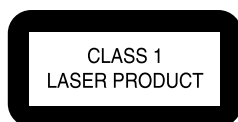


Service
Service
Service



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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

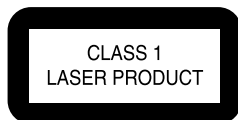



Figure 2-1

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 NÅR DEKSEL ÅPNES UNNGÅ EKSPONERING FOR STRÅLING
 ADVARSEL SYNLIG OG OSYNLIG LASERSTRÅLING NÅR DENNA DEL ÅR ÖPPNAD BETRakta EJ STRÅLEN
 VARO! AVATT AESSA OLET ALTTIINA NÄKYVÄLLE JA NÄKYMÄTT ÖMÄLLE LASER SÄTELYLLE. ÄLÄ KATSO 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.

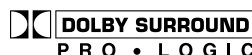


Figure 2-3

Trusurround

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



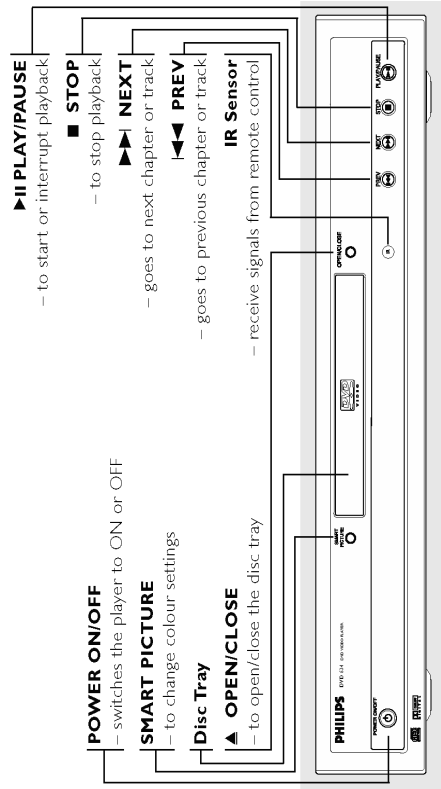
Figure 2-4

3. Directions for Use

Functional Overview

2

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.

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

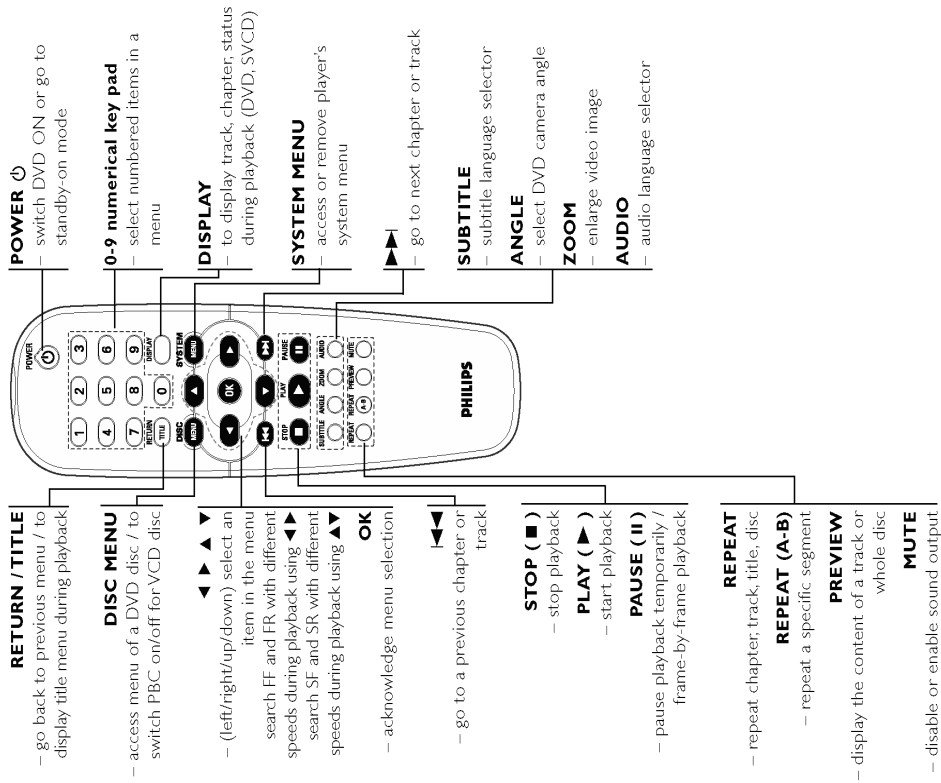
Helpful Hints!

- **Some DVD video discs require specific functions or allow only limited functions during playback.**
- “X” may appear 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

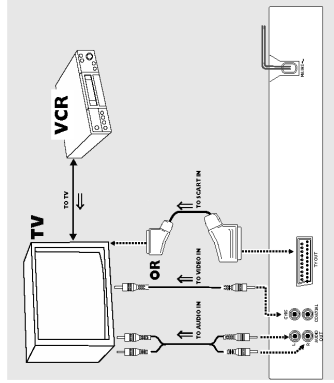
4

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.

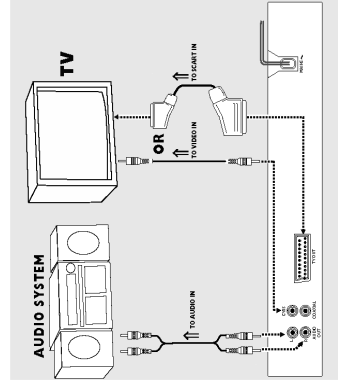
The following guidelines are options for the best picture and sound quality available on your DVD player:

- 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.



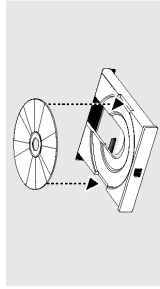
Connecting to a TV

- 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).

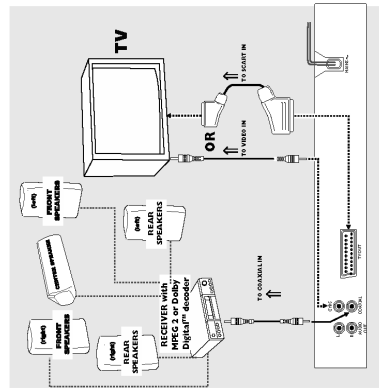
- 1 Press SMART PICTURE on the front panel to change the settings (Bright, Standard, Soft and Personal).

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.

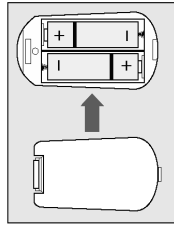


Notes:

- 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.

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 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.

Operation

7

Audio Control during playback

MUTE



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

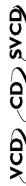
SURROUND SOUND



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.

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:

- 1 CC: Total time played in Current Chapter
- 2 CR: Remainder time in Current chapter
- 3 TC: Total time played in Current Title
- 4 TR: Remainder time in Current Title

SVCD or VCD discs:

- 1 DC: Total time played in Current Disc
- 2 DR: Remainder time in Current disc
- 3 TC: Total time played in Current Track
- 4 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.

- 1 Press ZOOM on the remote control to activate the zoom function.

Use the ◀▶ keys to pan across the screen. 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.

8

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
- 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 File Size	Comment
MP3 (VBR)	32 kbps	20.1	40 hrs	sound quality (digital copy) allowed
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	7.6	7.6 hrs	compression rate low
MP3 (VBR)	160 kbps	6.3	6.3 hrs	compression rate low
MP3 (VBR)	220 kbps	4.5	4.5 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.

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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

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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)

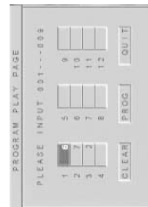
- 1 Select PROGRAM using ▲▼ keys and press OK to open the menu.
- 2 Enter the submenu by pressing the ▶ key.
→ SETUP: To access into Program mode.



- 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.

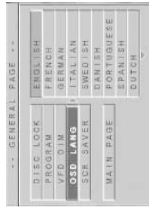
VFD Dim

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

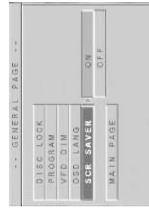
There are 14 languages available for information display on the TV screen.



- 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

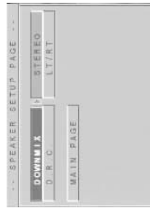
13

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.

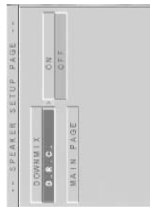
DOWNMIX mode



- 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.
- 3 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.
- 3 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

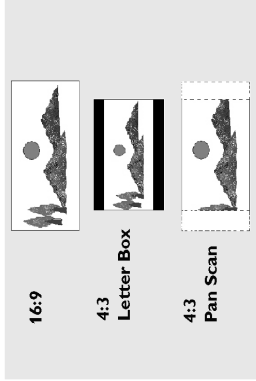
TV Display

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.

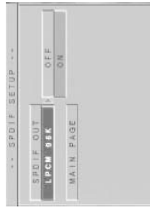


- 1 Press **▲▲** keys to select the TV DISPLAY in the General Setup menu and press OK to confirm.
- 2 Enter the submenu by pressing the **▶** key.
- 3 Use the **▲▲** keys to highlight an option.



- 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.
- 3 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.

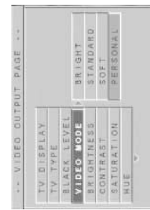


- Press **▲▼** keys to select the TV TYPE in the General Setup menu and press **OK** to confirm.
- Enter the submenu by pressing the **▶** key.
- Use the **▲▼** keys to highlight an option.
 - MULTI: Video output is depending on the format of the disc.
 - NTSC: DVD player will output only NTSC system.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



Setup Menu

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- 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.



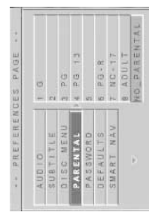
- 4 Enter the current 4 digit code.
- 5 Enter a new 4-digit code when the DVD player prompt for a new code.
- 6 Enter the code a second time to reconfirm.
- 5 Press PLAY key to return to Preferences menu.
 - The new 4 digit code will take effect.

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.



- 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

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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
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)
Dynamic Range (1kHz)
D/D
D/D/SVCD
S/VCDA/CD/CD
MPEG MP3

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

Number of lines
625
Multistandard
S25
(PAL/NTSC)

CONNECTIONS

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

CABINET

Dimensions (w x h x d)
Weight

- 435 x 293 x 75 mm
- 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

18

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.

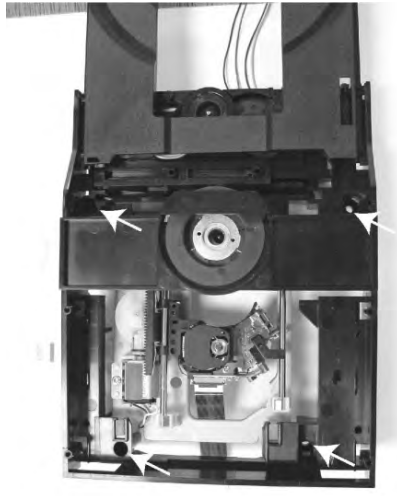
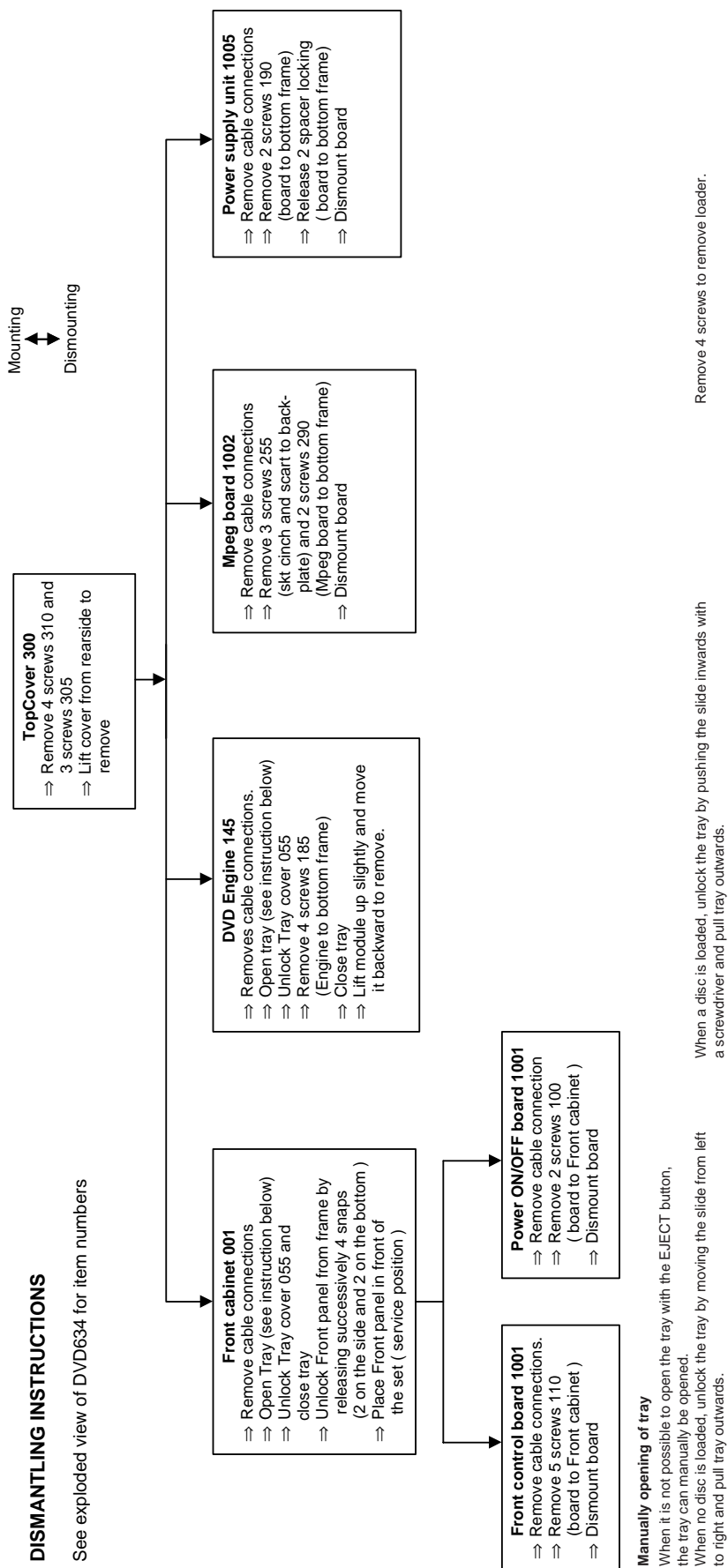
Cleaning Discs

- 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



Remove 4 screws to remove loader.



When a disc is loaded, unlock the tray by pushing the side inwards with a screwdriver and pull tray outwards.



Manually opening of tray
When it is not possible to open the tray with the EJECT button, the tray can manually be opened.
When no disc is loaded, unlock the tray by moving the slide from left to right and pull tray outwards.

DISMANTLING INSTRUCTIONS

See exploded view of DVD634 for item numbers

Figure 4-1 Dismantling Instructions

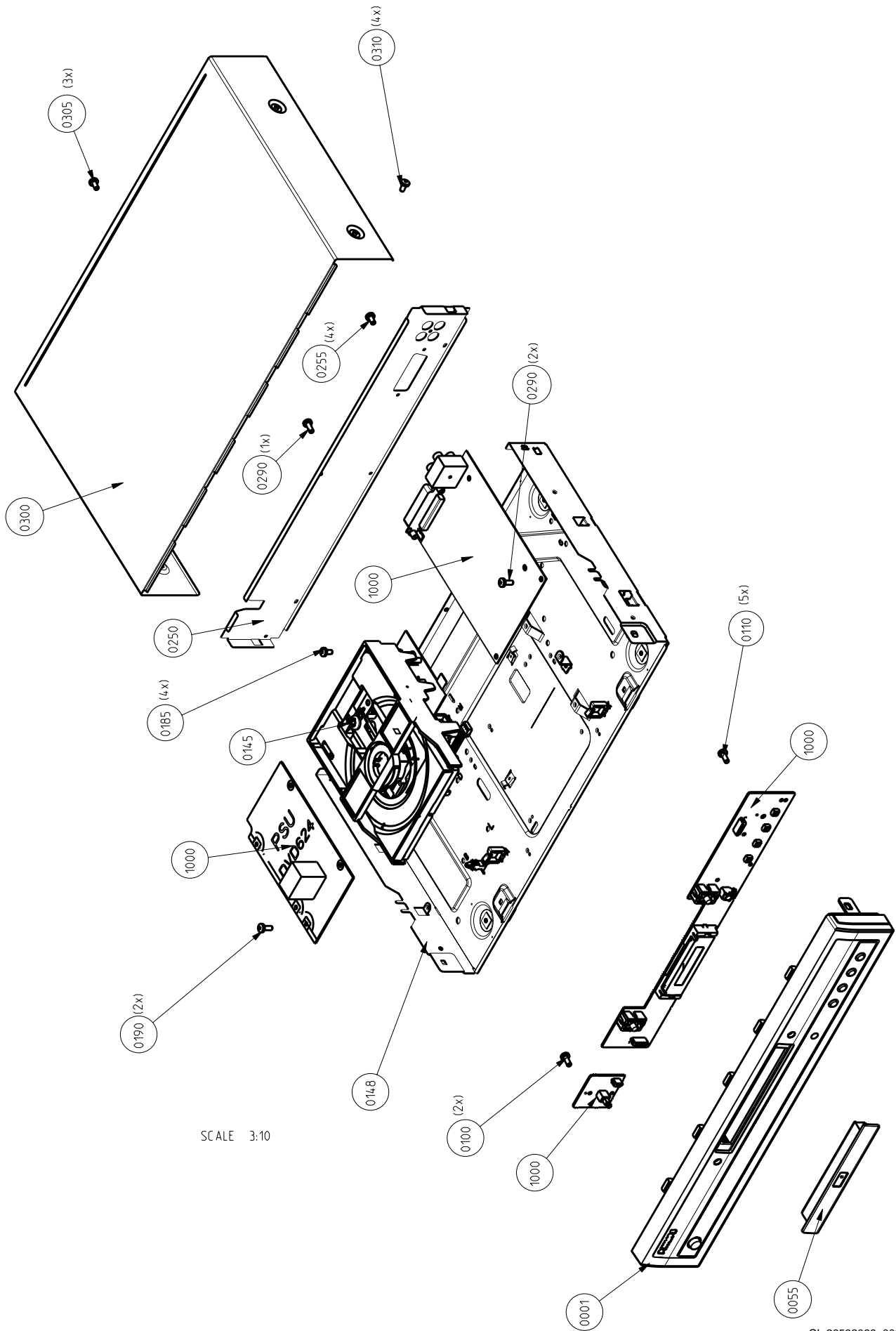


Figure 4-2 Exploded View

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:

- Press (OPEN/CLOSE) button on the front of the player or (1) on the remote control to open the disc tray.
- Enter the 4-digit code (0) (0) (0) (0) on the remote control.
- 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 / 733)
 - (ZOOM) Set to 3 front key matrix (for DVD640)
 - (AUDIO) Set to 6 front key matrix (for DVD634)
 - (REPEAT A-B) Set to 4 front key matrix (for DVD733)
- 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

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

Servo software

- Open disc tray on the player

- Insert the DOWNLOAD DISC into the player and close disc tray. The player should identify this file as MP3 format.
- Press (MENU), followed by (SUBTITLE)(AUDIO)(ANGLE) to enter Update Menu for the loader.
- From the menu, use arrow keys to move down and select UPGRADE menu item.
- Press right arrow button and then 'OK' to start upgrading.
- A flashing digit in the bottom line indicates the progress. It will start from 1 and upgrading will be completed when it reaches 30.
- The player will restart and upgrading is completed.

5.1.4 Verify setting

To check that the setting has change successfully.

