DVD-Video Player

DVD 950

DVD950/171

Service
Service
Service

Service Manual

CLASS 1
LASER PRODUCT

DVD VIDEO

COMPACT disc DIGITAL VIDEO

COMPACT disc DIGITAL AUDIO

Contents

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PHILIPS

1. Technical specifications

Specifications

PLAYBACK SYSTEM

DVD-Video
Video CD
CD (CD-R and CD-RW)

OPTICAL READOUT SYSTEM

Lasertype	Semiconductor AlGaAs	
Numerical Aperture	0.60 (DVD)	
	0.45 (VCD/CD)	
Wavelength	650 nm (DVD)	
	780 nm (VCD/CD)	

DVD DISC FORMAT

Medium	Optical Disc	
Diameter	12cm (8cm)	
Playing time	One layer	2.15 h*
(12cm)	Dual layer	4 h*
	Two side	4.30 h*
	Single layer	
	Two side	8 h*
	Dual layer	

TV STANDARD	**EUROPE**	**USA**
	(PAL/50Hz)	(NTSC/60Hz)
Number of lines	625	525
Playback	Multistandard	(PAL/NTSC)

VIDEO FORMAT

DA Converter	10 bits	
Signal handling	Components	
Digital Compression	MPEG2 for DVD	
	MPEG1 for VCD	

DVD	**50Hz**	**60Hz**
Horiz. Resolution	720 pixels**	720 pixels**
Vertical Resolution	576 lines	480 lines

VCD

Horiz. Resolution	352 pixels**	352 pixels**
Vertical Resolution	288 lines	240 lines

VIDEO PERFORMANCE

Video output	1 Vpp into 75 ohm	
S-Video output	Y: 1 Vpp into 75 ohm	
	C: 0.300 Vpp into 75 ohm	
Y	1 Vpp into 75 ohm	
C_R	0.7 Vpp into 75 ohm	
C_B	0.7 Vpp into 75 ohm	
Black Level Shift	On/Off	
Video Shift	Left/Right	

AUDIO FORMAT

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

Analog Sound Stereo & Dolby Surround™
(VCD & downmix from multichannel sound)
Full decoding of multi-channel surround sound
3D Sound for visual 5.1 channel sound on 2 speakers

CONNECTIONS

S-Video Output	Mini DIN, 4 pin	
Video Output	Cinch (yellow)	
Component Video	Y	Cinch
	C_R	Cinch
	C_B	Cinch
Audio L+R output	Cinch (white/red)	
Audio Front Left/Right	Cinch (white/red)	
Audio Surround Left/Right	Cinch (white/red)	
Audio Centre	Cinch (blue)	
Audio Subwoofer	Cinch (black)	
Digital Output	1 coaxial, 1 optical	
	IEC958 for CDDA / LPCM	
	IEC1937 for MPEG1, MPEG2 and AC-3	
	DTS	
Headphone	6.5 mm Jack	

CABINET

Dimensions (w x h x d)	435 x 88 x 315 (inch)
Weight	4 Kg

PACKAGE CONTENTS

DVD-Video Player
Universal Remote Control
Power cord
User Manual
S-Video cord
Audio/Video cord

GENERAL FUNCTIONALITY

Stop / Play / Pause
Fast Forward / Backward (3-speed)
Time search
Step Forward / Backward (on Virtual Jog/Shuttle)
Slow (3-speed on Virtual Jog/Shuttle)
Title / Track Select
Skip Next / Skip Previous
Repeat (Chapter / Title / All) or (Track / All)
A-B Repeat
Shuffle
Scan
Enhanced ("One OSD") menus
Perfect Still with digital multi-tap filter
Zoom (xl.33, x2. x4) with picture enhancement
3D Sound
Per speaker setting of Volume, Delay, Range

DVD FUNCTIONALITY

Multi-angle Selection
Audio Selection (1 out of max. 8 languages)
Subtitles Selection (1 out of max. 32 languages)
Aspect Ratio conversion (16:9, 4:3 Letterbox, 4:3 Pan Scan)
Parental Control and Disk lock
Disc Menu support (Title Menu and Root Menu)
Resume (5 discs) after stop / standby
Screen Saver (Dim 75% after 15 min.)
Programming Titles/chapters with Favorite Selection

VIDEO CD FUNCTIONALITY

Playback Control for VCD 2.0 discs
Disc lock
Resume (5 discs) after stop / standby
Screen Saver (Dim 75% after 15 min.)
Programming Tracks with Favorite Selection

AUDIO CD FUNCTIONALITY

Time Display (Total / Track / Remaining Track Time)
Full audio functionality with remote control
Programming with Favorite Track Selection

* typical playing time for movie with 2 spoken languages and 3 subtitle languages.
** equivalent to 500 lines on your TV

2. Warnings and Laser safety instructions

GB **WARNING**

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD).
Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance.
Keep components and tools also at this potential.

ESD

NL **WAARSCHUWING**

Alle IC's en vele andere halfgeleiders zijn gevoelig voor elektrostatische ontladingen (ESD).
Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen.
Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.
Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

F **ATTENTION**

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD).
Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise a leur manipulation.
Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité.
Veiller a ce que les composants ainsi que les outils que l'on utilise soient également a ce potentiel.

D **WARNUNG**

Alle IC und viele andere Halbleiter sind empfindlich gegen elektrostatische Entladungen (ESD).
Unsorgfältige Behandlung bei der Reparatur kann die Lebensdauer drastisch vermindern.
Sorgen sie dafür, das Sie im Reparaturfall über ein Pulsarmband mit Widerstand mit dem Massepotential des Gerätes verbunden sind.
Halten Sie Bauteile und Hilfsmittel ebenfalls auf diesem Potential.

I **AVVERTIMENTO**

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevita potrebbe essere fortemente ridatta in caso di non osservazione della piu grande cauzione alla loro manipolazione.
Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

GB

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

NL

Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkelijke toestand wordt terug gebracht en dat onderdelen, identiek aan de gespecifieerde worden toegepast.

D

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten.
Der Originalzustand des Gerats darf nicht verandert werden.
Fur Reparaturen sind Original-Ersatzteile zu verwenden.

I

Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati pezzi di ricambiago idetici a quelli specificati.

F

Les normes de sécurité exigent que l'appareil soit remis a l'état d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.

SHOCK, FIRE HAZARD SERVICE TEST:

CAUTION: After servicing this appliance and prior to returning to customer, measure the resistance between either primary AC cord connector pins (with unit NOT connected to AC mains and its Power switch ON), and the face or Front Panel of product and controls and chassis bottom,
Any resistance measurement less than 1 Megohms should cause unit to be repaired or corrected before AC power is applied, and verified before return to user/customer.
Ref.UL Standard NO.1492.

NOTE ON SAFETY:

Symbol ⚠ : Fire or electrical shock hazard. Only original parts should be used to replace any part with symbol ⚠
Any other component substitution(other than original type), may increase risk or fire or electrical shock hazard.

"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agrées, seuls habilités à réparer votre appareil en panne."

LASER SAFETY

This unit employs a laser. Only a qualified service person should remove the cover or attempt to service this device, due to possible eye injury.

LASER DEVICE UNIT

Type:	SemiconductorlaserGaAlAs
Wave length:	650 nm (DVD)
	780 nm (VCD/CD)
Output Power:	7 mW (DVD)
	10 mW (VCD/CD)
Beam divergence:	60 degree

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

WARNING

The use of optical instruments with this product will increase eye hazard.
Repair handling should take place as much as possible with a disc loaded inside the player

WARNING LOCATION: INSIDE ON LASER COVERSHIELD

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

Warning for powersupply on position 1005

The primary side of the powersupply including the heatsink carries live mains voltage when the player is connected to the mains even when the player is swiched off !
This primary area is not shielded so it is possible to touch copper tracks and/or components when servicing the player. Service personnel have to take precautions to prevent touching this area or components in this area .
The primary side of the powersupply has been indicated with a lightning stroke and a stripe-marked printed on the printed wiring board

Note:
The screws on the basic Engine (position 218 in on the exploded viewdrawing) may never be touched removed or re-adjusted.
Handle the Basic engine with care when the unit has to be exchanged!
The mechanism of the basic engine is very sensative for droping or shocks

CL 96532065_003.eps
281099

DVD Video player
DVD950

Toll Free Help Line
Ligne d'assistance en service libre
Linea de ayuda telefónica sin cargo
800-531-0039

Let's make things better.

PHILIPS

Return your Warranty Registration card today to ensure you receive all the benefits you're entitled to.

- *Once your Philips purchase is registered, you're eligible to receive all the privileges of owning a Philips.*
- *So complete and return the Warranty Registration Card enclosed with your purchase at once. And take advantage of these important benefits.*

Warranty Verification
Registering your product within 10 days confirms your right to maximum protection under the terms and conditions of your Philips warranty.

Owner Confirmation
Your completed Warranty Registration Card serves as verification of ownership in the event of product theft or loss.

Model Registration
Returning your Warranty Registration Card right away guarantees you'll receive all the information and special offers which you qualify for as the owner of your model.

PHILIPS

Hurry! REGISTRATION NEEDED WITHIN 10 DAYS

Congratulations on your purchase, and welcome to the "family!"

Dear Philips product owner:

Thank you for your confidence in Philips .You've selected one of the best-built, best-backed products available today. And we'll do everything in our power to keep you happy with your purchase for many years to come.

As a member of the Philips "family," you're entitled to protection by one of the most comprehensive warranties and outstanding service networks in the industry.

What's more, your purchase guarantees you'll receive all the information and special offers for which you qualify, plus easy access to accessories from our convenient home shopping network.

And most importantly you can count on our uncompromising commitment to your total satisfaction.

All of this is our way of saying welcome–and thanks for investing in a Philips product.

Sincerely,

Robert Minkhorst
President and Chief Executive Officer

P.S. Remember, to get the most from your Philips product, you must return your Warranty Registration Card within 10 days. So please mail it to us right now!

Know these safety symbols

CAUTION
RISK OF ELECTRIC SHOCK DO NOT OPEN
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

This "bolt of lightning" indicates uninsulated material within your unit may cause an electrical shock. For the safety of everyone in your household, please do not remove product covering.

The "exclamation point" calls attention to features for which you should read the enclosed literature closely to prevent operating and maintenance problems.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

CAUTION: To prevent electric shock, match wide blade of plug to wide slot, and fully insert.

For Customer Use
Enter below the Serial No. which is located on the rear of the cabinet. Retain this information for future reference.

Model No. _____

Serial No. _____

MAC5097

PHILIPS *Visit our World Wide Web Site at http://www.philipsusa.com*

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LASER SAFETY

This unit employs a laser. Due to possible eye injury, only a qualified service person should remove the cover or attempt to service this device.

USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

LASER	
Type	Semiconductor laser GaAlAs
Wave length	650 nm (DVD) 785 nm (VCD/CD)
Output Power	7 mW (DVD) 10 mW (VCD/CD)
Beam divergence	60 degree.

NEVER MAKE OR CHANGE CONNECTIONS WITH THE POWER SWITCHED ON.

CAUTION

VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN AVOID EXPOSURE TO BEAM (WARNING LOCATION: INSIDE ON LASER COVER SHIELD)

The region code for this set is 1.

Since it is usual for DVD movies to be released at different times in different regions of the world, all players have region codes and discs can have an optional region code. If you load a disc of a different region code to your player, you will see the region code notice on the screen. The disc will not play, and should be unloaded.

CLASS 1
LASER PRODUCT

For Customer Use:

Read carefully the information located at the bottom of your DVD-VIDEO player and enter below the Serial N°. Retain this information for future reference.

Model N°. DVD-VIDEO 950 Serial N°. _____

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

This symbol warns the user that uninsulated voltage within the unit may have sufficient magnitude to cause electric shock. Therefore, it is dangerous to make any kind of contact with any inside part of this unit.

This symbol alerts the user that important literature concerning the operation and maintenance of this unit has been included. Therefore, it should be read carefully in order to avoid any problems.

WARNING

To reduce the risk of fire or electric shock, do not expose this appliance to rain or moisture.

CAUTION

Use of controls or adjustments or performance of procedures other than herein may result in hazardous radiation exposure.

The set complies with the FCC-Rules, Part 15 and with 21 CFR 1040.10.

Canada

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the Radio Interference Regulations of the Canadian Department of Communications.

AVISO
RIESGO DE CHOQUE ELÉCTRICO
NO ABRIR

Atención: Para reducir el riesgo de choque elécrico, no quite la tapa (o el panel posterior). En su interior no hay piezas que el usuario pueda reparar. Para servicio dirijase a personal calificado.

Este símbolo tiene por finalidad advertir al usuario de la presencia de tensión peligrosa no aislada dentro de la caja del aparato, que puede ser lo suficientemente fuerte para constituir un peligro de choque eléctrico.

Este símbolo sirve para advertir al usuario de la presencia de instrucciones de manejo y mantenimiento (servicio) importantes en el manual que acompaña al aparato.

AVISO

Para reducir el riesgo de fuego o choque eléctrico, no exponga el aparato a la lluvia o humedad.

ATENCIÓN

El uso de mando o ajustes o la ejecucción de métodos que no sean los aquí descritos puede ocasionar peligro de exposición a radiación.

El aparato cumple las normas FCC, Parte 15 y 21 CFR 1040.10.

AVIS
RISQUE DE CHOCS ÉLECTRIQUES
NE PAS OUVRIR

Attention: Afin de prévenir le risque de chocs électriques, ne pas retirer les vis. Toute réparation devrait être confiée à un personnel qualifié.

Ce symbole indique la présence d'une tension suffisamment élevée pour engendrer un risque de chocs électriques.

Ce symbole indique que le manuel d'installation fourni avec l'appareil contient d'importantes recommandations quant au fonctionnement et à l'entretien de ce dernier.

AVIS

Afin de réduire tout risque d'incendie ou de choc électrique, il ne faut pas exposer cet appareil à la pluie ou à l'humidité.

ATTENTION

L'utilisation des commandes ou réglages ou le non-respect des procédures ci-incluses peuvent se traduire par une exposition dangereuse à l'irradiation.

L'appareil répond aux normes FCC, Part 15 et 21 CFR 1040.10.

Canada

Cet appareil numérique n'emet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de Class B prescrites dans le Règlement sur le Brouillage Radioélectrique édicté par le Ministère des Communications du Canada.

IMPORTANT SAFETY INSTRUCTIONS –

Read before operating equipment

This product was designed and manufactured to meet strict quality and safety standards. There are, however, some installation and operation precautions which you should be particularly aware of.

1. **Read these instructions** – All the safety and operating instructions should be read before the appliance is operated.
2. **Keep these instructions** – The safety and operating instructions should be retained for future reference.
3. **Heed all warnings** – All warnings on the appliance and in the operating instructions should be adhered to.
4. **Follow all instructions** – All operating and use instructions should be followed.
5. **Do not use this apparatus near water** – for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement or near a swimming pool, etc.
6. **Clean only with a damp cloth**. The appliance should be cleaned only as recommended by the manufacturer.
7. **Install in accordance with the manufacturers instructions. Do not block any of the ventilation openings**. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface or placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.
8. **Do not install near any heat sources** such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. **Do not defeat the safety purpose** of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. When the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

10. **Protect the power cord** from being walked on or pinched particulary at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. **Only use attachments/accessories** specified by the manufacturer.
12. **Use only with a cart,** stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. **Unplug this apparatus** during lightning storms or when unused for long periods of time.
14. **Refer all servicing** to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

EL 4562-E004: 99/3

LIMITED WARRANTY

DVD VIDEO PLAYER

90 Days Free Labor
One Year Exchange Warranty on Parts
This product must be carried in for repair.

WHO IS COVERED?

You must have proof of purchase to receive warranty service. A sales receipt or other document showing that you purchased the product is considered proof of purchase.

WHAT IS COVERED?

Warranty coverage begins the day you buy your product. *For 90 days thereafter*, all parts will be repaired or replaced, and labor is free. *From 90 days to one year from the day of purchase*, all parts will be repaired or replaced, but you pay for all labor charges. *After one year from the day of purchase*, you pay for the replacement or repair of all parts, and for all labor charges.

All parts, including repaired and replaced parts, are covered only for the original warranty period. When the warranty on the product expires, the warranty on all replaced and repaired parts also expires.

WHAT IS EXCLUDED?

Your warranty does not cover:

- labor charges for installation or setup of the product, adjustment of customer controls on the product, and installation or repair of antenna systems outside of the product.
- product repair and/or part replacement because of misuse, accident, unauthorized repair or other cause not within the control of Philips Consumer Electronics.
- reception problems caused by signal conditions or cable or antenna systems outside the unit.
- a product that requires modification or adaptation to enable it to operate in any country other than the country for which it was designed, manufactured, approved and/or authorized, or repair of products damaged by these modifications.
- incidental or consequential damages resulting from the product. (Some states do not allow the exclusion of incidental or consequential damages, so the above exclusion may not apply to you. This includes, but is not limited to, prerecorded material, whether copyrighted or not copyrighted.)
- a product that is used for commercial or institutional purposes (including but not limited to rental purposes).

WHERE IS SERVICE AVAILABLE?

Warranty service is available in all countries where the product is officially distributed by Philips Consumer Electronics. In countries where Philips Consumer Electronics does not distribute the product, the local Philips service organization will attempt to provide service (although there may be a delay if the appropriate spare parts and technical manual(s) are not readily available).

MAKE SURE YOU KEEP...

Please keep your sales receipt or other document showing proof of purchase. Attach it to this owner's manual and keep both nearby. Also keep the original box and packing material in case you need to return your product.

BEFORE REQUESTING SERVICE...

Please check your owner's manual before requesting service. Adjustments of the controls discussed there may save you a service call.

TO GET WARRANTY SERVICE IN U.S.A., PUERTO RICO OR U.S. VIRGIN ISLANDS...

Take the product to a Philips factory service center (see enclosed list) or authorized service center for repair. When the product has been repaired, you must pick up the unit at the center. Centers may keep defective parts.

(In U.S.A., Puerto Rico and U.S. Virgin Islands, all implied warranties, including implied warranties of merchantability and fitness for a particular purpose, are limited in duration to the duration of this express warranty. Because some states do not allow limitations on how long an implied warranty may last, this limitation may not apply to you.)

TO GET WARRANTY SERVICE IN CANADA...

Please contact Philips at:

1-800-661-6162 (French Speaking)
1-800-363-7278 (English Speaking)

(In Canada, this warranty is given in lieu of all other warranties. No other warranties are expressed or implied, including any implied warranties of merchantability or fitness for a particular purpose. Philips is not liable under any circumstances for any direct, indirect, special, incidental or consequential damages, howsoever incurred, even if notified of the possibility of such damages.)

REMEMBER...

Please record the model and serial numbers found on the product below. Also, please fill out and mail your warranty registration card promptly. It will be easier for us to notify you if necessary.

MODEL # _____
SERIAL # _____

This warranty gives you specific legal rights. You may have other rights which vary from state/province to state/province.

Philips Service Solutions Group, P.O. Box 2976, Longview, Texas 75606, (903) 242-4800

EL619IE003 / MAC 6058 / 12-98

Contents

Introduction

Entertainment for the new millennium

Video was never like this before! Digital video discs provide perfect digital, studio-quality pictures; with three dimensional digital, multi-channel audio, story sequences screened from your choice of camera angle; sound tracks in as many as eight languages; and up to 32 subtitles if available on disc. Whether you watch DVD-Video on wide-screen or regular TV, you always see it the way it was meant to be.

Digital video

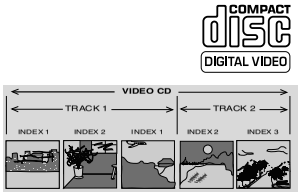
DVD-Video uses state-of-the-art MPEG2 data compression technology to register an entire movie on a single 5-inch disc. DVD's variable bitrate compression, running at up to 9.8 Mbits/second, captures even the most complex pictures in their original quality.
The crystal-clear digital pictures have a horizontal resolution of over 500 lines, with 720 pixels (picture elements) to each line. This resolution is more than double that of VHS, superior to Laser Disc, and entirely comparable with digital masters made in recording studios.
DVD-Video discs conform to either the PAL or NTSC video standard. This player can play both PAL and NTSC discs, presenting them in the best possible way on your multi-standard TV screen.
As the universal video system of the future, DVD-Video offers optimal pictures on any TV screen.

Introduction

Your Philips DVD-Video player will play digital video discs conforming to the universal DVD-Video standard. With it, you will be able to enjoy full-length movies with true cinema picture quality, as well as stereo or multi-channel sound (depending on the disc and your playback setup).
The unique features of DVD-Video, such as selection of sound track, subtitle languages and different camera angles (again depending on the disc), are all included. What's more, Philips Child Lock lets you decide which discs your children will be able to see.
In addition to DVD-Video discs, you will be able to play all Video CDs and Audio CDs (including finalized CD Recordable and CD Rewritable). You will find the On-Screen Display, player display, and remote control make the player easy to use. The manual provides all information you will need, so read on!

DVD-Video

You will recognize DVD-Video discs by the logo shown on left.
Depending on the material on the disc (a movie, video clips, a drama series, etc.) the disc may have one or more Titles. Each Title may have one or more Chapters. To make playback easy and convenient, your player lets you select Titles and playback Chapters.



