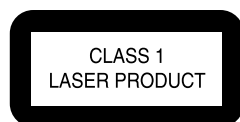


Service
Service
Service



Service Manual



Contents		Page
1	Technical Specs and Connection Facilities	2
2	Safety Instructions, Warnings, Notes	4
3	Directions for Use	5
4	Mechanical-, Dismantling Instructions, and Service Hints	14
5	Diagnostic Software, Trouble Shooting and Test Instructions	16
6	<i>Block-, Wiring Diagram and Testpoint Overview</i>	
	Block Diagram	23
	Wiring Diagram	24
	Testpoint Overview MPEG Boards	25-26
7	<i>Electrical Diagrams and Print-Layouts</i>	<i>Diagram PWB</i>
	Power Supply Unit 90PS132 WR BILLION EH	27 28
	Power Supply Unit BPAVC 7xx UR-EURO SLIM	29 30-31
	MPEG Board: Processor	32 35
	MPEG Board: Audio/Power	33 35
	MPEG Board: Video & SCART	34 35
	MPEG Board 6018: MPEG Processor	36 39-43
	MPEG Board 6018: Audio Power	37 39-43
	MPEG Board 6018: Video & SCART	38 39-43
	Front Board (Diagram D)	44 45
8	Alignments (Not Applicable)	47
9	Circuit Descriptions (Not Applicable)	47
	List of Abbreviations (Not Applicable)	47
	IC Data	47
10	Spare Parts List	50
11	Errata	54

©Copyright 2002 Philips Consumer Electronics B.V. Eindhoven, The Netherlands.
All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, or otherwise without the prior permission of Philips.



PHILIPS

1. Technical Specifications and PWB Location Drawing

1.1 Technical Specifications

PLAYBACK SYSTEM

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

VIDEO PERFORMANCE

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

AUDIO FORMAT

Digital	MPEG/AC-3/DTS	Compressed
	PCM	Digital
		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 CDDA / LPCM/
	MPEG1
	IEC1937 for MPEG2, Dolby
	Digital and DTS

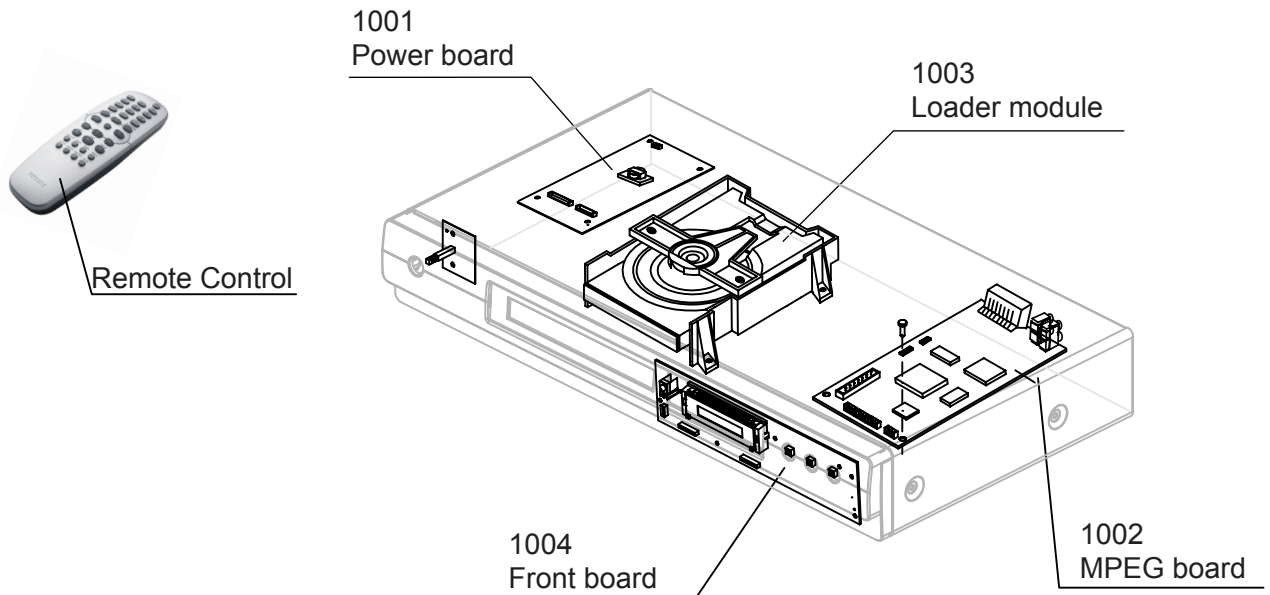
CABINET

Dimensions (w x h x d)	435 x 235 x 71 mm
Weight	Approximately 2.7 Kg

Specifications subject to change without prior notice

1.2 PWB Location Drawing

PCB LOCATION DVD640/001/021/051



PARTS 12NC LIST

	DVD615/001/021/051
1001 PSU board	3141 018 02930
1002 MPEG board	3141 018 02760
1003 Loader module	3141 018 02660
1004 Front board	3141 018 02750
Remote control	3141 017 90201


Figure 1-1 PWB Location Drawing

2. Safety Instructions, Warnings and Notes

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

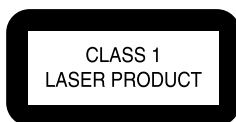



Figure 2-1 Class 1 Laser Product

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

2.2.2 Laser

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

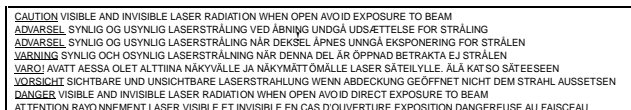


Figure 2-2 Warning text

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

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:

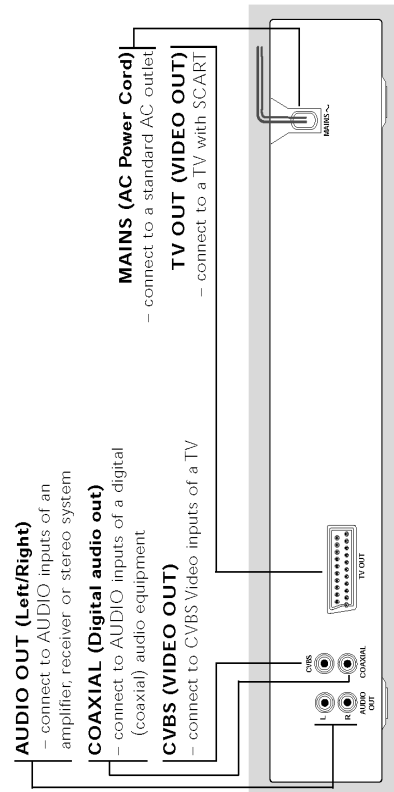
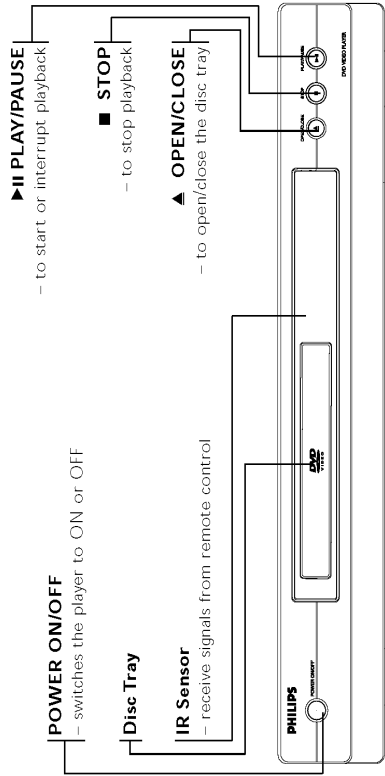
	- Description refers to playback of DVD-video discs
	- Description refers to playback of Video CDs
	- Description refers to playback of Audio-CDs
	- Description refers to playback of Super Video CDs

Helpful Hints!

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

Functional Overview

Front and Rear Panels



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

Functional Overview

Remote Control

- RETURN / TITLE**
 - go back to previous menu / to display title menu during playback
- DISC MENU**
 - access menu of a DVD disc / to switch PBC on/off for VCD disc
- Navigation**
 - (left/right/up/down) select an item in the menu
 - search FF and FR with different speeds during playback using **◀▶**
 - search SF and SR with different speeds during playback using **◀▶**
 - acknowledge menu selection **OK**
 - go to a previous chapter or track **◀◀**
- STOP (■)**
 - stop playback
- PLAY (▶)**
 - start playback
- PAUSE (||)**
 - pause playback temporarily / frame-by-frame playback
- REPEAT**
 - repeat chapter, track, title, disc
- REPEAT (A-B)**
 - repeat a specific segment
- PREVIEW**
 - display the content of a track or whole disc
- MUTE**
 - disable or enable sound output

English

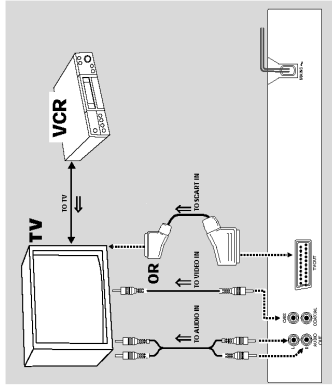
Preparation

English

If your TV is not equipped with a SCART input, you can select the following connection:

If your TV has a CVBS/Video input connector,

- 1 Connect the CVBS VIDEO OUT on the DVD player to the CVBS VIDEO IN.
- 2 Connect the Left and Right AUDIO OUT on the DVD player to the Left and Right AUDIO IN on the TV.



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

- 1 Use the CVBS Video Output for good picture quality.
- 2 Use SCART Output for best picture quality.

Sound

- 1 Digital audio connections provide the clearest sound. Connect one of the DVD player's DIGITAL AUDIO OUT (COAXIAL) to your amplifier or receiver.

- 2 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.

Warning!

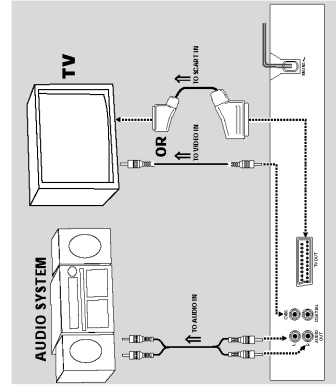
- **Never make or change connections with the power switched on.**
- **Connect the DVD player directly to your TV, instead of eg. a VCR, to avoid distortion because DVD video discs are copy protected.**
- **Do not connect the DVD player AUDIO OUT to PHONO IN of your amplifier or receiver.**

Connecting to a TV

- 1 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.



Connecting to an Audio System

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

Note:

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

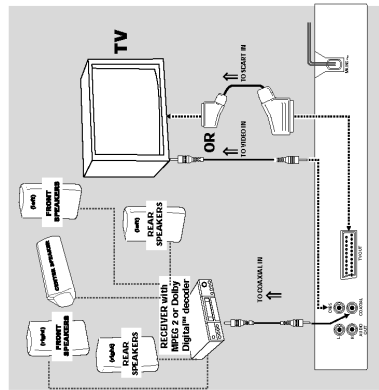
Preparation

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.

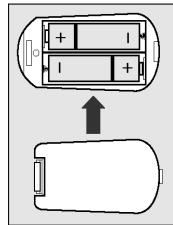


Notes:

- 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.

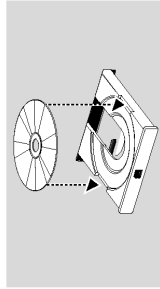
Switching On

- 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. EXT1, EXT2, AV1, AV2, AUDIO/VIDEO, etc. (Refer to your TV owner's manual for detail)
 - The player display lights up and the default screen appears on the TV.
- 4 If you are using an external equipment (eg. audio system or receiver), turn them on and select the appropriate input source that was used to connect to the DVD player output. Refer to the equipment owner's manual for details.

Operation

Basic Playback

- 1 Press POWER ON/OFF on the front panel.
- 2 Press OPEN/CLOSE ▲ 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 ▲ again to close the tray. → 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 STOP DVD VCD CD SVCD
You can resume playback from the point where the playback was last stopped by pressing the STOP key once.
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.
→ 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 VCD VCD CD SVCD
Press ◀ or ▶ during playback to go to the fast forward / backward searching.
- 2 Press ◀ or ▶ again to increase the speed for searching.
- 3 To resume normal playback, press PLAY.

SLOW MOTION (Slow Forward and Slow Backward)

- 1 Press ▲ or ▼ during playback to get slow motion effect.
 - 2 Press ▲ or ▼ again to get different playback forward/backward speed.
 - 3 To resume normal playback, press PLAY.
- 1 Press VCD VCD CD SVCD
Press ▲ during playback to get slow motion effect.
 - 2 Press ▲ again to get different playback forward speed.
 - 3 To resume normal playback, press PLAY.

Note:

- SLOW BACKWARD feature is not available for SVC/AVCD/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).

Operation

Audio Control during playback

MUTE



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

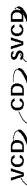
SURROUND SOUND



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:

- 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

The Zoom function allows you to enlarge the video image.

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.

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

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 (1/4, 3/4, 2/4, 1/4).

Note:

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

Changing the audio language

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

Note:

- This feature is subject to availability of the disc.

Subtitles

- 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

English

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

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.

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

- 1 Press numerical key pad '4'.
- 2 Press OK to exit.

MP3 CD Playback

English

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 Quality	Bit-rate	Approximate MP3 CD time	Comment
AMF ratio	32 kbps	60 hrs	Source quality significantly affected
FM ratio	64 kbps	20 hrs	
Near CD	96 kbps	15 hrs	Bit-rates & format quality
CD like	128 kbps	10 hrs	compression rate
CD*	256 kbps	5 hrs	Compression rate
CD*	256 kbps	3 hrs	Support to play CD, instead

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.

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

Basic Operations

- 1 At Stop mode, press SYSTEM MENU to enter the Setup menu.
→ Setup menu appears on the TV screen.
Press OK to enter to next submenu or confirm your selection.
- 2 Use ◀▶ keys to enter the submenu or return to previous menu.
- 3 Use ▲▼ keys to select the preferred option.
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.

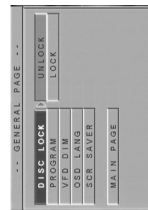
General Setup

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.



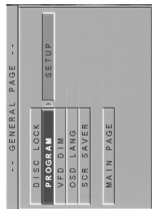
- 1 Press ▲▼ keys to select the DISC LOCK in the General Setup menu and press OK to confirm.
- 2 Enter the submenu by pressing the ▶ key.
→ LOCK: Lock the disc being played.
→ UNLOCK: Unlock the disc.
- 3 Press ◀ key to return to General Setup menu.

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)

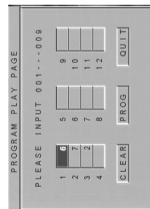
- 1 Select PROGRAM using ▲▼ keys and press OK to open the menu.
- 2 Enter the submenu by pressing the ▶ key.
→ SETUP: To access into Program mode.



- 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.



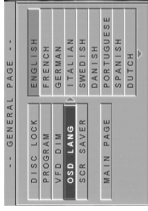
Exclude a track

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

Setup Menu

OSD Language

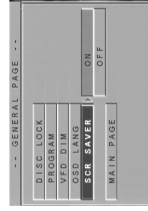
There are 14 languages available for information display on the TV screen.



- 1 Press ▲▼ keys to select the OSD LANG in the General Setup menu and press OK to confirm.
Enter the submenu by pressing the ▶ key.
- 2 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.
- 3 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.

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.
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.

Setup Menu

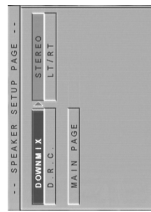
English

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.
- 4 Press **▶** key to enter the SPEAKER SETUP menu. Press **▶** key to confirm selection.

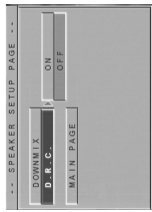
DOWNMIX mode



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

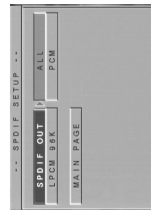
SPDIF setup

- 1 Press SYSTEM MENU to enter the Setup menu.
- 2 Press **▲▼** keys to choose SPDIF SETUP menu.
- 3 Press OK to confirm selection.
- 4 Press **▶** key to enter the SPDIF SETUP menu. Press **▶** key to confirm selection.

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.
- 2 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.

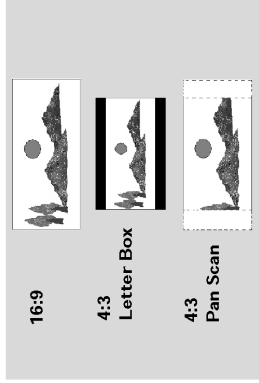
Setup Menu

English

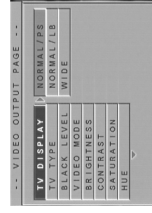
TV Display

Select the aspect ratio of the TV to be connected.

- 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.
 - 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.

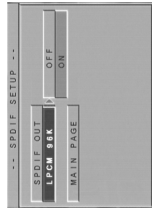


- 1 Press **▲▼** keys to select the TV DISPLAY in the General Setup menu and press OK to confirm.
- 2 Enter the submenu by pressing the **▶** key.
- 3 Use the **▲▼** keys to highlight an option.



- 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.
- 2 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

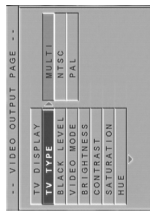
Some settings that are included in VIDEO OUT PAGE menu are: TV DISPLAY, VIDEO OUTPUT, TV TYPE, BLACK LEVEL, VIDEO MODE, BRIGHTNESS, CONTRAST, SATURATION, HUE

- 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

TV Type

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

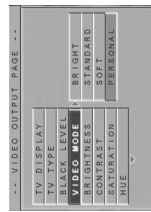


- 1 Press **▲▼** keys to select the TV TYPE in the General Setup menu and press **OK** to confirm.
- 2 Enter the submenu by pressing the **▶** key.
- 3 Use the **▲▼** keys to highlight an option.
 - MULTI: Video output is depending on the format of the disc.
 - NTSC: DVD player will output only NTSC system.
 - PAL: DVD player will output only PAL system.
- 4 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



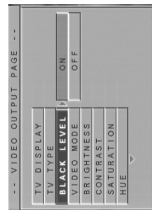
- 1 Press **▲▼** keys to select the VIDEO MODE in the VIDEO OUTPUT Setup menu and press **OK** to confirm.
- 2 Enter the submenu by pressing the **▶** key.

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

Personal Picture setting

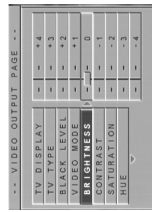
Personal picture setting includes setup of BLACK LEVEL, BRIGHTNESS, CONTRAST, SATURATION and HUE which allows you to personalise your picture setting.

Black Level



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

Brightness/Contrast/Saturation/Hue



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

Setup Menu

English

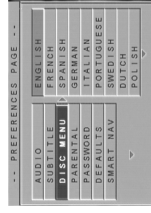
- 1 Press **▲▼** keys to select the SUBTITLE in the Preferences menu and press **OK** to confirm.
- 2 Enter the submenu by pressing the **▶** key.
- 3 Use the **▲▼** keys to highlight an option.
- 4 Press **OK** and press **◀** key to return to Preferences menu.

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.



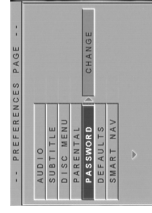
- 1 Press **▲▼** keys to select the DISC MENU in the Preferences menu and press **OK** to confirm.
- 2 Enter the submenu by pressing the **▶** key.
- 3 Use the **▲▼** keys to highlight an option.
- 4 Press **OK** and press **◀** key to return to Preferences menu.

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.



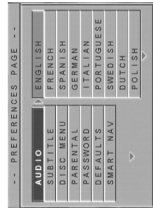
Preferences setup

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

- 1 Press **STOP** twice.
- 2 Press **SYSTEM MENU** to enter its menu.
- 3 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.



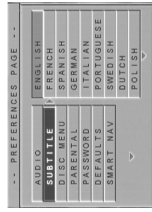
- 1 Press **▲▼** keys to select the AUDIO in the Preferences menu and press **OK** to confirm.
- 2 Enter the submenu by pressing the **▶** key.
- 3 Use the **▲▼** keys to highlight an option.
- 4 Press **OK** and press **◀** key to return to Preferences menu.

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

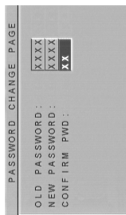
DVD discs are available for multi-subtitle languages. Use these settings to select your preferred default language.



Setup Menu

English

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



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

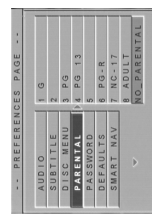
Note:

- 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.

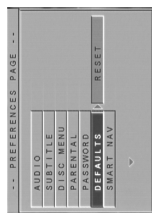
- If you set a rating for the player, all scenes with the same rating or lower will be played.
- If no suitable ratings is found, playback will stop and the 4-digit code has to be entered.
- VCD, SVCD, CD and illegal DVD discs have no level of definition, thus Parental Control is not available on these discs.



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

Default

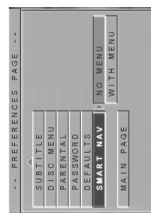
Use **DEFAULT** feature if problems occur during setting the DVD player. This feature will reset all settings to factory default and all the personal settings will be erased.



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

Smart Navigator

Smart Navigator menu will be displayed during picture CD and MP3 CD playback.



- Press **▲▼** keys to select the **SMART NAV** in the Preferences menu and press **OK** to confirm.
- Enter the submenu by pressing the **▶** key.
- 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.
- Press **OK** to confirm your selection.

