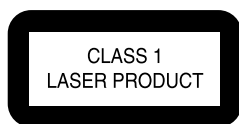


Service
Service
Service



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300502

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
 DVD-R & DVD+RW

VIDEO PERFORMANCE

CVBS 1 Vpp into 75 ohm
 RGB (SCART) 0.7 Vpp into 75 ohm
 Black Level Shift On/Off
 Video Shift Left/Right

AUDIO FORMAT

Digital	MPEG/AC-3/DTS	Compressed
		Digital
	PCM	16, 20, 24 bits
		fs, 44.1, 48, 96 kHz

MPEG MP3 MPEG Audio L3
 Analogue Stereo Sound
 Full decoding of Dolby Digital multi-channel surround sound

AUDIO PERFORMANCE

DA Converter	24 bits
Signal-Noise (1kHz)	90 dB
Dynamic Range (1kHz)	80 dB
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
MPEG MP3	MPEG Audio L3

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

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

CONNECTIONS

SCART	Euroconnector
Video Output	Cinch (yellow)
Audio L+R output	Cinch (white/red)
Digital Output	1 coaxial
	IEC958 for CDD A / LPCM/
	MPEG1
	IEC1937 for MPEG2, Dolby
	Digital and DTS

CABINET

Dimensions (w x h x d)	435 x 293 x 75 mm
Weight	Approximately 2.7 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

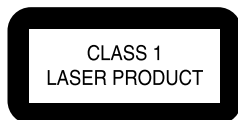


Figure 2-1

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:

CAUTION VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN AVOID EXPOSURE TO BEAM
 ADVARSEL SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING UNDGÅ UDSÆTTELSE FOR STRÅLING
 ADVARSEL SYNLIG OG USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES UNNGÅ EKSPONERING FOR STRÅLEN
 VARNING SYNLIG OCH OSYNLIG LASERSTRÅLING NÅR DENNA DEL ÅR ÖPPNAD BETRÄKTA EJ STRÅLEN
 VARO! AVATT AESSA OLET ALTTIINA NÄKYVÄLLE JA NÄKYMÄTT ÖMÄLLE LASER SÄTELYLLE. ÄLÄ KÄT SO SÄTEESEEN
 VORSICHT SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG WENN ABDECKUNG GEÖFFNET NICHT DEM STRAHL AUSSETZEN
 DANGER VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN AVOID DIRECT EXPOSURE TO BEAM
 ATTENTION RAYONNEMENT LASER VISIBLE ET INVISIBLE EN CAS D'OUVERTURE EXPOSITION DANGEREUSE AU FAISCEAU

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.



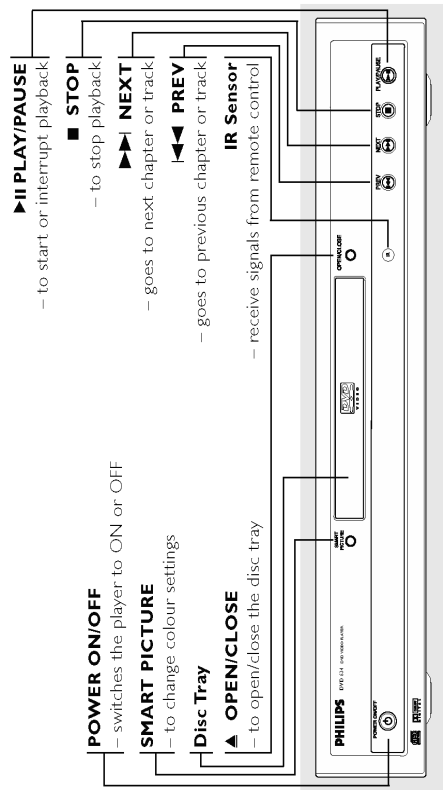
Figure 2-4

3. Directions for Use

2

Functional Overview

Front and Rear Panels



AUDIO OUT (Left/Right)

- connect to AUDIO inputs of an amplifier, receiver or stereo system

COAXIAL (Digital audio out)

- connect to AUDIO inputs of a digital (coaxial) audio equipment

CVBS (VIDEO OUT)

- connect to CVBS Video inputs of a TV

MAINS (AC Power Cord)

- connect to a standard AC outlet

TV OUT (VIDEO OUT)

- connect to a TV with SCART

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

1

Introduction

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. We have tried to make the packaging 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 drawer to be opened.

- 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
	- Description refers to playback of SuperVideo CDs

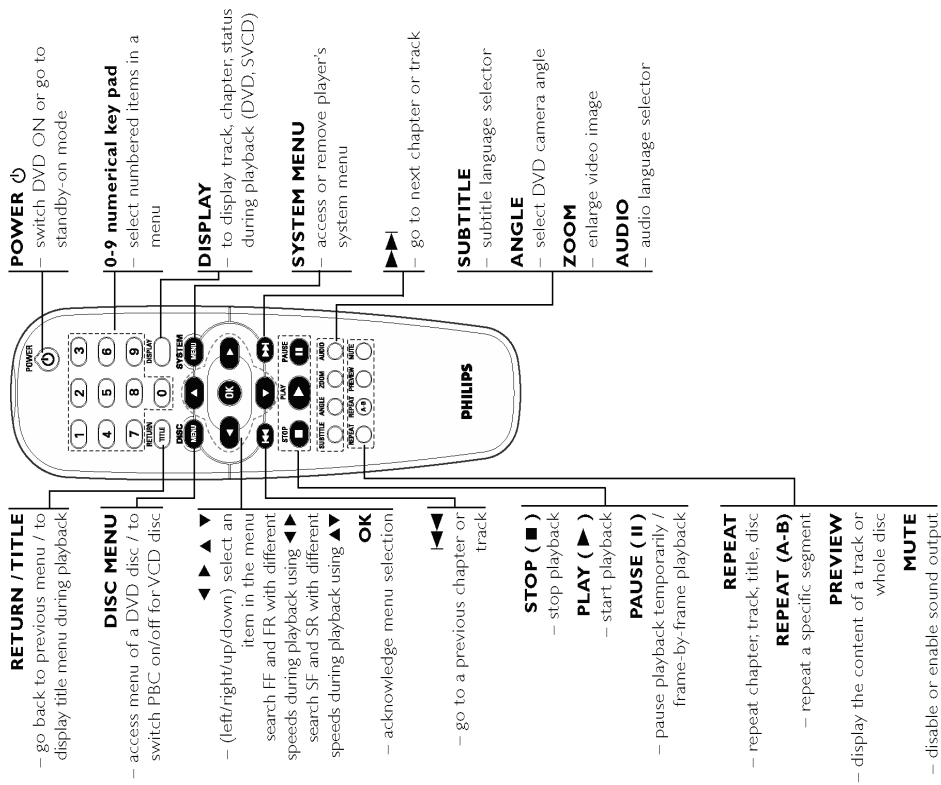
Helpful Hints!

- **Some DVD video discs require specific functions or allow only limited functions during playback.**
- **"X" may appears on the TV screen which means that the function is not available on that specific DVD video disc.**

Functional Overview

3

Remote Control



Note:

- Press numerical key pad "1" for 2 seconds to OPEN/CLOSE disc tray.

Preparation

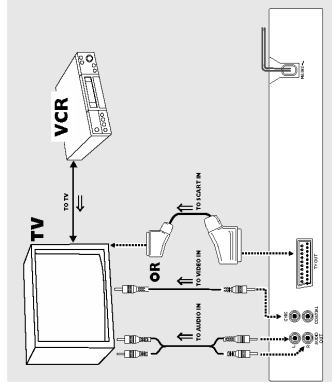
4

Basic Connections

- Please refer to the instruction manuals 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.

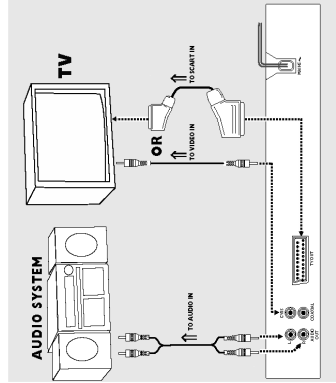
The following guidelines are options for the best picture and sound quality available on your DVD player:

- Picture**
Use the CVBS Video Output for good picture quality.
Use SCART Output for best picture quality.
- Sound**
Digital audio connections provide the clearest sound. Connect one of the DVD player's DIGITAL AUDIO OUT (COAXIAL) to your amplifier or receiver.
If digital connections are not possible, connect the DVD player's Left and Right (white and red) AUDIO OUT to your amplifier, receiver, stereo or TV.



Connecting to an Audio System

- You can also listen to the sound of audio CDs and DVD video discs by connecting to an optional stereo system.
- Connect the Left and Right AUDIO OUT on the DVD player to the Left and Right AUDIO IN on the stereo system.

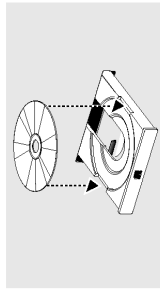


Connecting to a TV

- Connect the SCART (TV OUT) on the DVD player to the corresponding connector on the TV IN.
- Note:
- Ensure that the "TV" indication on SCART cable is connected to the TV set and "DVD" indication on SCART cable is connected to the DVD player.

Basic Playback

- 1 Press POWER ON/OFF on the front panel.
- 2 Press OPEN/CLOSE \blacktriangle on the front panel to open disc loading tray.
- 3 Place the chosen disc in the tray, with the label facing up.
- 4 Press OPEN/CLOSE \blacktriangle again to close the tray. \rightarrow Playback starts automatically.



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 You can resume playback from the point where the playback was last stopped by pressing the STOP key once.
- 2 Playback will start from the beginning if you press STOP key twice to stop playback.

PAUSE/STEP

- 1 Press PAUSE once to get a still picture during playback. \rightarrow Playback will pause.
- 2 To step forward to the next picture frame, press PAUSE again.
- 3 To resume normal playback, press PLAY.

SEARCH (Fast Forward and Fast Backward)

- 1 Press \blacktriangle or \blacktriangleright during playback to go to the fast forward / backward searching.
- 2 Press \blacktriangle or \blacktriangleright again to increase the speed for searching.
- 3 To resume normal playback, press PLAY.

SLOW MOTION (Slow Forward and Slow Backward)

- 1 Press \blacktriangle or \blacktriangleright during playback to get slow motion effect.
- 2 Press \blacktriangle or \blacktriangleright again to get different playback forward/backward speed.
- 3 To resume normal playback, press PLAY.

STOP DVD VCD CD SVCD

- 1 Press \blacktriangle during playback to get slow motion effect.
- 2 Press \blacktriangle again to get different playback forward speed.
- 3 To resume normal playback, press PLAY.

Note:

- SLOW BACKWARD feature is not available for SVCD/VCD/CD discs.

Smart Picture

You can select one of the predefined sets of colour settings and one set (Personal) which you can define yourself (see "Smart Picture" in Setup Menu).

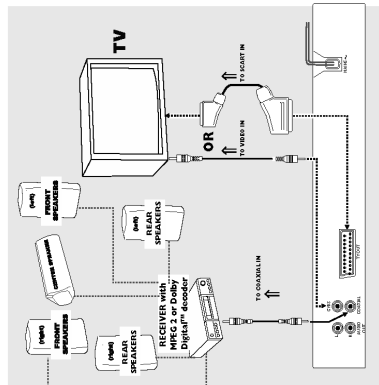
- 1 Press SMART PICTURE on the front panel to change the settings (Bright, Standard, Soft and Personal).

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 connectors.

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

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



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 places.
- Do not spill water or put anything wet on the remote control.

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. EX11, EX12, AV1, AV2, AUDIO/VIDEO, etc. (Refer to your TV owner's manual for detail)) \rightarrow 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 details.

Notes:

- 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.
- To see the selected audio format of the current DVD in the Setup Menu, refer to "Setup Menu".
- MP3 Audio is not available on the Digital Output.

Operation

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Audio Control during playback

MUTE



- 1 Press MUTE to disable the sound output.
- 2 Press MUTE again to enable the sound output again.

SURROUND SOUND



- The DVD player can reproduce virtual surround sound effect.
- 1 Press DISPLAY on the remote control.
 - 2 Use ◀▶ to highlight 3D option.
 - 3 Press ▲▼ to switch between ON or OFF mode.

Audio Channel Selection



- 1 SVCD discs has two stereo audio channels which are used for playing karaoke or for selecting the audio language. (eg. choose one channel for music background of the song while playing a karaoke disc).
- 2 Press AUDIO on the remote control to select the preferred audio channel.
- 3 VCD discs has only one channel. Mono left audio or mono right audio channel by pressing the AUDIO on the remote control.

Repeat



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.



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, VCD, XCD, CD, SVCD

- 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.

5 Disc Resume



The RESUME feature applies not only to the disc in the player; but also to the last four discs you have played.

- 1 Simply reload the disc on the disc tray.
- 2 Press PLAY while disc is loading.
- 3 Playback resume from the point at which you've last stopped.

OSD (On-Screen Display)



A number of operations can be done with the menu bar on the screen. Press DISPLAY on the remote control to access to the menu bar.

Title Selection

- 1 Press ◀▶ to highlight TITLE number option.
- 2 Press ▲▼ to change the Title number.
- 3 Playback will start from the selected Title.

Chapter Selection

- 1 Press ◀▶ to highlight CHAPTER number option.
- 2 Press ▲▼ to change the Chapter number.
- 3 Playback will start from the selected Chapter.

Operation

8

Time Search

The Time Search function allows you to start playing at any chosen time on the disc. Press ◀▶ to highlight Time Display.

DVD discs:

- CC: Total time played in Current Chapter
- CR: Remainder time in Current chapter
- TC: Total time played in Current Title
- TR: Remainder time in Current Title

SVCD or VCD discs:

- DC: Total time played in Current Disc
- DR: Remainder time in Current disc
- TC: Total time played in Current Track
- TR: Remainder time in Current track

- 2 Press ◀▶ to highlight item TIME and playback starts from the selected time position on the disc.
- Enter hours, minutes and seconds from left to right in the time edit box using remote control numerical key pad.
- Press OK to confirm the selected time.

Zoom DVD, VCD, XCD, SVCD

The Zoom function allows you to enlarge the video image. Press ZOOM on the remote control to activate the zoom function.

- 1 Use the ◀▶▲▼ keys to pan across the screen.
- 2 Playback will continue.
- 3 To exit Zoom mode, select zoom to "ZOOM OFF" by pressing ZOOM key on the remote control.

Note:

- This function is subject to availability of the disc.

Special DVD Features

Playing a title/chapter

- DVD video discs may have one or more TITLES, and each TITLE may have one or more CHAPTERS.

- 1 Insert a disc and close the tray; playback starts automatically.
 - The display on the screen shows the type of disc loaded, disc's information and playing time.
- 2 When the Disc Menu appear on the TV screen, use ◀▶▲▼ keys or numerical keys on the remote control to select an option and continue playback.
- 3 If the titles are numbered, press the numerical keys or use the ◀▶▲ keys to select desired title in the menubar.
- 4 Press OK to confirm the selection.

Camera Angle DVD

Some discs contain scenes which have been shot simultaneously from various angles. This DVD player allows you to select the desired camera angle.

- Press ANGLE on the remote control repeatedly to display the multiple angles (4/4, 3/4, 2/4, 1/4).

Note:

- This function is subject to availability of the DVD disc.

Changing the audio language DVD

- Press AUDIO on the remote control repeatedly to select the different languages.

Note:

- This feature is subject to availability of the disc.

Subtitles DVD, SVCD

- 1 Press the SUBTITLE key on the remote control repeatedly to select the different subtitles.
- 2 Press SUBTITLE for about 2 seconds to switch subtitle off.

Note:

- This feature is subject to availability of the disc.

Operation

Special VCD & SVCD Features

Playback Control (PBC)

- 1 Load a Video CD with PBC and press PLAY.
- 2 Press DISC MENU on the remote control to select PBC ON or OFF.
- 3 Use **◀◀** or **▶▶** to select your preferred page.
- 4 If the PBC menu consists of a list of numbered index menu, enter your choice with the numerical key pad (0-9) or **◀▶▶▶** keys for direct selection.
- 4 Press OK to confirm playback.

Notes:

- You can also press RETURN to enter the index menu during playback.
- This feature is subject to availability of the disc.

If you want to skip the index menu and playback from the beginning.

- Press DISC MENU on the remote control to switch off the function.
- For karaoke discs, even if the PBC function is off, you can still use the **◀◀** or **▶▶** to select your preferred track.

Preview VCD SVCD

- At stop mode, press PREVIEW on the remote control.
- The preview menu will be displayed.

1. INTRO
2. DISC
3. TRACK
4. EXIT

1. INTRO

DVD player will playback every track for few seconds with full screen to obtain a summary of the disc content.

- 1 Press numerical key pad '1'.
- 2 Press OK to confirm.
- The full screen of each track will appear in sequence.
- 3 Press STOP to quit previewing.

9

2. DISC

Reduce the picture of 9 tracks enough to display in a full screen.



- 1 Press numerical key pad '2'.
- 2 Press OK to confirm.
- The preview of 9 track with full screen will appear.
- 3 To select other tracks beyond this page, press **◀◀** or **▶▶**.
- 4 Press the numerical key pad to select preferred track.
- 5 Press OK to confirm.

3. TRACK

Reduce the picture of a single track enough to display in a full screen.



- 1 Press numerical key pad '3'.
- 2 Press OK to confirm.
- The preview of one track with 9 parts in a full screen will appear.
- 3 To select other tracks, press **◀◀** or **▶▶**.
- 4 Press the numerical key pad to choose the starting point.
- 5 Press OK to playback the starting point.
4. EXIT
- 2 Press numerical key pad '4'.
- 2 Press OK to exit.

MP3 CD Playback

MP3 Disc Features

Support following MP3-CD formats (ISO9660 format):

- Max. 30 characters
- The max-nested directory is 8 levels
- The max-ALB number is 32
- Supported VBR bit-rate
- Supported sampling frequencies for MP3 disc are: 32 kHz, 44.1 kHz, 48 kHz
- Supported Bit-rates of MP3 disc are: 32, 64, 96, 128, 192, 256 (kbps)

Following formats can't be supported

- The files like *.WMA, *.AAC, *.DLF, *.M3U, *.PLS
- Chinese filenames
- The non-session closed discs
- The discs recorded under UDF format

Downloading MP3 files from the Internet or copying songs from your own legal discs is a delicate process.

Sound	Bit Rate	Approximate Playback Time	Approximate total Playback Time	Comment
MP3 (VBR)	32 kbps	20.1	40 hrs	not recommended
MP3 (VBR)	48 kbps	20.1	20 hrs	not recommended
MP3 (VBR)	64 kbps	15.1	15 hrs	Balanced sound quality
MP3 (VBR)	96 kbps	10.1	10 hrs	compression rate low
MP3 (VBR)	128 kbps	5.1	5 hrs	compression rate low
MP3 (VBR)	160 kbps	3.1	3 hrs	compression rate low
MP3 (VBR)	220 kbps	2.1	2 hrs	compression rate low

You may experience an occasional "skip" while listening to your MP3 files. This is normal.

Additional note for MP3 disc Playback:

- In compliance with the SDMI, digital-out is muted while playing MP3 discs.
- Due to the recording nature of Digital Audio MP3 (DAM), only Digital Audio music will play.
- The disc reading time may exceed 10 seconds due to the large number of songs compiled onto one disc.
- For multi-session discs, only the first session will be available.

10

Album/Title

This feature allows you to view and select the next or previous MP3 disc, Album/Title.

- 1 Press **◀◀** / **▶▶** to scroll through the previous or next Track.
- 2 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 / PLAY / PAUSE
 - SKIP NEXT / PREVIOUS
 - REPEAT (TRACK / ALBUM / DISC)

MP3 Discs - Album/Track/Disc

- To repeat a track, press REPEAT.
- **REP ONE** appears on the player display.
- To repeat the entire disc, press REPEAT a second time.
- **REP ALL** appears on the player display.
- To exit REPEAT mode, press REPEAT a third time.
- **REPEAT OFF** appears on the player display.

Setup Menu

11

Basic Operations

- 1 At Stop mode, press SYSTEM MENU to enter the Setup menu.
→ Setup menu appears on the TV screen.
- 2 Press OK to enter to next submenu or confirm your selection.
- 3 Use ◀▶ keys to enter the submenu or return to previous menu.
- 4 Use ▲▼ keys to select the preferred option.
- 5 Press SYSTEM MENU again to exit from the Setup Menu.
→ All settings will be stored in the DVD player's memory even if the DVD player is switched to power-off.

General Setup

Some settings are essential during the start up of the DVD player. For example: DISC LOCK, PROGRAM, OSD LANGUAGE and SCREEN SAVER.

- 1 Press SYSTEM MENU to enter the Setup menu.
- 2 Press ▲▼ keys to choose GENERAL SETUP menu.
- 3 Press OK to confirm selection.
- Setting for GENERAL SETUP menu appears on the TV screen.
- 4 To exit to the default screen, select MAIN PAGE.

Disc Lock

When a disc is locked with a code, the code will be store in the DVD player's memory. During playback of the locked disc, the DVD player will prompt for the password.



- 1 Press ▲▼ keys to select the DISC LOCK in the General Setup menu and press OK to confirm.
- 2 Enter the submenu by pressing the ▶ key.
→ LOCK: Lock the disc being played.
→ UNLOCK: Unlock the disc.
- 3 Press ◀ key to return to General Setup menu.

Notes:

- When playback a locked disc, the DVD player will prompt to enter your password or 3308 (default) password.
- To change the password, refer to option PASSWORD in PREFERENCE menu.

Program (not available for DVD discs)

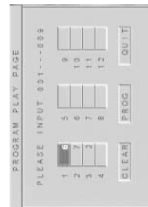
- 1 Select PROGRAM using ▲▼ keys and press OK to open the menu.
- 2 Enter the submenu by pressing the ▶ key.
→ SETUP: To access into Program mode.