Video CD

You will recognize Video CDs by the logo shown at left.
Depending on the material on the disc (a movie, video clips, a drama series, etc.) the disc may have one or more tracks. Tracks may have one or more indexes, as indicated on the disc case. To make playback easy and convenient, your player lets you select tracks and indexes.

Audio CD

Audio CDs contain music tracks only.
You will recognize CDs by their logo which is shown at left.
You can play them in conventional style through a stereo system, using the keys on the remote control and/or front panel, or via the TV using the On-Screen Display (OSD).

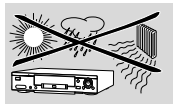
Unpacking

First check and identify the contents of your DVD-Video player package. You should have the following items.
- DVD-Video player
- Remote Control with two AA batteries
- A/C power cord
- Audio/Video cord
- S-Video cord
- Instructions for use

If any item is damaged or missing, contact your retailer or Philips.

Keep the packaging materials; you may need them to transport your player in the future.

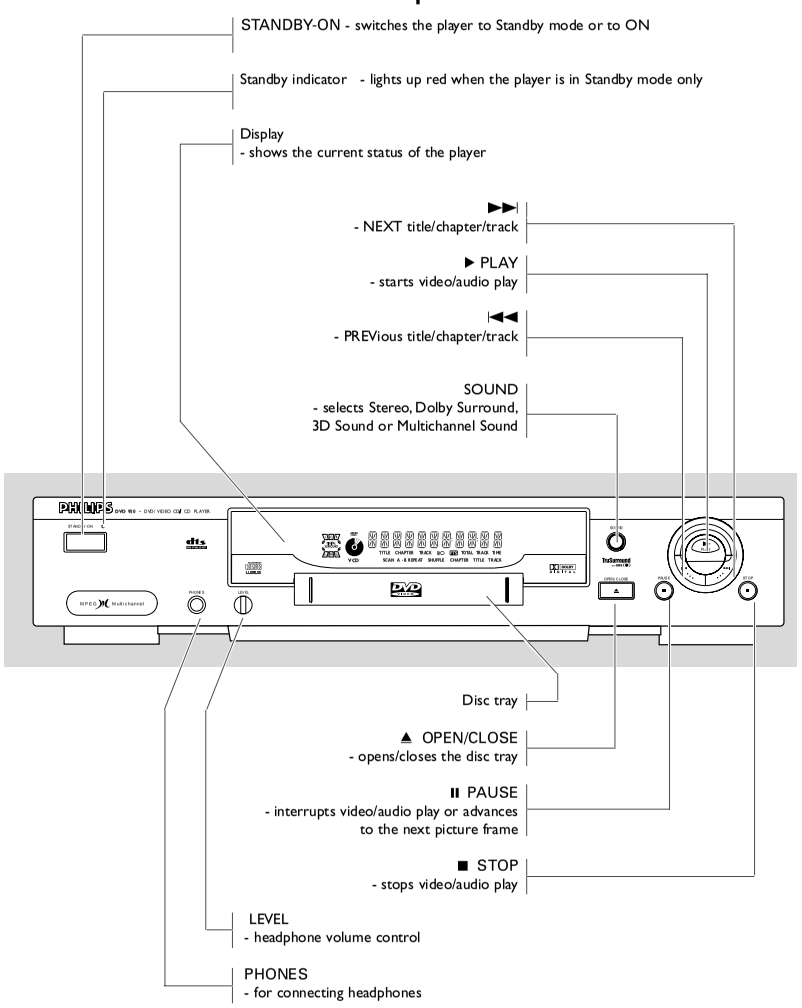
Placement



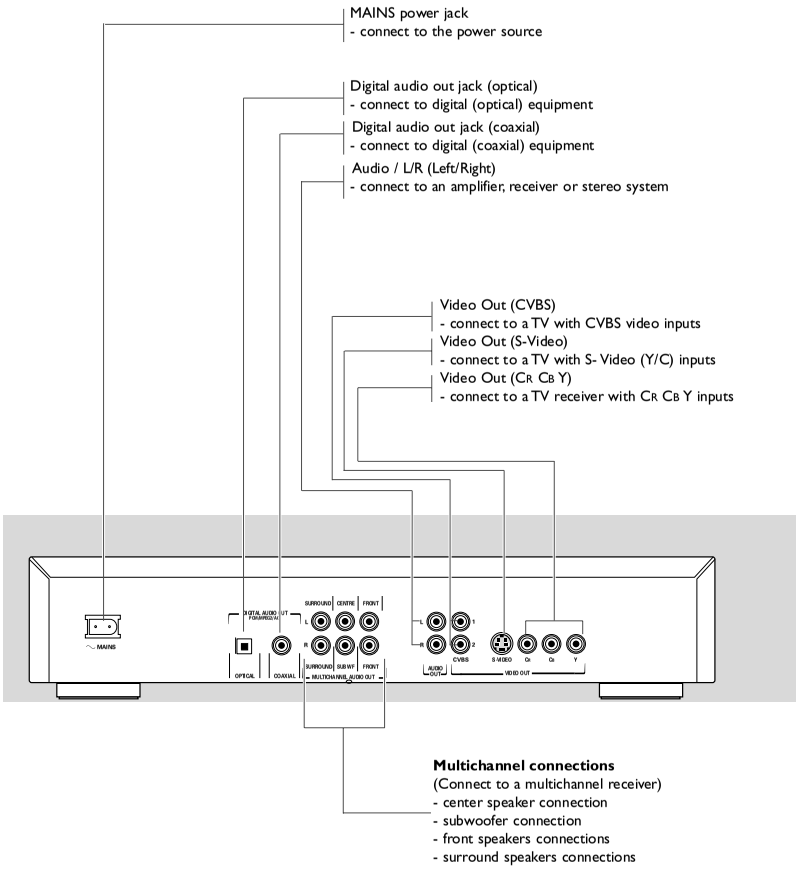
- Place the player on a firm, flat surface.
- Keep the player away from domestic heating equipment and direct sunlight.
- In a cabinet, allow about 2.5 cm (1 inch) of free space all around the player for adequate ventilation.
- If the DVD-Video player cannot read CDs/DVDs correctly, use a commonly available cleaning CD/DVD to clean the lens before taking the DVD-Video player to be repaired. Other cleaning methods may destroy the lens. Always keep the tray closed to avoid dust on the lens.
- The lens may cloud over when the DVD-Video player is suddenly moved from cold to warm surroundings. Playing a CD/DVD is not possible then. Leave the DVD-Video player in a warm environment until the moisture evaporates.

Functional overview

Front panel



Rear panel

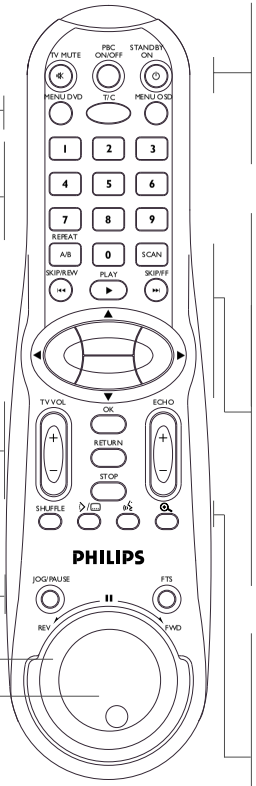


Caution: Do not touch the inner pins of the jacks on the rear panel connectors. Electrostatic discharge may cause permanent damage to the unit.

Display

- Front (left and right) speakers active
- Center speaker active
- Test tone active
- Active audio format
- Surround (left and right) speakers active
- Subwoofer active
- DVD disc inserted
- (V)CD disc inserted
- Indicates current player function: Play, Pause, Search, etc.
- DVD TITLE number
- DVD CHAPTER number
- VCD/CD TRACK number
- TRACK TIME in hours, minutes and seconds
- TOTAL TIME in hours, minutes and seconds
- REPEAT CHAPTER/TITLE/TRACK active
- Remote control active (flashing)
- FTS active
- SCAN active
- REPEAT A-B active
- SHUFFLE active

Remote control



MENU DVD
- access menu of a DVD

T/C
- mode selector title/chapter

MENU OSD
- access or remove On-screen display

0-9 numerical key pad

TV VOL +/-
- Volume up/down

OK
- acknowledge menu selection

RETURN
- go back to previous menu

■
- stop

CH +/-
- search channel forward/backward

FTS
- FTS active

PAUSE
- pause playback temporarily

SHUTTLE
- alternative fast forward and rewind

JOG
- frame-by-frame playback

STANDBY-ON

PBC ON/OFF

TV MUTE
- DVD-mode: selects Stereo, Dolby Surround, 3D Sound reproduction
- TV-mode: mute ON/OFF

REPEAT
- repeat chapter, track, title, disc

REPEAT A-B
- repeat sequence

SCAN
- playback of the first 10 seconds of each chapter within a title (DVD) or the first 10 seconds of each track on a disc (VCD/CD)

|◄◄
- skip/rewind

►
- play

►►|
- skip/fast forward

◄ ► ▲ ▼
- (left/right/up/down) cursor movement

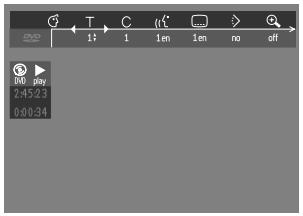
SHUFFLE
- playback tracks in random order

/
- select DVD camera angle /
- subtitle language selector

- audio language selector

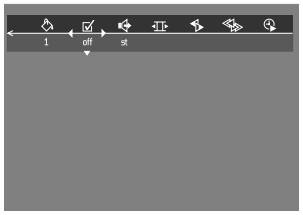
- enlarge video image

On-screen display information



Menu bar/Status window

- User preference
- Title/Track
- Chapter/Index
- Audio language
- Subtitle language
- Angle
- Zoom
- Video Program
- Color Setting
- Sound
- Picture by Picture
- Slow motion
- Fast motion
- Time search



Status window icons

The status window displays the current status of the player and appears with the first part of the menu bar. (You must activate this in the Features Menu, see Personal Preferences for details).

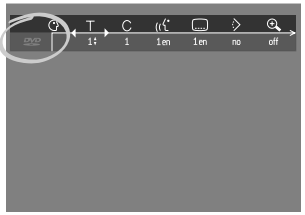
General

Disc type

Tray status

Default screen

The default screen is displayed when the player is in STOP mode.
It may contain a 'Status Window' and a 'Temporary Feedback Field'. This screen gives information concerning prohibited actions, playback modes, available angles, etc.



