ==> refer to application software filename.
 - TDDVD580V02-ES ==> refer to application software version.

5.1.5 ComPair

There is no ComPair available for DVD580M player

5.2 Trouble Shooting

In this paragraph some troubleshooting tips are given to diagnos the DVD580M player. For detailed diagnostics, check the faulting tree since no built-in diagnostic software is available in the player.

5.2.1 DVD Engine

The DVD engine is a non-repairable component. Hence, it is necessary to determine if any fault condition of the player is caused by the DVD engine before replacing it.

The engine is a stand-alone system, an integrated unit of Slot loader and servo board, which does not need to be connected to the decoder board to perform it basic operations. Once a stable voltage is supplied to the engine, some mechanical movement will be observed. Hence, to determine whether the engine is faulty, remove the 40 pins flex cable and observe the mechanical movement. If no mechanical movement is observed, the engine should be faulty and it should be reconfirmed with a working engine.

The Slot Loader has an optical unit consisting of two lasers, one for CD with a wavelength of 780 nm, and one for, DVD with a wavelength of 650 nm. If any one type of disc (DVD or VCD / CD) cannot be identified by the player, it can be sure that the fault is due to the engine.

5.3 Fault Finding Trees

5.3.1 No Operation

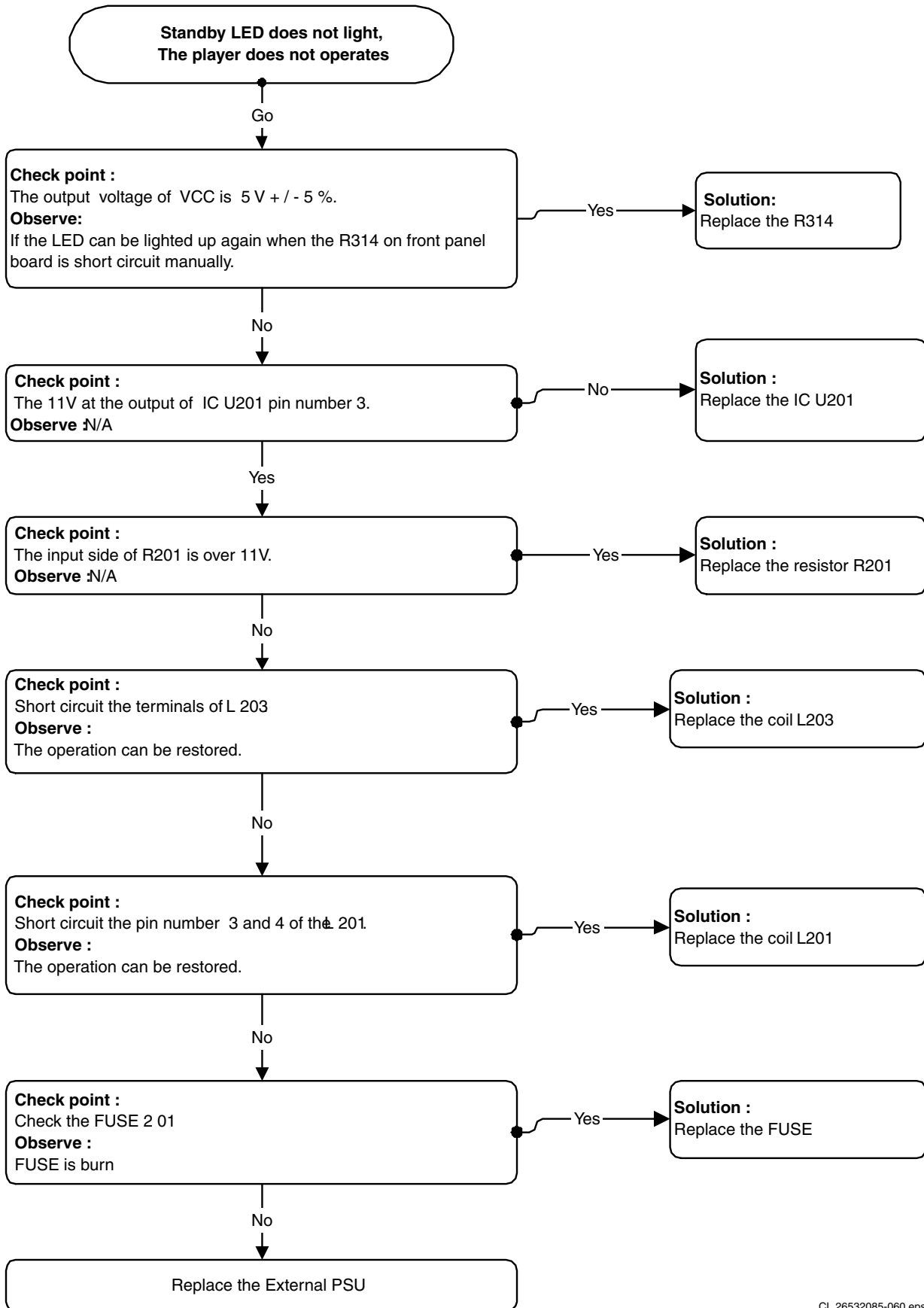


Figure 5-1

5.3.2 No Supply at power on

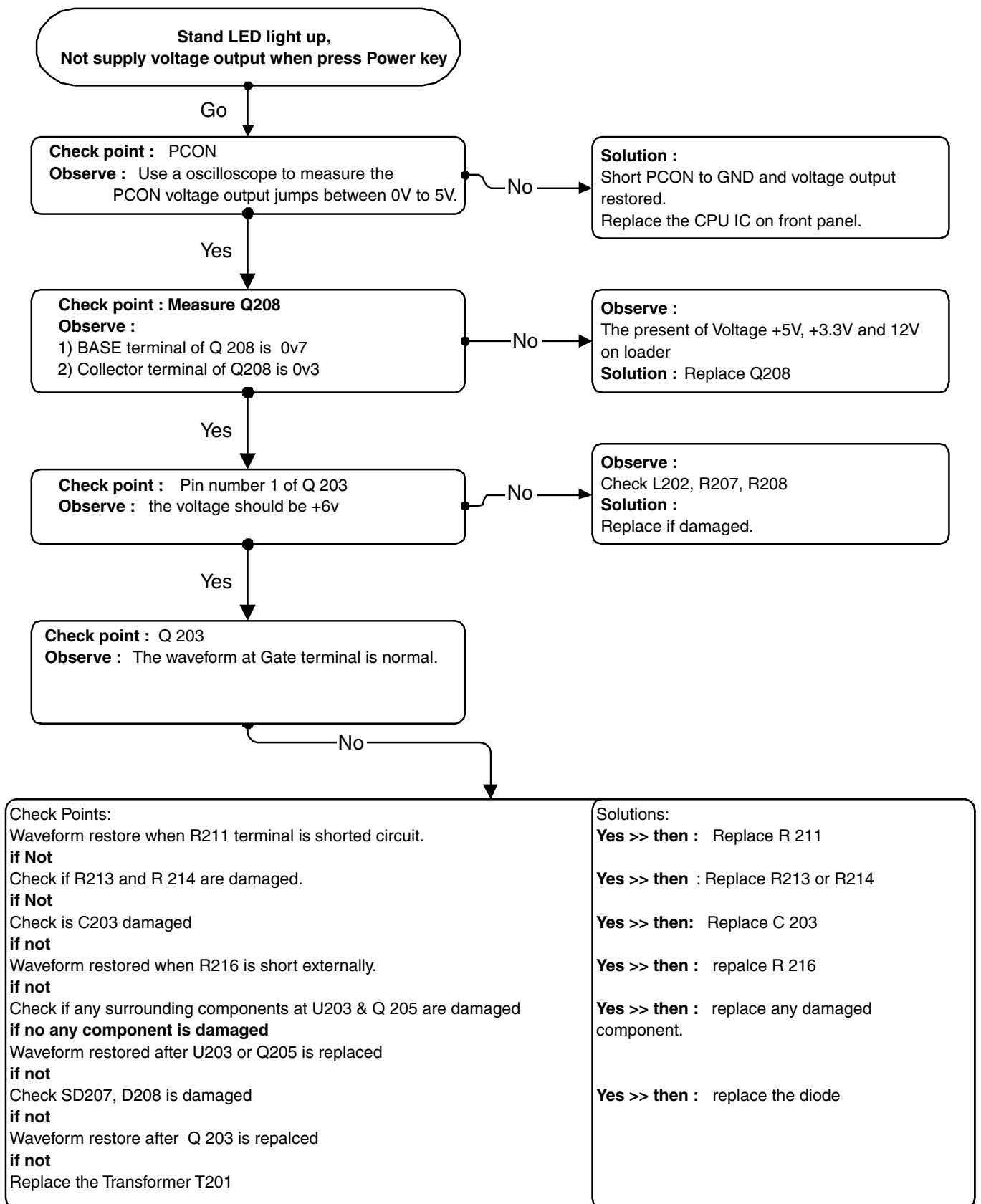


Figure 5-2

5.3.3 No Video and Sound

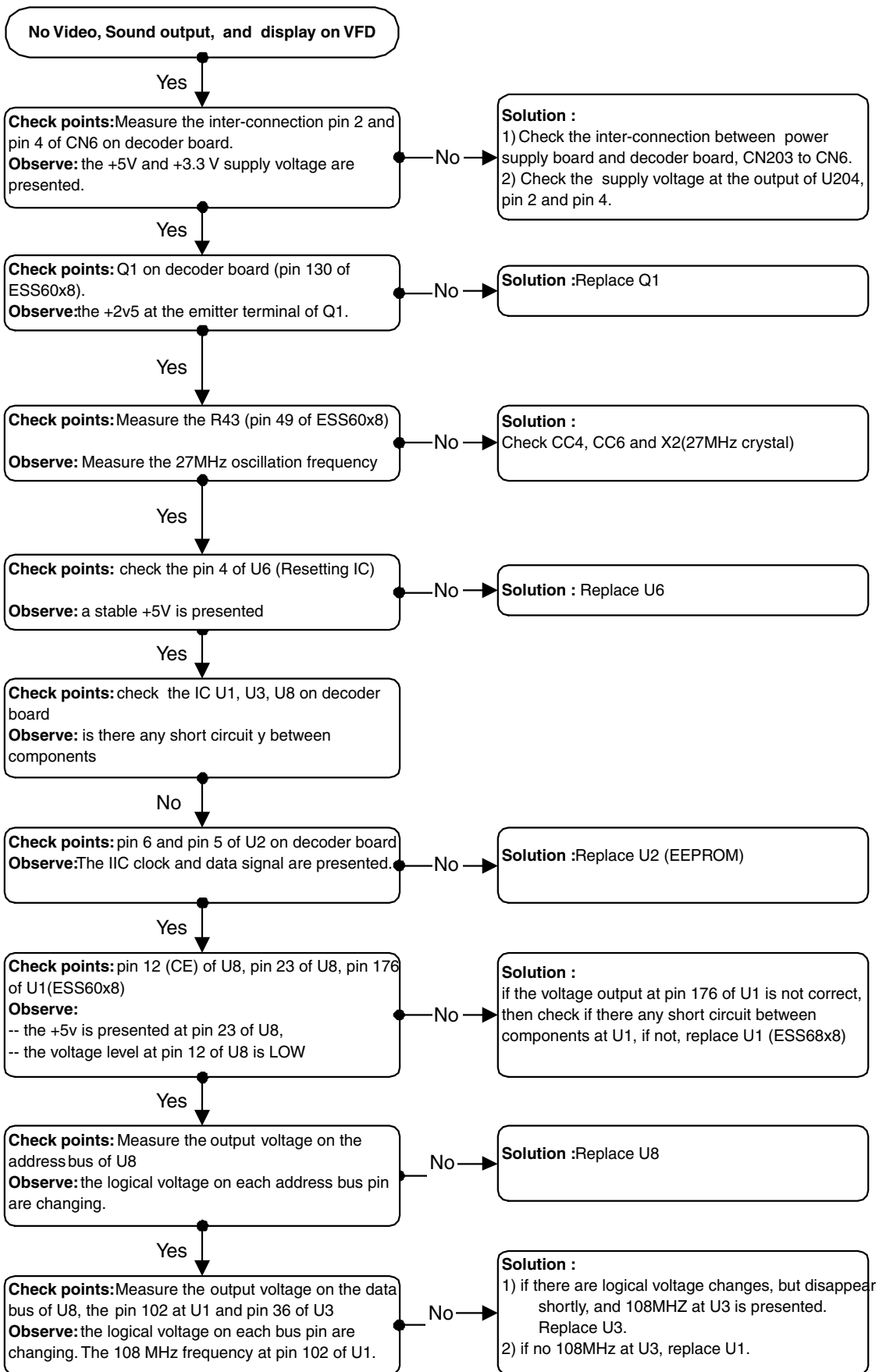
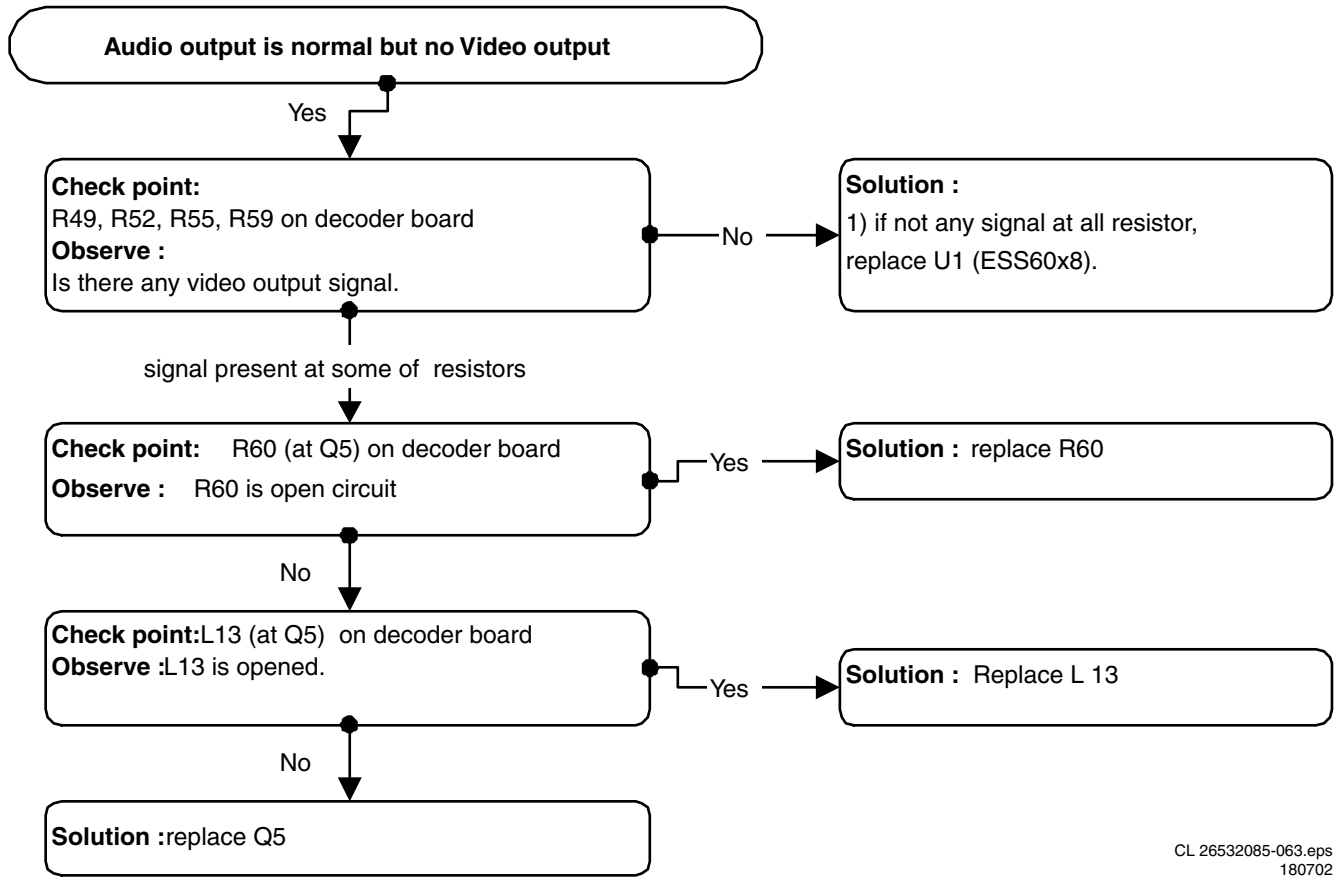


Figure 5-3

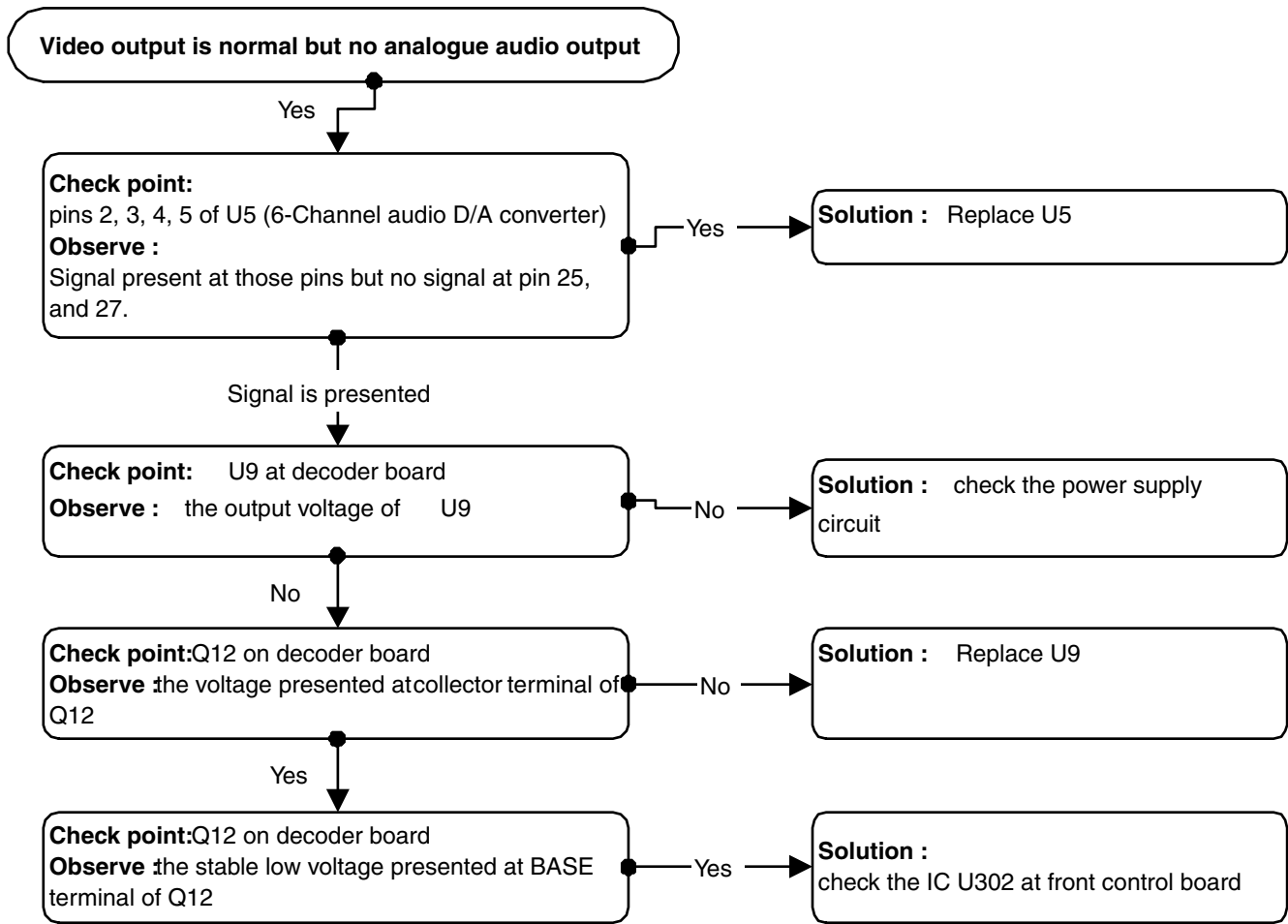
5.3.4 No Video



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Figure 5-4

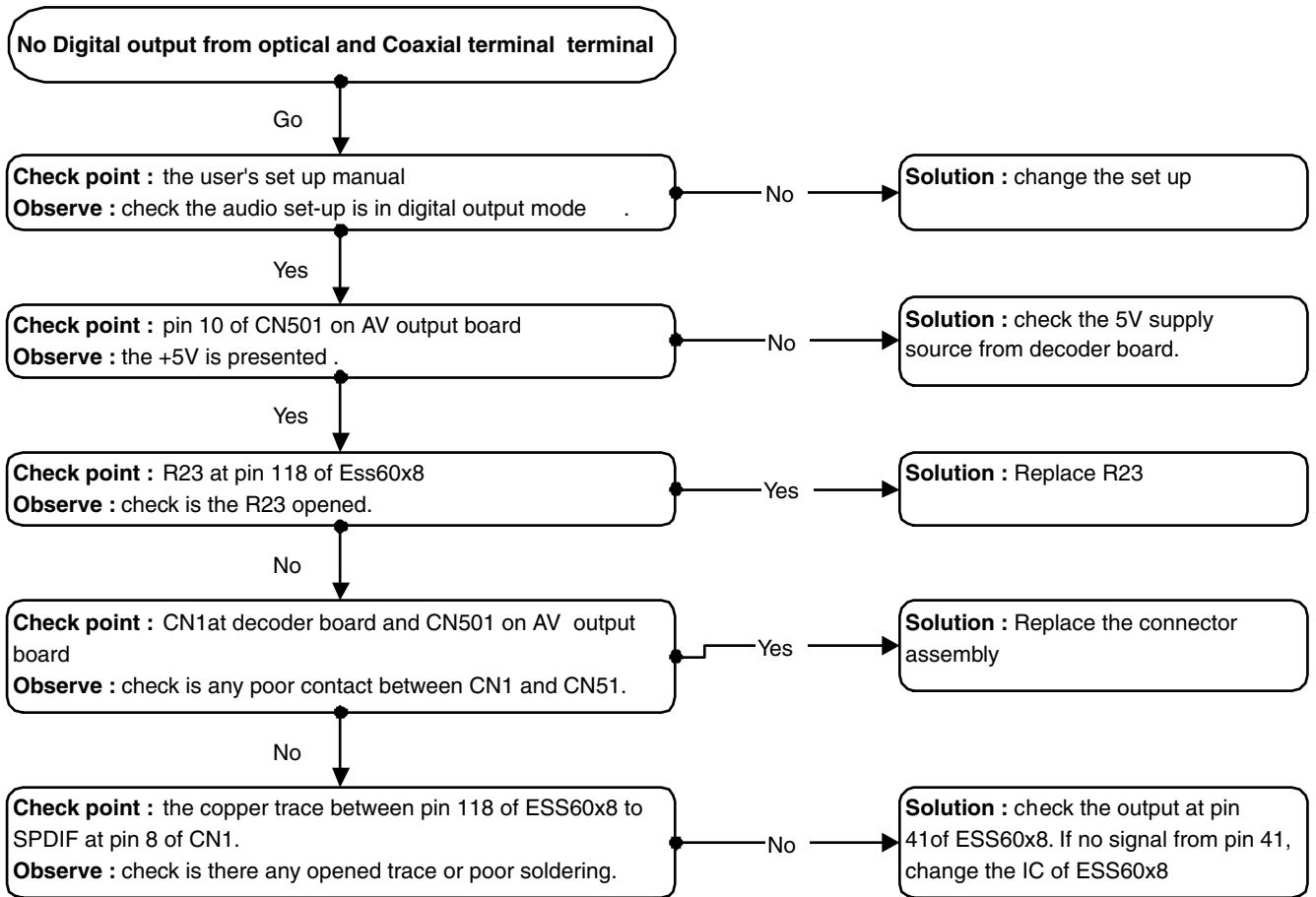
5.3.5 No Analog Audio Output on Cinch



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Figure 5-5

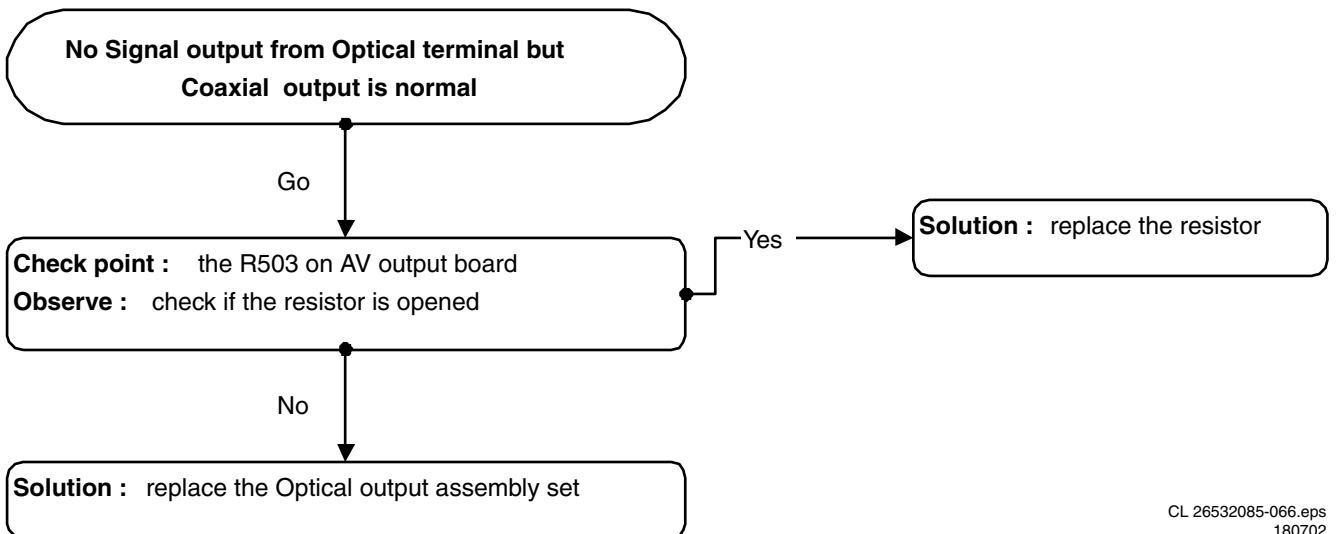
5.3.6 No Digital Out on Optical and Coaxial