- Press (DISPLAY) button on the remote control while disc tray is open.
- 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

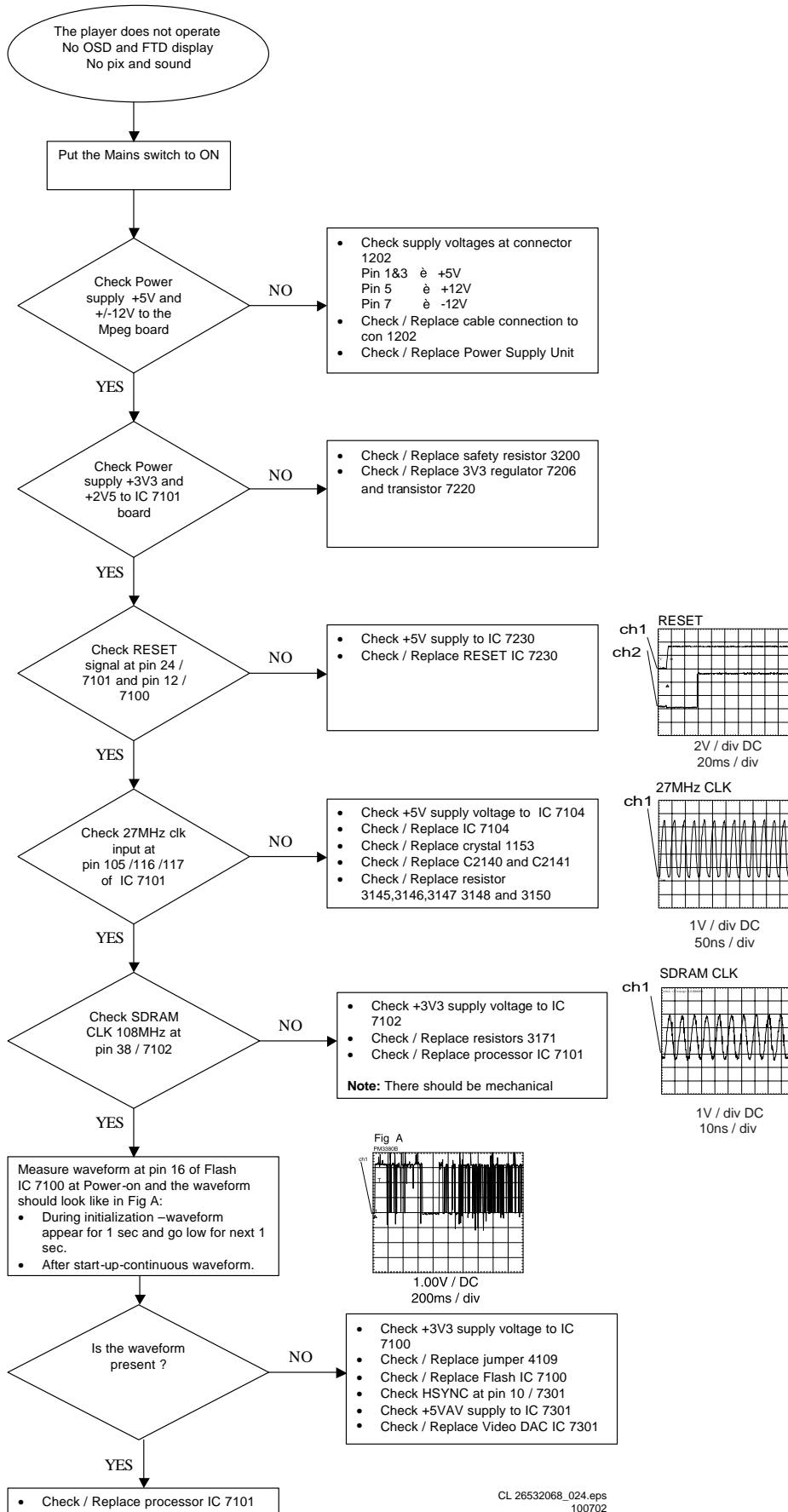
The M3.2 Atapi engine is a non-repairable component. Hence, it is necessary to determine if any fault condition of the player are caused by the DVD engine before replacing it.

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

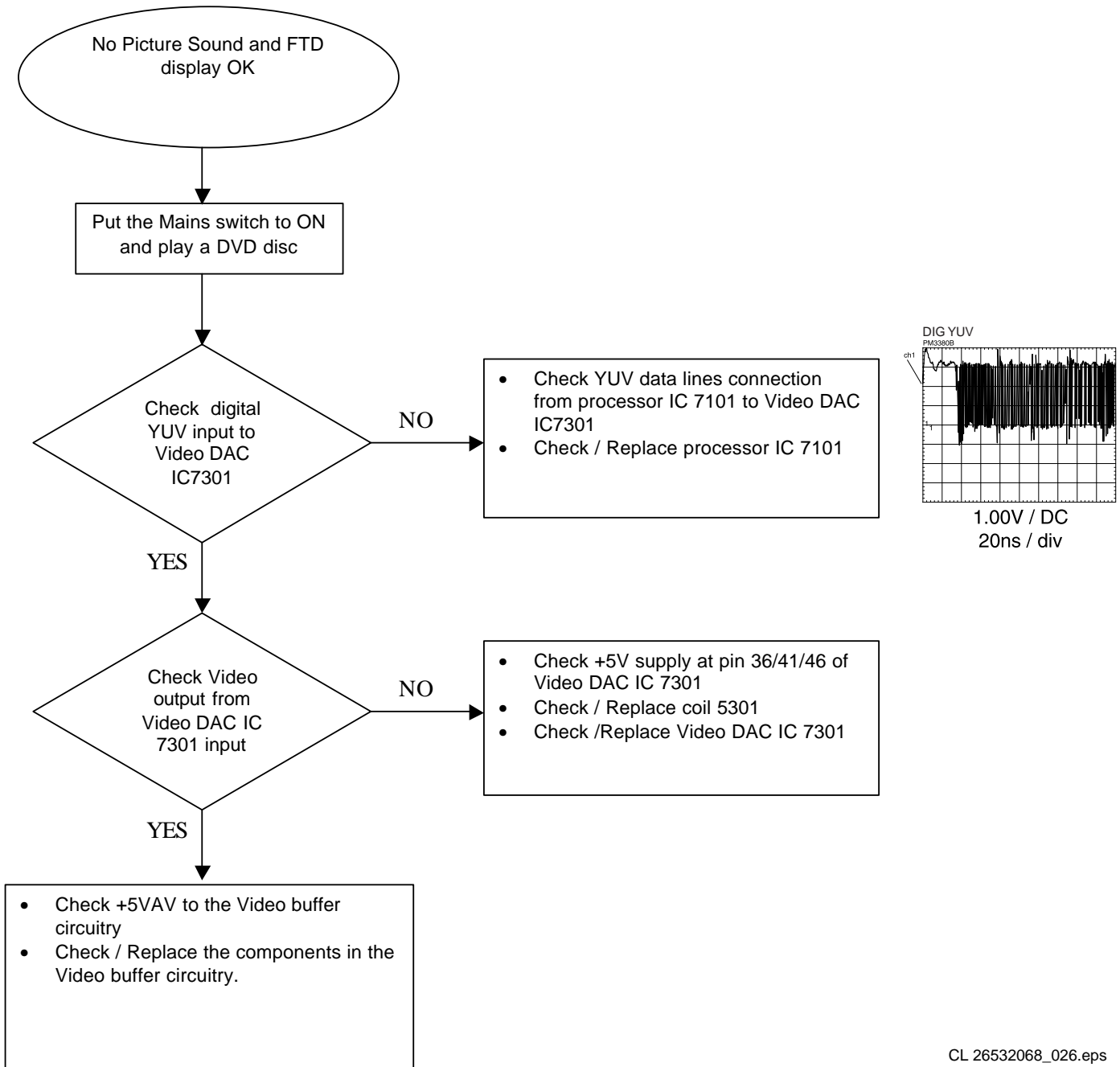


Figure 5-2 No Picture

5.3.3 No Color

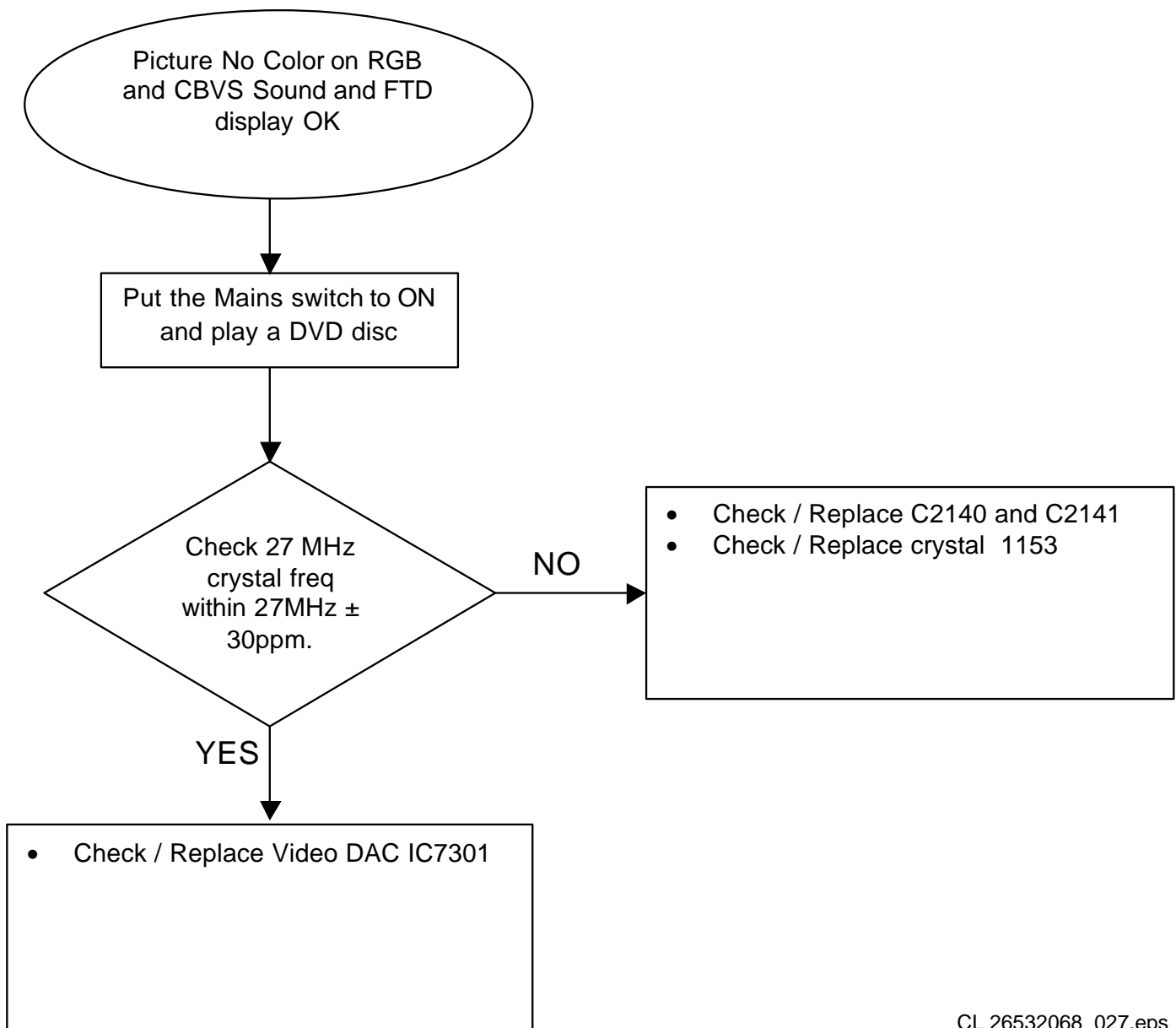
CL 26532068_027.eps
040702

Figure 5-3 Pix no color

5.3.4 No Sound

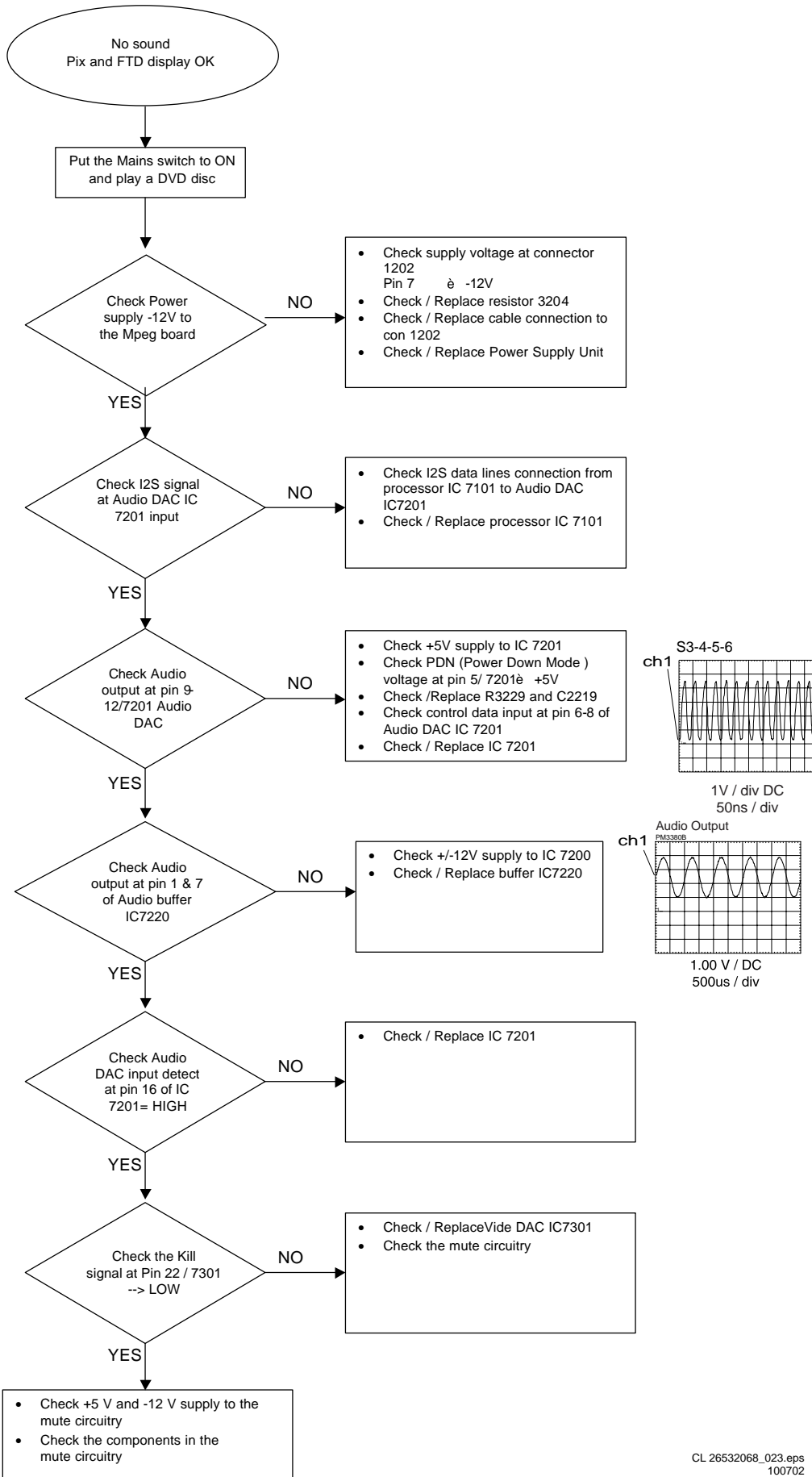
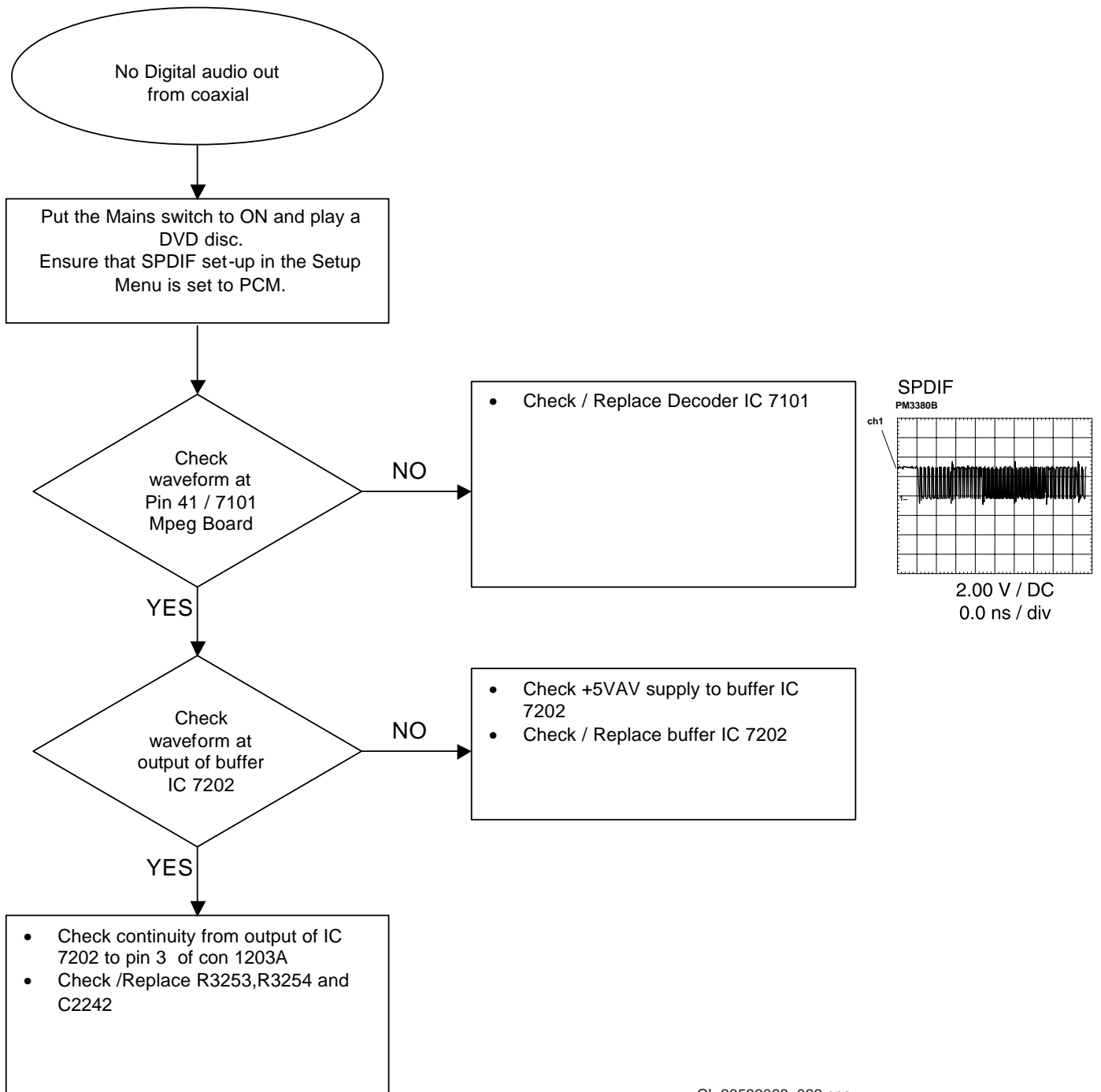