- 3 Press OK to enter into the Program page.

Storing a track

- 1 Enter a valid track number using the numerical key pad.
- 2 Press ◀▶▶ keys to move the cursor to next selected position.
- 3 Repeat above sequence to enter another track number until the whole program is completed.
- 4 Press ◀◀◀ or ◀▶▶▶ to program more tracks.



Exclude a track

- 1 Press ◀▶▶ keys to move the cursor to the track that you want to exclude.
- 2 Enter an invalid track number.

Setup Menu

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Cancel all tracks

- 1 Press ◀▶▶ keys to move the cursor to the CLEAR button.
- 2 Press OK to erase all tracks.
- 3 Now you can input your favourite tracks again.

Playback tracks

- When programming is completed,
- 1 Press ◀▶▶ keys to move the cursor to the PROG button.
 - 2 Press OK.
→ Playback starts with the selected programmed sequence.

Stop the program playback

- At the program page,
- 1 Press ◀▶▶ keys to move the cursor to the QUIT button.
 - 2 Press OK to exit this menu or press STOP key twice.

VFD Dim

This function is used to adjust the brightness of the display on the front panel.

- 1 Press ▲▼ keys to select the VFD DIM in the General Setup menu and press OK to confirm.
- 2 Enter the submenu by pressing the ▶ key.
- 3 Use the ▲▼ keys to highlight an option.
→ 100:VFD brighter than normal.
→ 70: standard brightness
→ 40:VFD to dim mode
→ OFF: switch off front panel display
- 4 Press OK and press ◀ key to return to General Setup menu.

OSD Language

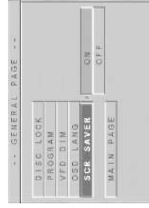
There are 14 languages available for information display on the TV screen.



- 1 Press ▲▼ keys to select the OSD LANG in the General Setup menu and press OK to confirm.
- 2 Enter the submenu by pressing the ▶ key.
- 3 Use the ▲▼ keys to highlight an option.
→ ENGLISH: OSD information will be displayed in English.
→ FRENCH: OSD information will be displayed in Français and etc.
- 4 Press OK and press ◀ key to return to General Setup menu.

Screen Saver

This function is used to turn on or off the screen saver.



- 1 Press ▲▼ keys to select the SCR SAVER in the General Setup menu and press OK to confirm.
- 2 Enter the submenu by pressing the ▶ key.
- 3 Use the ▲▼ keys to highlight an option.
→ ON: At stop mode, screen saver will turn on within 5-6 minutes.
→ OFF: Screen is disable.
- 4 Press OK and press ◀ key to return to General Setup menu.

Setup Menu

13

Speaker setup

This menu contains setup options of your speaker system, such as DOWNMIX and D.R.C. (Dynamic Range Compression).

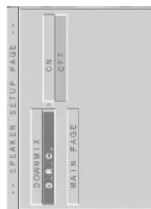
- 1 Press SYSTEM MENU to enter the Setup menu.
- 2 Press **▲▲** keys to choose SPEAKER SETUP menu.
- 3 Press OK to confirm selection.
- Setting for SPEAKER SETUP menu appears on the TV screen.
- 4 To exit to default screen, select MAIN PAGE.

DOWNMIX mode

- 1 Press **▲▲** keys to select the DOWNMIX in the Speaker Setup menu and press OK to confirm. Enter the submenu by pressing the **▶** key.
- 2 Use the **▲▲** keys to highlight an option.
- LTRT: Select this settings when the DVD player is connected to a Dolby Pro Logic decoder which send a signal output from the DVD player.
- STEREO: This setting will downmix the signal of Dolby Digital and DTS into stereo signals directly output from L/R connector.
- 4 Press OK and press **◀** key to return to Speaker Setup menu.

D.R.C. (Dynamic Range Compression)

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



- 1 Press **▲▲** keys to select the D.R.C. in the Speaker Setup menu and press OK to confirm. Enter the submenu by pressing the **▶** key.
- 2 Use the **▲▲** keys to highlight an option.
- ON: Enable D.R.C.
- OFF: Disable D.R.C.
- 4 Press OK and press **◀** key to return to Speaker Setup menu.

SPDIF setup

- 1 Press SYSTEM MENU to enter the Setup menu.
- 2 Press **▲▲** keys to choose SPDIF SETUP menu.
- 3 Press OK to confirm selection.
- Setting for SPDIF setup menu appears on the TV screen.
- 4 To exit to default screen, select MAIN PAGE.

Note:

– SPDIF is the abbreviation of Sony Philips Digital Interface which is a protocol of digital data transferring.

SPDIF OUT setup

- 1 Press **▲▲** keys to select the SPDIF OUT in the SPDIF Setup menu and press OK to confirm. Enter the submenu by pressing the **▶** key.
- 2 Use the **▲▲** keys to highlight an option.
- ALL: Original digital signals output
- PCM: Convert to PCM signals to digital output.
- 4 Press OK and press **◀** key to return to SPDIF Setup menu.

Setup Menu

14

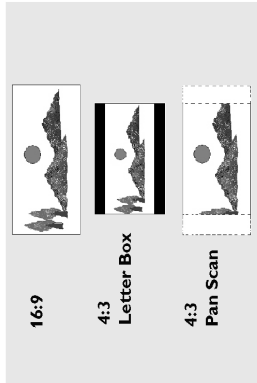
TV Display

Select the aspect ratio of the TV to be connected.

16:9 → when you connect a wide-screen TV to the DVD player.

4:3 LETTER BOX → 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.

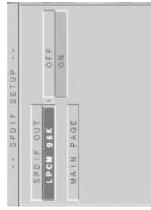
4:3 PAN SCAN → when you connect a normal TV to the DVD player. Displays the wide picture on the whole TV screen with a portion automatically cut off.



- 1 Press **▲▲** keys to select the TV DISPLAY in the General Setup menu and press OK to confirm.
- 2 Enter the submenu by pressing the **▶** key.
- 3 Use the **▲▲** keys to highlight an option.



- 4 Press OK and press **◀** key to return to VIDEO OUTPUT Setup menu.

LPCM 96K mode

- 1 Press **▲▲** keys to select the LPCM 96K in the SPDIF Setup menu and press OK to confirm. Enter the submenu by pressing the **▶** key.
- 2 Use the **▲▲** keys to highlight an option.
- ON: Detect the loading disc for appropriate sampling rate.
- OFF: The decoding process is under the sampling rate of 48KHz.
- 4 Press OK and press **◀** key to return to SPDIF Setup menu.

Video Out Setup

Some settings that are included in VIDEO OUT PAGE menu are: TV DISPLAY, VIDEO OUTPUT, TV TYPE, BLACK LEVEL, VIDEO MODE, BRIGHTNESS, CONTRAST, SATURATION, HUE.

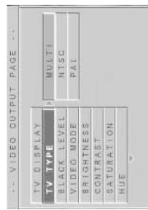
- 1 Press STOP twice.
- 2 Press SYSTEM MENU to enter its menu.
- 3 Select the VIDEO OUTPUT SETUP by pressing **▲▲** key and OK the confirm selection.

Setup Menu

15

TV Type

This player is equipped with an NTSC/PAL settings to ensure that the DVD player system matches your TV.

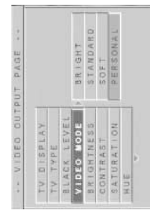


- Press **▲▼** keys to select the TV TYPE in the General Setup menu and press **OK** to confirm.
- Enter the submenu by pressing the **▶** key.
- Use the **▲▼** keys to highlight an option.
 - MULTI: Video output is depending on the format of the disc.
 - NTSC: DVD player will output only NTSC system.
 - PAL: DVD player will output only PAL system.
- Press **OK** and press **◀** key to return to VIDEO OUTPUT Setup menu.

Smart Picture

You can select one of the predefined set of colour settings and one set (Personal) which you can define yourself.

Video mode



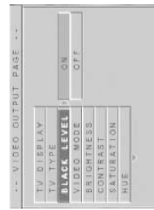
- You can choose one picture setting from a fixed predefined set. (Bright, Standard and Soft).
- Press **▲▼** keys to select the VIDEO MODE in the VIDEO OUT Setup menu and press **OK** to confirm.
- Enter the submenu by pressing the **▶** key.

- Use the **▲▼** keys to highlight an option.
 - BRIGHT: TV screen brighter
 - STANDARD: Standard picture setting
 - SOFT: TV screen softer
 - PERSONAL: Reapply the previous setting
- Press **OK** and press **◀** key to return to VIDEO OUTPUT Setup menu.

Personal Picture setting

Personal picture setting includes setup of BLACK LEVEL, BRIGHTNESS, CONTRAST, SATURATION and HUE which allows you to personalise your picture setting.

Black Level



- Press **▲▼** keys to select the BLACK LEVEL in the VIDEO OUT Setup menu and press **OK** to confirm.
- Enter the submenu by pressing the **▶** key.
- Use the **▲▼** keys to highlight an option.
 - ON: enable smart adjustment of black level
 - OFF: disable smart adjustment of black level
- Press **OK** and press **◀** key to return to VIDEO OUTPUT Setup menu.

Brightness/Contrast/Saturation/Hue



- Press **▲▼** keys to select the BRIGHTNESS/CONTRAST/SATURATION/HUE in the VIDEO OUT Setup menu and press **OK** to confirm.
- Enter the submenu by pressing the **▶** key.
- Use the **▲▼** keys to adjust the level.
- Press **OK** and press **◀** key to return to VIDEO OUTPUT Setup menu.

Setup Menu

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Preferences setup

Some settings that are included in PREFERENCES menu are: AUDIO, SUBTITLE, DISC MENU, PARENTAL CONTROL, PASSWORD, DEFAULT and SMART NAV.

- Press **STOP** twice.
- Press SYSTEM MENU to enter its menu.
- Select the PREFERENCES by pressing **▲▼** key and **OK** the confirm selection.

Audio language

DVD discs are available for multi-audio languages. Use these settings to select your preferred default language.



- Press **▲▼** keys to select the AUDIO in the Preferences menu and press **OK** to confirm.
- Enter the submenu by pressing the **▶** key.
- Use the **▲▼** keys to highlight an option.
- Press **OK** and press **◀** key to return to Preferences menu.

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.

Subtitle language

DVD discs are available for multi-subtitle languages. Use these settings to select your preferred default language.



- Press **▲▼** keys to select the SUBTITLE in the Preferences menu and press **OK** to confirm.
- Enter the submenu by pressing the **▶** key.
- Use the **▲▼** keys to highlight an option.
- Press **OK** and press **◀** key to return to Preferences menu.

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.

Password

You can change the setup of parental control and disc lock. Enter your password when required by the DVD player.



- Press **▲▼** keys to select the SUBTITLE in the Preferences menu and press **OK** to confirm.
- Enter the submenu by pressing the **▶** key.
- Use the **▲▼** keys to highlight an option.
- Press **OK** and press **◀** key to return to Preferences menu.

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.

Disc menu language

DVD discs are available for multiple disc menu languages. Use these settings to select your preferred default language.



- Press **▲▼** keys to select the DISC MENU in the Preferences menu and press **OK** to confirm.
- Enter the submenu by pressing the **▶** key.
- Use the **▲▼** keys to highlight an option.
- Press **OK** and press **◀** key to return to Preferences menu.

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.

Setup Menu

- 1 Press **▲▲** keys to select the PASSWORD in the Preferences menu and press OK to confirm.
- 2 Enter the submenu by pressing the **▶** key.
- 3 Use the **▲▲** keys to highlight an option.



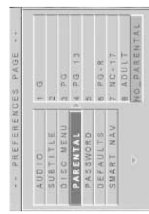
- 4 Enter the current 4 digit code.
- 5 Enter a new 4-digit code when the DVD player prompt for a new code.
- 6 Enter the code a second time to reconfirm.
- 5 Press PLAY key to return to Preferences menu.
 - The new 4 digit code will take effect.

Note:

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

Parental Control

- Parental Control 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.
 - If no suitable ratings is found, playback will stop and the 4-digit code has to be entered.
 - VCD, SVCD, CD and illegal DVD discs have no level of definition, thus Parental Control is not available on these discs.



17

- 1 Press **▲▲** keys to select the PARENTAL in the Preferences menu and press OK to confirm.
- 2 Enter the submenu by pressing the **▶** key.
- 3 Use the **▲▲** keys to highlight a rating from 1 to 8 for the loaded disc.
- Select NO PARENTAL and press OK to deactivate the Parental Control feature.
- 4 Press OK and press **◀** key to return to Preferences menu.

Default

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



- 1 Press **▲▲** keys to select the DEFAULTS in the Preferences menu and press OK to confirm.
- 2 Enter the submenu by pressing the **▶** key.
- 3 Press OK.

Smart Navigator

- Smart Navigator menu will be displayed during picture CD and MP3 CD playback.
- 1 Press **▲▲** keys to select the SMART NAV in the Preferences menu and press OK to confirm.
 - 2 Enter the submenu by pressing the **▶** key.
 - 3 Use the **▲▲** keys to highlight an option.
 - NO MENU: playback all images or MP3 musics in sequence automatically
 - WITH MENU: playback images or MP3 musics in the selected folder.
 - 4 Press OK to confirm your selection.

Specifications

PLAYBACK SYSTEM

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

VIDEO PERFORMANCE

CVBS
1 Vpp into 75 ohm
0.7 Vpp into 75 ohm
RGB (SCART)
Black Level Shift
Video Shift
On/Off
Left/Right

AUDIO FORMAT

Digital
MPEG/AC-3/DTS
Compressed
Digital
PCM
MPEG MP3
MPEG Audio L3
Analogue Stereo Sound
Full decoding of Dolby Digital multi-channel surround sound

AUDIO PERFORMANCE

DA Converter
24 bits
Signal-Noise (1kHz)
90 dB
Dynamic Range (1kHz)
80 dB
DVD
fs 96 kHz
4 Hz - 44 kHz
DSD/SVCD
fs 48 kHz
4 Hz - 22 kHz
SVCD/A/CD/CD
fs 44.1 kHz
4 Hz - 20 kHz
MPEG MP3
MPEG Audio L3

18

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

Number of lines
625
Multistandard
S25
(PAL/NTSC)

CONNECTIONS

SCART
Euroconnector
Video Output
Cinch (yellow)
Cinch (white/red)
Audio L+R output
1 coaxial
IEC958 for CDDA / LPCM
MPEG1
IEC1937 for MPEG2, Dolby Digital and DTS

CABINET

Dimensions (w x h x d)
435 x 293 x 75 mm
Weight
Approximately 2,7 kg

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

Specifications subject to change without prior notice

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.

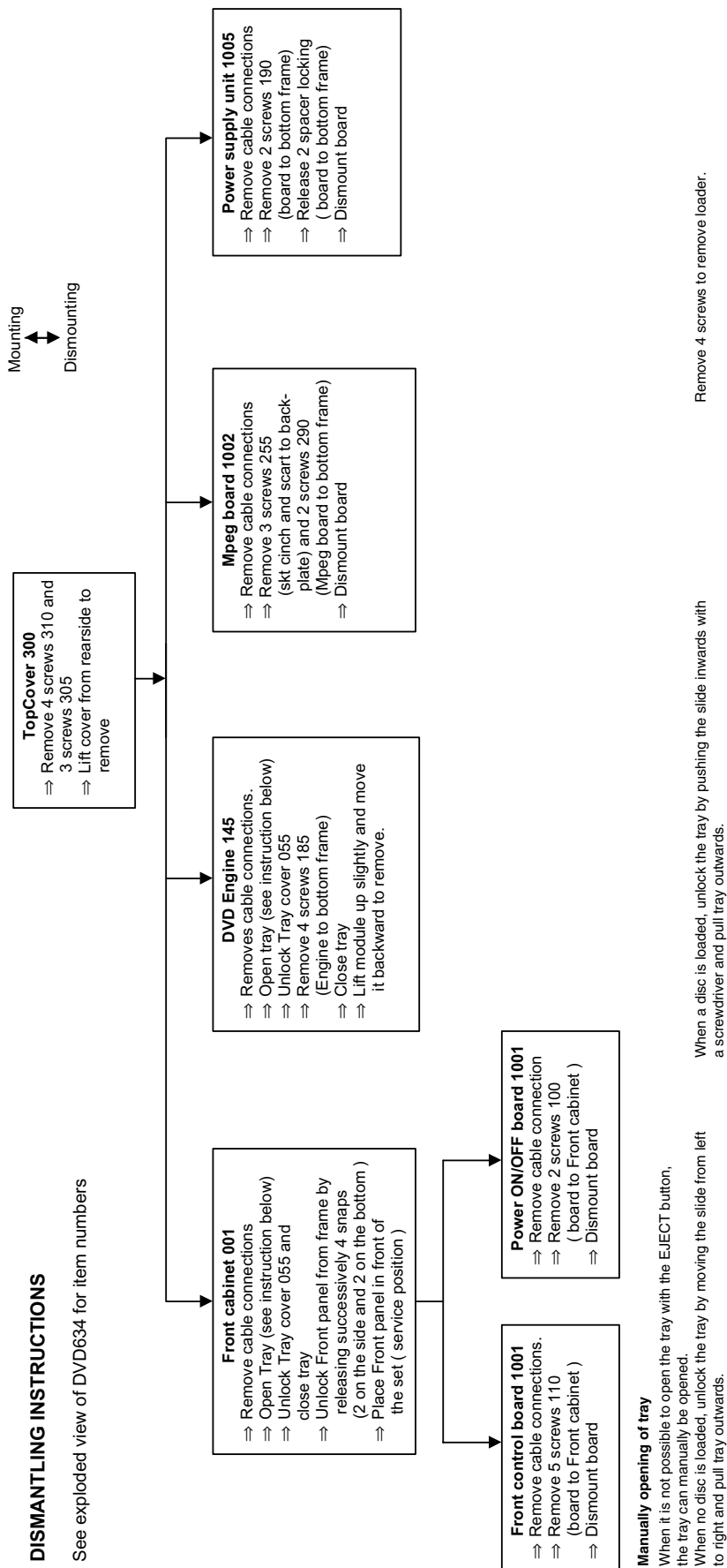
Cleaning Discs

- 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 benzine, 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



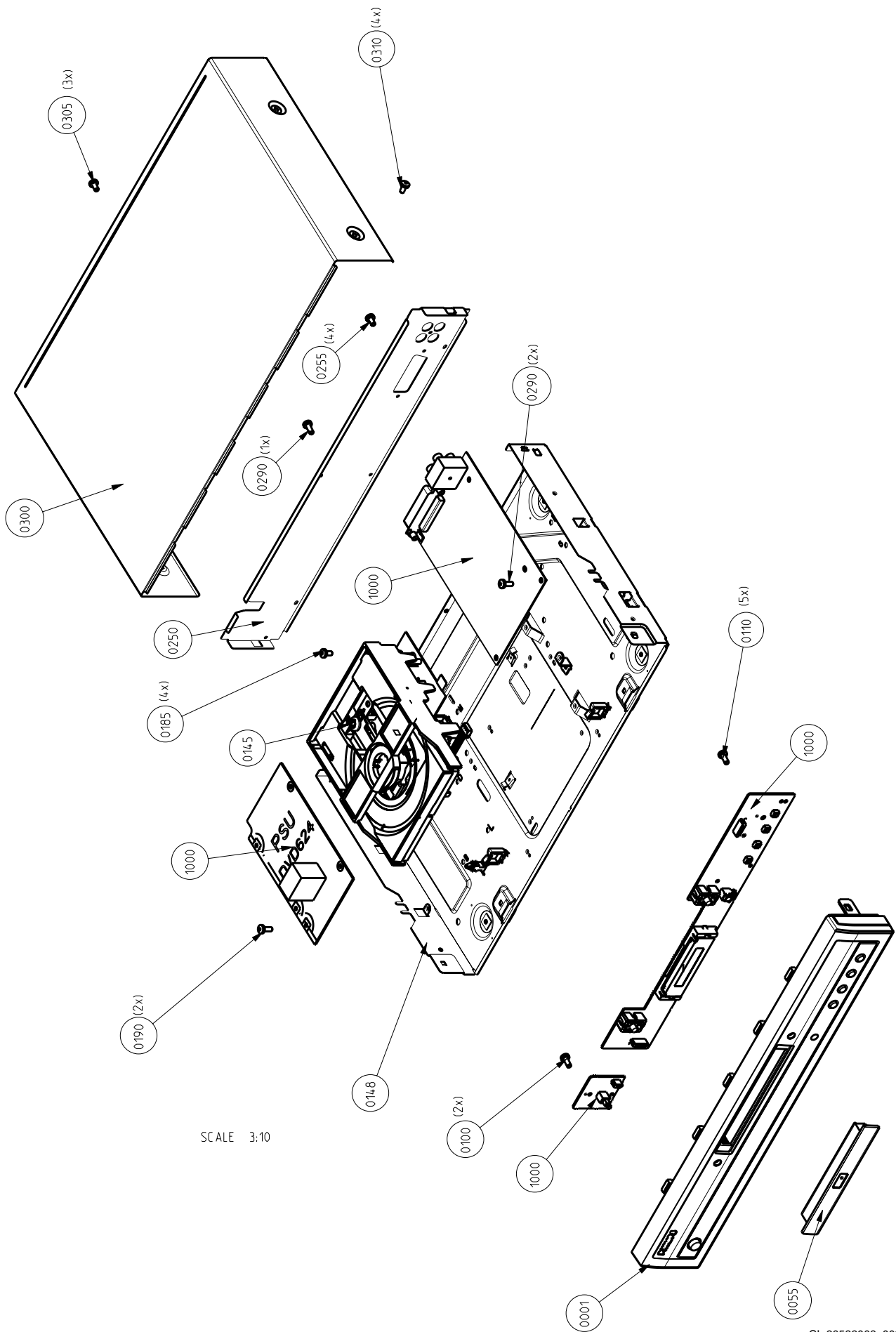


Figure 4-2 Exploded View

5. Diagnostic Software, Trouble Shooting and Test Instructions

5.1 Service Hints

5.1.1 Repair tips

Switched mode power supply

The power supply unit has to be replaced in case of failure. The schematic diagram provided in the service manual is only for information and no service parts will be available.