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Figure 5-6

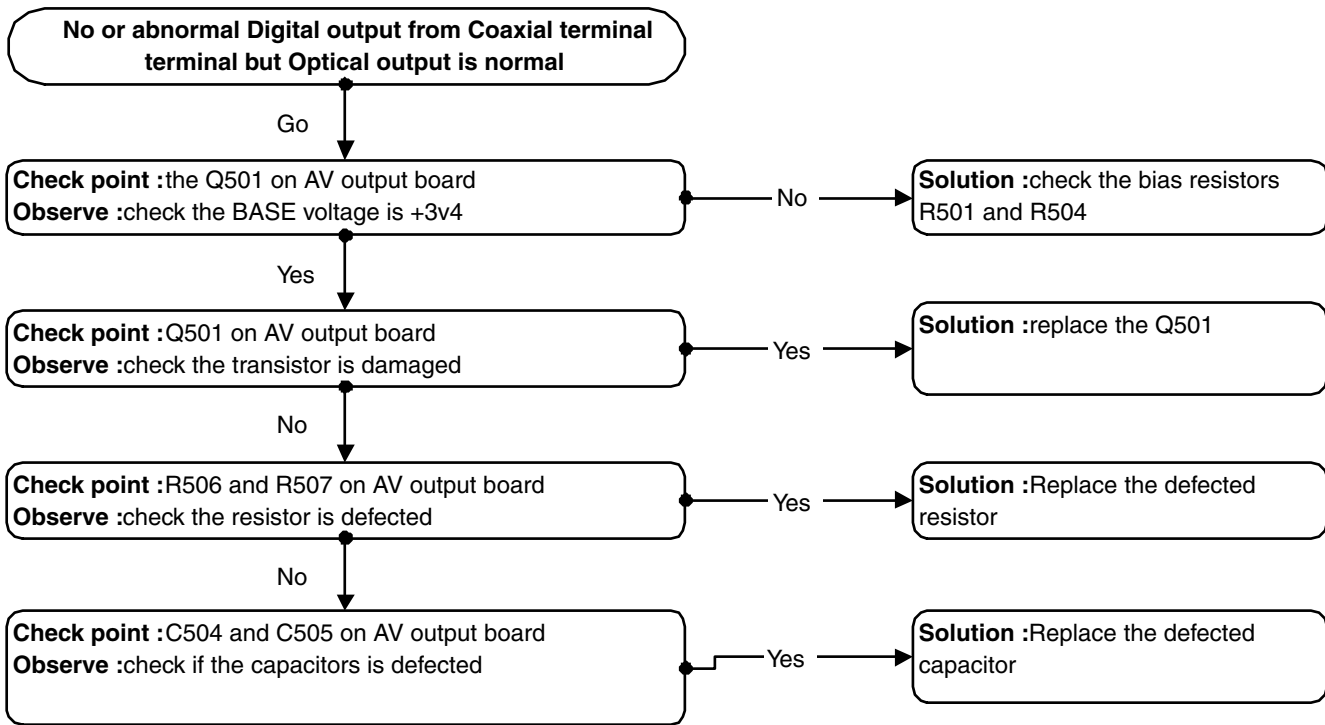
5.3.7 No Digital Out on Optical



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Figure 5-7

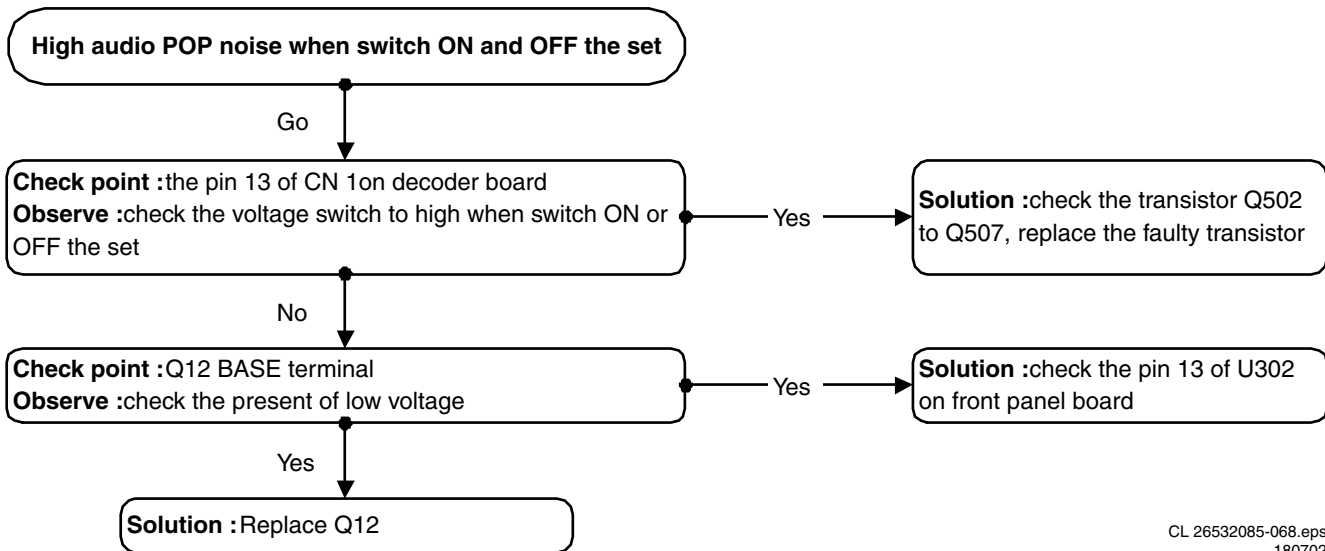
5.3.8 No Digital Out on Coaxial



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Figure 5-8

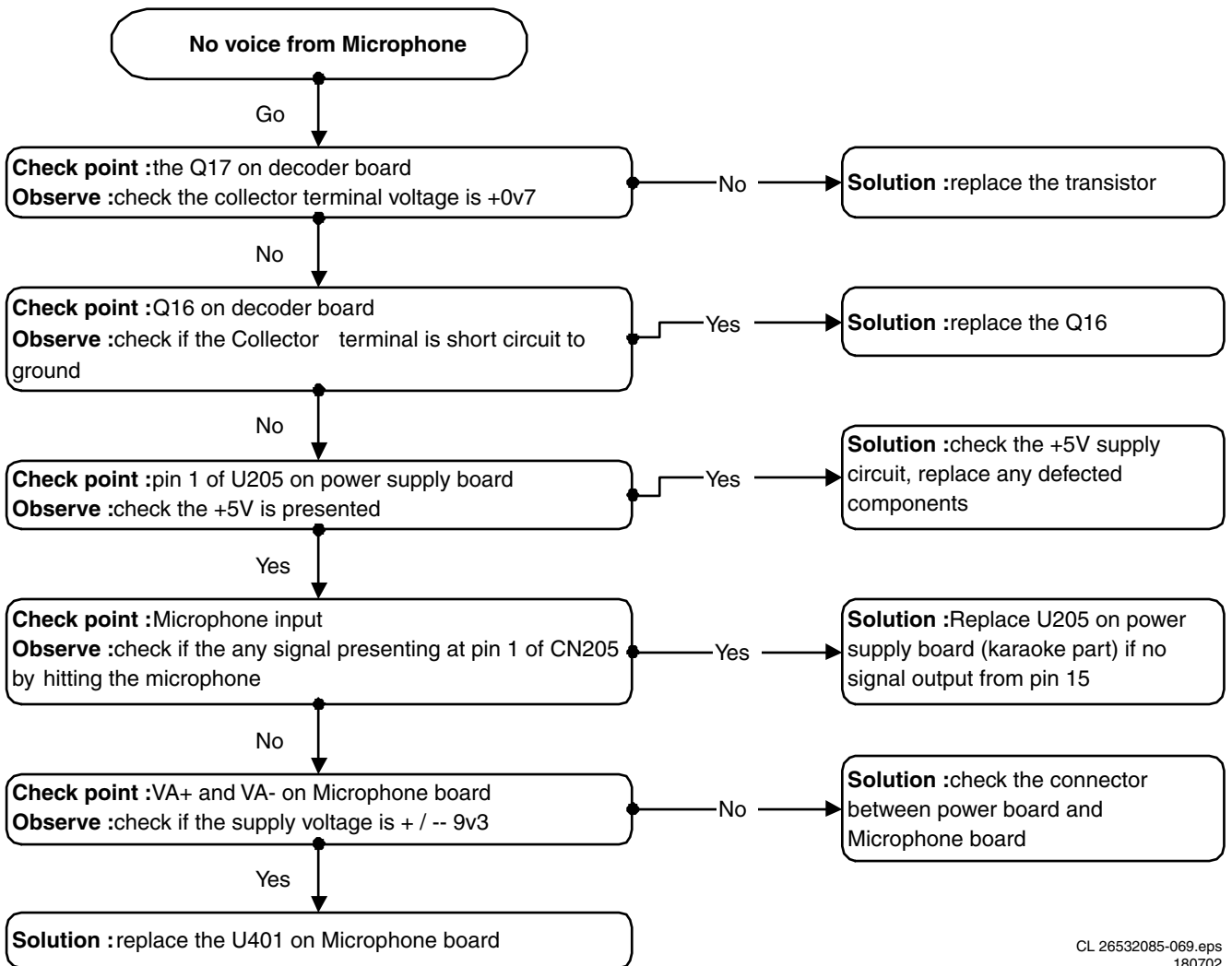
5.3.9 POP Sound



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Figure 5-9

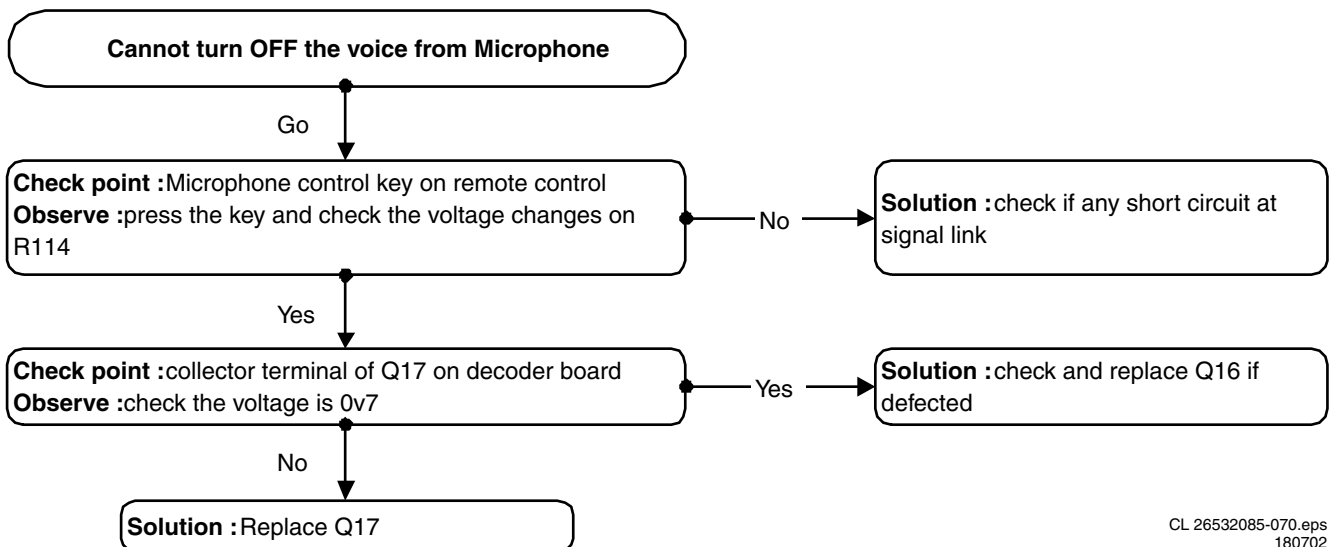
5.3.10 Microphone Not Working



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180702

Figure 5-10

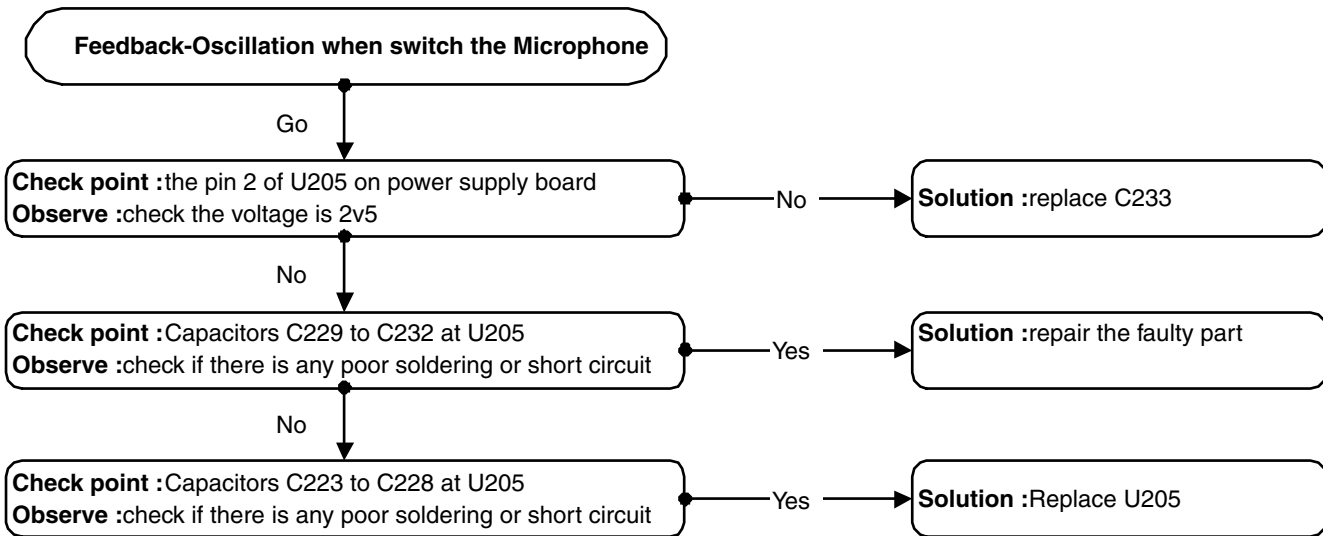
5.3.11 Microphone Cannot Sw Off



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180702

Figure 5-11

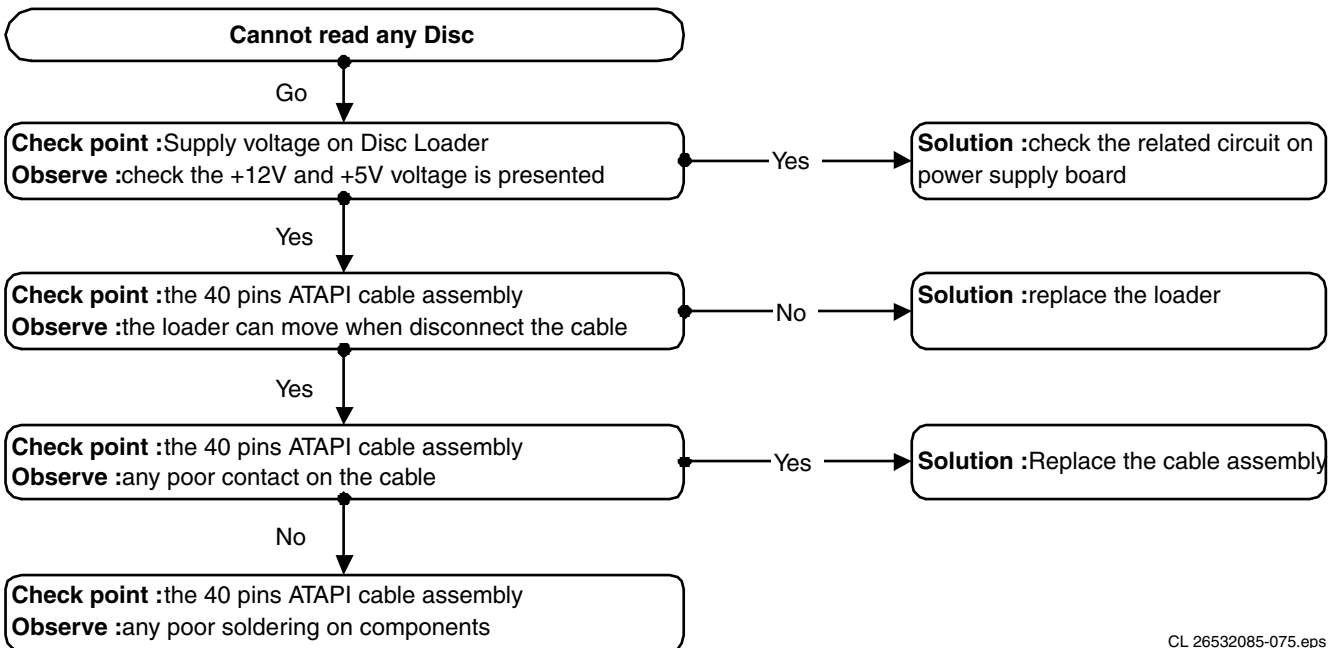
5.3.12 Oscillation From Microphone



CL 26532085-071.eps
180702

Figure 5-12

5.3.13 Cannot Read Any Disc



CL 26532085-075.eps
180702

Figure 5-13

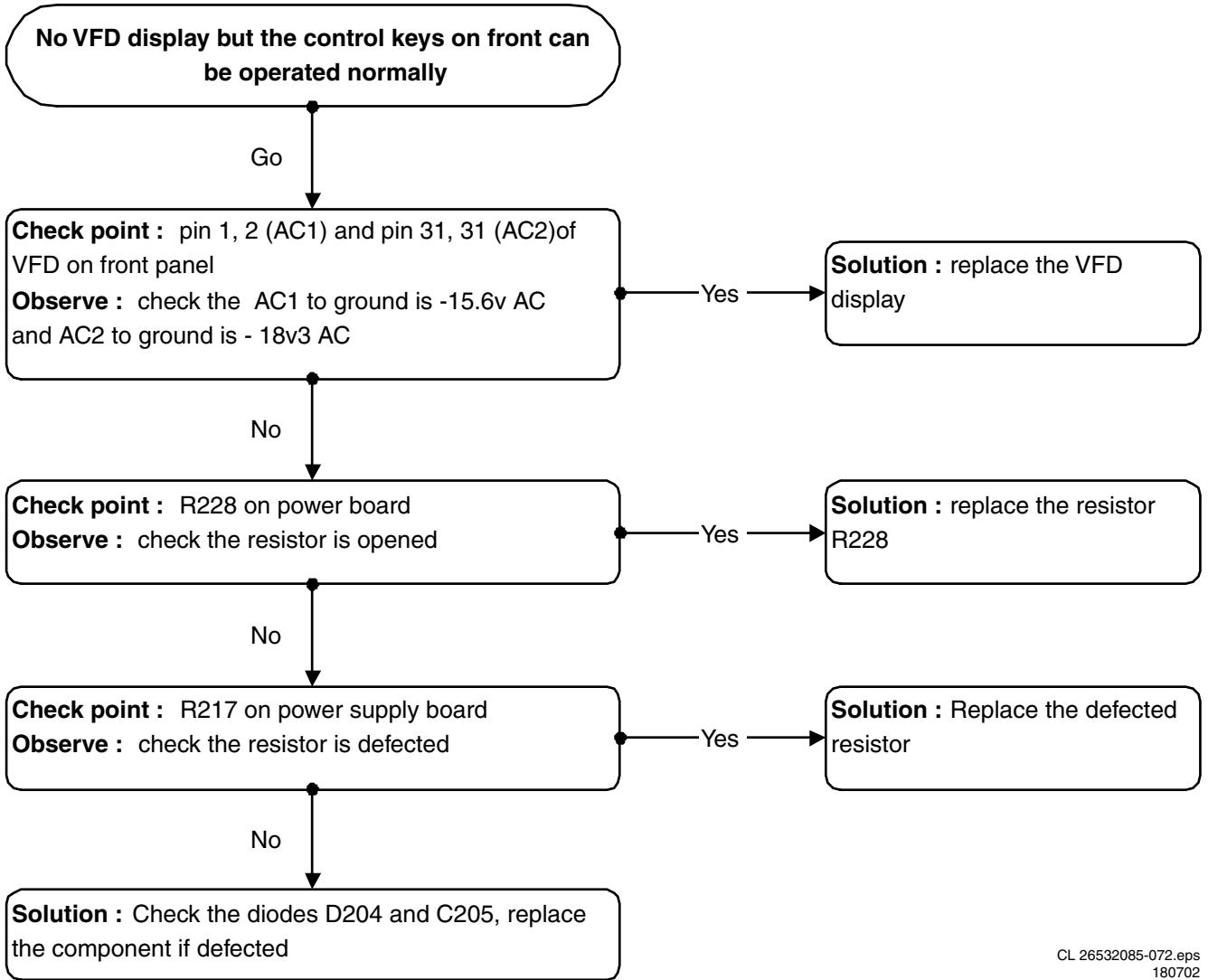
5.3.14 Can Only Read DVD Disc



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180702

Figure 5-14

5.3.15 No VFD Display

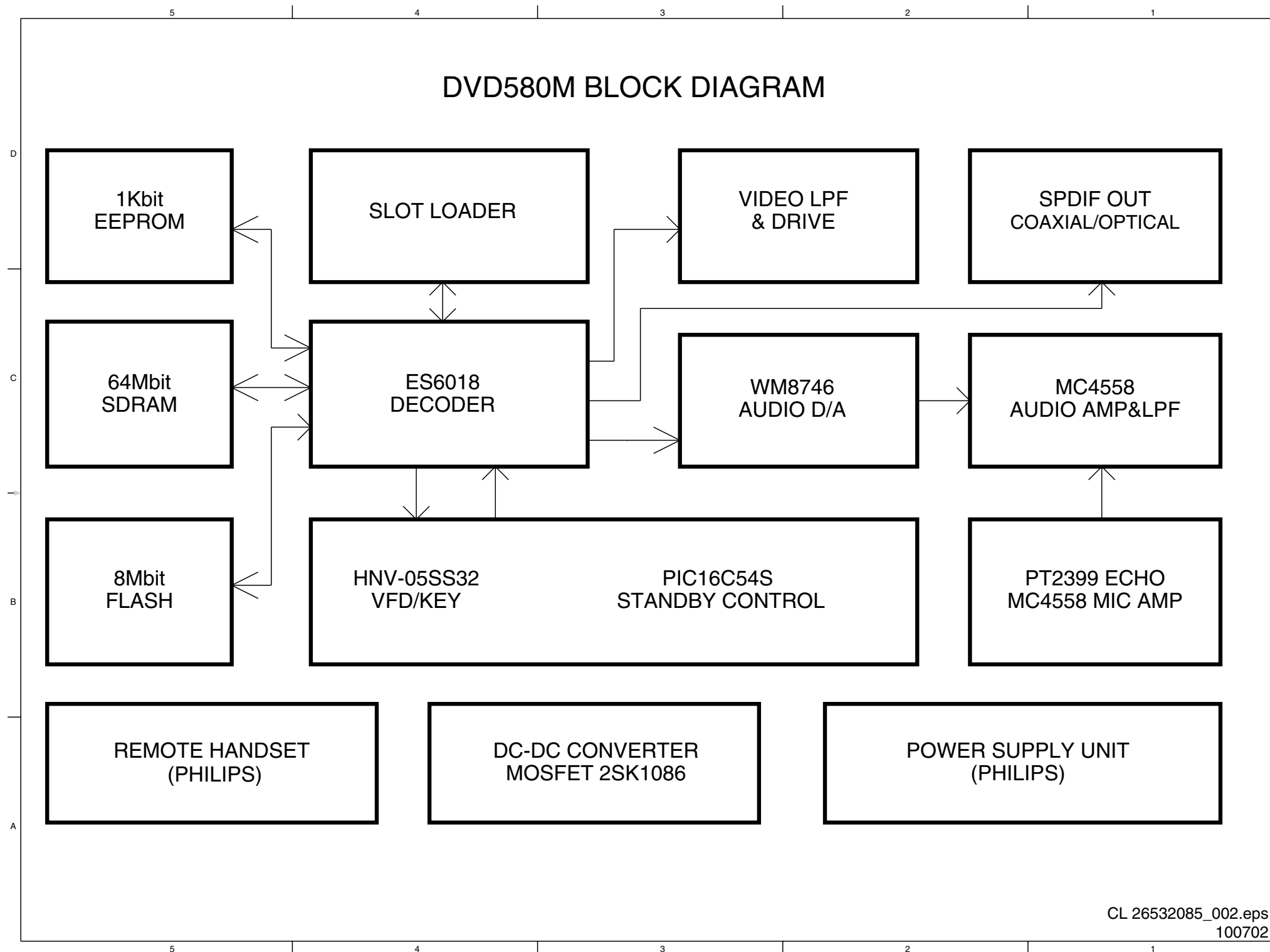


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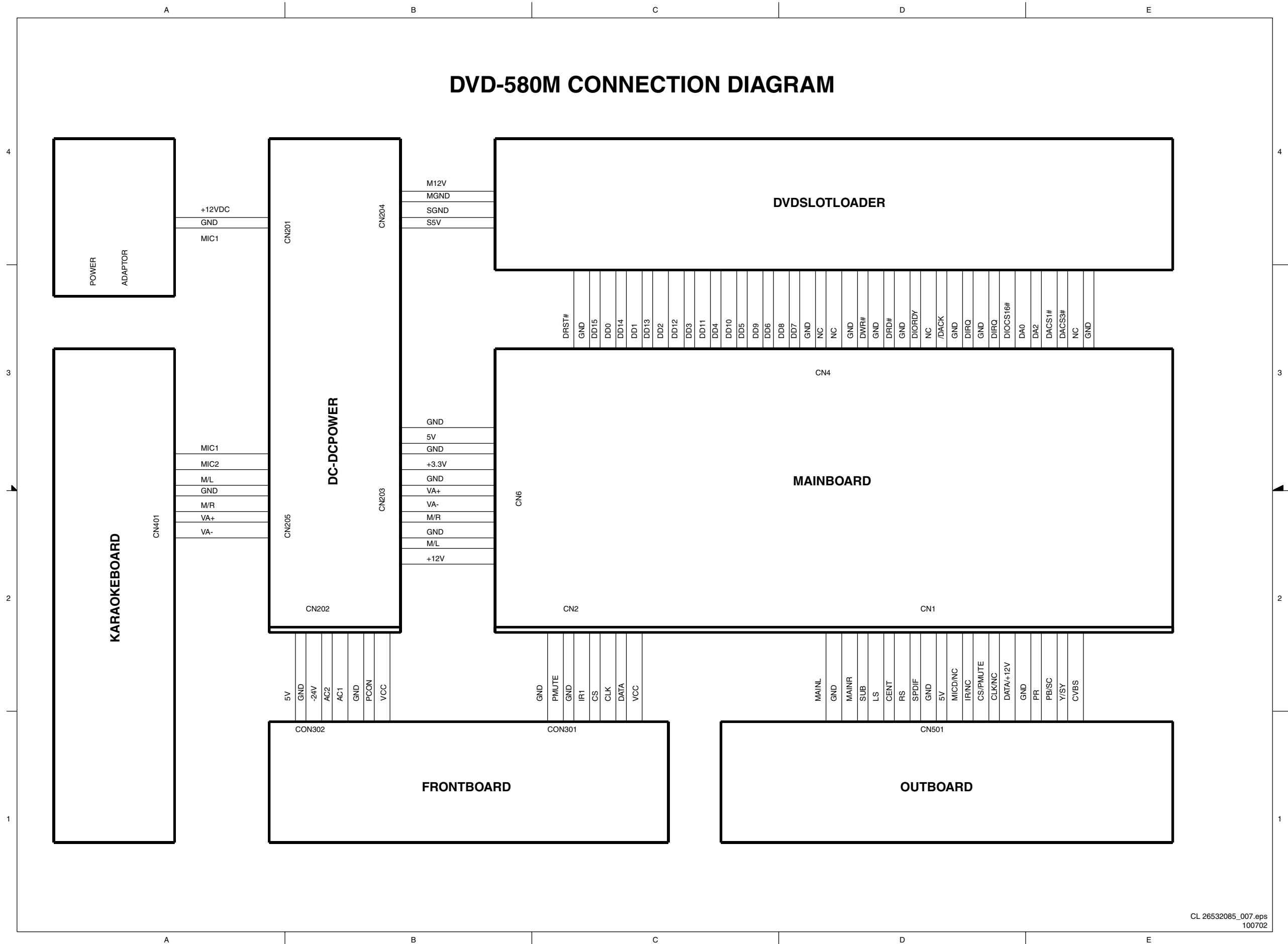
Figure 5-15