Figure 5-4 No sound

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

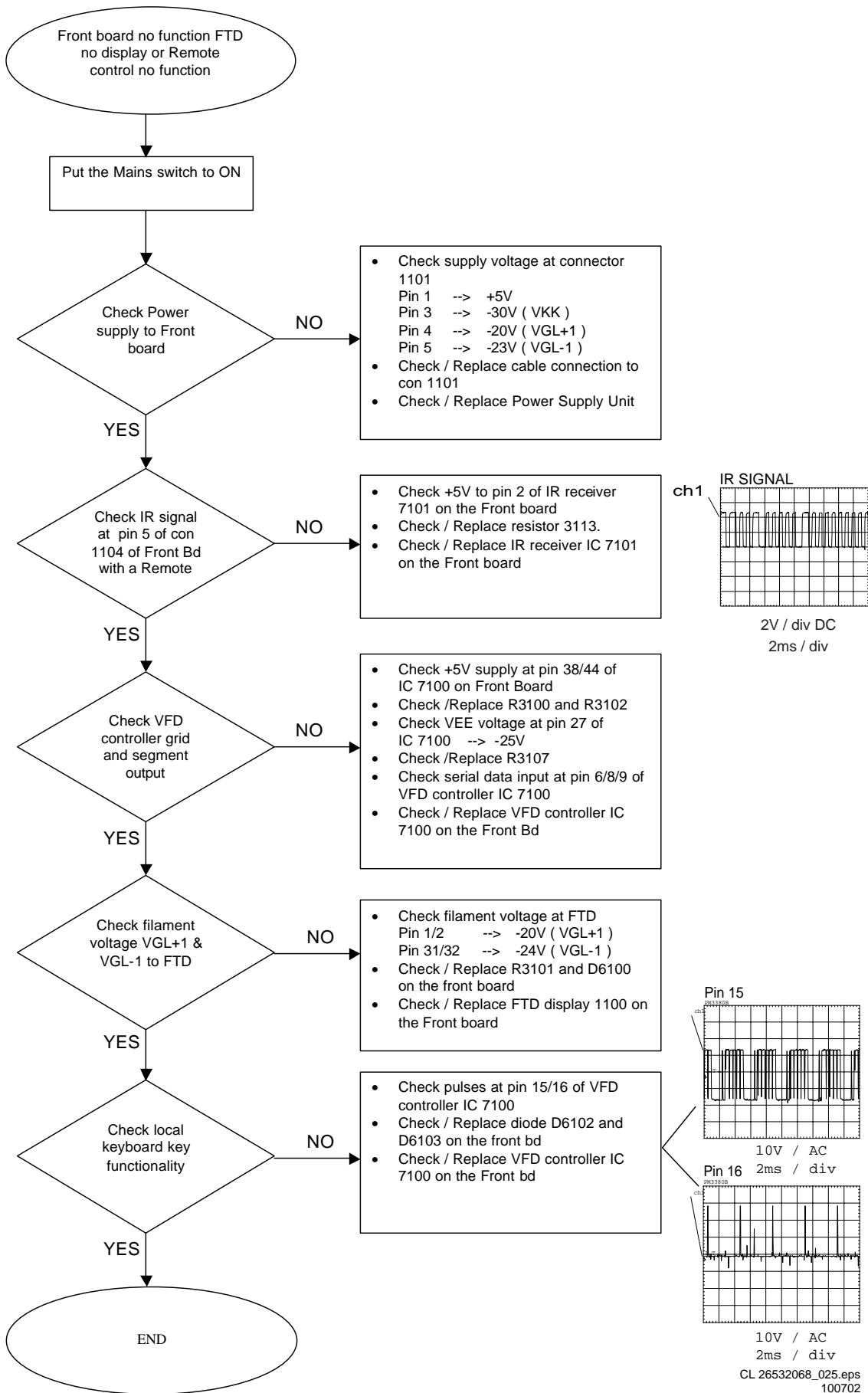
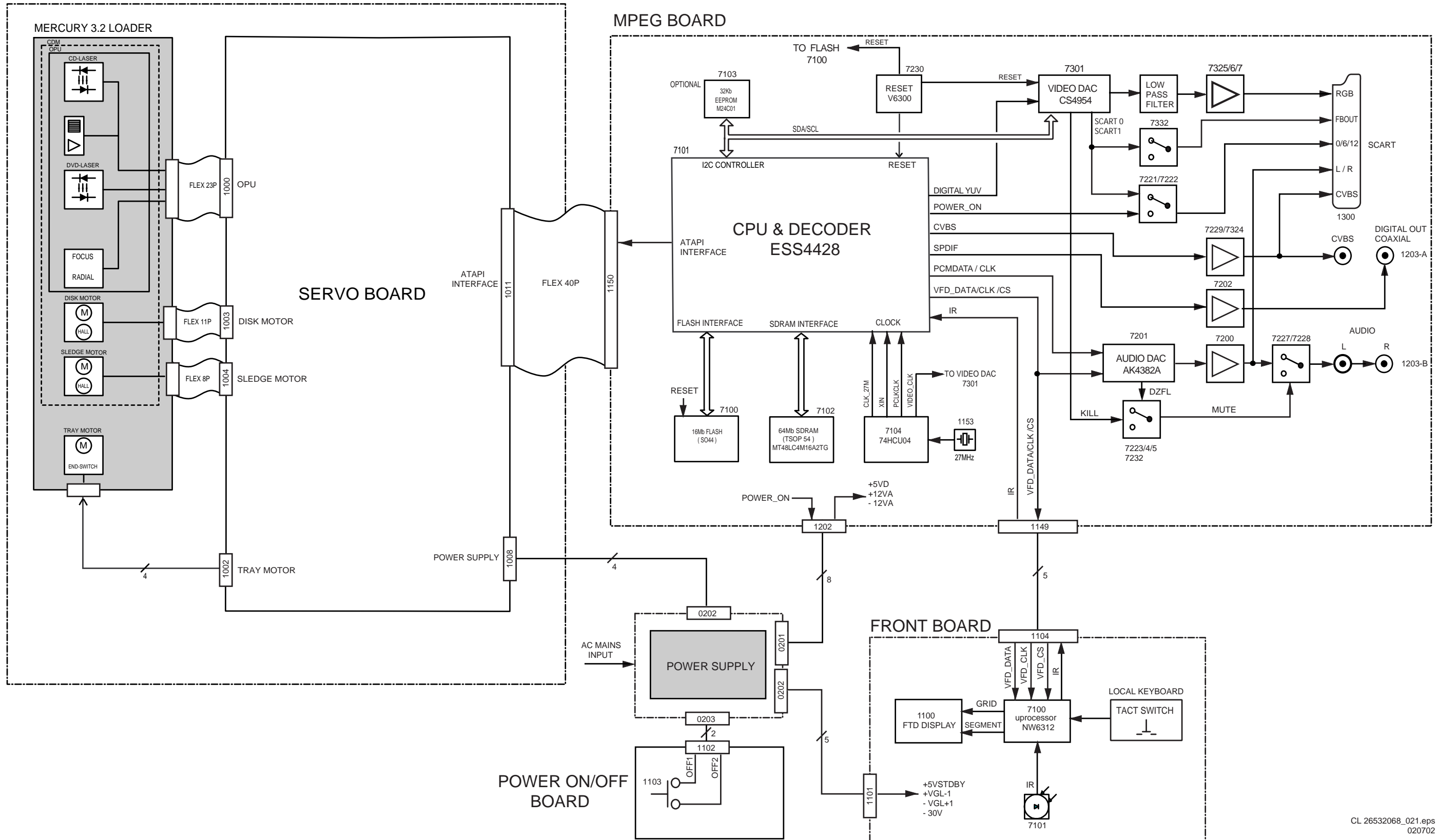


Figure 5-6 No RC and FTD display

6. Block and Wiring Diagram.

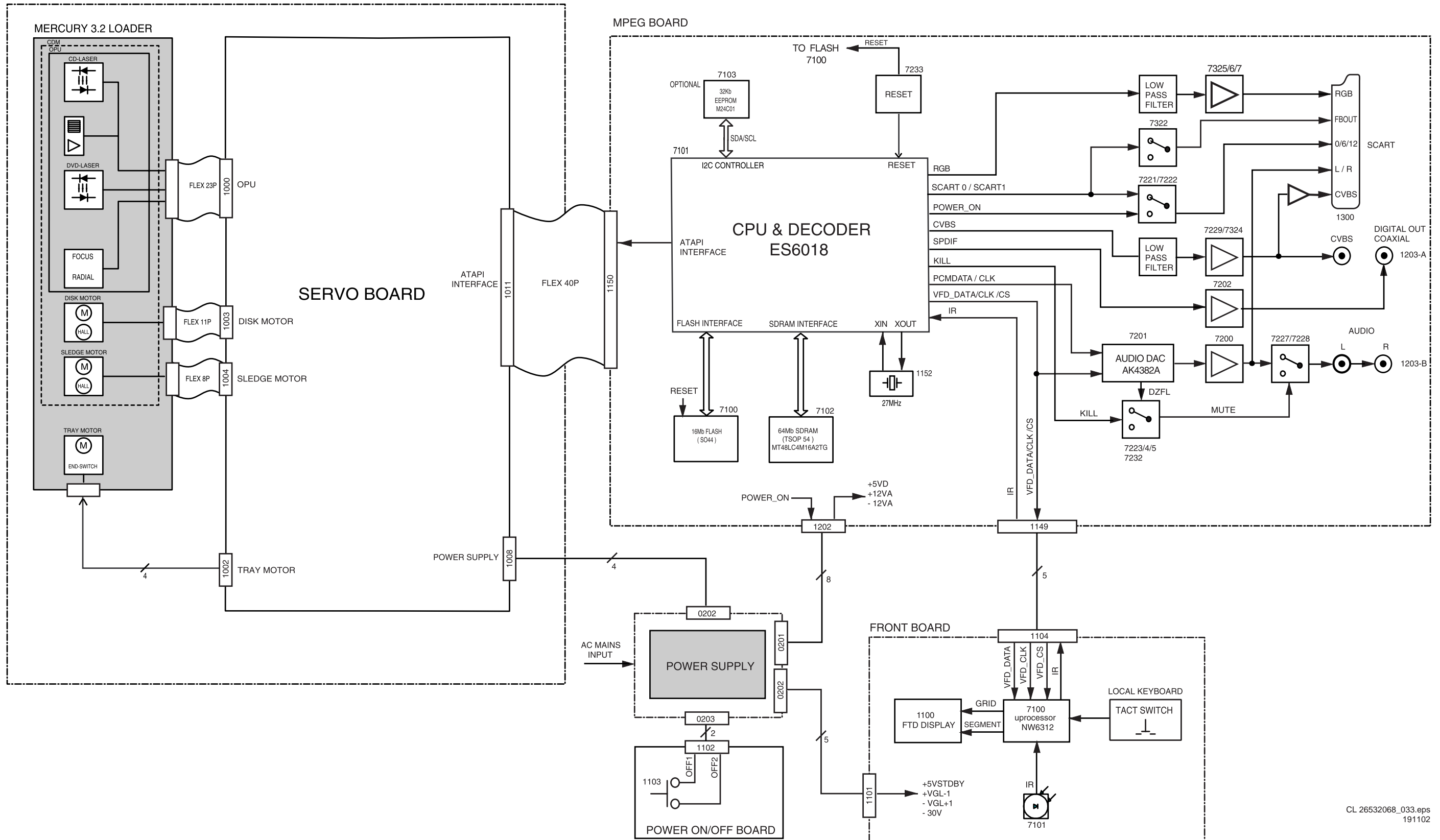
Block Diagram

GENERAL BLOCK DIAGRAM DVD634 EU
DVD ENGINE VAE6013/11



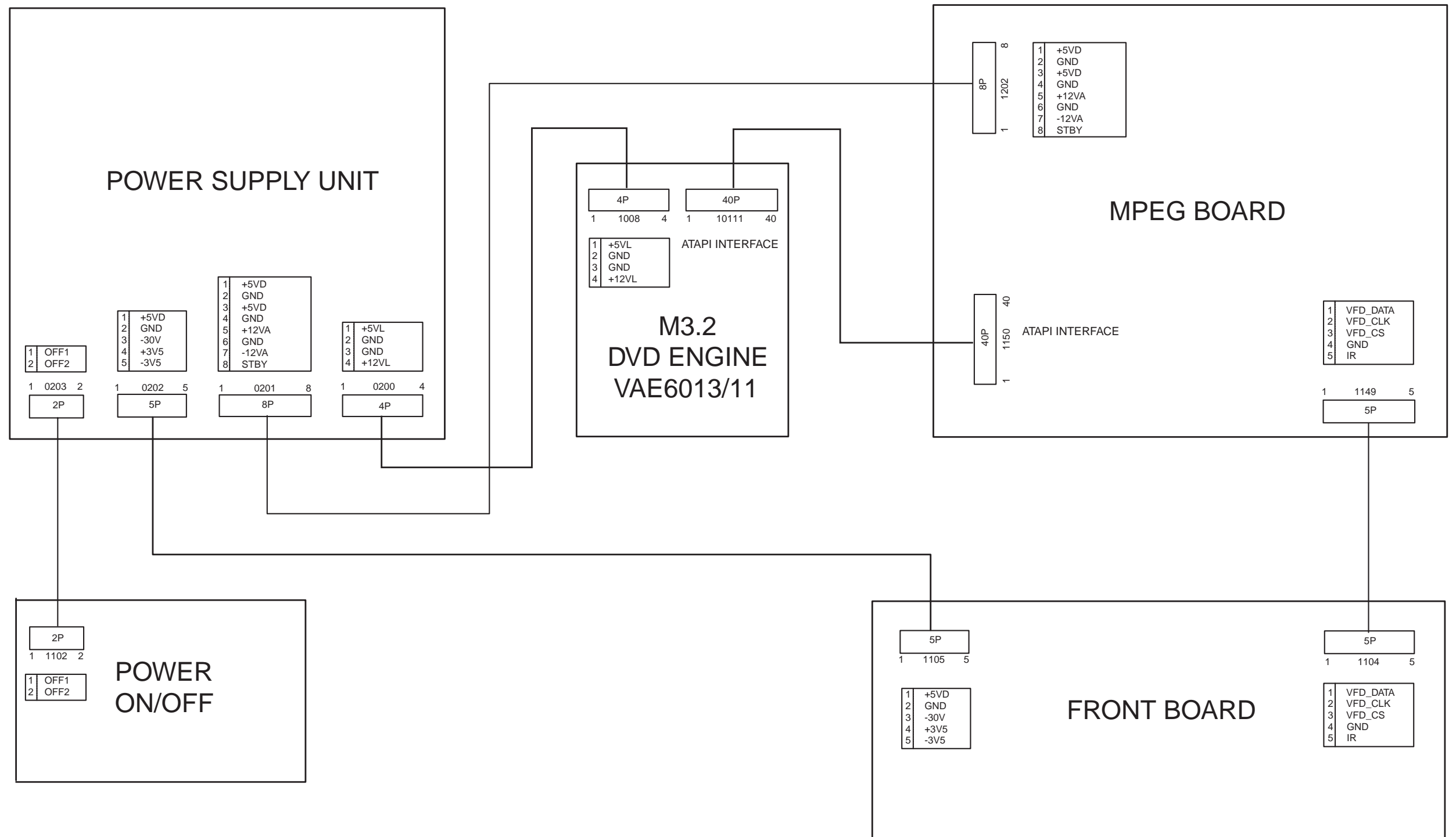
Block Diagram

GENERAL BLOCK DIAGRAM DVD634 EU - ES6018 Mpeg
DVD ENGINE VAE6013/11



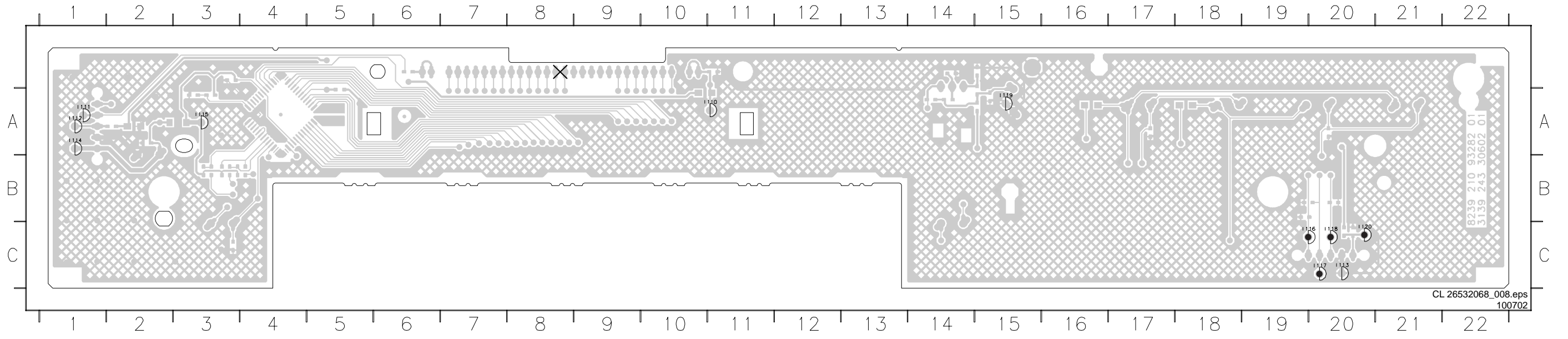
Wiring Diagram

WIRING DIAGRAM FOR DVD634 EU



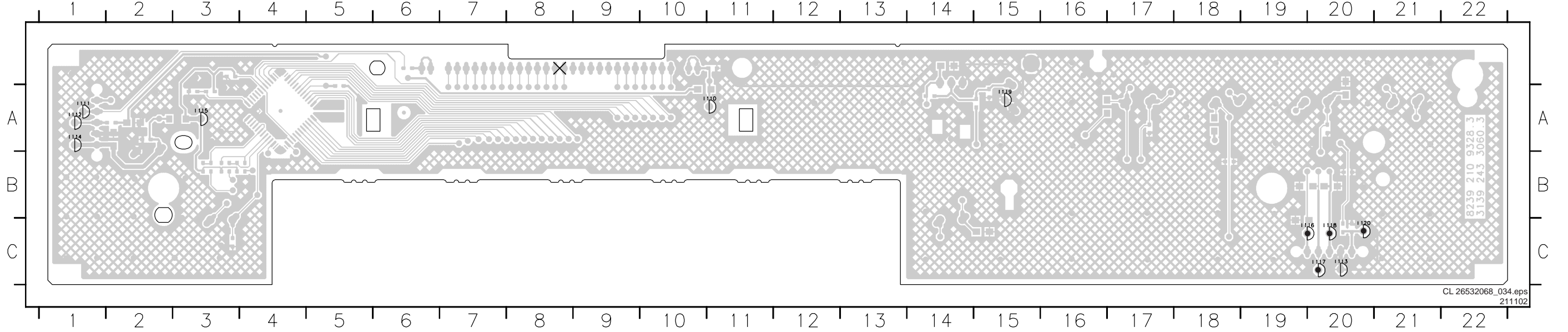
Test Point Overview Display Board - Bare Board 30602