M3.2 Atapi Engine

The M3.2 Atapi Engine is an integrated unit of VAL6013/03 loader and servo board purchase from POS. According to POS service policy, the loader and servo board are non-repairable unit and in case of failure, it has to be replaced with a complete DVD Atapi Engine.

Mpeg board and Front Display

The Mpeg board and Front display has to be repaired down to component level.

5.1.2 Change of Software setting

The software setting can be change according to the following procedure:

1. Press (OPEN/CLOSE) button on the front of the player or (1) on the remote control to open the disc tray.
2. Enter the 4-digit code (0) (0) (0) (0) 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
–	(SUBTITLE) Set to Picture CD Off (Off = DVD634)		
–	(ANGLE) Set to Picture CD On (On = DVD640)		
–	(ZOOM) Set to 3 front key matrix (for DVD640)		
–	(AUDIO) Set to 6 front key matrix (for DVD634)		
4. The change should effect immediately with information indicated on TV screen.

5.1.3 Software upgrade via Download disc

Both the application and servo 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 SW.

Application software

1. Open disc tray on the player.
2. Insert the DOWNLOAD DISC into the player and close disc tray.
3. The upgrading operation will start automatically.
4. Once the DOWNLOAD DISC is recognized, the player will automatically eject the disc tray.
5. Remove the DOWNLOAD DISC.
6. Upgrading of the software will continue with the status being shown on the FTD.
7. Once when the software is upgraded, the disc tray will automatically close.
8. The player will be restarted automatically and display on FTD will show (NO DISC)

Servo software

1. Open disc tray on the player
2. Insert the DOWNLOAD DISC into the player and close disc tray. The player should identify this file as MP3 format.
3. Press (MENU), followed by (SUBTITLE)(AUDIO)(ANGLE) to enter Update Menu for the loader.

4. From the menu, use arrow keys to move down and select UPGRADE menu item.
5. Press right arrow button and then 'OK' to start upgrading.
6. A flashing digit in the bottom line indicates the progress. It will start from 1 and upgrading will be completed when it reaches 30.
7. The player will restart and upgrading is completed.

5.1.4 Verify setting

To check that the setting has change successfully.

1. Press (DISPLAY) button on the remote control while disc tray is open.
2. Two lines text will appear on the TV screen. That is how it looks like.

DVD640/634_V319_0522

RG 2 LD 0836 F6 Jpeg-0 3000

In text, the following numbers refer to:

- V319_0522 ==> refer to Application software version
- RG 2 ==> refer to region code
- LD 0836 ==> refer to servo software version
- F6 ==> refer to DVD634/640 front key matrix
- Jpeg-0 ==> refer to Picture CD On/Off

5.1.5 ComPair

There is no ComPair available for DVD634

5.2 Trouble Shooting

In this paragraph some troubleshooting tips are given to diagnos the DVD634 player. For detailed diagnostics, check the faulting tree since no built-in diagnostic software is available in the player.

5.2.1 M3.2 Atapi Engine

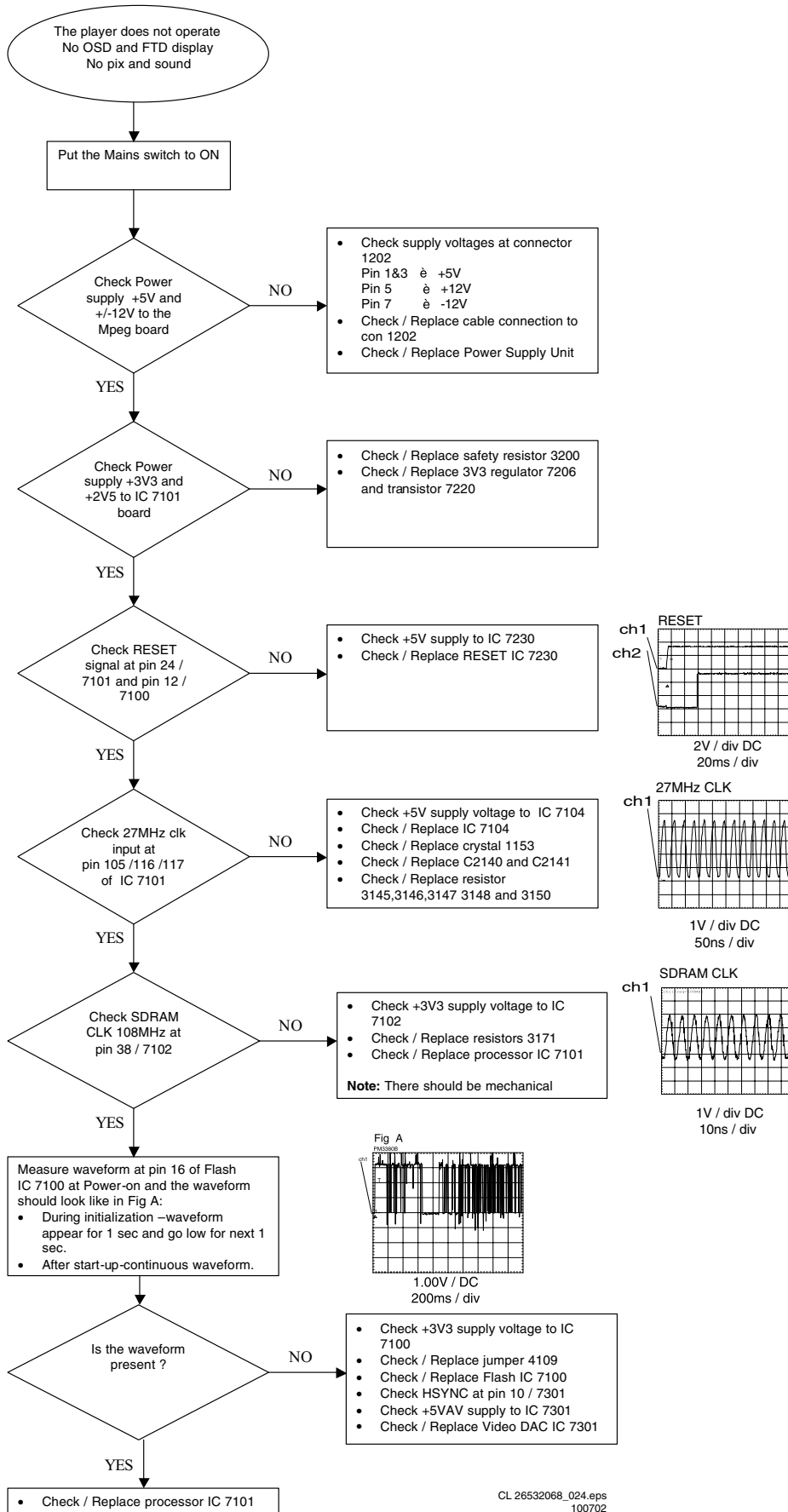
The M3.2 Atapi engine is a non-repairable component. Hence, it is necessary to determine if any fault condition of the player are caused by the DVD engine before replacing it.

The engine is a stand-alone system, an integrated unit of VAL6013/03 loader and servo board, which does not need to be connected to the Mpeg board to perform it basic operation. 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 reconfirm with a working engine.

The Mercury 3 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



CL 26532068_024.eps
100702

Figure 5-1 No operation

5.3.2 No Picture

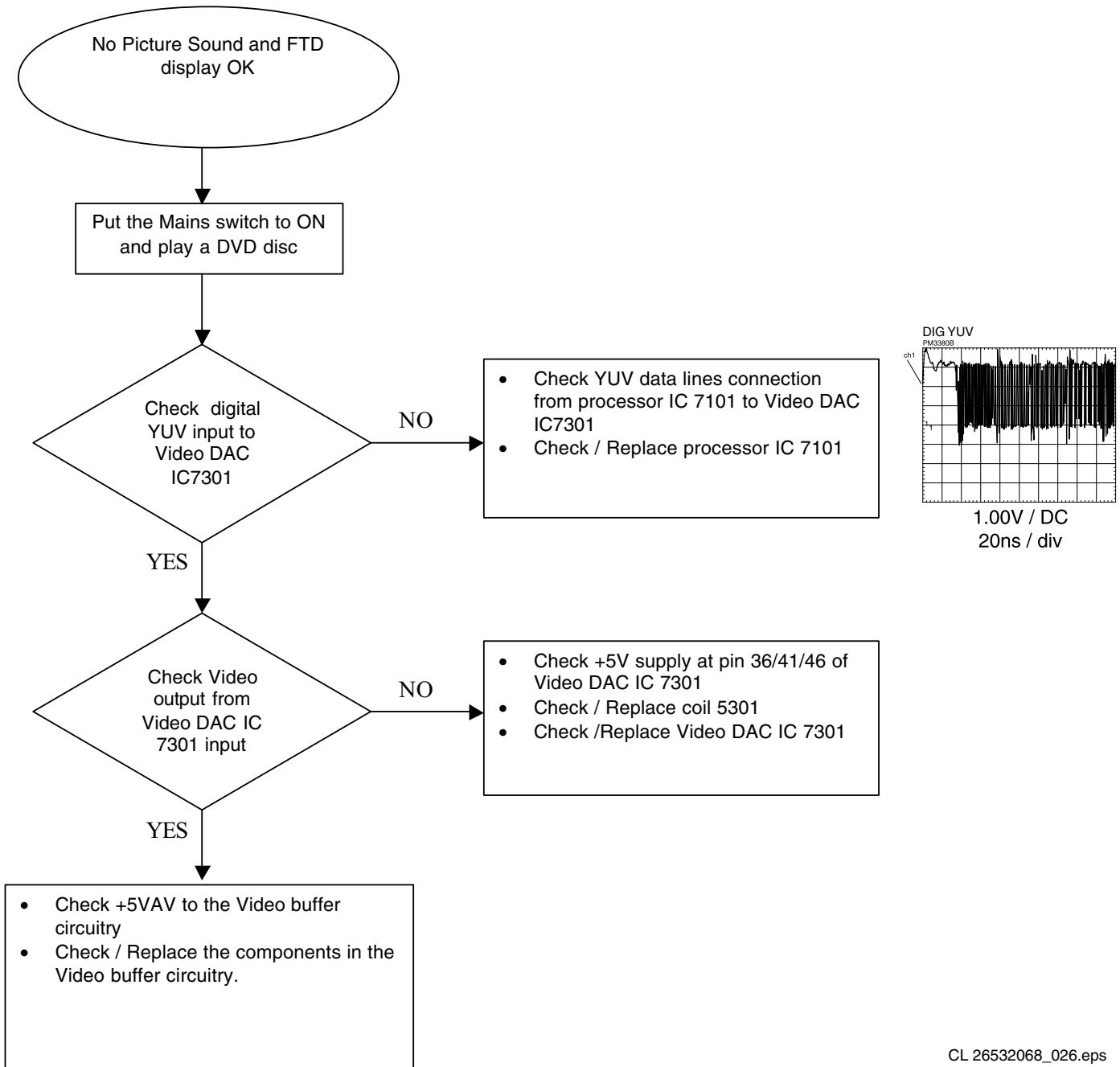


Figure 5-2 No Picture

5.3.3 No Color

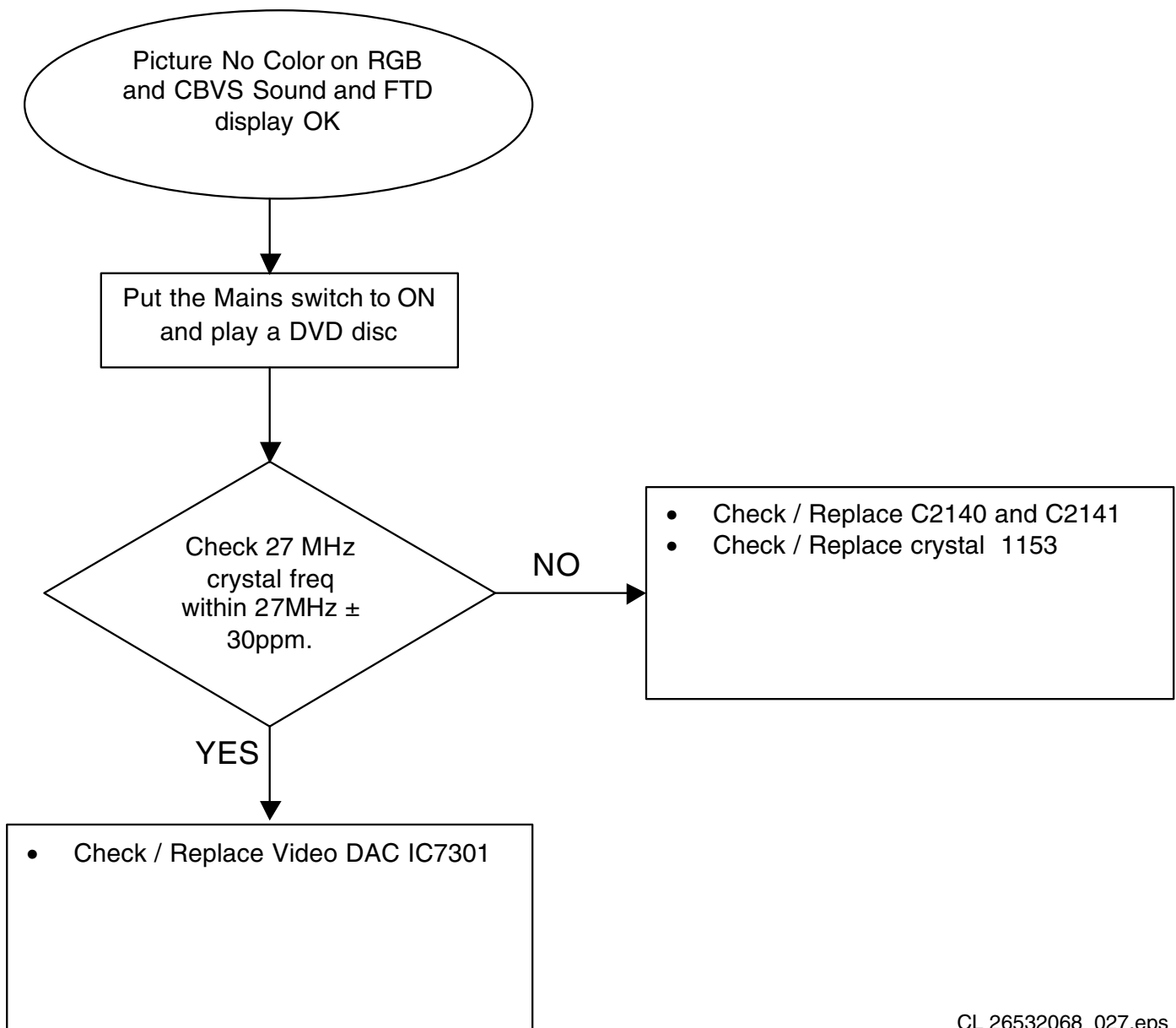
CL 26532068_027.eps
040702

Figure 5-3 Pix no color

5.3.4 No Sound

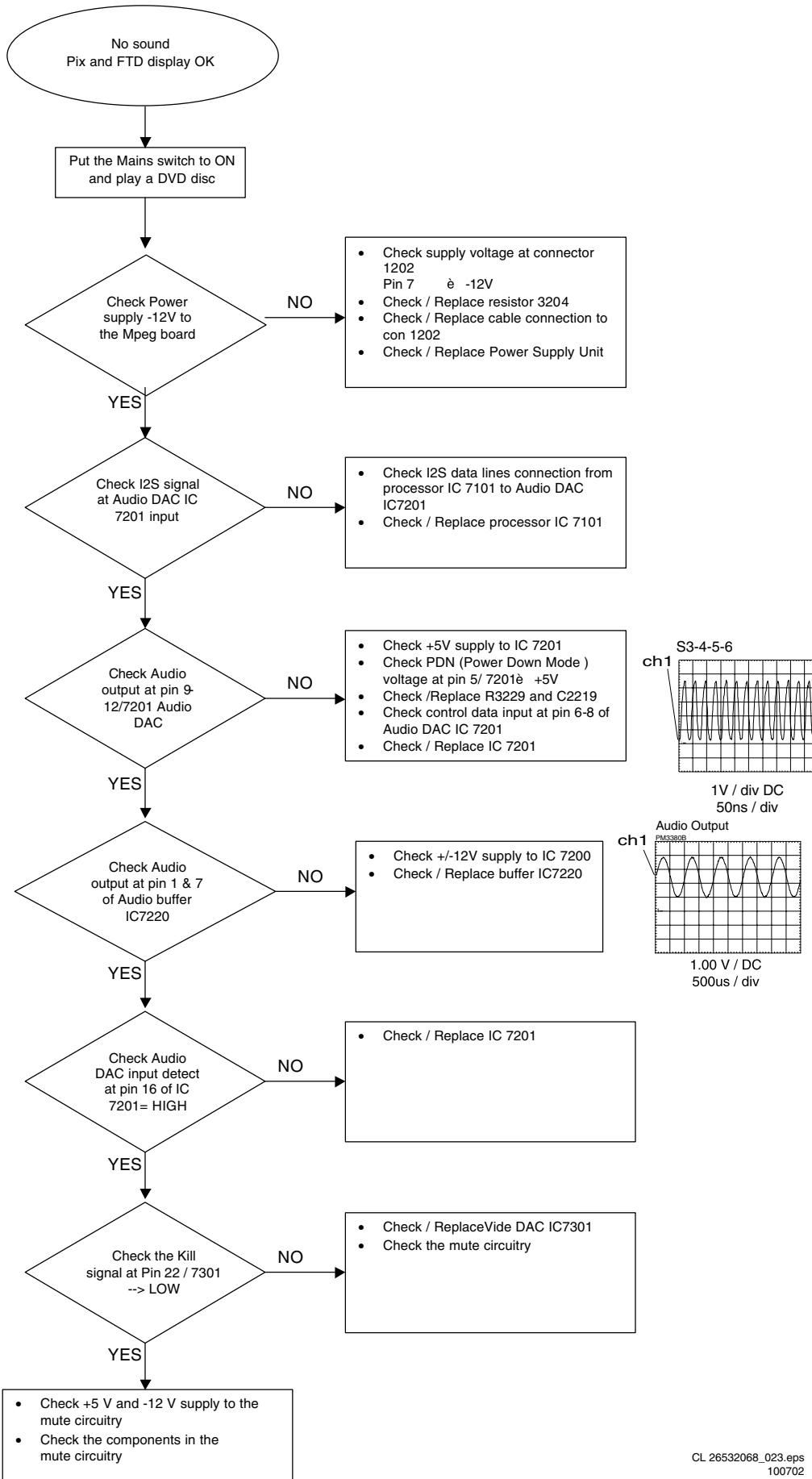
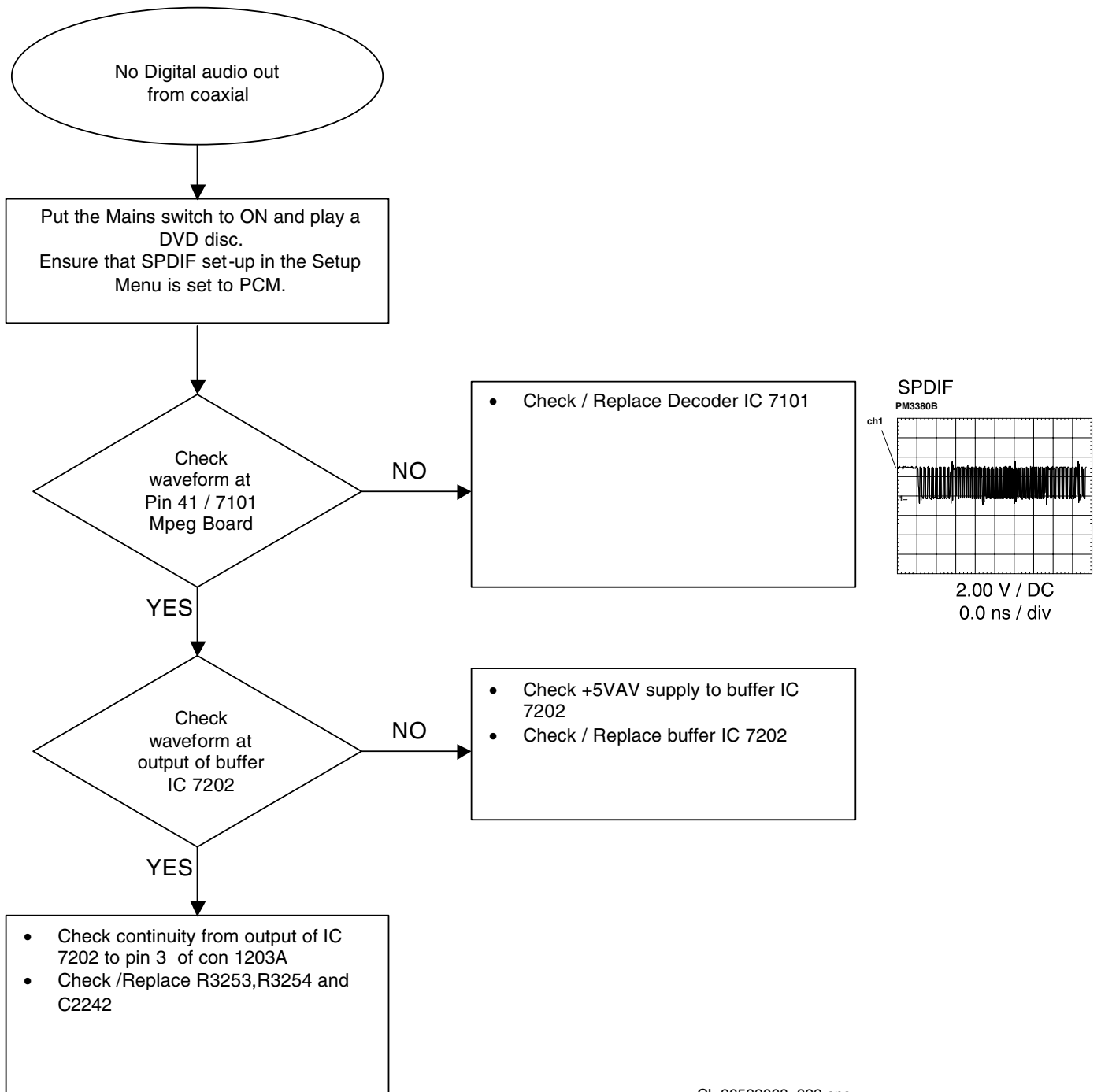