6. Block and Wiring Diagram.

Block Diagram

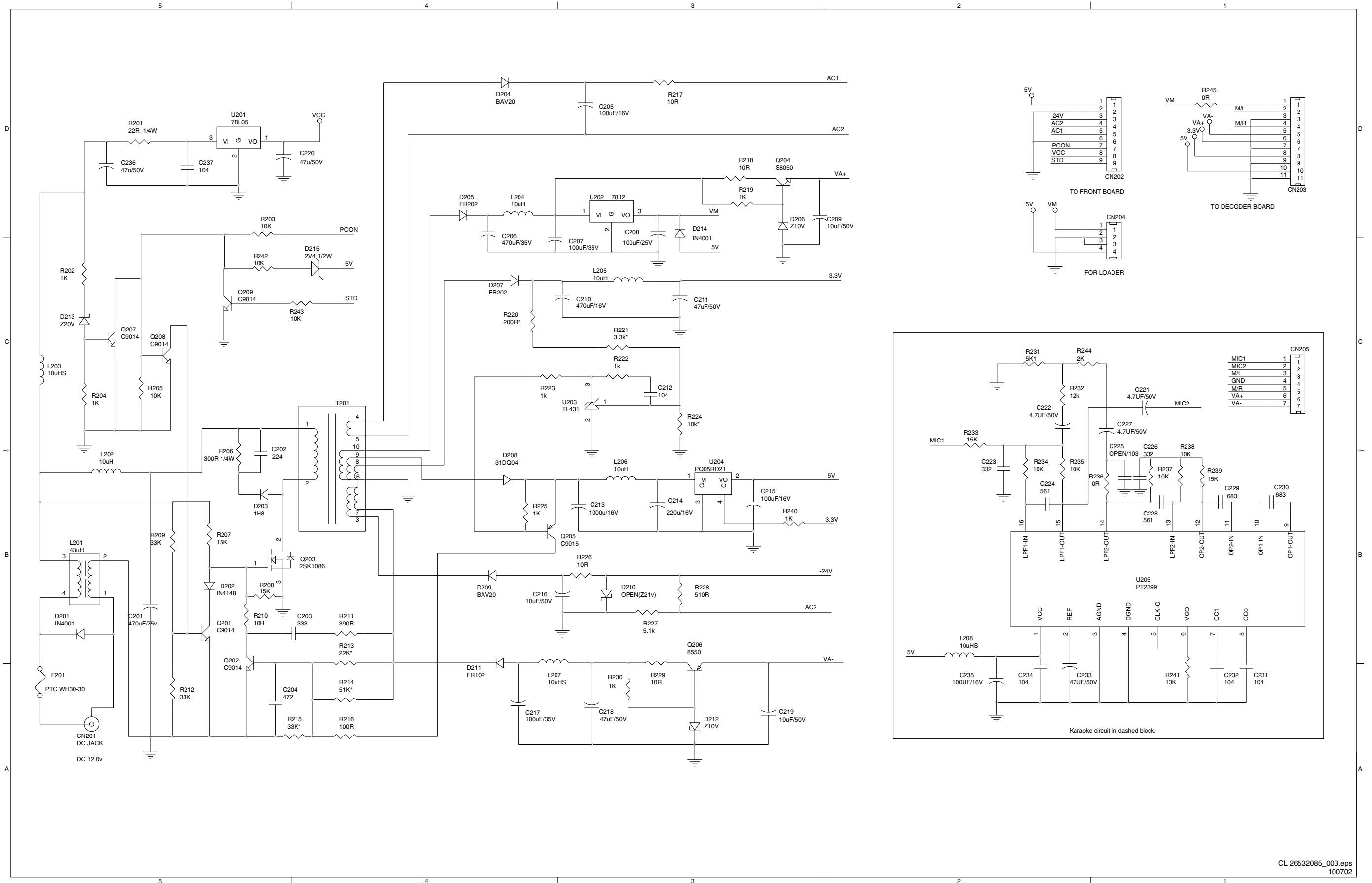


Wiring Diagram

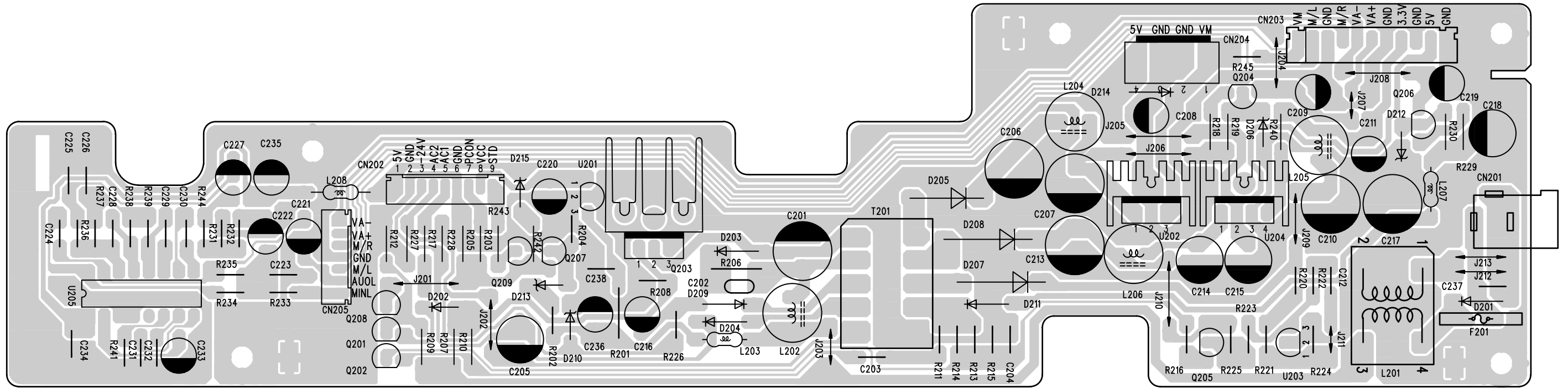


7. Electrical Diagrams

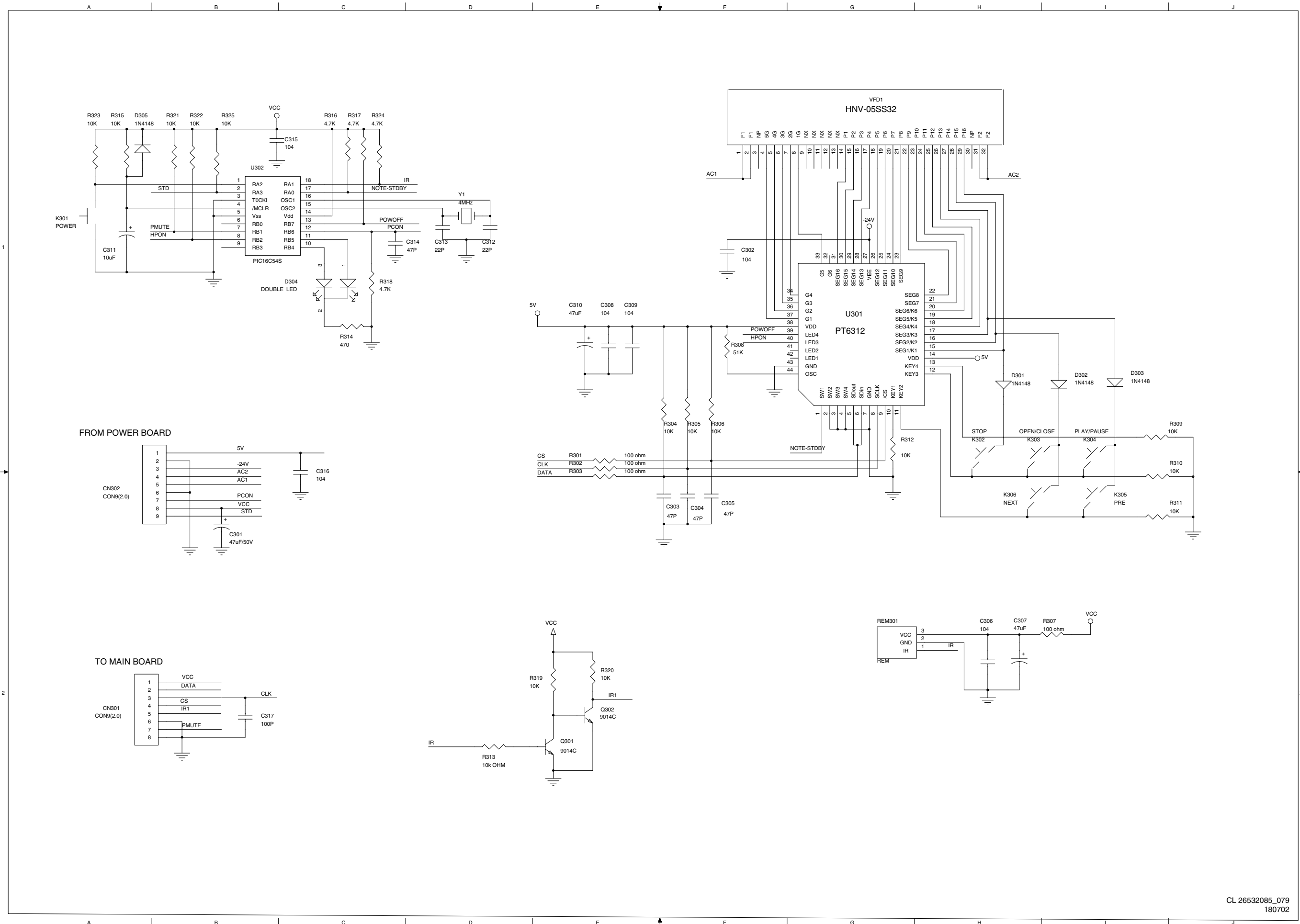
Power Board



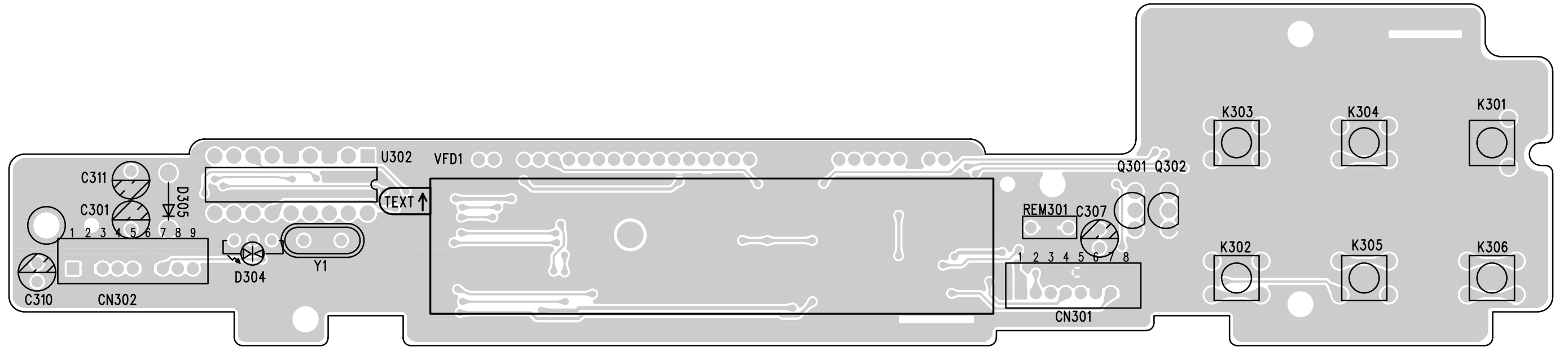
Layout Power Board



Front Board

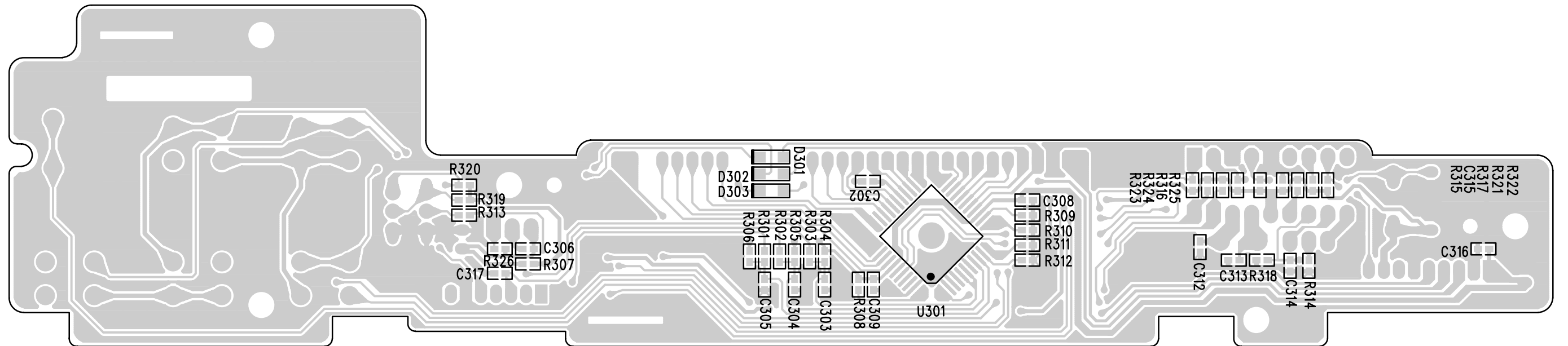


Layout Front Board (Top Side)



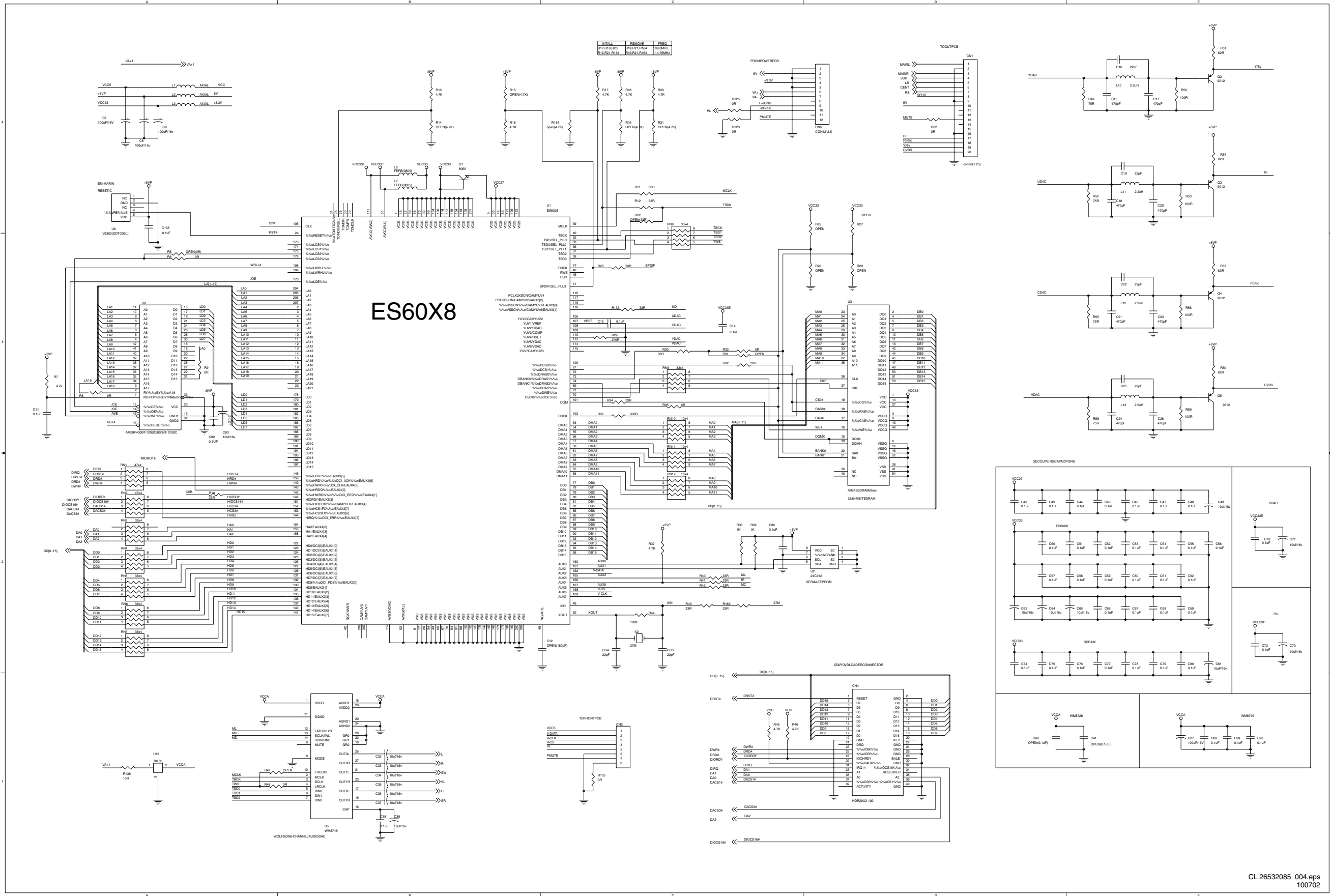
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Layout Front Board (Bottom Side)

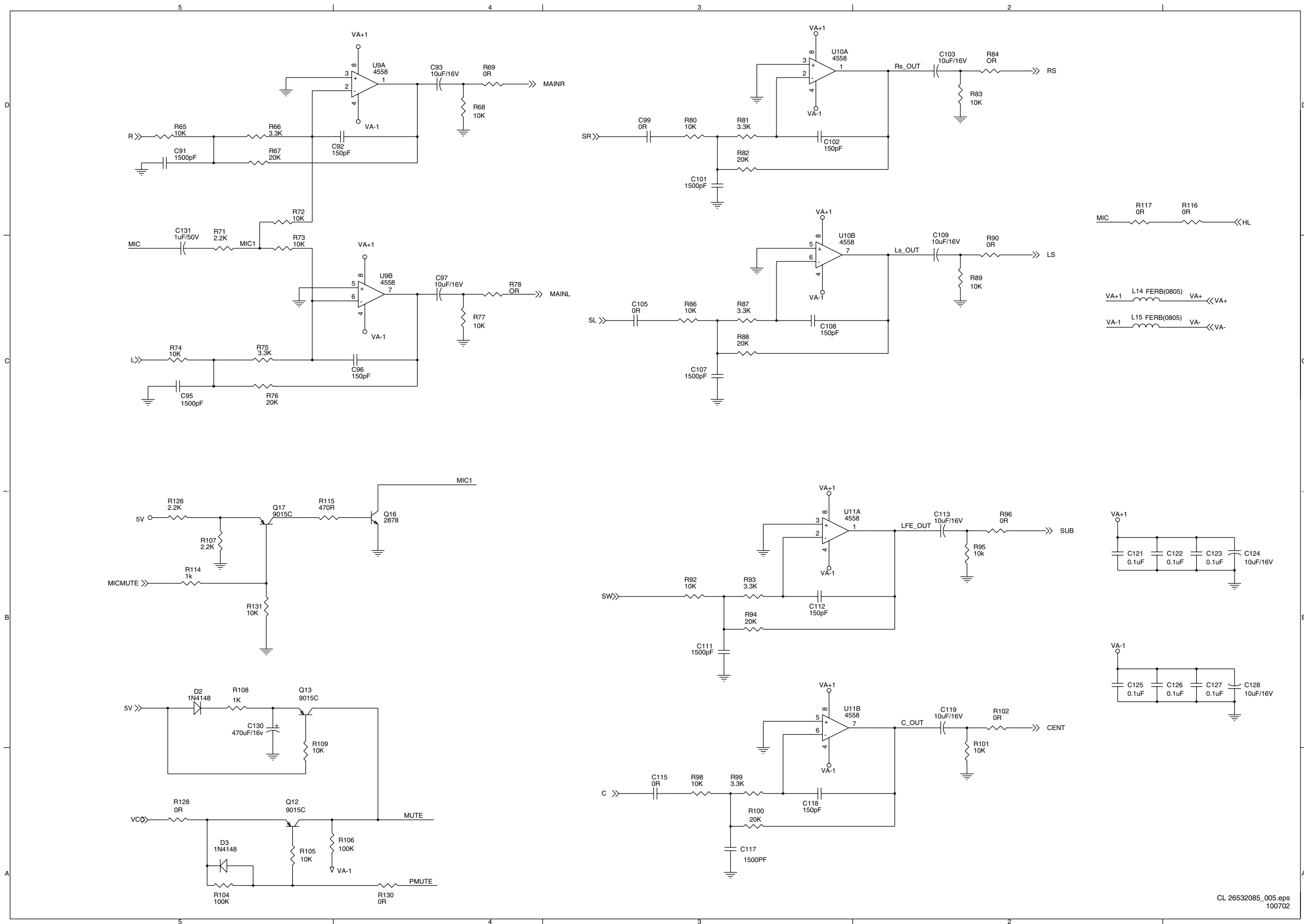


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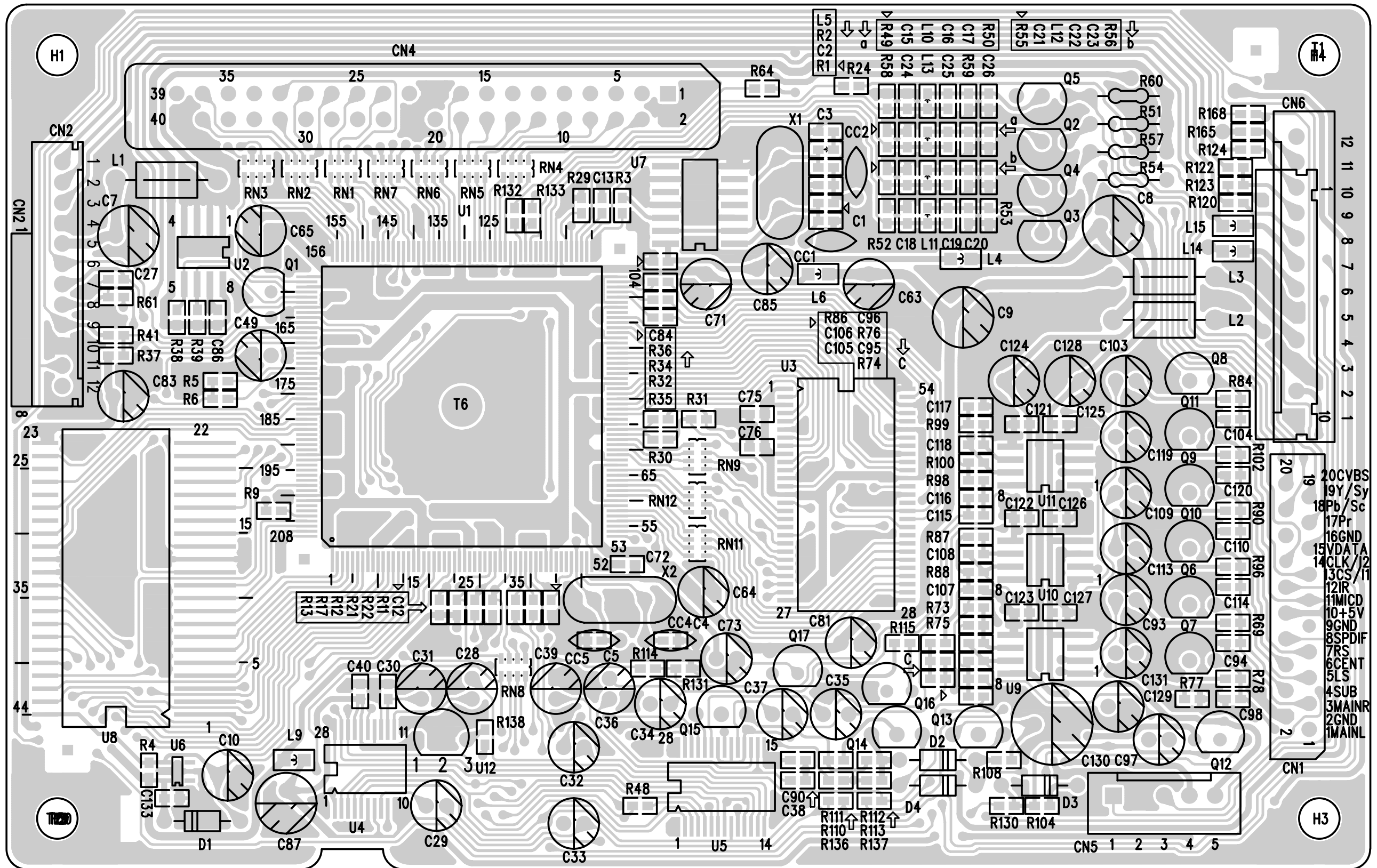
Decoder Board: Processor and Memory



Decoder Board: Audio Interface



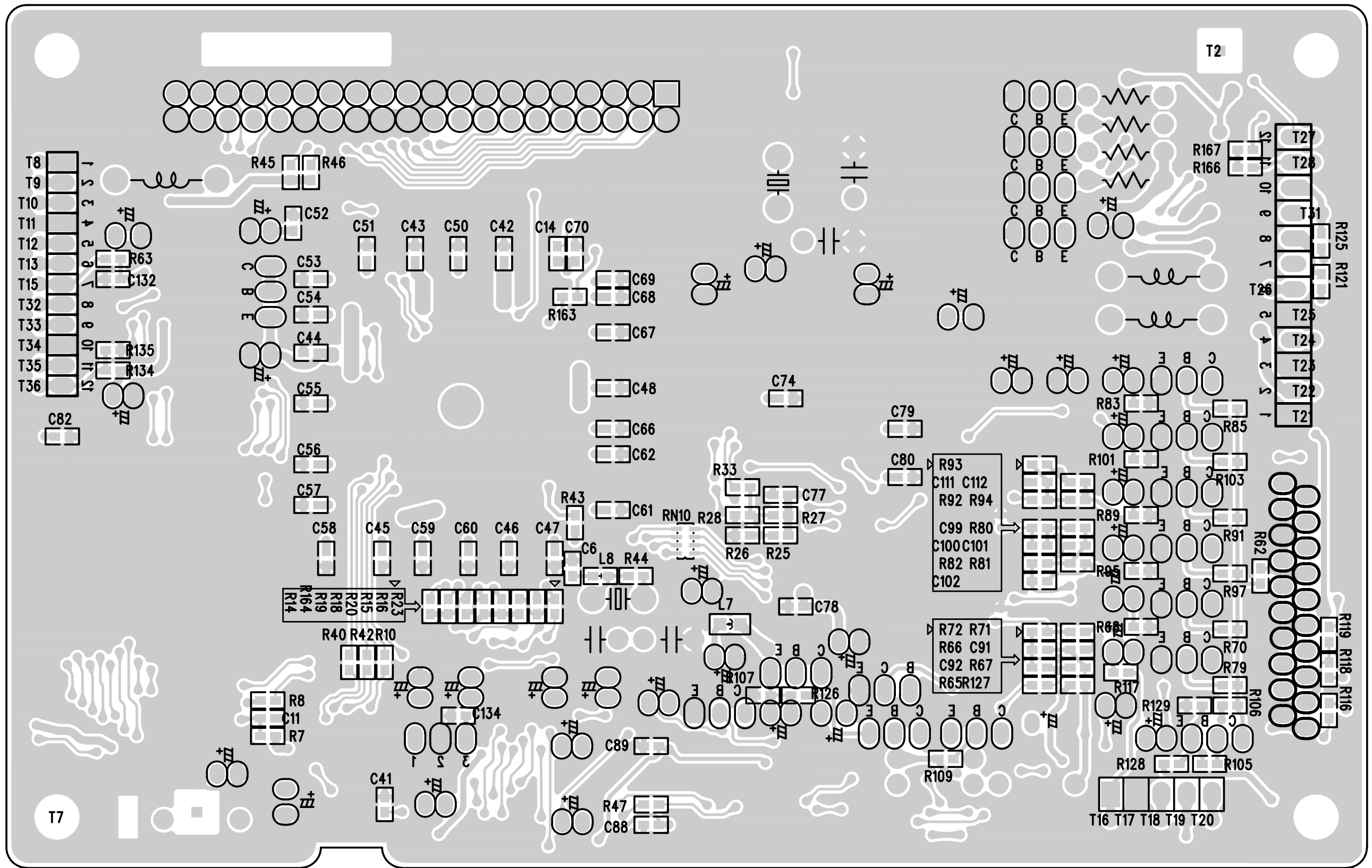
Layout Decoder Board (Top Side)