I110 A11 I111 A1 I112 A1 I113 C20 I114 A1 I115 A3 I116 C19 I117 C20 I118 C20 I119 A15 I120 C20

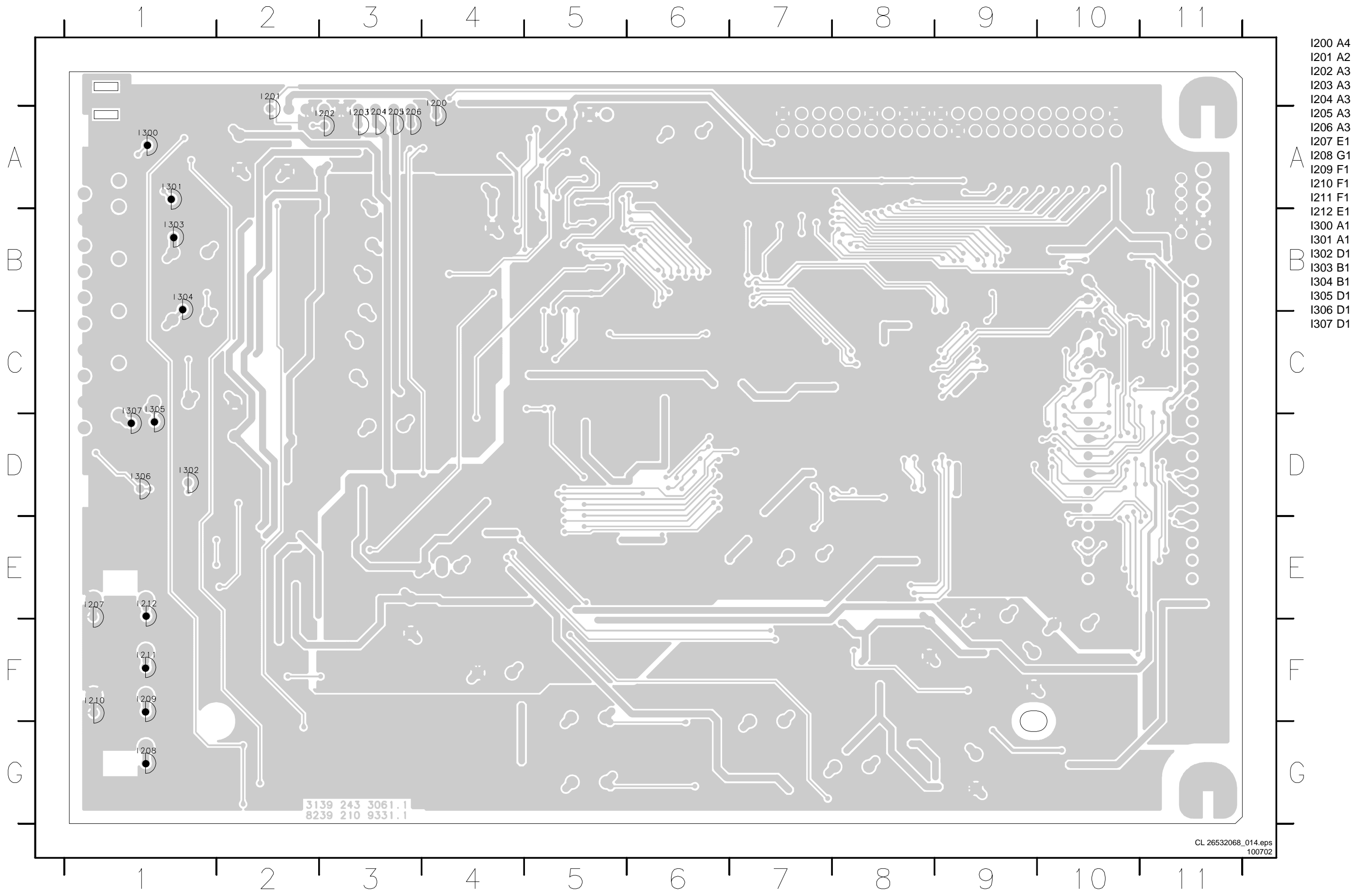


Test Point Overview Display Board - Bare Board 30603

I110 A11 I111 A1 I112 A1 I113 C20 I114 A1 I115 A3 I116 C19 I117 C20 I118 C20 I119 A15 I120 C20



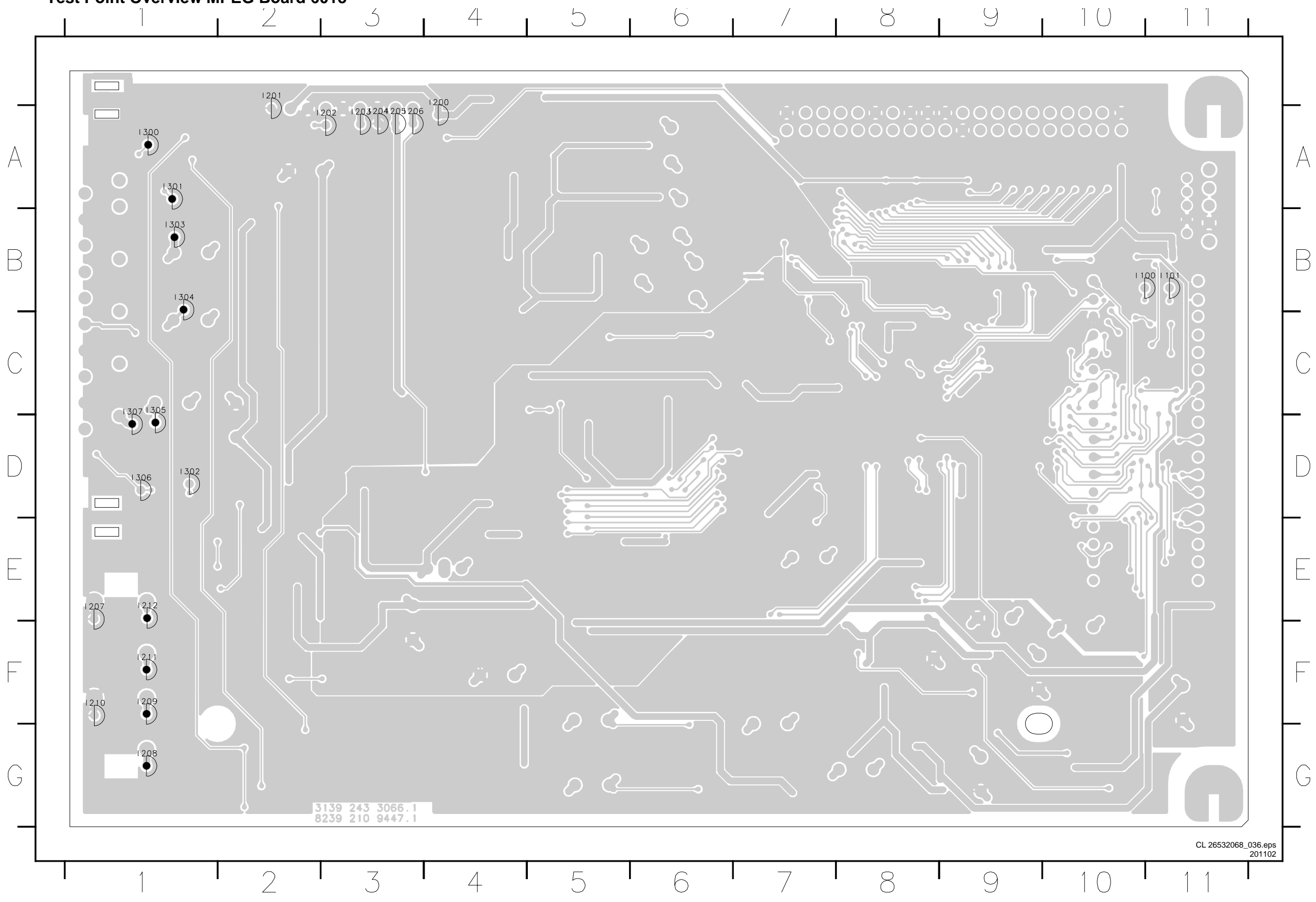
Test Point Overview MPEG Board 4428



- 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

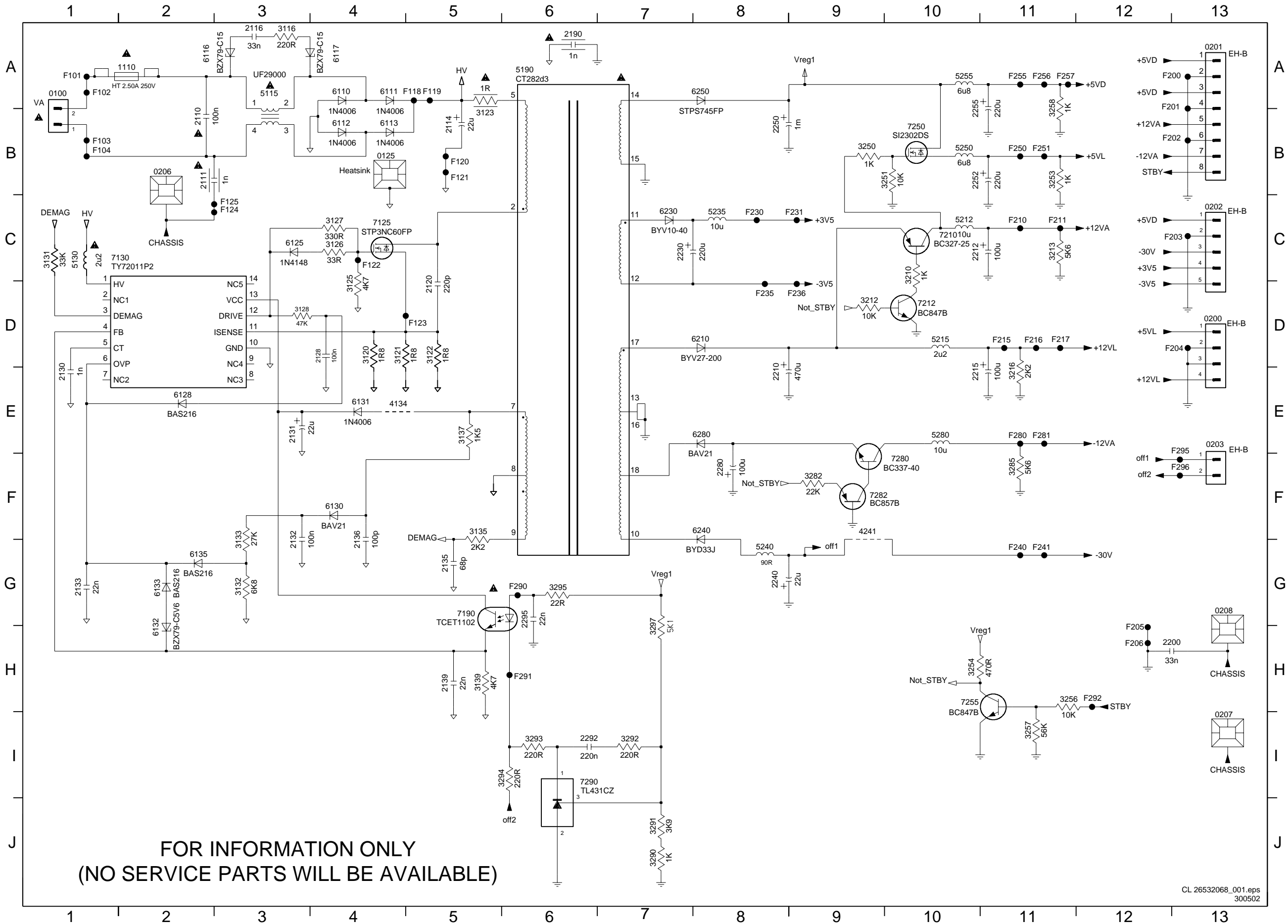
Test Point Overview MPEG Board 6018



I100	B10
I101	B11
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

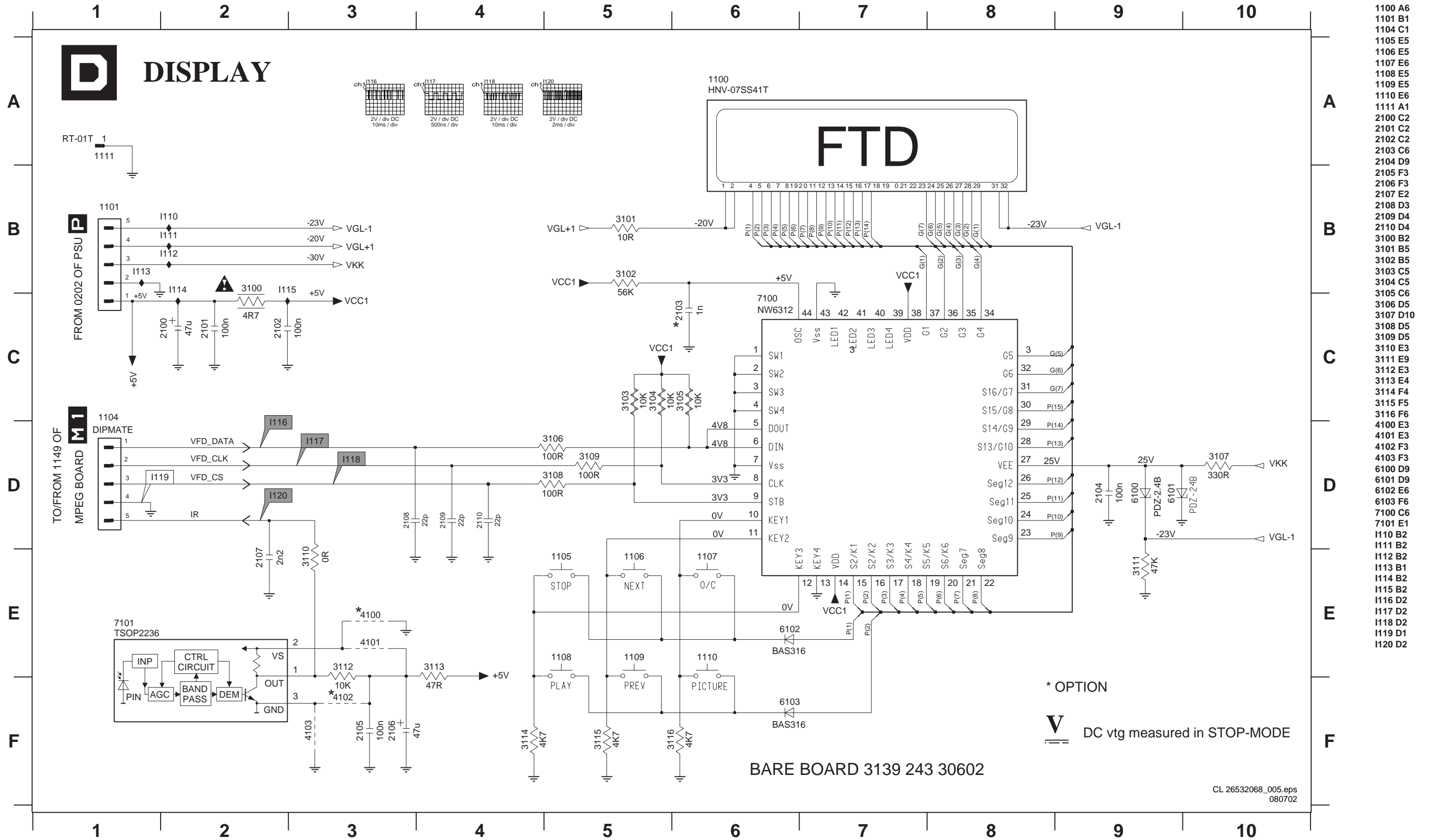
7. Electrical Diagrams

Power Supply Unit



FOR INFORMATION ONLY
(NO SERVICE PARTS WILL BE AVAILABLE)

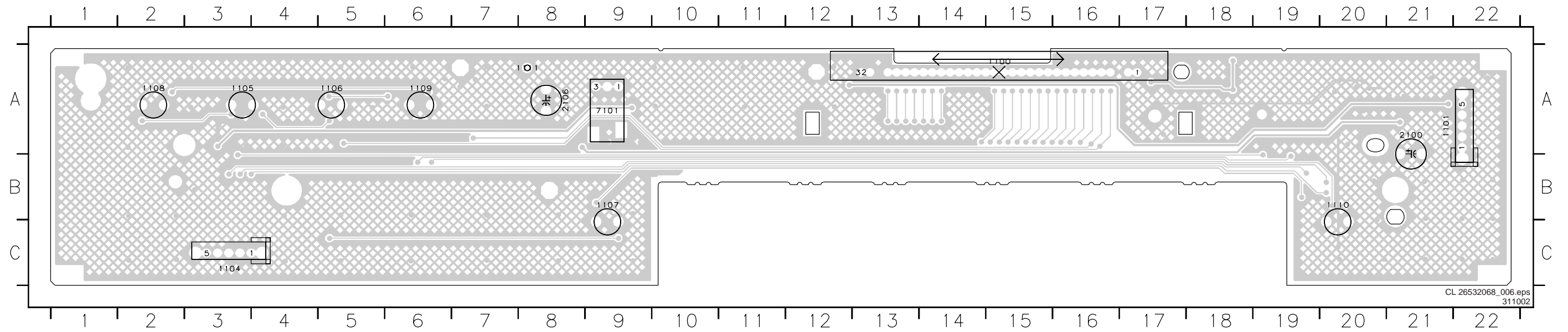
Display Board - Bare Board 30602



- 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

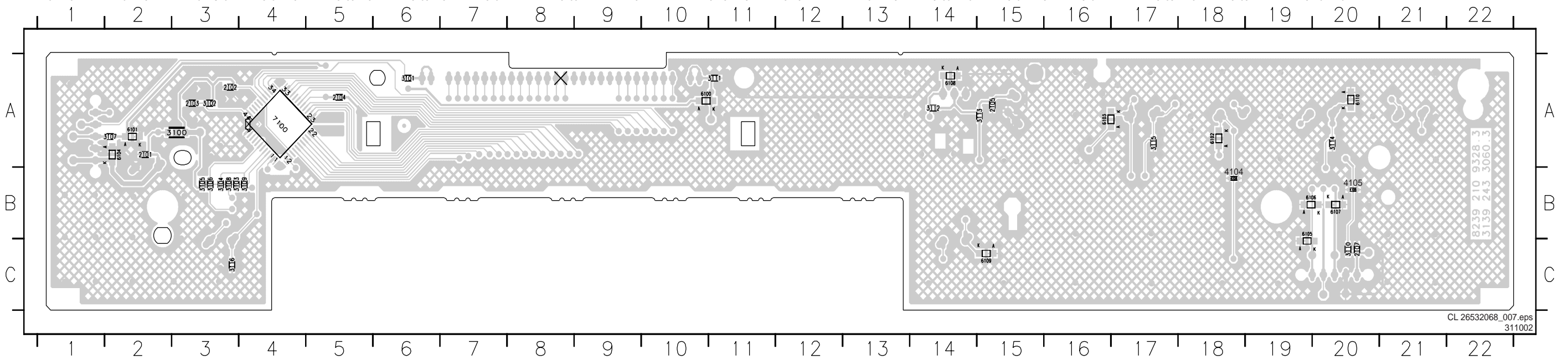
Layout Display Board (Top Side) - Bare Board 30602

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

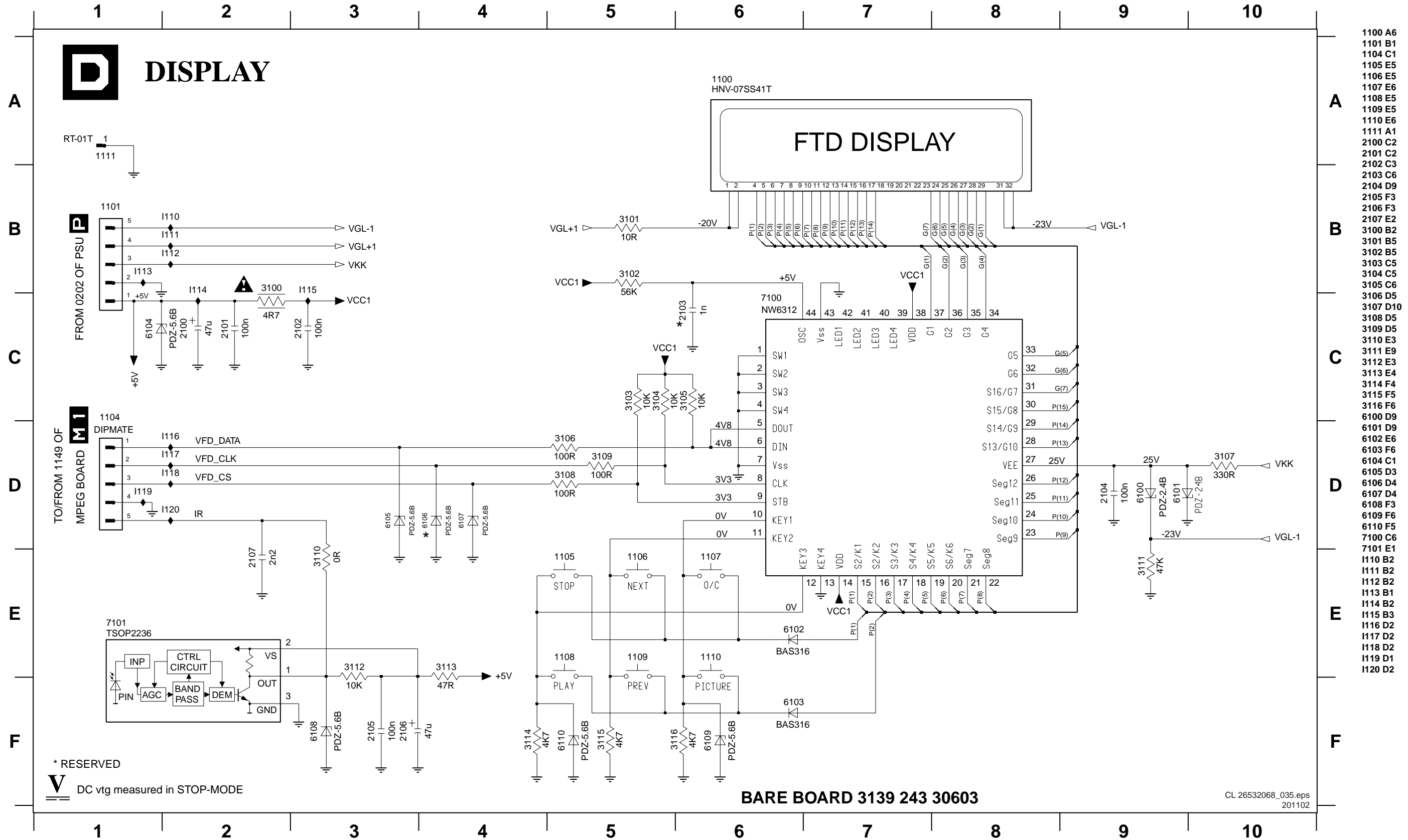


Layout Display Board (Bottom Side) - Bare Board 30602

2101 A2 2103 A3 2105 A15 3100 A3 3102 A3 3104 B3 3106 B3 3108 B3 3110 C20 3112 A14 3114 A20 3116 C3 4105 B20 6101 A2 6103 A16 6105 B19 6107 B20 6109 C15 7100 A4
 2102 A3 2104 A5 2107 C20 3101 A6 3103 B3 3105 B3 3107 A2 3109 B4 3111 A11 3113 A15 3115 A17 4104 B18 6100 A10 6102 A18 6104 A2 6106 B19 6108 A14 6110 A20



Display Board - Bare Board 30603



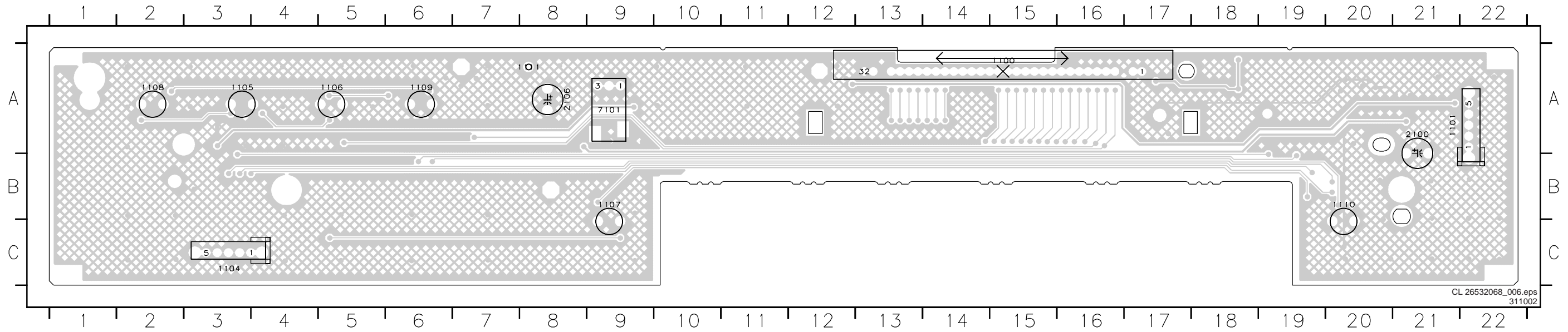
- 1100 A6
- 1101 B1
- 1104 C1
- 1105 E5
- 1106 E5
- 1107 E6
- 1108 E5
- 1109 E5
- 1110 E6
- 1111 A1
- 2100 C2
- 2101 C2
- 2102 C3
- 2103 C6
- 2104 D9
- 2105 F3
- 2106 F3
- 2107 E2
- 3100 B2
- 3101 B5
- 3102 B5
- 3103 C5
- 3104 C5
- 3105 C6
- 3106 D5
- 3107 D10
- 3108 D5
- 3109 D5
- 3110 E3
- 3111 E9
- 3112 E3
- 3113 E4
- 3114 F4
- 3115 F5
- 3116 F6
- 6100 D9
- 6101 D9
- 6102 E6
- 6103 F6
- 6104 C1
- 6105 D3
- 6106 D4
- 6107 D4
- 6108 F3
- 6109 F6
- 6110 F5
- 7100 C6
- 7101 E1
- 1110 B2
- 1111 B2
- 1112 B2
- 1113 B1
- 1114 B2
- 1115 B3
- 1116 D2
- 1117 D2
- 1118 D2
- 1119 D1
- 1120 D2