Troubleshooting

English

WARNING

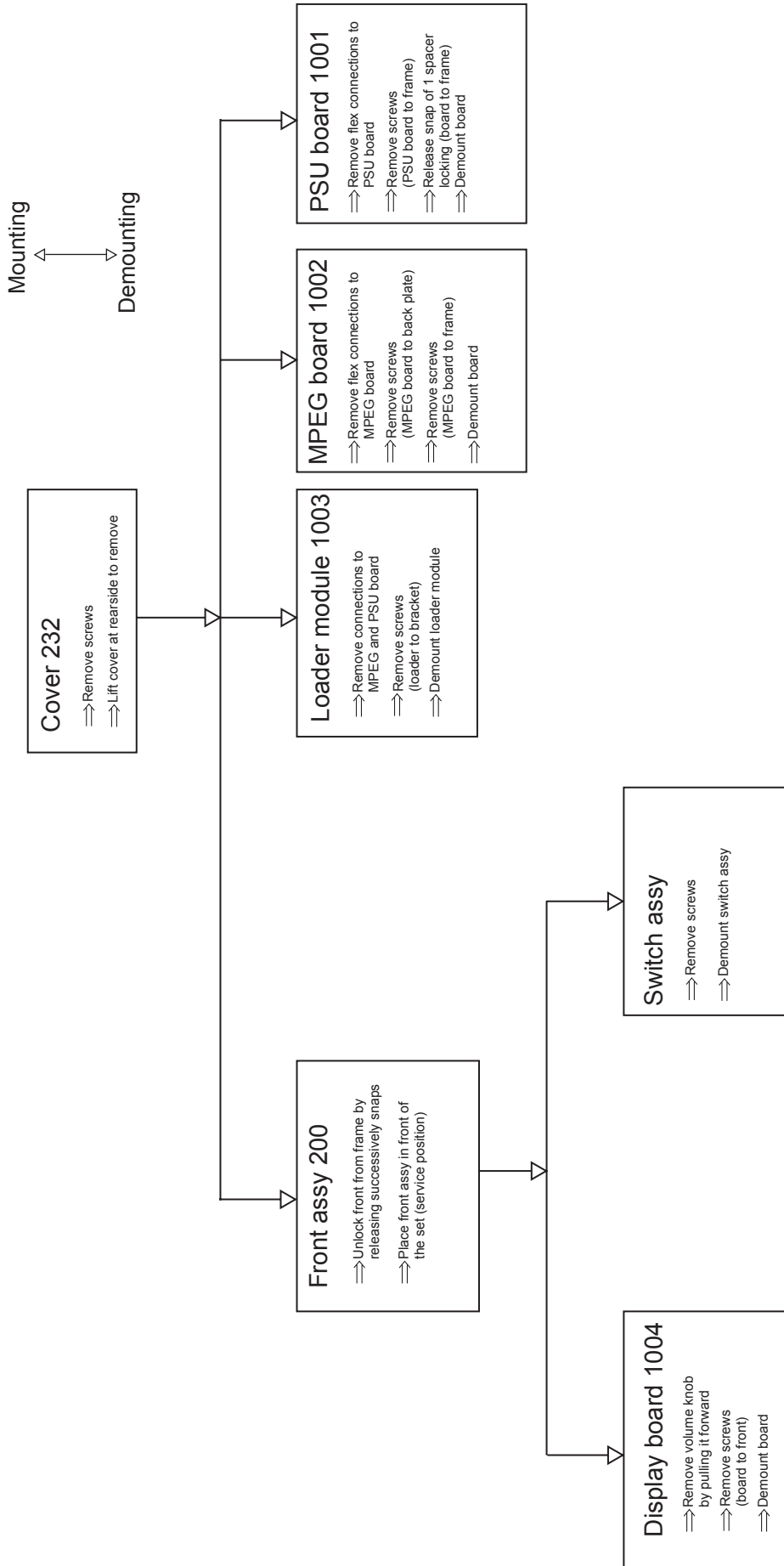
Under no circumstances should you try to repair the system yourself, as this will invalidate the warranty. Do not open the system as there is a risk of electric shock. If a fault occurs, first check the points listed below before taking the system for repair.

Problem	Solution
No power	– Check if the AC power cord is properly connected.
No picture	– Check if the TV is switched on. – Check the video connection.
Distorted picture	– Sometimes a small amount of picture distortion may appear. This is not a malfunction.
Completely distorted picture or black/white picture with DVD or Video CD	– Make sure the NTSC/PAL setting at the DVD player matches the video signal of your television. (See NTSC/PAL Conversion/Settings)
No sound or distorted sound	– Adjust the volume.
No audio at digital output	– Check that the speakers are connected correctly – Check the digital connections. – Check the settings menu to make sure the digital output is set to ALL or PCM.
No sound and picture	– Check if the audio format of the selected audio language matches your receiver capabilities.
Disc can't be played	– Check that the SCART cable is connected to the correct device (See Connecting to a TV) – Ensure the disc label is facing up. – Check if the disc is defective by trying another disc. – Region code incorrect.
Picture freezes momentarily during playback	– Check the disc for fingerprints/scratches and clean with a soft cloth wiping from centre to edge.
No return to start-up screen when disc is removed	– Reset the unit by switching the player off, then on again.
The player does not respond to the remote control	– Aim the remote control directly at the sensor on the front of the player. – Reduce the distance to the player. – Replace the batteries in the remote control. – Re-insert the batteries with their polarities (+/- signs) as indicated.
Buttons do not work or player stops responding	– To completely reset the player, unplug the AC cord from the AC outlet for 5-10 seconds.
Player does not respond to some operating commands during playback.	– Operations may not be permitted by the disc. Refer to the instructions of the disc.
DVD Video player cannot read CDs/DVDs	– Use a commonly available cleaning CD/DVD to clean the lens before sending the DVD player for repair.

If you are unable to remedy a problem by following these hints, consult your dealer or service centre (HOTLINE).

4. Mechanical- and Dismantling Instructions

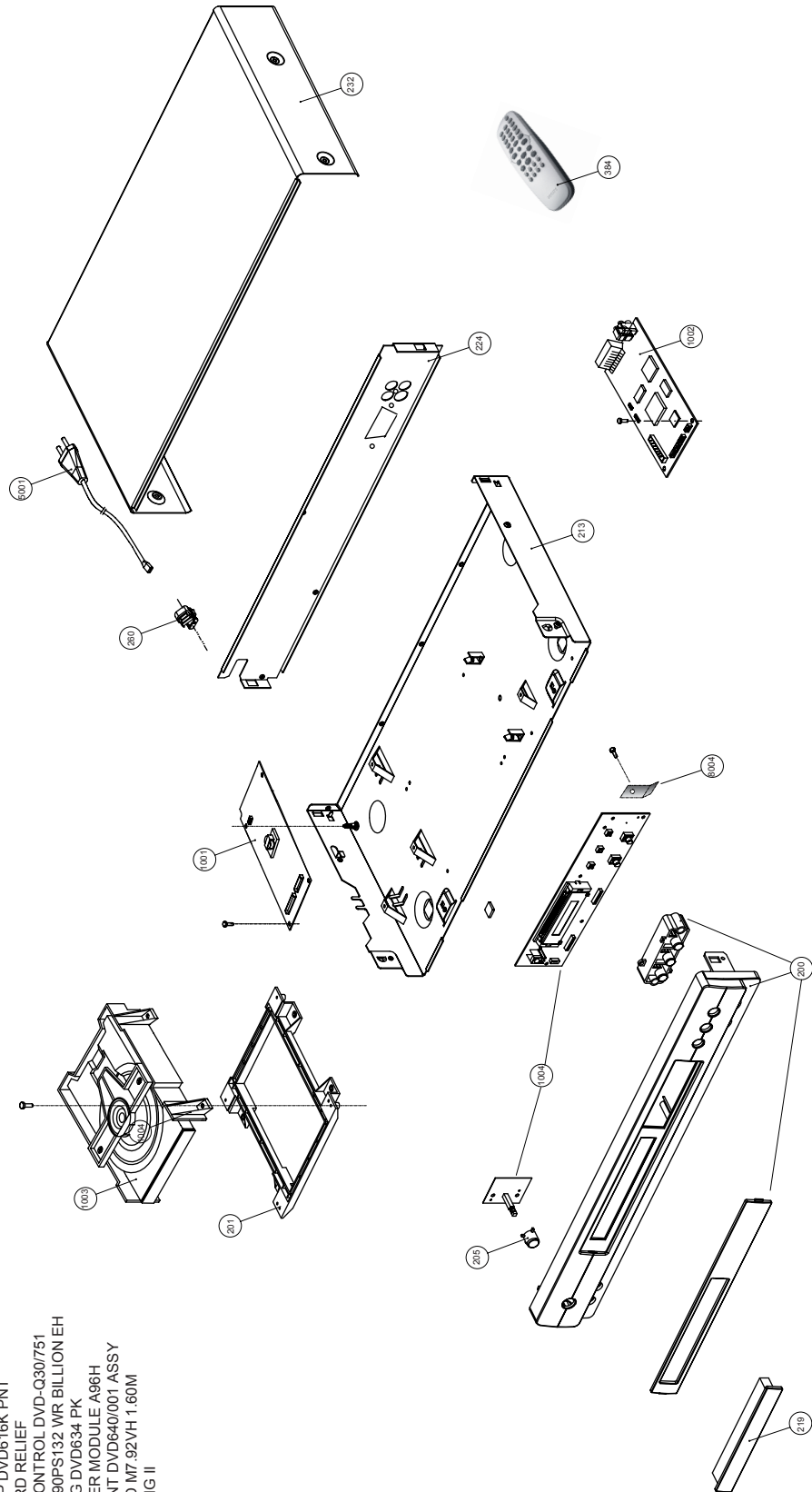
Dismantling Instructions



DISMANTLING INSTRUCTIONS DVD640/001/021/051

See exploded view for item numbers

- ITEM 12NC DESCRIPTION
- 0200 3141 017 76381 CAB FRONT ASSY DVD640/001
 - 0201 3141 014 24720 BRACKET
 - 0205 3141 017 75990 BUTTON POWER DVD616K PNT PRT
 - 0213 3141 017 76391 FRAME ASSY DVD640/051
 - 0219 3141 017 75600 DOOR DVD616K PRT
 - 0224 3141 017 76161 BACK PLATE DVD640/001 PNT PRT
 - 0232 3141 017 75610 COVER TOP DVD616K PNT
 - 0260 3140 113 21880 MAINS CORD RELIEF
 - 0384 3141 017 90220 REMOTE CONTROL DVD-Q30/751
 - 1001 3141 018 03220 PBAS PSU 90FS132 WR BILLION EH
 - 1002 3139 247 10721 PCBA MPEG DVD634 PK
 - 1003 3141 018 03140 DVD LOADER MODULE A96H
 - 1004 3141 019 21570 PBAS FRONT DVD640/001 ASSY
 - 5001 3141 018 71300 MAIN CORD M7.92VH 1.60M
 - 8004 3141 011 60630 EMC SPRING II



DVD640/001/021/051 EXPLODED VIEW

Figure 4-1 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.

Atapi Engine

The Atapi Engine is an integrated unit of loader and servo board. 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 DVD640 / DVD733

5.2 Trouble Shooting

In this paragraph some troubleshooting tips are given to diagnos the DVD640 player. For detailed diagnostics, check the faulting tree since no built-in diagnostic software is available in the player.