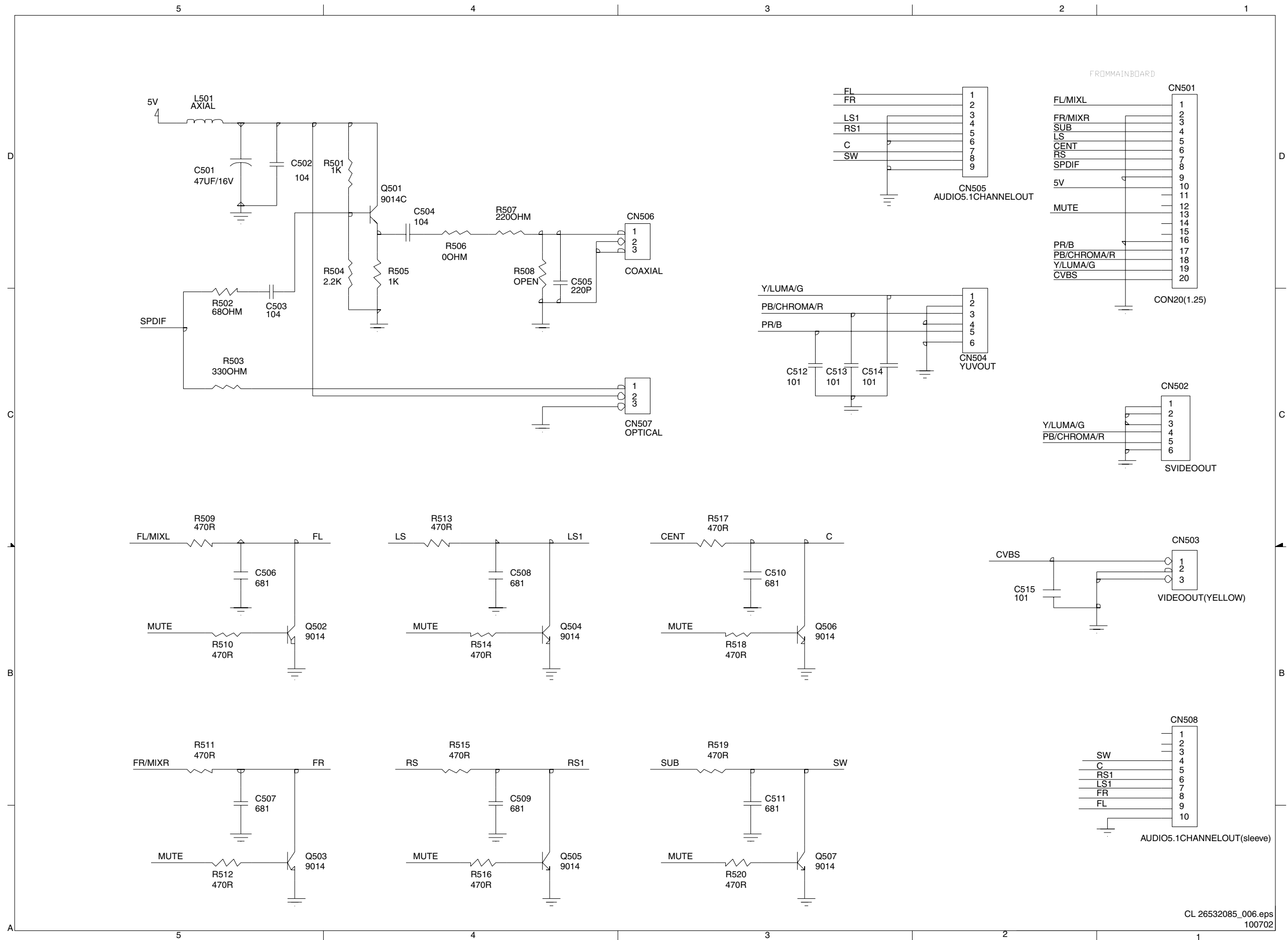
Pinout table for connector CN6:

20	20CVBS
19	19Y/Sy
18	18Pb/Sc
17	17Pr
16	16GND
15	15VDATA
14	14CLK/2
13	13CS/I1
12	12IR
11	11MICD
10	10+5V
9	9GND
8	8SPDIF
7	7RS
6	6CENT
5	5LS
4	4SUB
3	3MAINR
2	2GND
1	1MAINL

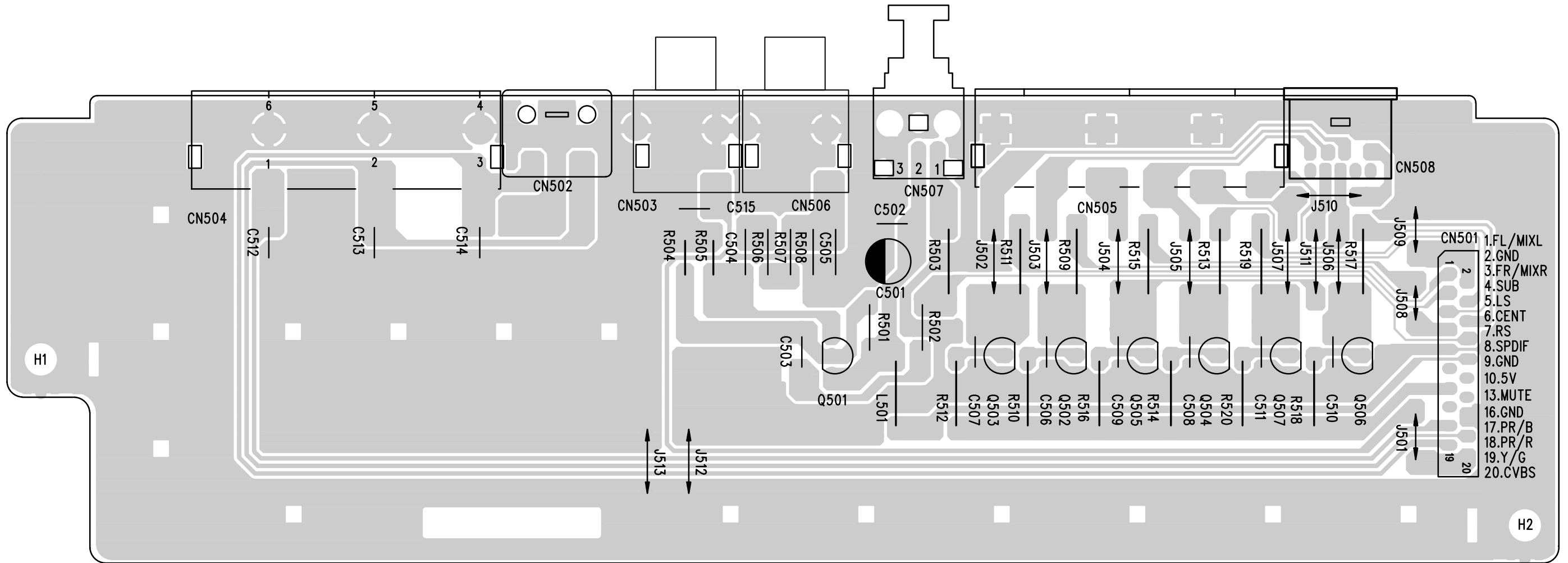
Layout Decoder Board (Bottom Side)



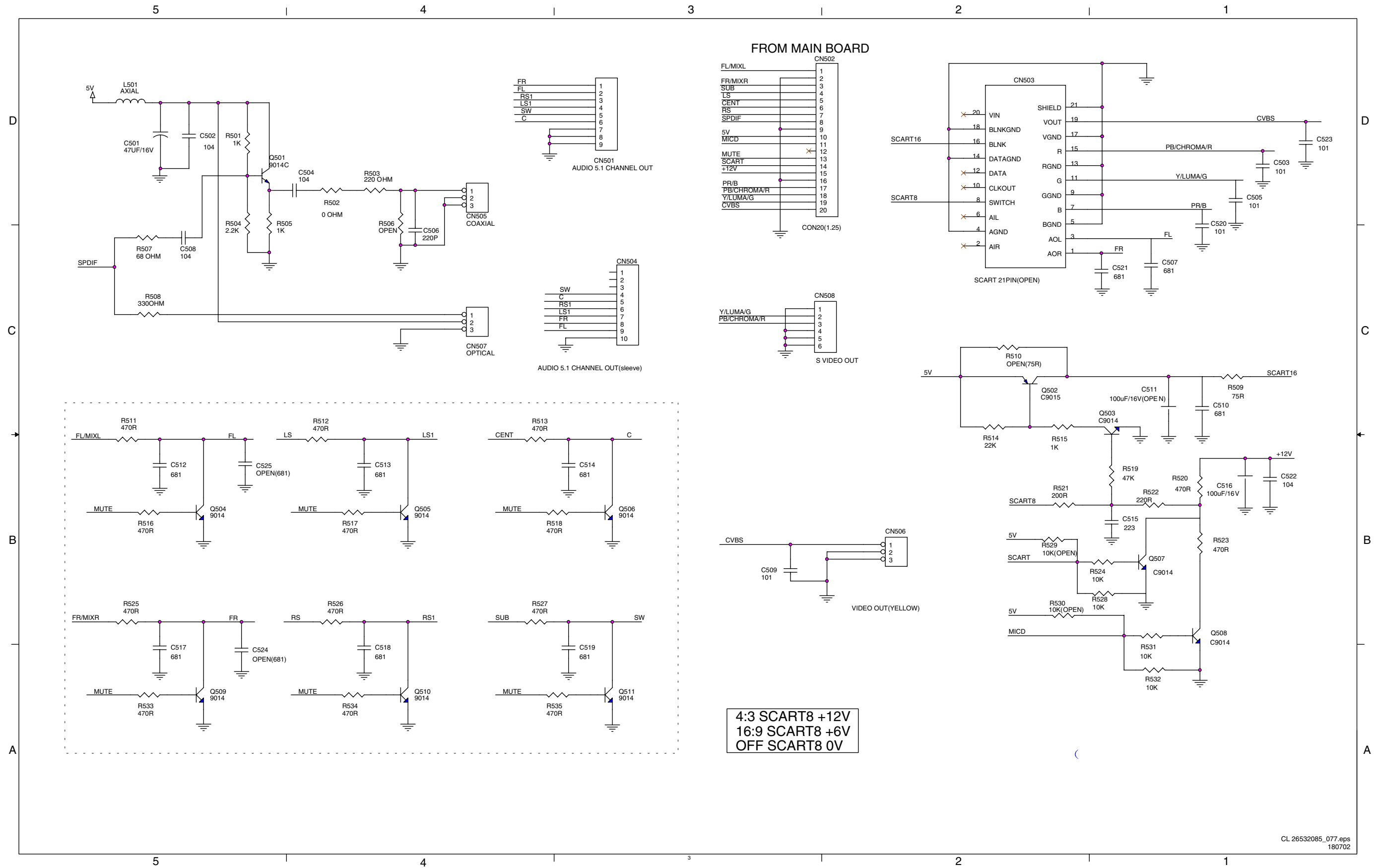
AV Board (Only For NON-EU Models)



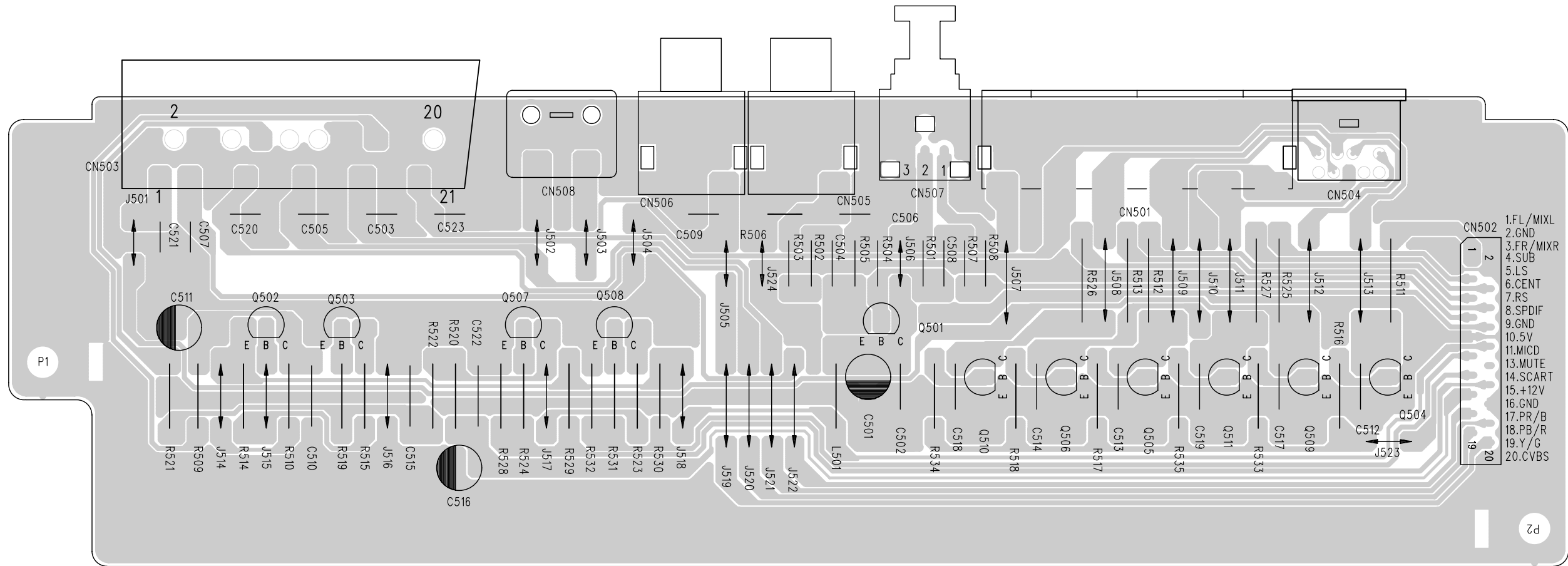
Layout AV Board (Only For NON-EU MOdels)



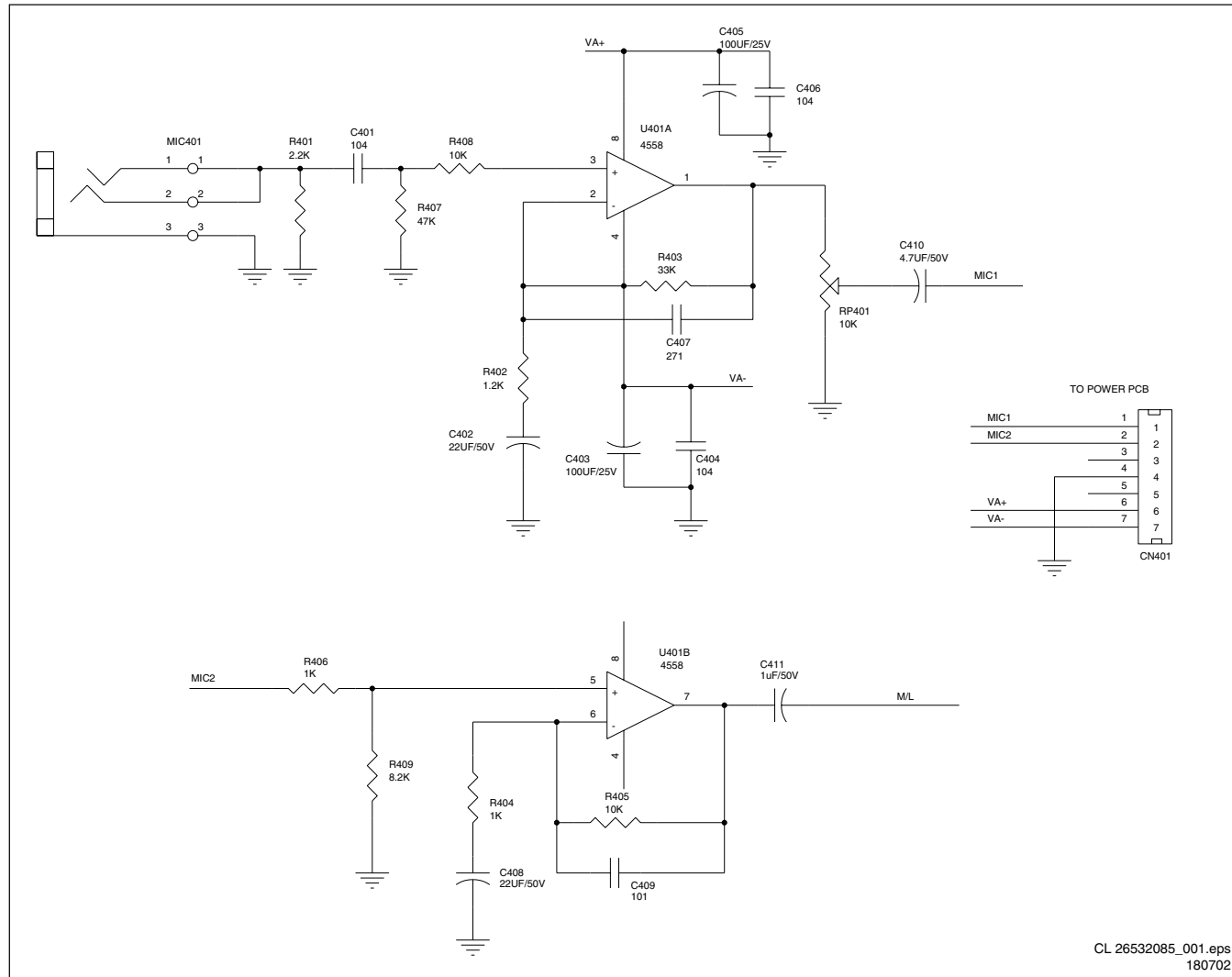
AV Scart Board (Only For EU Models)



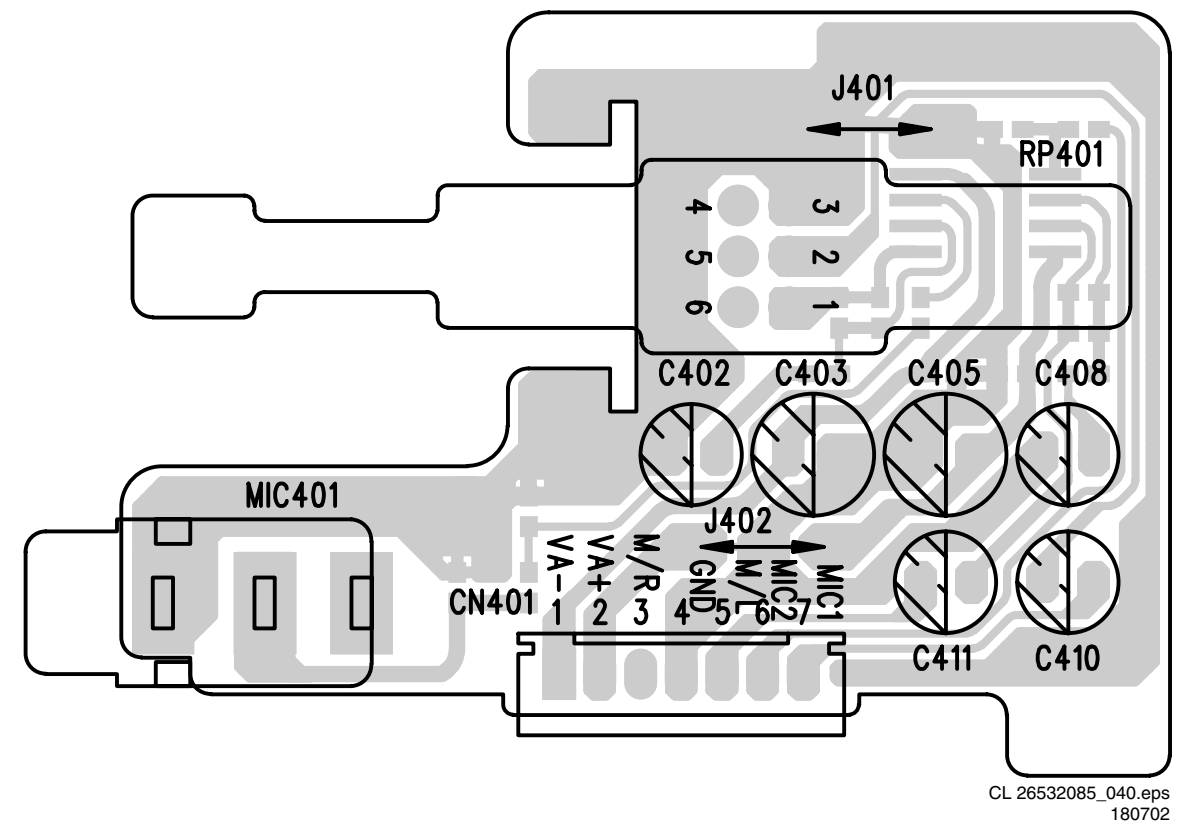
Layout AV Scart Board (Only For EU Models)



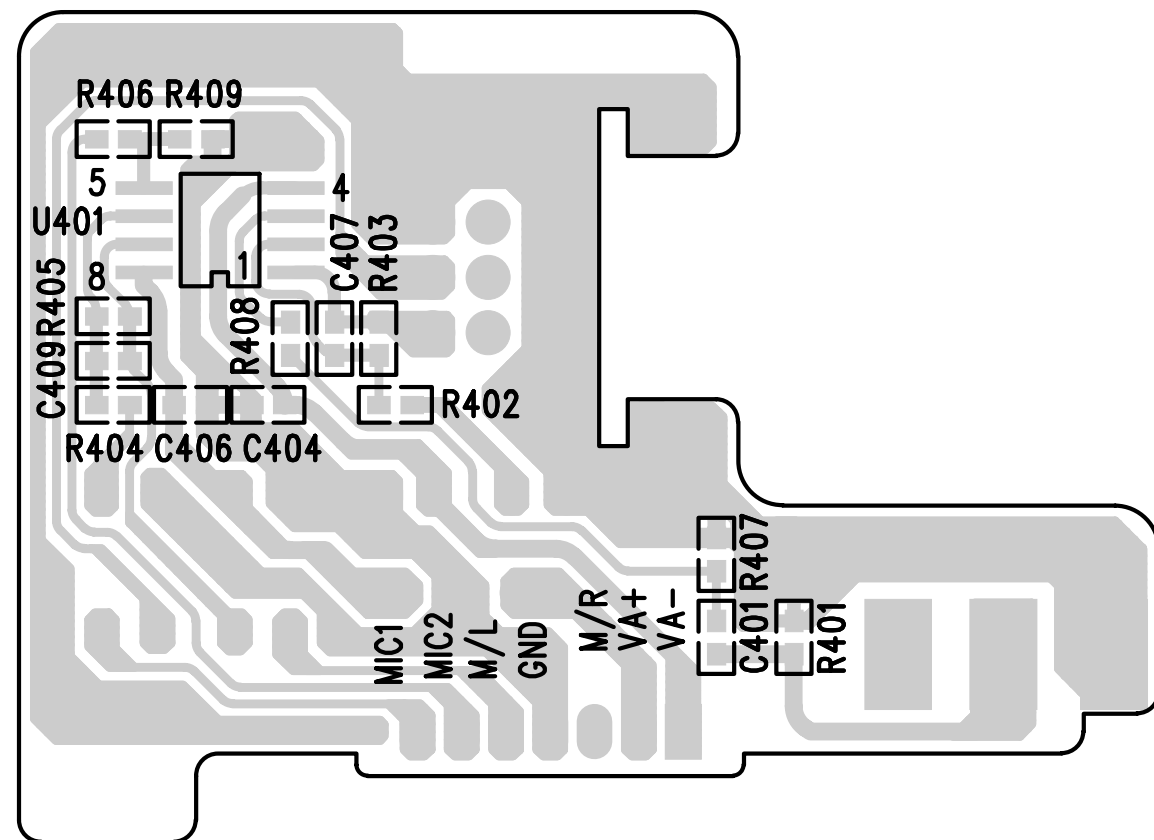
Karaoke Board



Layout Karaoke Board (Top Side)



Layout Karaoke Board (Bottom Side)



8. Alignments

Not applicable.

9. Circuit description

9.1 System Block Diagram, Functions Of Circuit Module And Signal Flow Of The Dvd Player

9.1.1 System Block Diagram

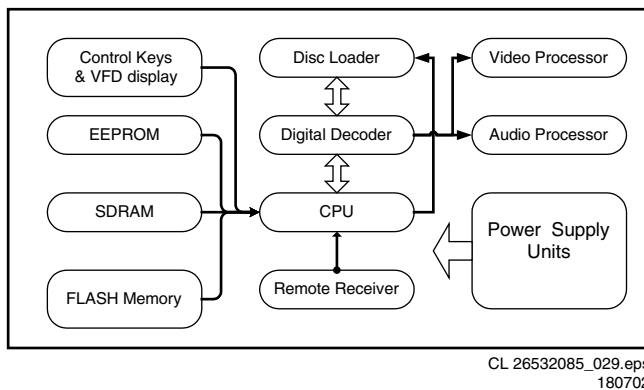


Figure 9-1 System Block Diagram

Note: The system architecture in the frame above would be remained the same in different design of DVD product.

9.2 Circuit Module Function And Signal Flow

- **Disc Loader:** The encoded digital signal storing in the Disc (DVD, CD, VCD...) is to be picked up by the Disc loader and transfer to the Digital Decoder for further processing. The Loader is constructed by Optical pick-up, Driving mechanism, Digital signal processor, and Servo controller.
- **Optical pick-up** unit includes Laser Diode and Lens, Light to Electrical conversion circuit.
- **Driving mechanism** includes Disc loading mechanism, Main Axis moving system, and the driving mechanism of optical Pick-up unit.
- **FLASH / EPROM** memory is used to store the control program.
- **EEPROM** is used to store the user information, such as menu and function setup.
- **The CPU** loads the control program from the FLASH / EPROM to control the hold system running.
- **SDRAM** is used to store the data stream, data renew and data buffer.
- **Digital decoder** is functioned as data receiver and selection, DVD data identification and data decryption, Program data or system data de-multiplexing.
- **Video Processor** is used to import the data stream from data buffer (SDRAM), hence perform the data decoding and error correction, picture format conversion such as Letterbox, Pan scan and Wide screen, and finally the processed video data will be output to the NTSC / PAL video encoder and other processing unit.
- **Audio Processor:** Digital audio data are fetched from SDRAM and then to be decoded, the decoded data will be loaded into the SDRAM buffer again, then to be switch to Audio port or IEC-958 interface for further D to A conversion.

- **VFD** is used to display part of system information transfer from CPU such as when loading the disc and playback timing...etc.
- **CPU** is also responsible to the control signal from the remote handset and performs the operation commanded by the user.
- **The Power supply unit** provides to the system a stable and continuous voltage and current for operation.

9.3 The Variance Of Hardware

- Variation A: DVD LOADER with mechanical structure, Optical pickup system, Disc signal processor and Servo controller.
- Variation B: DVD LOADER with mechanical structure, Optical pickup system, the Disc signal processor and Servo controller to be combined into decoder board.
- Variation C: Servo controller system is integrated into Decoder IC chip set.

9.4 Introduction Of Dvd Related Information

9.4.1 Format

- **DVD Video:** Normally Dual faces, used to store the Audio and video program.
- **DVD Audio:** High definition Audio, the definition is double higher than the Audio CD disc.
- **DVD-ROM:** Compatible with computer files format, used for data storage.
- **DVD-R:** Similar to CD-ROM, can only be written once.
- **DVD-RAM:** Can be rewritten for 100k times.
- **DVD-RW:** Similar to DVD RAM, but can be rewritten more than 1000 times.

9.4.2 Video Encoding

- **MPEG1:** Major technique include DCT (Discrete cosine transformation), RLC (Run length coding), VLC (variable length code), Motion compensation prediction (I, P, B picture transmitting). The picture resolution and picture rate are fixed.
- **MPEG2:** Same as MPEG1 but increase the data bit rate, higher picture resolution. The picture definition is defined as Main profile @ Main level.
- **JPEG:** Static picture with video compression coding technique.