Figure 5-4 No sound

5.3.5 No Digital Audio Out



CL 26532068_022.eps
030702

Figure 5-5 No Digital audio out

5.3.6 No RC and FTD Display

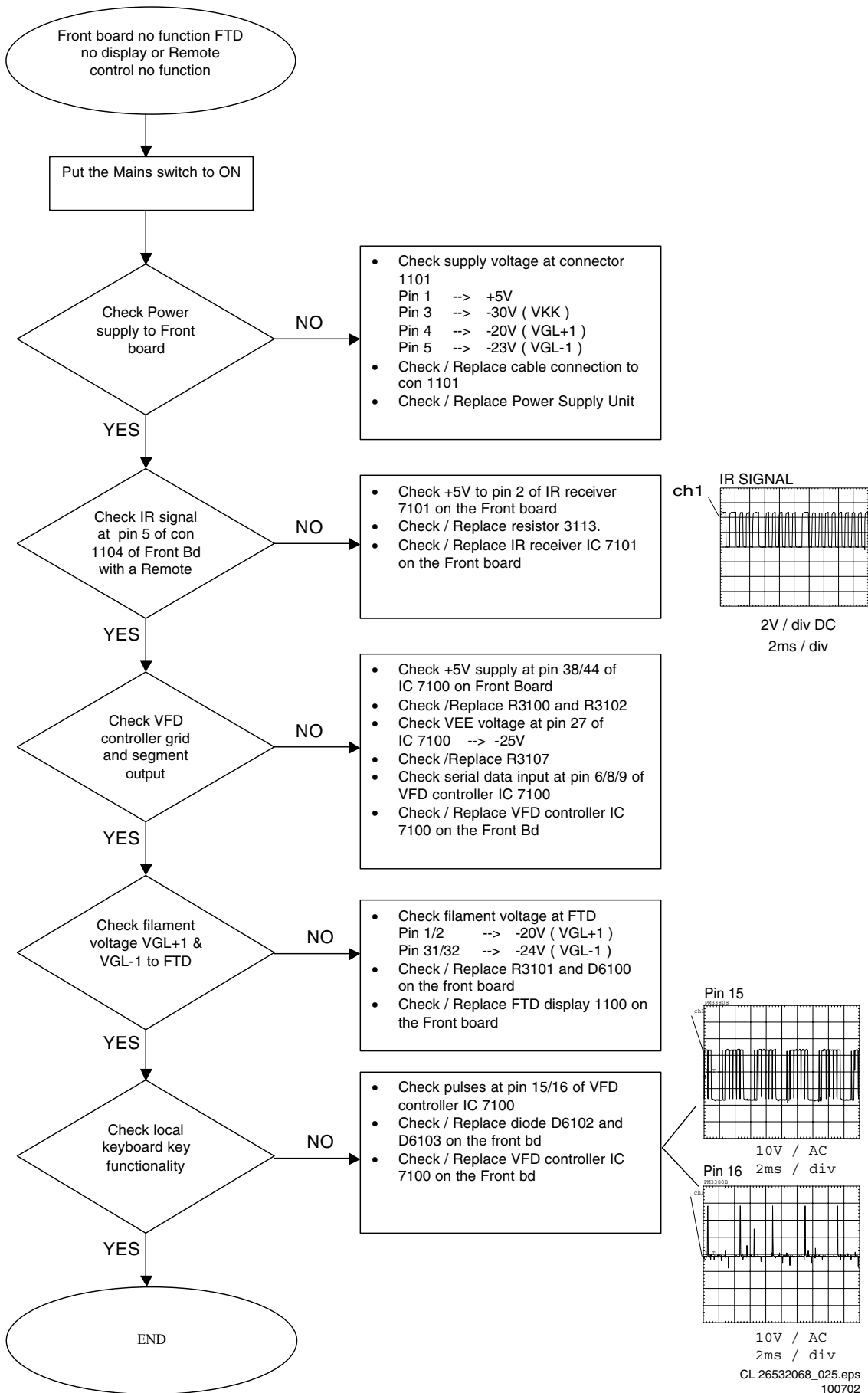
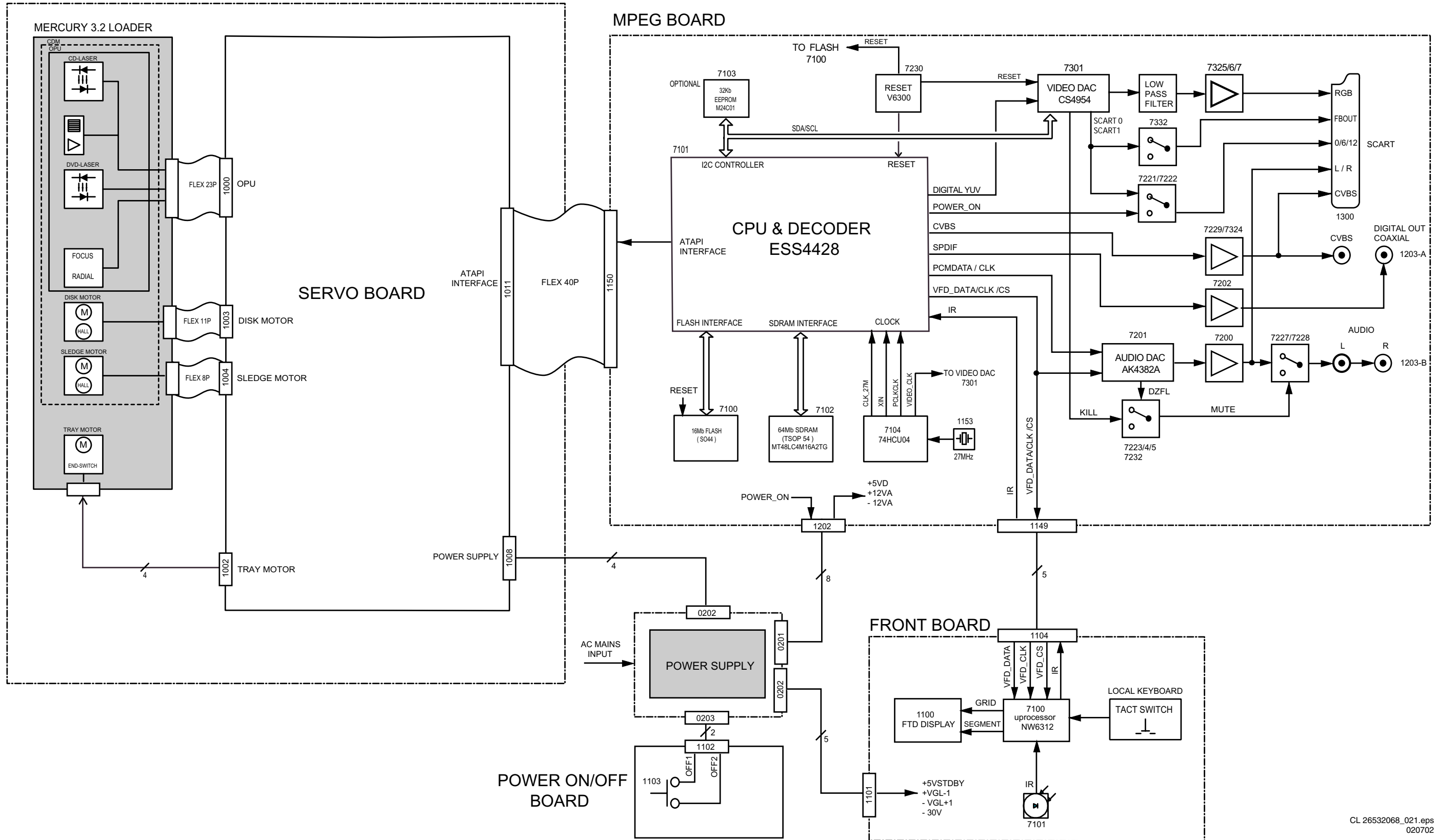


Figure 5-6 No RC and FTD display

6. Block and Wiring Diagram.

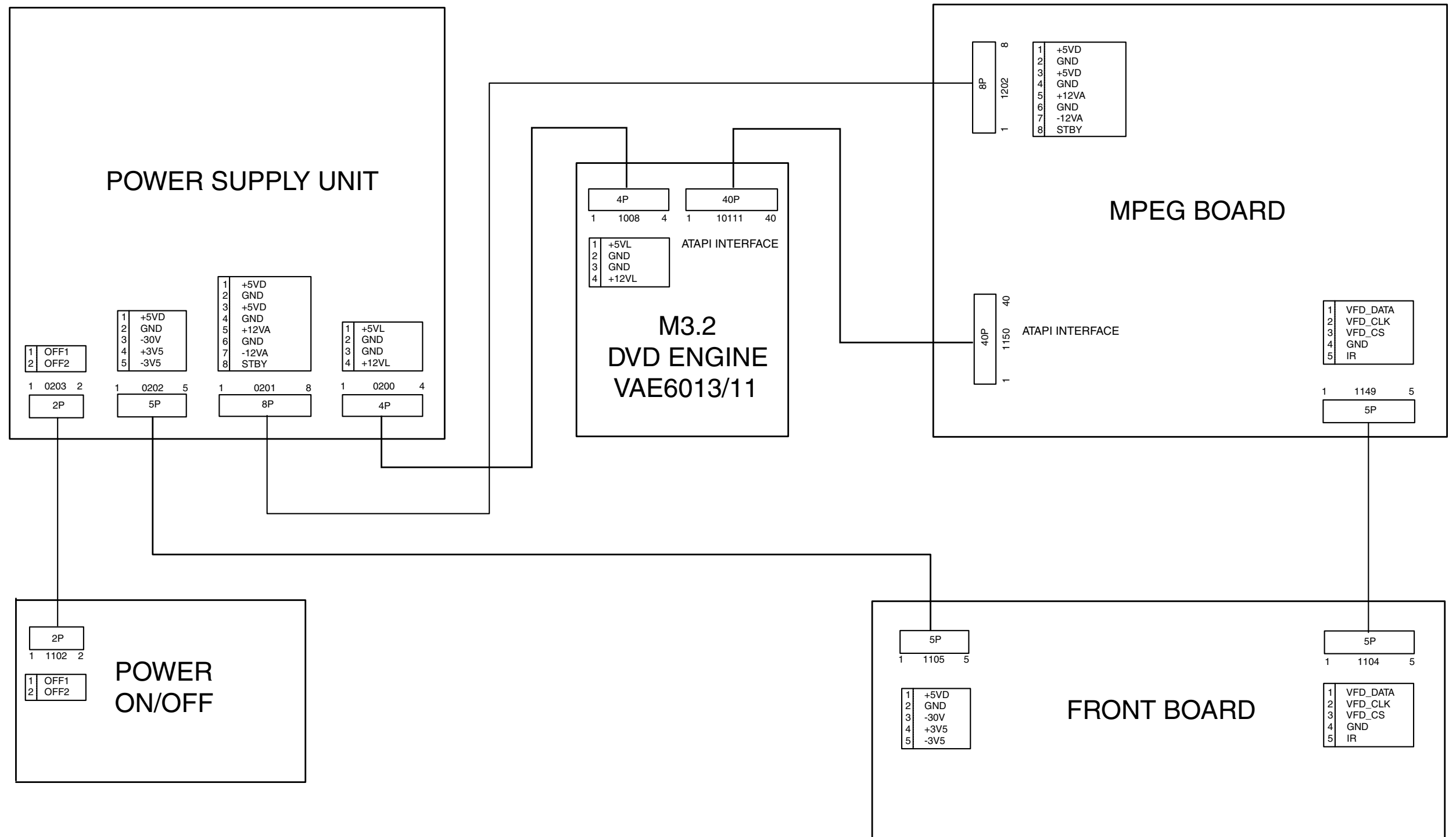
Block Diagram

GENERAL BLOCK DIAGRAM DVD634 EU
DVD ENGINE VAE6013/11

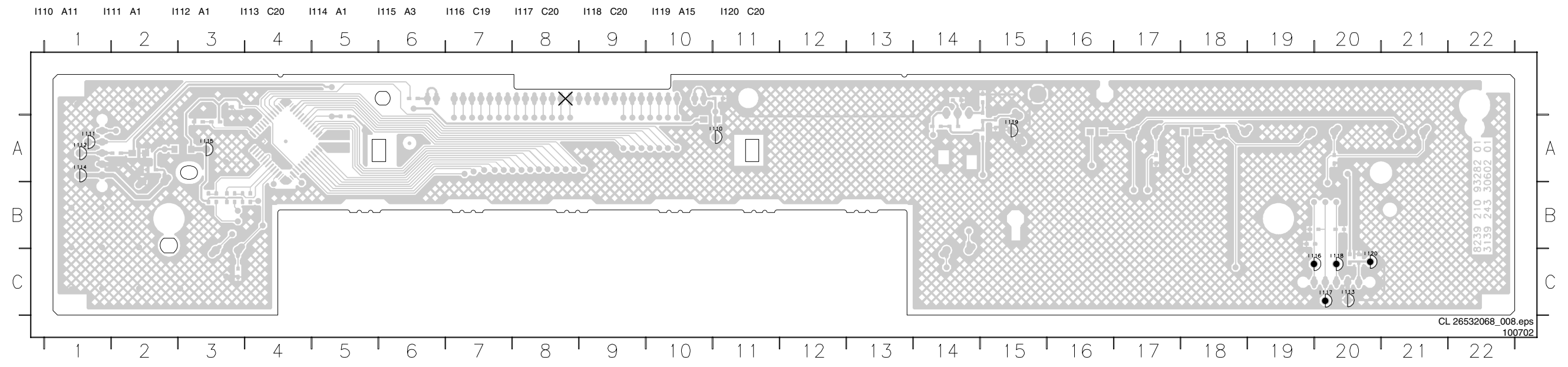


Wiring Diagram

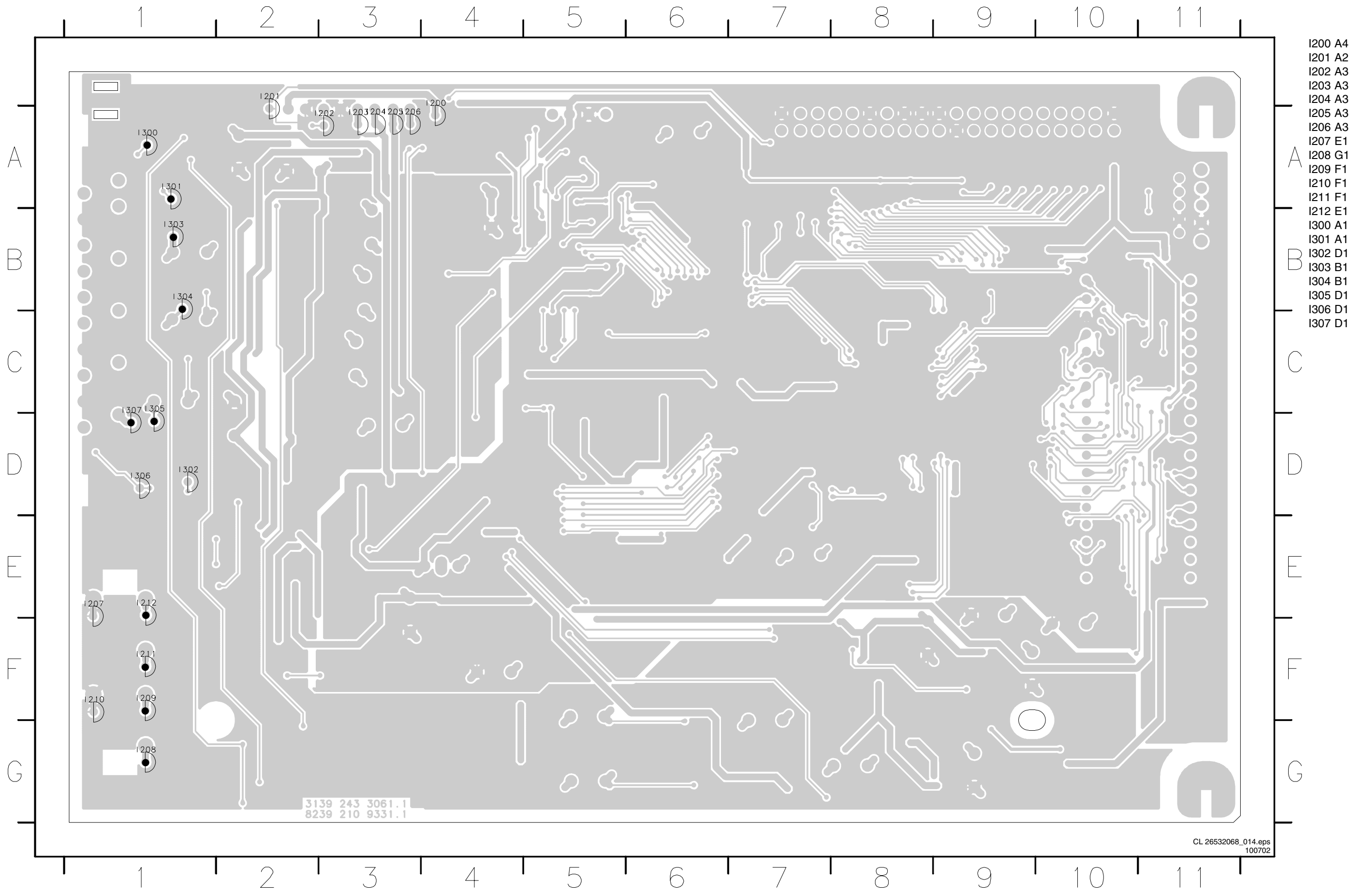
WIRING DIAGRAM FOR DVD634 EU



Test Point Overview Display Board



Test Point Overview MPEG Board

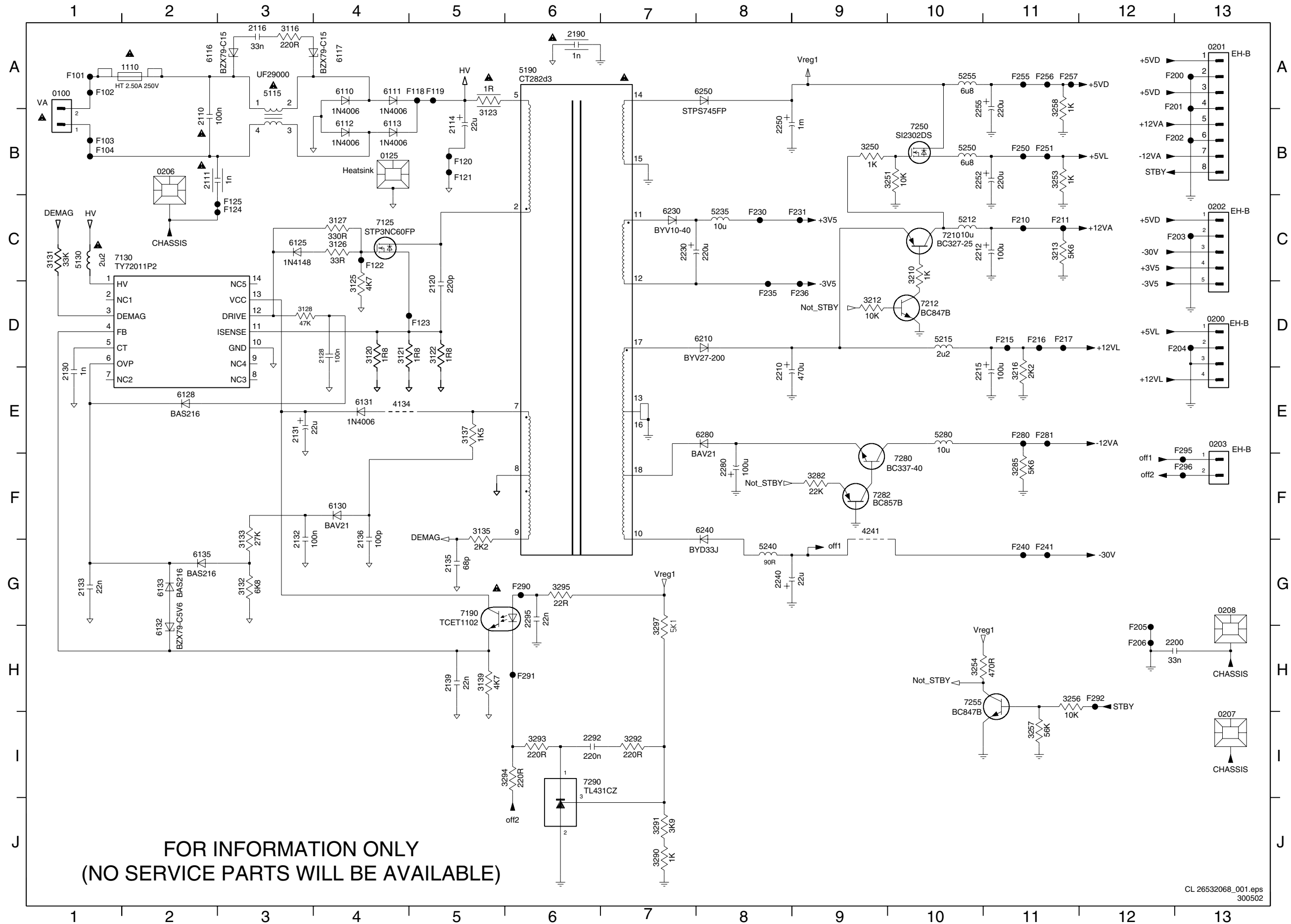


- I200 A4
- I201 A2
- I202 A3
- I203 A3
- I204 A3
- I205 A3
- I206 A3
- I207 E1
- I208 G1
- I209 F1
- I210 F1
- I211 F1
- I212 E1
- I300 A1
- I301 A1
- I302 D1
- I303 B1
- I304 B1
- I305 D1
- I306 D1
- I307 D1