5.2.1 Atapi Engine

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

5.3 Fault Finding Trees

5.3.1 No Operation

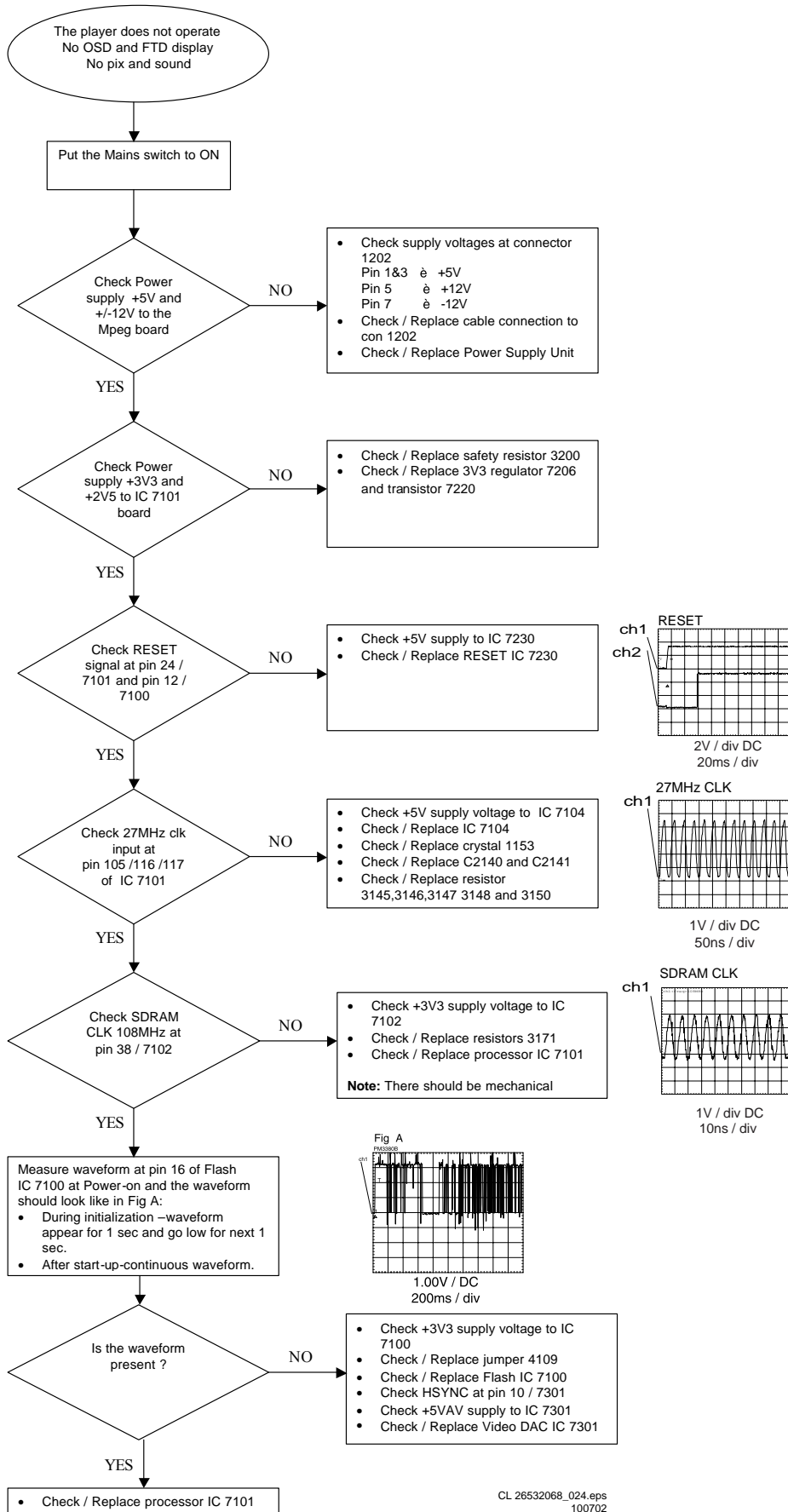


Figure 5-1 No operation

5.3.2 No Picture

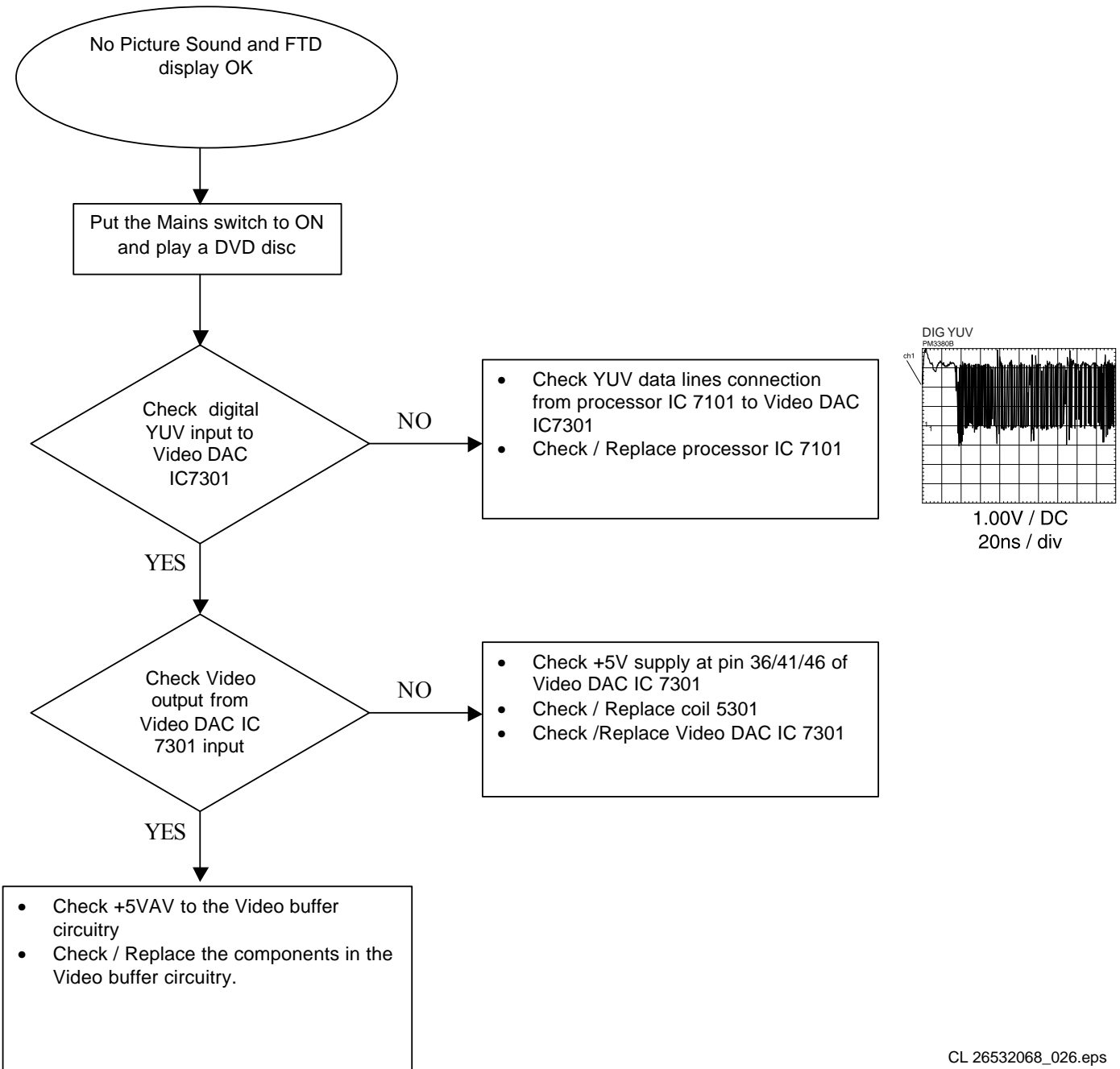


Figure 5-2 No Picture

5.3.3 No Color

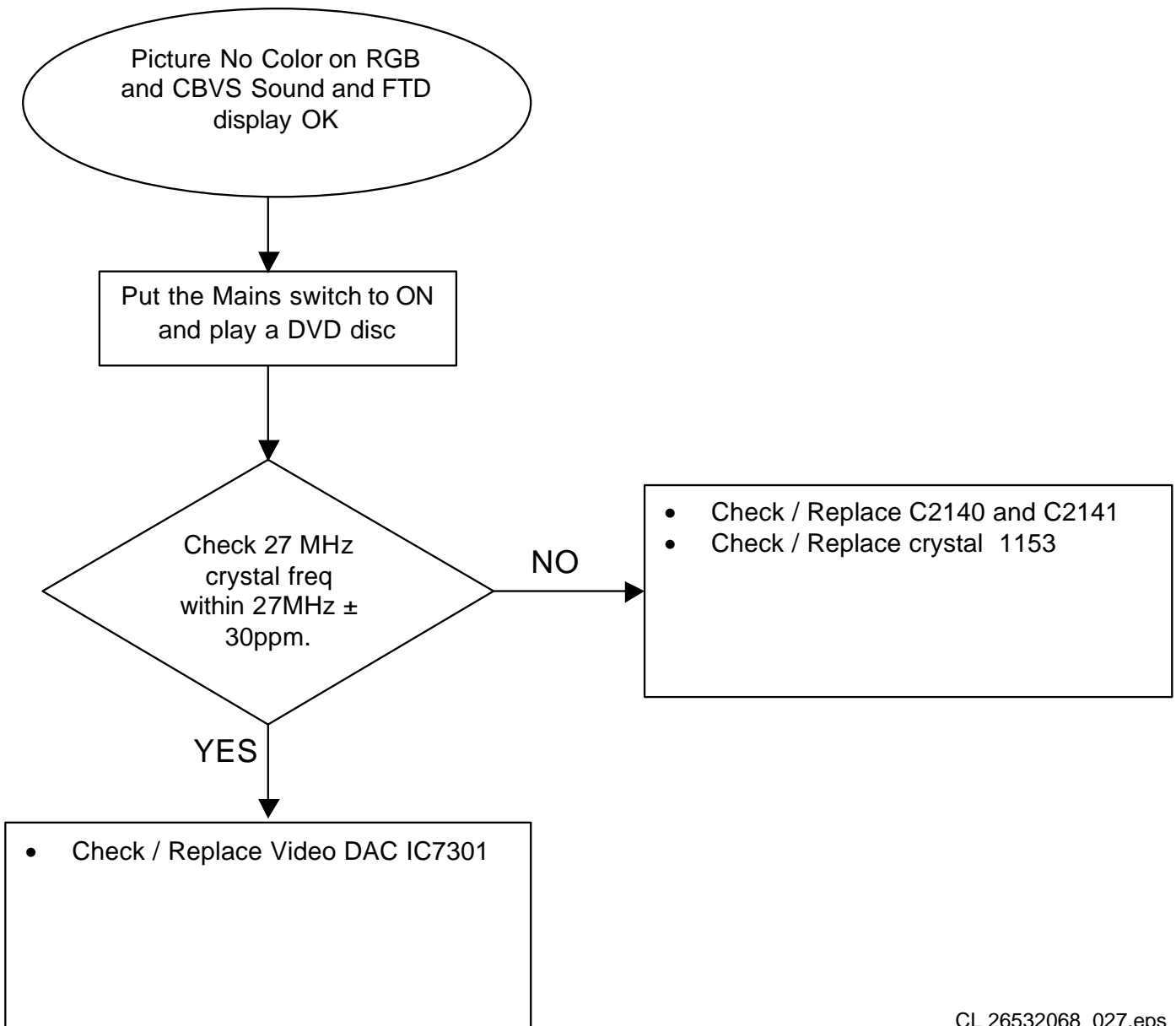
CL 26532068_027.eps
040702

Figure 5-3 Pix no color

5.3.4 No Sound

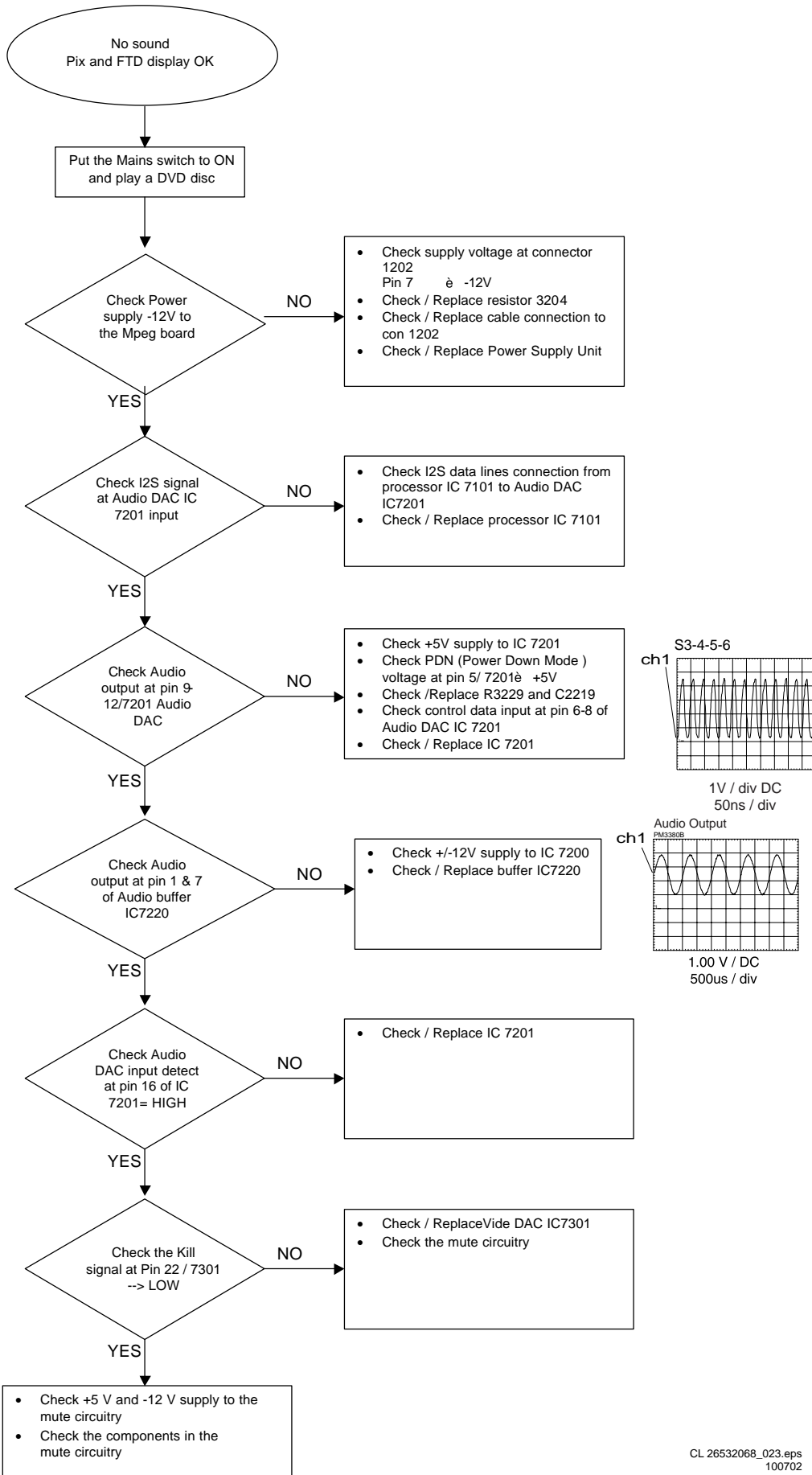
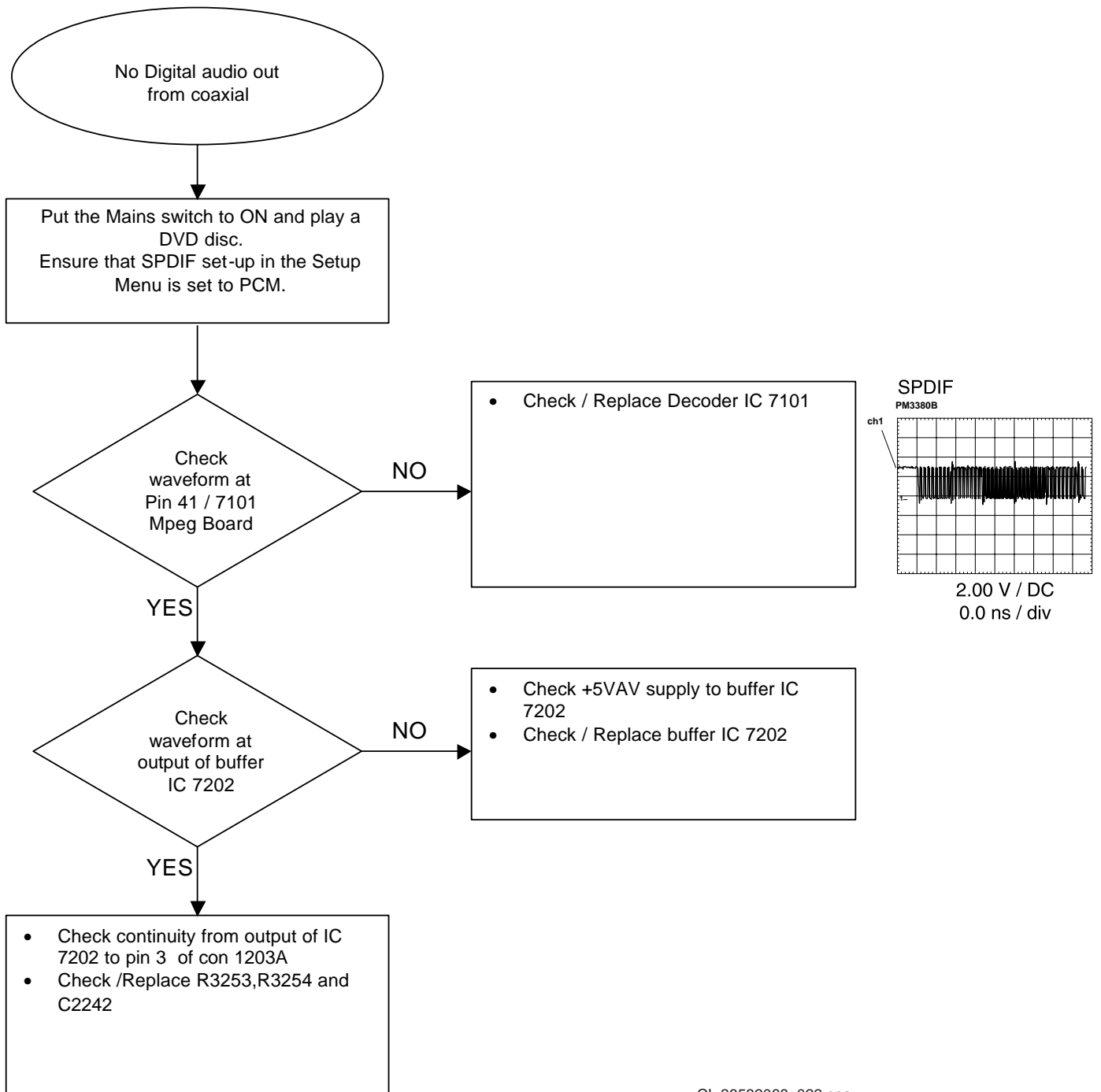


Figure 5-4 No sound

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

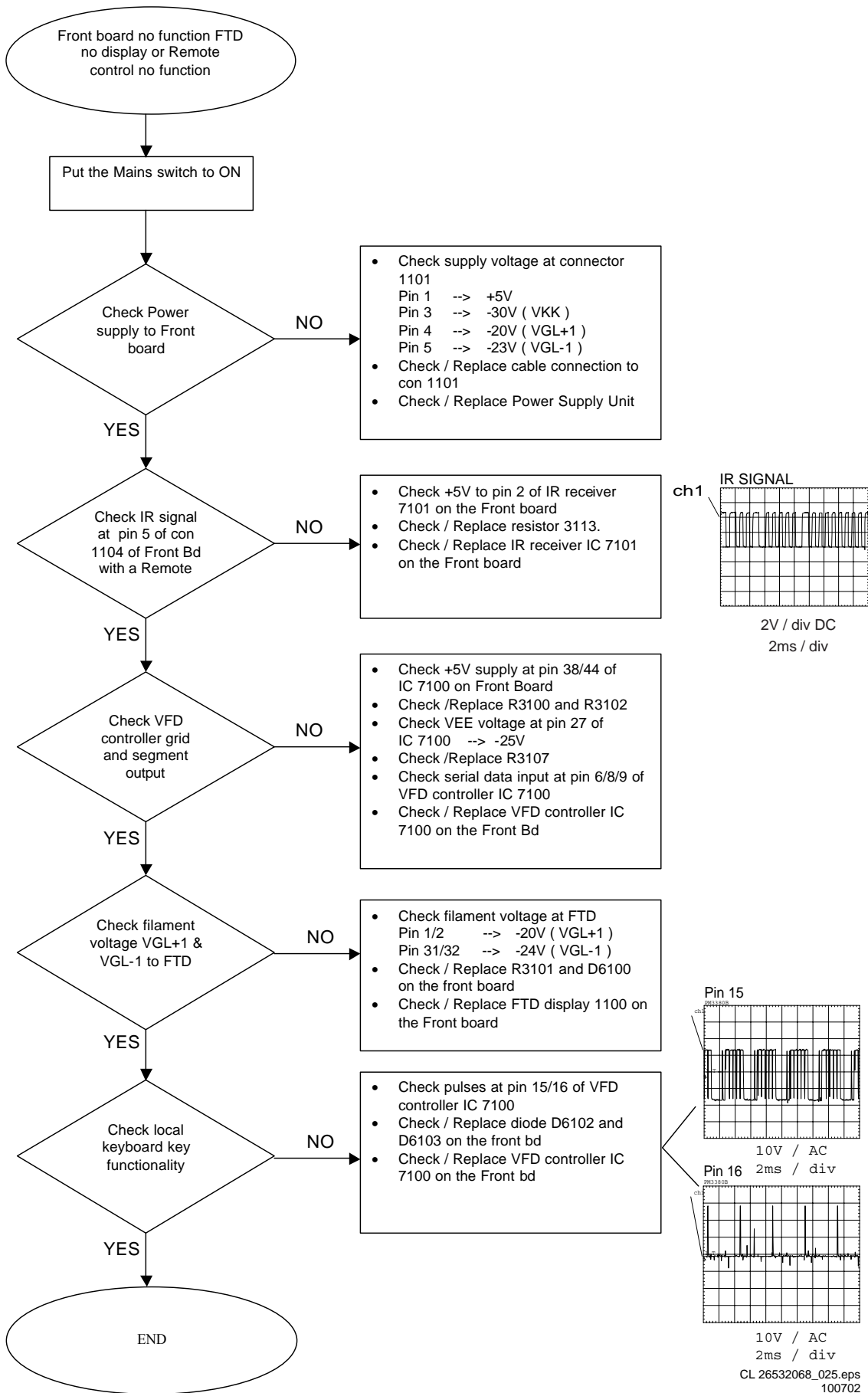
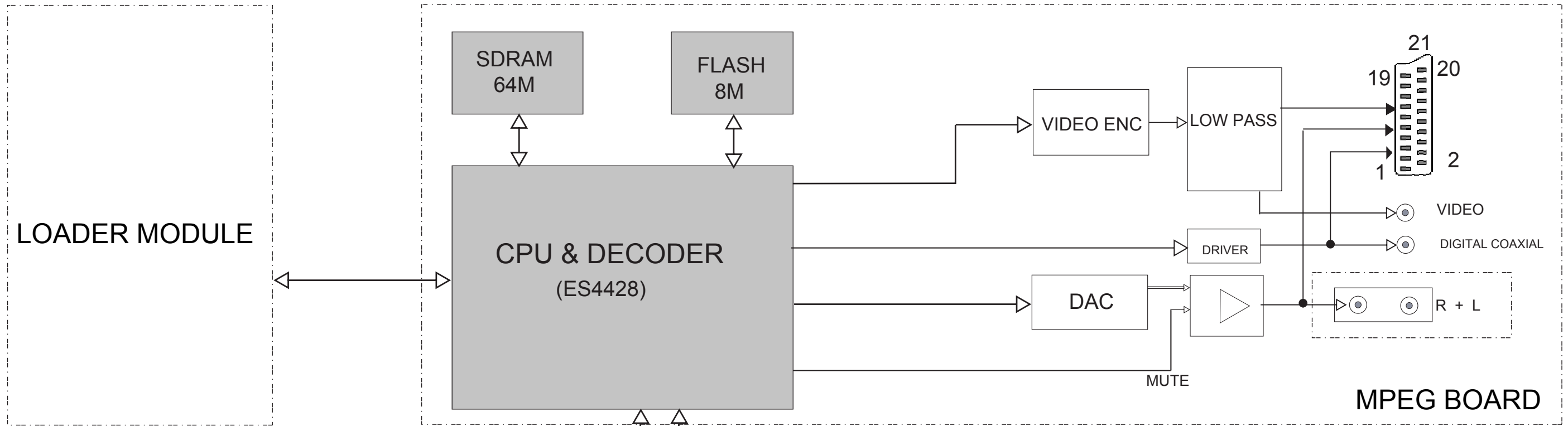


Figure 5-6 No RC and FTD display

6. Block and Wiring Diagram.

Block Diagram DVD640

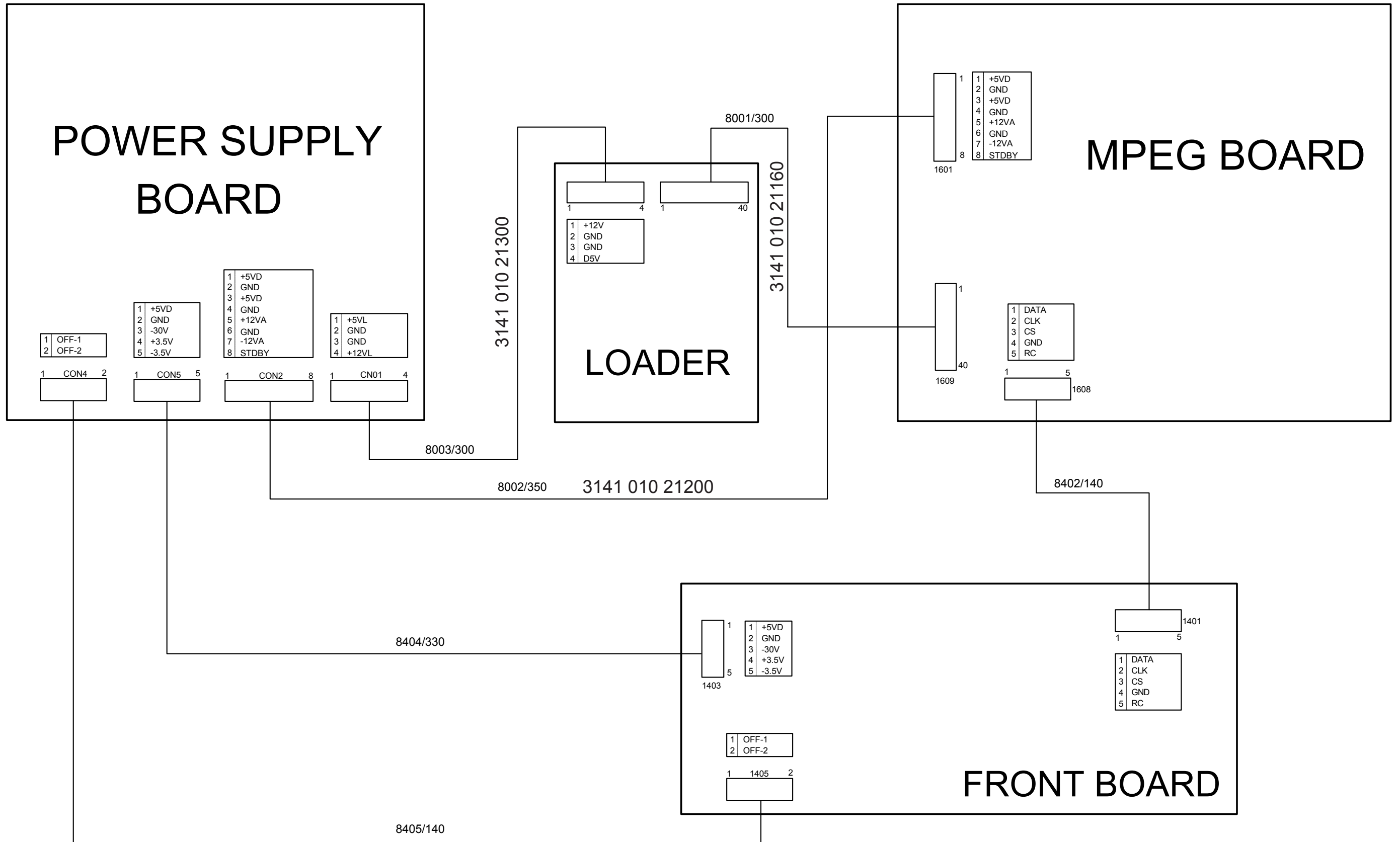


SCART INTERFACE

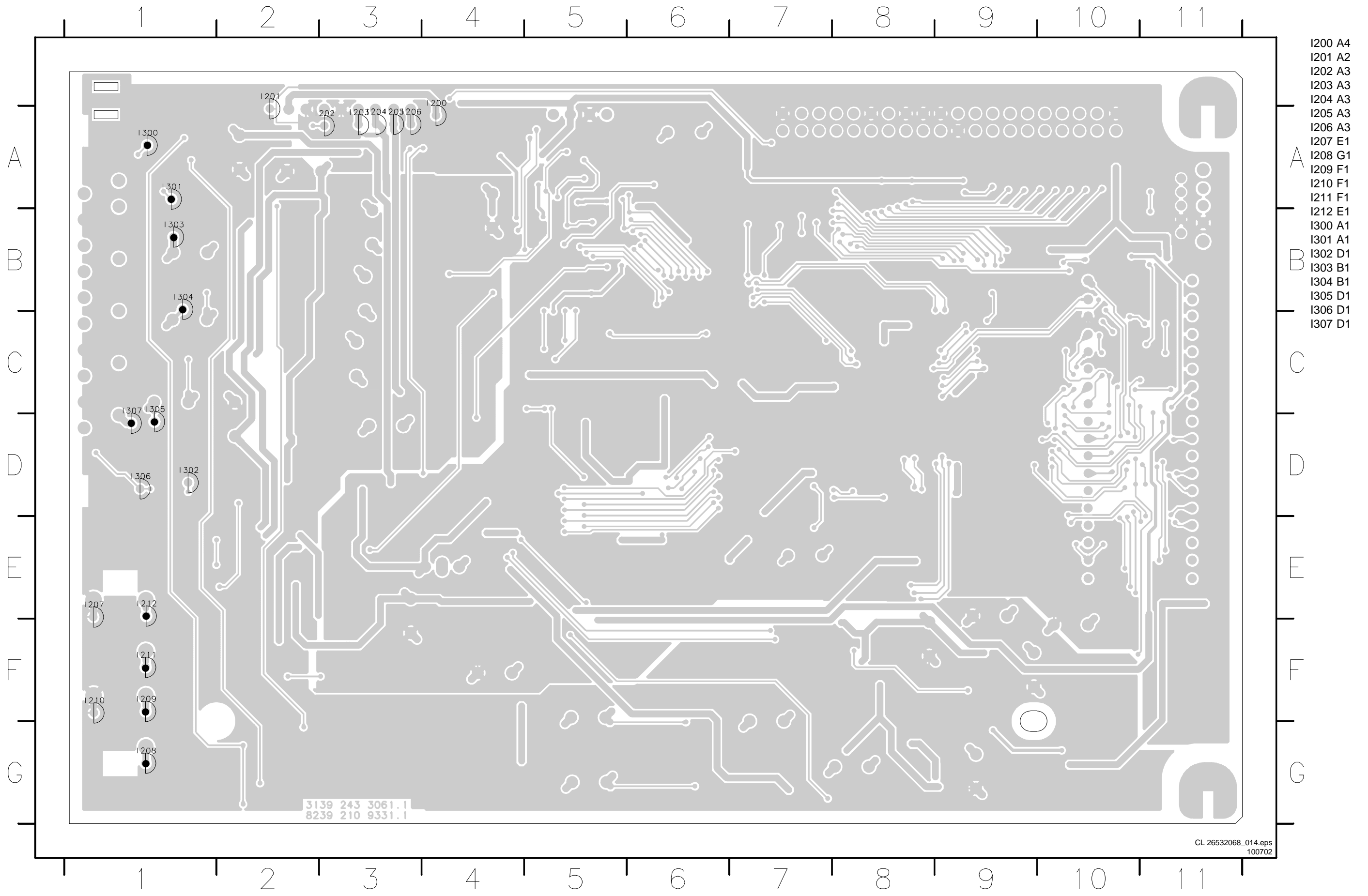
Pin	Assignment	Description
1	AOR	Audio Out Right
2	AIR	Audio In Right
3	AOL	Audio Out Left + Right
4	AGND	Audio Ground
5	BGND	RGB Blue Ground
6	AIL	Audio In Left + Mono1
7	B	RGB Blue
8	SWTCH	Audio/RGB switch/16:9
9	GGND	RGB Green Ground
10	CLKOUT	Clock Out
11	G	RGB Green
12	DATA	Data Out
13	RGND	RGB Red Ground
14	DATAGND	Data Out
15	R	RGB Red/Chrominance
16	BLNK	Blanking Signal
17	VGND	Composite Video Ground
18	BLNKGND	Blanking Signal Ground
19	VOUT	Composite Video Out
20	VIN	Composite Video In/Luminance
21	SHIELD	Ground/Shield (connected to chassis)