* RESERVED
 V DC vtg measured in STOP-MODE

BARE BOARD 3139 243 30603

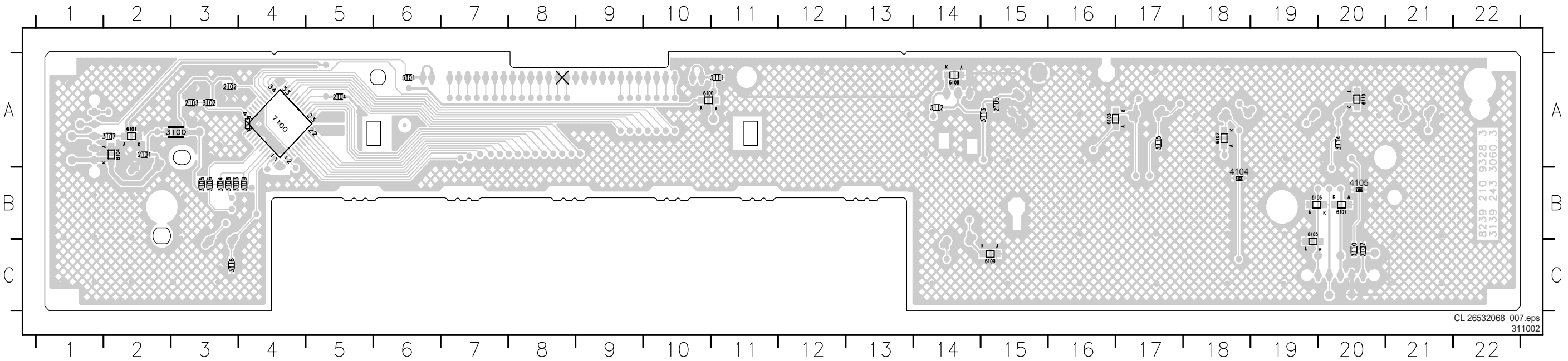
Layout Display Board (Top Side) - Bare Board 30603

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

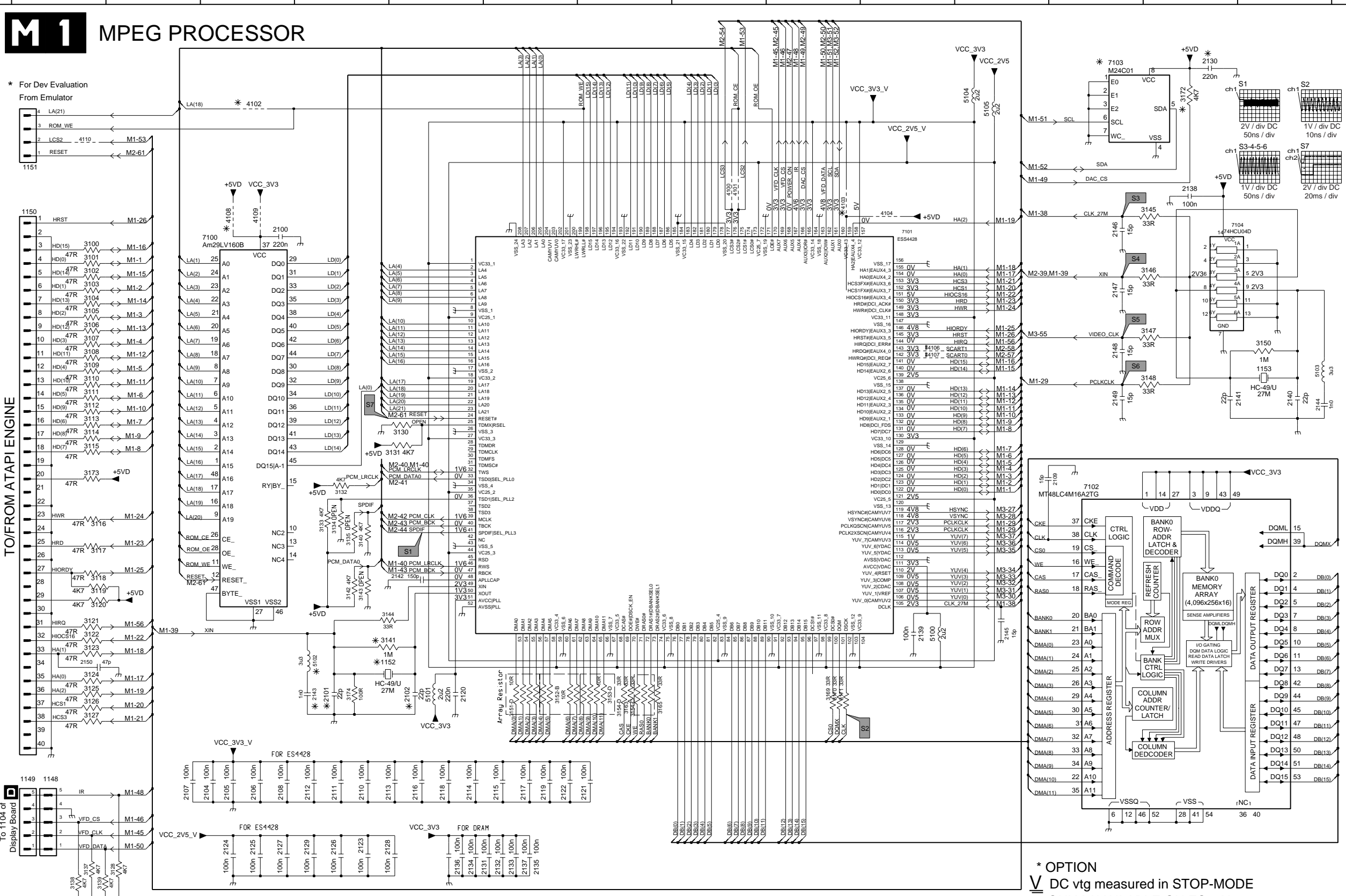


Layout Display Board (BottomSide) - Bare Board 30603

2101 A2 2103 A3 2105 A15 3100 A3 3102 A3 3104 B3 3106 B3 3108 B3 3110 C20 3112 A14 3114 A20 3116 C3 4105 B20 6101 A2 6103 A16 6105 B19 6107 B20 6109 C15 7100 A4
2102 A3 2104 A5 2107 C20 3101 A6 3103 B3 3105 B3 3107 A2 3109 B4 3111 A11 3113 A15 3115 A17 4104 B18 6100 A10 6102 A18 6104 A2 6106 B19 6108 A14 6110 A20



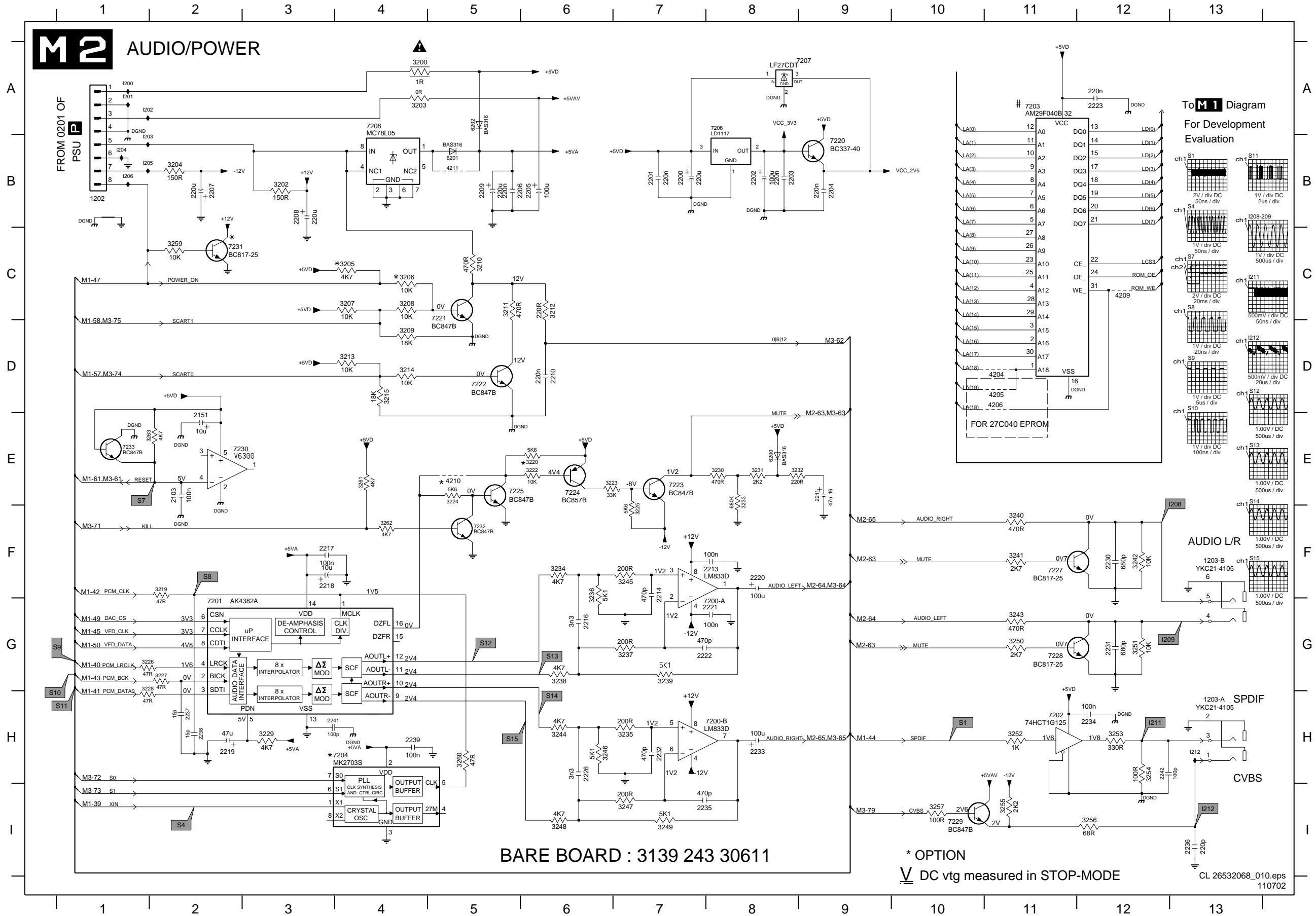
MPEG Board 4428: Processor



1148 H1	3174 G4
1149 H1	4100 B8
1150 B1	4101 B8
1151 B1	4102 B3
1152 G4	4103 B9
1153 D13	4104 B10
2100 C3	5101 G5
2101 G4	5102 G4
2102 G5	4108 B3
2104 H3	4109 B3
2105 H3	4110 B1
2106 H3	5100 G10
2107 H2	5101 G5
2108 H3	5102 G4
2109 E11	5103 D14
2110 H4	5104 B10
2111 H4	5105 A11
2112 H4	7100 C3
2113 H4	7101 C10
2114 H5	7102 E12
2115 H6	7103 A12
2116 H5	7104 B13
2117 H6	
2118 H5	
2119 H6	
2120 G5	
2121 H7	
2122 H6	
2123 H4	
2124 I3	
2125 I3	
2126 I4	
2127 I3	
2128 I4	
2129 I4	
2130 A13	
2131 I6	
2132 I6	
2133 I6	
2134 I5	
2135 I6	
2136 I5	
2137 I6	
2138 B13	
2139 G10	
2140 D14	
2141 D13	
2142 F5	
2143 G4	
2144 D11	
2145 G11	
2146 C12	
2147 C12	
2148 D12	
2149 D12	
2150 G1	
3100 C1	
3101 C1	
3102 C1	
3103 C1	
3104 C1	
3105 C1	
3106 D1	
3107 D1	
3108 D1	
3109 D1	
3110 D1	
3111 D1	
3112 D1	
3113 E1	
3114 E1	
3115 E1	
3116 F1	
3117 F1	
3118 F1	
3119 F1	
3120 G1	
3121 G1	
3122 G1	
3123 G1	
3124 G1	
3125 H1	
3126 H1	
3127 H1	
3128 I1	
3129 E5	
3130 E5	
3131 E5	
3132 E4	
3133 F4	
3134 F4	
3135 F4	
3137 I1	
3138 I1	
3139 I1	
3140 F4	
3141 G4	
3142 F4	
3143 F4	
3144 G4	
3145 B12	
3146 C12	
3147 D12	
3148 D12	
3149 D12	
3150 D13	
3151 D H6	
3152-B G6	
3153-D G7	
3154-C H7	
3154-D H7	
3163 H7	
3165 H7	
3169 G9	
3170 G9	
3171 G9	
3172 A13	
3173 E1	

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

MPEG Board 4428: Audio Power

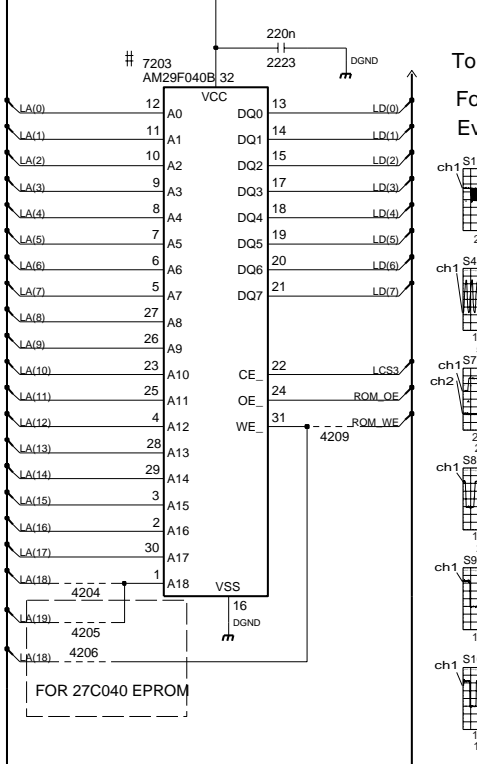


BARE BOARD : 3139 243 30611

* OPTION
 V DC vtg measured in STOP-MODE

1202 B1	7204 H3
1203-A H13	7206 A8
1203-B F13	7207 A9
2103 E2	7208 A4
2151 D2	7220 B9
2200 B7	7221 D5
2201 B7	7222 D5
2202 B8	7223 E7
2203 B8	7224 E6
2204 B9	7225 E5
2205 B6	7227 F11
2206 B5	7228 G11
2207 B2	7229 I10
2208 B3	7230 E2
2208 B5	7231 C2
2209 B5	7232 F5
2210 D6	7233 E1
2211 E9	I200 A1
2213 F8	I201 A1
2214 F7	I202 A1
2216 G6	I203 B1
2217 F3	I205 B1
2218 F3	I206 B1
2219 H2	I207 F13
2220 F8	I208 F13
2221 G8	I209 G13
2222 G7	I210 H13
2223 A12	I211 H13
2223 H2	I212 H13
2226 H6	
2230 F12	
2231 G12	
2232 H7	
2233 H8	
2234 H12	
2235 I7	
2236 I13	
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	
3222 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 H11	
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 H5	
3261 E4	
3262 F4	
3263 E2	
4204 D11	
4205 D11	
4206 D11	
4209 C12	
4210 E5	
4211 B5	
6200 E8	
6201 B5	
6202 A5	
7200-A G7	
7200-B H7	
7201 G2	
7202 H11	
7203 A11	

To M1 Diagram
 For Development
 Evaluation

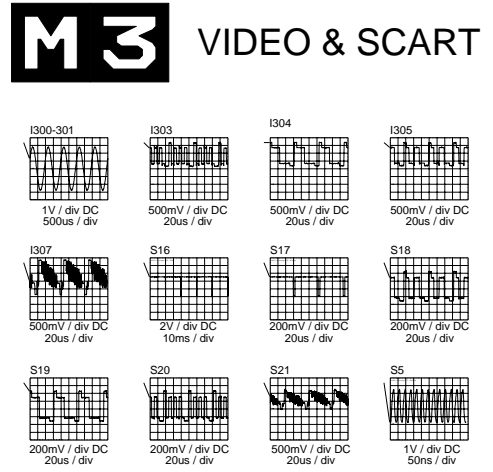
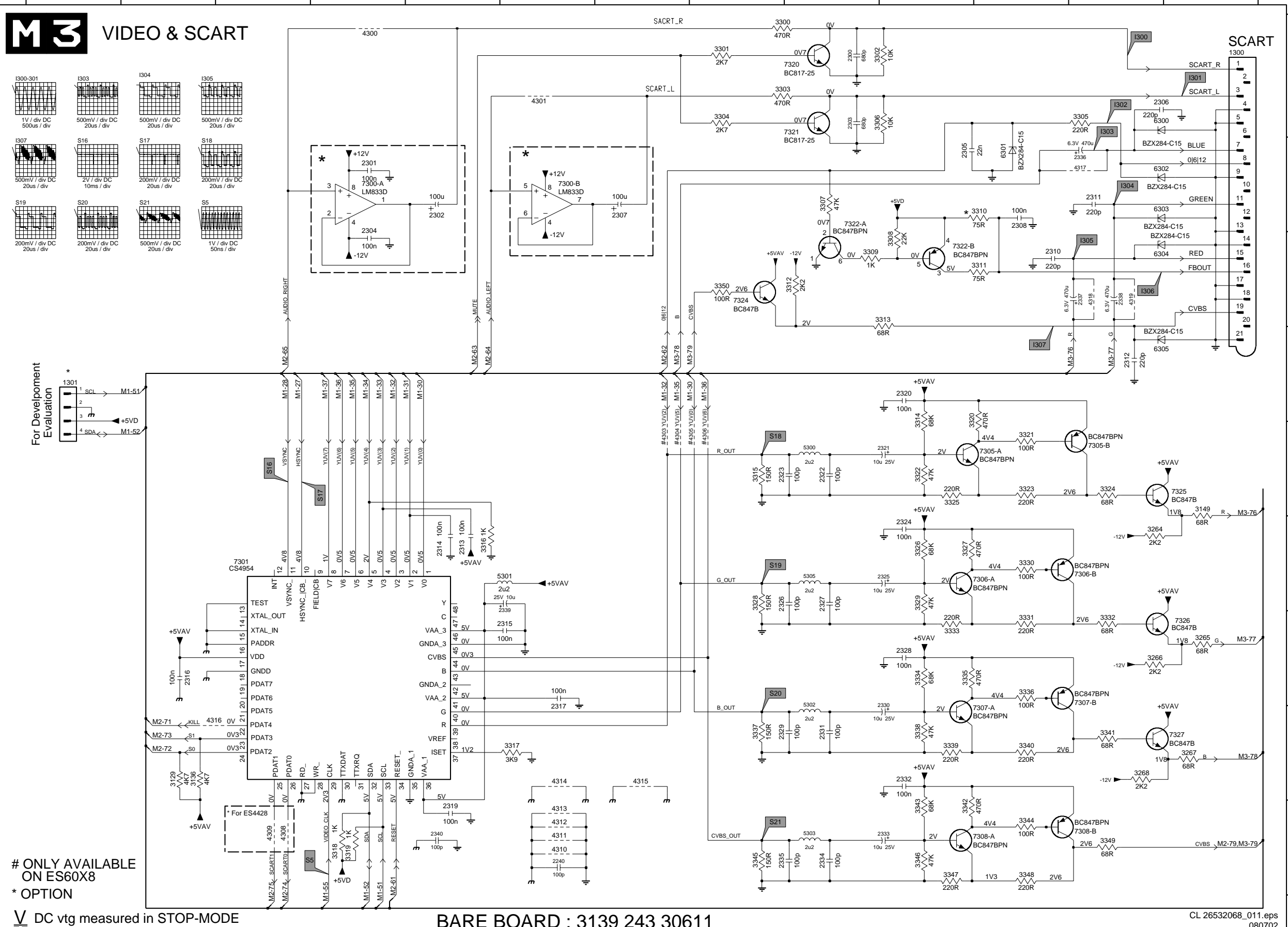