Temporary Feedback Field icons

Scan

Repeat All

Repeat Title

Repeat Track

Repeat Chapter

Shuffle

Shuffle Repeat

Repeat A to end

Repeat A-B

Angle

Child Lock On

Child Safe

Resume

Action prohibited

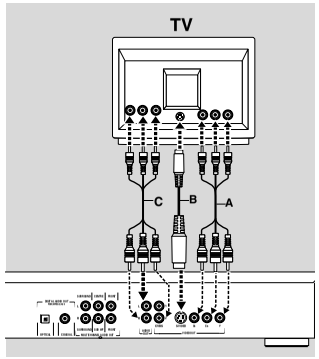
Preparation

General notes

- Depending on your TV and other equipment you wish to connect, there are various ways you could connect the player. Possible connections are shown in the following drawings.
  Please refer to the manuals of your TV, VCR, Stereo System or other devices as necessary to make the best connections.
- Do not connect your DVD-player via your VCR. The video quality could be distorted by the copy protection system.
- For better sound reproduction, connect the player's audio out jacks to the audio in jacks of your amplifier, receiver, stereo or A/V equipment. See 'Connecting to optional equipment'.

Caution: Do not connect the player's audio out jack to the phono in jack of your audio system.

Connect to a TV



Component Video (Y C_R C_B) connection

1 Connect the C_R, C_B, Y jacks on the DVD-player to the corresponding jacks on the TV (cable not included) ***(A)***.
2 Connect the audio Left and Right out jacks to the audio left/right in jacks on the TV ***(C)***.

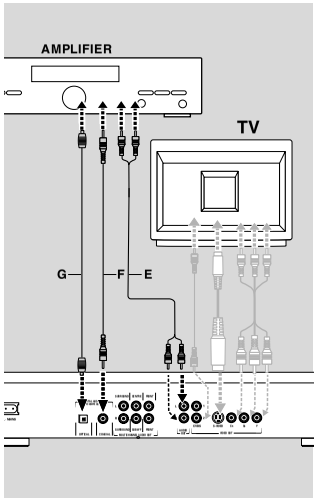
S-Video (Y/C) connection

1 Connect the S-Video jack on the DVD-player to the S-Video in jack on the TV using an optional S-Video cable ***(B)***.
2 Connect the audio Left and Right out jacks to the audio left/right in jacks on the TV ***(C)***.

Video CVBS connection

1 Connect the Video out (CVBS) jack to the video in jack on the TV using the audio/video cable supplied ***(C)***.
2 Connect the audio Left and Right out jacks to the audio left/right in jacks on the TV.

Connecting to optional equipment



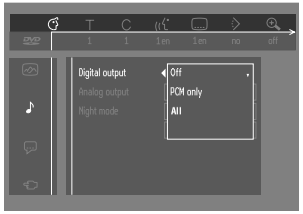
Connecting to an amplifier equipped with two channel analog stereo

- Connect the audio Left and Right out jacks of the DVD player to the audio left and right on your amplifier, receiver or stereo system, using the optional audio cable ***(D)***.

Connecting to an amplifier equipped with two channel digital stereo (PCM)

1 Connect the player's digital audio out jack (optical ***F*** or coaxial ***E***) to the corresponding in jack on your amplifier.
Use an optional digital (optical ***F*** or coaxial ***E***) audio cable. (not supplied)
2 You will need to activate the player's digital output (see 'Personal Preferences').

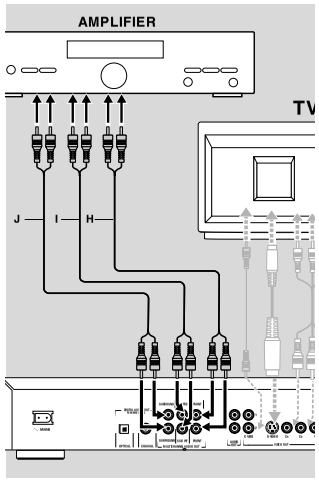
Connecting to an A/V receiver equipped with a multi-channel decoder (Dolby, MPEG 2 and DTS)



Digital Multi-channel sound
Digital multi-channel connection provides the best sound quality. For this you need a multi-channel A/V receiver that supports one or more of the audio formats supported by your DVD player (MPEG 2, Dolby Digital (AC3) and DTS). Check the receiver manual and the logos on the front of the receiver.

1 Connect the DVD-player's digital audio output (optical ***F*** or coaxial ***E***) to the corresponding input on the receiver using an optional digital (optical ***F*** or coaxial ***E***) audio cable. (not supplied)
2 You will need to activate the player's digital output (see 'Personal Preferences').

Note: If the audio format of the digital output does not match the capabilities of your receiver, the receiver will produce a strong, distorted sound or no sound at all. The selected audio format of the DVD is displayed in the Status Window when the Menu OSD is activated or Audio button is activated.
Six Channel Digital Surround Sound via digital connection can only be obtained if your receiver is equipped with a Digital Multi-channel decoder.
To see the selected audio format of the current DVD in the Status Window, press the MENU OSD or the Audio Language selector button.



Analog connection to a multi-channel A/V receiver with 6 CH connectors

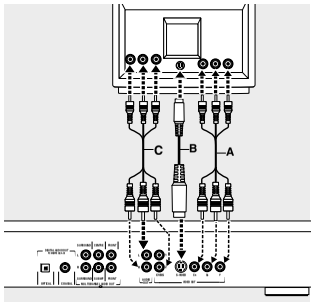
This DVD player contains a multi-channel decoder. This enables playback of DVDs recorded in Multi-channel Surround without the need for an optional decoder.

1 Connect the audio out jacks for Center speaker and Subwoofer connection ***(H)*** to the corresponding in jacks on your receiver.
Note: If the subwoofer is equipped with its own amplifier, the Subwoofer connection should be connected to the subwoofer directly.

Connect the audio Left and Right out jacks for Front speaker connection ***(G)*** to the corresponding in jack sockets on your receiver.

Connect the audio Left and Right out jacks for Surround speaker connection ***(I)*** to the corresponding in jacks on your receiver.

2 Make the appropriate Sound settings for Analog Output and Speaker Settings in the Personal Preferences menu.



Connecting to an amplifier equipped with Dolby Surround™

Dolby Surround sound

1 Connect the player to the TV, then connect the player's audio Left and Right out jacks to the corresponding in jacks on the Dolby Surround™ Audio/Video receiver, using the audio/video cable supplied ***(C)***.

If your amplifier is equipped with a Dolby Digital™ decoder,

- Connect the player as described in 'Connecting to an A/V receiver with multi-channel decoder'.

If your TV is equipped with a Dolby Surround™ decoder,

- Connect the player to the TV as described in 'Connecting to a TV'.

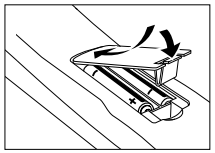
Connecting the power cord

1 Plug the female end of the supplied power cord into the Mains jack on the rear of the player.
2 Connect the other end of the cord to an AC outlet.

Note: When the player is in the "STANDBY" mode, it is still consuming some power. If you wish to disconnect your player completely from the power, unplug the power cord from the AC outlet.

Caution: Only qualified service personnel should remove the cover or attempt to service this device.

Remote control battery installation



Loading the batteries

1 Open the battery compartment cover.
2 Insert two 'AA' batteries as indicated inside the battery compartment.
3 Close the cover.

Caution: Do not mix old and new batteries. Never mix different types of batteries (standard, alkaline, etc.)

NTSC/PAL Settings

You can switch the NTSC/PAL setting of the DVD player to match the video signal of your TV. This setting only affects the television's on-screen display that shows the stop and setup modes. You may select either NTSC or PAL. To change the DVD player setting to PAL or NTSC, follow the steps below.

1 Unplug the DVD player from the mains.
2 Press and hold ■ and ►►| on the front of the DVD player. While holding ■ and ►►|, plug in the mains.
3 After PAL or NTSC appears on the display panel of the DVD player, release ■ and ►►| at the same time. The PAL or NTSC that appears on the display panel indicates the current setting.
4 To change the setting, press ►►| within three seconds. The new setting (PAL or NTSC) will appear on the display panel.

General explanation

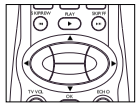
About this manual

This manual gives the basic instructions for operating this DVD player. Some DVDs require specific operation or allow only limited operation during playback. In these cases, the player may not respond to all operating commands. When this occurs, please refer to the instructions contained with the DVD. When the symbol ✕ appears on the TV screen, the operation is not permitted by the player or the disc.

Remote control operation

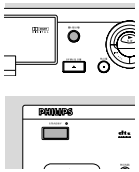
- Unless otherwise stated, all operations can be carried out with the remote control. Always point the remote control directly at the player, making sure there are no obstructions in the path of the infrared beam.
  When there are corresponding keys on the front panel of the player, they can also be used.

Menu bar operation



- A number of operations can be carried out via the menu bar on the screen. The menu bar can be accessed by pressing any of the following keys on the remote control: MENU OSD, T, C, Angle, Audio Language, Subtitle Language and Zoom.
- The following functions are available via the menu bar:
  - User preference
  - Title/Track
  - Chapter/Index
  - Audio language
  - subtitle language
  - Angle
  - Zoom
  - Color Setting
  - Video Program
  - Sound
  - Picture by Picture
  - Slow motion
  - Fast motion
  - Time search
- The various items can be selected by pressing the **MENU OSD** button, then the ▼/▲ keys or by pressing the relevant keys on the remote control.
- Pressing **MENU OSD** while the menu bar is displayed will clear the menu bar from the screen.
- When selecting an item in the menu bar, the selected item will be highlighted and the appropriate cursor keys to operate this item will be displayed below the icon.
- < or > indicates that more items are available at the left/right of the menu bar. Press ◀ or ▶ to select these items.

Turning On the power



1 Switch on the TV and select the video in jack channel for your DVD-Video player.
2 Press **STANDBY-ON** or any other button
➤ The player display lights , and the 'Initial Setup Screen' appears.

The 'Initial Setup' will only appear the very first time you turn on the player. In 'Initial Setup', you may have to set your personal preferences for some of the player's most relevant items. See 'Initial Setup'.

Initial Setup

General

In 'Initial Setup' you may have to set your preferences for some of the player features.

Manual Operation

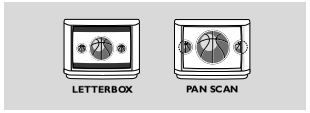
After switching on the player for the very first time, the 'Initial Setup Screen' will appear.
The menu for the first item to be set is displayed and the first option is highlighted.

- Use the ▼▲ keys to go through the options in the menu.
  The icon of the selected option will be highlighted.
- Use **OK** to confirm your selection and to go to the next menu.

Automatic setting:

When settings will be taken over from your TV or Home Cinema system, the message 'Auto configuring in process' will appear.
Menus for which no settings are available will be displayed. They have to be set manually.