Wiring Diagram DVD763SA EU

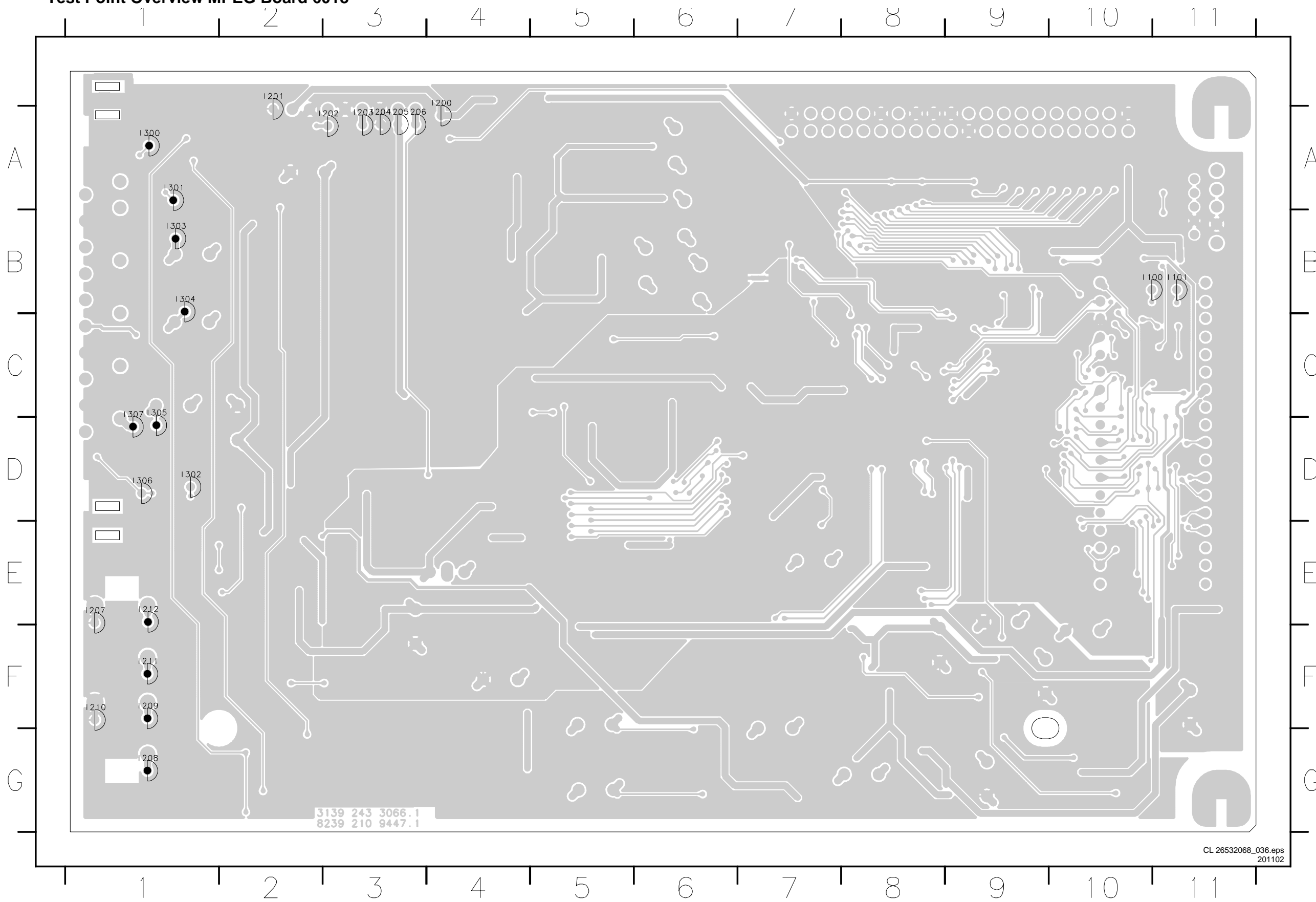
Wiring Diagram DVD640/001/021/051



Test Point Overview MPEG Board 4428



Test Point Overview MPEG Board 6018

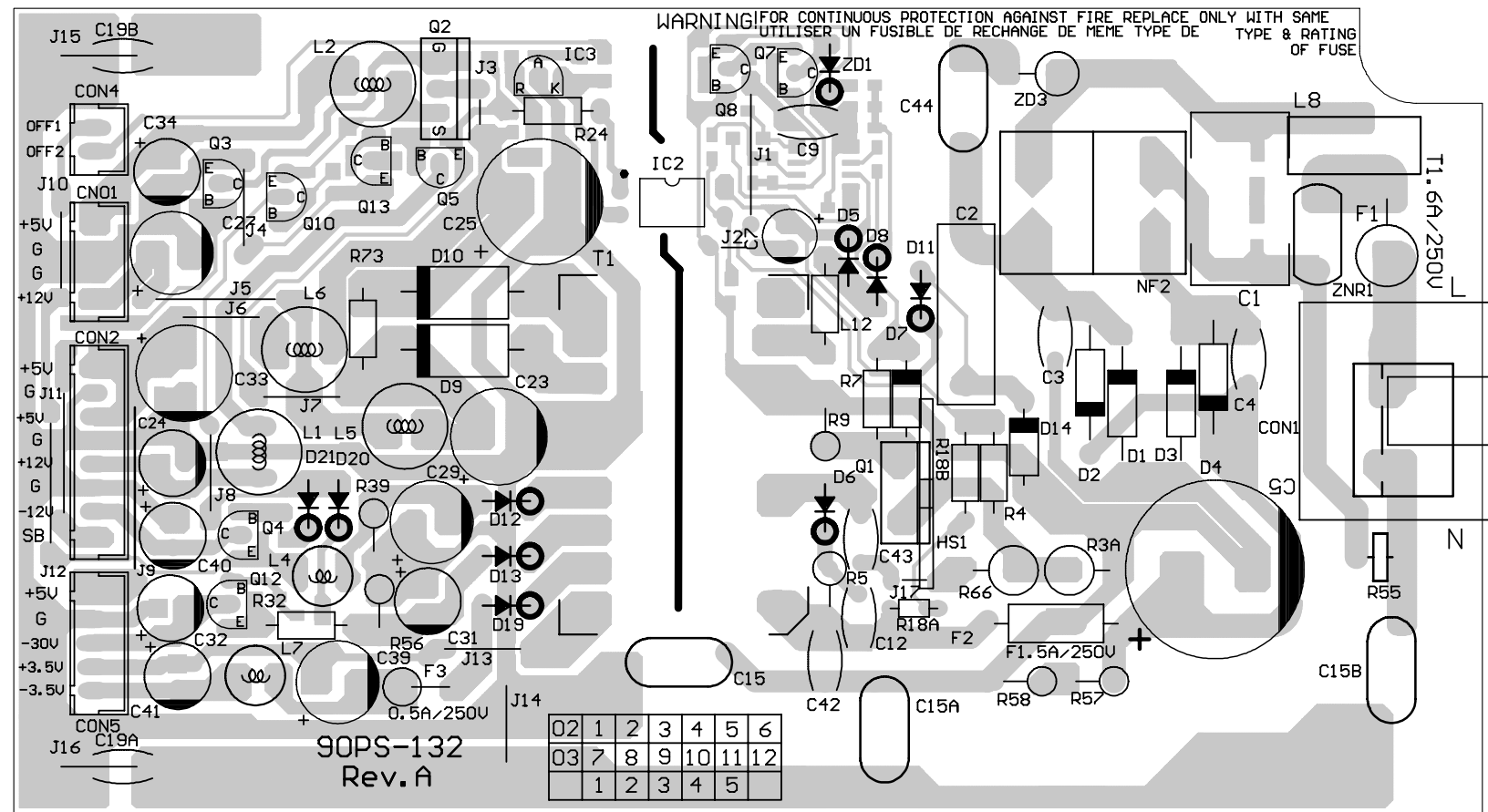


I100	B10
I101	B11
I200	A4
I201	A2
I202	A3
I203	A3
I204	A3
I205	A3
I206	A3
I207	E1
I208	G1
I209	F1
I210	F1
I211	F1
I212	E1
I300	A1
I301	A1
I302	D1
I303	B1
I304	B1
I305	D1
I306	D1
I307	D1

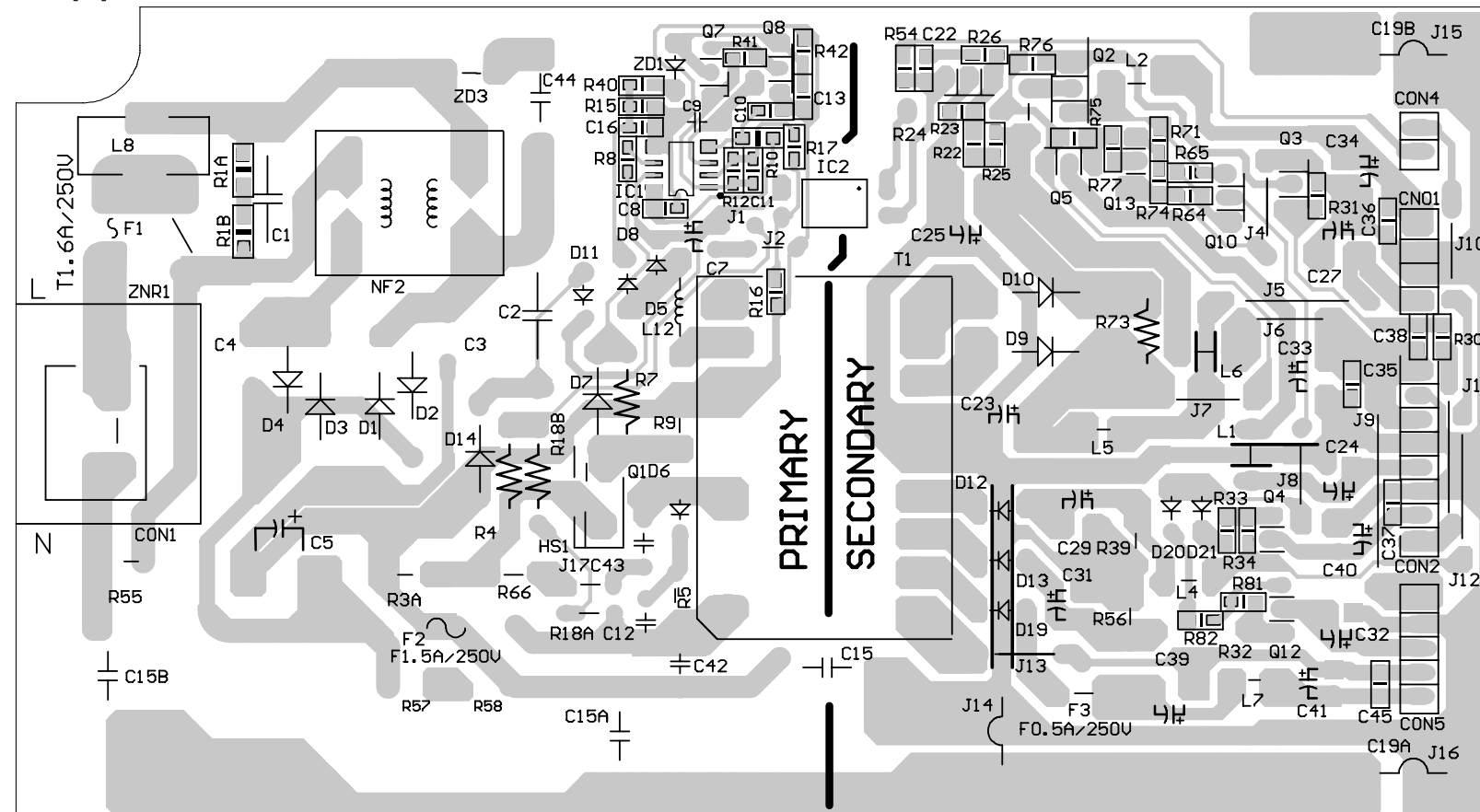
3139 243 3066.1
8239 210 9447.1

Layout PSU 90PS132 WR BILLION EH

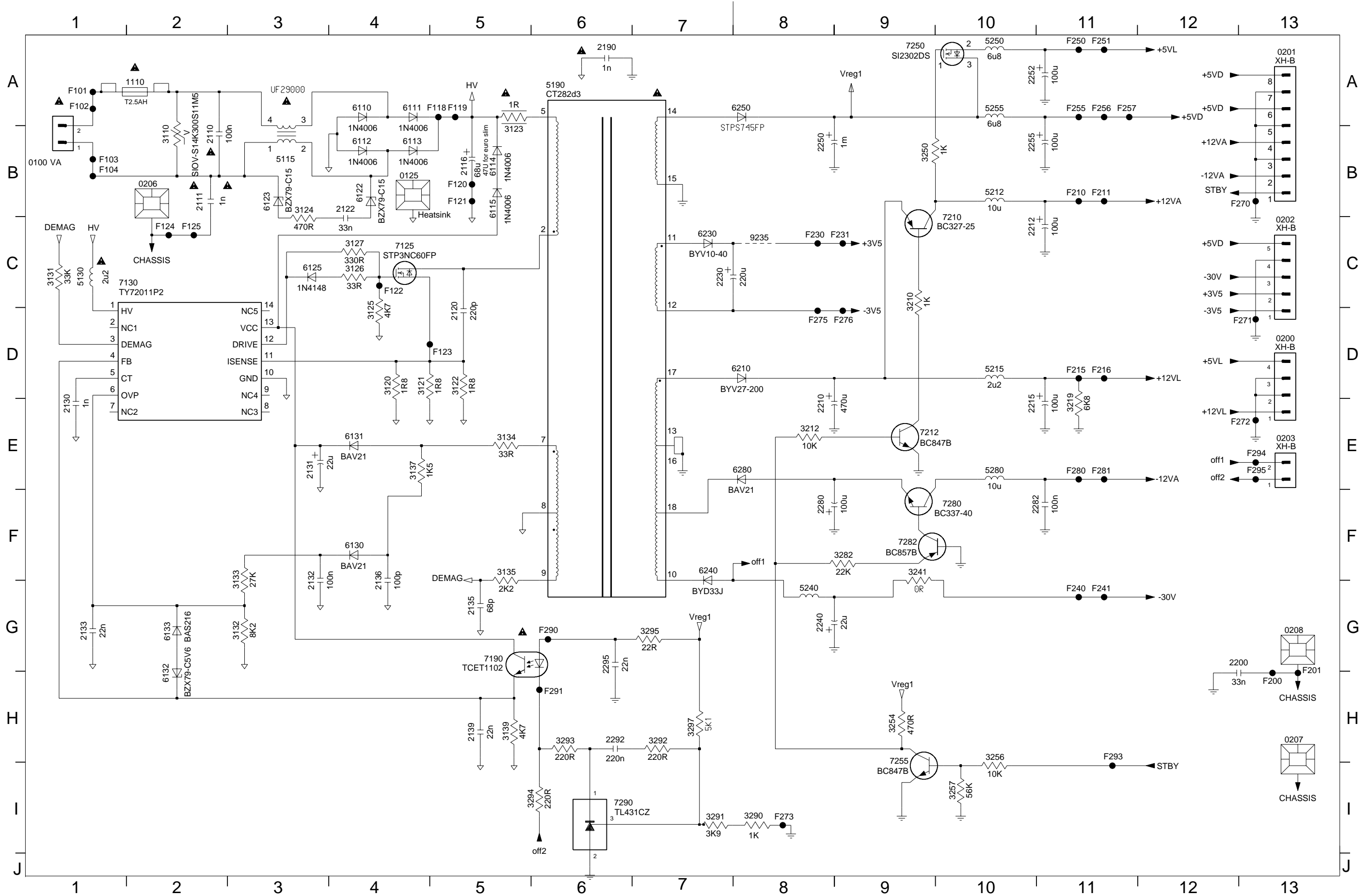
Component Side



Copper Side

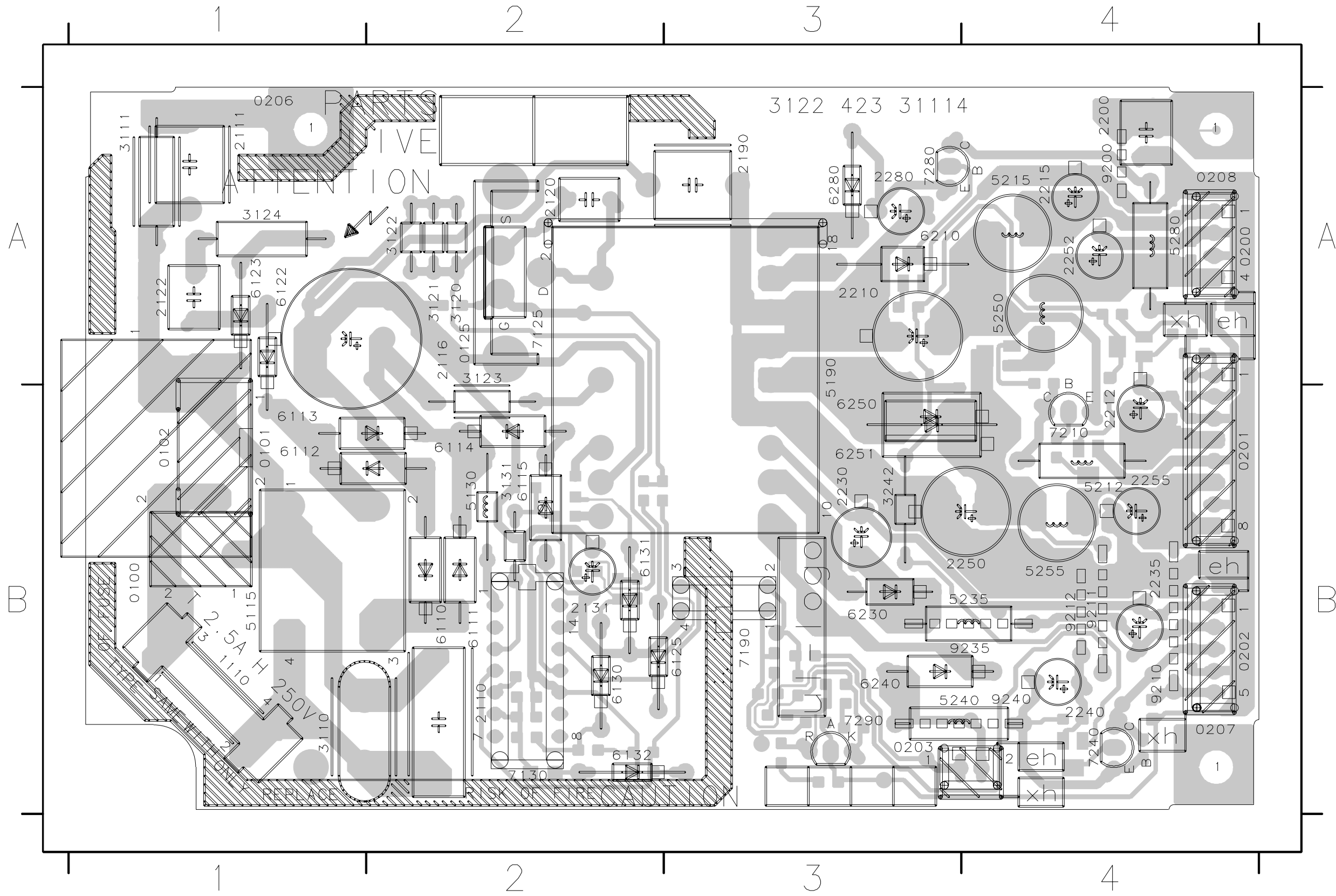


PBAS PSU BPAVC 7xx UR-EURO SLIM



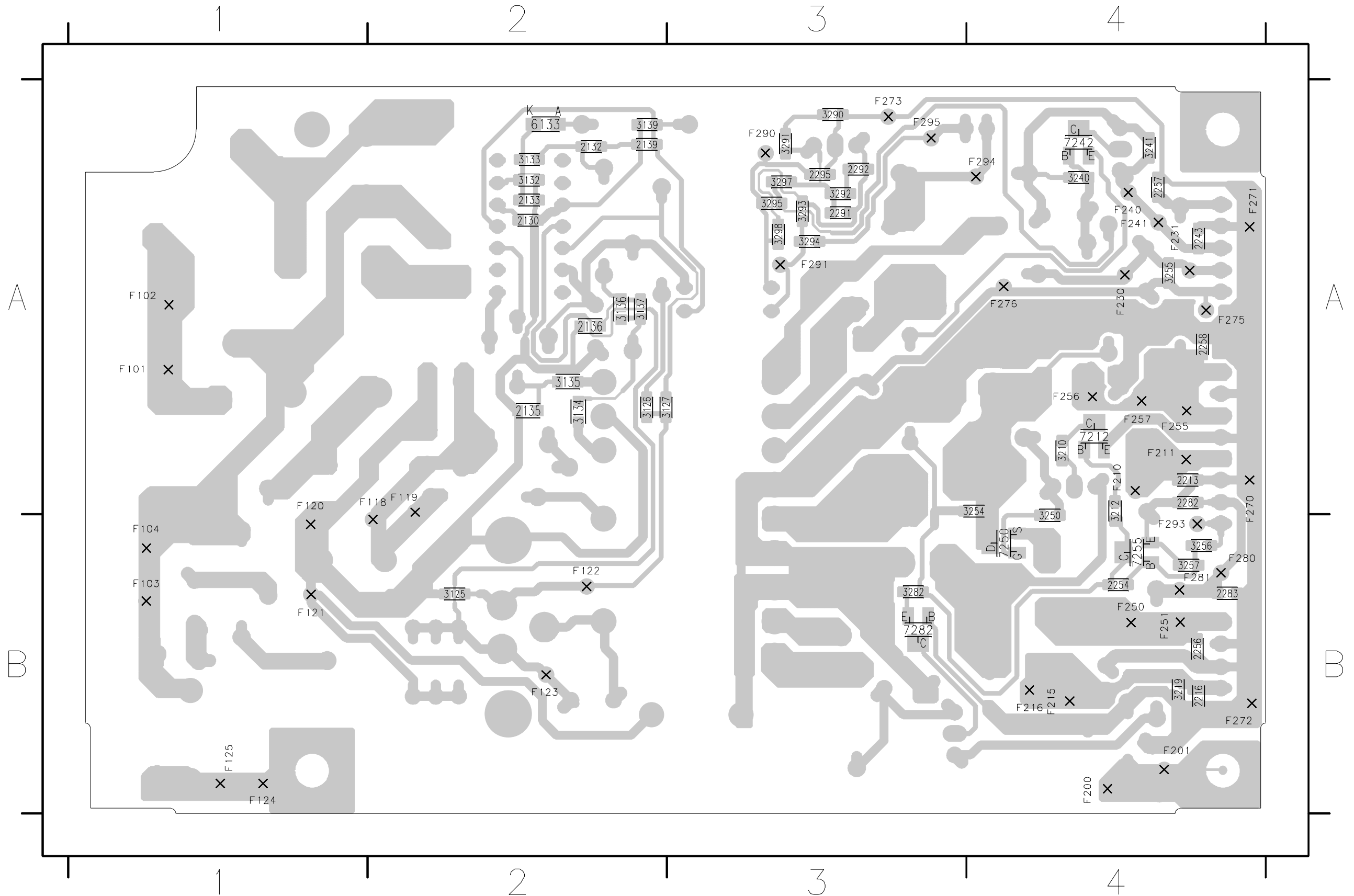
PBAS PSU BPAVC 7xx UR-EURO SLIM (Top Side)

0100	B1	0206	A1	2122	A1	2235	B4	3120	A2	5130	B2	5280	A4	6123	A1	6250	B3	7280	A3
0101	B1	0207	B4	2131	B2	2240	B4	3121	A2	5190	B3	6110	B2	6125	B3	6251	B3	7281	B3
0102	B1	0208	A4	2190	A3	2250	B4	3122	A2	5191	B4	6111	B2	6126	B3	6252	B3	7282	B3
0125	A2	1110	B1	2200	A4	2252	A4	3123	A2	5192	A4	6112	B2	6127	B3	6253	B3	7283	B3
0200	A4	2110	B2	2210	A3	2255	B4	3124	A1	5193	B4	6113	B2	6128	B3	6254	B3	7284	B3
0201	B4	2111	A1	2212	B4	2280	A3	3125	B2	5194	B3	6114	B2	6129	B3	6255	B3	7285	B3
0202	B4	2116	A2	2215	A4	3110	B1	3242	B3	5250	A4	6115	B2	6130	B3	6256	B3	7286	B3
0203	B3	2120	A2	2230	B3	3111	A1	5115	B1	5255	B4	6122	A1	6131	B3	6257	B3	7287	B3