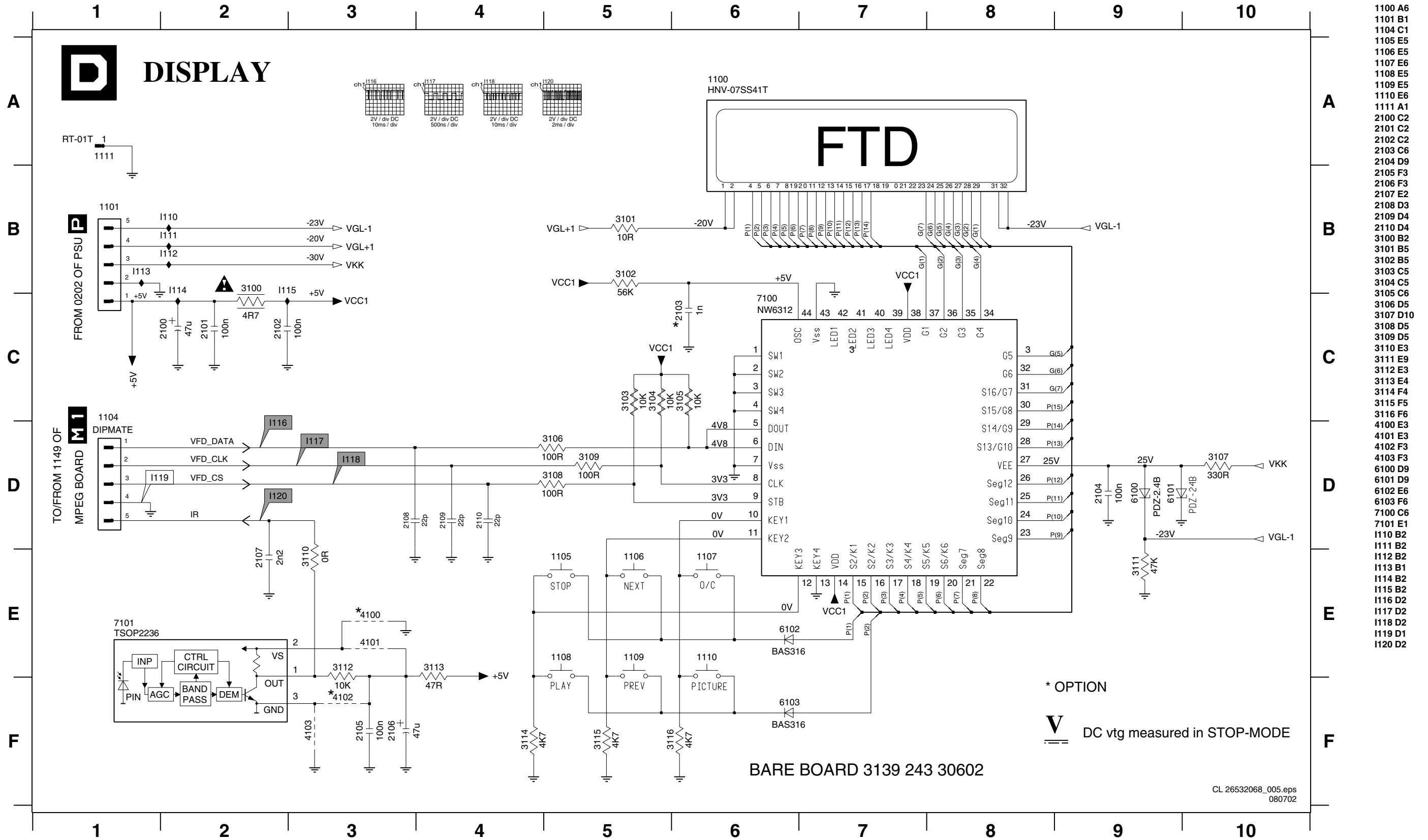
3139 243 3061.1
8239 210 9331.1

7. Electrical Diagrams

Power Supply Unit



Display Board

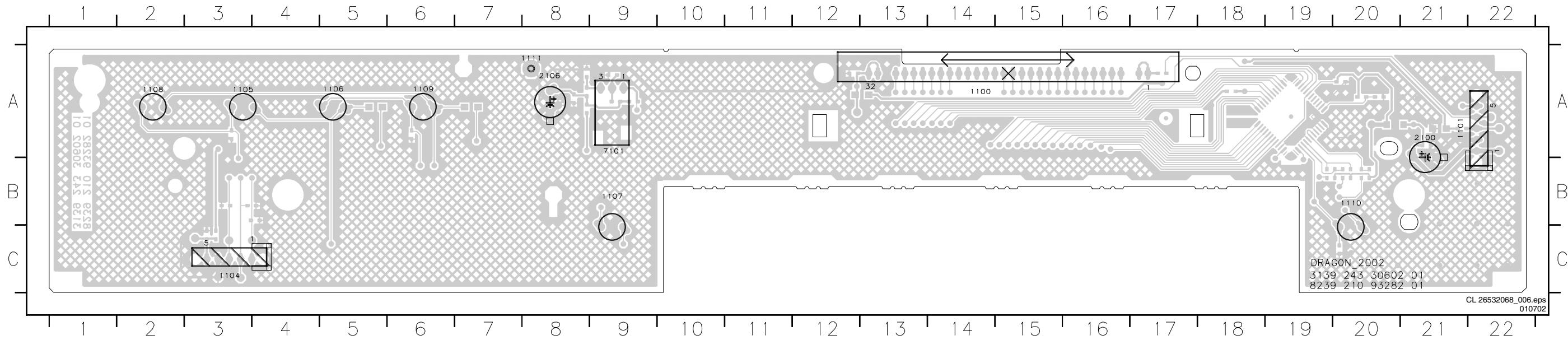


- 1100 A6
- 1101 B1
- 1104 C1
- 1105 E5
- 1106 E5
- 1107 E6
- 1108 E5
- 1109 E5
- 1110 E6
- 1111 A1
- 2100 C2
- 2101 C2
- 2102 C2
- 2103 C6
- 2104 D9
- 2105 F3
- 2106 F3
- 2107 E2
- 2108 D3
- 2109 D4
- 2110 D4
- 3100 B2
- 3101 B5
- 3102 B5
- 3103 C5
- 3104 C5
- 3105 C6
- 3106 D5
- 3107 D10
- 3108 D5
- 3109 D5
- 3110 E3
- 3111 E9
- 3112 E3
- 3113 E4
- 3114 F4
- 3115 F5
- 3116 F6
- 4100 E3
- 4101 E3
- 4102 F3
- 4103 F3
- 6100 D9
- 6101 D9
- 6102 E6
- 6103 F6
- 7100 C6
- 7101 E1
- 1110 B2
- 1111 B2
- 1112 B2
- 1113 B1
- 1114 B2
- 1115 B2
- 1116 D2
- 1117 D2
- 1118 D2
- 1119 D1
- 1120 D2

* OPTION
V DC vtg measured in STOP-MODE

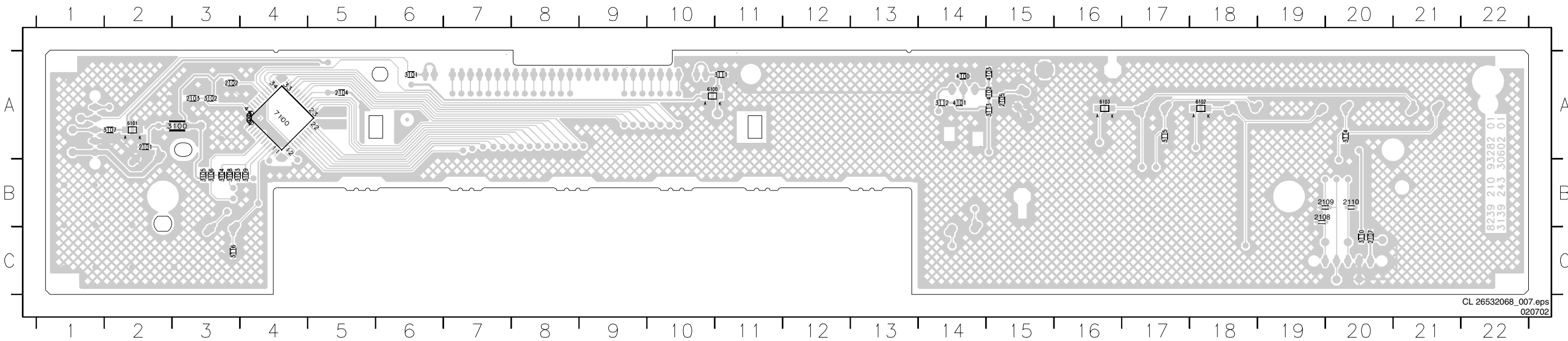
Layout Display Board (Top Side)

1100 A15 1101 A21 1104 C3 1105 A3 1106 A5 1107 B9 1108 A2 1109 A6 1110 B20 1111 A8 2100 A21 2106 A8 7101 A9



Layout Display Board (Bottom Side)

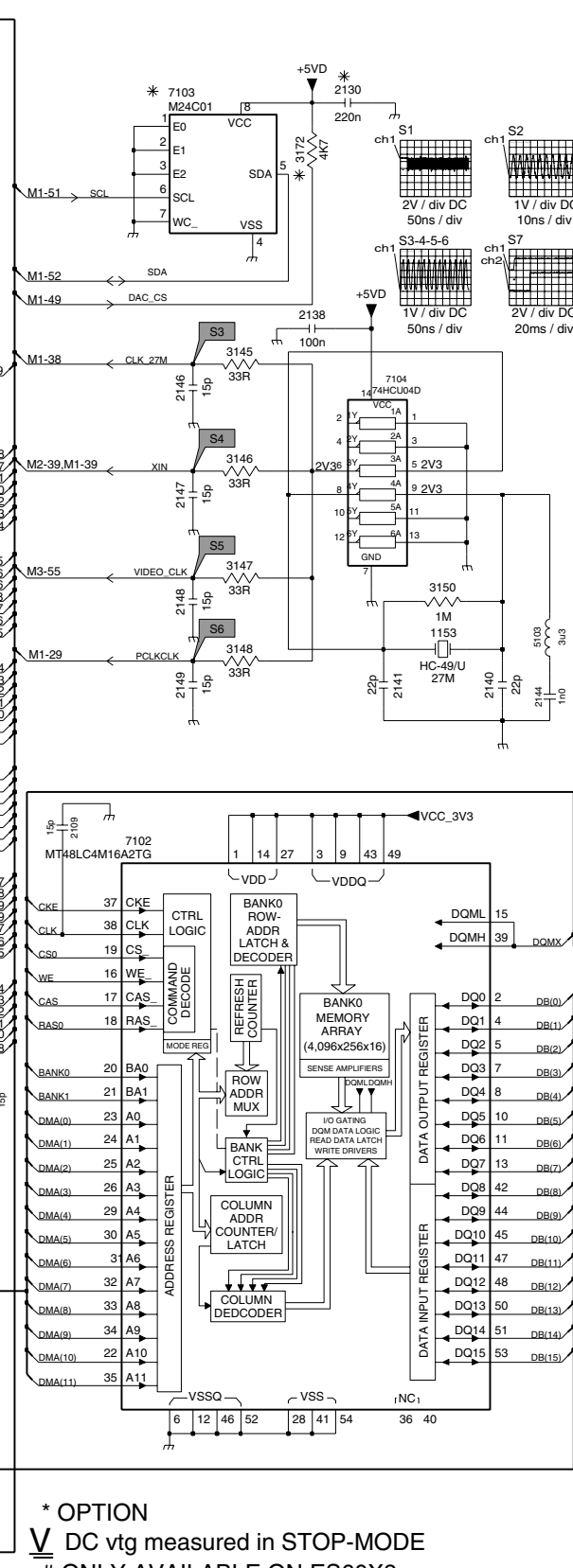
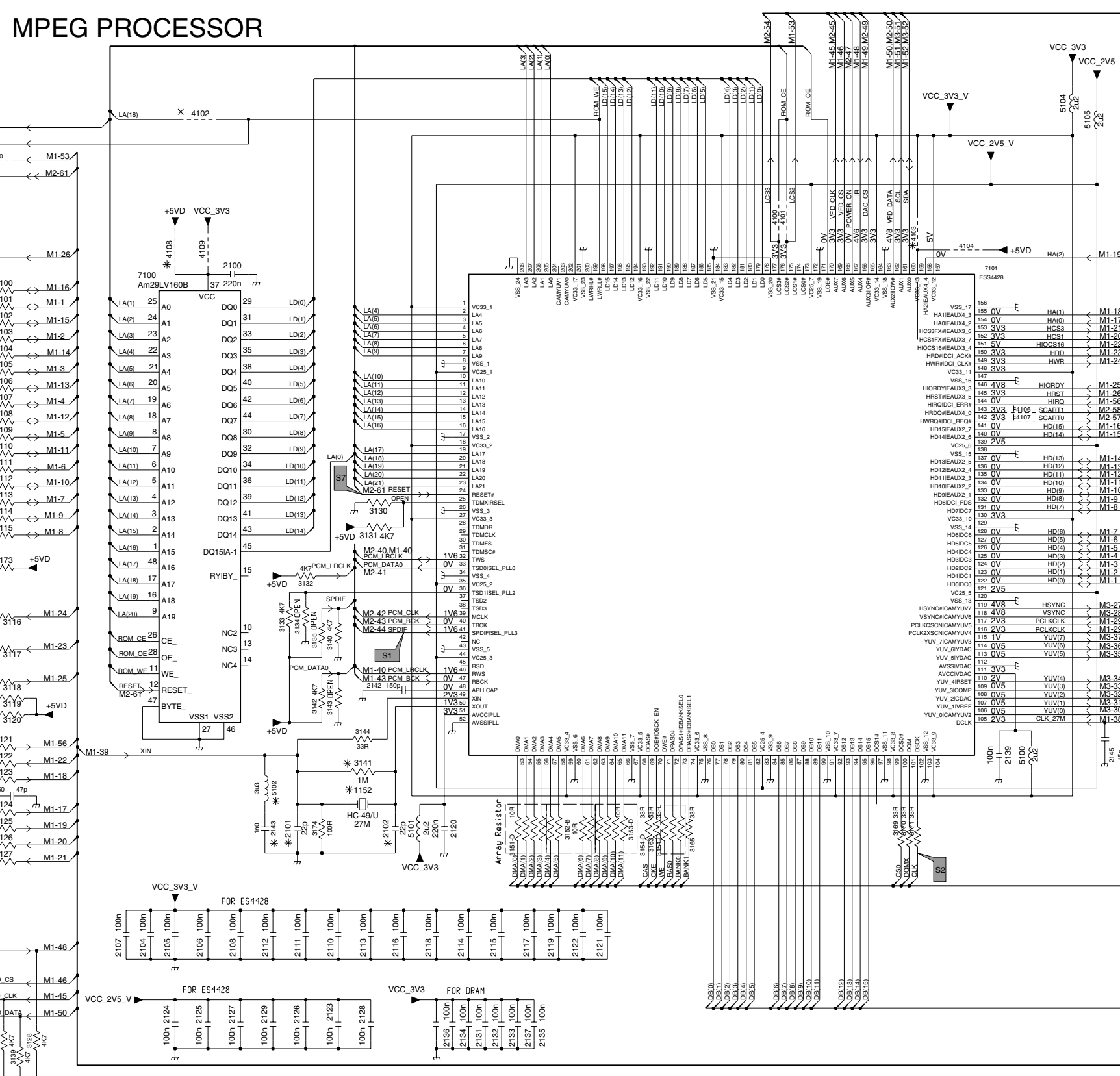
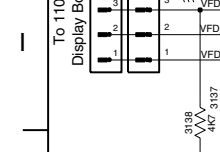
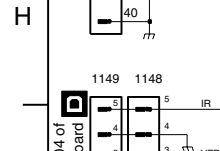
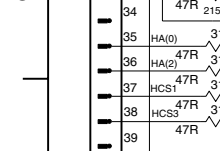
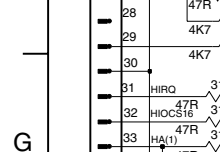
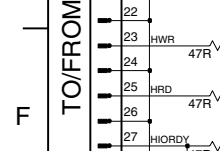
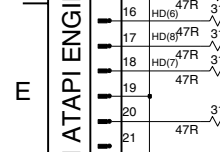
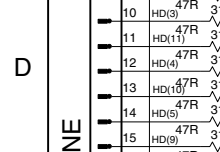
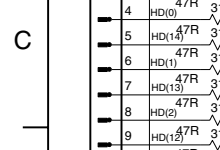
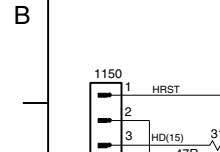
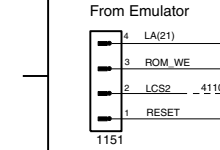
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 2102 A3 2105 A15 2109 B19 3101 A6 3104 B3 3107 A2 3110 C20 3113 A15 3116 C3 4102 A15 6101 A2 7100 A4
 2103 A3 2107 C20 2110 B20 3102 A3 3105 B3 3108 B3 3111 A11 3114 A20 4100 A14 4103 A15 6102 A18



MPEG Board

M1 MPEG PROCESSOR

* For Dev Evaluation From Emulator

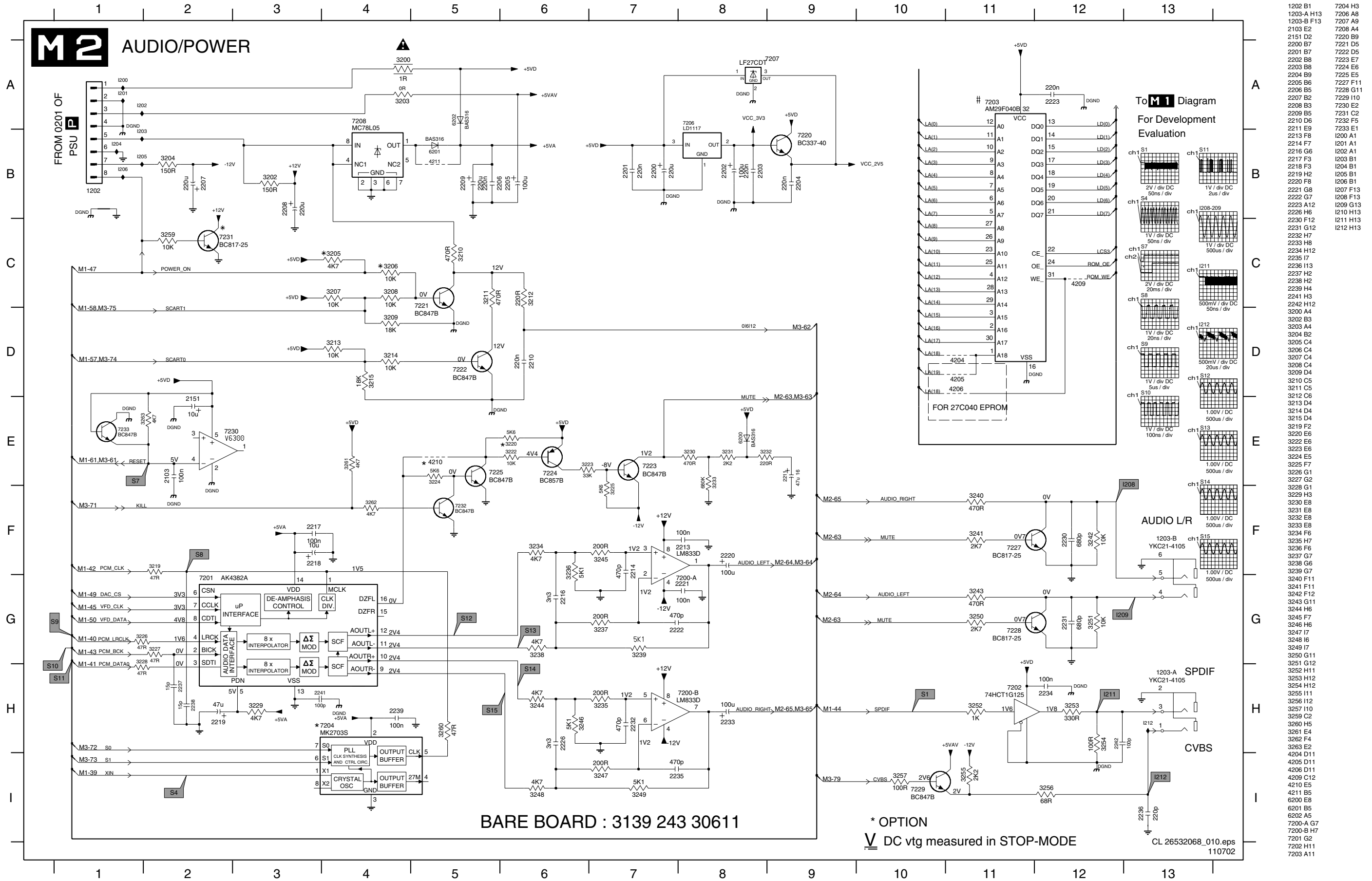


* OPTION V DC vtg measured in STOP-MODE # ONLY AVAILABLE ON ES60X8 CL 26532068_009.eps 080702