Note: Preferences have to be set in the order in which the item menus will appear on the screen.
The 'Initial Setup' screen will only disappear after the settings for the last item have been confirmed.
If any keys other than ▼▲ or **OK** *are pressed, ✕ will appear on the screen.*
If the player is switched off while setting personal preferences, all preferences have to be set again after switching the player on again.



The following items may have to be set in Initial Setup:
Menu language

The On Screen Menus will be displayed in the language you choose. You can choose from different languages.

Audio language

The sound will be in the language you choose if it is available on the disc in play. If the language you select is not available, speech will revert to the first spoken language on the disc. You can choose from different languages.

Subtitle language

The subtitles will be in the language you choose if it is available on the disc in play. If the language you select is not available, subtitles will revert to the first subtitle language on the disc. You can choose from 16 different languages.

TV Shape

If you have a wide screen (16:9) TV, select 16:9.
If you have a regular (4:3) TV, select 4:3.
If you have a 4:3 TV, you can also select between:
Letterbox for a 'wide-screen' picture with black bars top and bottom, or Pan Scan, for a full-height picture with the sides trimmed. If a disc has Pan Scan, the picture then moves (scans) horizontally to keep the main action on the screen.

Country

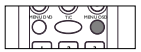
Select your country. This also is used as input for the 'Parental Control' feature. (see 'Access Control')

Note: All these items may have to be set during 'Initial Setup'. After that, they can always be changed in the Personal Preferences Menu.

Personal preferences

You can set your personal preferences for some of the player features.

General operation:



- Press **MENU OSD** on the remote control.
- Select in the menu bar.
  ➤ The Personal Preferences menu appears.
- Use the ◄►▼▲ keys to toggle through the menus, sub menus and submenu options.
  ➤ When a menu item is selected, the cursor keys (on the remote control) to operate the item are displayed next to the item.
- Press **OK** to confirm and return to the main menu.

The following items can be adapted:

Picture

- **TV Shape**
  See 'Initial Setup'

Features

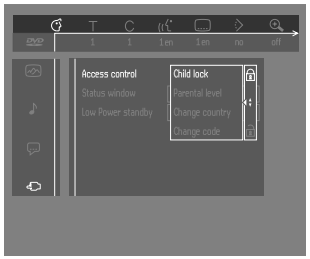
- **Access Control**
  Access Control contains the following features:
  Child Lock - When Child Lock is set to ON, a 4-digit code needs to be entered in order to play discs.
  Parental control - Allows the conditional presentation of DVDs containing Parental Control information. (see 'Access Control')

- **Status Window**
  Displays the current status of the player and is displayed with the menu bar. When disc playback is stopped, it is displayed with the 'Temporary Feedback Field' in the default screen. See 'On Screen Display information;
  Factory setting is ON. Select OFF to suppress display of the Status Window.

- **Low power Standby**
  If this is set to ON, the player will go in low-power standby when the standby button is pressed (front panel or remote control).

Access control; child lock (DVD and VCD)

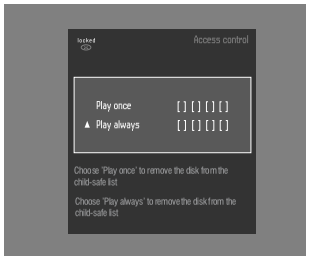
Activating/deactivating the child lock



1. When disc playback is stopped, select **ACCESS CONTROL** in the features menu using the ▼/▲ keys.
2. Enter a 4-digit code of your own choice.
3. Enter the code a second time.
4. Move to Child lock using the ▼/▲ keys.
5. Move to **LOCK/UNLOCK** icons using the ► key.
6. Select **LOCK** icon using the ▼/▲ keys.
7. Press **OK** or ◄ to confirm, then press ◄ again to exit the menu.
   ➤ Now unauthorized discs will not be played unless the 4-digit code is entered.
8. Select **UNLOCK** icon to deactivate the Child Lock.

Note: Confirmation of the 4-digit code is necessary when:
- The code is entered for the very first time (see above);
- The code is changed (see 'Changing the 4-digit code');
- The code is cancelled (see 'Changing the 4-digit code');

Authorizing discs



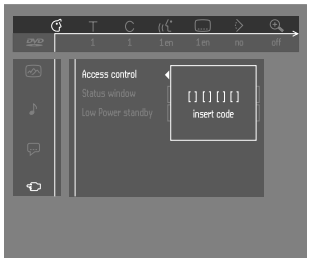
- Insert the disc. See 'Loading disc'.
  ➤ The 'child protect' dialog will appear.
  You will be asked to enter your secret code for 'Play Once 'or 'Play Always.' If you select 'Play Once', the disc can be played as long as it is in the player and the player is ON. If you select 'Play Always', the disc will become child safe (authorized) and can always be played, even if the Child Lock is set to ON.

Notes: The player memory maintains a list of 50 authorized ('Child safe') disc titles. A disc will be placed in the list when 'Play Always' is selected in the 'child protect' dialog. Each time a 'child safe' disc is played, it will be placed on top of the list. When the list is full and a new disc is added, the last disc in the list will be removed from the list.
Double sided DVDs may have a different ID for each side. In order to make the disc 'child safe', each side has to be authorized.
Multi-volume VCDs may have a different ID for each volume. In order to make the complete set 'child safe', each volume has to be authorized.

Deauthorizing discs

- Insert the disc. See 'Loading disc'.
  ➤ Playback starts automatically.
- Press ■ while ☺ is visible.
  ➤ The ☹ will appear and the disc is now deauthorized.

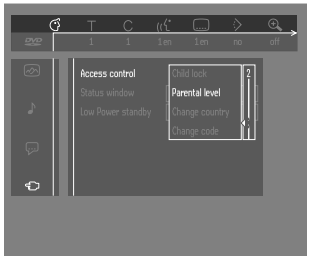
Access control; Parental control (DVD-Video only)



Movies on DVDs may contain scenes not suitable for children. Therefore, disc may contain 'Parental Control' information which applies to the complete disc or to certain scenes on the disc. These scenes are rated from 1 to 8, and alternative, more suitable scenes are available on the disc. Ratings are country dependent. The 'Parental Control' feature allows you to prevent discs from being played by your children or to have certain discs played with alternative scenes.

Activating/Deactivating Parental Control

1 When disc playback is stopped, select **ACCESS CONTROL** in the Features menu using the ▼/▲ keys.
2 Enter your 4-digit code. If necessary, enter the code a second time.
3 Move to Parental Control using the ▼/▲ keys.
4 Move to **VALUE ADJUSTMENT** (1-8) using the ▶ key.
5 Then use the ▼/▲ keys or the numerical keys on the remote control to select a rating from 1 to 8 for the disc inserted.



Rating 0 (displayed as '– –'):
Parental Control is not activated. The Disc will be played in full.

Ratings 1 to 8:
The disc contains scenes not suitable for children. If you set a rating for the player, all scenes with the same rating or lower will be played. Higher rated scenes will not be played unless an alternative is available on the disc. The alternative must have the same rating or a lower one. If no suitable alternative is found, play will stop and the 4-digit code has to be entered.

6 Press **OK** or ◀ to confirm, then press ◀ again to exit the menu.

Country

1 When disc playback is stopped, select **ACCESS CONTROL** in the Features menu using the ▼/▲ keys.
2 Enter the 4-digit code.
3 Move to **CHANGE COUNTRY** using the ▼ key.
4 Press the ▶ key.
5 Select a country using ▼/▲.
6 Press **OK** or ◀ to confirm, then press ◀ again to exit the menu.

Changing the 4-digit code

1 When disc playback is stopped, select **ACCESS CONTROL** in the Features menu using the ▼/▲ keys.
2 Enter the old code.
3 Move to **CHANGE CODE** using the ▼ key.
4 Press the ▶ key.
5 Enter the new 4-digit code.
6 Enter the code a second time and reconfirm by pressing **OK**.
7 Press ◀ to exit the menu.

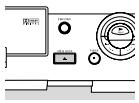
Note: If you forget your 4 digit code, it can be cancelled by pressing ■ four times in the 'Access Control' dialog. You can then enter a new code (twice!) as described above.

Parental Control Disclaimer

"This DVD player features the PARENTAL CONTROL system which is intended to activate when playing DVD discs furnished with certain software coding made. This is according to technical standards adopted by the set maker and disc content industries.
Please note that the PARENTAL CONTROL system will not activate to the extent a DVD disc is not furnished with the appropriate software coding. Also note that at the time of release of this DVD player, certain aspects of the said technical standards had not been fully settled among set maker and the disc content industries.
On this basis Philips cannot warrant functioning of the PARENTAL CONTROL system and disclaims any liability of unintended watching of disc contend.
If in doubt, please check system functioning with the disc before you allow children access or apply to the relevant disc publisher."

Operation

Loading discs



1 Press **OPEN/CLOSE** on the front of the player. The disc tray opens.
2 Load your chosen disc in the tray, label side up (also when a double sided DVD is inserted). Make sure it is sitting properly in the correct recess.
3 Gently push the tray, or press **OPEN/CLOSE**, to close the tray.

➤ READ appears in the status window and on the player display, and playback starts automatically.

Note: If 'Child Lock' is set to ON and the disc inserted is not in the 'child safe' list (not authorized), the 4-digit code must be entered and/or the disc must be authorized. (see 'Access Control')

Playing a DVD-video disc

Playing a title

➤ After inserting the disc and closing the tray, playback starts automatically and the status window and the player display show the type of disc loaded, as well as information about the disc's contents and playing time.
The disc may invite you to select an item from a menu. If the selections are numbered, press the appropriate numerical key; if not, use the ▼/▲, ◀/▶ keys to highlight your selection, then press **OK**.
➤ The currently playing title and chapter number are displayed in the menu bar and the player display.
The elapsed playing time is shown in the status window and the player display.

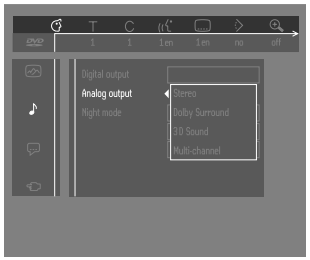
- If required, you can use the **Sound** key to select Stereo, Dolby Surround, 3D-Sound or Multichannel.
  Play may stop at the end of the Title, and the player may in return to the DVD menu. To go on to the next title, press ▶.
- To stop play at any other time, press ■.
  ➤ The default screen will appear, giving information about the current status of the player.
- You can resume play from the point at which you stopped play. Press ▶; when you see the Resume icon I▶ on the screen, press ▶ again.
  ➤ The RESUME feature applies not only to the disc in the player, but also to the last four discs you have played. Simply reload the disc, press ▶; when you see the Resume icon I▶ on the screen , press ▶ again.