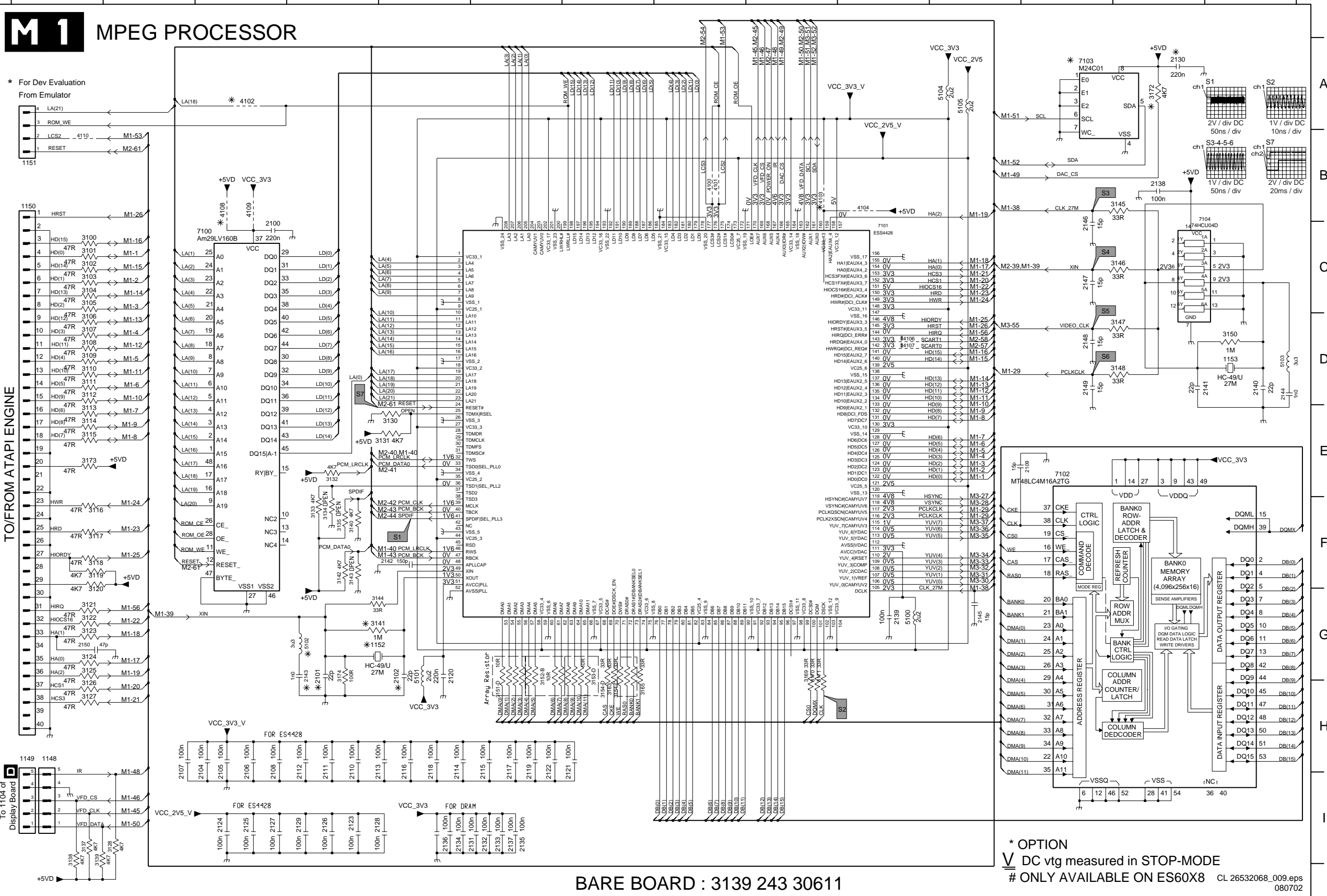


PBAS PSU BPAVC 7xx UR-EURO SLIM (Bottom Side)

2130	A2	2139	A2	2256	B4	2291	A3	3127	A2	3136	A2	3219	B4	3255	A4	3291	A3	3297	A3	7250	B4
2132	A2	2213	A4	2257	A4	2292	A3	3132	A2	3137	A2	3240	A4	3256	B4	3292	A3	3298	A3	7255	B4
2133	A2	2216	B4	2258	A4	2295	A3	3133	A2	3139	A2	3241	A4	3257	B4	3293	A3	6133	A2	7282	B3
2135	A2	2243	A4	2282	A4	3125	B2	3134	A2	3210	A4	3250	B4	3282	B3	3294	A3	7212	A4		
2136	A2	2254	B4	2283	B4	3126	A2	3135	A2	3212	A4	3254	A4	3290	A3	3295	A3	7242	A4		



MPEG Board 4428: Processor

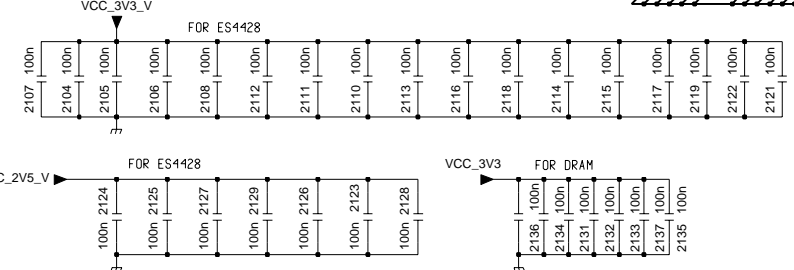


M1 MPEG PROCESSOR

* For Dev Evaluation From Emulator

TO/FROM ATAPI ENGINE

To 1104 of Display Board



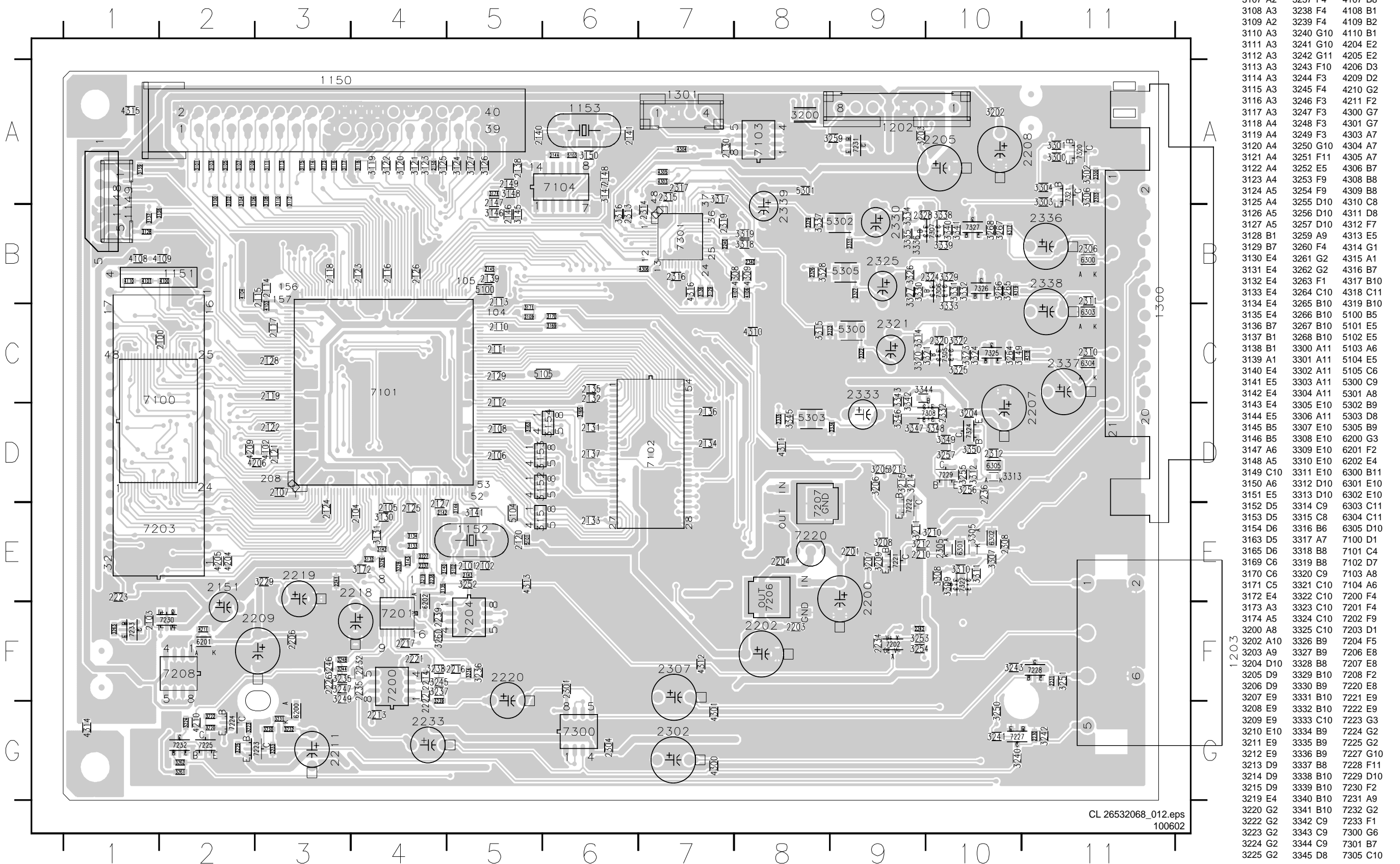
BARE BOARD : 3139 243 30611

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

- 1148 H1
- 1149 H1
- 1150 B1
- 1151 B1
- 1152 G4
- 1153 D13
- 1154 B10
- 1155 G4
- 1156 G5
- 1157 B3
- 1158 H3
- 1159 H3
- 1160 B1
- 1161 G5
- 1162 G5
- 1163 D10
- 1164 H4
- 1165 A11
- 1166 H4
- 1167 C10
- 1168 H5
- 1169 H6
- 1170 A12
- 1171 H7
- 1172 H6
- 1173 H5
- 1174 H6
- 1175 H6
- 1176 H6
- 1177 H6
- 1178 H6
- 1179 H6
- 1180 G5
- 1181 G5
- 1182 G5
- 1183 G5
- 1184 G5
- 1185 G5
- 1186 G5
- 1187 G5
- 1188 G5
- 1189 G5
- 1190 G5
- 1191 G5
- 1192 G5
- 1193 G5
- 1194 G5
- 1195 G5
- 1196 G5
- 1197 G5
- 1198 G5
- 1199 G5
- 1200 G5
- 1201 G5
- 1202 G5
- 1203 G5
- 1204 G5
- 1205 G5
- 1206 G5
- 1207 G5
- 1208 G5
- 1209 G5
- 1210 G5
- 1211 G5
- 1212 G5
- 1213 G5
- 1214 G5
- 1215 G5
- 1216 G5
- 1217 G5
- 1218 G5
- 1219 G5
- 1220 G5
- 1221 G5
- 1222 G5
- 1223 G5
- 1224 G5
- 1225 G5
- 1226 G5
- 1227 G5
- 1228 G5
- 1229 G5
- 1230 G5
- 1231 G5
- 1232 G5
- 1233 G5
- 1234 G5
- 1235 G5
- 1236 G5
- 1237 G5
- 1238 G5
- 1239 G5
- 1240 G5
- 1241 G5
- 1242 G5
- 1243 G5
- 1244 G5
- 1245 G5
- 1246 G5
- 1247 G5
- 1248 G5
- 1249 G5
- 1250 G5
- 1251 G5
- 1252 G5
- 1253 G5
- 1254 G5
- 1255 G5
- 1256 G5
- 1257 G5
- 1258 G5
- 1259 G5
- 1260 G5
- 1261 G5
- 1262 G5
- 1263 G5
- 1264 G5
- 1265 G5
- 1266 G5
- 1267 G5
- 1268 G5
- 1269 G5
- 1270 G5
- 1271 G5
- 1272 G5
- 1273 G5
- 1274 G5
- 1275 G5
- 1276 G5
- 1277 G5
- 1278 G5
- 1279 G5
- 1280 G5
- 1281 G5
- 1282 G5
- 1283 G5
- 1284 G5
- 1285 G5
- 1286 G5
- 1287 G5
- 1288 G5
- 1289 G5
- 1290 G5
- 1291 G5
- 1292 G5
- 1293 G5
- 1294 G5
- 1295 G5
- 1296 G5
- 1297 G5
- 1298 G5
- 1299 G5
- 1300 G5
- 1301 C1
- 1302 C1
- 1303 C1
- 1304 C1
- 1305 C1
- 1306 D1
- 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 H1
- 1326 H1
- 1327 H1
- 1328 H1
- 1329 E5
- 1330 E5
- 1331 E5
- 1332 E4
- 1333 F4
- 1334 F4
- 1335 F4
- 1336 F4
- 1337 I1
- 1338 I1
- 1339 I1
- 1340 F4
- 1341 G4
- 1342 F4
- 1343 F4
- 1344 G4
- 1345 B12
- 1346 C12
- 1347 D12
- 1348 D12
- 1349 D12
- 1350 D13
- 1351 D H6
- 1352-B G6
- 1353-D G7
- 1354-C H7
- 1354-D H7
- 1355 H7
- 1356 H7
- 1357 G9
- 1358 G9
- 1359 G9
- 1360 G9
- 1361 G9
- 1362 A13
- 1363 E1

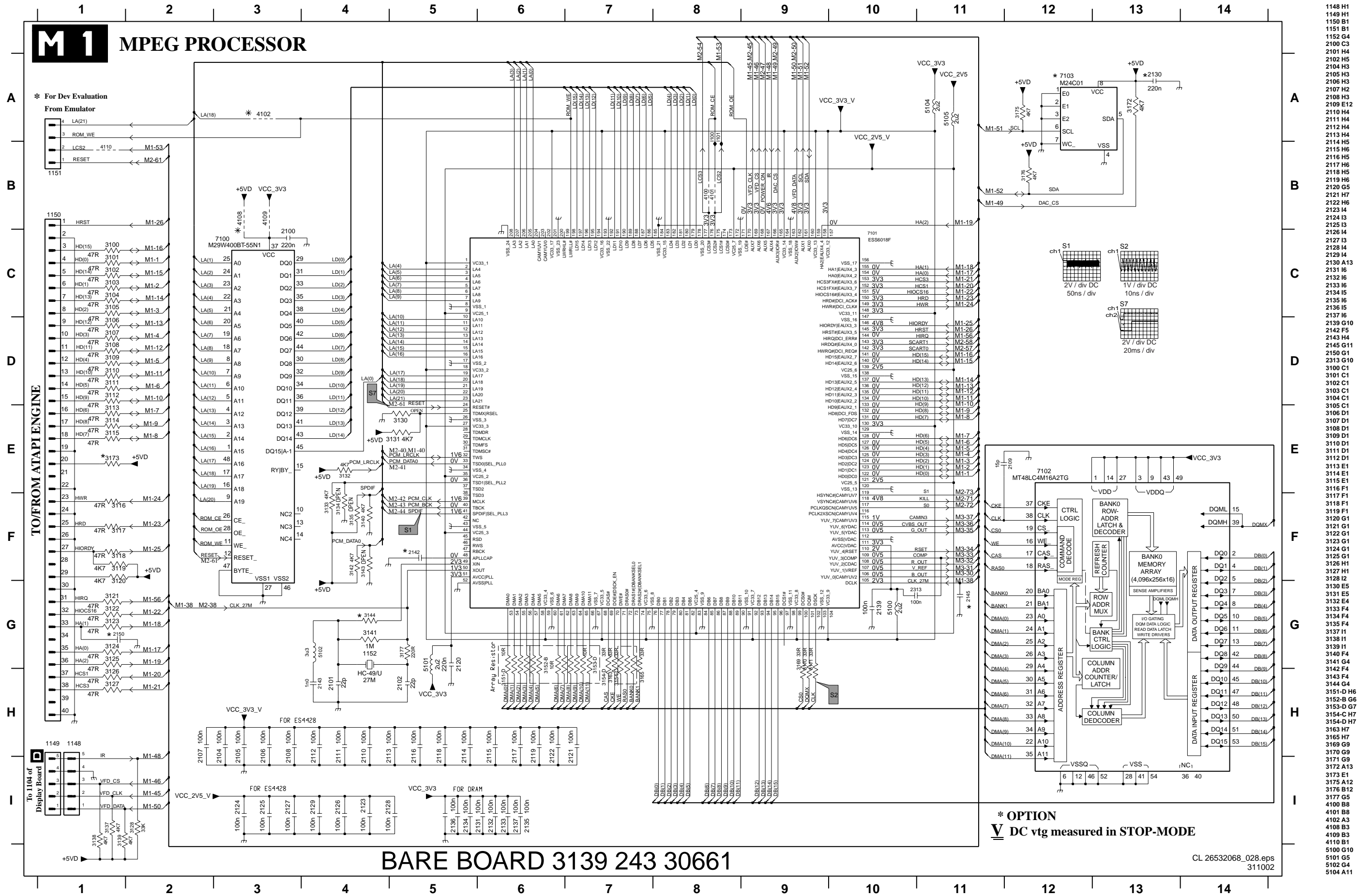
Layout MPEG Board 4428 (Top Side)

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 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	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



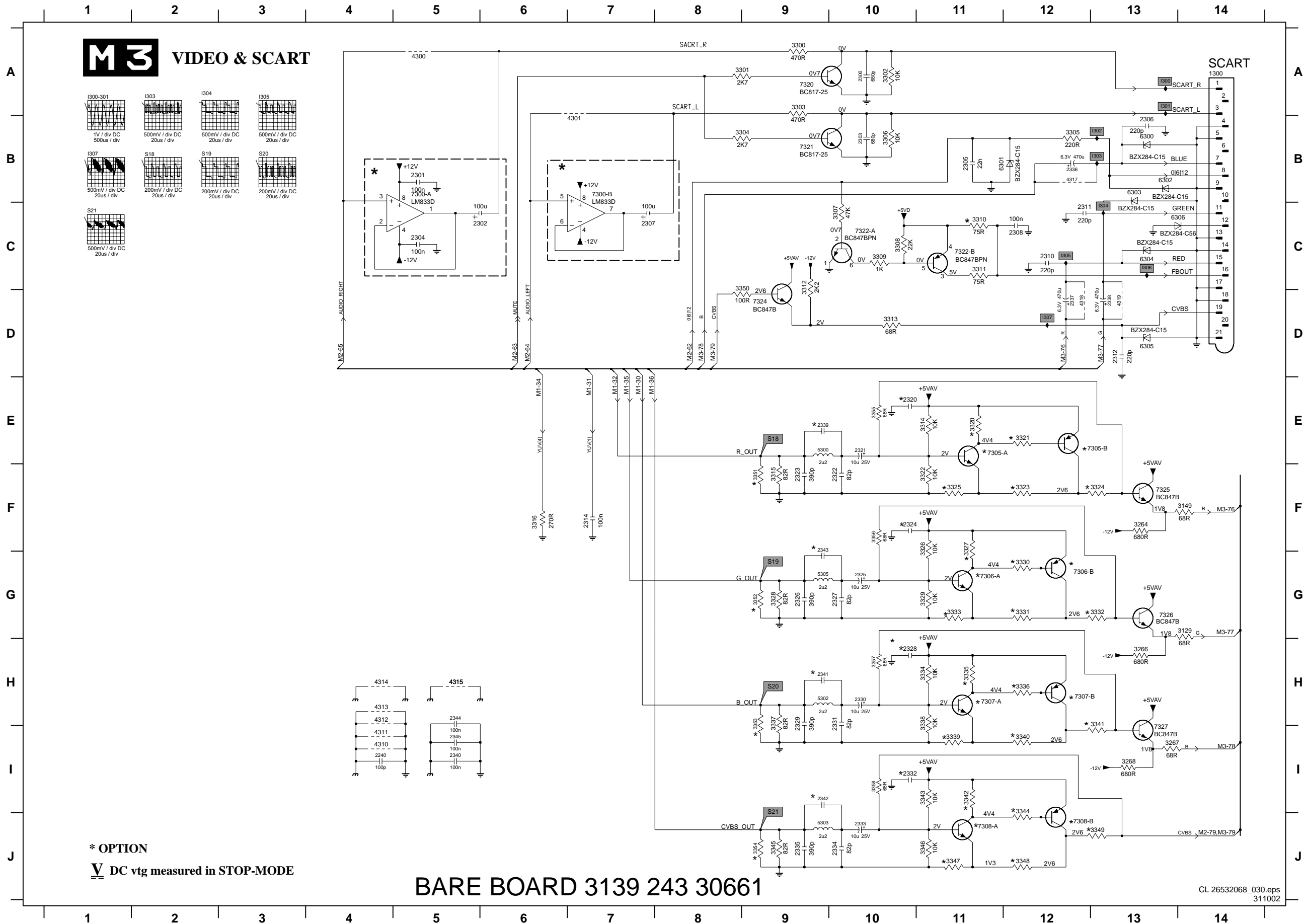
2337 C11	3226 E4	3346 D9
2338 B11	3227 E4	3347 D9
2339 B8	3228 E4	3348 D10
2340 B8	3229 E3	3349 D10
2300 A2	3230 G3	3350 D10
3101 A2	3231 G3	4100 B2
3102 A2	3232 G3	4101 B1
3103 A2	3233 G3	4102 D3
3104 A2	3234 F5	4103 C3
3105 A2	3235 F3	4104 B2
3106 A2	3236 F5	4106 B8
3107 A2	3237 F4	4107 B8
3108 A3	3238 F4	4108 B1
3109 A2	3239 F4	4109 B2
3110 A3	3240 G10	4110 B1
3111 A3	3241 G10	4204 E2
3112 A3	3242 G11	4205 E2
3113 A3	3243 F10	4206 D3
3114 A3	3244 F3	4209 D2
3115 A3	3245 F4	4210 G2
3116 A3	3246 F3	4211 F2
3117 A3	3247 F3	4300 G7
3118 A4	3248 F3	4301 G7
3119 A4	3249 F3	4303 A7
3120 A4	3250 G10	4304 A7
3121 A4	3251 F11	4305 A7
3122 A4	3252 E5	4306 B7
3123 A4	3253 F9	4308 B8
3124 A5	3254 F9	4309 B8
3125 A4	3255 D10	4310 C8
3126 A5	3256 D10	4311 D8
3127 A5	3257 D10	4312 F7
3128 B1	3259 A9	4313 E5
3129 B7	3260 F4	4314 G1
3130 E4	3261 G2	4315 A1
3131 E4	3262 G2	4316 B7
3132 E4	3263 F1	4317 B10
3133 E4	3264 C10	4318 C11
3134 E4	3265 B10	4319 B10
3135 E4	3266 B10	5100 B5
3136 B7	3267 B10	5101 E5
3137 B1	3268 B10	5102 E5
3138 B1	3300 A11	5103 A6
3139 A1	3301 A11	5104 E5
3140 E4	3302 A11	5105 C6
3141 E5	3303 A11	5300 C9
3142 E4	3304 A11	5301 A8
3143 E4	3305 E10	5302 B9
3144 E5	3306 A11	5303 D8
3145 B5	3307 E10	5305 B9
3146 B5	3308 E10	6200 G3
3147 A6	3309 E10	6201 F2
3148 A5	3310 E10	6202 E4
3149 C10	3311 E10	6300 B11
3150 A6	3312 D10	6301 E10
3151 E5	3313 D10	6302 E10
3152 D5	3314 C9	6303 C11
3153 D5	3315 C8	6304 C11
3154 D6	3316 B6	6305 D10
3163 D5	3317 A7	7100 D1
3165 D6	3318 B8	7101 C4
3169 C6	3319 B8	7102 D7
3170 C6	3320 C9	7103 A8
3171 C5	3321 C10	7104 A6
3172 E4	3322 C10	7200 F4
3173 A3	3323 C10	7201 F4
3174 A5	3324 C10	7202 F9
3200 A8	3325 C10	7203 D1
3202 A10	3326 B9	7204 F5
3203 A9	3327 B9	7206 E8
3204 D10	3328 B8	7207 E8
3205 D9	3329 B10	7208 F2
3206 D9	3330 B9	7220 E8
3207 E9	3331 B10	7221 E9
3208 E9	3332 B10	7222 E9
3209 E9	3333 C10	7223 G3
3210 E10	3334 B9	7224 G2
3211 E9	3335 B9	7225 G2
3212 E9	3336 B9	7227 G10
3213 D9	3337 B8	7228 F11
3214 D9	3338 B10	7229 D10
3215 D9	3339 B10	7230 F2
3219 E4	3340 B10	7231 A9
3220 G2	3341 B10	7232 G2
3222 G2	3342 C9	7233 F1
3223 G2	3343 C9	7300 G6
3224 G2	3344 C9	7301 B7
3225 G2	3345 D8	7305 C10