9.4.3 Digital Audio Coding

The audio processing technique applying in DVD movie is Dolby Digital, DTS (Digital theater system, and MPEG2 audio code). Different audio coding format provide different data compression that is different amount of data will be transferred. PCM (Pulse code modulation) use pulse with same amplitude and pulse width to perform signal conversion.

9.4.4 Anti-pirate Copy Technique

- **APS (Analogue protection system):** Prevent pirate copy from home use VCR --- Macro vision 7.0.

- CSS (Content scrambling system): data encryption and authentication scheme intended to prevent copying video files from the disc --- Matsushita.

9.4.5 Region Code Restriction

In order to protect the publishing right and benefit of Studio and the feature different between countries, distributing time, and the violation of pirate copy. The player will identify the region code recorded on the DVD disc for program playback.

Code	Region
1	USA, Canada, Some Pacific Islands
2	Japan, Western-Europe, Northern-Europe, Middle East (Egypt, Iran), South Africa, Green Land
3	Taiwan, Hong Kong, South-Korea, Thailand, Indonesia, and other South-Asia countries
4	Australia, New Zealand, Central - South America, Most of South pacific Islands
5	Russia, Mongolia, India, Middle Asia, East Europe, North Korea, North Africa, and Most of Africa
6	Main Land China

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Figure 9-2 Region Code

9.4.6 Parental Guiding Lock

In order to prevent the young children from watching the movie with strong violation and sexual content, some of the DVD disc will include PG level code. The higher PG level means stronger in the restriction on children to watch or parent guidance is needed during playback the movie.

Level definition table of MPAA (the motion Picture association of America)

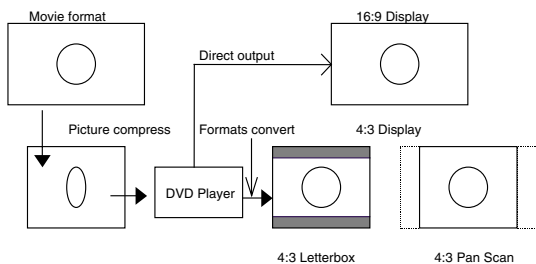
MPAA Rating	Parental Level	Description
	8	Un-rated
NC-17	7	Adult Audience
R	6	Mature audience
	5	Mature teenage audience
PG13	4	Teenage audience
PG	3	Mature young audience
	2	Most audience
G	1	General

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Figure 9-3 Parental Guide

9.4.7 Multiple Picture Format Compatibility

DVD disc is capable to support the wild screen movie playback. For 16:9 format, it is necessary to modify from original wild screen format to 4:3 format in order to match with normal TV picture by so called Letterbox method or Pan Scan method which will leave two black bars (matte) at the top and bottom of picture by both methods. To playback the DVD disc with 16:9 picture format on 16:9 TV or some other 16:9 display devices, the operation software in the player will adjust the setting of decoder automatically to fit the picture.



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Figure 9-4 Picture Format

9.5 Introduction Of Dvd580m

- External Power Supply Unit (Switching Mode power supply) with wide range mains input from 90V to 240V.
- DC 12 V input terminal locating at the back panel is compatible for car battery application.
- Auto standby function, Screen saver function when the set is in idle mode.
- The latest ESS Digital decoder solution is applied.
- Slot-in disc loader, provides strong shock resist capability.
- Support JPEG format disc playback.
- Dolby digital and DTS dual sound decoder. Audio D/A converter support to 192KHz / 24bit data stream.
- Optical and Coaxial output terminal. (SPDIF: SONY Panasonic digital interface).
- Analogue audio 5.1 channel output terminal, 9 - pins speaker output terminal for Philips speaker system.
- Composite video, S-Video, Component video output available.
- Provide -karaoke- microphone jack input and MIC level control. (691 AP version).
- Support DVD, SVCD, VCD, CD (musical), CD-R and MP3 playback.
- Flat and vertical position placement when mounting into an additional stand.

9.6 Design Specification

Operating condition of the player

- Operating voltage: AC 110V to 240V at 50/60 Hz.
- Maximum power consumption: 20W (player + external power supply unit).
- Standby power consumption: 2W (player + external power supply unit).
- Ambient Operation temperature: - 5 deg C to + 40 deg C.
- Ambient humidity: Less then 95 %
- Reference accuracy: 27MHz +/- 30 ppm.

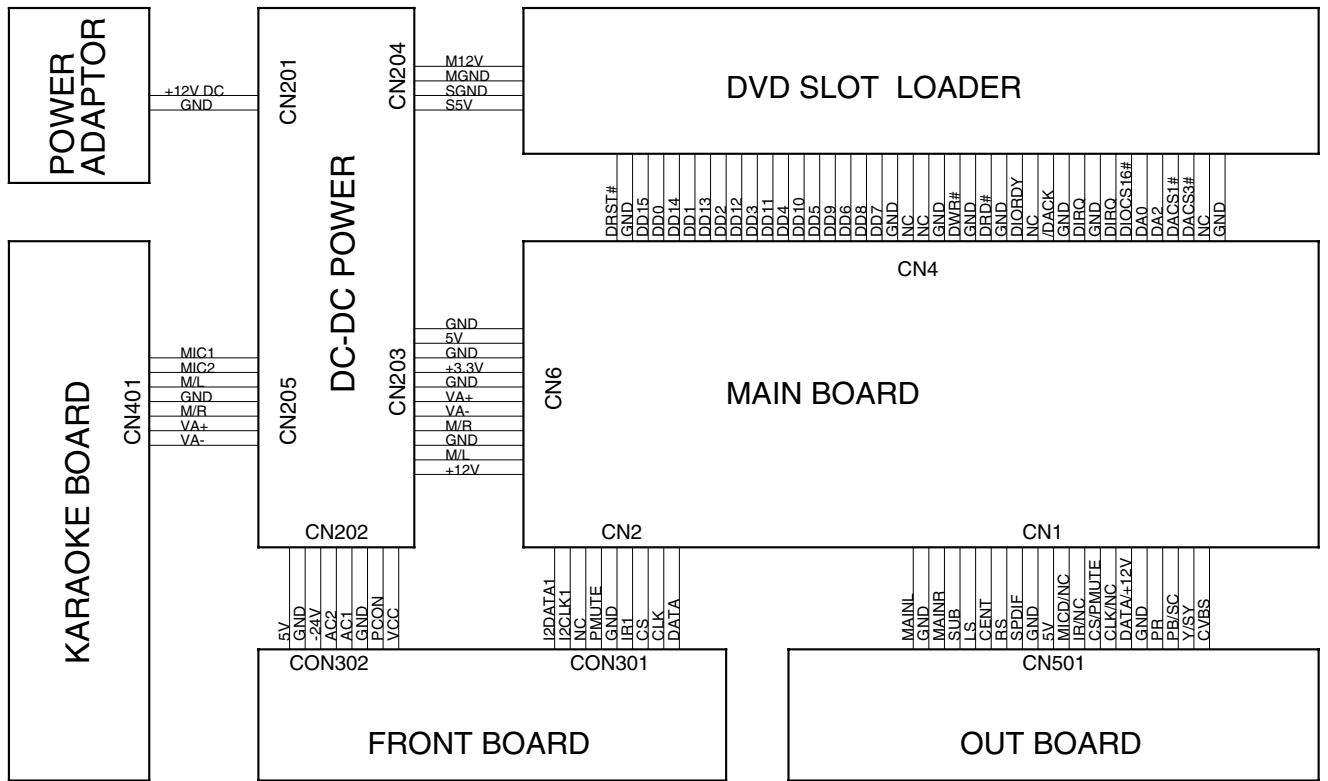
Accuracy of supply voltage and normal current consumption:

Part	Supply voltage	Accuracy	Current
Loader	+ 12V	+/-1%	200mA
Loader	+5V	+/-5%	600mA
Decoder board	+3.3V	+/-5%	450mA
	+5V	+/-5%	250mA
Front panel	VCC (5V)	+/-1%	50mA
	+5V	+/-5%	100mA
Light source voltage (VFD)	- 24V / -22V	+/-5%	5mA
	AC1-AC2 / DC3V	+/-5%	100mA
"Karaoke" chip	+5V	+/-5%	100mA

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Figure 9-5 Voltage/Current

9.7 Dvd580m Schematic Diagram



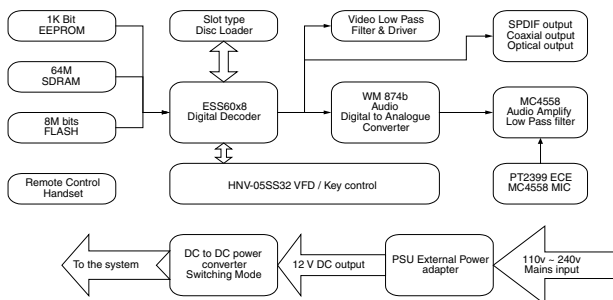
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Figure 9-6 Connection Diagram

The power supply board in the set is a switching mode DC to DC converter circuit, in which converting the 12V DC supply from external PSU to other level of voltages for the system modules such as Disc loader, Digital decoder, Audio D/A converter, VFD and other driving IC chip sets.

Due to the limitation of space in the set, there is also a "karaoke" microphone mixer circuit install on the Power supply board

System Block diagram of DVD580M.



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Figure 9-7 DVD580M Diagram

9.8 Circuit Operation And Trouble Shooting Guide

9.8.1 Power Supply Circuit

Operation Analysis

The function of the power supply unit is DC to DC converter, the input of the circuit is 12V DC, the output of the supply unit provides the voltages of VCC for CPU, +5V & 3.3 V for Digital decoder, -24V, AC1 & AC2 for Heater of VFD, +12V & 5V for Slot loader, and +9.3V, -9.3V for Audio amplify.

The primary winding of the power transformer is connecting to the 12V from external power Unit, and the Drain terminal of the MOSFET transistor. The ON / OFF behavior of the MOSFET generating a switching voltage with variable frequency, the individual voltages supplying to the DVD system is converted by the transformer. Two of the output (+5V, +3.3V) from secondary winding of the transformer is to be used as feedback control (circuit constructed with U203, Q205, Q202). The switching frequency is controlled within 45kHz to 50kHz according to the loading condition.

Note that the driving and feedback circuit is forming a close loop circuit that maintains the stability of the power supply; any circuit link in the closed loop to be opened will cause the damage of high voltage components in the system. Hence, precaution at the control loop has to be taken when proceed the service work.

Key Components

High precision Variable voltage stabiliser TL 431

TL431 is constructed as an error amplifier for detecting the voltage fluctuation from power transformer.

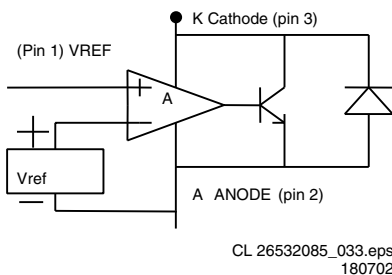


Figure 9-8 TL431 Block diagram

The TL431 includes 4 part of circuit:

- Error amplify A
- Internal reference voltage V ref of 2V5.
- A NPN transistor VT, the function of this transistor is to adjust the loading current
- Protection diode VD, the diode is used to prevent the damage of K - A terminal when reverse connection.

TL431 operation principle:

When the voltage at K (pin 3) starts to grow, the VREF is also growing. When VREF grows higher than the internal Vref (2V5), the error-amplify output a positive voltage that driving the transistor VT to make the terminal voltage at K (cathode) falls. On the other hand, when the VREF drop lower than the internal Vref, the error amplify outputs a lower voltage to VT (error amplify transistor), hence making the terminal voltage at K to be higher.

The operation of TL431 in DVD580M system:

In the power supply circuit of DVD580M, pin 1 of U203 (TL431) is used to detect the voltage fluctuation of +3.3V; the varying voltage at pin 1 will be transfer to current output from pin 3 of TL431 that driving to Q205 then Q202 as a feedback path of closed control loop. The feedback signal is finally controlling the ON -OFF timing of Q203 (power MOSFET) hence changing

the switching frequency to make a stable voltage output to DVD system.

Fault condition judgment on TL431:

Since the TL431 is a single conduct device between K -A (pin3 to pin 2), the forward resistance between K-A terminal should be 5 kohm to 5.1 kohm. Under this condition, the device is judged to be good.

Schottky diodes:

The characteristics of Schottky diode is having large forward rectify current, low forward voltage drop, short reverse recovery time, and low reverse surge voltage. The typical forward voltage drop on the Schottky diode is within 0.4V.

In DVD580M, the Schottky diode is used with 31DQ06 in which, the forward rectify current is 3A, and reverse voltage is 60V.

MOSFET transistor

Q203 is a N-channel MOSFET power transistor. The Drain to Source breakdown voltage is 55V; conducting resistance is less than 0.1 ohm. If any replacement is need, the same model has to be applied in order to maintain the product reliability.

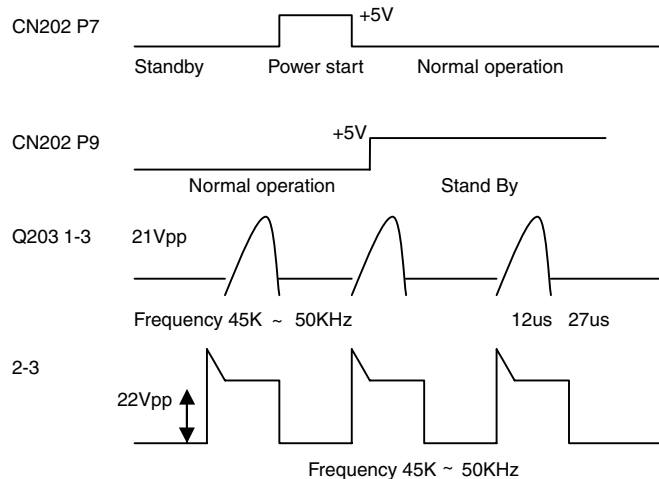
Output Voltage Table On Power Supply Board:

Location	1	2	3	4	5	6	7	8	9	10	11	Unit
CN204	+12	0	+5	0								V
CN203	NC	0	0	0	-9.3	+9.3	0	+3.3	0	+5	0	V
CN205	0	0	0	0	0	+9.3	-9.3					V
CN202	+5	0	-22	-18.5	-15.6	0	0	+5.6	0			V
U203	Gate terminal: 2.48 v, Source terminal: 4.10 v											V
Q208	Base to Emitter: 0v7, Collect to Emitter: 0v3											V
Q207	Base to Emitter: 0v, Collect to Emitter: 0v7											V

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Figure 9-9 Output Voltage

Major Test Waveforms Pattern:



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Figure 9-10 Test Waveforms

9.8.2 The Digital Decoder Module

Reference Clock Oscillator At Digital Decoder

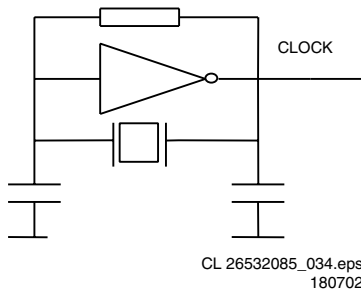


Figure 9-11 Clock Oscillator

In DVD580M, the negation gate of the 27MHz oscillation circuit is built inside the Digital Decoder (ESS 60x8 pin 49 and 50). During the start up period of supply voltage, the instant voltage surge input to the pin 49 of the decoder, the surge voltage will be inverted and feed into the pin 50 through the resistor R44, the paralleled crystal hence start to oscillate and the frequency can be stabilized at 27MHz. The normal tolerance of the oscillating frequency is within 30 ppm. There are two types of Crystal for oscillator, fundamental frequency and Harmonic frequency, defected crystal should be replaced with same type corresponding to the circuit requirement (the requirement of the decoder in DVD580M), or frequency distortion will happen or even no oscillation will start. The 27MHz crystal in DVD580M is fundamental frequency type; defected crystal should be replace by the same type. Also, the capacitors connecting to the crystal are part of the oscillation circuit, if the capacitors are faulty, the oscillation will not be set-up.

The Digital Decoder Ic Chip

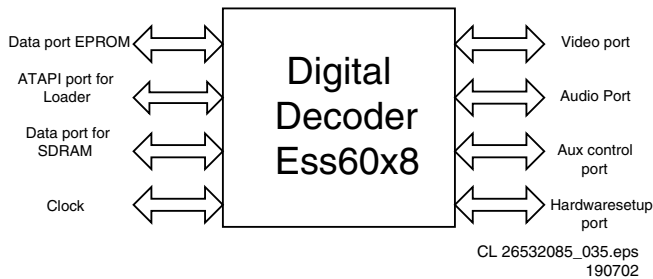


Figure 9-12 Digital Decoder

The running of Digital decoder needs a stable voltage supply and accurate clock reference. The Decoder also provides an auxiliary control port for the system options (pin 160 to 169). After the system initialization through I2C buses, the software program will be load into the decoder and start to run. The Disc loader also transmitting data follows the command from Decoder, then Video, Audio and digital signal are available at DVD output terminal afterward. There is a CPU integrated inside the decoder, hence the decoder can responsible and control some of the peripheral device in the DVD system (through additional control port).

The Characteristic And Operation Of Memory Devices

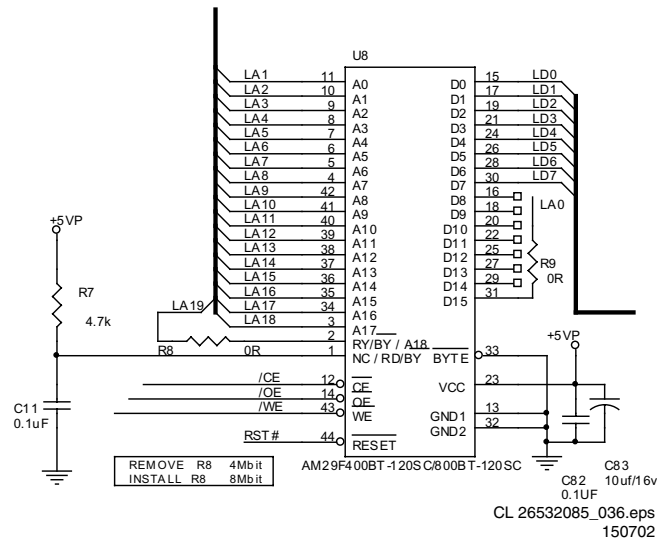


Figure 9-13 FLASH Memory

FLASH memory chip (IC location: U8) is the on line programmable memory, which can be program by providing a +5V voltage supply, the memory can be maintained in the chip even the supply voltage is off. After the supply voltage is set up, the chip set will be initialized by activate the reset terminal (pin 25). The FLASH is now available for data read write, when the interface control voltages are presented at CE (chip enable), WE (write enable), Address bus, data bus and OE (output enable). The operating software in DVD580M is upgradeable through reading CD-ROM. A dedicated file name should be load into the CD-ROM as a file identifier in the DVD player; the software will be upgrade automatically by the player once CD-Rom can be read successfully. Note that when the software upgrade is done successfully, the TV picture will be turned into a blank picture. Turn the player OFF and ON again, the set will run under the new program.

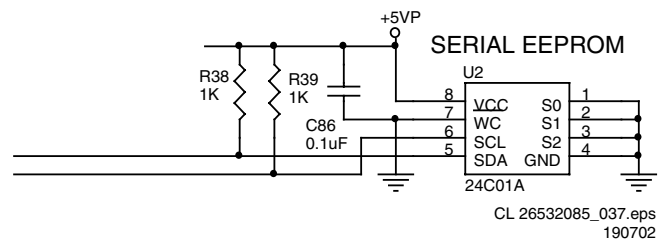


Figure 9-14 EEPROM Memory

EEPROM is the memory chip that can be rewrite data through I2C bus interface. The data can be hold in the chip even the power is OFF. EEPROM is used when the memory size is not large and no necessary to access the data in high speed. In DVD580M, EEPROM is used to store the user information such as menu setting. There is access limitation in EEPROM, When the EEPROM is faulty, and the system will not be initialized.

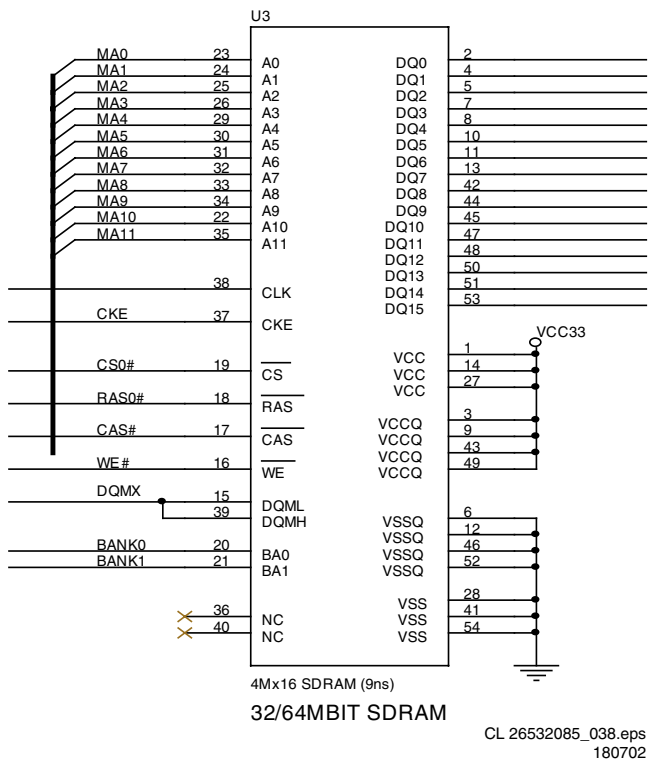


Figure 9-15 SDRAM Memory

SDRAM is dynamic type memory; beside the clock generator, it is also containing Row address buses, data buses, and some other control port such as Chip enable, Write enable.

In DVD580M, SDRAM is used as the video and Audio data buffer, data storage, and renew. The data store in SDRAM will be lost when supply voltage is OFF.

SDRAM has its own data access time requirement. In DVD580M, the SDRAM with -7 specification is applied, any defected SDRAM should be replaced with the same model or Video mosaics and Color batch will appear on screen.

Audio Digital To Analogue Converter

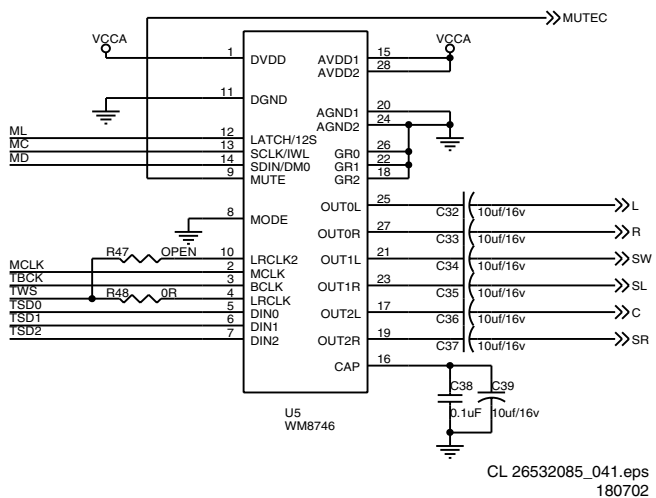


Figure 9-16 Audio DAC

Audio digital to Analogue converter (DAC) is using the I2S bus as data transfer interface. It is consisting of MCLK operation clock and BCK bit clock, (LRCK) Left Right clock, audio data (TSD0, TSD1, TSD2) and Analogue audio output. Also some of the control port for internal function setup.

When measuring on the DAC, all three data bus will carry data during multi channels sound is to be decoding such as Dolby digital or DTS format. When decoding two channels stereo sound, only TSD0 will carry signal.

Pins 12, 13, 14 of the DAC are the internal function setup control pins.

MCLK, BCK, LRCK, and TSD0, TSD1, TSD2 are output from the decoder (U1), the DAC could be faulty if no any output from the 5.1 Channel terminals above.

Under the normal playback condition, the pin13 and 14 should be +3.3V and the pin12 should be 0v.

Video Filter Network And Driving Circuit

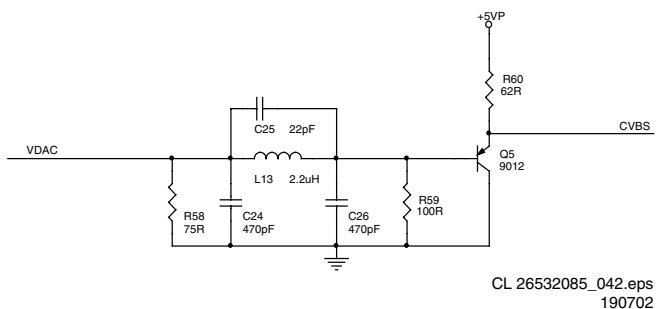


Figure 9-17 Video Filter Network

Video signal output from the Digital decoder (ESS60x8) will to be input into the filter network before further output to display device in order to reduce the high frequency component imposed on the Video signal. The video circuit in the above figure is consisting of the low pass filter and buffer amplifier.

When there is no video signal output from any one of the connecting terminals of player such as CVBS, S-video, and Y-Pr-Pb. One of the corresponding buffer amplifiers could be faulty.

It is because of the DVD580M has to support multiple video output format, but only four output channels from ESS 60x8 are to be provided, hence either S-video or Component video will be selected once at a time as the output format instead of both. During the practical use, the user setup menu should correspond to the output video terminal.

The user may be selecting the video format in the way that differs from their desire, which cause wrong output from the terminal. Check the setting before further service work.

Karaoke mixer

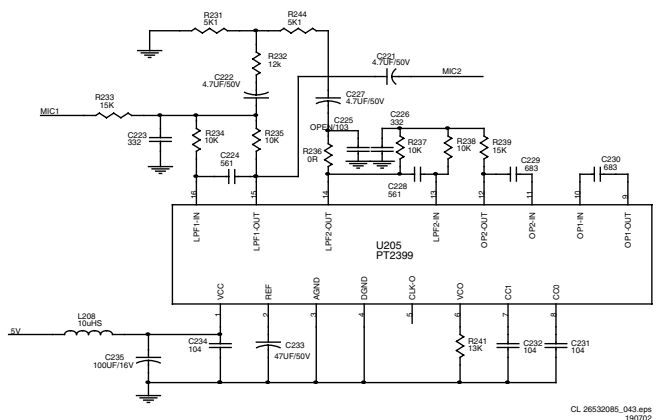
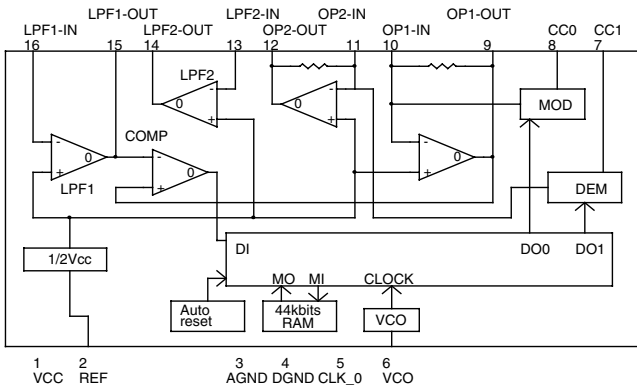


Figure 9-18 Karaoke Mixer

The karaoke board is installed on the same board of power supply unit due to the limited space in DVD580M. The main function of the board is to create an echo effect at the function of the Microphone input. Adjust the circuit parameters at Pin 13 ~ 16 of U203 can adjust the frequency response, the ratio

between R231 and R244 will change the deep of echo effect, the value of R241 will affect the delay time of voice.

This additional diagram will help to understand the structure of PT2399 (chip set for karaoke feature).