Note: Since it is usual for DVD movies to be released at different times in different regions of the world, all players have region codes. Discs can have an optional region code. If you load a disc of a different region code into your player, you will see the region code notice on the screen. The disc will not play and should be removed from the player.

Playing a Video CD

Playing a disc

- After inserting the disc and closing the tray, playback starts automatically and the status window and the player display show the type of disc loaded, as well as information about the disc's contents and playing time.
- The disc may invite you to select an item from a menu. If the selections are numbered, press the appropriate numerical key.
- The currently playing track number is displayed in the menu bar and the player display. The elapsed playing time is shown in the status window and the player display.



- If required, you can use the **SOUND** key to select Stereo, Dolby Surround, 3D-Sound or Multichannel.
- To stop play at any time, press ■.
  ➤ The default screen will then appear.
- You can resume play from the point at which you stopped play. Press ▶; when you see the Resume icon on the screen I▶, press ▶ again.
  The RESUME feature applies not only to the disc in the player, but also to the last four discs you have played. Simply reload the disc, press ▶; when you see the Resume on the screen icon I▶, press ▶ again.

General features

Note: Unless stated otherwise, all operations described are based on remote control operation. A number of operations can also be carried out via the menu bar on the screen. (see 'Menu bar operation')

Moving to another title/TRACK

When a disc has more than one title or track (which you can see from both the menu bar and the player display), you can move to another title as follows:

- Press T (title), then press ▶I briefly during play to select the next title/track.
- Press T (title), then press I◀ briefly during play to return to the beginning of the current title/track. Press I◀ briefly to step back to the previous title/track.

Moving to another chapter/index

When a title on a disc has more than one chapter or a track has more than one index (which you can see from the player display and on the menu bar), you can move to another chapter/index as follows:

- Press ▶I briefly during play to select the next chapter/index.
- Press I◀ briefly during play to return to the beginning of the current chapter/index. Press I◀ **twice** briefly to step back to the previous chapter/index.
- To go directly to any chapter or index, select C (chapter), then enter the title number using the numerical keys **(0-9)**.

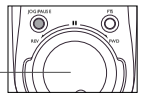
Note: If the number has more than one digit, press the keys in rapid succession.

Slow Motion

- Select ⏴ (Slow motion) in the menu bar.
- Use the ▼ keys to enter the Slow Motion menu.
  - ➤ The player will now go into PAUSE mode.
- Use the cursor keys ◄ ► to select the required speed: -1, -1/2, -1/4 or -1/8 (backward), or +1/8, +1/4, +1/2 or +1 (forward).
- Select 1 to play at normal speed again.
- If **II** is pressed, the speed will be set to 0.
- To exit slow motion mode, press ► or ▲.

You can also select Slow Motion speeds by using the ▷ button on the remote control.

Still Picture and Frame-by-frame playback



- Select ⏴ (picture by picture) in the menu bar.
- Use the ▼ key to enter the picture by picture menu.
  - ➤ The player will now go into PAUSE mode.
- Use the cursor keys ◄ ► to select the previous or next picture frame.
- To exit Picture by picture mode, press ► or ▲.

You can also step forward by pressing **II** repeatedly on the remote control.

Search

- Select ⏩ (Fast motion) in the menu bar.
- Use the ▼ keys to enter the Fast Motion menu.
- Use the ◄ ► keys to select the required speed: -32, -8 or -4 (backward), or +4, +8, +32 (forward).
- Select 1 to play at normal speed again.
- To exit Fast Motion mode, press ► or ▲.

To search forward or backward through different speeds, you can also hold down ◄◄ or ►►.

Repeat

DVD-Video Discs - Repeat chapter/title/disc

- To repeat the currently playing chapter, press **REPEAT**.
  - ➤ **REPEAT CHAPTER** appears on the player display.
- To repeat the currently playing title, press **REPEAT** a second time
  - ➤ **REPEAT TITLE** appears on the display.
- To repeat the entire disc, press **REPEAT** a third time
  - ➤ **REPEAT** appears on the display.
- To exit Repeat mode, press **REPEAT** a fourth time.

Video CDs - Repeat track/disc

- To repeat the currently playing track, press **REPEAT**.
  - ➤ **REPEAT TRACK** appears on the player display.
- To repeat the entire disc, press **REPEAT** a second time.
  - ➤ **REPEAT** appears on display and screen.
- To exit Repeat mode, press **REPEAT** a third time.

Repeat A-B

To repeat a sequence in a title:

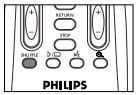
- Press **REPEAT A-B** at your chosen starting point;
  - ➤ **A-** appears briefly on the screen.
- Press **REPEAT A-B** again at your chosen end point;
  - ➤ **A-B REPEAT** appears briefly on the display, and the repeat sequence begins. (**A-B REPEAT** is displayed on the front panel of the player)
- To exit the sequence, press **REPEAT A-B**.

Scan

Plays the first 10 seconds of each chapter/index on the disc.

- Press **SCAN**.
- To continue play at your chosen chapter/index, press **SCAN** again or press ►.

Shuffle



DVD-Video discs

This shuffles the playing order of chapters within a title, if the title has more than one.

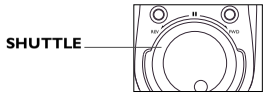
- Press **SHUFFLE** during play.
  - ➤ SHUFFLE appears on the screen for about 2 seconds.
- To return to normal play, press **SHUFFLE** again.

Video CDs

This shuffles the playing order of the tracks, if the disc has more than one.

- Press **SHUFFLE** during play.
  - ➤ SHUFFLE appears on the screen for about 2 seconds.
- To return to normal play, press **SHUFFLE** again.

Shuttle

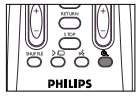


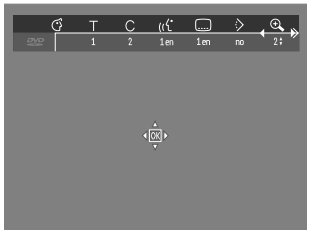
- As an alternative, the SHUTTLE knob, can be used to search forwards or backwards.
- Turning the SHUTTLE knob will allow you to return to PLAY (same as pressing ►).

Time search

The Time Search function allows you to start playing at any chosen time on the disc.

- Select ⏲ (Time Search) in the menu bar.
- Press ▼.
  - ➤ The player will now go into **PAUSE** mode.
  - ➤ A time edit box appears on the screen, showing the elapsed playing time of the current disc.
- Use the digit keys to enter the required start time. Enter hours, minutes and seconds from right to left in the box.
  - ➤ Each time an item has been entered, the next item will be highlighted.
- Press **OK** to confirm the start time.
  - ➤ The time edit box will disappear and play starts from the selected time position on the disc.





Zoom

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

- Select (Zoom) in the menu bar.
- Press ▼/▲ to activate the ZOOM function and select the required zoom factor: 1.33 or 2 or 4.
  - ➤ The player will go into Pause mode.
  - ➤ The selected zoom factor appears below the Zoom icon in the menu bar and *'Press OK to pan'* appears below the menu bar.
  - ➤ The picture will change accordingly.
- Press **OK** to confirm the selection.
  - ➤ The panning icons appear on the screen: ▲ ▼ ◄ ► and **OK**.
- Use the ▲ ▼ ◄ ► keys to pan across the screen.
- When **OK** is pressed only the zoomed picture will be shown on the screen.
- If you wish to zoom at any moment, press (Zoom) and select the required zoom factor as described above.
- To exit Zoom mode:
  – Press ►.
  - ➤ Playback will resume.
  – Press **STOP**, **MENU OSD**.

FTS-Video

- The FTS-Video function allows you to store your favorite titles and chapters (DVD) and favorite tracks and indexes (VCD) for a particular disc in the player memory.
- Each FTS program can contain 20 items (titles, chapters).
- Each time an FTS program is played it will be placed on top of the list. When the list is full and a new program is added, the last program in the list will be removed from the list.
- The selections can be called up and played at any time.

Storing a FTS-Video Program

- In STOP mode, select **Video FTS** ☑ in the menu bar.
- Press ▼ to open the menu.
  - ➤ The **Video FTS** menu appears.
- Press ◄ or ► or **FTS** to select **ON** or **OFF**.

Storing titles/tracks

- Press ▼ to select **TITLES**.
- Use ► and ◄ to select the required title.
- Press **OK** if you wish to store the entire title.
  - ➤ The title number will be added to the list of selections.

Storing chapters/indexes

- Press ▼ on the selected title number.
  - ➤ The title number will be marked and the highlight moves to the first available chapter number for this title.
- Use ► and ◄ to select the required chapter number.
- Press **OK** to confirm the selection.
  - ➤ The title/chapter selection will be added to the list of selections.
- Press **OK** or **MENU OSD** to exit the **Video FTS** ☑ menu.

Erasing a FTS-Video Program

- In STOP mode, select **Video FTS** ☑ in the menu bar.
- Use ▼ to select **PROGRAM**.
- Use ► and ◄ to select the required selection number.
- Press **OK** to erase the selection.
- Press **MENU OSD** to exit.

If you wish to erase all selections:

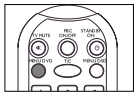
- In STOP mode, select **Video FTS** ☑ in the menu bar.
- Use ▼ to select **CLEAR ALL**.
- Press **OK**.
  - ➤ All selections will now be erased.
- Press **MENU OSD** to exit.

Special DVD-features

Checking the contents of DVD-Video discs: Menus

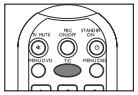
For titles and chapters, selection menus may be included on the disc. The DVD's menu feature allows you to make selections from these menus. Press the appropriate numerical key; or use the ▼, ▲, ►, ◄ keys to highlight your selection, then press **OK**.

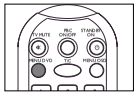
Title menus



- Press **MENU DVD**.
  - ➤ If the current title has a menu, the menu now will appears on the screen. If no menu is present in the title, the disc menu will be displayed.
- The menu can list camera angles, spoken language and subtitle options, and chapters for the title.
- To remove the title menu, press **MENU DVD** again.

Disc menu





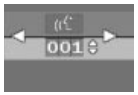
- Press T then press **MENU DVD**.
  - ➤ The disc menu is displayed.
- To remove the disc menu, press T, then press **MENU DVD**.

Camera Angle

If the disc contains sequences recorded from different camera angles, the angle icon appears, showing the number of available angles and the angle being shown currently. You can then change the camera angle if you wish.

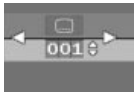
- Use the ▼/▲ keys to select the required angle in the angle icon.
  - ➤ After a small delay, play changes to the selected angle. The angle icon remains displayed until multiple angles are no longer available.