MPEG Board 6018: Processor

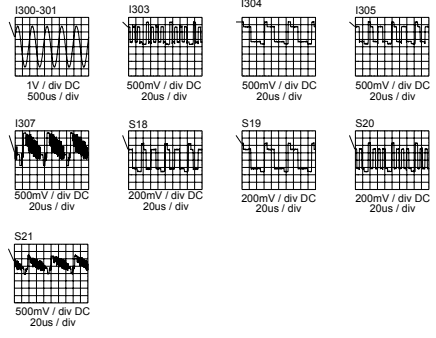


- 1148 H1
- 1149 H1
- 1150 B1
- 1151 B1
- 1152 G4
- 2100 C3
- 2101 H4
- 2102 H5
- 2104 H3
- 2105 H3
- 2106 H3
- 2107 H2
- 2108 H3
- 2109 E12
- 2110 H4
- 2111 H4
- 2112 H4
- 2113 H4
- 2114 H5
- 2115 H6
- 2116 H5
- 2117 H6
- 2118 H5
- 2119 H6
- 2120 G5
- 2121 H7
- 2122 H6
- 2123 I4
- 2124 I3
- 2125 I3
- 2126 I4
- 2127 I3
- 2128 I4
- 2129 I4
- 2130 A13
- 2131 I6
- 2132 I6
- 2133 I6
- 2134 I5
- 2135 I6
- 2136 I5
- 2137 I6
- 2139 G10
- 2142 F5
- 2143 H4
- 2145 G11
- 2150 G1
- 2151 G10
- 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 G1
- 3126 H1
- 3127 H1
- 3128 I1
- 3130 E5
- 3131 E5
- 3132 E4
- 3133 F4
- 3134 F4
- 3135 F4
- 3137 H1
- 3138 H1
- 3139 H1
- 3140 F4
- 3141 G4
- 3142 F4
- 3143 F4
- 3144 G4
- 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
- 3175 A12
- 3176 B12
- 3177 G5
- 4100 B8
- 4101 B8
- 4102 A3
- 4103 A3
- 4108 B3
- 4109 B3
- 4110 B1
- 5100 G10
- 5101 G5
- 5102 G4
- 5104 A11

MPEG Board 6018: Video & Scart



M3 VIDEO & SCART



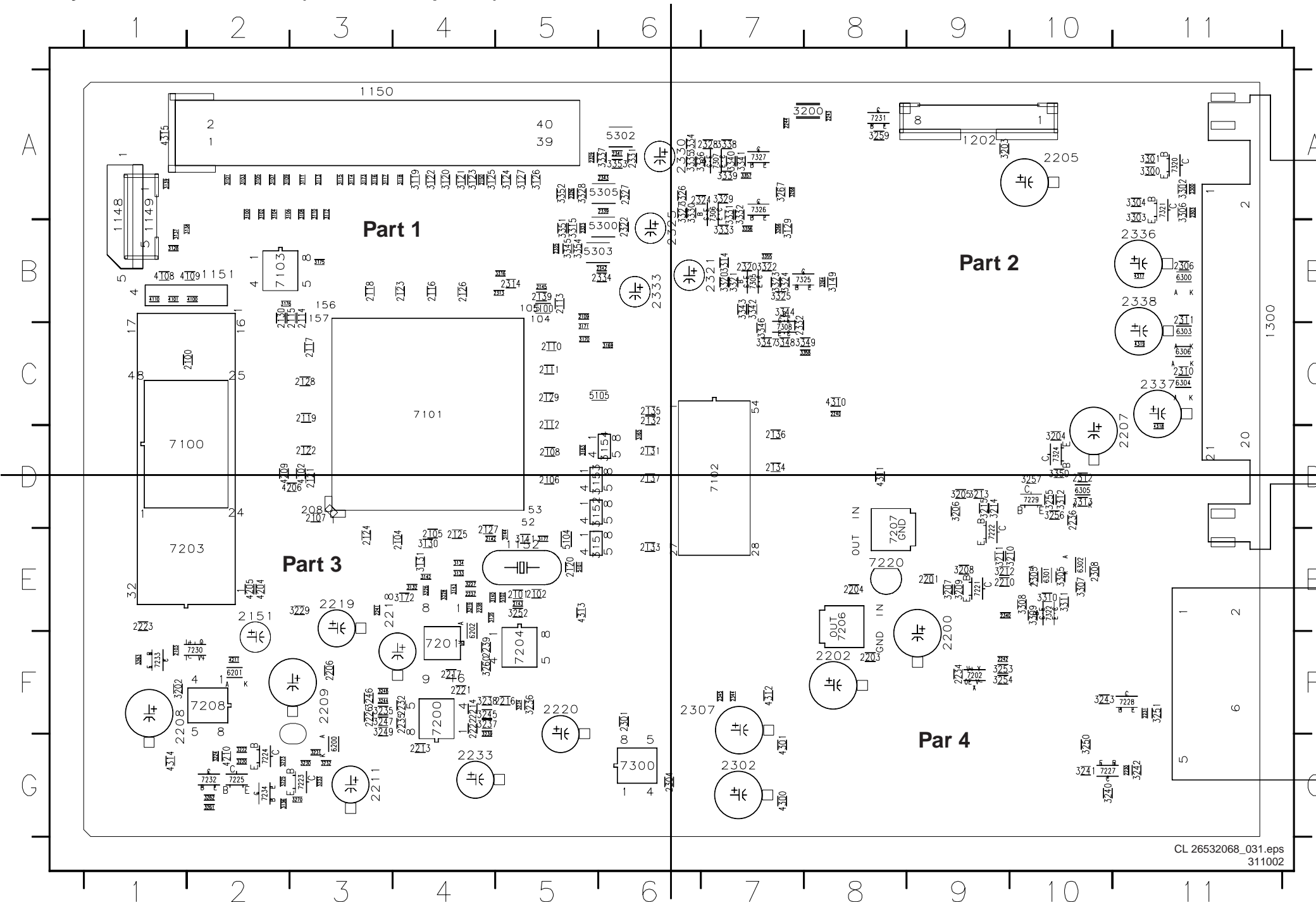
* OPTION
V DC vtg measured in STOP-MODE

BARE BOARD 3139 243 30661

CL 26532068_030.eps
 311002

- 1300 A14
- 2240 I4
- 2300 A10
- 2301 B5
- 2302 C6
- 2303 B10
- 2304 C5
- 2305 B11
- 2306 B13
- 2307 C7
- 2308 C12
- 2310 C12
- 2311 C12
- 2312 D13
- 2314 F7
- 2320 E10
- 2321 E10
- 2322 F10
- 2323 F9
- 2324 F10
- 2325 G10
- 2326 G9
- 2327 G10
- 2328 H10
- 2329 H9
- 2330 H10
- 2331 H10
- 2332 I10
- 2333 J10
- 2334 J10
- 2335 J9
- 2336 B12
- 2337 D12
- 2338 D13
- 2339 E9
- 2340 I5
- 2341 H9
- 2342 I9
- 2343 G9
- 2344 H5
- 2345 I5
- 3129 G14
- 3149 F14
- 3264 F13
- 3266 H13
- 3267 H13
- 3268 H13
- 3300 A9
- 3301 A9
- 3302 A10
- 3303 A9
- 3304 B9
- 3305 B12
- 3306 B10
- 3307 C10
- 3308 C10
- 3309 C10
- 3310 C11
- 3311 C11
- 3312 C9
- 3313 D10
- 3314 E11
- 3315 F9
- 3316 F6
- 3320 E11
- 3321 E12
- 3322 F11
- 3323 F12
- 3324 F13
- 3325 F11
- 3326 F11
- 3327 F11
- 3328 G9
- 3329 G11
- 3330 G12
- 3331 G12
- 3332 G13
- 3333 G11
- 3334 H11
- 3335 H11
- 3336 H12
- 3337 H9
- 3338 H11
- 3339 I11
- 3340 I2
- 3341 I3
- 3342 I11
- 3343 I11
- 3344 J2
- 3345 J9
- 3346 J11
- 3347 J11
- 3348 J12
- 3349 J13
- 3350 D9
- 3351 F9
- 3352 G9
- 3353 H9
- 3354 J9
- 3355 E10
- 3356 F10
- 3357 H10
- 3358 I10
- 4300 A5
- 4301 B7
- 4310 I4
- 4311 I4
- 4312 H4
- 4313 H4
- 4314 H4
- 4315 H5
- 4317 B12
- 4318 D12
- 4319 D13
- 5300 E9
- 5302 H9
- 5303 J9
- 5305 G9
- 6300 B13
- 6303 B13
- 6304 C13
- 6305 D13
- 6306 C14
- 7300-A B5
- 7300-B B7
- 7305-A E11
- 7305-B E12
- 7306-A G11
- 7306-B G12
- 7307-A H12
- 7307-B H12
- 7308-A J11
- 7308-B J12
- 7320 A9
- 7321 B9
- 7322-A C10
- 7322-B C11
- 7324 D9
- 7325 F13
- 7326 G13
- 7327 I13
- 1300 A14
- 1301 A14
- 1302 B13
- 1303 B13
- 1304 C13
- 1305 C12
- 1306 C13
- 1307 D12

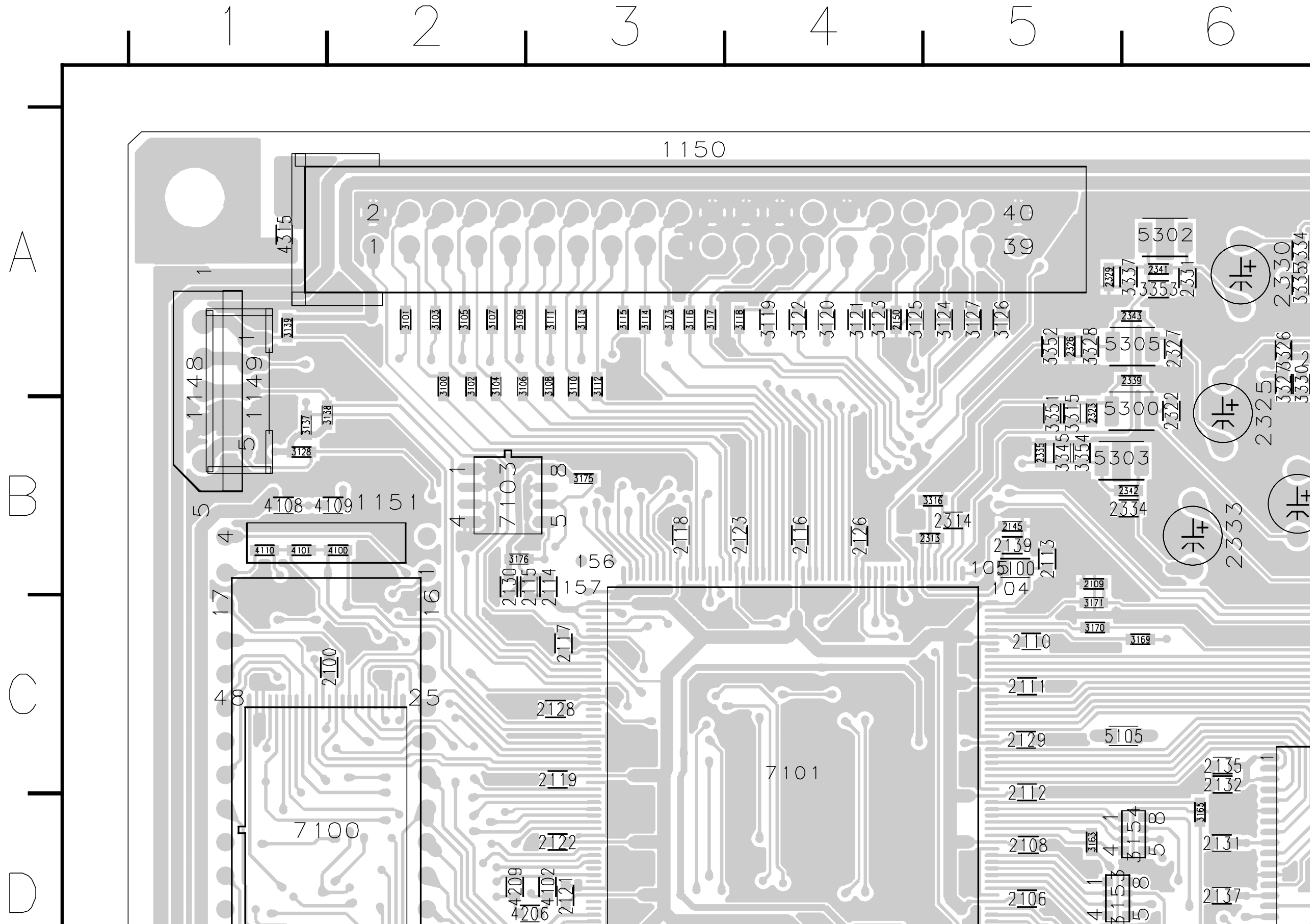
Layout MPEG Board 6018 (Overview Top Side)



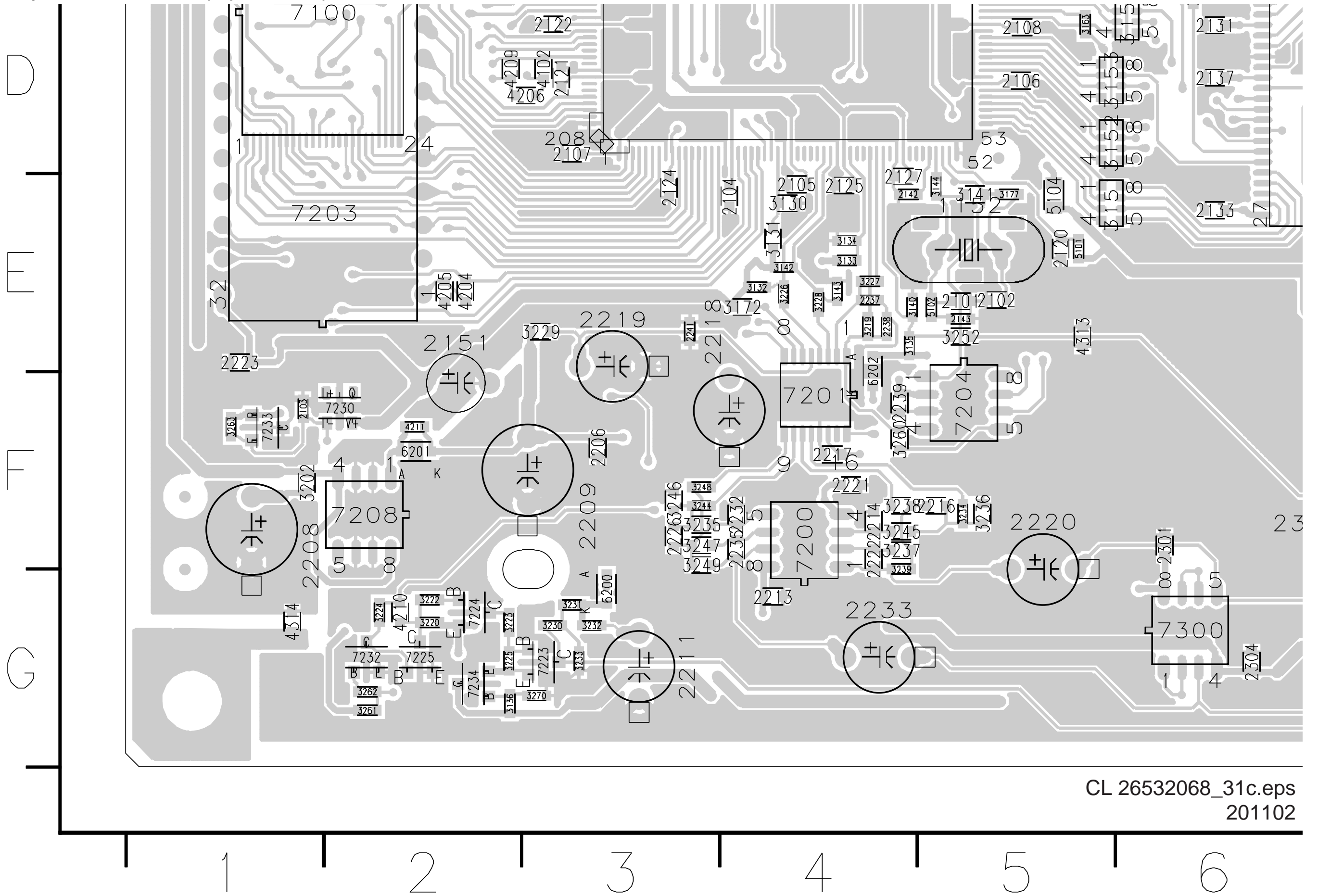
1148 A1	2217 F4	3103 A2	3210 E10	3312 D10	4319 C11
1149 A1	2218 E3	3104 A2	3211 E9	3313 D10	5100 B5
1150 A3	2219 E3	3105 A2	3212 E9	3314 B7	5101 E5
1151 B2	2220 F5	3106 A2	3213 D9	3315 B5	5102 E5
1152 E5	2221 F4	3107 A2	3214 D9	3316 B5	5104 E5
1202 A9	2222 F4	3108 A3	3215 D9	3320 B7	5105 C6
1300 B11	2223 E1	3109 A2	3219 E4	3321 B7	5300 B6
2100 C2	2226 F3	3110 A3	3220 G2	3322 B7	5302 A6
2101 E5	2230 G11	3111 A3	3222 G2	3323 B7	5303 B5
2102 E5	2231 F11	3112 A3	3223 G2	3324 B7	5305 A6
2103 F1	2232 F4	3113 A3	3224 G2	3325 B7	6200 G3
2104 E4	2233 G4	3114 A3	3225 G2	3326 A6	6201 F2
2105 E4	2234 F9	3115 A3	3226 E4	3327 A6	6202 E4
2106 D5	2235 F4	3116 A3	3227 E4	3328 A5	6300 B11
2107 D3	2236 D10	3117 A3	3228 E4	3329 A7	6301 E10
2108 D5	2237 E4	3118 A4	3229 E3	3330 A6	6302 E10
2109 B5	2238 E4	3119 A4	3230 G3	3331 A7	6303 C11
2110 C5	2239 F4	3120 A4	3231 G3	3332 A7	6304 C11
2111 C5	2240 C8	3121 A4	3232 G3	3333 B7	6305 D10
2112 C5	2241 E3	3122 A4	3233 G3	3334 A6	6306 C11
2113 B5	2242 F9	3123 A4	3234 F5	3335 A6	7100 D1
2114 B3	2243 A8	3124 A5	3235 F3	3336 A6	7101 C4
2115 B3	2244 A7	3125 A4	3236 F5	3337 A6	7102 D7
2116 B4	2300 A11	3126 A5	3237 F4	3338 A7	7103 B2
2117 C3	2301 F6	3127 A5	3238 F4	3339 A7	7200 F4
2118 B3	2302 G7	3128 B1	3239 F4	3340 A7	7201 F4
2119 C3	2303 A11	3129 B7	3240 G10	3341 A7	7202 F9
2120 E5	2304 G6	3130 E4	3241 G10	3342 B7	7203 E1
2121 D3	2305 E10	3131 E4	3242 G11	3343 B7	7204 F5
2122 D3	2306 B11	3132 E4	3243 F10	3344 B7	7206 E8
2123 B4	2307 F6	3133 E4	3244 F3	3345 B5	7207 E8
2124 E3	2308 E10	3134 E4	3245 F4	3346 C7	7208 F2
2125 E4	2310 C11	3135 E4	3246 F3	3347 C7	7220 E8
2126 B4	2311 B11	3136 G2	3247 F3	3348 C7	7221 E9
2127 E4	2312 D10	3137 B1	3248 F3	3349 C8	7222 E9
2128 C3	2313 B5	3138 B1	3249 F3	3350 D10	7223 G3
2129 C5	2314 B5	3139 A1	3250 G10	3351 B5	7224 G2
2130 B2	2320 B7	3140 E4	3251 F11	3352 A5	7225 G2
2131 D6	2321 B7	3141 E5	3252 E5	3353 A6	7227 G10
2132 C6	2322 B6	3142 E4	3253 F9	3354 B5	7228 F11
2133 E6	2323 B5	3143 E4	3254 F9	3355 B7	7229 D10
2134 D7	2324 A6	3144 E5	3255 D10	3356 B7	7230 F2
2135 C6	2325 B6	3149 B8	3256 D10	3357 A7	7231 A8
2136 D7	2326 A5	3151 E5	3257 D10	3358 C8	7232 G2
2137 D6	2327 A6	3152 D5	3259 A8	4100 B2	7233 F1
2139 B5	2328 A7	3153 D5	3260 F4	4101 B1	7234 G2
2142 E4	2329 A5	3154 D6	3261 G2	4102 D3	7300 G6
2143 E5	2330 A6	3163 D5	3262 G2	4108 B1	7305 B7
2145 B5	2331 A6	3165 D6	3263 F1	4109 B2	7306 A7
2150 A4	2332 C7	3169 C6	3264 B8	4110 B1	7307 A7
2151 E2	2333 B6	3170 C5	3266 B7	4204 E2	7308 C7
2200 F9	2334 B6	3171 C5	3267 A7	4205 E2	7320 A11
2201 E9	2335 B5	3172 E4	3268 A7	4206 D3	7321 A11
2202 F8	2336 B11	3173 A3	3270 G3	4209 D2	7322 E10
2203 F8	2337 C11	3175 B3	3300 A11	4210 G2	7324 D10
2204 E8	2338 B11	3176 B2	3301 A11	4211 F2	7325 B7
2205 A10	2339 A6	3177 E5	3302 A11	4300 G7	7326 A7
2206 F3	2340 E9	3200 A8	3303 A11	4301 G7	7327 A7
2207 D11	2341 A6	3202 F1	3304 A11	4310 C8	
2208 F1	2342 B6	3203 A9	3305 E10	4311 D8	
2209 F3	2343 A6	3204 D10	3306 A11	4312 F7	
2210 E9	2344 F7	3205 D9	3307 E10	4313 E5	
2211 G3	2345 F7	3206 D9	3308 E10	4314 G1	
2213 G4	3100 A2	3207 E9	3309 E10	4315 A1	
2214 F4	3101 A2	3208 E9	3310 E10	4317 B11	
2216 F5	3102 A2	3209 E9	3311 E10	4318 D11	