BARE BOARD : 3139 243 30611

- 1148 H1, 1149 H1, 1150 B1, 1151 B1, 1152 G4, 1153 D13, 1154 B10, 1155 G5, 1156 B3, 1157 H3, 1158 B1, 1159 E1, 1160 G4, 1161 H4, 1162 H4, 1163 C3, 1164 H5, 1165 A12, 1166 H6, 1167 G7, 1168 H6, 1169 H6, 1170 A13, 1171 H6, 1172 H6, 1173 H6, 1174 H6, 1175 H6, 1176 H6, 1177 H6, 1178 H6, 1179 H6, 1180 H6, 1181 H6, 1182 H6, 1183 H6, 1184 H6, 1185 H6, 1186 H6, 1187 H6, 1188 H6, 1189 H6, 1190 H6, 1191 H6, 1192 H6, 1193 H6, 1194 H6, 1195 H6, 1196 H6, 1197 H6, 1198 H6, 1199 H6, 1200 H6, 1201 H6, 1202 H6, 1203 H6, 1204 H6, 1205 H6, 1206 H6, 1207 H6, 1208 H6, 1209 H6, 1210 H6, 1211 H6, 1212 H6, 1213 H6, 1214 H6, 1215 H6, 1216 H6, 1217 H6, 1218 H6, 1219 H6, 1220 H6, 1221 H6, 1222 H6, 1223 H6, 1224 H6, 1225 H6, 1226 H6, 1227 H6, 1228 H6, 1229 H6, 1230 H6, 1231 H6, 1232 H6, 1233 H6, 1234 H6, 1235 H6, 1236 H6, 1237 H6, 1238 H6, 1239 H6, 1240 H6, 1241 H6, 1242 H6, 1243 H6, 1244 H6, 1245 H6, 1246 H6, 1247 H6, 1248 H6, 1249 H6, 1250 H6, 1251 H6, 1252 H6, 1253 H6, 1254 H6, 1255 H6, 1256 H6, 1257 H6, 1258 H6, 1259 H6, 1260 H6, 1261 H6, 1262 H6, 1263 H6, 1264 H6, 1265 H6, 1266 H6, 1267 H6, 1268 H6, 1269 H6, 1270 H6, 1271 H6, 1272 H6, 1273 H6, 1274 H6, 1275 H6, 1276 H6, 1277 H6, 1278 H6, 1279 H6, 1280 H6, 1281 H6, 1282 H6, 1283 H6, 1284 H6, 1285 H6, 1286 H6, 1287 H6, 1288 H6, 1289 H6, 1290 H6, 1291 H6, 1292 H6, 1293 H6, 1294 H6, 1295 H6, 1296 H6, 1297 H6, 1298 H6, 1299 H6, 1300 H6, 1301 C1, 1302 C1, 1303 C1, 1304 C1, 1305 C1, 1306 C1, 1307 D1, 1308 D1, 1309 D1, 1310 D1, 1311 D1, 1312 D1, 1313 E1, 1314 E1, 1315 E1, 1316 F1, 1317 F1, 1318 F1, 1319 F1, 1320 G1, 1321 G1, 1322 G1, 1323 G1, 1324 G1, 1325 G1, 1326 H1, 1327 H1, 1328 H1, 1329 H1, 1330 E5, 1331 E5, 1332 E4, 1333 F4, 1334 F4, 1335 F4, 1336 H1, 1337 H1, 1338 H1, 1339 H1, 1340 F4, 1341 G4, 1342 F4, 1343 F4, 1344 G4, 1345 B12, 1346 C12, 1347 D12, 1348 D12, 1349 D13, 1350 D13, 1351-D H6, 1352-B G7, 1353-C H7, 1354-C H7, 1355 H7, 1356 H7, 1357 G9, 1358 G9, 1359 G9, 1360 G9, 1361 G9, 1362 A13, 1363 E1

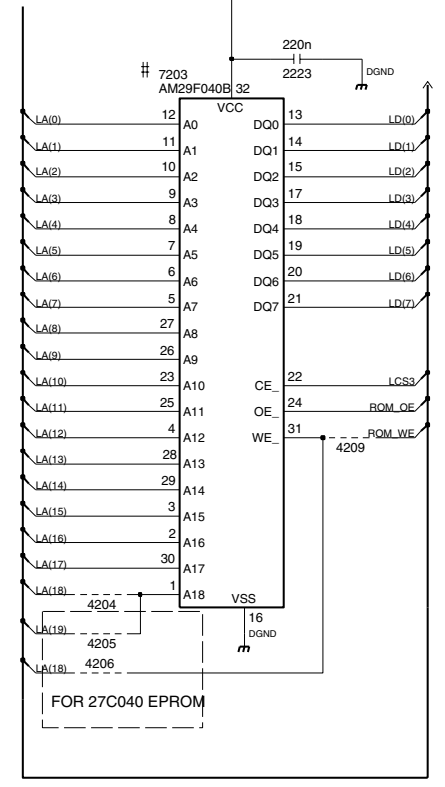
MPEG Board: Audio Power



BARE BOARD : 3139 243 30611

* OPTION
 V DC vtg measured in STOP-MODE

To M1 Diagram
 For Development
 Evaluation



AUDIO L/R

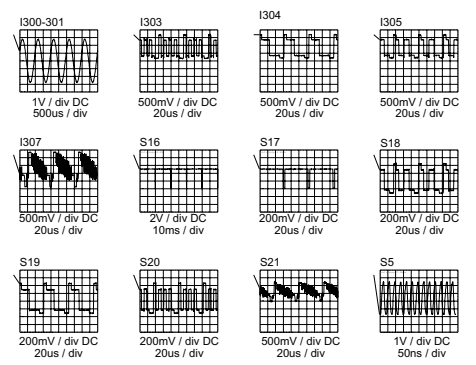
SPDIF

CVBS

- 1202 B1
- 1203-A H13
- 1203-B F13
- 2103 E2
- 2151 D2
- 2200 B7
- 2201 B7
- 2202 B8
- 2203 B8
- 2204 B9
- 2205 B6
- 2206 B5
- 2207 B2
- 2208 B3
- 2209 B5
- 2210 D6
- 2211 E9
- 2213 F8
- 2214 F7
- 2216 G6
- 2217 F3
- 2218 F3
- 2219 H2
- 2220 F8
- 2221 G8
- 2222 G7
- 2223 A12
- 2226 H6
- 2230 F12
- 2231 G12
- 2232 H7
- 2233 H8
- 2234 H12
- 2235 I7
- 2236 H3
- 2237 H2
- 2238 H2
- 2239 H4
- 2241 H3
- 2242 H12
- 3200 A4
- 3202 B3
- 3203 A4
- 3204 B2
- 3205 C4
- 3206 C4
- 3207 C4
- 3208 C4
- 3209 D4
- 3210 C5
- 3211 C5
- 3212 C6
- 3213 D4
- 3214 D4
- 3215 D4
- 3219 F2
- 3220 E6
- 3223 E6
- 3224 E5
- 3225 F7
- 3226 G1
- 3227 G2
- 3228 G1
- 3229 H3
- 3230 E8
- 3231 E8
- 3232 E8
- 3233 E8
- 3234 F6
- 3235 H7
- 3236 F6
- 3237 G7
- 3238 G6
- 3239 G7
- 3240 F11
- 3241 F11
- 3242 F12
- 3243 G11
- 3244 H6
- 3245 F7
- 3246 H6
- 3247 I7
- 3248 I6
- 3249 I7
- 3250 G11
- 3251 G12
- 3252 H11
- 3253 H12
- 3254 H12
- 3255 H11
- 3256 H12
- 3257 I0
- 3259 C2
- 3260 H4
- 3261 E5
- 3262 F4
- 3263 E2
- 4204 D11
- 4205 D11
- 4206 D11
- 4208 C12
- 4210 E5
- 4211 B5
- 6200 E8
- 6201 B5
- 6202 A5
- 7200-A G7
- 7200-B H7
- 7201 G2
- 7202 H11
- 7203 A11
- 7204 H3
- 7206 A8
- 7207 A9
- 7208 A4
- 7209 B9
- 7221 D5
- 7222 D5
- 7223 E7
- 7224 E6
- 7225 E5
- 7227 F11
- 7228 G11
- 7229 I10
- 7230 E2
- 7231 C2
- 7232 F5
- 7233 E1
- I200 A1
- I201 A1
- I202 B1
- I203 B1
- I206 B1
- I207 F13
- I208 F13
- I209 G13
- I210 H13
- I211 H13
- I212 H13

MPEG Board: Video & Scart

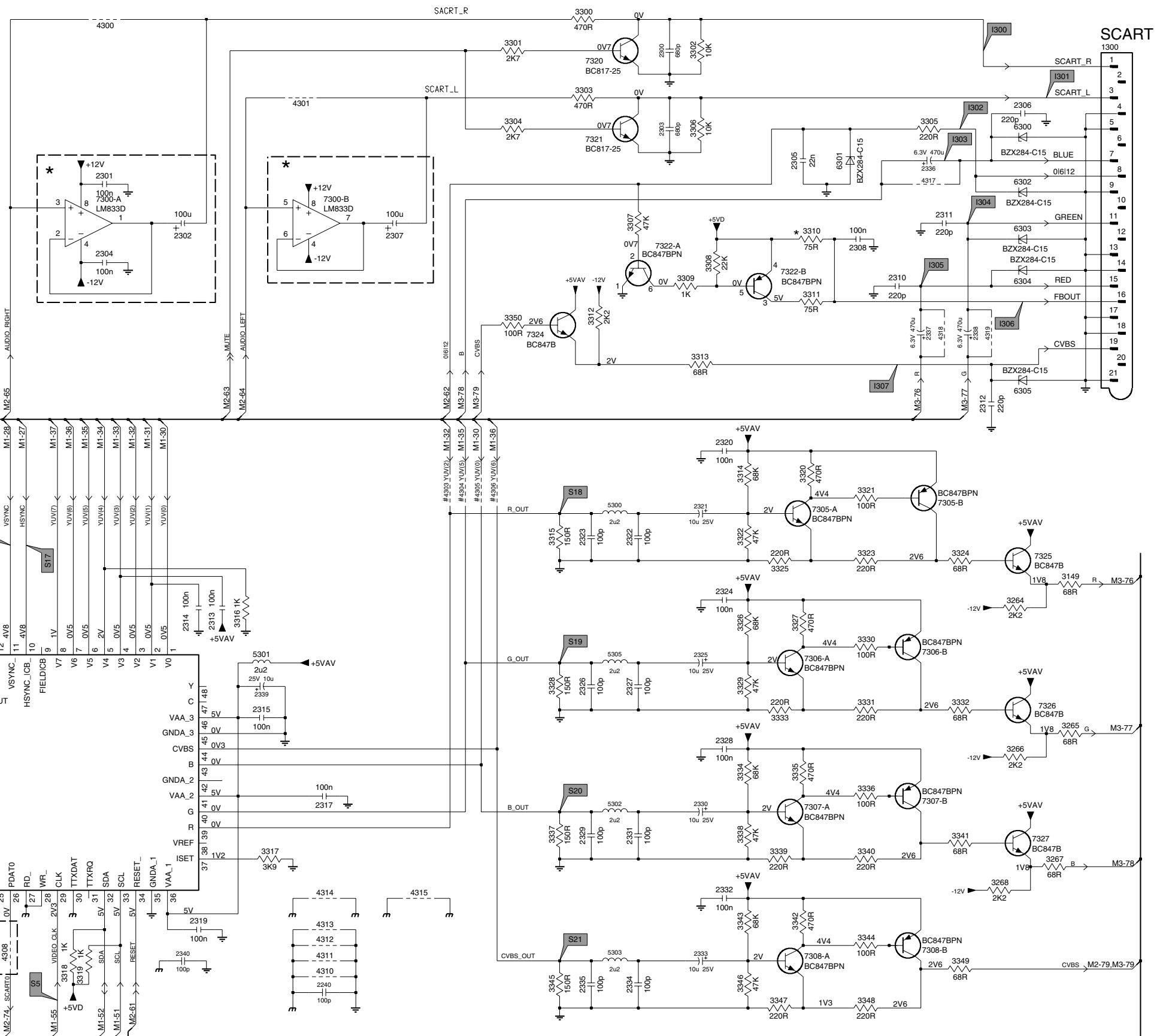
M3 VIDEO & SCART



For Development Evaluation

ONLY AVAILABLE ON ES60X8
* OPTION

DC vtg measured in STOP-MODE



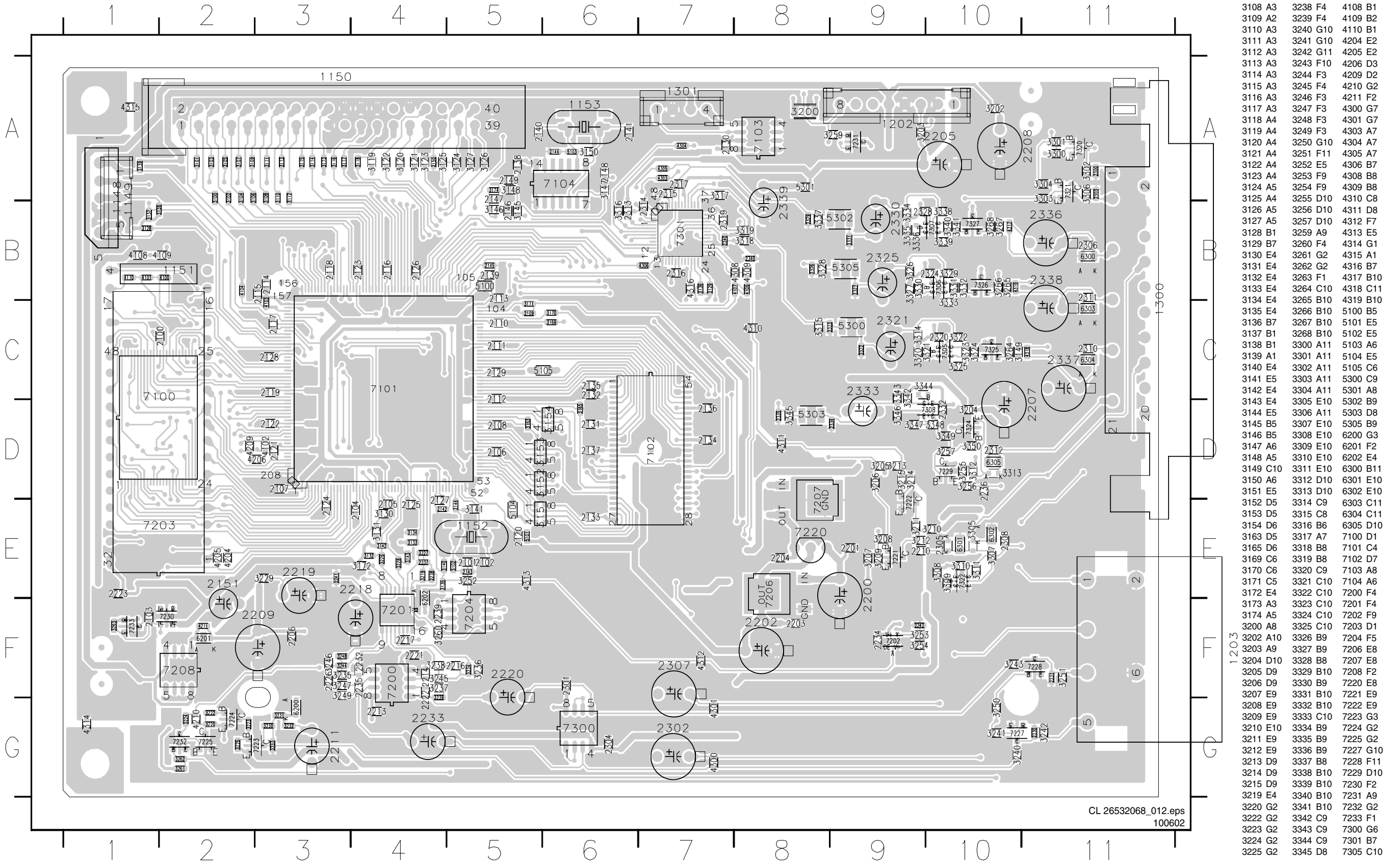
BARE BOARD : 3139 243 30611

CL 26532068_011.eps
080702

- I300 A13
- I301 D1
- 2240 I6
- 2300 A9
- 2301 B4
- 2302 B5
- 2303 A9
- 2304 C4
- 2305 B10
- 2306 A12
- 2307 B7
- 2308 B11
- 2310 C11
- 2311 B12
- 2312 D12
- 2313 F5
- 2314 F5
- 2315 G6
- 2316 G2
- 2317 G6
- 2319 I5
- 2320 D10
- 2321 E10
- 2322 E9
- 2323 E9
- 2324 F10
- 2325 F10
- 2326 F8
- 2327 F9
- 2328 G10
- 2329 H8
- 2330 H10
- 2331 H9
- 2332 H10
- 2333 I10
- 2334 I9
- 2335 I8
- 2336 B12
- 2337 C12
- 2338 C12
- 2339 F6
- 2340 I5
- 3129 H2
- 3136 H2
- 3149 E13
- 3264 F12
- 3265 G13
- 3266 G12
- 3268 H12
- 3300 A8
- 3301 A8
- 3302 A10
- 3303 A8
- 3304 A8
- 3305 A12
- 3306 A10
- 3307 B9
- 3308 C10
- 3309 C9
- 3310 B11
- 3311 C11
- 3312 C9
- 3313 C10
- 3314 D10
- 3315 E8
- 3316 F5
- 3317 H6
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- 3325 E10
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- 3335 G10
- 3336 G11
- 3337 H8
- 3338 H10
- 3339 H10
- 3340 H11
- 3341 H12
- 3342 I10
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- 3344 I11
- 3345 I8
- 3346 I10
- 3347 I10
- 3348 I11
- 3349 I12
- 3350 C8
- 4300 A4
- 4301 A6
- 4303 E7
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- 4306 E8
- 4308 I3
- 4309 I3
- 4310 I6
- 4311 I6
- 4312 I6
- 4313 I6
- 4314 H6
- 4315 H7
- 4316 H2
- 4317 B12
- 4318 C12
- 4319 C12
- 5300 E9
- 5301 F6
- 5302 H9
- 5303 I9
- 5305 F9
- 6300 A12
- 6301 B11
- 6302 B12
- 6303 B12
- 6304 C12
- 6305 D12
- 7300-A B4
- 7300-B B6
- 7301 F3
- 7305-A E11
- 7305-B E12
- 7306-A F10
- 7306-B F12
- 7307-A H10
- 7307-B G12
- 7308-A H10
- 7308-B H12
- 7320 A8
- 7321 A8
- 7322-B C9
- 7323 C8
- 7325 E13
- 7326 G13
- 7327 H13
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- I301 A13
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- I303 B12
- I304 B12
- I305 C12
- I306 C12
- I307 C11

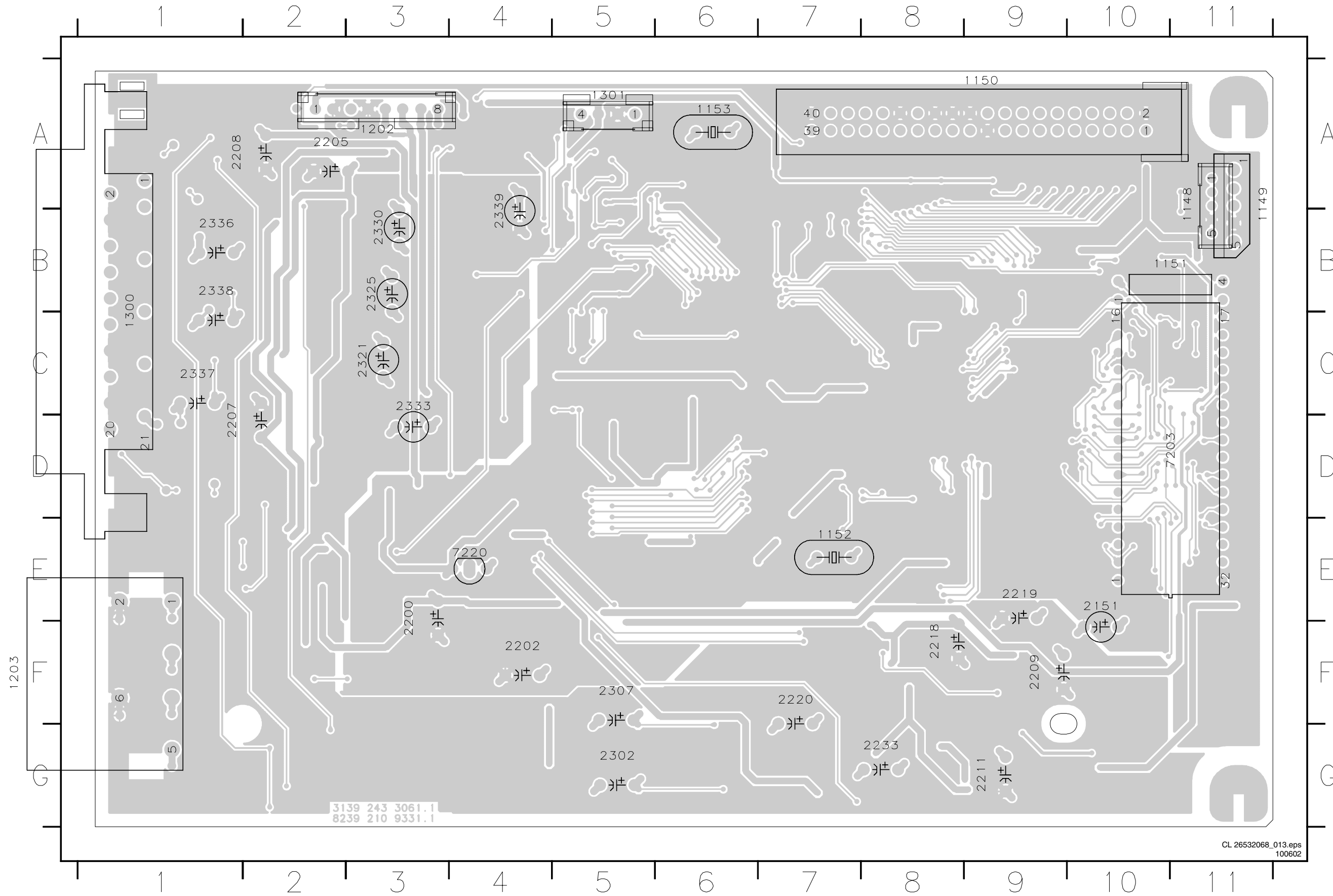
Layout MPEG Board (Top Side)