Changing the audio language



- Select (Audio) in the menu bar.
- Press or ▼/▲ repeatedly to see the different languages.

Subtitles



- Select (Subtitle) in the menu bar.
- Press or ▼/▲ repeatedly to see the different subtitles.

Special VCD-Features

Playback Control (PBC)

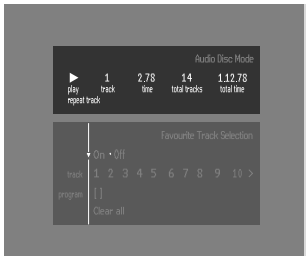
When PBC ON

- Press PBC ON/OFF to ON
- Load a Video CD with PBC and press ▶.
  ➤ The PBC menu appears on the TV screen.
- Go through the menu with the keys indicated on the TV screen until your chosen passage starts to play. If a PBC menu consists of a list of titles, you can select a title directly.
- Enter your choice with the numerical keys **(0-9)**.
- Press **RETURN** to go back to the previous menu.

When PBC OFF

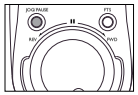
- Press PBC ON/OFF to OFF.
- Playback will resume when press ▶.
- The PBC menu does not appear on the TV screen.

Playing an audio CD



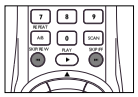
- After loading the disc, playback starts automatically.
- If the TV is on, the Audio CD screen appears.
- The number of tracks and the total playing time will be shown on the screen and on the player display.
- During play, the current track number and its elapsed playing time will be shown on the screen and on the player display.
- Playback will stop at the end of the disc.
- To stop play at any other time, press ■.

Pause



- Press **II** during play.
- To return to play, press ▶ .

Search

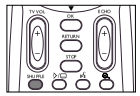


- To search forward or backward through the disc at four times normal speed, hold down ◀◀ or ▶▶ for about one second during play.
  ➤ Search begins, and sound is partially muted.
- To step up to eight times the normal speed, press ◀◀ or ▶▶ again.
  ➤ Search goes to eight times the speed, and the sound is muted.
- To return to four times the normal speed, press ◀◀ or ▶▶ again.
- If the TV is on, search speed and direction are indicated on the screen each time ◀◀ or ▶▶ is pressed.
- To end the search, press ▶ or ■ as desired.

Moving to another track

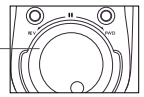
- Press ▶| briefly during play to go to the next track.
- Press |◀ briefly during play to return to the beginning of the current track. Press |◀ briefly again to step back to the previous track.
- To go directly to any track, enter the track number using the numerical keys **(0-9)**.

Shuffle



- Press **SHUFFLE** during play.
  ➤ The order of the tracks is changed.
- To return to normal play, press **SHUFFLE** again.

Shuttle



- As an alternative, the SHUTTLE knob, can be used to search forwards or backwards.
- Turning the SHUTTLE knob will allow you to return to PLAY (same as pressing ▶).

Repeat track/disc

- To repeat the currently playing track, press **REPEAT**.
  ➤ **REPEAT TRACK** appears on the display.
- To repeat the entire disc, press **REPEAT** a second time.
  ➤ **REPEAT** appears on the display.
- To exit Repeat mode, press **REPEAT** a third time.

Repeat A-B

To repeat a sequence:

- Press **REPEAT A-B** at your chosen starting point;
  ➤ **A-** appears briefly on the player display.
- Press **REPEAT A-B** again at your chosen end point;
  ➤ **A-B** appears briefly on the display, and the sequence begins to play repeatedly.
- To exit the sequence, press **REPEAT A-B** again.

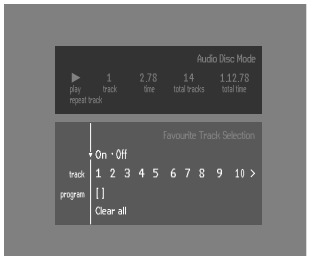
Scan

Plays the first 10 seconds of each track on the disc.

- Press **SCAN**.
- To continue play at your chosen track, press **SCAN** again or press ▶.

FTS (Favorite Track Selection)

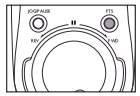
- The FTS feature allows you to store your favorite tracks for a particular disc in the player memory.
- Each FTS program can contain 20 tracks.
- Each time an FTS program is played it will be placed on top of the list. When the list is full and a new program is added, the last program in the list will be removed from the list.
- The selections can be called up and played at any time.



Storing an FTS Program

1 Load a disc and stop playback.
2 Use ▼ to go to the list of available tracks.
3 Use ◄ or ► to select tracks from the list.
To go directly to any track, enter the track number using the numerical keys **(0-9)**.
4 Store each track by pressing **OK**.
➤ The track numbers will be added to the list of selected tracks.
➤ The number of tracks and the playing time of the program will be shown on the screen and the player display.

When your FTS Program is complete, press ► to start play, or ▲ to go back to Stop mode. In either case, the FTS Program will be automatically memorized.



Switching FTS ON/OFF

1 Use ▲ ▼ to move to the top.
2 Use ◄ or ► to select either ON or OFF.

Erasing a track from an FTS-program

1 Use ▼ to go to the list of selected tracks.
2 Use ◄ and ► to select the track number you wish to erase.
3 Press **OK**.
➤ The track number will be erased from the list of selected tracks.

Erasing the complete program

● Use ▼ to select Clear All and press **OK**.
➤ The complete FTS program for the disc will be erased.

Before requesting service

If it appears that the DVD-Video player is faulty, first consult this checklist. It may be that something has been overlooked. Under no circumstances attempt to repair the system yourself; this will invalidate the warranty.

Look for the specific symptom(s). Then perform only the actions listed to remedy the specific symptom(s).

Symptom	Remedy
No power	Check if both plugs of the power cord are properly connected. Check if there is power at the AC outlet by plugging in another appliance.
No picture	Check if the TV is switched on. Check the video connection.
Distorted picture	Check the disc for fingerprints and clean with a soft cloth, wiping from center to edge. Sometimes a small amount of picture distortion may appear .This is not a malfunction.
Completely distorted picture or no color with player menu.	If the picture is distorted completely or if the picture rolls vertically, make sure the NTSC/PAL setting at the DVD player matches the video signal of your television. If your TV video signal is NTSC, select the NTSC setting at the DVD player. If your video signal is PAL, select the PAL setting.- see **NTSC/PAL SETTINGS**.
Distorted or Black/White picture with DVD or Video CD.	The disc format does not match your TV's video signal (PAL/NTSC).
No sound	Check audio connections. If you are using a HiFi amplifier, try another sound source.
Distorted sound from HiFi amplifier.	Check to make sure that no audio connections are made to the amplifier phono input.
No audio at digital output.	Check the digital connections. Check the settings menu to make sure the digital output is set to ALL or PCM. Check if the audio format of the selected audio language matches your receiver capabilities.
Disc can't be played.	Ensure the disc label is facing up. Clean the disc. Check if the disc is defective by trying another disc. Check to see if the disc is defective, badly scratched or warped (not flat)
No return to start-up screen when disc is removed.	Reset by switching the player off, then on again. Check to see if the program requires another disc to be loaded.
The player does not respond to the remote control.	Aim the remote control directly at the sensor on the front of the player. Remove any obstacles between the player and the remote control. Inspect or replace the batteries in the remote control.
Buttons do not work.	Set the player in standby by using the STANDBY button on the front of the player. Press standby-on again to set the player back to ON.
Player does not respond to all operating commands during playback.	Operations are not permitted by the disc. Refer to the instructions of the disc.

Cleaning discs

Some problems occur because the disc inside the player is dirty. To avoid these problems clean your discs regularly, in the following way:

- When a disc becomes dirty, clean it with a cleaning cloth. Wipe the disc from the center out.

Caution: Do not use solvents such as benzine, thinner, commercially available cleaners, or anti-static spray intended for analog discs.

Specifications

PLAYBACK SYSTEM

DVD-Video
Video CD
CD (CD-R and CD-RW)

OPTICAL READOUT SYSTEM

Lasertype	Semiconductor AlGaAs	
Numerical Aperture	0.60 (DVD)	
	0.45 (VCD/CD)	
Wavelength	650 nm (DVD)	
	780 nm (VCD/CD)	

DVD DISC FORMAT

Medium	Optical Disc	
Diameter	12cm (8cm)	
Playing time	One layer	2.15 h*
(12cm)	Dual layer	4 h*
	Two side	4.30 h*
	Single layer	
	Two side	8 h*
	Dual layer	

TV STANDARD	**EUROPE**	**USA**
	(PAL/50Hz)	(NTSC/60Hz)
Number of lines	625	525
Playback	Multistandard	(PAL/NTSC)

VIDEO FORMAT

DA Converter	10 bits
Signal handling	Components
Digital Compression	MPEG2 for DVD
	MPEG1 for VCD

DVD	**50Hz**	**60Hz**
Horiz. Resolution	720 pixels**	720 pixels**
Vertical Resolution	576 lines	480 lines

VCD

Horiz. Resolution	352 pixels**	352 pixels**
Vertical Resolution	288 lines	240 lines

VIDEO PERFORMANCE

Video output	1 Vpp into 75 ohm
S-Video output	Y: 1 Vpp into 75 ohm
	C: 0.300 Vpp into 75 ohm
Y	1 Vpp into 75 ohm
C_R	0.7 Vpp into 75 ohm
C_B	0.7 Vpp into 75 ohm
Black Level Shift	On/Off
Video Shift	Left/Right

AUDIO FORMAT

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

Analog Sound Stereo & Dolby Surround™
(VCD & downmix from multichannel sound)
Full decoding of multi-channel surround sound
3D Sound for visual 5.1 channel sound on 2 speakers

CONNECTIONS

S-Video Output	Mini DIN, 4 pin	
Video Output	Cinch (yellow)	
Component Video	Y	Cinch
	C_R	Cinch
	C_B	Cinch
Audio L+R output	Cinch (white/red)	
Audio Front Left/Right	Cinch (white/red)	
Audio Surround Left/Right	Cinch (white/red)	
Audio Centre	Cinch (blue)	
Audio Subwoofer	Cinch (black)	
Digital Output	1 coaxial, 1 optical	
	IEC958 for CDDA / LPCM	
	IEC1937 for MPEG1, MPEG2 and AC-3	
	DTS	
Headphone	6.5 mm Jack	

CABINET

Dimensions (w x h x d)	435 x 88 x 315 (inch)
Weight	4 Kg

PACKAGE CONTENTS

DVD-Video Player
Universal Remote Control
Power cord
User Manual
S-Video cord
Audio/Video cord