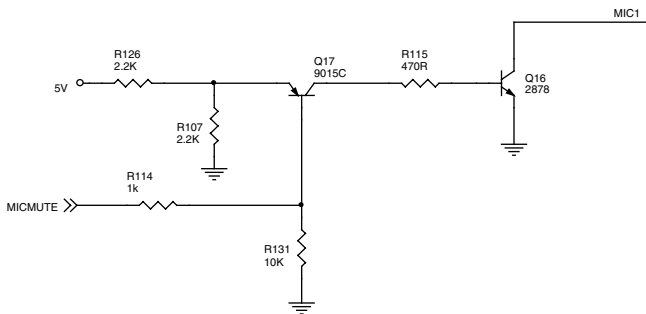


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Figure 9-19 Karaoke Chipset

PT 2399 is an echo / surround sound processor, both ADC and DAC are build in side the chip set, which convert the analogue voice from microphone into digital for time delay processing.

The Mute Circuit For Microphone Input



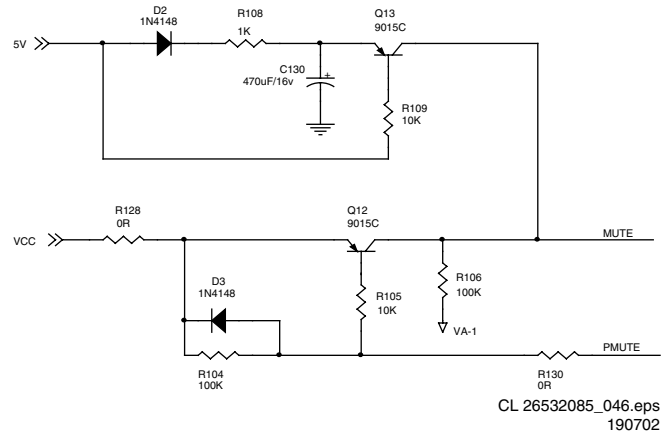
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Figure 9-20 Microphone Mute Circuit

When the Microphone is turn off, MICMUTE voltage will drop to 0V from 3.3V. A +5V voltage will be divided to +2.5 V through R126, R127 and force the Q17 to be conducted hence switch on the Q 16 and Mute the Microphone input.

When service work is needed on Microphone part, press the MIC button on the remote handset and measure the change of MICMUTE voltage, which help to know if any defect on the circuit.

Sound Muting When Switch On And Off The Set



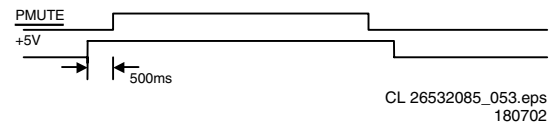
CL 26532085_046.eps
190702

Figure 9-21 Sound Muting

During the set is being ON and OFF, there will be POP noise from the audio, which is caused by the voltage surge from audio channel.

When the main is connected to the set, only VCC (+5V) is available at the moment. Set will be turn ON if the power key on the remote handset is pressed. POP noise appears during the setup time of VA+ and VA-.

In order to suppress the POP noise, a PMUTE voltage has to be providing to Q12 and make it turn OFF (Mute activation) before the PCON arrive. On the other hand, Q13 circuit is used to prevent the POP noise from mains shut down instead of normal turn OFF.

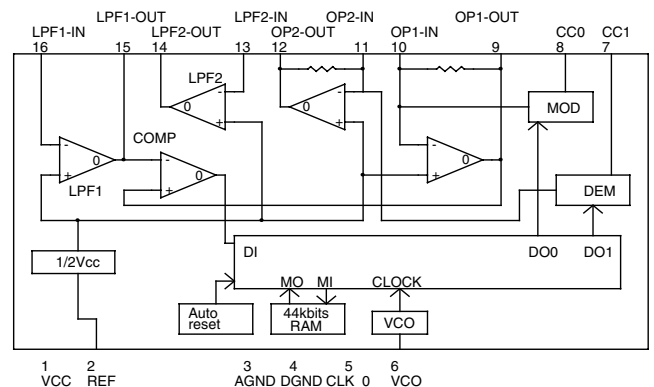


CL 26532085_053.eps
180702

Figure 9-22 PMUTE Timing Chart

Note that the time different between PMUTE and setup time of +5V. PMUTE voltage is controlled by the U302 at the front panel. If any poor audio outputs happen, check and make sure the mute circuit is not faulty

Vfd Driving And Key Control Scanning



CL 26532085_044.eps
190702

Figure 9-23 VFD Driver

To light up the VFD display, the heater filament of the VFD (AC1, AC2), a negative voltage (-24V), grid terminal (G1 to G4) to Anode voltage controlled by the driver chip set are provided.

CS, CLK and DATA perform the communication between VFD driver and CPU.

VFD driver also keep scanning the keyboard (front panel buttons) periodically to detect the user command and transfer to CPU for performing the action.

Remote Control Isolation Circuit And Cpu Interface At Front Panel

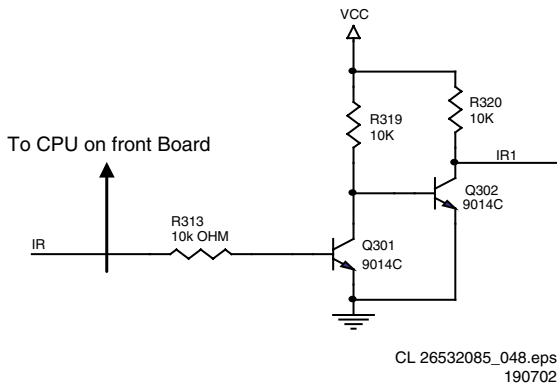


Figure 9-24 Remote Control Isolation

The two transistors in the circuit are used for isolation of remote signal. Infrared signal for remote receiver will be send to the CPU (front panel board) for command processing. When the set is in standby condition, no voltage is supply to the Decoder IC; the output voltage at IR receiver is in low output condition, the CPU (front panel) will not receive the IR signal from remote handset without the isolation circuit.

In the following diagram shows that a high stage voltage will be send out from U302 to turn off all supply other than the VCC.

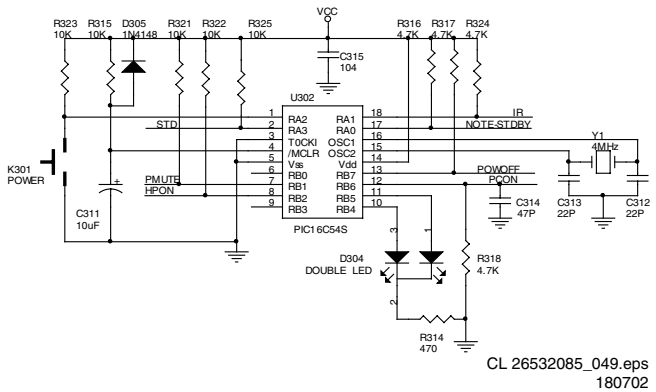


Figure 9-25 U302 Control Diagram

Digital Audio Output Circuit

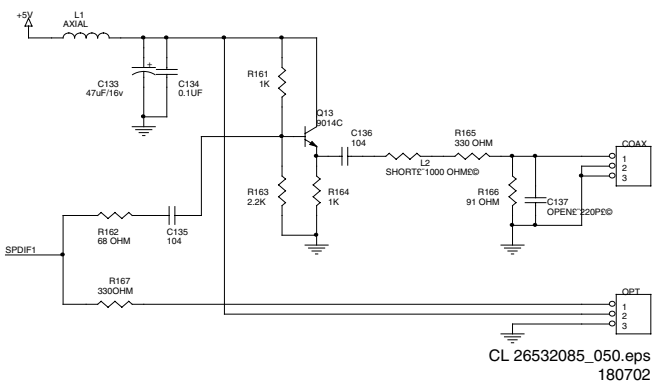


Figure 9-26 Digital Audio Out

Digital audios are source from the decoder (ESS60x8) chip set that is the serial data stream in SPDIF format. There are two form of digital audio output, one of them is coaxial, and while the other one is optical. The optical terminal is an electrical to optical signal converter.

9.9 Trouble Shooting On The Disc Loader Of Dvd580m

The Disc loader in DVD580M is of Slot-Entrance-type with a high accuracy of the mechanical structure and a good shockproof capability. The loader in the DVD player is not belonging to component serviceable part. Hence, it is necessary to clarify if any fault condition of the player is caused by the loader, before replacing the loader.

In the DVD system, the linkage between loader and the decoder board is the ATAPI standard. The loader is a stand-alone system, the servo control board of the loader is consisting all necessary device for disc reading and primary decode, such as CPU, DSP and data memory. Once a stable voltage is supplied to the loader, the loader itself can operate even without connecting to the decoder board. By observing the movement of optical assembly part and the major axis motor will know the loader is operating. Hence, to clarify whether the loader is in fault condition, remove the 40 pins wire assembly and observe the movement descript above. If the +12V and +5V supply voltage is normal by measure, and no any movement can be obtained, the loader is faulty.

One the other hand, If the loader can operate alone, but lost it after 40 pins connecter is reconnected, then the decoder board or the decoder chipset itself may get faulty. In this situation, check the circuit between the two modules (loader and decoder board) or replace the decoder IC chipset if necessary. The disc loader is having two type of laser pickup optical, one for DVD disc, while the other one works for VCD or CD. If any one type of disc (DVD or VCD / CD) dose not be identified. It can be sure that the fault is come from the disc Loader.

10. Spare Parts List

DVD580M /691 General

Various

1001	9965 000 13928	ADAPTER 12VDC 2.5A
1002	9965 000 13929	ASS'Y - REMOTE HANDSET
1003	9965 000 13930	LOADER TD-S202
1004	9965 000 13931	"C" CABLE ASS'Y 3 HEAD RCA VCD
1005	9965 000 13932	1.25MM PITCH, 20 PINS FLAT CAB
1009	9965 000 13933	POWER CORD 1880 +/- 20MM
1010	9965 000 13934	PLASTIC SUPPORT
1011	9965 000 13935	CAB.BACK
1012	9965 000 13936	FRONT PANEL
1013	9965 000 13937	CAB.LOWER
1014	9965 000 13938	CAB.UPPER
1015	9965 000 13939	FUNCTION KEY
1016	9965 000 13940	LENS
1017	9965 000 13941	MIC KNOB
1018	9965 000 13942	DISK BRUSH
1037	9965 000 13943	BACKPLATE
1038	9965 000 13944	STAND
1040	9965 000 13945	LOCKNUT
1052	9965 000 13947	USER' INSTRUCTION
1053	9965 000 13948	ASS'Y - AV BD
1054	9965 000 13949	ASS'Y - DECODE BD
1055	9965 000 13950	ASS'Y - FRONT CTL BD
1056	9965 000 13951	ASS'Y - KARAOKE BD
1057	9965 000 13952	ASS'Y - POWER BD

AV Board

Various

CN501	9965 000 13968	CONN.FFC FP-20 PITCH=1.25MM
CN502	9965 000 13973	S-TERMINAL SOCKET
CN503	9965 000 13970	RCA SOCKET
CN504	9965 000 13971	RCA SOCKET 3P AV-3.2- 3W-H
CN505	9965 000 13972	RCA SOCKET AV-3.2-6W-14
CN506	9965 000 13969	RCA JACK
CN507	9965 000 13953	OPT TERMINAL
CN508	9965 000 13974	SOCKET S-W13-M

-II-

C501	9965 000 13961	.ELEC 47 μ F 16V +/-20%
C502	9965 000 13962	.CER 0.1 μ F 50V +/-5% F
C503	9965 000 13962	.CER 0.1 μ F 50V +/-5% F
C504	9965 000 13962	.CER 0.1 μ F 50V +/-5% F
C505	9965 000 13963	.CER 220 pF 50V +/-5%
C506	9965 000 13964	.CER 680pF 50V +/-5% C
C507	9965 000 13964	.CER 680pF 50V +/-5% C
C508	9965 000 13964	.CER 680pF 50V +/-5% C
C509	9965 000 13964	.CER 680pF 50V +/-5% C
C510	9965 000 13964	.CER 680pF 50V +/-5% C
C511	9965 000 13964	.CER 680pF 50V +/-5% C
C512	9965 000 13965	.SMD 100pF 50V +/-5% C
C513	9965 000 13965	.SMD 100pF 50V +/-5% C
C514	9965 000 13965	.SMD 100pF 50V +/-5% C
C515	9965 000 13965	.SMD 100pF 50V +/-5% C

-□-

R501	9965 000 13955	RES. C.F. 1k Ω 1/6W +/-5%
R502	9965 000 13958	RES. C.F. 68 Ω 1/6W +/-5%
R503	9965 000 13959	RES. C.F. 330 Ω 1/6W +/-5%
R504	9965 000 13957	RES. C.F. 2.2k Ω 1/6W +/-5%
R505	9965 000 13955	RES. C.F. 1k Ω 1/6W +/-5%
R507	9965 000 13956	RES. C.F. 220 Ω 1/6W +/-5%
R509	9965 000 13960	RES. C.F. 470 Ω 1/6W +/-5%
R510	9965 000 13960	RES. C.F. 470 Ω 1/6W +/-5%
R511	9965 000 13960	RES. C.F. 470 Ω 1/6W +/-5%
R512	9965 000 13960	RES. C.F. 470 Ω 1/6W +/-5%
R513	9965 000 13960	RES. C.F. 470 Ω 1/6W +/-5%
R514	9965 000 13960	RES. C.F. 470 Ω 1/6W +/-5%
R515	9965 000 13960	RES. C.F. 470 Ω 1/6W +/-5%
R516	9965 000 13960	RES. C.F. 470 Ω 1/6W +/-5%
R517	9965 000 13960	RES. C.F. 470 Ω 1/6W +/-5%
R518	9965 000 13960	RES. C.F. 470 Ω 1/6W +/-5%
R519	9965 000 13960	RES. C.F. 470 Ω 1/6W +/-5%
R520	9965 000 13960	RES. C.F. 470 Ω 1/6W +/-5%

L501 9965 000 13966 FERR. BEAD LB3.5X6



Q501	9965 000 13954	TRANSISTOR C9014C NPN E.B.C
Q502	9965 000 13954	TRANSISTOR C9014C NPN E.B.C
Q503	9965 000 13954	TRANSISTOR C9014C NPN E.B.C
Q504	9965 000 13954	TRANSISTOR C9014C NPN E.B.C
Q505	9965 000 13954	TRANSISTOR C9014C NPN E.B.C
Q506	9965 000 13954	TRANSISTOR C9014C NPN E.B.C
Q507	9965 000 13954	TRANSISTOR C9014C NPN E.B.C

Decoder Board

Various

CN1	9965 000 13968	CONN.FFC FP-20 PITCH=1.25MM
CN3	9965 000 14018	CONN.PH-8A 8PIN PITCH=2.0MM
CN4	9965 000 14017	PIN BASE (*20X2 2.54MM)
CN6	9965 000 14016	PIN BASE *10 TJC3-10A

-II-

C7	9965 000 14004	CAP.ELEC 100UF 16V +/- 20%
C8	9965 000 14004	CAP.ELEC 100UF 16V +/- 20%
C9	9965 000 14004	CAP.ELEC 100UF 16V +/- 20%
C89	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%
C90	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%
C91	9965 000 14010	CAP. SMD 1500PF 50V +/- 10% B
C92	9965 000 14009	CAP. SMD 150PF 50V +/-5% C
C93	9965 000 14003	CAP.ELEC 10UF 16V +/- 20% 2MM
C95	9965 000 14010	CAP. SMD 1500PF 50V +/- 10% B
C96	9965 000 14009	CAP. SMD 150PF 50V +/-5% C
C97	9965 000 14003	CAP.ELEC 10UF 16V +/- 20% 2MM
C99	9965 000 13985	RES. SMD 0 OHM 1/16W +/- 5%
CC4	9965 000 14011	CAP. SMD 22PF 50V +/-5% C
CC5	9965 000 14011	CAP. SMD 22PF 50V +/-5% C
C101	9965 000 14010	.SMD 1500pF 50V +/-10% B
C102	9965 000 14009	.SMD 150pF 50V +/-5% C
C103	9965 000 14003	.ELEC 10 μ F 16V +/-20% 2MM
C105	9965 000 13985	RES. SMD 0 OHM 1/16W +/- 5%
C107	9965 000 14010	.SMD 1500pF 50V +/-10% B
C108	9965 000 14009	.SMD 150pF 50V +/-5% C
C109	9965 000 14003	.ELEC 10 μ F 16V +/-20% 2MM
C111	9965 000 14010	.SMD 1500pF 50V +/-10% B
C112	9965 000 14009	.SMD 150pF 50V +/-5% C
C113	9965 000 14003	.ELEC 10 μ F 16V +/-20% 2MM
C115	9965 000 13985	RES. SMD 0 OHM 1/16W +/- 5%
C117	9965 000 14010	.SMD 1500pF 50V +/-10% B
C118	9965 000 14009	.SMD 150pF 50V +/-5% C
C119	9965 000 14003	.ELEC 10 μ F 16V +/-20% 2MM
C121	9965 000 14008	.SMD 0.1 μ F 50V +80%~- 20%
C122	9965 000 14008	.SMD 0.1 μ F 50V +80%~- 20%

C123	9965 000 14008	.SMD 0.1 μ F 50V +80%~- 20%
C124	9965 000 14003	.ELEC 10 μ F 16V +/-20% 2MM
C125	9965 000 14008	.SMD 0.1 μ F 50V +80%~- 20%
C126	9965 000 14008	.SMD 0.1 μ F 50V +80%~- 20%
C127	9965 000 14008	.SMD 0.1 μ F 50V +80%~- 20%
C128	9965 000 14003	.ELEC 10 μ F 16V +/-20% 2MM
C130	9965 000 14005	.ELEC 470 μ F 16V +/-20%
C131	9965 000 14006	.ELEC 1 μ F 50V +/-20%
C133	9965 000 14008	.SMD 0.1 μ F 50V +80%~- 20%
R6	9965 000 13985	RES. SMD 0 OHM 1/16W +/- 5%
R7	9965 000 13998	RES. SMD 4.7K OHM 1/16W +/-5%
R8	9965 000 13985	RES. SMD 0 OHM 1/16W +/- 5%
R9	9965 000 13985	RES. SMD 0 OHM 1/16W +/- 5%
R10	9965 000 13994	RES. SMD 33 OHM 1/16W +/- -5%
R11	9965 000 13994	RES. SMD 33 OHM 1/16W +/- -5%
R12	9965 000 13994	RES. SMD 33 OHM 1/16W +/- -5%
R13	9965 000 13998	RES. SMD 4.7K OHM 1/16W +/-5%
R16	9965 000 13998	RES. SMD 4.7K OHM 1/16W +/-5%
R17	9965 000 13998	RES. SMD 4.7K OHM 1/16W +/-5%
R18	9965 000 13998	RES. SMD 4.7K OHM 1/16W +/-5%
R20	9965 000 13998	RES. SMD 4.7K OHM 1/16W +/-5%
R23	9965 000 13994	RES. SMD 33 OHM 1/16W +/- -5%
R29	9965 000 13993	RES.SMD 270 1/16W 0603 +/-5%
R30	9965 000 13994	RES. SMD 33 OHM 1/16W +/- -5%
R32	9965 000 13994	RES. SMD 33 OHM 1/16W +/- -5%
R33	9965 000 13985	RES. SMD 0 OHM 1/16W +/- 5%
R34	9965 000 13994	RES. SMD 33 OHM 1/16W +/- -5%
R35	9965 000 13985	RES. SMD 0 OHM 1/16W +/- 5%
R36	9965 000 13995	RES. SMD 330 OHM 1/16W +/-5%
R37	9965 000 13998	RES. SMD 4.7K OHM 1/16W +/-5%
R38	9965 000 13988	RES. SMD 1K OHM 1/16W +/- -5%
R39	9965 000 13988	RES. SMD 1K OHM 1/16W +/- -5%
R40	9965 000 13994	RES. SMD 33 OHM 1/16W +/- -5%
R41	9965 000 13994	RES. SMD 33 OHM 1/16W +/- -5%
R42	9965 000 13994	RES. SMD 33 OHM 1/16W +/- -5%
R43	9965 000 13994	RES. SMD 33 OHM 1/16W +/- -5%
R44	9965 000 13990	RES. SMD 100K OHM 1/ 16W +/-5%
R45	9965 000 13998	RES. SMD 4.7K OHM 1/16W +/-5%
R46	9965 000 13998	RES. SMD 4.7K OHM 1/16W +/-5%
R48	9965 000 13985	RES. SMD 0 OHM 1/16W +/- 5%
R49	9965 000 13999	RES. SMD 75 OHM 1/16W +/- -5%
R50	9965 000 13987	RES. SMD 100 OHM 1/16W +/-5%
R51	9965 000 13984	RES.C.F 62 OHM 1/4W +/- 5%
R52	9965 000 13999	RES. SMD 75 OHM 1/16W +/- -5%

R53	9965 000 13987	RES. SMD 100 OHM 1/16W +/-5%
R54	9965 000 13984	RES.C.F 62 OHM 1/4W +/-5%
R55	9965 000 13999	RES. SMD 75 OHM 1/16W +/-5%
R56	9965 000 13987	RES. SMD 100 OHM 1/16W +/-5%
R57	9965 000 13984	RES.C.F 62 OHM 1/4W +/-5%
R58	9965 000 13999	RES. SMD 75 OHM 1/16W +/-5%
R59	9965 000 13987	RES. SMD 100 OHM 1/16W +/-5%
R60	9965 000 13984	RES.C.F 62 OHM 1/4W +/-5%
R62	9965 000 13985	RES. SMD 0 OHM 1/16W +/-5%
R65	9965 000 13989	RES. SMD 10K OHM 1/16W +/-5%
R66	9965 000 13996	RES. SMD 3.3K OHM 1/16W +/-5%
R67	9965 000 13991	RES. SMD 20K OHM 1/16W +/-5%
R68	9965 000 13989	RES. SMD 10K OHM 1/16W +/-5%
R69	9965 000 13985	RES. SMD 0 OHM 1/16W +/-5%
R71	9965 000 13992	RES. SMD 2.2K OHM 1/16W +/-5%
R72	9965 000 13989	RES. SMD 10K OHM 1/16W +/-5%
R73	9965 000 13989	RES. SMD 10K OHM 1/16W +/-5%
R74	9965 000 13989	RES. SMD 10K OHM 1/16W +/-5%
R75	9965 000 13996	RES. SMD 3.3K OHM 1/16W +/-5%
R76	9965 000 13991	RES. SMD 20K OHM 1/16W +/-5%
R77	9965 000 13989	RES. SMD 10K OHM 1/16W +/-5%
R78	9965 000 13985	RES. SMD 0 OHM 1/16W +/-5%
R80	9965 000 13989	RES. SMD 10K OHM 1/16W +/-5%
R81	9965 000 13996	RES. SMD 3.3K OHM 1/16W +/-5%
R82	9965 000 13991	RES. SMD 20K OHM 1/16W +/-5%
R83	9965 000 13989	RES. SMD 10K OHM 1/16W +/-5%
R84	9965 000 13985	RES. SMD 0 OHM 1/16W +/-5%
R86	9965 000 13989	RES. SMD 10K OHM 1/16W +/-5%
R87	9965 000 13996	RES. SMD 3.3K OHM 1/16W +/-5%
R88	9965 000 13991	RES. SMD 20K OHM 1/16W +/-5%
R89	9965 000 13989	RES. SMD 10K OHM 1/16W +/-5%
R90	9965 000 13985	RES. SMD 0 OHM 1/16W +/-5%
R92	9965 000 13989	RES. SMD 10K OHM 1/16W +/-5%
R93	9965 000 13996	RES. SMD 3.3K OHM 1/16W +/-5%
R94	9965 000 13991	RES. SMD 20K OHM 1/16W +/-5%
R95	9965 000 13989	RES. SMD 10K OHM 1/16W +/-5%
R96	9965 000 13985	RES. SMD 0 OHM 1/16W +/-5%
R98	9965 000 13989	RES. SMD 10K OHM 1/16W +/-5%
R99	9965 000 13996	RES. SMD 3.3K OHM 1/16W +/-5%
R100	9965 000 13991	RES. SMD 20k Ω 1/16W +/-5%
R101	9965 000 13989	RES. SMD 10k Ω 1/16W +/-5%
R102	9965 000 13985	RES. SMD 0 Ω 1/16W +/-5%
R104	9965 000 13990	RES. SMD 100k Ω 1/16W +/-5%
R105	9965 000 13989	RES. SMD 10k Ω 1/16W +/-5%
R106	9965 000 13990	RES. SMD 100k Ω 1/16W +/-5%
R107	9965 000 13992	RES. SMD 2.2k Ω 1/16W +/-5%
R108	9965 000 13988	RES. SMD 1k Ω 1/16W +/-5%

R109	9965 000 13989	RES. SMD 10k Ω 1/16W +/-5%
R114	9965 000 13988	RES. SMD 1k Ω 1/16W +/-5%
R115	9965 000 13997	RES. SMD 470 Ω 1/16W +/-5%
R116	9965 000 13985	RES. SMD 0 Ω 1/16W +/-5%
R117	9965 000 13985	RES. SMD 0 Ω 1/16W +/-5%
R123	9965 000 13985	RES. SMD 0 Ω 1/16W +/-5%
R125	9965 000 13985	RES. SMD 0 Ω 1/16W +/-5%
R126	9965 000 13992	RES. SMD 2.2k Ω 1/16W +/-5%
R128	9965 000 13985	RES. SMD 0 Ω 1/16W +/-5%
R130	9965 000 13985	RES. SMD 0 Ω 1/16W +/-5%
R131	9965 000 13989	RES. SMD 10k Ω 1/16W +/-5%
R133	9965 000 13994	RES. SMD 33 Ω 1/16W +/-5%
R135	9965 000 13985	RES. SMD 0 Ω 1/16W +/-5%
R138	9965 000 13986	RES. SMD 10 Ω 1/16W +/-5%
R163	9965 000 13994	RES. SMD 33 Ω 1/16W +/-5%
RN1	9965 000 14002	RES.NET 47*4 +/-5%
RN2	9965 000 14002	RES.NET 47*4 +/-5%
RN3	9965 000 14001	NETWORK RES. 33 OHM +/-5%
RN4	9965 000 14001	NETWORK RES. 33 OHM +/-5%
RN5	9965 000 14001	NETWORK RES. 33 OHM +/-5%
RN6	9965 000 14001	NETWORK RES. 33 OHM +/-5%
RN7	9965 000 14001	NETWORK RES. 33 OHM +/-5%
RN8	9965 000 14001	NETWORK RES. 33 OHM +/-5%
RN9	9965 000 14001	NETWORK RES. 33 OHM +/-5%
RN10	9965 000 14000	NETWORK RES. 10 Ω 1/16W +/-5%
RN11	9965 000 14000	NETWORK RES. 10 Ω 1/16W +/-5%
RN12	9965 000 14000	NETWORK RES. 10 Ω 1/16W +/-5%

L1	9965 000 13966	FERR. BEAD LB3.5X6
L2	9965 000 13966	FERR. BEAD LB3.5X6
L3	9965 000 13966	FERR. BEAD LB3.5X6
L6	9965 000 14013	SMD MAGNETISM BEAD
L7	9965 000 14013	SMD MAGNETISM BEAD
L10	9965 000 14014	INDUCTOR 2.2UH 0603
L11	9965 000 14014	INDUCTOR 2.2UH 0603
L12	9965 000 14014	INDUCTOR 2.2UH 0603
L13	9965 000 14014	INDUCTOR 2.2UH 0603
L14	9965 000 14013	SMD MAGNETISM BEAD
L15	9965 000 14013	SMD MAGNETISM BEAD
X2	9965 000 14015	CRYSTAL 27MHZ