AUDIO L/R

SPDIF

CVBS

MPEG Board 4428: Video & Scart



ONLY AVAILABLE ON ES60X8
* OPTION

DC vtg measured in STOP-MODE

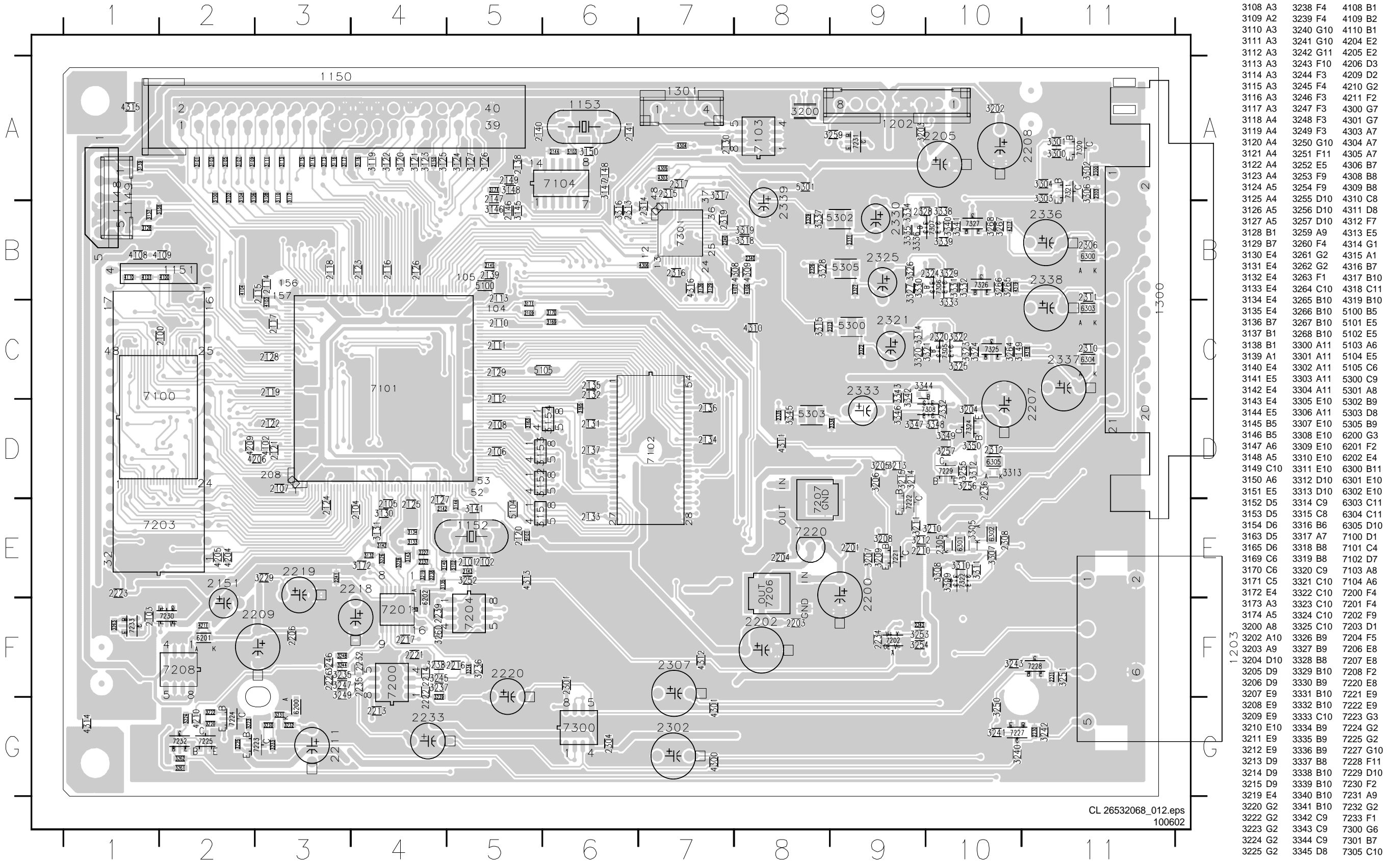
BARE BOARD : 3139 243 30611

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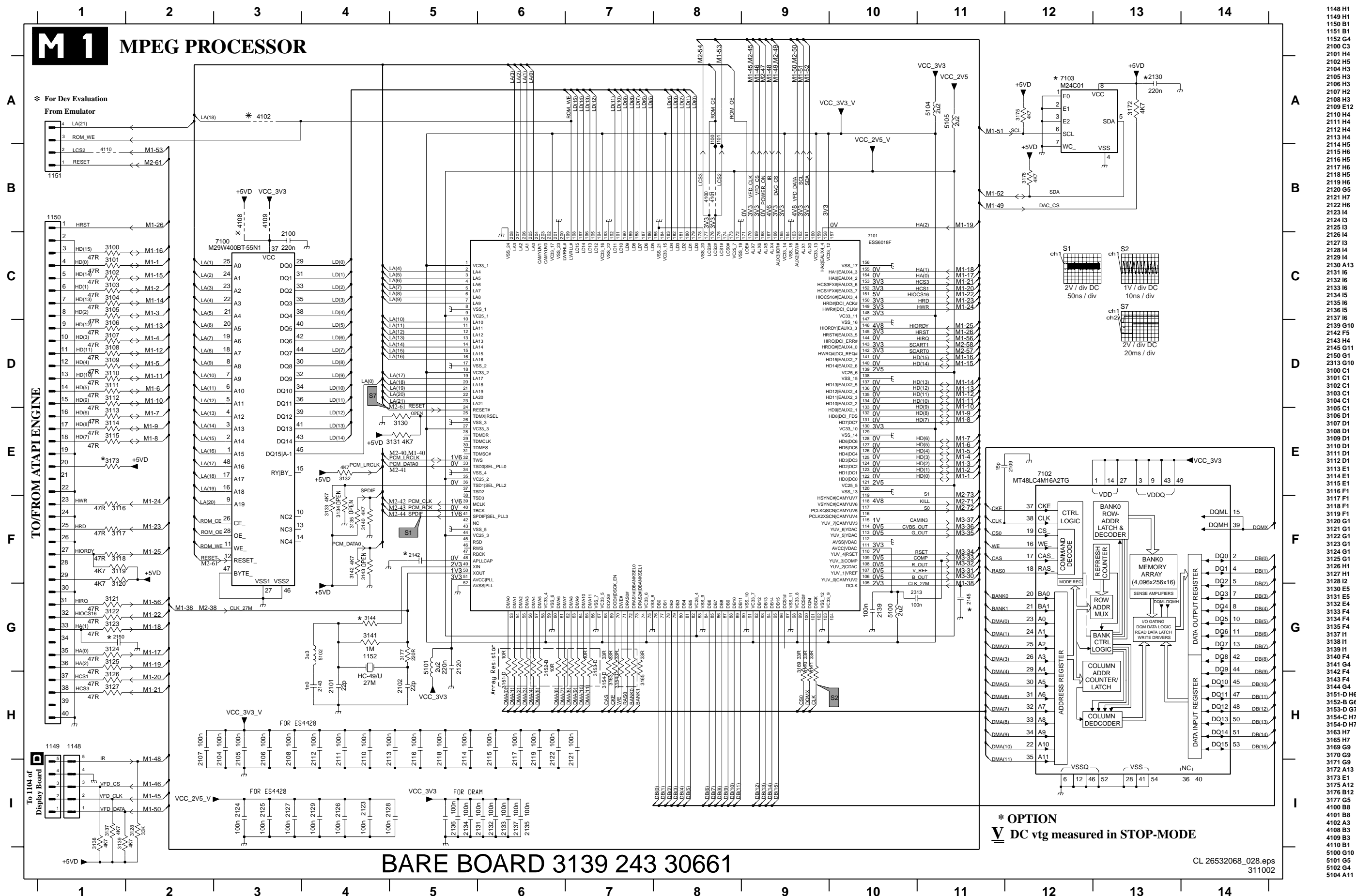
- 1300 A13
- 1301 D1
- 2240 I6
- 2300 A9
- 2301 B4
- 2302 B5
- 2303 A9
- 2304 C4
- 2305 B10
- 2306 A12
- 2307 B7
- 2310 C11
- 2311 B12
- 2312 D12
- 2313 F5
- 2314 F5
- 2315 G6
- 2316 G2
- 2317 G6
- 2319 I5
- 2320 D10
- 2321 E10
- 2322 E9
- 2323 E8
- 2324 F10
- 2325 F10
- 2326 F8
- 2327 F9
- 2328 G10
- 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
- 3267 H13
- 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 D10
- 3314 D10
- 3315 E8
- 3316 F5
- 3317 H6
- 3318 I4
- 3319 I4
- 3320 D11
- 3321 E11
- 3322 E10
- 3323 E11
- 3324 E12
- 3325 E10
- 3326 F10
- 3327 F10
- 3328 F8
- 3329 F10
- 3330 F11
- 3331 G11
- 3332 G12
- 3333 G10
- 3334 G10
- 3335 G10
- 3336 G11
- 3337 H8
- 3338 H10
- 3339 H10
- 3340 H11
- 3341 H12
- 3342 I10
- 3343 I10
- 3344 I11
- 3345 I8
- 3346 I10
- 3347 I10
- 3348 I11
- 3349 I12
- 3350 C8
- 4300 A4
- 4301 A6
- 4303 E7
- 4304 E7
- 4305 E8
- 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-A B9
- 7322-B C10
- 7324 C8
- 7325 E13
- 7326 G13
- 7327 H13
- I300 A13
- I301 A13
- I302 A12
- I303 B12
- I304 B12
- I305 C12
- I306 C12
- I307 C11

Layout MPEG Board 4428 (Top Side)

1148 A1	2102 E5	2113 B5	2124 E3	2135 C6	2146 B5	2205 A10	2218 F4	2234 F9	2302 G7	2314 B7	2326 B8	2337 C11	3226 E4	3346 D9
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 E10	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	2152 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	2243 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

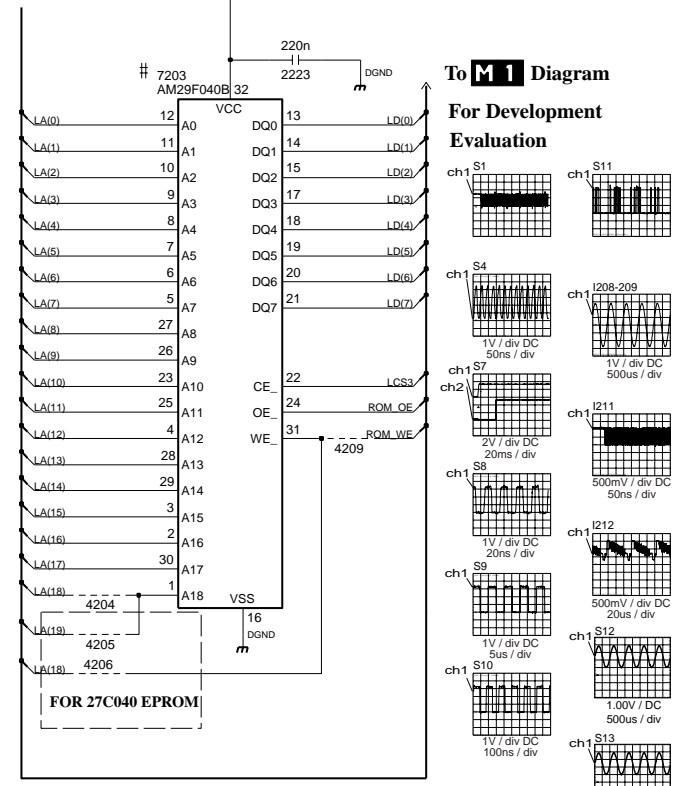
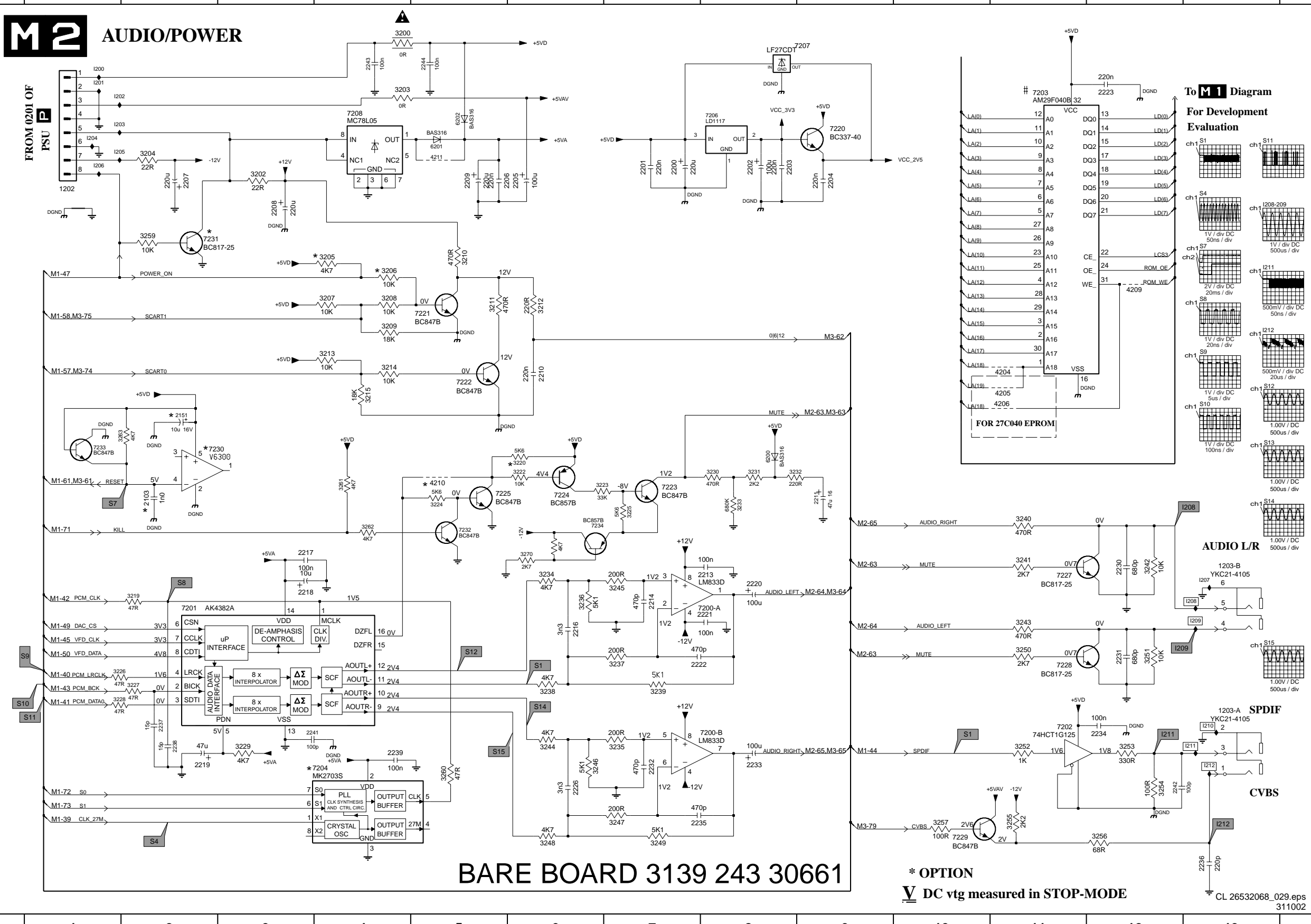


MPEG Board 6018: Processor



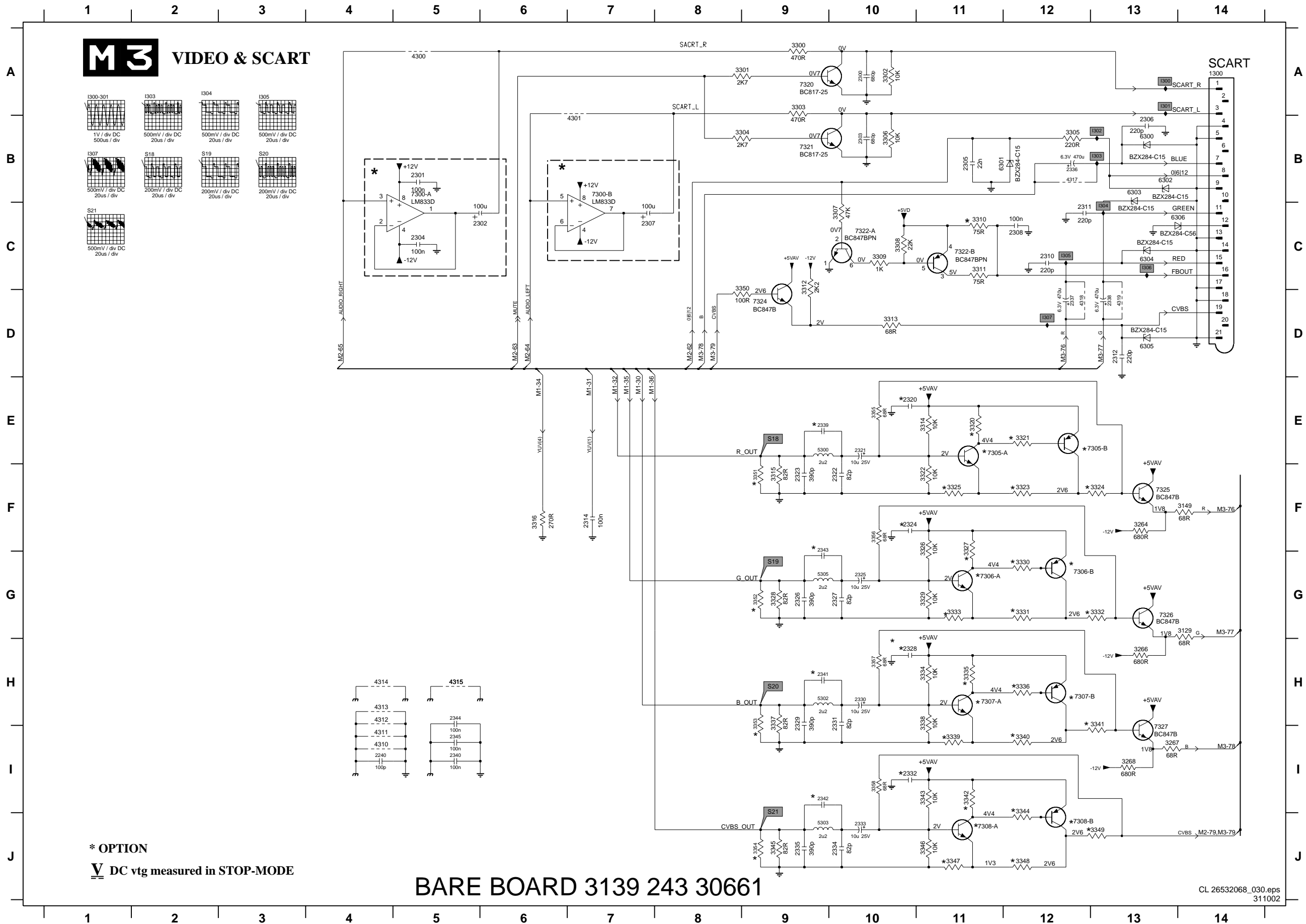
- 1148 H1
- 1149 H1
- 1150 B1
- 1151 B1
- 1152 G4
- 2100 C3
- 2101 H4
- 2102 H3
- 2104 H3
- 2105 H3
- 2106 H3
- 2107 H2
- 2108 H3
- 2109 E12
- 2110 H4
- 2111 H4
- 2112 H4
- 2113 H4
- 2114 H4
- 2115 H6
- 2116 H5
- 2117 H6
- 2118 H5
- 2119 H5
- 2120 G5
- 2121 H7
- 2122 H6
- 2123 I4
- 2124 I3
- 2125 I3
- 2126 I4
- 2127 I3
- 2128 I4
- 2129 I4
- 2130 A13
- 2131 I6
- 2132 I6
- 2133 I6
- 2134 I5
- 2135 I6
- 2136 I5
- 2137 I6
- 2138 G10
- 2139 G10
- 2140 F5
- 2141 H4
- 2142 G11
- 2143 G11
- 2144 G10
- 2145 G11
- 2146 G11
- 2147 G10
- 2148 G11
- 2149 G11
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- 2216 G11
- 2217 G11
- 2218 G11
- 2219 G11
- 2220 G11
- 2221 G11
- 2222 G11
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MPEG Board 6018: Audio Power

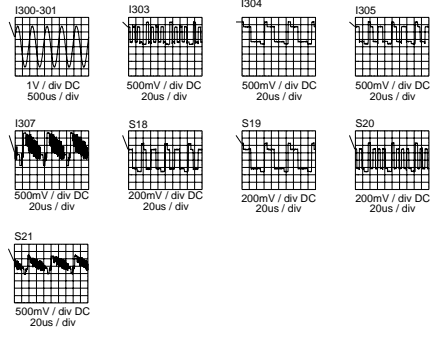


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3242 F12	
3243 G11	
3244 H6	
3245 F7	
3246 H6	
3247 I7	
3248 I6	
3249 I7	
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3252 H11	
3253 H12	
3254 H12	
3255 I11	
3256 I11	
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3263 E2	
3270 F6	
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4209 C12	
4210 E5	
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7200-A G7	