CL 26532068_031.eps
311002

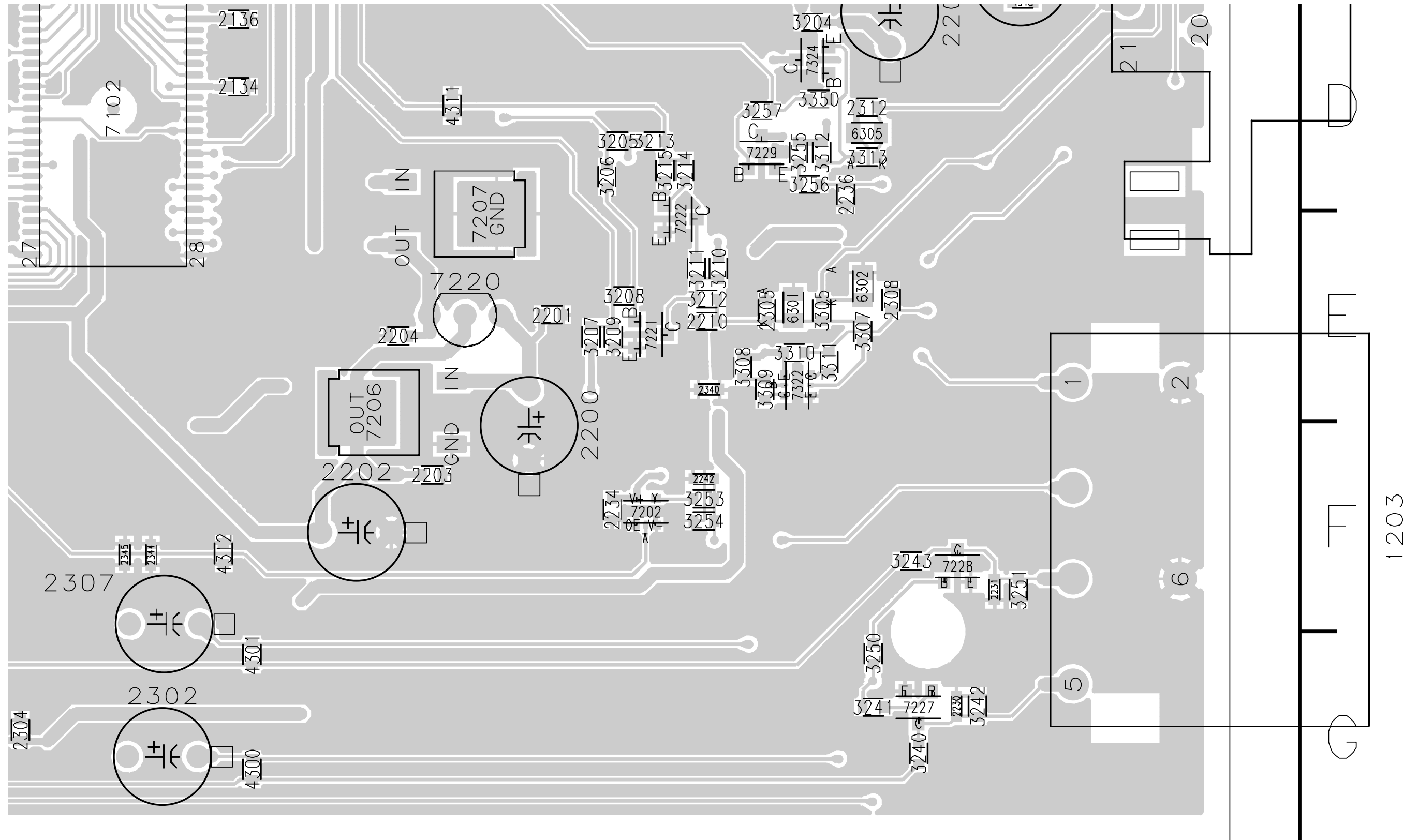
Layout MPEG Board 6018 (Top Side Part 1)



Layout MPEG Board 6018 (Top Side Part 3)



Layout MPEG Board 6018 (Top Side Part 4)

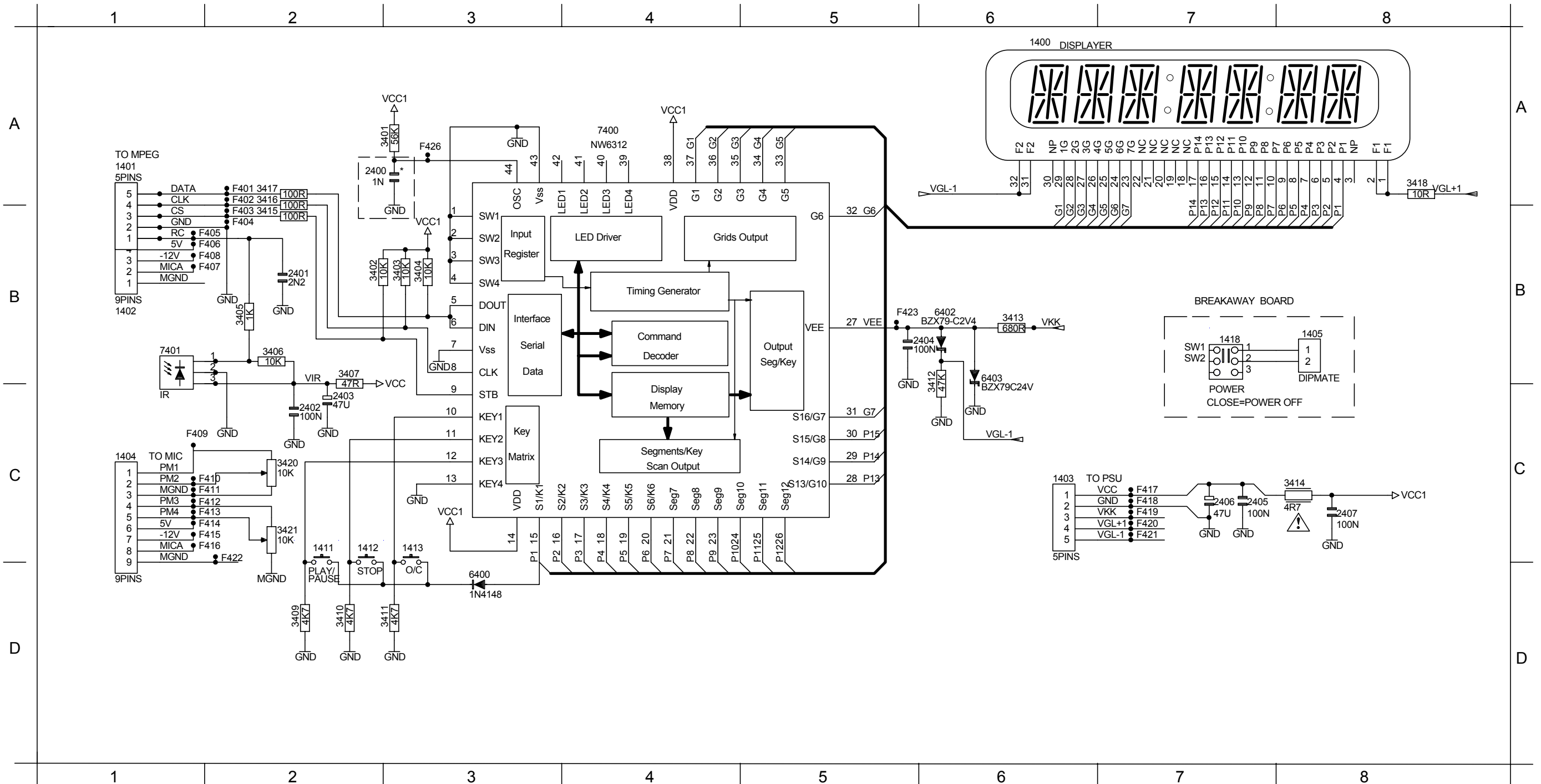


CL 26532068_31d.eps
201102

7 8 9 10 11

Front Board

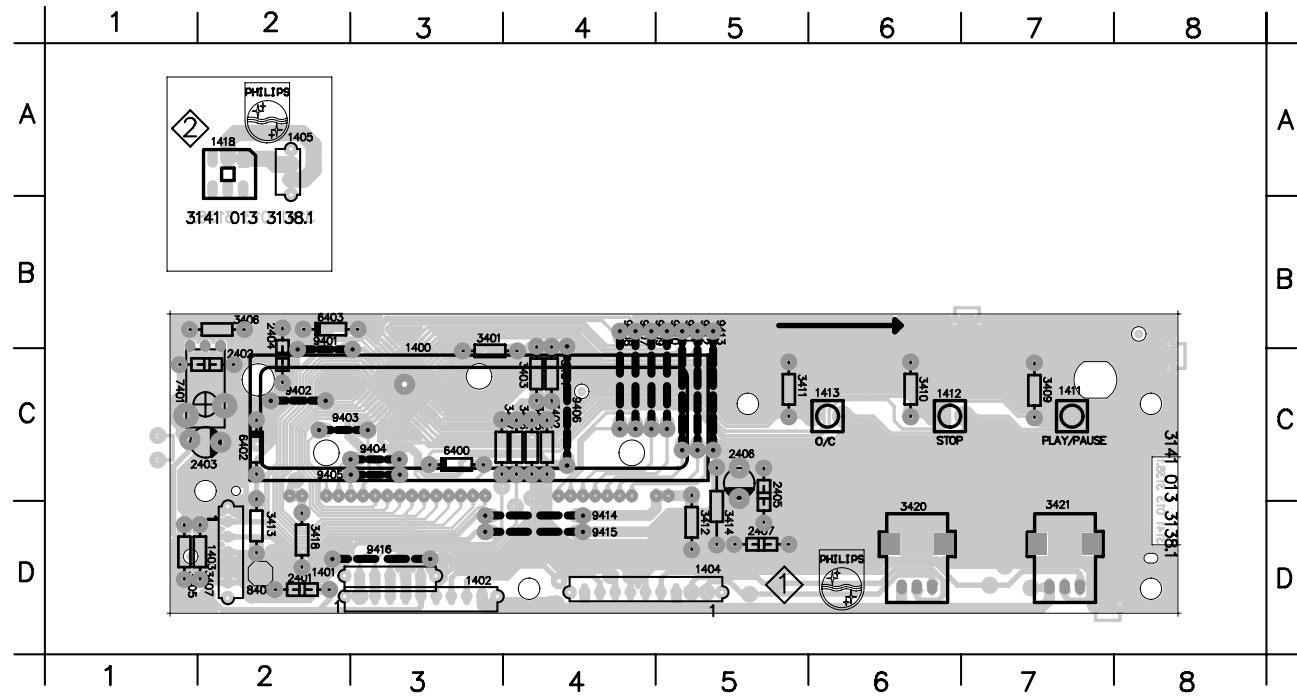
1400	A7	1405	B8	2400	B3	2405	C7	3403	B3	3409	D2	3414	C8	3420	C2	7400	B4	F404	B2	F409	C1	F414	C1	F419	C7	F426	B3
1401	B1	1411	C2	2401	B2	2406	C7	3404	B3	3410	D2	3415	B2	3421	C2	7401	B1	F405	B1	F410	C1	F415	C1	F420	C7		
1402	B1	1412	C2	2402	C2	2407	C8	3405	B2	3411	D3	3416	B2	6400	D3	F401	A2	F406	B1	F411	C1	F416	C1	F421	C7		
1403	C6	1413	C3	2403	C2	3401	A3	3406	B2	3412	B6	3417	B2	6402	B6	F402	A2	F407	B1	F412	C1	F417	C7	F422	C2		
1404	C1	1418	B7	2404	B5	3402	B3	3407	B2	3413	B6	3418	A8	6403	B6	F403	B2	F408	B1	F413	C1	F418	C7	F423	B5		



Layout Front Board

Component side

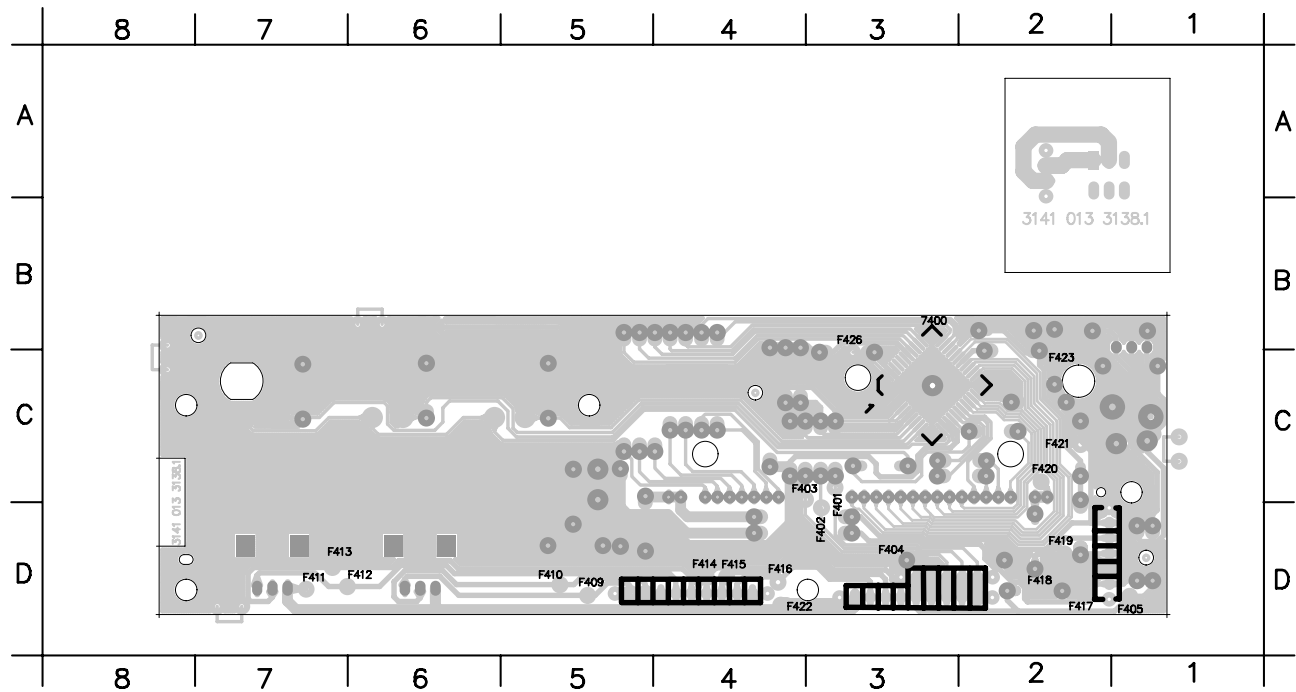
1400	C3	1405	A2	2401	D2	2406	C5	3404	C4	3410	C6	3415	C4	3421	D7	8406	D2	9405	C3	9410	C5
1401	D3	1411	C7	2402	C2	2407	D5	3405	D1	3411	C5	3416	C4	6400	C3	9401	C2	9406	C4	9411	C5
1402	D3	1412	C6	2403	C2	3401	C3	3406	B2	3412	D5	3417	C3	6402	C2	9402	C2	9407	C4	9412	C5
1403	D2	1413	C6	2404	C2	3402	C4	3407	D2	3413	D2	3418	D2	6403	B2	9403	C2	9408	C4	9413	C5
1404	D4	1418	A2	2405	C5	3403	C4	3409	C7	3414	D5	3420	D6	7401	C2	9404	C3	9409	C4	9414	D4



9415 D4
9416 D3

Copper side

1400	C3	1405	A2	2401	D2	2406	C5	3404	C4	3410	C6	3415	C4	3421	D7	8406	D2	9405	C3	9410	C5
1401	D3	1411	C7	2402	C2	2407	D5	3405	D1	3411	C5	3416	C4	6400	C3	9401	C2	9406	C4	9411	C5
1402	D3	1412	C6	2403	C2	3401	C3	3406	B2	3412	D5	3417	C3	6402	C2	9402	C2	9407	C4	9412	C5
1403	D2	1413	C6	2404	C2	3402	C4	3407	D2	3413	D2	3418	D2	6403	B2	9403	C2	9408	C4	9413	C5
1404	D4	1418	A2	2405	C5	3403	C4	3409	C7	3414	D5	3420	D6	7401	C2	9404	C3	9409	C4	9414	D4



9415 D4
9416 D3

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

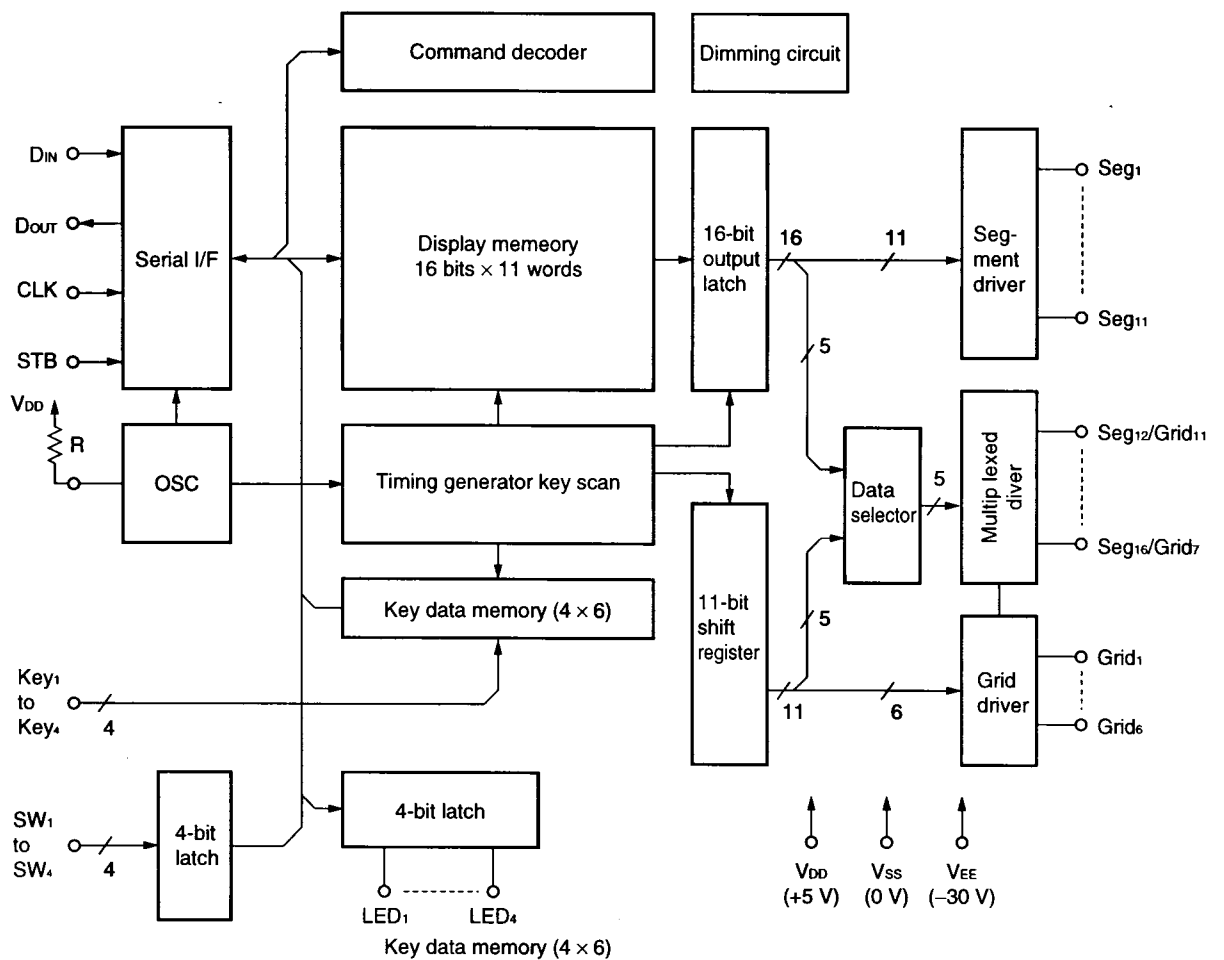
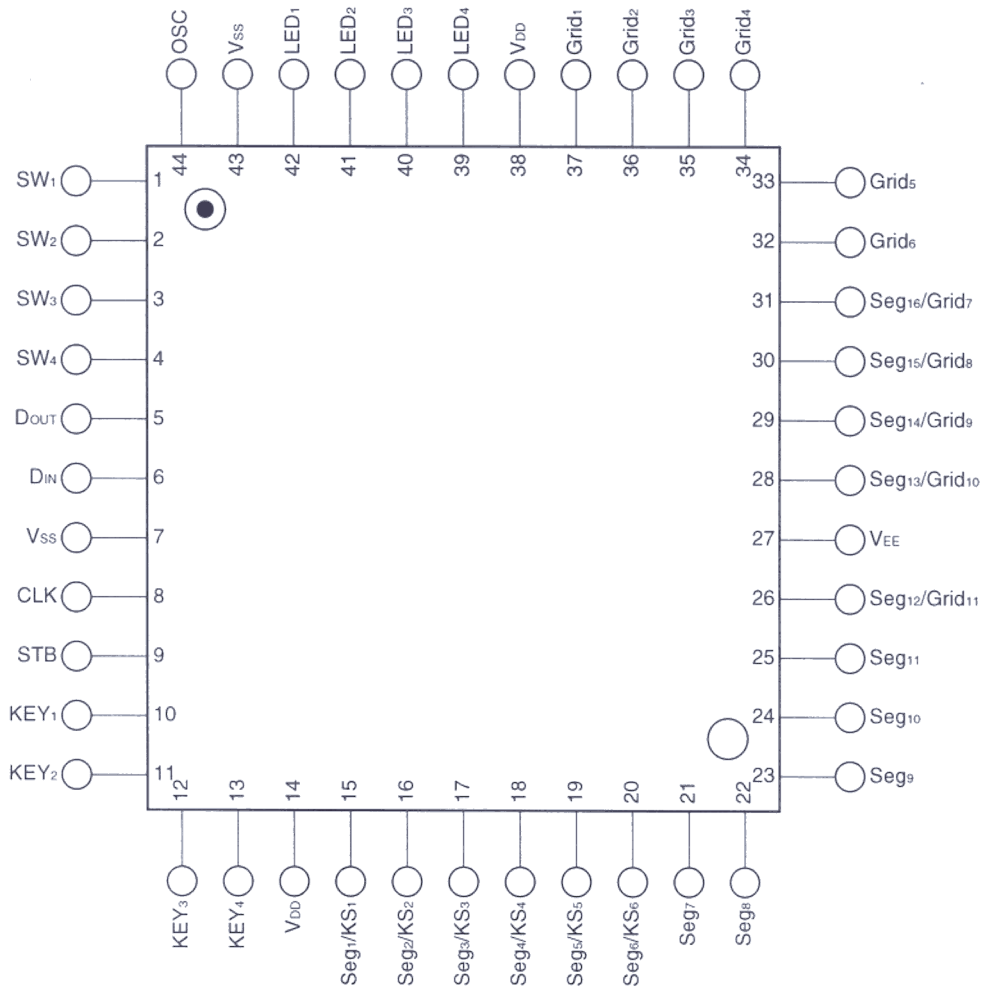