D2	4822 130 30621	1N4148
D3	4822 130 30621	1N4148

Q12	4822 130 63082	9015C
Q13	4822 130 63082	9015C
Q16	4822 130 43818	2SC2878-A
Q17	4822 130 63082	9015C
Q1	4822 130 63664	8050C
Q2	9965 000 13975	TRANSISTOR C9012H PNP E.B.C
U1	9965 000 13979	IC ES6018
U2	9965 000 13976	IC AT24C01A S0-8 EEPROM 1K
U3	9965 000 13981	IC IS42S16400-7T 4M*16 SDRAM
U5	9965 000 13983	IC D/A WM8746
U6	9965 000 13978	IC 3PIN VOLTAGE V6300 SOT-23
U8	9965 000 13980	IC HY29F800
U9	9965 000 13982	IC NJM4558V (SMD PKG)
U10	9965 000 13982	IC NJM4558V (SMD PKG)
U11	9965 000 13982	IC NJM4558V (SMD PKG)
U12	9965 000 13977	IC 78L05 VOLT REGULATOR 0.5A

Front Control Board

Various

K301	9965 000 14031	TACT SWITCH TSAB-1
K302	9965 000 14031	TACT SWITCH TSAB-1
K303	9965 000 14031	TACT SWITCH TSAB-1
K304	9965 000 14031	TACT SWITCH TSAB-1
K305	9965 000 14031	TACT SWITCH TSAB-1
K306	9965 000 14031	TACT SWITCH TSAB-1
CN301	9965 000 14030	HS 8P26 260 PH-8Y/JC20-8Y
CN302	9965 000 14029	HS 9P2468#24 280 PH-9Y/JC20-9Y

-II-

C11	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%
C13	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%
C14	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%
C15	9965 000 14012	CAP. SMD 470PF 50V +/-5% 0603
C16	9965 000 14011	CAP. SMD 22PF 50V +/-5% C
C17	9965 000 14012	CAP. SMD 470PF 50V +/-5% 0603
C18	9965 000 14012	CAP. SMD 470PF 50V +/-5% 0603
C19	9965 000 14011	CAP. SMD 22PF 50V +/-5% C
C20	9965 000 14012	CAP. SMD 470PF 50V +/-5% 0603
C21	9965 000 14012	CAP. SMD 470PF 50V +/-5% 0603
C22	9965 000 14011	CAP. SMD 22PF 50V +/-5% C
C23	9965 000 14012	CAP. SMD 470PF 50V +/-5% 0603
C24	9965 000 14012	CAP. SMD 470PF 50V +/-5% 0603
C25	9965 000 14011	CAP. SMD 22PF 50V +/-5% C
C26	9965 000 14012	CAP. SMD 470PF 50V +/-5% 0603
C32	9965 000 14003	CAP. ELEC 10UF 16V +/-20% 2MM
C33	9965 000 14003	CAP. ELEC 10UF 16V +/-20% 2MM
C34	9965 000 14007	CAP. ELEC 10 UF 16V +/-20%
C35	9965 000 14007	CAP. ELEC 10 UF 16V +/-20%
C36	9965 000 14003	CAP. ELEC 10UF 16V +/-20% 2MM
C37	9965 000 14007	CAP. ELEC 10 UF 16V +/-20%
C38	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%
C39	9965 000 14003	CAP. ELEC 10UF 16V +/-20% 2MM
C42	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%
C43	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%
C44	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%
C45	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%
C46	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%
C47	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%
C48	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%
C49	9965 000 14003	CAP. ELEC 10UF 16V +/-20% 2MM
C50	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%
C51	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%
C52	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%
C53	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%
C54	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%
C55	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%

C56	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%				C404	9965 000 14008	. SMD 0.1μF 50V +80%~-20%
C57	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%				C405	9965 000 14036	. ELEC 100 μF 25V +/-20%
C58	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%				C406	9965 000 14008	. SMD 0.1μF 50V +80%~-20%
C59	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%				C407	9965 000 13965	. SMD 100pF 50V +/-5% C
C60	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%				C408	9965 000 14038	. ELEC 22 μF 50V +/-20%
C61	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%				C409	9965 000 13965	. SMD 100pF 50V +/-5% C
C62	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%				C410	9965 000 14039	. ELEC 4.7 μF 50V +/-20%
C63	9965 000 14003	CAP.ELEC 10UF 16V +/-20% 2MM				C411	9965 000 14037	. ELEC 1 μF 50V +/-20%
C64	9965 000 14003	CAP.ELEC 10UF 16V +/-20% 2MM						
C65	9965 000 14003	CAP.ELEC 10UF 16V +/-20% 2MM						
C66	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%						
C67	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%						
C68	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%						
C69	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%						
C70	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%						
C71	9965 000 14003	CAP.ELEC 10UF 16V +/-20% 2MM						
C72	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%						
C73	9965 000 14003	CAP.ELEC 10UF 16V +/-20% 2MM						
C74	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%						
C75	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%						
C76	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%						
C77	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%						
C78	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%						
C79	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%						
C80	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%						
C81	9965 000 14003	CAP.ELEC 10UF 16V +/-20% 2MM						
C82	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%						
C83	9965 000 14003	CAP.ELEC 10UF 16V +/-20% 2MM						
C86	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%						
C87	9965 000 14004	CAP.ELEC 100UF 16V +/-20%						
C88	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%						
C301	9965 000 14027	.ELEC 47μF 16V +/-20% MINI						
C302	9965 000 14008	. SMD 0.1μF 50V +80%~-20%						
C303	9965 000 14028	.SMD 47pF 50V +/-5% 0603						
C304	9965 000 14028	.SMD 47pF 50V +/-5% 0603						
C305	9965 000 14028	.SMD 47pF 50V +/-5% 0603						
C306	9965 000 14008	. SMD 0.1μF 50V +80%~-20%						
C307	9965 000 14027	.ELEC 47μF 16V +/-20% MINI						
C308	9965 000 14008	. SMD 0.1μF 50V +80%~-20%						
C309	9965 000 14008	. SMD 0.1μF 50V +80%~-20%						
C310	9965 000 14027	.ELEC 47μF 16V +/-20% MINI						
C311	9965 000 14026	. ELEC 10μF 16V +/-20%SMALL						
C312	9965 000 14011	. SMD 22pF 50V +/-5% C						
C313	9965 000 14011	. SMD 22pF 50V +/-5% C						
C314	9965 000 14028	.SMD 47pF 50V +/-5% 0603						
C315	9965 000 14008	. SMD 0.1μF 50V +80%~-20%						
C316	9965 000 14008	. SMD 0.1μF 50V +80%~-20%						
C317	9965 000 13965	. SMD 100pF 50V +/-5% C						
R301	9965 000 13987	RES. SMD 100 Ω 1/16W +/-5%						
R302	9965 000 13987	RES. SMD 100 Ω 1/16W +/-5%						
R303	9965 000 13987	RES. SMD 100 Ω 1/16W +/-5%						
R304	9965 000 13989	RES. SMD 10k Ω 1/16W +/-5%						
R305	9965 000 13989	RES. SMD 10k Ω 1/16W +/-5%						
R306	9965 000 13989	RES. SMD 10k Ω 1/16W +/-5%						
R307	9965 000 13987	RES. SMD 100 Ω 1/16W +/-5%						
R308	9965 000 14025	RES.SMD 51k 1/16W +/-5% 0603						
R309	9965 000 13989	RES. SMD 10k Ω 1/16W +/-5%						
R310	9965 000 13989	RES. SMD 10k Ω 1/16W +/-5%						
R311	9965 000 13989	RES. SMD 10k Ω 1/16W +/-5%						
R312	9965 000 13989	RES. SMD 10k Ω 1/16W +/-5%						
R313	9965 000 13989	RES. SMD 10k Ω 1/16W +/-5%						
R314	9965 000 13997	RES. SMD 470 Ω 1/16W +/-5%						
R315	9965 000 13989	RES. SMD 10k Ω 1/16W +/-5%						
R316	9965 000 13998	RES. SMD 4.7k Ω 1/16W +/-5%						
R317	9965 000 13998	RES. SMD 4.7k Ω 1/16W +/-5%						
R318	9965 000 13998	RES. SMD 4.7k Ω 1/16W +/-5%						
R319	9965 000 13989	RES. SMD 10k Ω 1/16W +/-5%						
R320	9965 000 13989	RES. SMD 10k Ω 1/16W +/-5%						
R321	9965 000 13989	RES. SMD 10k Ω 1/16W +/-5%						
R322	9965 000 13989	RES. SMD 10k Ω 1/16W +/-5%						
R323	9965 000 13989	RES. SMD 10k Ω 1/16W +/-5%						
R324	9965 000 13998	RES. SMD 4.7k Ω 1/16W +/-5%						
D301	9965 000 14021	SMD DIODE 4148						
D302	9965 000 14021	SMD DIODE 4148						
D303	9965 000 14021	SMD DIODE 4148						
D304	9965 000 14023	LED Y/G BT-H603GYK-3						
D305	4822 130 30621	1N4148						
REM301	9965 000 14020	IR RECEIVER MODULE HK381B						
Q301	9965 000 13954	TRANSISTOR C9014C NPN E.B.C						
Q302	9965 000 13954	TRANSISTOR C9014C NPN E.B.C						
U301	8241 010 40440							
U302	9965 000 14022	IC PIC16C54 DIP18 NEED PROGRAM						
VFD1	9965 000 14024	VFD HNV-05SS32						
Karaoke Board								
Various								
CN401	9965 000 14040	HS 7P 2468#26 60 PH-7Y/SAN-7Y						
MIC401	9965 000 14041	EARPHONE SOCKET CK3-3.5-3WK-E						
Power Board								
Various								
CN201	9965 000 14088	JACK SUPER WOOFER (2128SZ)						
CN202	9965 000 14018	CONN.PH-8A 8PinF PITCH=2.0MM						
CN203	9965 000 14087	HS 10P26 230 TJC3-10Y/SCN-10Y						
CN204	9965 000 14086	CONN. VH-4A 4PinF PITCH=3.96MM						
CN205	9965 000 14018	CONN.PH-8A 8PinF PITCH=2.0MM						
Power Board								
Various								
C201	9965 000 14071	. ELEC 470 μF 25V +/-20%						
C203	9965 000 14080	. M.P.E. 0.033μF 50V +/-5%						
C204	9965 000 14081	. M.P.E. 5600pF 50V +/-5%						
C205	9965 000 14069	. ELEC 100 μF 16V +/-20%						
C206	9965 000 14073	. ELEC 470 μF 35V +/-20%						
C207	9965 000 14072	. ELEC 100 μF 35V +/-20%						
C208	9965 000 14036	. ELEC 100 μF 25V +/-20%						
C209	9965 000 14075	. ELEC 10 μF 50V +/-20%						
C210	9965 000 14068	. ELEC 470 μF 16V +/-20%						
C211	9965 000 14076	. ELEC 47 μF 50V +/-20%						
C212	9965 000 13962	. CER 0.1 μF 50V +/-5% F						
C213	9965 000 14067	. ELEC 1000 μF 16V +/-20%						
C214	9965 000 14070	. ELEC 220 μF 16V +/-20%						
C215	9965 000 14069	. ELEC 100 μF 16V +/-20%						
C216	9965 000 14075	. ELEC 10 μF 50V +/-20%						
C217	9965 000 14072	. ELEC 100 μF 35V +/-20%						
C218	9965 000 14076	. ELEC 47 μF 50V +/-20%						
C219	9965 000 14075	. ELEC 10 μF 50V +/-20%						
C220	9965 000 14076	. ELEC 47 μF 50V +/-20%						
C221	9965 000 14039	. ELEC 4.7 μF 50V +/-20%						
C222	9965 000 14039	. ELEC 4.7 μF 50V +/-20%						
C223	9965 000 14077	.CER 3.3nF 50V +/-10% TUBμF						
C224	9965 000 14078	. CER 560 pF 50V +/-5%						
C226	9965 000 14077	.CER 3.3nF 50V +/-10% TUBμF						
C227	9965 000 14039	. ELEC 4.7 μF 50V +/-20%						
C228	9965 000 14078	. CER 560 pF 50V +/-5%						
C229	9965 000 14079	.CER 0.068μF 50V +80/-20%						
C230	9965 000 14079	.CER 0.068μF 50V +80/-20%						
C231	9965 000 13962	. CER 0.1 μF 50V +/-5% F						
C232	9965 000 13962	. CER 0.1 μF 50V +/-5% F						
C233	9965 000 14076	. ELEC 47 μF 50V +/-20%						
C234	9965 000 13962	. CER 0.1 μF 50V +/-5% F						
C235	9965 000 14069	. ELEC 100 μF 16V +/-20%						

C236	9965 000 14074	ELEC 47 μ F 50V +/-20%
C237	9965 000 13962	. CER 0.1 μ F 50V +/-5% F
C238	9965 000 13962	. CER 0.1 μ F 50V +/-5% F



F201	9965 000 14066	PTC 30V/40A
R201	9965 000 14059	RES. C.F. 22 Ω 1/4W +/-5%
R202	9965 000 13955	RES. C.F. 1k Ω 1/6W +/-5%
R203	9965 000 14050	RES. C.F. 10k Ω 1/6W +/-5%
R204	9965 000 13955	RES. C.F. 1k Ω 1/6W +/-5%
R205	9965 000 14050	RES. C.F. 10k Ω 1/6W +/-5%
R207	9965 000 14053	RES. C.F. 15k Ω 1/6W +/-5%
R208	9965 000 14053	RES. C.F. 15k Ω 1/6W +/-5%
R209	9965 000 14055	RES. C.F. 33k Ω 1/6W +/-5%
R210	9965 000 14048	RES. C.F. 10 Ω 1/6W +/-5%
R211	9965 000 14056	RES. C.F. 390 Ω 1/6W +/-5%
R212	9965 000 14055	RES. C.F. 33k Ω 1/6W +/-5%
R213	9965 000 14062	RES. M.F. 22k Ω 1/6W +/-1%
R214	9965 000 14065	RES.M.O.F 51k 1/6W +/-1%
R215	9965 000 14064	RES.F.O.M 33k 1/6W +/-1%
R216	9965 000 14049	RES. C.F. 100 Ω 1/6W +/-5%
R217	9965 000 14051	RES. C.F. 12 Ω 1/6W +/-5%
R218	9965 000 14048	RES. C.F. 10 Ω 1/6W +/-5%
R219	9965 000 13955	RES. C.F. 1k Ω 1/6W +/-5%
R220	9965 000 14061	RES.M.O.F 200 1/6W +/-1%
R221	9965 000 14063	RES. M.F. 3.3k Ω 1/6W +/-1%
R222	9965 000 13955	RES. C.F. 1k Ω 1/6W +/-5%
R223	9965 000 13955	RES. C.F. 1k Ω 1/6W +/-5%
R224	9965 000 14060	RES. M.F. 10k Ω 1/6W +/-1%
R225	9965 000 13955	RES. C.F. 1k Ω 1/6W +/-5%
R226	9965 000 14048	RES. C.F. 10 Ω 1/6W +/-5%
R227	9965 000 14058	RES. C.F. 5.1k Ω 1/6W +/-5%
R228	9965 000 14057	RES. C.F. 510 Ω 1/6W +/-5%
R229	9965 000 14048	RES. C.F. 10 Ω 1/6W +/-5%
R230	9965 000 13955	RES. C.F. 1k Ω 1/6W +/-5%
R231	9965 000 14058	RES. C.F. 5.1k Ω 1/6W +/-5%
R232	9965 000 14052	RES. C.F. 13k Ω 1/6W +/-5%
R233	9965 000 14053	RES. C.F. 15k Ω 1/6W +/-5%
R234	9965 000 14050	RES. C.F. 10k Ω 1/6W +/-5%
R235	9965 000 14050	RES. C.F. 10k Ω 1/6W +/-5%
R237	9965 000 14050	RES. C.F. 10k Ω 1/6W +/-5%
R238	9965 000 14050	RES. C.F. 10k Ω 1/6W +/-5%
R239	9965 000 14053	RES. C.F. 15k Ω 1/6W +/-5%
R240	9965 000 13955	RES. C.F. 1k Ω 1/6W +/-5%
R241	9965 000 14052	RES. C.F. 13k Ω 1/6W +/-5%
R242	9965 000 14050	RES. C.F. 10k Ω 1/6W +/-5%
R244	9965 000 14054	RES. C.F. 2k Ω 1/6W +/-5%



L201	9965 000 14083	LINE TER 2*38 μ H
L202	9965 000 14085	COIL WIDTH 10 μ H
L203	9965 000 14082	COIL CHOKE 10 μ H +/-10%
L204	9965 000 14085	COIL WIDTH 10 μ H
L205	9965 000 14085	COIL WIDTH 10 μ H
L206	9965 000 14085	COIL WIDTH 10 μ H
L207	9965 000 14082	COIL CHOKE 10 μ H +/-10%
L208	9965 000 14082	COIL CHOKE 10 μ H +/-10%



D201	4822 130 31438	1N4001G
D202	4822 130 30621	1N4148
D204	9965 000 14043	DIODE FR102 (FAST RECOVERY)
D205	4822 130 83883	FR202
D206	9965 000 14044	DIODE ZENER 10V 1/2W +/-5%
D207	4822 130 83883	FR202
D208	4822 130 82865	31DQ04
D209	9965 000 14043	DIODE FR102 (FAST RECOVERY)
D211	9965 000 14043	DIODE FR102 (FAST RECOVERY)
D212	9965 000 14044	DIODE ZENER 10V 1/2W +/-5%
D213	9965 000 14042	DIODE ZENER 19V5-20V4 1/2W
D214	4822 130 31438	1N4001G
D215	9965 000 14045	DIODE ZENER 2V4 1/2W 5%



Q201	9965 000 13954	TRANSISTOR C9014C NPN E.B.C
Q202	9965 000 13954	TRANSISTOR C9014C NPN E.B.C
Q203	9965 000 14046	TRANSISTOR 2SK1086

Q204	4822 130 63664	8050C
Q205	4822 130 63082	9015C
Q206	4822 130 10058	SS8550C
Q207	9965 000 13954	TRANSISTOR C9014C NPN E.B.C
Q208	9965 000 13954	TRANSISTOR C9014C NPN E.B.C
Q209	9965 000 13954	TRANSISTOR C9014C NPN E.B.C
T201	9965 000 14084	TRANSFORMER CONV. BCK-EI2212B-
U201	9965 000 13977	IC 78L05 VOLT REGULATOR 0.5A
U202	4822 209 90087	KA7812
U203	4822 209 81397	TL431CLPST
U204	9965 000 14047	IC PQ05RD21 TO-220 SHARP
U205	4822 209 17186	PT2399

DVD580M /001 Mechanical**Various**

1001	9965 000 13928	ADAPTER 12VDC 2.5A
1002	9965 000 14560	ASS'Y - REMOTE HANDSET
1003	9965 000 13930	LOADER TD-S202
1004	9965 000 14561	SCART CONN20P M/M NON-STANDARD
1005	9965 000 13932	CONN. 20PX80X1.25 B
1009	9965 000 13933	POWER CORD 1880 +/- 20MM
1011	9965 000 13935	CAB.BACK
1012	9965 000 13936	FRONT PANEL
1013	9965 000 14571	CAB.LOWER
1014	9965 000 13938	CAB.UPPER
1015	9965 000 13939	FUNCTION KEY
1016	9965 000 13940	LENS
1018	9965 000 13942	DISK BRUSH
1037	9965 000 14572	BACKPLATE
1038	9965 000 13944	STAND
1040	9965 000 13945	LOCKNUT
1052	9965 000 14573	USER' INSTRUCTION
1053	9965 000 14574	ASS'Y - AV BD
1054	9965 000 14575	ASS'Y - DECODER BD
1055	9965 000 13950	ASS'Y - FRONT CTL BD
1057	9965 000 14576	ASS'Y - POWER BD

AV Board**Various**

CN501	9965 000 13972	RCA SOCKET AV-3.2-6W-14
CN502	9965 000 13968	CONN.FFC FP-20 PITCH=1.25MM
CN503	9965 000 14577	SCART SOCKET 21 PINS SS101-P
CN504	9965 000 13974	SOCKET S-W13-M
CN505	9965 000 13969	RCA JACK
CN506	9965 000 13970	RCA SOCKET
CN507	9965 000 13953	OPT TERMINAL
CN508	9965 000 13973	S-TERMINAL SOCKET

-II-

C501	9965 000 13961	. ELEC 47 μ F 16V +/-20%
C502	9965 000 13962	. CER 0.1 μ F 50V +/-5% F
C503	9965 000 14578	. CER 100 pF 50V +/-5% CH
C504	9965 000 13962	. CER 0.1 μ F 50V +/-5% F
C505	9965 000 14578	. CER 100 pF 50V +/-5% CH
C506	9965 000 13963	. CER 220 pF 50V +/-5%
C508	9965 000 13962	. CER 0.1 μ F 50V +/-5% F
C509	9965 000 14578	. CER 100 pF 50V +/-5% CH
C510	9965 000 13964	. CER 680pF 50V +/-5% C
C511	9965 000 14579	. ELEC 10 μ F 16V +/-20%
C512	9965 000 13964	. CER 680pF 50V +/-5% C
C513	9965 000 13964	. CER 680pF 50V +/-5% C
C514	9965 000 13964	. CER 680pF 50V +/-5% C
C515	9965 000 14580	. CER 0.022 μ F 50V 20% F
C516	9965 000 13961	. ELEC 47 μ F 16V +/-20%
C517	9965 000 13964	. CER 680pF 50V +/-5% C
C518	9965 000 13964	. CER 680pF 50V +/-5% C
C519	9965 000 13964	. CER 680pF 50V +/-5% C
C520	9965 000 14578	. CER 100 pF 50V +/-5% CH
C522	9965 000 13964	. CER 680pF 50V +/-5% C
C523	9965 000 14578	. CER 100 pF 50V +/-5% CH



R501	9965 000 13955	RES. C.F. 1k Ω 1/6W +/-5%
R503	9965 000 13956	RES. C.F. 220 Ω 1/6W +/-5%
R504	9965 000 13957	RES. C.F. 2.2k Ω 1/6W +/-5%
R505	9965 000 13955	RES. C.F. 1k Ω 1/6W +/-5%
R507	9965 000 13958	RES. C.F. 68 Ω 1/6W +/-5%
R508	9965 000 13959	RES. C.F. 330 Ω 1/6W +/-5%
R509	9965 000 14583	RES. C.F. 75 Ω 1/6W +/-5%
R511	9965 000 13960	RES. C.F. 470 Ω 1/6W +/-5%
R512	9965 000 13960	RES. C.F. 470 Ω 1/6W +/-5%
R513	9965 000 13960	RES. C.F. 470 Ω 1/6W +/-5%
R514	9965 000 14584	RES. C.F. 22k Ω 1/6W +/-5%
R515	9965 000 13955	RES. C.F. 1k Ω 1/6W +/-5%
R516	9965 000 13960	RES. C.F. 470 Ω 1/6W +/-5%
R517	9965 000 13960	RES. C.F. 470 Ω 1/6W +/-5%
R518	9965 000 13960	RES. C.F. 470 Ω 1/6W +/-5%
R519	9965 000 14585	RES. C.F. 47k Ω 1/6W +/-5%
R520	9965 000 13960	RES. C.F. 470 Ω 1/6W +/-5%
R521	9965 000 14586	RES. C.F. 200 Ω 1/6W +/-5%
R522	9965 000 14586	RES. C.F. 200 Ω 1/6W +/-5%
R523	9965 000 13960	RES. C.F. 470 Ω 1/6W +/-5%

R524	9965 000 14050	RES. C.F. 10k Ω 1/6W +/-5%
R525	9965 000 13960	RES. C.F. 470 Ω 1/6W +/-5%
R526	9965 000 13960	RES. C.F. 470 Ω 1/6W +/-5%
R527	9965 000 13960	RES. C.F. 470 Ω 1/6W +/-5%
R528	9965 000 14050	RES. C.F. 10k Ω 1/6W +/-5%
R529	9965 000 14050	RES. C.F. 10k Ω 1/6W +/-5%
R530	9965 000 14050	RES. C.F. 10k Ω 1/6W +/-5%
R531	9965 000 14050	RES. C.F. 10k Ω 1/6W +/-5%
R532	9965 000 14050	RES. C.F. 10k Ω 1/6W +/-5%
R533	9965 000 13960	RES. C.F. 470 Ω 1/6W +/-5%
R534	9965 000 13960	RES. C.F. 470 Ω 1/6W +/-5%
R535	9965 000 13960	RES. C.F. 470 Ω 1/6W +/-5%

L501 9965 000 13966 FERR. BEAD LB3.5X6



Q501	9965 000 14581	TRANSISTOR 3DG9014-C NPN
Q502	9965 000 14582	TRANSISTOR 3CG9015C PNP
Q503	9965 000 14581	TRANSISTOR 3DG9014-C NPN
Q504	9965 000 14581	TRANSISTOR 3DG9014-C NPN
Q505	9965 000 14581	TRANSISTOR 3DG9014-C NPN
Q506	9965 000 14581	TRANSISTOR 3DG9014-C NPN
Q507	9965 000 14581	TRANSISTOR 3DG9014-C NPN
Q508	9965 000 14581	TRANSISTOR 3DG9014-C NPN
Q509	9965 000 14581	TRANSISTOR 3DG9014-C NPN
Q510	9965 000 14581	TRANSISTOR 3DG9014-C NPN
Q511	9965 000 14581	TRANSISTOR 3DG9014-C NPN

MPEG Board**Various**

CN1	9965 000 13968	CONN.FFC FP-20 PITCH=1.25MM
CN3	9965 000 14018	CONN.PH-8A 8PIN PITCH=2.0MM
CN4	9965 000 14017	PIN BASE (*20X2 2.54MM)
CN6	9965 000 14016	PIN BASE *10 TJC3-10A
X2	9965 000 14015	CRYSTAL 27MHZ

-II-

C7	9965 000 14004	CAP.ELEC 100UF 16V +/- 20%
C8	9965 000 14004	CAP.ELEC 100UF 16V +/- 20%
C9	9965 000 14004	CAP.ELEC 100UF 16V +/- 20%
C11	9965 000 14008	CAP. SMD 0.1UF 50V +80%--20%
C13	9965 000 14008	CAP. SMD 0.1UF 50V +80%--20%
C14	9965 000 14008	CAP. SMD 0.1UF 50V +80%--20%
C15	9965 000 14012	CAP.SMD 470PF 50V +/-5% 0603
C16	9965 000 14011	CAP. SMD 22PF 50V +/-5% C
C17	9965 000 14012	CAP.SMD 470PF 50V +/-5% 0603
C18	9965 000 14012	CAP.SMD 470PF 50V +/-5% 0603
C19	9965 000 14011	CAP. SMD 22PF 50V +/-5% C
C20	9965 000 14012	CAP.SMD 470PF 50V +/-5% 0603
C21	9965 000 14012	CAP.SMD 470PF 50V +/-5% 0603
C22	9965 000 14011	CAP. SMD 22PF 50V +/-5% C
C23	9965 000 14012	CAP.SMD 470PF 50V +/-5% 0603
C24	9965 000 14012	CAP.SMD 470PF 50V +/-5% 0603
C25	9965 000 14011	CAP. SMD 22PF 50V +/-5% C