MPEG Board 6018: Video & Scart



M3 VIDEO & SCART



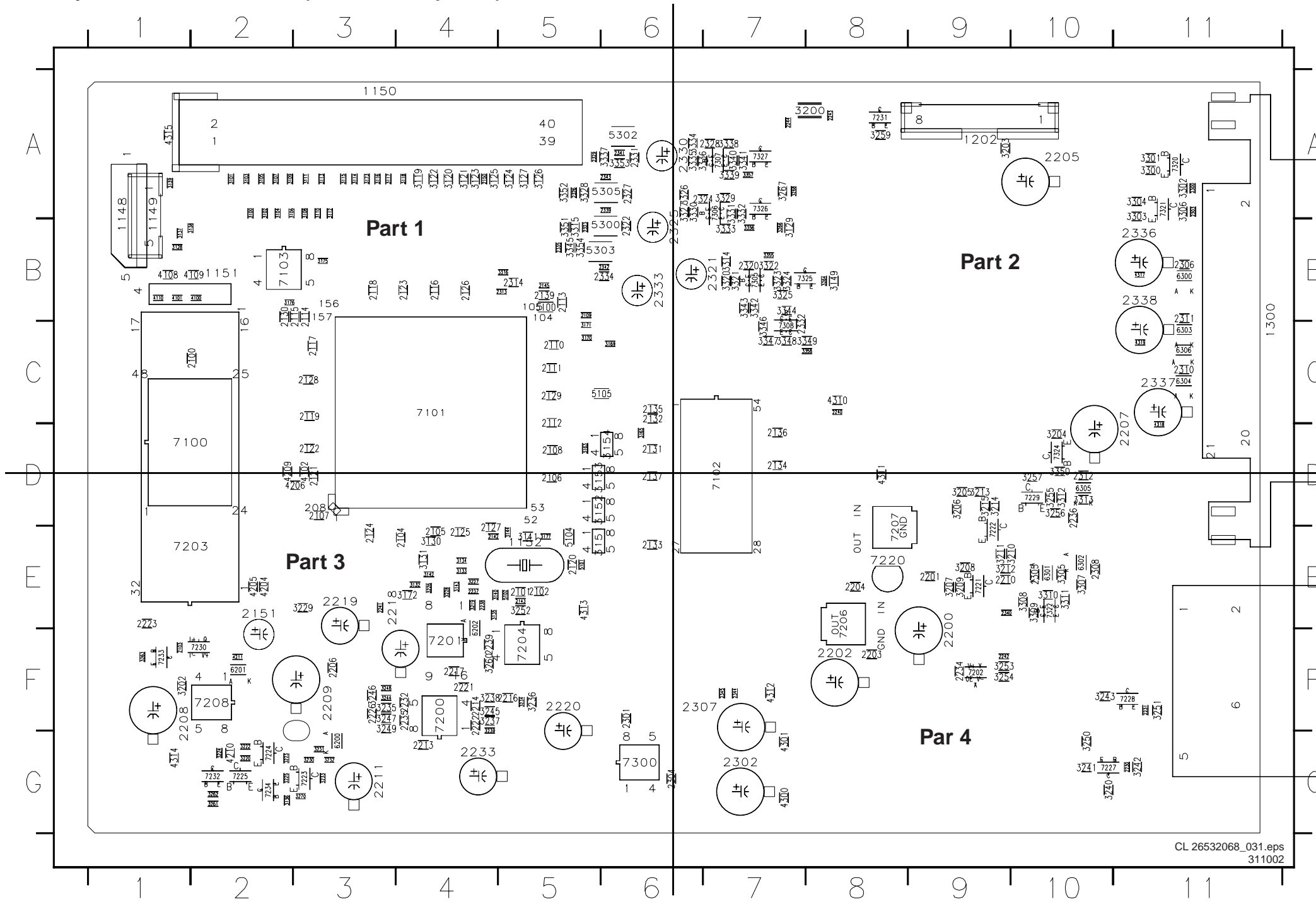
* OPTION
 V DC vtg measured in STOP-MODE

BARE BOARD 3139 243 30661

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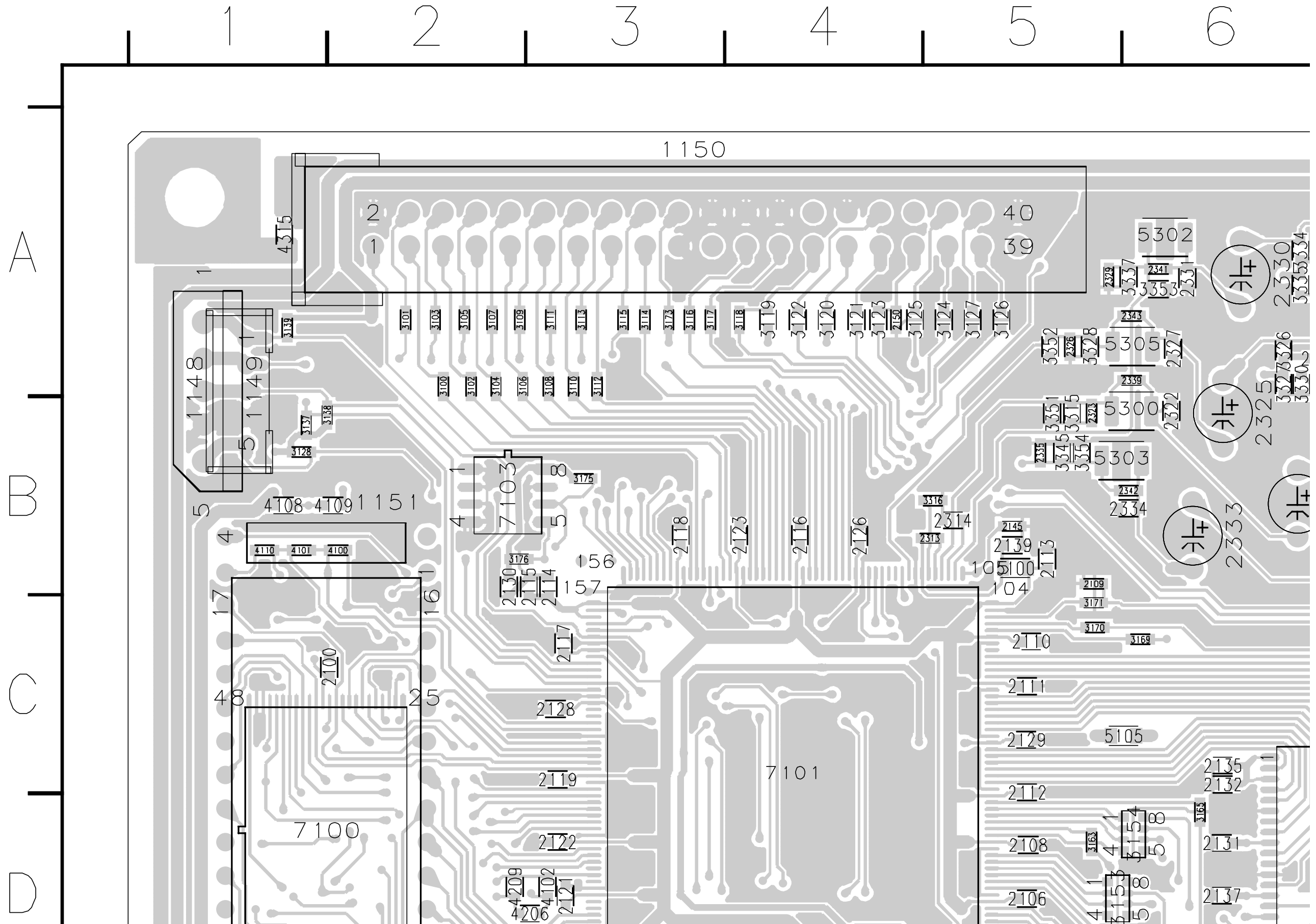
Layout MPEG Board 6018 (Overview Top Side)



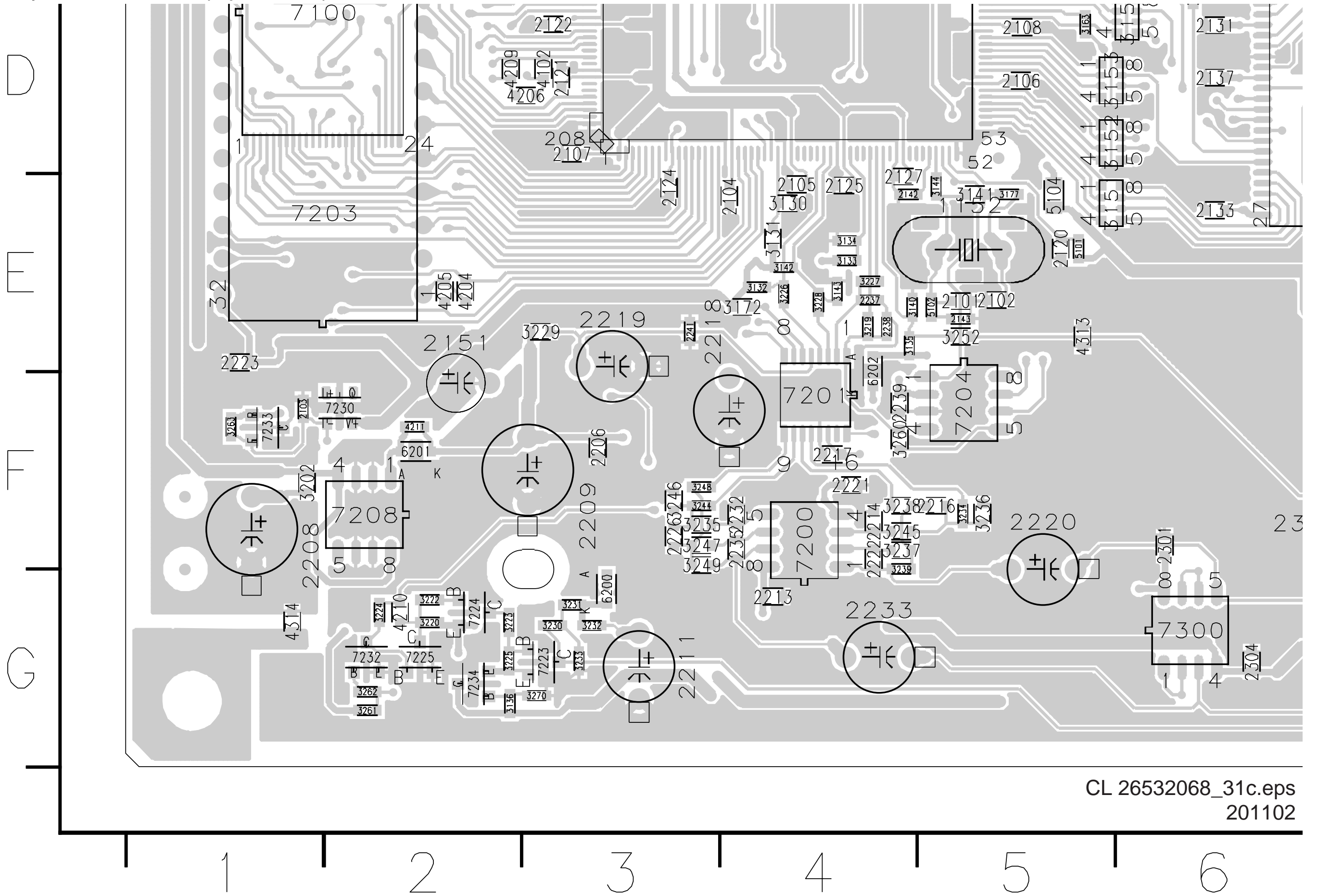
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2105 E4	2234 F9	3115 A3	3226 E4	3327 A6	6202 E4
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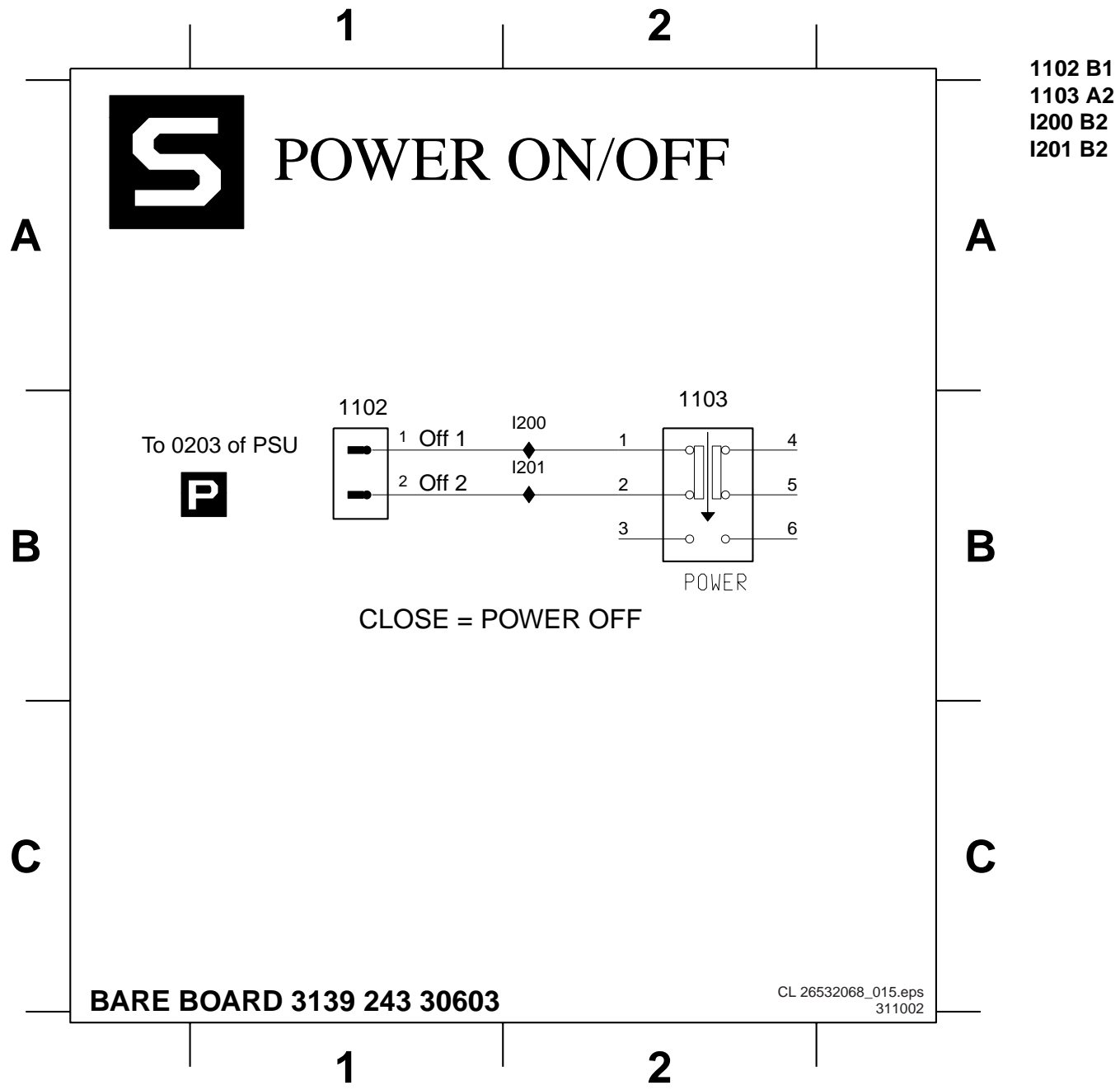
Layout MPEG Board 6018 (Top Side Part 1)



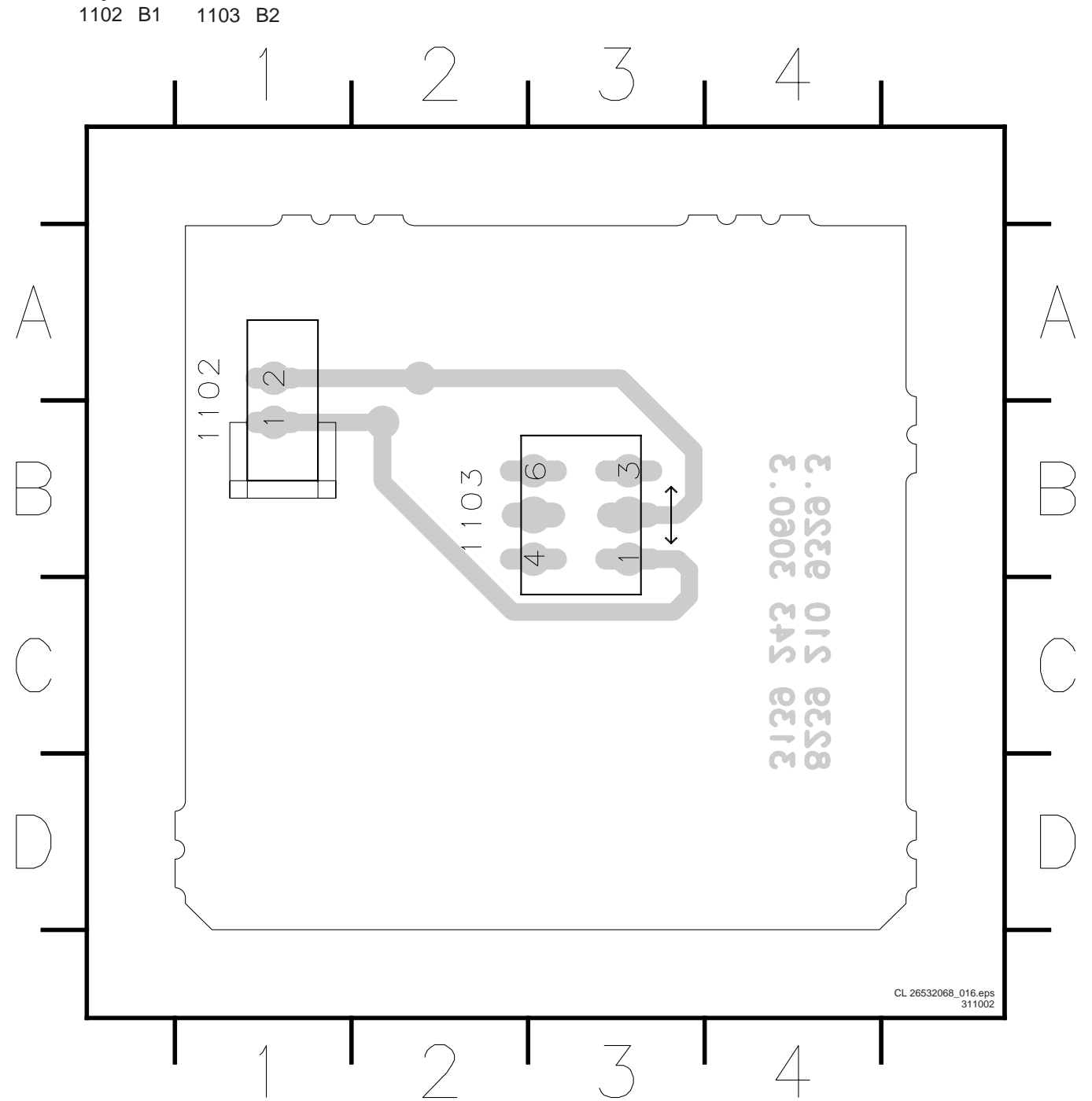
Layout MPEG Board 6018 (Top Side Part 3)



Power On/Off Panel



Layout Power On/Off Panel



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

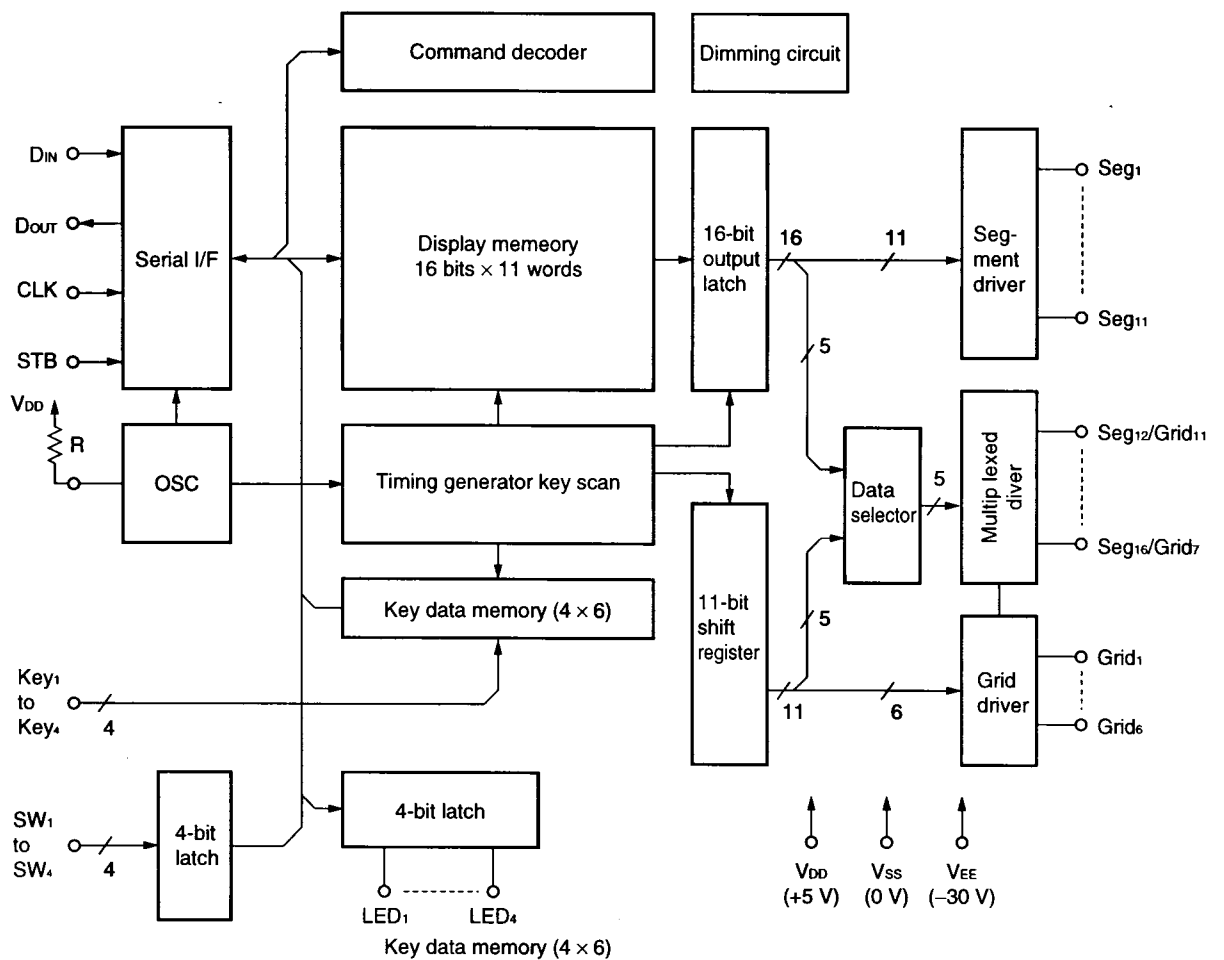
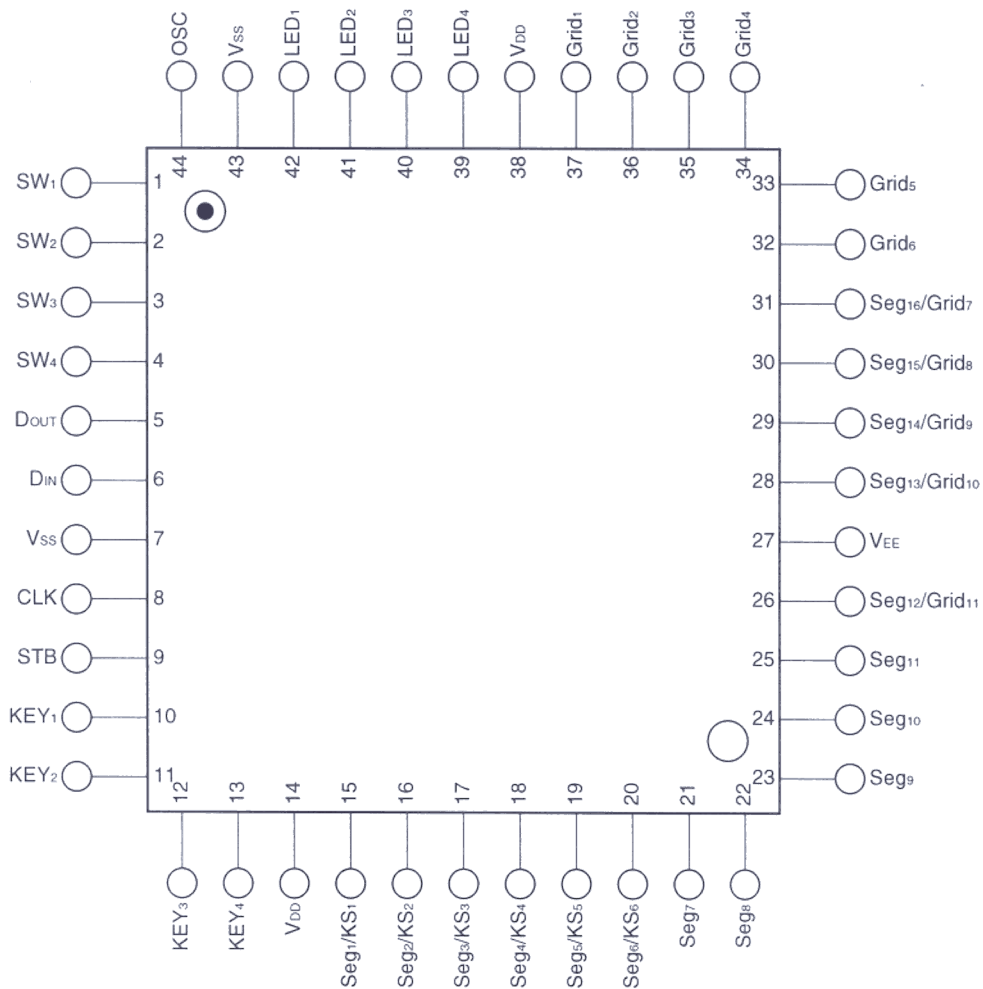