Figure 9-1 Block Diagram uPD16312

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 /001

Various

	3139 248 82121	PCBAS MPEG DVD624
	3141 018 03130	MCP PCB FRONT DVD616K/931
0200	3141 017 76381	CAB FRONT ASSY DVD640/ 001
0201	3141 014 24720	BRACKET
0205	3141 017 75590	BUTTON POWER DVD616K PNT PRT
0213	3141 017 76391	FRAME ASSY DVD640/051
0219	3141 017 75600	DOOR DVD616K PRT
0224	3141 017 76161	BACK PLATE DVD640/001 PNT PRT
0232	3141 017 75610	COVER TOP DVD616K PNT
0260	3140 113 21880	MAINS CORD RELIEF
0384	3141 017 90220	REMOTE CONTROL DVD- Q30/751
0397	3141 010 21180	CABLE SCART
1001▲	3122 427 23372	PBAS PSU BPAVC 7XX WR CLASS 3
1001▲	3141 018 03220	PBAS PSU 90PS132 WR BILLION EH
1001▲	3122 427 23432	PBAS PSU BPAVC 7XX EURO SLIM
1002	3139 247 10721	PCBA MPEG DVD634 PK
1003	3141 018 03140	DVD LOADER MODULE A96H
1004	3141 019 21570	PBAS FRONT DVD640/001 ASSY

5001▲	3141 018 71300	MAIN CORD M7.92VH 1.60M
8001	3141 010 21160	CWAS 40RK/40RK 300 40 28S
8002	3141 010 21290	CWAS 08EH/08EH 350 8 WH 26S
8003	3141 010 21300	CWAS 04EH/04LC 300 22S
8004	3141 011 60630	EMC SPRING II

Mechanical /021

Various

	3139 248 82121	PCBAS MPEG DVD624
	3141 018 03130	MCP PCB FRONT DVD616K/931
0200	3141 017 76381	CAB FRONT ASSY DVD640/ 001
0201	3141 014 24720	BRACKET
0205	3141 017 75590	BUTTON POWER DVD616K PNT PRT
0213	3141 017 76391	FRAME ASSY DVD640/051
0219	3141 017 75600	DOOR DVD616K PRT
0224	3141 017 76161	BACK PLATE DVD640/001 PNT PRT
0232	3141 017 75610	COVER TOP DVD616K PNT
0260	3140 113 21880	MAINS CORD RELIEF
0384	3141 017 90220	REMOTE CONTROL DVD- Q30/751
0397	3141 010 21180	CABLE SCART
1001▲	3122 427 23372	PBAS PSU BPAVC 7XX WR CLASS 3
1001▲	3141 018 03220	PBAS PSU 90PS132 WR BILLION EH
1001▲	3122 427 23432	PBAS PSU BPAVC 7XX EURO SLIM
1002	3139 247 10721	PCBA MPEG DVD634 PK
1003	3141 018 03140	DVD LOADER MODULE A96H
1004	3141 019 21570	PBAS FRONT DVD640/001 ASSY

5001▲	3141 018 71300	MAIN CORD M7.92VH 1.60M
8001	3141 010 21160	CWAS 40RK/40RK 300 40 28S
8002	3141 010 21290	CWAS 08EH/08EH 350 8 WH 26S
8003	3141 010 21300	CWAS 04EH/04LC 300 22S

8004	3141 011 60630	EMC SPRING II
------	----------------	---------------

Mechanical /051

Various

	3139 248 82121	PCBAS MPEG DVD624
	3141 018 03130	MCP PCB FRONT DVD616K/931
0200	3141 017 76381	CAB FRONT ASSY DVD640/ 001
0201	3141 014 24720	BRACKET
0205	3141 017 75590	BUTTON POWER DVD616K PNT PRT
0213	3141 017 76391	FRAME ASSY DVD640/051
0219	3141 017 75600	DOOR DVD616K PRT
0224	3141 017 76161	BACK PLATE DVD640/001 PNT PRT
0232	3141 017 75610	COVER TOP DVD616K PNT
0260	3140 113 21880	MAINS CORD RELIEF
0384	3141 017 90220	REMOTE CONTROL DVD- Q30/751
0397	3141 010 21180	CABLE SCART
1001▲	3122 427 23372	PBAS PSU BPAVC 7XX WR CLASS 3
1001▲	3141 018 03220	PBAS PSU 90PS132 WR BILLION EH
1001▲	3122 427 23432	PBAS PSU BPAVC 7XX EURO SLIM
1002	3139 247 10721	PCBA MPEG DVD634 PK
1003	3141 018 03140	DVD LOADER MODULE A96H
1004	3141 019 21570	PBAS FRONT DVD640/001 ASSY

5001▲	3141 018 71340	A.C. MAINS CORD PQ8B1V6Y10A-05
8001	3141 010 21160	CWAS 40RK/40RK 300 40 28S
8002	3141 010 21290	CWAS 08EH/08EH 350 8 WH 26S
8003	3141 010 21300	CWAS 04EH/04LC 300 22S
8004	3141 011 60630	EMC SPRING II

Front PWB

Various

0040	3141 013 31382	PCB FRONT DVD616K/931
0041	3141 014 24760	FTD HOLDER
1400	3141 010 50220	VFD 20-0704N (ZEC)
1401	4822 265 30735	5 PINS
1403	4822 265 30735	5 PINS
1405	2422 025 04849	CON BMT 2P
1411	4822 276 13114	
1412	4822 276 13114	
1413	4822 276 13114	
1418	2422 128 02939	SWI PUSH 2P 100MA 30V SPEC12 B

2402	2020 561 90365	TUB 50V 100nF 20% A
2403	4822 124 23624	47µF 20% 16V
2404	2020 561 90365	TUB 50V 100nF 20% A
2405	2020 561 90365	TUB 50V 100nF 20% A
2406	4822 124 23624	47µF 20% 16V
2407	2020 561 90365	TUB 50V 100nF 20% A

3401	4822 116 52291	56k 5% 0.5W
3402	4822 050 21003	10k 1% 0.6W
3403	4822 050 21003	10k 1% 0.6W
3404	4822 050 21003	10k 1% 0.6W
3405	4822 050 21002	1k 1% 0.6W
3406	4822 050 21003	10k 1% 0.6W
3407	4822 116 52195	47Ω 5% 0.5W
3409	4822 116 52283	4k7 5% 0.5W
3410	4822 116 52283	4k7 5% 0.5W
3411	4822 116 52283	4k7 5% 0.5W
3412	4822 116 83884	47k 5% 0.5W
3413	4822 116 52228	680Ω 5% 0.5W

3414	4822 052 10478	4Ω7 5% 0.33W
3415	4822 116 52175	100Ω 5% 0.5W
3416	4822 116 52175	100Ω 5% 0.5W
3417	4822 116 52175	100Ω 5% 0.5W
3418	4822 116 52176	10Ω 5% 0.5W

→

6400	4822 130 30621	1N4148
6402	4822 130 31253	BZX79-C2V4
6403	4822 130 34398	BZX79-B24



7400	8241 010 40440	IC PT6312 QFP44
7401	3141 010 50260	IR RECEIVER HK361BT-16
8402	3141 010 21240	CWAS 05EH/05OP 140 5 WH 26S
8404	3141 010 21310	CWAS 05XH/05OP SCR 330 5 WH26S
8404	3141 010 21331	CWAS 05EH/05 OP SCR 330 5 WH26
8405	3141 010 21280	CWAS 02EH/02OP 140 2 WH 26S
8406	3141 010 20250	CWAS 01 SPA/01 OP 110 BK 24F T

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	

—|—

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

7102	9322 166 67668		2205	4822 124 23052	100µF 20% 16V	3128	4822 051 30333	33k 5% 0.062W
7104	5322 209 11517	PC74HCU04T	2206	4822 126 13879	220nF 20% 16V	3129	4822 051 30689	68Ω 5% 0.063W 0603 RC21 RST SM
7200	4822 209 30095	LM833D	2207	4822 124 40196	220µF 20% 16V	3131	4822 051 30472	4k7 5% 0.062W
7201	9322 177 09685		2208	4822 124 40196	220µF 20% 16V	3132	4822 051 30472	4k7 5% 0.062W
7202	9352 456 80115	74HCT1G125GW	2209	4822 124 40196	220µF 20% 16V	3133	4822 051 30472	4k7 5% 0.062W
7206	4822 209 17398	LD1117DT33	2210	4822 126 13879	220nF 20% 16V	3136	4822 051 30472	4k7 5% 0.062W
7208	4822 209 33411	MC78L05ACD	2211	4822 124 80231	47µF 20% 16V	3137	4822 051 30472	4k7 5% 0.062W
7220	4822 130 40855	BC337	2213	2238 586 59812	0603 50V 100NP80M	3138	4822 051 30472	4k7 5% 0.062W
7221	5322 130 60159	BC846B	2214	4822 126 13881	470pF 5% 50V	3139	4822 051 30472	4k7 5% 0.062W
7222	5322 130 60159	BC846B	2216	5322 126 11579	3.3nF 10% 63V	3140	4822 051 30472	4k7 5% 0.062W
7223	5322 130 60159	BC846B	2217	2238 586 59812	0603 50V 100NP80M	3141	4822 051 30105	1M 5% 0.062W
7224	4822 130 60373	BC856B	2218	4822 124 11947	10µF 20% 16V	3142	4822 051 30472	4k7 5% 0.062W
7225	5322 130 60159	BC846B	2219	4822 124 80231	47µF 20% 16V	3144	4822 051 30008	0Ω jumper
7227	4822 130 42804	BC817-25	2220	4822 124 23052	100µF 20% 16V	3149	4822 051 30689	68Ω 5% 0.063W 0603 RC21 RST SM
7228	4822 130 42804	BC817-25	2221	2238 586 59812	0603 50V 100NP80M	3151	4822 117 12662	10Ω X4 5%
7229	5322 130 60159	BC846B	2222	4822 126 13881	470pF 5% 50V	3152	4822 117 12662	10Ω X4 5%
7230	3141 018 51120		2223	4822 126 13879	220nF 20% 16V	3153	4822 117 12662	10Ω X4 5%
7231	4822 130 42804	BC817-25	2226	5322 126 11579	3.3nF 10% 63V	3154	4822 117 13576	NETW 4 X 33Ω 5% 1206
7232	5322 130 60159	BC846B	2230	4822 126 13909	680pF 10% 50V	3163	4822 051 30339	33Ω 5% 0.062W
7301	3141 018 51100		2231	4822 126 13909	680pF 10% 50V	3165	4822 051 30339	33Ω 5% 0.062W
7305	9340 425 30115		2232	4822 126 13881	470pF 5% 50V	3169	4822 051 30339	33Ω 5% 0.062W
7306	9340 425 30115		2233	4822 124 23052	100µF 20% 16V	3170	4822 051 30339	33Ω 5% 0.062W
7307	9340 425 30115		2234	2238 586 59812	0603 50V 100NP80M	3171	4822 051 30339	33Ω 5% 0.062W
7308	9340 425 30115		2235	4822 126 13881	470pF 5% 50V	3172	4822 051 30472	4k7 5% 0.062W
7320	4822 130 42804	BC817-25	2236	4822 126 13883	220pF 5% 50V	3175	4822 051 30472	4k7 5% 0.062W
7321	4822 130 42804	BC817-25	2237	4822 122 33752	15pF 5% 50V	3176	4822 051 30472	4k7 5% 0.062W
7322	9340 425 30115		2238	4822 122 33752	15pF 5% 50V	3177	4822 051 30221	220Ω 5% 0.062W
7324	5322 130 60159	BC846B	2239	2238 586 59812	0603 50V 100NP80M	3200	4822 051 20008	0Ω jumper . (0805)
7325	5322 130 60159	BC846B	2240	2238 586 59812	0603 50V 100NP80M	3202	4822 117 12139	22Ω 5% 0.062W
7326	5322 130 60159	BC846B	2241	2238 586 59812	0603 50V 100NP80M	3203	4822 051 30008	0Ω jumper
7327	5322 130 60159	BC846B	2300	4822 126 13909	680pF 10% 50V	3204	4822 117 12139	22Ω 5% 0.062W
			2301	2238 586 59812	0603 50V 100NP80M	3207	4822 051 30103	10k 5% 0.062W
			2303	4822 126 13909	680pF 10% 50V	3208	4822 051 30103	10k 5% 0.062W
			2305	4822 126 14494	22nF 10% 25V 0603	3209	4822 051 30183	18k 5% 0.062W
			2306	4822 126 13883	220pF 5% 50V	3210	4822 051 30471	470Ω 5% 0.062W
			2308	2238 586 59812	0603 50V 100NP80M	3211	4822 051 30471	470Ω 5% 0.062W
			2310	4822 126 13883	220pF 5% 50V	3212	4822 051 30221	220Ω 5% 0.062W
			2311	4822 126 13883	220pF 5% 50V	3213	4822 051 30103	10k 5% 0.062W
			2312	4822 126 13883	220pF 5% 50V	3214	4822 051 30103	10k 5% 0.062W
			2313	2238 586 59812	0603 50V 100NP80M	3215	4822 051 30183	18k 5% 0.062W
			2314	2238 586 59812	0603 50V 100NP80M	3219	4822 051 30101	100Ω 5% 0.062W
			2321	4822 124 11947	10µF 20% 16V	3220	4822 051 30562	5k6 5% 0.063W 0603 RC21 RST SM
			2322	2020 552 94427	0603 50V 100P 5%	3222	4822 051 30103	10k 5% 0.062W
			2323	4822 126 14315	390pF 5% 50V 0603	3223	4822 051 30333	33k 5% 0.062W
			2325	4822 124 11947	10µF 20% 16V	3224	4822 051 30562	5k6 5% 0.063W 0603 RC21 RST SM
			2326	4822 126 14315	390pF 5% 50V 0603	3225	4822 051 30562	5k6 5% 0.063W 0603 RC21 RST SM
			2327	2020 552 94427	0603 50V 100P 5%	3226	4822 051 30479	47Ω 5% 0.062W
			2329	4822 126 14315	390pF 5% 50V 0603	3227	4822 051 30479	47Ω 5% 0.062W
			2330	4822 124 11947	10µF 20% 16V	3228	4822 051 30479	47Ω 5% 0.062W
			2331	2020 552 94427	0603 50V 100P 5%	3229	4822 051 30472	4k7 5% 0.062W
			2333	4822 124 11947	10µF 20% 16V	3230	4822 051 30471	470Ω 5% 0.062W
			2334	2020 552 94427	0603 50V 100P 5%	3231	4822 051 30222	2k2 5% 0.062W
			2335	4822 126 14315	390pF 5% 50V 0603	3232	4822 051 30221	220Ω 5% 0.062W
			2336	4822 124 80791	470µF 16V 20% 105C DXH=8X11.5	3233	4822 051 30684	680k 5% 0.062W
			2337	4822 124 80791	470µF 16V 20% 105C DXH=8X11.5	3234	5322 117 13026	4k7 1% 0.063W 0603 RC22H
			2338	4822 124 80791	470µF 16V 20% 105C DXH=8X11.5	3235	2322 704 62001	RST SM 0603 RC22H 200Ω PM1 R
			2340	2238 586 59812	0603 50V 100NP80M	3236	2322 704 65102	RST SM 0603 RC22H 5k1 PM1
			2344	2238 586 59812	0603 50V 100NP80M	3237	2322 704 62001	RST SM 0603 RC22H 200Ω PM1 R
			2345	2238 586 59812	0603 50V 100NP80M	3238	5322 117 13026	4k7 1% 0.063W 0603 RC22H
						3239	2322 704 65102	RST SM 0603 RC22H 5k1 PM1
						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	RST SM 0603 RC22H 200Ω PM1 R
						3246	2322 704 65102	RST SM 0603 RC22H 5k1 PM1
						3247	2322 704 62001	RST SM 0603 RC22H 200Ω PM1 R
						3248	5322 117 13026	4k7 1% 0.063W 0603 RC22H
						3249	2322 704 65102	RST SM 0603 RC22H 5k1 PM1
						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
						3260	4822 051 30479	47Ω 5% 0.062W

MPEG ES 6018 PWB

Various


1149	4822 267 10734	B5B-EH-A
1150	2422 025 17682	CON BM V 40P M 2.54 440094 B
1152	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	CON BM EURO H 21P F BK GRND-L

—|—

2100	4822 126 13879	220nF 20% 16V
2101	4822 122 33761	22pF 5% 50V
2102	4822 122 33761	22pF 5% 50V
2104	2238 586 59812	0603 50V 100NP80M
2105	2238 586 59812	0603 50V 100NP80M
2106	2238 586 59812	0603 50V 100NP80M
2107	2238 586 59812	0603 50V 100NP80M
2108	2238 586 59812	0603 50V 100NP80M
2109	4822 122 33752	15pF 5% 50V
2110	2238 586 59812	0603 50V 100NP80M
2111	2238 586 59812	0603 50V 100NP80M
2112	2238 586 59812	0603 50V 100NP80M
2113	2238 586 59812	0603 50V 100NP80M
2114	2238 586 59812	0603 50V 100NP80M
2115	2238 586 59812	0603 50V 100NP80M
2116	2238 586 59812	0603 50V 100NP80M
2117	2238 586 59812	0603 50V 100NP80M
2118	2238 586 59812	0603 50V 100NP80M
2119	2238 586 59812	0603 50V 100NP80M
2120	4822 126 13879	220nF 20% 16V
2121	2238 586 59812	0603 50V 100NP80M
2122	2238 586 59812	0603 50V 100NP80M
2123	2238 586 59812	0603 50V 100NP80M
2124	2238 586 59812	0603 50V 100NP80M
2125	2238 586 59812	0603 50V 100NP80M
2126	2238 586 59812	0603 50V 100NP80M
2127	2238 586 59812	0603 50V 100NP80M
2128	2238 586 59812	0603 50V 100NP80M
2129	2238 586 59812	0603 50V 100NP80M
2131	2238 586 59812	0603 50V 100NP80M
2132	2238 586 59812	0603 50V 100NP80M
2133	2238 586 59812	0603 50V 100NP80M
2134	2238 586 59812	0603 50V 100NP80M
2135	2238 586 59812	0603 50V 100NP80M
2136	2238 586 59812	0603 50V 100NP80M
2137	2238 586 59812	0603 50V 100NP80M
2139	2238 586 59812	0603 50V 100NP80M
2143	3198 016 31020	0603 25V 1nF
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

—WW—

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
3104	4822 051 30479	47Ω 5% 0.062W
3105	4822 051 30479	47Ω 5% 0.062W
3106	4822 051 3	

3261	4822 051 30472	4k7 5% 0.062W	7228	4822 130 42804	BC817-25
3262	4822 051 30472	4k7 5% 0.062W	7229	5322 130 60159	BC846B
3263	4822 051 30472	4k7 5% 0.062W	7231	4822 130 42804	BC817-25
3264	4822 051 30222	2k2 5% 0.062W	7232	5322 130 60159	BC846B
3266	4822 051 30222	2k2 5% 0.062W	7233	9322 189 96685	IC SM M62720GP (MITJ) R
3267	4822 051 30689	68Ω 5% 0.063W 0603 RC21 RST SM	7234	4822 130 60373	BC856B
3268	4822 051 30222	2k2 5% 0.062W	7320	4822 130 42804	BC817-25
3270	4822 051 30272	2k7 5% 0.062W	7321	4822 130 42804	BC817-25
3300	4822 051 30471	470Ω 5% 0.062W	7322	9340 425 30115	TRA SIG SM BC847BPN (PHSE) R
3301	4822 051 30272	2k7 5% 0.062W	7324	5322 130 60159	BC846B
3302	4822 051 30103	10k 5% 0.062W	7325	5322 130 60159	BC846B
3303	4822 051 30471	470Ω 5% 0.062W	7326	5322 130 60159	BC846B
3304	4822 051 30272	2k7 5% 0.062W	7327	5322 130 60159	BC846B
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 30103	10k 5% 0.062W			
3315	4822 117 13501	82Ω 5% 0.62W 0603			
3316	4822 051 30271	270Ω 5% 0.062W			
3322	4822 051 30103	10k 5% 0.062W			
3326	4822 051 30103	10k 5% 0.062W			
3328	4822 117 13501	82Ω 5% 0.62W 0603			
3329	4822 051 30103	10k 5% 0.062W			
3334	4822 051 30103	10k 5% 0.062W			
3337	4822 117 13501	82Ω 5% 0.62W 0603			
3338	4822 051 30103	10k 5% 0.062W			
3343	4822 051 30103	10k 5% 0.062W			
3345	4822 117 13501	82Ω 5% 0.62W 0603			
3346	4822 051 30103	10k 5% 0.062W			
3350	4822 051 30101	100Ω 5% 0.062W			
3355	4822 051 30689	68Ω 5% 0.063W 0603 RC21 RST SM			
3356	4822 051 30689	68Ω 5% 0.063W 0603 RC21 RST SM			
3357	4822 051 30689	68Ω 5% 0.063W 0603 RC21 RST SM			
3358	4822 051 30689	68Ω 5% 0.063W 0603 RC21 RST SM			
<hr/>					
~					
5100	4822 157 10586	2.2μH 10% 0805			
5101	3198 018 52280	FXDIND SM 0603 2U2 PM10 COL R			
5102	3198 018 53380	FXDIND SM 0603 3U3 PM10 COL R			
5104	4822 157 10586	2.2μH 10% 0805			
5105	4822 051 20008	0R00 JUMP. (0805)			
5300	4822 157 70299	2.2μH (NL322522T-2R2J)			
5302	4822 157 70299	2.2μH (NL322522T-2R2J)			
5303	4822 157 70299	2.2μH (NL322522T-2R2J)			
5305	4822 157 70299	2.2μH (NL322522T-2R2J)			
<hr/>					
⤵					
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			
<hr/>					
					
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			

11. Errata

11.1 Manual 3122 785 12071

11.1.1 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 and the belonging parts list are added.

11.1.2 During production, 2 power supply were introduced from production code VNxx onward with 3122 427 23372 used before wk239 and 3122 427 23432 after wk239.

- In this service manual the circuit diagram and print layout are added