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1149 A1	2103 F1	2114 B3	2125 E4	2136 D7	2147 A5	2206 F3	2219 E3	2235 F4	2303 A11	2315 A7	2327 B9	2338 B11	3227 E4	3347 D9
1150 A3	2104 E4	2115 B3	2126 B4	2137 D6	2148 A6	2207 D11	2220 F5	2236 D10	2304 G6	2316 B7	2328 B9	2339 B8	3228 E4	3348 D10
1151 B1	2105 E4	2116 B4	2127 E4	2138 A5	2149 A5	2208 A11	2221 F4	2237 E4	2305 E10	2317 A7	2329 B8	2340 B8	3229 E3	3349 D10
1152 E5	2106 D5	2117 C3	2128 C3	2139 B5	2150 A4	2209 F3	2222 F4	2238 E4	2306 B11	2319 B7	2330 B9	3100 A2	3230 G3	3350 D10
1153 A6	2107 D3	2118 B3	2129 C5	2140 A5	2151 E2	2210 E9	2223 E1	2239 F4	2307 F7	2320 C10	2331 B9	3101 A2	3231 G3	4100 B2
1202 A9	2108 D5	2119 C3	2130 A7	2141 A6	2200 E9	2211 G3	2226 F3	2240 B7	2308 E10	2321 C9	2332 D10	3102 A2	3232 G3	4101 B1
1300 B11	2109 C5	2120 E5	2131 D6	2142 E4	2201 E9	2213 G4	2230 G11	2241 E3	2310 C11	2322 C9	2333 C9	3103 A2	3233 G3	4102 D3
1301 A7	2110 C5	2121 D3	2132 C6	2143 E5	2202 F8	2214 F4	2231 F11	2242 F9	2311 B11	2323 C8	2334 D9	3104 A2	3234 F5	4103 C3
2100 C2	2111 C5	2122 D3	2133 E6	2144 A6	2203 F8	2216 F5	2232 F4	2300 A11	2312 D10	2324 B10	2335 D8	3105 A2	3235 F3	4104 B2
2101 E5	2112 C5	2123 B4	2134 D7	2145 B5	2204 E8	2217 F4	2233 G4	2301 F6	2313 B6	2325 B9	2336 B11	3106 A2	3236 F5	4106 B8



CL 26532068_012.eps
100602

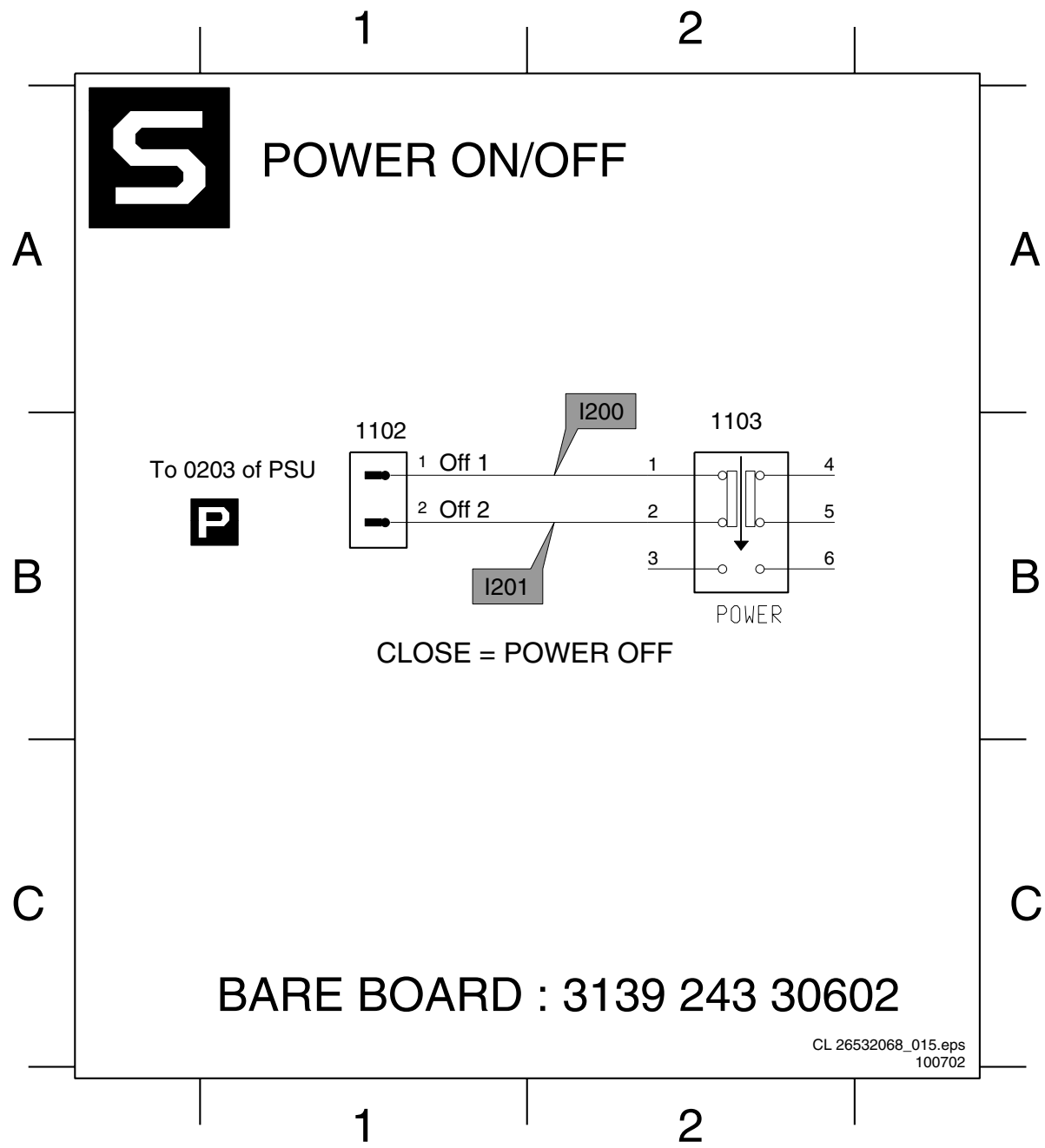
Layout MPEG Board (Bottom Side)



- 1148 A11
- 1149 A11
- 1150 A9
- 1151 B11
- 1152 E7
- 1153 A6
- 1202 A3
- 1300 B1
- 1301 A5
- 2151 E10
- 2200 E3
- 2202 F4
- 2205 A2
- 2207 D1
- 2208 A1
- 2209 F9
- 2211 G9
- 2218 F8
- 2219 E9
- 2220 F7
- 2233 G8
- 2302 G5
- 2307 F5
- 2321 C3
- 2325 B3
- 2330 B3
- 2333 C3
- 2336 B1
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- 2338 B1
- 2339 B4
- 7203 D11
- 7220 E4

3139 243 3061.1
8239 210 9331.1

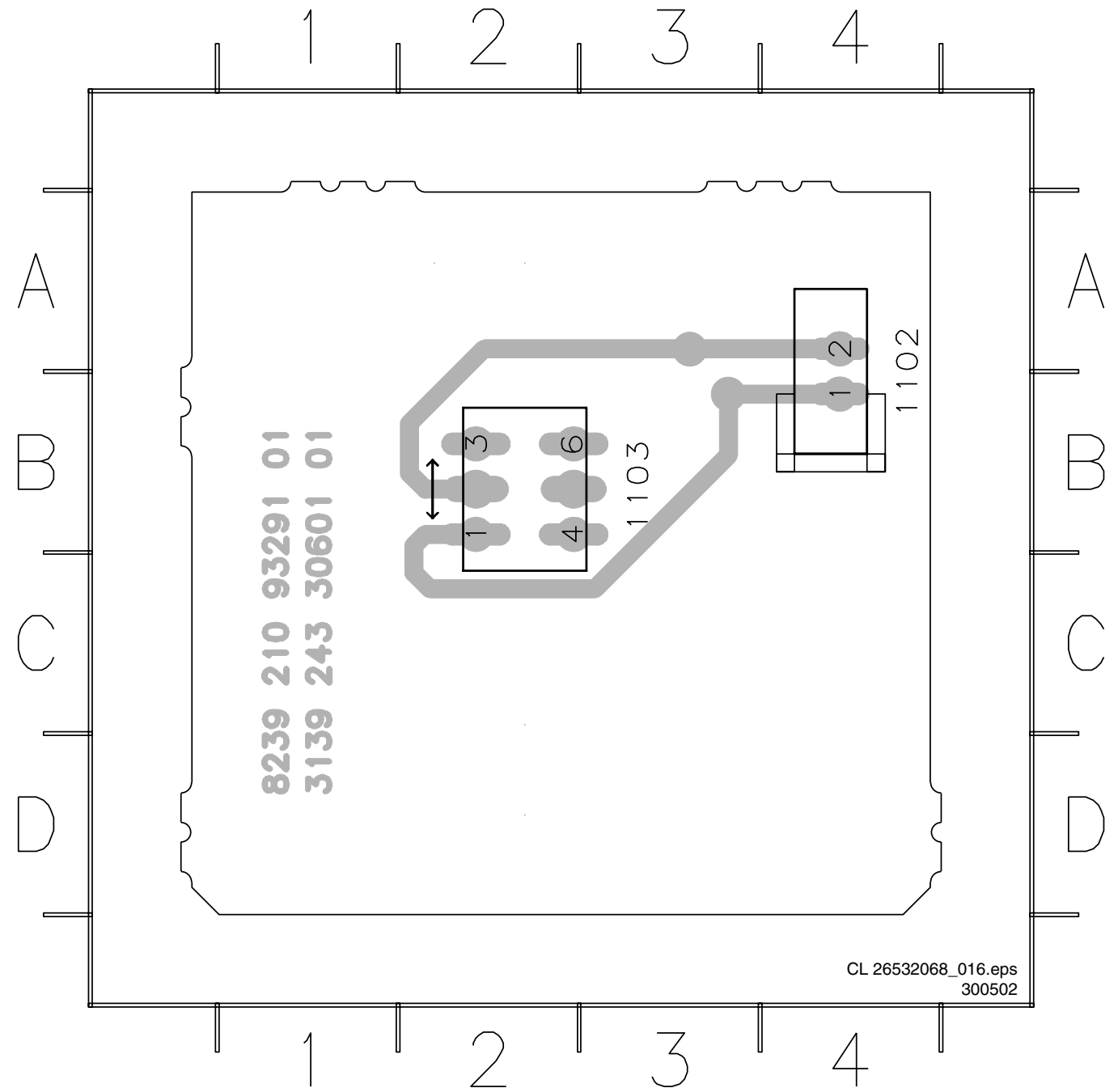
Power On/Off Panel



1102 B1
1103 A2
I200 B2
I201 B2

CL 26532068_015.eps
100702

Layout Power On/Off Panel



CL 26532068_016.eps
300502

8. Alignments

Not applicable.

9. Circuit Descriptions, List of Abbreviations, and IC Data

9.1 Circuit Descriptions

Not applicable.

9.2 List of abbreviations

Not applicable.

9.3 IC Data

9.3.1 uPD16312

BLOCK DIAGRAM

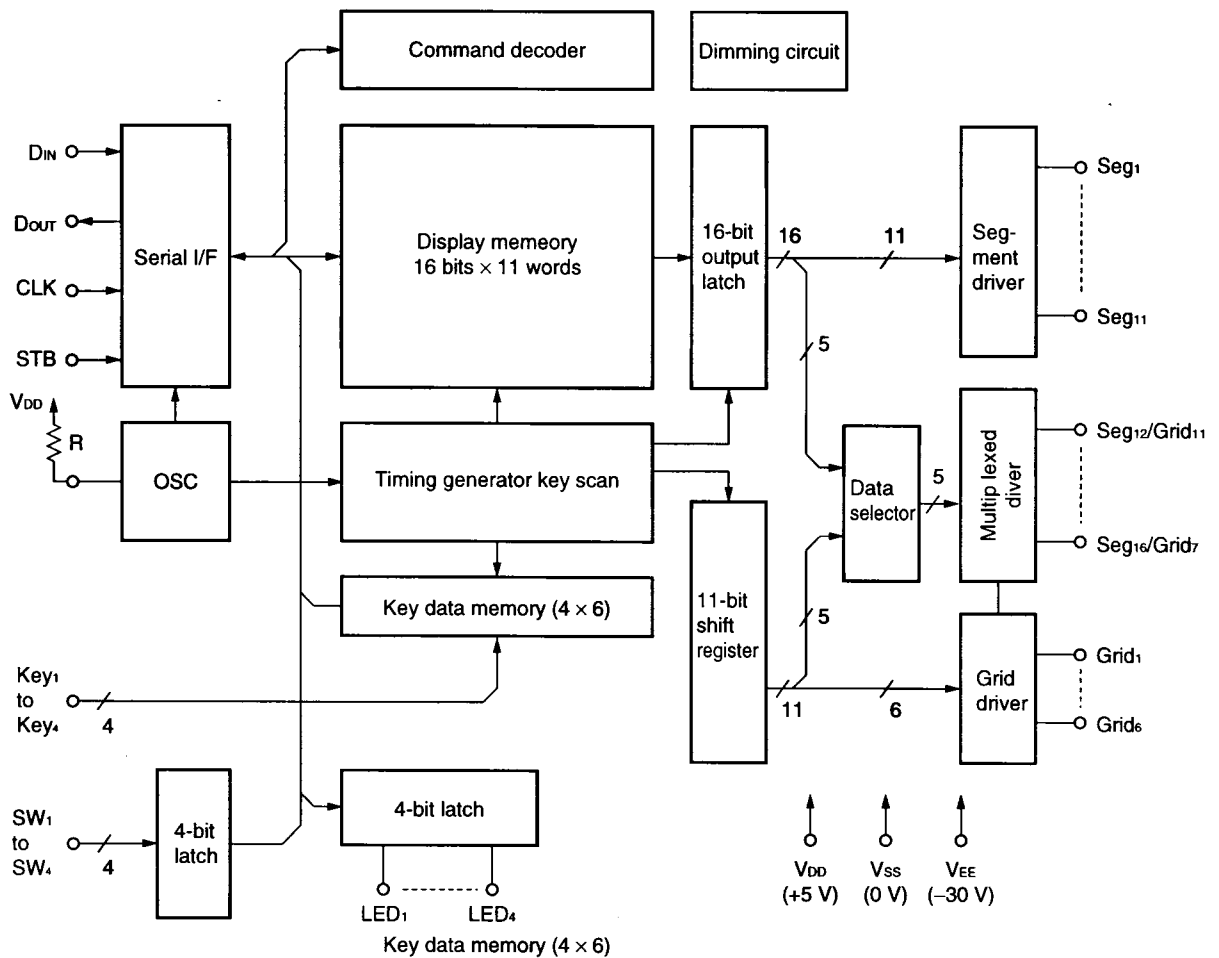
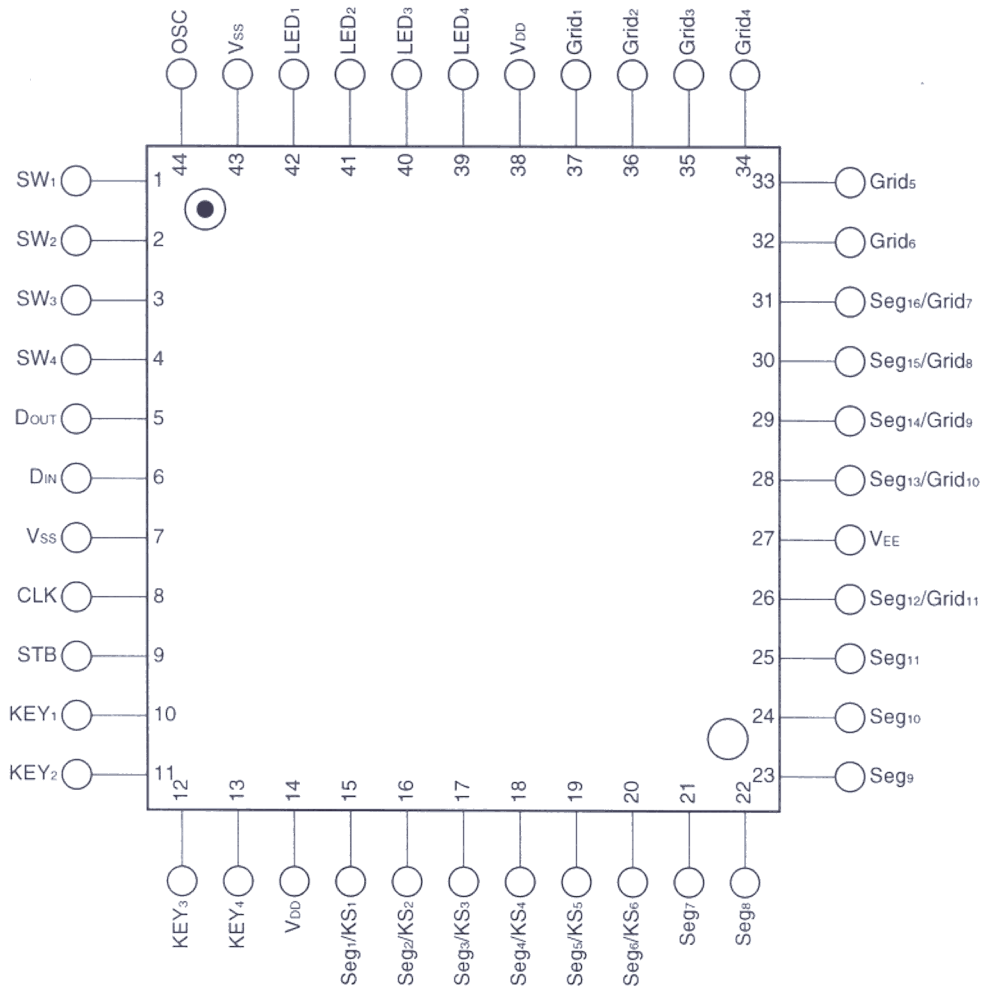


Figure 9-1 Block Diagram uPD16312

PIN CONFIGURATION (Top View)



Use all power pins.

Figure 9-2 Pinning uPD16312

Pin Function

Symbol	Pin Name	Pin No	Description
DIN	Data input	6	Input serial data at rising edge of shift clock, starting from the low order bit.
DOU _T	Data output	5	Output serial data at the falling edge of the shift clock, starting from low order bit. This is N-ch open-drain output pin.
STB	Strobe	9	Initializes serial interface at the rising or falling edge of the μ PD16312. It then waits for reception of a command. Data input after STB has fallen is processed as a command. While command data is processed, current processing is stopped, and the serial interface is initialized. While STB is high, CLK is ignored.
CLK	Clock input	8	Reads serial data at the rising edge, and outputs data at the falling edge.
OSC	Oscillator pin	44	Connect resistor to this pin to determine the oscillation frequency to this pin.
Seg ₁ /KS ₁ to Seg ₆ /KS ₆	High-voltage output	15 to 20	Segment output pins (Dual function as key source)
Seg ₇ to Seg ₁₁	High-voltage output (segment)	21 to 25	Segment output pins
Grid ₁ to Grid ₆	High-voltage output (grid)	37 to 32	Grid output pins
Seg ₁₂ /Grid ₁₁ to Seg ₁₆ /Grid ₇	High-voltage output (segment/grid)	26, 28 to 31	These pins are selectable for segment or grid driving.
LED ₁ to LED ₄	LED output	42 to 39	CMOS output. +20 mA max.
KEY ₁ to KEY ₄	Key data input	10 to 13	Data input to these pins is latched at the end of the display cycle.
SW ₁ to SW ₄	Switch input	1 to 4	These pins constitute a 4-bit general-purpose input port.
V _{DD}	Logic power	14, 38	5 V \pm 10 %
V _{SS}	Logic ground	7, 43	Connect this pin to system GND.
V _{EE}	Pull-down level	27	V _{DD} – 35 V max.