Figure 9-1 Block Diagram uPD16312

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.
DOUT	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	CON BMT 2P
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

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2100	4822 124 81286	47μF 20% 16V
2101	2238 586 59812	0603 50V 100NP80M
2102	2238 586 59812	0603 50V 100NP80M
2104	2238 586 59812	0603 50V 100NP80M
2104	3198 024 44730	47nF 50V 0603
2105	2238 586 59812	0603 50V 100NP80M
2106	4822 124 81286	47μF 20% 16V
2107	4822 126 14238	0603 50V 2N2 COL R

—WW—

3100	4822 117 11152	4Ω 7 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

—D—

6100	9340 548 42115	PDZ2.4B
6101	9340 548 68115	DIO REG SM PDZ24B (PHSE) R
6102	4822 130 11397	BAS316
6103	4822 130 11397	BAS316
6104	3198 020 55680	DIO REG SM BZX384-C5V6 COL R
6105	3198 020 55680	DIO REG SM BZX384-C5V6 COL R
6107	3198 020 55680	DIO REG SM BZX384-C5V6 COL R
6108	3198 020 55680	DIO REG SM BZX384-C5V6 COL R
6109	3198 020 55680	DIO REG SM BZX384-C5V6 COL R
6110	3198 020 55680	DIO REG SM BZX384-C5V6 COL R



7100	9322 186 03671	IC SM UPD16312GB-3B4 (NEC0) Y
7101	9322 155 82667	IR RECEIVER TSOP2236

MPEG ES4428 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 CINCH H 4P F WHYERDBK Y
1300	2422 025 12352	

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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	

2108	2238 586 59812	0603 50V 100NP80M	2338	4822 124 80791	470µF 16V 20% 105C	3232	4822 051 30221	220Ω 5% 0.062W
2109	4822 122 33752	15pF 5% 50V			DXH=8X11.5	3233	4822 051 30684	680k 5% 0.062W
2110	2238 586 59812	0603 50V 100NP80M	2340	2238 586 59812	0603 50V 100NP80M	3234	5322 117 13026	4k7 1% 0.063W 0603 RC22H
2111	2238 586 59812	0603 50V 100NP80M	2344	2238 586 59812	0603 50V 100NP80M	3235	2322 704 62001	RST SM 0603 RC22H 200Ω
2112	2238 586 59812	0603 50V 100NP80M	2345	2238 586 59812	0603 50V 100NP80M			PM1 R
2113	2238 586 59812	0603 50V 100NP80M				3236	2322 704 65102	RST SM 0603 RC22H 5k1
2114	2238 586 59812	0603 50V 100NP80M						PM1
2115	2238 586 59812	0603 50V 100NP80M				3237	2322 704 62001	RST SM 0603 RC22H 200Ω
2116	2238 586 59812	0603 50V 100NP80M						PM1 R
2117	2238 586 59812	0603 50V 100NP80M	3100	4822 051 30479	47Ω 5% 0.062W	3238	5322 117 13026	4k7 1% 0.063W 0603 RC22H
2118	2238 586 59812	0603 50V 100NP80M	3101	4822 051 30479	47Ω 5% 0.062W	3239	2322 704 65102	RST SM 0603 RC22H 5k1
2119	2238 586 59812	0603 50V 100NP80M	3102	4822 051 30479	47Ω 5% 0.062W			PM1
2120	4822 126 13879	220nF 20% 16V	3103	4822 051 30479	47Ω 5% 0.062W	3240	4822 051 30471	470Ω 5% 0.062W
2121	2238 586 59812	0603 50V 100NP80M	3104	4822 051 30479	47Ω 5% 0.062W	3241	4822 051 30272	2k7 5% 0.062W
2122	2238 586 59812	0603 50V 100NP80M	3105	4822 051 30479	47Ω 5% 0.062W	3242	4822 051 30103	10k 5% 0.062W
2123	2238 586 59812	0603 50V 100NP80M	3106	4822 051 30479	47Ω 5% 0.062W	3243	4822 051 30471	470Ω 5% 0.062W
2124	2238 586 59812	0603 50V 100NP80M	3107	4822 051 30479	47Ω 5% 0.062W	3244	5322 117 13026	4k7 1% 0.063W 0603 RC22H
2125	2238 586 59812	0603 50V 100NP80M	3108	4822 051 30479	47Ω 5% 0.062W	3245	2322 704 62001	RST SM 0603 RC22H 200Ω
2126	2238 586 59812	0603 50V 100NP80M	3109	4822 051 30479	47Ω 5% 0.062W			PM1 R
2127	2238 586 59812	0603 50V 100NP80M	3110	4822 051 30479	47Ω 5% 0.062W	3246	2322 704 65102	RST SM 0603 RC22H 5k1
2128	2238 586 59812	0603 50V 100NP80M	3111	4822 051 30479	47Ω 5% 0.062W			PM1
2129	2238 586 59812	0603 50V 100NP80M	3112	4822 051 30479	47Ω 5% 0.062W	3247	2322 704 62001	RST SM 0603 RC22H 200Ω
2131	2238 586 59812	0603 50V 100NP80M	3113	4822 051 30479	47Ω 5% 0.062W			PM1 R
2132	2238 586 59812	0603 50V 100NP80M	3114	4822 051 30479	47Ω 5% 0.062W	3248	5322 117 13026	4k7 1% 0.063W 0603 RC22H
2133	2238 586 59812	0603 50V 100NP80M	3115	4822 051 30479	47Ω 5% 0.062W	3249	2322 704 65102	RST SM 0603 RC22H 5k1
2134	2238 586 59812	0603 50V 100NP80M	3116	4822 051 30479	47Ω 5% 0.062W			PM1
2135	2238 586 59812	0603 50V 100NP80M	3117	4822 051 30479	47Ω 5% 0.062W	3250	4822 051 30272	2k7 5% 0.062W
2136	2238 586 59812	0603 50V 100NP80M	3118	4822 051 30479	47Ω 5% 0.062W	3251	4822 051 30103	10k 5% 0.062W
2137	2238 586 59812	0603 50V 100NP80M	3119	4822 051 30472	4k7 5% 0.062W	3252	4822 051 30102	1k 5% 0.062W
2139	2238 586 59812	0603 50V 100NP80M	3120	4822 051 30472	4k7 5% 0.062W	3253	4822 051 30331	330Ω 5% 0.062W
2143	3198 016 31020	0603 25V 1nF	3121	4822 051 30479	47Ω 5% 0.062W	3254	4822 051 30101	100Ω 5% 0.062W
2200	4822 124 40196	220µF 20% 16V	3122	4822 051 30479	47Ω 5% 0.062W	3255	4822 051 30222	2k2 5% 0.062W
2201	4822 126 13879	220nF 20% 16V	3123	4822 051 30479	47Ω 5% 0.062W	3256	4822 051 30689	68Ω 5% 0.063W 0603 RC21
2202	4822 124 23052	100µF 20% 16V	3124	4822 051 30479	47Ω 5% 0.062W			RST SM
2203	4822 126 13879	220nF 20% 16V	3125	4822 051 30479	47Ω 5% 0.062W	3257	4822 051 30101	100Ω 5% 0.062W
2204	4822 126 13879	220nF 20% 16V	3126	4822 051 30479	47Ω 5% 0.062W	3259	4822 051 30103	10k 5% 0.062W
2205	4822 124 23052	100µF 20% 16V	3127	4822 051 30479	47Ω 5% 0.062W	3260	4822 051 30479	47Ω 5% 0.062W
2206	4822 126 13879	220nF 20% 16V	3128	4822 051 30333	33k 5% 0.062W	3261	4822 051 30472	4k7 5% 0.062W
2207	4822 124 40196	220µF 20% 16V	3129	4822 051 30689	68Ω 5% 0.063W 0603 RC21	3262	4822 051 30472	4k7 5% 0.062W
2208	4822 124 40196	220µF 20% 16V			RST SM	3263	4822 051 30472	4k7 5% 0.062W
2209	4822 124 40196	220µF 20% 16V	3131	4822 051 30472	4k7 5% 0.062W	3264	4822 051 30222	2k2 5% 0.062W
2210	4822 126 13879	220nF 20% 16V	3132	4822 051 30472	4k7 5% 0.062W	3266	4822 051 30222	2k2 5% 0.062W
2211	4822 124 80231	47µF 20% 16V	3133	4822 051 30472	4k7 5% 0.062W	3267	4822 051 30689	68Ω 5% 0.063W 0603 RC21
2213	2238 586 59812	0603 50V 100NP80M	3136	4822 051 30472	4k7 5% 0.062W			RST SM
2214	4822 126 13881	470pF 5% 50V	3137	4822 051 30472	4k7 5% 0.062W	3268	4822 051 30222	2k2 5% 0.062W
2216	5322 126 11579	3.3nF 10% 63V	3138	4822 051 30472	4k7 5% 0.062W	3270	4822 051 30272	2k7 5% 0.062W
2217	2238 586 59812	0603 50V 100NP80M	3139	4822 051 30472	4k7 5% 0.062W	3300	4822 051 30471	470Ω 5% 0.062W
2218	4822 124 11947	10µF 20% 16V	3140	4822 051 30472	4k7 5% 0.062W	3301	4822 051 30272	2k7 5% 0.062W
2219	4822 124 80231	47µF 20% 16V	3141	4822 051 30105	1M 5% 0.062W	3302	4822 051 30103	10k 5% 0.062W
2220	4822 124 23052	100µF 20% 16V	3142	4822 051 30472	4k7 5% 0.062W	3303	4822 051 30471	470Ω 5% 0.062W
2221	2238 586 59812	0603 50V 100NP80M	3144	4822 051 30008	0Ω jumper	3304	4822 051 30272	2k7 5% 0.062W
2222	4822 126 13881	470pF 5% 50V	3149	4822 051 30689	68Ω 5% 0.063W 0603 RC21	3305	4822 051 30221	220Ω 5% 0.062W
2223	4822 126 13879	220nF 20% 16V			RST SM	3306	4822 051 30103	10k 5% 0.062W
2226	5322 126 11579	3.3nF 10% 63V	3151	4822 117 12662	10Ω X4 5%	3307	4822 117 12925	47k 1% 0.063W 0603
2230	4822 126 13909	680pF 10% 50V	3152	4822 117 12662	10Ω X4 5%	3308	4822 051 30223	22k 5% 0.062W
2231	4822 126 13909	680pF 10% 50V	3153	4822 117 12662	10Ω X4 5%	3309	4822 051 30102	1k 5% 0.062W
2232	4822 126 13881	470pF 5% 50V	3154	4822 117 13576	NETW 4 X 33Ω 5% 1206	3311	4822 051 30759	75Ω 5% 0.062W
2233	4822 124 23052	100µF 20% 16V	3163	4822 051 30339	33Ω 5% 0.062W	3312	4822 051 30222	2k2 5% 0.062W
2234	2238 586 59812	0603 50V 100NP80M	3165	4822 051 30339	33Ω 5% 0.062W	3313	4822 051 30689	68Ω 5% 0.063W 0603 RC21
2235	4822 126 13881	470pF 5% 50V	3169	4822 051 30339	33Ω 5% 0.062W			RST SM
2236	4822 126 13883	220pF 5% 50V	3170	4822 051 30339	33Ω 5% 0.062W	3314	4822 051 30103	10k 5% 0.062W
2237	4822 122 33752	15pF 5% 50V	3171	4822 051 30339	33Ω 5% 0.062W	3315	4822 117 13501	82Ω 5% 0.62W 0603
2238	4822 122 33752	15pF 5% 50V	3172	4822 051 30472	4k7 5% 0.062W	3316	4822 051 30271	270Ω 5% 0.062W
2239	2238 586 59812	0603 50V 100NP80M	3175	4822 051 30472	4k7 5% 0.062W	3322	4822 051 30103	10k 5% 0.062W
2240	2238 586 59812	0603 50V 100NP80M	3176	4822 051 30472	4k7 5% 0.062W	3326	4822 051 30103	10k 5% 0.062W
2241	2238 586 59812	0603 50V 100NP80M	3177	4822 051 30221	220Ω 5% 0.062W	3328	4822 117 13501	82Ω 5% 0.62W 0603
2300	4822 126 13909	680pF 10% 50V	3200	4822 051 20008	0Ω jumper . (0805)	3329	4822 051 30103	10k 5% 0.062W
2301	2238 586 59812	0603 50V 100NP80M	3202	4822 117 12139	22Ω 5% 0.062W	3334	4822 051 30103	10k 5% 0.062W
2303	4822 126 13909	680pF 10% 50V	3203	4822 051 30008	0Ω jumper	3337	4822 117 13501	82Ω 5% 0.62W 0603
2305	4822 126 14494	22nF 10% 25V 0603	3204	4822 117 12139	22Ω 5% 0.062W	3338	4822 051 30103	10k 5% 0.062W
2306	4822 126 13883	220pF 5% 50V	3207	4822 051 30103	10k 5% 0.062W	3343	4822 051 30103	10k 5% 0.062W
2308	2238 586 59812	0603 50V 100NP80M	3208	4822 051 30103	10k 5% 0.062W	3345	4822 117 13501	82Ω 5% 0.62W 0603
2310	4822 126 13883	220pF 5% 50V	3209	4822 051 30183	18k 5% 0.062W	3346	4822 051 30103	10k 5% 0.062W
2311	4822 126 13883	220pF 5% 50V	3210	4822 051 30471	470Ω 5% 0.062W	3350	4822 051 30101	100Ω 5% 0.062W
2312	4822 126 13883	220pF 5% 50V	3211	4822 051 30471	470Ω 5% 0.062W	3355	4822 051 30689	68Ω 5% 0.063W 0603 RC21
2313	2238 586 59812	0603 50V 100NP80M	3212	4822 051 30221	220Ω 5% 0.062W			RST SM
2314	2238 586 59812	0603 50V 100NP80M	3213	4822 051 30103	10k 5% 0.062W	3356	4822 051 30689	68Ω 5% 0.063W 0603 RC21
2321	4822 124 11947	10µF 20% 16V	3214	4822 051 30103	10k 5% 0.062W			RST SM
2322	2020 552 94427	0603 50V 100P 5%	3215	4822 051 30183	18k 5% 0.062W	3357	4822 051 30689	68Ω 5% 0.063W 0603 RC21
2323	4822 126 14315	390pF 5% 50V 0603	3219	4822 051 30101	100Ω 5% 0.062W			RST SM
2325	4822 124 11947	10µF 20% 16V	3220	4822 051 30562	5k6 5% 0.063W 0603 RC21	3358	4822 051 30689	68Ω 5% 0.063W 0603 RC21
2326	4822 126 14315	390pF 5% 50V 0603			RST SM			RST SM
2327	2020 552 94427	0603 50V 100P 5%	3222	4822 051 30103	10k 5% 0.062W			
2329	4822 126 14315	390pF 5% 50V 0603	3223	4822 051 30333	33k 5% 0.062W			
2330	4822 124 11947	10µF 20% 16V	3224	4822 051 30562	5k6 5% 0.063W 0603 RC21			
2331	2020 552 94427	0603 50V 100P 5%			RST SM			
2333	4822 124 11947	10µF 20% 16V	3225	4822 051 30562	5k6 5% 0.063W 0603 RC21	5100	4822 157 10586	2.2µH 10% 0805
2334	2020 552 94427	0603 50V 100P 5%			RST SM	5101	3198 018 52280	FXDIND SM 0603 2U2 PM10
2335	4822 126 14315	390pF 5% 50V 0603	3226	4822 051 30479	47Ω 5% 0.062W			COL R
2336	4822 124 80791	470µF 16V 20% 105C	3227	4822 051 30479	47Ω 5% 0.062W	5102	3198 018 53380	FXDIND SM 060

5302	4822 157 70299	2.2µH (NL322522T-2R2J)
5303	4822 157 70299	2.2µH (NL322522T-2R2J)
5305	4822 157 70299	2.2µH (NL322522T-2R2J)

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6200	4822 130 11397	BAS316
6202	4822 130 11397	BAS316
6300	4822 130 11522	UDZ15B
6301	4822 130 11522	UDZ15B
6302	4822 130 11522	UDZ15B
6303	4822 130 11522	UDZ15B
6304	4822 130 11522	UDZ15B
6305	4822 130 11522	UDZ15B
6306	4822 130 83206	BZX79-B5V6



7100	9965 000 15979	M29W400BT/DVD640/ 634_V322_0909
7101	9322 185 42671	IC SM ES6018F (ESST) Y
7102	9322 166 67668	IC SM MT48LC4M16A2TG- 7E(MRNO)R
7200	4822 209 30095	LM833D
7201	9322 177 09685	IC SM AK4382AVT (AKM0) R
7202	9352 456 80115	74HCT1G125GW
7206	4822 209 17398	LD1117DT33
7208	4822 209 33411	MC78L05ACD
7220	4822 130 40855	BC337
7221	5322 130 60159	BC846B
7222	5322 130 60159	BC846B
7223	5322 130 60159	BC846B
7224	4822 130 60373	BC856B
7225	5322 130 60159	BC846B
7227	4822 130 42804	BC817-25
7228	4822 130 42804	BC817-25
7229	5322 130 60159	BC846B
7231	4822 130 42804	BC817-25
7232	5322 130 60159	BC846B
7233	9322 189 96685	IC SM M62720GP (MITJ) R
7234	4822 130 60373	BC856B
7320	4822 130 42804	BC817-25
7321	4822 130 42804	BC817-25
7322	9340 425 30115	TRA SIG SM BC847BPN (PHSE) R
7324	5322 130 60159	BC846B
7325	5322 130 60159	BC846B
7326	5322 130 60159	BC846B
7327	5322 130 60159	BC846B

11. Errata

11.1 Revision List

11.1.1 Manual 3122 785 12251

During production, the ES6018 Mpeg board (3139 248 82364) was introduced from production code VN02 onwards.

- In this service manual the circuit diagrams, print layout, block diagram and the belonging parts list are added.

During production, the print layout of the Front Panel has been changed to solve Electro-Static Discharge (ESD) problem.

- This new print layout is introduced as a running change from wk245 onward. In this service manual the new circuit diagrams,
- print layout and the belonging parts list are added