C26	9965 000 14012	CAP.SMD 470PF 50V +/-5% 0603
C32	9965 000 14003	CAP.ELEC 10UF 16V +/- 20% 2MM
C33	9965 000 14007	CAP. ELEC 10 UF 16V +/- 20%
C34	9965 000 14007	CAP. ELEC 10 UF 16V +/- 20%
C35	9965 000 14007	CAP. ELEC 10 UF 16V +/- 20%
C36	9965 000 14003	CAP.ELEC 10UF 16V +/- 20% 2MM
C37	9965 000 14007	CAP. ELEC 10 UF 16V +/- 20%
C38	9965 000 14008	CAP. SMD 0.1UF 50V +80%--20%
C39	9965 000 14003	CAP.ELEC 10UF 16V +/- 20% 2MM
C42	9965 000 14008	CAP. SMD 0.1UF 50V +80%--20%
C43	9965 000 14008	CAP. SMD 0.1UF 50V +80%--20%
C44	9965 000 14008	CAP. SMD 0.1UF 50V +80%--20%
C45	9965 000 14008	CAP. SMD 0.1UF 50V +80%--20%
C46	9965 000 14008	CAP. SMD 0.1UF 50V +80%--20%
C47	9965 000 14008	CAP. SMD 0.1UF 50V +80%--20%
C48	9965 000 14008	CAP. SMD 0.1UF 50V +80%--20%
C49	9965 000 14003	CAP.ELEC 10UF 16V +/- 20% 2MM
C50	9965 000 14008	CAP. SMD 0.1UF 50V +80%--20%
C51	9965 000 14008	CAP. SMD 0.1UF 50V +80%--20%
C52	9965 000 14008	CAP. SMD 0.1UF 50V +80%--20%
C53	9965 000 14008	CAP. SMD 0.1UF 50V +80%--20%
C54	9965 000 14008	CAP. SMD 0.1UF 50V +80%--20%
C55	9965 000 14008	CAP. SMD 0.1UF 50V +80%--20%
C56	9965 000 14008	CAP. SMD 0.1UF 50V +80%--20%
C57	9965 000 14008	CAP. SMD 0.1UF 50V +80%--20%
C58	9965 000 14008	CAP. SMD 0.1UF 50V +80%--20%
C59	9965 000 14008	CAP. SMD 0.1UF 50V +80%--20%
C60	9965 000 14008	CAP. SMD 0.1UF 50V +80%--20%
C61	9965 000 14008	CAP. SMD 0.1UF 50V +80%--20%
C62	9965 000 14008	CAP. SMD 0.1UF 50V +80%--20%
C63	9965 000 14003	CAP.ELEC 10UF 16V +/- 20% 2MM
C64	9965 000 14003	CAP.ELEC 10UF 16V +/- 20% 2MM
C65	9965 000 14003	CAP.ELEC 10UF 16V +/- 20% 2MM
C66	9965 000 14008	CAP. SMD 0.1UF 50V +80%--20%
C67	9965 000 14008	CAP. SMD 0.1UF 50V +80%--20%
C68	9965 000 14008	CAP. SMD 0.1UF 50V +80%--20%
C69	9965 000 14008	CAP. SMD 0.1UF 50V +80%--20%
C70	9965 000 14008	CAP. SMD 0.1UF 50V +80%--20%
C71	9965 000 14003	CAP.ELEC 10UF 16V +/- 20% 2MM
C72	9965 000 14008	CAP. SMD 0.1UF 50V +80%--20%
C73	9965 000 14003	CAP.ELEC 10UF 16V +/- 20% 2MM
C74	9965 000 14008	CAP. SMD 0.1UF 50V +80%--20%
C75	9965 000 14008	CAP. SMD 0.1UF 50V +80%--20%
C76	9965 000 14008	CAP. SMD 0.1UF 50V +80%--20%
C77	9965 000 14008	CAP. SMD 0.1UF 50V +80%--20%
C78	9965 000 14008	CAP. SMD 0.1UF 50V +80%--20%
C79	9965 000 14008	CAP. SMD 0.1UF 50V +80%--20%

C80	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%	R13	9965 000 13998	RES. SMD 4.7K OHM 1/16W +/-5%	R77	9965 000 13989	RES. SMD 10K OHM 1/16W +/-5%
C81	9965 000 14003	CAP.ELEC 10UF 16V +/- 20% 2MM	R16	9965 000 13998	RES. SMD 4.7K OHM 1/16W +/-5%	R78	9965 000 13985	RES. SMD 0 OHM 1/16W +/- 5%
C82	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%	R17	9965 000 13998	RES. SMD 4.7K OHM 1/16W +/-5%	R80	9965 000 13989	RES. SMD 10K OHM 1/16W +/-5%
C83	9965 000 14003	CAP.ELEC 10UF 16V +/- 20% 2MM	R18	9965 000 13998	RES. SMD 4.7K OHM 1/16W +/-5%	R81	9965 000 13996	RES. SMD 3.3K OHM 1/16W +/-5%
C86	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%	R20	9965 000 13998	RES. SMD 4.7K OHM 1/16W +/-5%	R82	9965 000 13991	RES. SMD 20K OHM 1/16W +/-5%
C87	9965 000 14588	CAP. ELEC 100 UF 16V +/- 20%	R23	9965 000 13994	RES. SMD 33 OHM 1/16W +/- 5%	R83	9965 000 13989	RES. SMD 10K OHM 1/16W +/-5%
C88	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%	R24	9965 000 13985	RES. SMD 0 OHM 1/16W +/- 5%	R84	9965 000 13985	RES. SMD 0 OHM 1/16W +/- 5%
C89	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%	R29	9965 000 13993	RES.SMD 270 1/16W 0603 +/-5%	R86	9965 000 13989	RES. SMD 10K OHM 1/16W +/-5%
C90	9965 000 14008	CAP. SMD 0.1UF 50V +80%~-20%	R30	9965 000 13994	RES. SMD 33 OHM 1/16W +/- 5%	R87	9965 000 13996	RES. SMD 3.3K OHM 1/16W +/-5%
C91	9965 000 14010	CAP. SMD 1500PF 50V +/- 10% B	R32	9965 000 13994	RES. SMD 33 OHM 1/16W +/- 5%	R88	9965 000 13991	RES. SMD 20K OHM 1/16W +/-5%
C92	9965 000 14009	CAP. SMD 150PF 50V +/-5% C	R33	9965 000 13985	RES. SMD 0 OHM 1/16W +/- 5%	R89	9965 000 13989	RES. SMD 10K OHM 1/16W +/-5%
C93	9965 000 14003	CAP.ELEC 10UF 16V +/- 20% 2MM	R34	9965 000 13994	RES. SMD 33 OHM 1/16W +/- 5%	R90	9965 000 13985	RES. SMD 0 OHM 1/16W +/- 5%
C95	9965 000 14010	CAP. SMD 1500PF 50V +/- 10% B	R35	9965 000 13985	RES. SMD 0 OHM 1/16W +/- 5%	R92	9965 000 13989	RES. SMD 10K OHM 1/16W +/-5%
C96	9965 000 14009	CAP. SMD 150PF 50V +/-5% C	R36	9965 000 13995	RES. SMD 330 OHM 1/16W +/-5%	R93	9965 000 13996	RES. SMD 3.3K OHM 1/16W +/-5%
C97	9965 000 14003	CAP.ELEC 10UF 16V +/- 20% 2MM	R37	9965 000 13998	RES. SMD 4.7K OHM 1/16W +/-5%	R94	9965 000 13991	RES. SMD 20K OHM 1/16W +/-5%
C99	9965 000 13985	RES. SMD 0 OHM 1/16W +/- 5%	R38	9965 000 13988	RES. SMD 1K OHM 1/16W +/- 5%	R95	9965 000 13989	RES. SMD 10K OHM 1/16W +/-5%
C101	9965 000 14010	. SMD 1500pF 50V +/-10% B	R39	9965 000 13988	RES. SMD 1K OHM 1/16W +/- 5%	R96	9965 000 13985	RES. SMD 0 OHM 1/16W +/- 5%
C102	9965 000 14009	. SMD 150pF 50V +/-5% C	R40	9965 000 13994	RES. SMD 33 OHM 1/16W +/- 5%	R98	9965 000 13989	RES. SMD 10K OHM 1/16W +/-5%
C103	9965 000 14003	.ELEC 10uF 16V +/-20% 2MM	R41	9965 000 13994	RES. SMD 33 OHM 1/16W +/- 5%	R99	9965 000 13996	RES. SMD 3.3K OHM 1/16W +/-5%
C105	9965 000 13985	RES. SMD 0 OHM 1/16W +/- 5%	R42	9965 000 13994	RES. SMD 33 OHM 1/16W +/- 5%	R100	9965 000 13991	RES. SMD 20k Ω 1/16W +/- 5%
C107	9965 000 14010	. SMD 1500pF 50V +/-10% B	R43	9965 000 13994	RES. SMD 33 OHM 1/16W +/- 5%	R101	9965 000 13989	RES. SMD 10k Ω 1/16W +/- 5%
C108	9965 000 14009	. SMD 150pF 50V +/-5% C	R44	9965 000 13990	RES. SMD 100K OHM 1/ 16W +/-5%	R102	9965 000 13985	RES. SMD 0 Ω 1/16W +/-5%
C109	9965 000 14003	.ELEC 10uF 16V +/-20% 2MM	R45	9965 000 13998	RES. SMD 4.7K OHM 1/16W +/-5%	R104	9965 000 13990	RES. SMD 100k Ω 1/16W +/- 5%
C111	9965 000 14010	. SMD 1500pF 50V +/-10% B	R46	9965 000 13998	RES. SMD 4.7K OHM 1/16W +/-5%	R105	9965 000 13989	RES. SMD 10k Ω 1/16W +/- 5%
C112	9965 000 14009	. SMD 150pF 50V +/-5% C	R48	9965 000 13985	RES. SMD 0 OHM 1/16W +/- 5%	R106	9965 000 13990	RES. SMD 100k Ω 1/16W +/- 5%
C113	9965 000 14003	.ELEC 10uF 16V +/-20% 2MM	R49	9965 000 13999	RES. SMD 75 OHM 1/16W +/- 5%	R108	9965 000 13988	RES. SMD 1k Ω 1/16W +/- 5%
C115	9965 000 13985	RES. SMD 0 OHM 1/16W +/- 5%	R50	9965 000 13987	RES. SMD 100 OHM 1/16W +/-5%	R109	9965 000 13989	RES. SMD 10k Ω 1/16W +/- 5%
C117	9965 000 14010	. SMD 1500pF 50V +/-10% B	R51	9965 000 13984	RES.C.F 62 OHM 1/4W +/- 5%	R123	9965 000 13985	RES. SMD 0 Ω 1/16W +/-5%
C118	9965 000 14009	. SMD 150pF 50V +/-5% C	R52	9965 000 13999	RES. SMD 75 OHM 1/16W +/- 5%	R128	9965 000 13985	RES. SMD 0 Ω 1/16W +/-5%
C119	9965 000 14003	.ELEC 10uF 16V +/-20% 2MM	R53	9965 000 13987	RES. SMD 100 OHM 1/16W +/-5%	R130	9965 000 13985	RES. SMD 0 Ω 1/16W +/-5%
C121	9965 000 14008	. SMD 0.1uF 50V +80%~- 20%	R54	9965 000 13984	RES.C.F 62 OHM 1/4W +/- 5%	R132	9965 000 13985	RES. SMD 0 Ω 1/16W +/-5%
C122	9965 000 14008	. SMD 0.1uF 50V +80%~- 20%	R55	9965 000 13999	RES. SMD 75 OHM 1/16W +/- 5%	R133	9965 000 13994	RES. SMD 33 Ω 1/16W +/- 5%
C123	9965 000 14008	. SMD 0.1uF 50V +80%~- 20%	R56	9965 000 13987	RES. SMD 100 OHM 1/16W +/-5%	R135	9965 000 13985	RES. SMD 0 Ω 1/16W +/-5%
C124	9965 000 14003	.ELEC 10uF 16V +/-20% 2MM	R57	9965 000 13984	RES.C.F 62 OHM 1/4W +/- 5%	R138	9965 000 13986	RES. SMD 10 Ω 1/16W +/- 5%
C125	9965 000 14008	. SMD 0.1uF 50V +80%~- 20%	R58	9965 000 13999	RES. SMD 75 OHM 1/16W +/- 5%	R163	9965 000 13994	RES. SMD 33 Ω 1/16W +/- 5%
C126	9965 000 14008	. SMD 0.1uF 50V +80%~- 20%	R59	9965 000 13987	RES. SMD 100 OHM 1/16W +/-5%	R166	9965 000 13985	RES. SMD 0 Ω 1/16W +/-5%
C127	9965 000 14008	. SMD 0.1uF 50V +80%~- 20%	R60	9965 000 13984	RES.C.F 62 OHM 1/4W +/- 5%	R167	9965 000 13985	RES. SMD 0 Ω 1/16W +/-5%
C128	9965 000 14003	.ELEC 10uF 16V +/-20% 2MM	R62	9965 000 13985	RES. SMD 0 OHM 1/16W +/- 5%	RN1	9965 000 14002	RES.NET 47*4 +/-5%
C130	9965 000 14587	. ELEC 470 uF 16V +/-20%	R64	9965 000 13985	RES. SMD 0 OHM 1/16W +/- 5%	RN2	9965 000 14002	RES.NET 47*4 +/-5%
C133	9965 000 14008	. SMD 0.1uF 50V +80%~- 20%	R65	9965 000 13989	RES. SMD 10K OHM 1/16W +/-5%	RN3	9965 000 14001	NETWORK RES. 33 OHM +/- 5%
CC4	9965 000 14011	CAP. SMD 22PF 50V +/-5% C	R66	9965 000 13996	RES. SMD 3.3K OHM 1/16W +/-5%	RN4	9965 000 14001	NETWORK RES. 33 OHM +/- 5%
CC5	9965 000 14011	CAP. SMD 22PF 50V +/-5% C	R67	9965 000 13991	RES. SMD 20K OHM 1/16W +/-5%	RN5	9965 000 14001	NETWORK RES. 33 OHM +/- 5%
			R68	9965 000 13989	RES. SMD 10K OHM 1/16W +/-5%	RN6	9965 000 14001	NETWORK RES. 33 OHM +/- 5%
			R69	9965 000 13985	RES. SMD 0 OHM 1/16W +/- 5%	RN7	9965 000 14001	NETWORK RES. 33 OHM +/- 5%
			R74	9965 000 13989	RES. SMD 10K OHM 1/16W +/-5%	RN8	9965 000 14001	NETWORK RES. 33 OHM +/- 5%
			R75	9965 000 13996	RES. SMD 3.3K OHM 1/16W +/-5%	RN9	9965 000 14001	NETWORK RES. 33 OHM +/- 5%
			R76	9965 000 13991	RES. SMD 20K OHM 1/16W +/-5%	RN10	9965 000 14000	NETWORK RES. 10 Ω 1/ 16W +/-5
						RN11	9965 000 14000	NETWORK RES. 10 Ω 1/ 16W +/-5
						RN12	9965 000 14000	NETWORK RES. 10 Ω 1/ 16W +/-5
						L1	9965 000 13966	FERR. BEAD LB3.5X6
						L2	9965 000 13966	FERR. BEAD LB3.5X6

L3	9965 000 13966	FERR. BEAD LB3.5X6
L6	9965 000 14013	SMD MAGNETISM BEAD
L7	9965 000 14013	SMD MAGNETISM BEAD
L10	9965 000 14014	INDUCTOR 2.2UH 0603
L11	9965 000 14014	INDUCTOR 2.2UH 0603
L12	9965 000 14014	INDUCTOR 2.2UH 0603
L13	9965 000 14014	INDUCTOR 2.2UH 0603
L14	9965 000 14013	SMD MAGNETISM BEAD
L15	9965 000 14013	SMD MAGNETISM BEAD



D2	4822 130 30621	1N4148
D3	4822 130 30621	1N4148



Q1	4822 130 62718	JE8050C
Q2	9965 000 14589	TRANSISTOR 3CG9012H(PNP)
Q3	9965 000 14589	TRANSISTOR 3CG9012H(PNP)
Q4	9965 000 14589	TRANSISTOR 3CG9012H(PNP)
Q5	9965 000 14589	TRANSISTOR 3CG9012H(PNP)
Q12	9965 000 14582	TRANSISTOR 3CG9015C PNP
Q13	9965 000 14582	TRANSISTOR 3CG9015C PNP
U1	9965 000 14590	IC ES6018
U2	9965 000 14593	IC EEPROM 24C02N SI27C
U3	9965 000 14594	IC HY57V641620HGT-H
U5	9965 000 13983	IC D/A WM8746
U6	9965 000 13978	IC 3PIN VOLTAGE V6300 SOT-23
U8	9965 000 13980	IC HY29F800
U9	9965 000 14591	IC RC4558DR
U10	9965 000 14591	IC RC4558DR
U11	9965 000 14591	IC RC4558DR
U12	9965 000 14592	IC

Front Board

Various

CN301	9965 000 14030	HS 8P26 260 PH-8Y/JC20-8Y
CN302	9965 000 14029	HS 9P2468#24 280 PH-9Y/JC20-9Y
K301	9965 000 14031	TACT SWITCH TSAB-1
K302	9965 000 14031	TACT SWITCH TSAB-1
K303	9965 000 14031	TACT SWITCH TSAB-1
K304	9965 000 14031	TACT SWITCH TSAB-1
K305	9965 000 14031	TACT SWITCH TSAB-1
K306	9965 000 14031	TACT SWITCH TSAB-1



C301	9965 000 14027	.ELEC 47µF 16V +/-20% MINI
C302	9965 000 14008	.SMD 0.1µF 50V +80%-- 20%
C303	9965 000 14028	.SMD 47pF 50V +/-5% 0603
C304	9965 000 14028	.SMD 47pF 50V +/-5% 0603
C305	9965 000 14028	.SMD 47pF 50V +/-5% 0603
C306	9965 000 14008	.SMD 0.1µF 50V +80%-- 20%
C307	9965 000 14027	.ELEC 47µF 16V +/-20% MINI
C308	9965 000 14008	.SMD 0.1µF 50V +80%-- 20%
C309	9965 000 14008	.SMD 0.1µF 50V +80%-- 20%
C310	9965 000 14027	.ELEC 47µF 16V +/-20% MINI
C311	9965 000 14026	.ELEC 10µF 16V +/- 20%SMALL
C312	9965 000 14011	.SMD 22pF 50V +/-5% C
C313	9965 000 14011	.SMD 22pF 50V +/-5% C
C314	9965 000 14028	.SMD 47pF 50V +/-5% 0603
C315	9965 000 14008	.SMD 0.1µF 50V +80%-- 20%
C316	9965 000 14008	.SMD 0.1µF 50V +80%-- 20%
C317	9965 000 13965	.SMD 100pF 50V +/-5% C



R301	9965 000 13987	RES. SMD 100 Ω 1/16W +/- 5%
R302	9965 000 13987	RES. SMD 100 Ω 1/16W +/- 5%
R303	9965 000 13987	RES. SMD 100 Ω 1/16W +/- 5%
R304	9965 000 13989	RES. SMD 10k Ω 1/16W +/- 5%
R305	9965 000 13989	RES. SMD 10k Ω 1/16W +/- 5%
R306	9965 000 13989	RES. SMD 10k Ω 1/16W +/- 5%
R307	9965 000 13987	RES. SMD 100 Ω 1/16W +/- 5%
R308	9965 000 14025	RES.SMD 51k 1/16W +/-5% 0603
R309	9965 000 13989	RES. SMD 10k Ω 1/16W +/- 5%
R310	9965 000 13989	RES. SMD 10k Ω 1/16W +/- 5%
R311	9965 000 13989	RES. SMD 10k Ω 1/16W +/- 5%
R312	9965 000 13989	RES. SMD 10k Ω 1/16W +/- 5%
R313	9965 000 13989	RES. SMD 10k Ω 1/16W +/- 5%
R314	9965 000 13997	RES. SMD 470 Ω 1/16W +/- 5%
R315	9965 000 13989	RES. SMD 10k Ω 1/16W +/- 5%
R316	9965 000 13998	RES. SMD 4.7k Ω 1/16W +/- 5%
R317	9965 000 13998	RES. SMD 4.7k Ω 1/16W +/- 5%
R318	9965 000 13998	RES. SMD 4.7k Ω 1/16W +/- 5%
R319	9965 000 13989	RES. SMD 10k Ω 1/16W +/- 5%
R320	9965 000 13989	RES. SMD 10k Ω 1/16W +/- 5%
R321	9965 000 13989	RES. SMD 10k Ω 1/16W +/- 5%
R322	9965 000 13989	RES. SMD 10k Ω 1/16W +/- 5%
R323	9965 000 13989	RES. SMD 10k Ω 1/16W +/- 5%
R324	9965 000 13998	RES. SMD 4.7k Ω 1/16W +/- 5%



D301	9965 000 14021	SMD DIODE 4148
D302	9965 000 14021	SMD DIODE 4148
D303	9965 000 14021	SMD DIODE 4148
D304	9965 000 14023	LED Y/G BT-H603GYK-3
D305	4822 130 30621	1N4148
REM3		
01	9965 000 14020	IR RECEIVER MODULE HK381B



Q301	9965 000 13954	TRANSISTOR C9014C NPN E.B.C
Q302	9965 000 13954	TRANSISTOR C9014C NPN E.B.C
U301	8241 010 40440	IC PT6312 QFP44
U302	9965 000 14022	IC PIC16C54 DIP18 NEED PROGRAM
VFD1	9965 000 14024	VFD HNV-05SS32

DC-DC Board

Various

CN201	9965 000 14088	JACK SUPER WOOFER (2128SZ)
CN202	9965 000 14018	CONN.PH-8A 8PinF PITCH=2.0MM
CN203	9965 000 14595	HS 11P26 230 TJC3-11Y/ SCN-11Y
CN204	9965 000 14086	CONN. VH-4A 4PinF PITCH=3.96MM



C201	9965 000 14596	.ELEC 470 µF 25V +/-20%
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C202	9965 000 14597	.M.P.E. 0.01µF 50V +/-5%
C203	9965 000 14597	.M.P.E. 0.01µF 50V +/-5%
C204	9965 000 14081	.M.P.E. 5600pF 50V +/-5%
C205	9965 000 14069	.ELEC 100 µF 16V +/-20%
C206	9965 000 14073	.ELEC 470 µF 35V +/-20%
C207	9965 000 14598	.ELEC 100 µF 35V +/-20%
C208	9965 000 14036	.ELEC 100 µF 25V +/-20%
C209	9965 000 14075	.ELEC 10 µF 50V +/-20%
C210	9965 000 14599	.ELEC 470 µF 16V +/-20%
C211	9965 000 14076	.ELEC 47 µF 50V +/-20%
C212	9965 000 13962	.CER 0.1 µF 50V +/-5% F
C213	9965 000 14067	.ELEC 1000 µF 16V +/-20%
C214	9965 000 14070	.ELEC 220 µF 16V +/-20%
C215	9965 000 14069	.ELEC 100 µF 16V +/-20%
C216	9965 000 14075	.ELEC 10 µF 50V +/-20%
C217	9965 000 14598	.ELEC 100 µF 35V +/-20%
C218	9965 000 14076	.ELEC 47 µF 50V +/-20%
C219	9965 000 14075	.ELEC 10 µF 50V +/-20%
C220	9965 000 14076	.ELEC 47 µF 50V +/-20%
C236	9965 000 14076	.ELEC 47 µF 50V +/-20%
C237	9965 000 13962	.CER 0.1 µF 50V +/-5% F
C238	9965 000 13962	.CER 0.1 µF 50V +/-5% F



R201	9965 000 14059	RES. C.F. 22 Ω 1/4W +/-5%
R202	9965 000 13955	RES. C.F. 1k Ω 1/6W +/-5%
R203	9965 000 14050	RES. C.F. 10k Ω 1/6W +/-5%
R204	9965 000 13955	RES. C.F. 1k Ω 1/6W +/-5%
R205	9965 000 14050	RES. C.F. 10k Ω 1/6W +/-5%
R206	9965 000 14066	PTC 30V/40A
R207	9965 000 14053	RES. C.F. 15k Ω 1/6W +/-5%
R209	9965 000 14055	RES. C.F. 33k Ω 1/6W +/-5%
R210	9965 000 14048	RES. C.F. 10 Ω 1/6W +/-5%
R211	9965 000 14605	RES. C.F. 150 Ω 1/6W +/-5%
R212	9965 000 14055	RES. C.F. 33k Ω 1/6W +/-5%
R213	9965 000 14062	RES. M.F. 22k Ω 1/6W +/-1%
R214	9965 000 14065	RES.M.O.F 51k 1/6W +/-1%
R215	9965 000 14064	RES.F.O.M 33k 1/6W +/-1%
R216	9965 000 14049	RES. C.F. 100 Ω 1/6W +/-5%
R217	9965 000 14051	RES. C.F. 12 Ω 1/6W +/-5%
R218	9965 000 14048	RES. C.F. 10 Ω 1/6W +/-5%
R219	9965 000 13955	RES. C.F. 1k Ω 1/6W +/-5%
R220	9965 000 14606	RES. C.F. 51 Ω 1/6W +/-5%
R221	9965 000 14607	RES. M.F. 300 Ω 1/6W +/-5%
R222	9965 000 14605	RES. C.F. 150 Ω 1/6W +/-5%
R223	9965 000 13960	RES. C.F. 470 Ω 1/6W +/-5%
R224	9965 000 13955	RES. C.F. 1k Ω 1/6W +/-5%
R225	9965 000 13955	RES. C.F. 1k Ω 1/6W +/-5%
R226	9965 000 14048	RES. C.F. 10 Ω 1/6W +/-5%
R227	9965 000 14058	RES. C.F. 5.1k Ω 1/6W +/-5%
R228	9965 000 14057	RES. C.F. 510 Ω 1/6W +/-5%
R229	9965 000 14048	RES. C.F. 10 Ω 1/6W +/-5%
R230	9965 000 13955	RES. C.F. 1k Ω 1/6W +/-5%
R240	9965 000 13955	RES. C.F. 1k Ω 1/6W +/-5%
R242	9965 000 13956	RES. C.F. 220 Ω 1/6W +/-5%
R243	9965 000 14050	RES. C.F. 10k Ω 1/6W +/-5%



D201	4822 130 31438	1N4001G
D202	4822 130 30621	1N4148
D203	9965 000 14600	DIODE ZENER 16V 1/2W +/- 5%
D204	9965 000 14043	DIODE FR102 (FAST RECOVERY)
D205	4822 130 83883	FR202
D206	9965 000 14044	DIODE ZENER 10V 1/2W +/- 5%
D207	9965 000 14601	DIODE 31DQ06
D208	9965 000 14601	DIODE 31DQ06
D209	9965 000 14043	DIODE FR102 (FAST RECOVERY)
D211	9965 000 14043	DIODE FR102 (FAST RECOVERY)
D212	9965 000 14044	DIODE ZENER 10V 1/2W +/- 5%
D213	9965 000 14042	DIODE ZENER 19V5-20V4 1/2W
D214	4822 130 31438	1N4001G
D215	9965 000 14045	DIODE ZENER 2V4 1/2W 5%



L201	9965 000 14083	LINE TER 2*38µH
L202	9965 000 14085	COIL WIDTH 10µH
L203	9965 000 14082	COIL CHOKE 10µH +/-10%
L204	9965 000 14085	COIL WIDTH 10µH
L205	9965 000 14085	COIL WIDTH 10µH
L206	9965 000 14085	COIL WIDTH 10µH
L207	9965 000 14082	COIL CHOKE 10µH +/-10%



Q201	9965 000 14581	TRANSISTOR 3DG9014-C NPN
Q202	9965 000 14581	TRANSISTOR 3DG9014-C NPN
Q203	9965 000 14602	TRANSISTOR IRFZ44N (MOS)
Q204	4822 130 62718	JE8050C
Q205	9965 000 14582	TRANSISTOR 3CG9015C PNP
Q206	9965 000 14603	TRANSISTOR KTC8550C
Q207	9965 000 14581	TRANSISTOR 3DG9014-C NPN
Q208	9965 000 14581	TRANSISTOR 3DG9014-C NPN
Q209	9965 000 14581	TRANSISTOR 3DG9014-C NPN
T201	9965 000 14608	TRANSFORMER CONV. BK-2202A
U201	9965 000 14592	IC
U202	4822 209 81726	MC7812CT
U203	9965 000 14609	IC AM431LP
U204	9965 000 14047	IC PQ05RD21 TO-220 SHARP