Figure 9-3 Pin Description μ PD16312

10. Spare Parts List

Mechanical DVD634 /001

Various

0001	3139 247 56151	FRONT COMPLETE DVD634
0145	9305 026 61311	VAE6013/11/V042 (PHOS) B
0250	3139 247 56041	PLATE BACK DVD624 PNT PRT
0300	3139 247 55511	COVER TOP DVD743 PPT
0361▲	4822 321 11196	MAINS CORD 20/21"
0365	3103 308 92610	CABLE AUDIO 2X2 RCA MALE 1.5
0373	2422 076 00445	CORD SCART 1M1 M 20P
0375	3139 246 11941	IFU DVD624/001
0390	3141 017 90220	REMOTE CONTROL DVD- Q30/751
1001	3139 248 82071	PCBAS FRONT DVD624
1002	3139 248 82121	PCBAS MPEG DVD624
1005▲	3122 427 23271	PSU DVD DRAGON EURO B

Mechanical DVD634 /021

Various

0001	3139 247 56151	FRONT COMPLETE DVD634
0145	9305 026 61311	VAE6013/11/V042 (PHOS) B
0250	3139 247 56041	PLATE BACK DVD624 PNT PRT
0300	3139 247 55511	COVER TOP DVD743 PPT
0361▲	4822 321 11196	MAINS CORD 20/21"
0365	3103 308 92610	CABLE AUDIO 2X2 RCA MALE 1.5
0373	2422 076 00445	CORD SCART 1M1 M 20P
0375	3139 246 11931	IFU DVD624/021
0390	3141 017 90220	REMOTE CONTROL DVD- Q30/751
1001	3139 248 82071	PCBAS FRONT DVD624
1002	3139 248 82121	PCBAS MPEG DVD624
1005▲	3122 427 23271	PSU DVD DRAGON EURO B

Mechanical DVD634 /051

Various

0001	3139 247 56151	FRONT COMPLETE DVD634
0145	9305 026 61311	VAE6013/11/V042 (PHOS) B
0250	3139 247 56041	PLATE BACK DVD624 PNT PRT
0300	3139 247 55511	COVER TOP DVD743 PPT
0361▲	4822 321 11207	MAINS CORD & FUSE 14" GB /05
0365	3103 308 92610	CABLE AUDIO 2X2 RCA MALE 1.5
0373	2422 076 00445	CORD SCART 1M1 M 20P
0375	3139 246 11921	IFU DVD624/051
0390	3141 017 90220	REMOTE CONTROL DVD- Q30/751
1001	3139 248 82071	PCBAS FRONT DVD624
1002	3139 248 82121	PCBAS MPEG DVD624
1005▲	3122 427 23271	PSU DVD DRAGON EURO B

Front PWB

Various

0002	3141 014 24852	FTD HOLDER
1100	3139 240 50341	FTD HNV-07SS44T DVD624
1101	4822 265 30735	5 PINS
1102	2422 025 04849	
1103	2422 128 03063	SWI PUSH 2P 2POS 30V V 18MM B
1104	4822 265 30735	5 PINS
1105	4822 276 13775	SWITCH
1106	4822 276 13775	SWITCH
1107	4822 276 13775	SWITCH
1108	4822 276 13775	SWITCH
1109	4822 276 13775	SWITCH
1110	4822 276 13775	SWITCH

—II—

2100	4822 124 81286	47μF 20% 16V
2101	2238 586 59812	
2102	2238 586 59812	
2104	2238 586 59812	
2105	2238 586 59812	
2106	4822 124 81286	47μF 20% 16V
2107	4822 126 14238	0603 50V 2N2 COL R

—□—

3100	4822 117 11152	4Ω7 5%
3101	4822 051 30109	10Ω 5% 0.062W
3102	4822 051 30563	56k 5% 0.062W
3103	4822 051 30103	10k 5% 0.062W
3104	4822 051 30103	10k 5% 0.062W
3105	4822 051 30103	10k 5% 0.062W
3106	4822 051 30101	100Ω 5% 0.062W
3107	4822 051 30331	330Ω 5% 0.062W
3108	4822 051 30101	100Ω 5% 0.062W
3109	4822 051 30101	100Ω 5% 0.062W
3110	4822 051 30008	0Ω jumper
3111	4822 117 12925	47k 1% 0.063W 0603
3112	4822 051 30103	10k 5% 0.062W
3113	4822 051 30479	47Ω 5% 0.062W
3114	4822 051 30472	4k7 5% 0.062W
3115	4822 051 30472	4k7 5% 0.062W
3116	4822 051 30472	4k7 5% 0.062W

—▶—

6100	9340 548 42115	
6101	9340 548 68115	DIO REG SM PDZ24B (PHSE) R
6102	4822 130 11397	BAS316
6103	4822 130 11397	BAS316

—□—

7100	9322 186 03671	UPD16312GB-3B4
7101	9322 155 82667	TSOP2236YA1

MPEG PWB

Various

1149	4822 267 10734	B5B-EH-A
1150	2422 025 17682	CON BM V 40P M 2.54 440094 B
1153	4822 242 81246	27MHz 20P HC49/UT
1202	4822 267 10574	CON BM V 8P 2.50
1203	2422 026 05353	SOC CINC H 4P F WHYERDBK Y
1300	2422 025 12352	
—II—		
2100	4822 126 13879	220nF 20% 16V
2104	2238 586 59812	
2105	2238 586 59812	
2106	2238 586 59812	
2107	2238 586 59812	
2108	2238 586 59812	
2109	4822 122 33752	15pF 5% 50V
2110	2238 586 59812	
2111	2238 586 59812	
2112	2238 586 59812	
2113	2238 586 59812	
2114	2238 586 59812	
2115	2238 586 59812	
2116	2238 586 59812	
2117	2238 586 59812	
2118	2238 586 59812	
2119	2238 586 59812	
2120	4822 126 13879	220nF 20% 16V
2121	2238 586 59812	
2122	2238 586 59812	
2123	2238 586 59812	
2124	2238 586 59812	
2125	2238 586 59812	
2126	2238 586 59812	
2127	2238 586 59812	
2128	2238 586 59812	

2129	2238 586 59812	
2131	2238 586 59812	
2132	2238 586 59812	
2133	2238 586 59812	
2134	2238 586 59812	
2135	2238 586 59812	
2136	2238 586 59812	
2137	2238 586 59812	
2138	2238 586 59812	
2139	2238 586 59812	
2140	4822 122 33761	22pF 5% 50V
2141	4822 122 33761	22pF 5% 50V
2142	4822 122 33753	150pF 5% 50V
2144	3198 016 31020	
2145	4822 122 33752	15pF 5% 50V
2146	4822 122 33752	15pF 5% 50V
2147	4822 122 33752	15pF 5% 50V
2148	4822 122 33752	15pF 5% 50V
2149	4822 122 33752	15pF 5% 50V
2200	4822 124 40196	220μF 20% 16V
2201	4822 126 13879	220nF 20% 16V
2202	4822 124 23052	100μF 20% 16V
2203	4822 126 13879	220nF 20% 16V
2204	4822 126 13879	220nF 20% 16V
2205	4822 124 23052	100μF 20% 16V
2206	4822 126 13879	220nF 20% 16V
2207	4822 124 40196	220μF 20% 16V
2208	4822 124 40196	220μF 20% 16V
2209	4822 124 40196	220μF 20% 16V
2210	4822 126 13879	220nF 20% 16V
2211	4822 124 80231	47μF 20% 16V
2213	2238 586 59812	
2214	4822 126 13881	470pF 5% 50V
2216	5322 126 11579	3.3nF 10% 63V
2217	2238 586 59812	
2218	4822 124 11947	10μF 20% 16V
2219	4822 124 80231	47μF 20% 16V
2220	4822 124 23052	100μF 20% 16V
2221	2238 586 59812	
2222	4822 126 13881	470pF 5% 50V
2223	4822 126 13879	220nF 20% 16V
2226	5322 126 11579	3.3nF 10% 63V
2230	4822 126 13909	680pF 10% 50V
2231	4822 126 13909	680pF 10% 50V
2232	4822 126 13881	470pF 5% 50V
2233	4822 124 23052	100μF 20% 16V
2234	2238 586 59812	
2235	4822 126 13881	470pF 5% 50V
2236	4822 126 13883	220pF 5% 50V
2237	4822 122 33752	15pF 5% 50V
2238	4822 122 33752	15pF 5% 50V
2240	2238 586 59812	
2241	2238 586 59812	
2300	4822 126 13909	680pF 10% 50V
2303	4822 126 13909	680pF 10% 50V
2305	4822 126 14494	22nF 10% 25V 0603
2306	4822 126 13883	220pF 5% 50V
2308	2238 586 59812	
2310	4822 126 13883	220pF 5% 50V
2311	4822 126 13883	220pF 5% 50V
2312	4822 126 13883	220pF 5% 50V
2315	2238 586 59812	
2316	2238 586 59812	
2317	2238 586 59812	
2319	2238 586 59812	
2320	2238 586 59812	
2321	4822 124 11947	10μF 20% 16V
2322	2020 552 94427	
2323	2020 552 94427	
2324	2238 586 59812	
2325	4822 124 11947	10μF 20% 16V
2326	2020 552 94427	
2327	2020 552 94427	
2328	2238 586 59812	
2329	2020 552 94427	
2330	4822 124 11947	10μF 20% 16V
2331	2020 552 94427	
2332	2238 586 59812	
2333	4822 124 11947	10μF 20% 16V
2334	2020 552 94427	
2335	2020 552 94427	
2339	4822 124 11947	10μF 20% 16V
2340	2238 586 59812	

—□—

3100	4822 051 30479	47Ω 5% 0.062W
3101	4822 051 30479	47Ω 5% 0.062W
3102	4822 051 30479	47Ω 5% 0.062W

3103	4822 051 30479	47Ω 5% 0.062W	3245	2322 704 62001		5300	4822 157 70299	2.2μH (NL322522T-2R2J)
3104	4822 051 30479	47Ω 5% 0.062W	3246	2322 704 65102		5301	3198 018 52280	FXDIND SM 0603 2U2 PM10 COL R
3105	4822 051 30479	47Ω 5% 0.062W	3247	2322 704 62001		5302	4822 157 70299	2.2μH (NL322522T-2R2J)
3106	4822 051 30479	47Ω 5% 0.062W	3248	5322 117 13026	4k7 1% 0.063W 0603 RC22H	5303	4822 157 70299	2.2μH (NL322522T-2R2J)
3107	4822 051 30479	47Ω 5% 0.062W	3249	2322 704 65102		5305	4822 157 70299	2.2μH (NL322522T-2R2J)
3108	4822 051 30479	47Ω 5% 0.062W	3250	4822 051 30272	2k7 5% 0.062W			
3109	4822 051 30479	47Ω 5% 0.062W	3251	4822 051 30103	10k 5% 0.062W			
3110	4822 051 30479	47Ω 5% 0.062W	3252	4822 051 30102	1k 5% 0.062W			
3111	4822 051 30479	47Ω 5% 0.062W	3253	4822 051 30331	330Ω 5% 0.062W			
3112	4822 051 30479	47Ω 5% 0.062W	3254	4822 051 30101	100Ω 5% 0.062W			
3113	4822 051 30479	47Ω 5% 0.062W	3255	4822 051 30222	2k2 5% 0.062W			
3114	4822 051 30479	47Ω 5% 0.062W	3256	4822 051 30689	68Ω 5% 0.063W 0603 RC21 RST SM			
3115	4822 051 30479	47Ω 5% 0.062W	3257	4822 051 30101	100Ω 5% 0.062W			
3116	4822 051 30479	47Ω 5% 0.062W	3259	4822 051 30103	10k 5% 0.062W			
3117	4822 051 30479	47Ω 5% 0.062W	3261	4822 051 30472	4k7 5% 0.062W			
3118	4822 051 30479	47Ω 5% 0.062W	3262	4822 051 30472	4k7 5% 0.062W			
3119	4822 051 30472	4k7 5% 0.062W	3263	4822 051 30472	4k7 5% 0.062W			
3120	4822 051 30472	4k7 5% 0.062W	3264	4822 051 30222	2k2 5% 0.062W			
3121	4822 051 30479	47Ω 5% 0.062W	3265	4822 051 30689	68Ω 5% 0.063W 0603 RC21 RST SM			
3122	4822 051 30479	47Ω 5% 0.062W	3266	4822 051 30222	2k2 5% 0.062W			
3123	4822 051 30479	47Ω 5% 0.062W	3267	4822 051 30689	68Ω 5% 0.063W 0603 RC21 RST SM			
3124	4822 051 30479	47Ω 5% 0.062W	3268	4822 051 30222	2k2 5% 0.062W			
3125	4822 051 30479	47Ω 5% 0.062W	3300	4822 051 30471	470Ω 5% 0.062W			
3126	4822 051 30479	47Ω 5% 0.062W	3301	4822 051 30272	2k7 5% 0.062W			
3127	4822 051 30479	47Ω 5% 0.062W	3302	4822 051 30103	10k 5% 0.062W			
3128	4822 051 30472	4k7 5% 0.062W	3303	4822 051 30471	470Ω 5% 0.062W			
3131	4822 051 30472	4k7 5% 0.062W	3304	4822 051 30272	2k7 5% 0.062W			
3132	4822 051 30472	4k7 5% 0.062W	3305	4822 051 30221	220Ω 5% 0.062W			
3133	4822 051 30472	4k7 5% 0.062W	3306	4822 051 30103	10k 5% 0.062W			
3136	4822 051 30472	4k7 5% 0.062W	3307	4822 117 12925	47k 1% 0.063W 0603			
3137	4822 051 30472	4k7 5% 0.062W	3308	4822 051 30223	22k 5% 0.062W			
3138	4822 051 30472	4k7 5% 0.062W	3309	4822 051 30102	1k 5% 0.062W			
3139	4822 051 30472	4k7 5% 0.062W	3311	4822 051 30759	75Ω 5% 0.062W			
3140	4822 051 30472	4k7 5% 0.062W	3312	4822 051 30222	2k2 5% 0.062W			
3142	4822 051 30472	4k7 5% 0.062W	3313	4822 051 30689	68Ω 5% 0.063W 0603 RC21 RST SM			
3144	4822 051 30339	33Ω 5% 0.062W	3314	4822 051 30683	68k 5% 0.062W			
3145	4822 051 30339	33Ω 5% 0.062W	3315	5322 117 13058	150Ω 1% 0.063W 0603 RC22H			
3146	4822 051 30339	33Ω 5% 0.062W	3317	4822 051 30392	3k9 5% 0.063W 0603			
3147	4822 051 30339	33Ω 5% 0.062W	3318	4822 051 30102	1k 5% 0.062W			
3148	4822 051 30339	33Ω 5% 0.062W	3319	4822 051 30102	1k 5% 0.062W			
3149	4822 051 30689	68Ω 5% 0.063W 0603 RC21 RST SM	3320	4822 051 30471	470Ω 5% 0.062W			
3150	4822 051 30105	1M 5% 0.062W	3321	4822 051 30101	100Ω 5% 0.062W			
3151	4822 117 12662	10Ω X4 5%	3322	4822 117 12925	47k 1% 0.063W 0603			
3152	4822 117 12662	10Ω X4 5%	3323	4822 051 30221	220Ω 5% 0.062W			
3153	4822 117 12662	10Ω X4 5%	3324	4822 051 30689	68Ω 5% 0.063W 0603 RC21 RST SM			
3154	4822 117 13576	NETW 4 X 33Ω 5% 1206	3325	4822 051 30221	220Ω 5% 0.062W			
3163	4822 051 30339	33Ω 5% 0.062W	3326	4822 051 30683	68k 5% 0.062W			
3165	4822 051 30339	33Ω 5% 0.062W	3327	4822 051 30471	470Ω 5% 0.062W			
3169	4822 051 30339	33Ω 5% 0.062W	3328	5322 117 13058	150Ω 1% 0.063W 0603 RC22H			
3170	4822 051 30339	33Ω 5% 0.062W	3329	4822 117 12925	47k 1% 0.063W 0603			
3171	4822 051 30339	33Ω 5% 0.062W	3330	4822 051 30101	100Ω 5% 0.062W			
3172	4822 051 30472	4k7 5% 0.062W	3331	4822 051 30221	220Ω 5% 0.062W			
3200	4822 051 20008	0Ω jumper . (0805)	3332	4822 051 30689	68Ω 5% 0.063W 0603 RC21 RST SM			
3202	4822 051 30151	150Ω 5% 0.062W	3333	4822 051 30221	220Ω 5% 0.062W			
3203	4822 051 30008	0Ω jumper	3334	4822 051 30683	68k 5% 0.062W			
3204	4822 117 12139	22Ω 5% 0.062W	3335	4822 051 30471	470Ω 5% 0.062W			
3207	4822 051 30103	10k 5% 0.062W	3336	4822 051 30101	100Ω 5% 0.062W			
3208	4822 051 30103	10k 5% 0.062W	3337	5322 117 13058	150Ω 1% 0.063W 0603 RC22H			
3209	4822 051 30183	18k 5% 0.062W	3338	4822 117 12925	47k 1% 0.063W 0603			
3210	4822 051 30471	470Ω 5% 0.062W	3339	4822 051 30221	220Ω 5% 0.062W			
3211	4822 051 30471	470Ω 5% 0.062W	3340	4822 051 30221	220Ω 5% 0.062W			
3212	4822 051 30221	220Ω 5% 0.062W	3341	4822 051 30689	68Ω 5% 0.063W 0603 RC21 RST SM			
3213	4822 051 30103	10k 5% 0.062W	3342	4822 051 30471	470Ω 5% 0.062W			
3214	4822 051 30103	10k 5% 0.062W	3343	4822 051 30683	68k 5% 0.062W			
3215	4822 051 30183	18k 5% 0.062W	3344	4822 051 30101	100Ω 5% 0.062W			
3219	4822 051 30101	100Ω 5% 0.062W	3345	5322 117 13058	150Ω 1% 0.063W 0603 RC22H			
3220	4822 051 30562	5k6 5% 0.063W 0603 RC21 RST SM	3346	4822 117 12925	47k 1% 0.063W 0603			
3222	4822 051 30103	10k 5% 0.062W	3347	4822 051 30221	220Ω 5% 0.062W			
3223	4822 051 30333	33k 5% 0.062W	3348	4822 051 30221	220Ω 5% 0.062W			
3224	4822 051 30562	5k6 5% 0.063W 0603 RC21 RST SM	3349	4822 051 30689	68Ω 5% 0.063W 0603 RC21 RST SM			
3225	4822 051 30562	5k6 5% 0.063W 0603 RC21 RST SM	3350	4822 051 30101	100Ω 5% 0.062W			
3226	4822 051 30479	47Ω 5% 0.062W						
3227	4822 051 30479	47Ω 5% 0.062W						
3228	4822 051 30479	47Ω 5% 0.062W						
3229	4822 051 30472	4k7 5% 0.062W						
3230	4822 051 30471	470Ω 5% 0.062W						
3231	4822 051 30222	2k2 5% 0.062W						
3232	4822 051 30221	220Ω 5% 0.062W						
3233	4822 051 30684	680k 5% 0.062W						
3234	5322 117 13026	4k7 1% 0.063W 0603 RC22H						
3235	2322 704 62001							
3236	2322 704 65102							
3237	2322 704 62001							
3238	5322 117 13026	4k7 1% 0.063W 0603 RC22H						
3239	2322 704 65102							
3240	4822 051 30471	470Ω 5% 0.062W						
3241	4822 051 30272	2k7 5% 0.062W						
3242	4822 051 30103	10k 5% 0.062W						
3243	4822 051 30471	470Ω 5% 0.062W						
3244	5322 117 13026	4k7 1% 0.063W 0603 RC22H						
3245	2322 704 62001							
3246	2322 704 65102							
3247	2322 704 62001							
3248	5322 117 13026	4k7 1% 0.063W 0603 RC22H						
3249	2322 704 65102							
3250	4822 051 30272	2k7 5% 0.062W						
3251	4822 051 30103	10k 5% 0.062W						
3252	4822 051 30102	1k 5% 0.062W						
3253	4822 051 30331	330Ω 5% 0.062W						
3254	4822 051 30101	100Ω 5% 0.062W						
3255	4822 051 30222	2k2 5% 0.062W						
3256	4822 051 30689	68Ω 5% 0.063W 0603 RC21 RST SM						
3257	4822 051 30101	100Ω 5% 0.062W						
3259	4822 051 30103	10k 5% 0.062W						
3261	4822 051 30472	4k7 5% 0.062W						
3262	4822 051 30472	4k7 5% 0.062W						
3263	4822 051 30472	4k7 5% 0.062W						
3264	4822 051 30222	2k2 5% 0.062W						
3265	4822 051 30689	68Ω 5% 0.063W 0603 RC21 RST SM						
3266	4822 051 30222	2k2 5% 0.062W						
3267	4822 051 30689	68Ω 5% 0.063W 0603 RC21 RST SM						
3268	4822 051 30222	2k2 5% 0.062W						
3300	4822 051 30471	470Ω 5% 0.062W						
3301	4822 051 30272	2k7 5% 0.062W						
3302	4822 051 30103	10k 5% 0.062W						
3303	4822 051 30471	470Ω 5% 0.062W						
3304	4822 051 30272	2k7 5% 0.062W						
3305	4822 051 30221	220Ω 5% 0.062W						
3306	4822 051 30103	10k 5% 0.062W						
3307	4822 117 12925	47k 1% 0.063W 0603						
3308	4822 051 30223	22k 5% 0.062W						
3309	4822 051 30102	1k 5% 0.062W						
3311	4822 051 30759	75Ω 5% 0.062W						
3312	4822 051 30222	2k2 5% 0.062W						
3313	4822 051 30689	68Ω 5% 0.063W 0603 RC21 RST SM						
3314	4822 051 30683	68k 5% 0.062W						
3315								