GENERAL FUNCTIONALITY

Stop / Play / Pause
Fast Forward / Backward (3-speed)
Time search
Step Forward / Backward (on Virtual Jog/Shuttle)
Slow (3-speed on Virtual Jog/Shuttle)
Title / Track Select
Skip Next / Skip Previous
Repeat (Chapter / Title / All) or (Track / All)
A-B Repeat
Shuffle
Scan
Enhanced ("One OSD") menus
Perfect Still with digital multi-tap filter
Zoom (xl.33, x2. x4) with picture enhancement
3D Sound
Per speaker setting of Volume, Delay, Range

DVD FUNCTIONALITY

Multi-angle Selection
Audio Selection (1 out of max. 8 languages)
Subtitles Selection (1 out of max. 32 languages)
Aspect Ratio conversion (16:9, 4:3 Letterbox, 4:3 Pan Scan)
Parental Control and Disk lock
Disc Menu support (Title Menu and Root Menu)
Resume (5 discs) after stop / standby
Screen Saver (Dim 75% after 15 min.)
Programming Titles/chapters with Favorite Selection

VIDEO CD FUNCTIONALITY

Playback Control for VCD 2.0 discs
Disc lock
Resume (5 discs) after stop / standby
Screen Saver (Dim 75% after 15 min.)
Programming Tracks with Favorite Selection

AUDIO CD FUNCTIONALITY

Time Display (Total / Track / Remaining Track Time)
Full audio functionality with remote control
Programming with Favorite Track Selection

* typical playing time for movie with 2 spoken languages and 3 subtitle languages.
** equivalent to 500 lines on your TV

4. Service hints

4.1 DVD-Module 218

The DVD module(Basic Engine and the mono board) has to be exchanged completely in case of failure. A new module for DVD950/171 can be ordered with codenumber 3104 129 52560.
Return the defective unit complete assembled in original package to Philips Consumer Service in Eindhoven

4.2 Diagnostic software

In chapter “Diagnostic software” some tests are refering to the SCART functionality.
These tests are for sets with RGB-output.

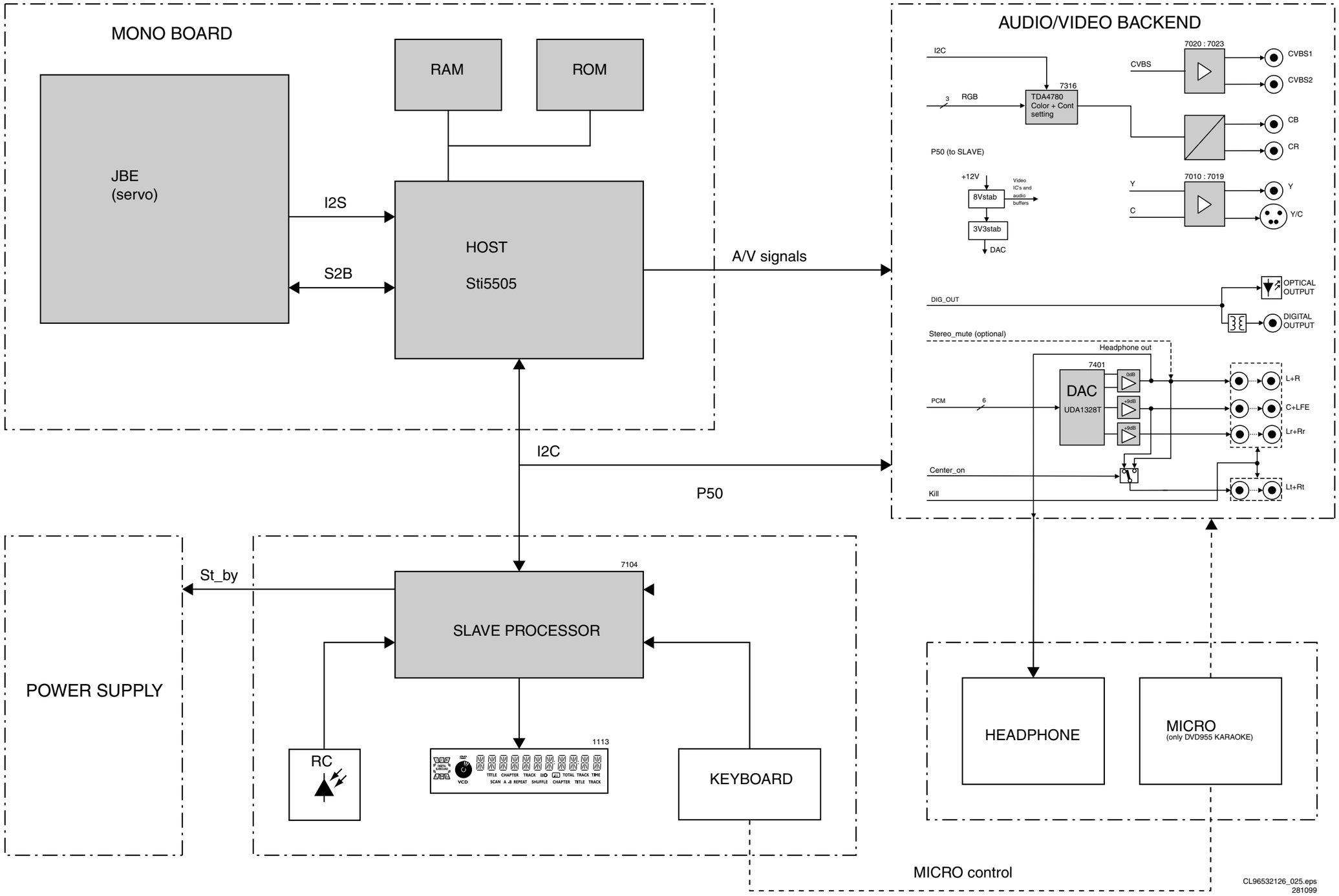
For sets without RGB-output no SCART connector is mounted.
In these sets the SCART tests will automatically be skipped

4.3 Power Supply options

3122 427 21750		**3122 427 21370**		**3122 427 21760**	
110V USA		220V Europe China		Multi voltage A/P	
2261	CAP 330pF	2121	ELCO 100µF 385V	2261	CAP 330pF
2121	ELCO 150µF 250V			2121	ELCO 150µF 400V
3133	Resistor 10MΩ				

5. Block and wiringdiagram, dismantling, exploded view and oscillograms

Blockdiagram



Dismantling instructions

DISMANTLING INSTRUCTIONS

See exploded view for item numbers

Cover 151
⇒ Remove 7 screws 233
⇒ Lift cover at rearside to remove

mounting ↑ ↓ demounting

Front assy 1
⇒ remove 2 screws 212 (front 1 →frame 213)
⇒ unlock front from frame by releasing successively 3 snaps(on the left, in the middle and on the right)
⇒ put front assy in front of the set(service position)

Display board 1002
⇒ Remove 7 screws 203 (board → front), pay attention to earth spring 300.
⇒ demount board

Headphone board 1006
⇒ Remove volume knob by pulling it forward
⇒ remove 3 screws 209 (board →front)
⇒ demount board

Standby board 1003 and switch assy
⇒ Remove 2 screws 25 → 26(board→ front)
⇒ demount board
⇒ Remove 1 screw 207
⇒ Take out switch assy

DVD MODULE 218
⇒ Remove connections to Mono board
⇒ remove 4 screws 217 (loader bracket 2 → frame 213)
⇒ demount module

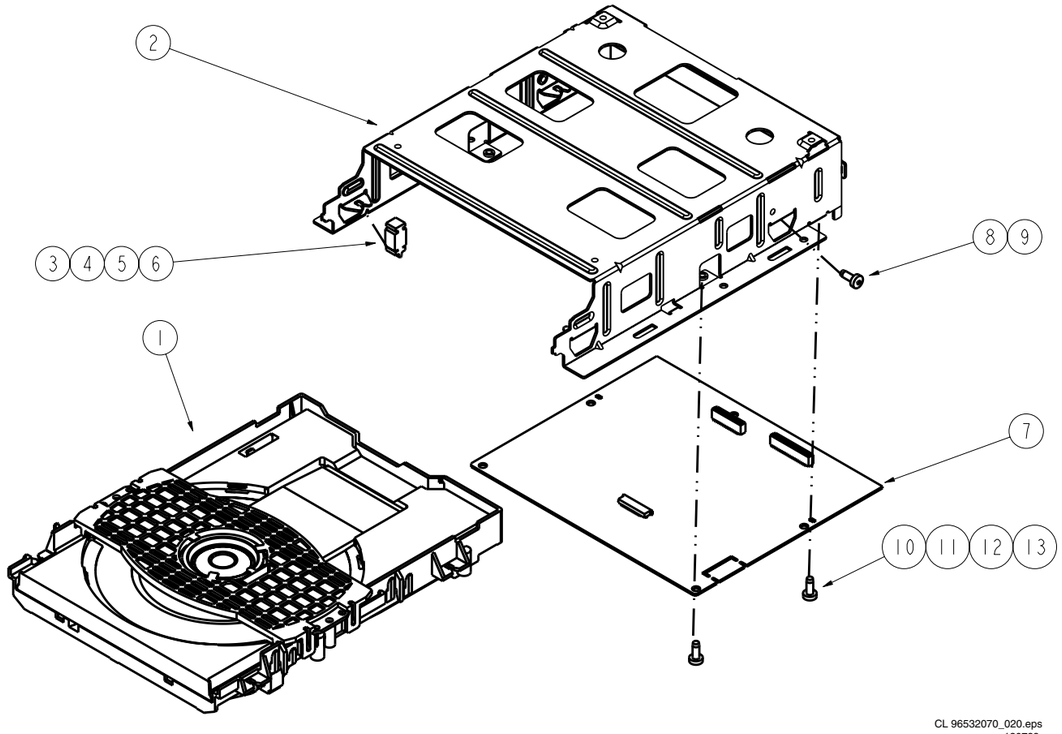
DVD MONO Board 7
⇒ See also exploded view of DVD module
⇒ Remove flex connections to turntabel motor and sledge motor.
⇒ remove 4 screws 10 → 13(mono board 7 → loader bracket 2)
⇒ remove carefully flex connection to OPU and wire connection to tray motor.
⇒ demount board.

LOADER VAL3000 1
⇒ Remove 2 screws 8, 9
⇒ Remove 4 suspensions 3 → 6 from loader bracket

A/V board 1002
⇒ remove flex connections to Mono board
⇒ remove 7 screws 227
⇒ release snaps of 2 spacers 221
⇒ demount board

Power supply unit 1005
⇒ remove connections
⇒ remove 2 screws 222 (board→frame)
⇒ remove screw 225 (mains inled→backplate)
⇒ release snaps of spacers 226 (board→frame)
⇒ demount board

Exploded view DVD MODULE 218



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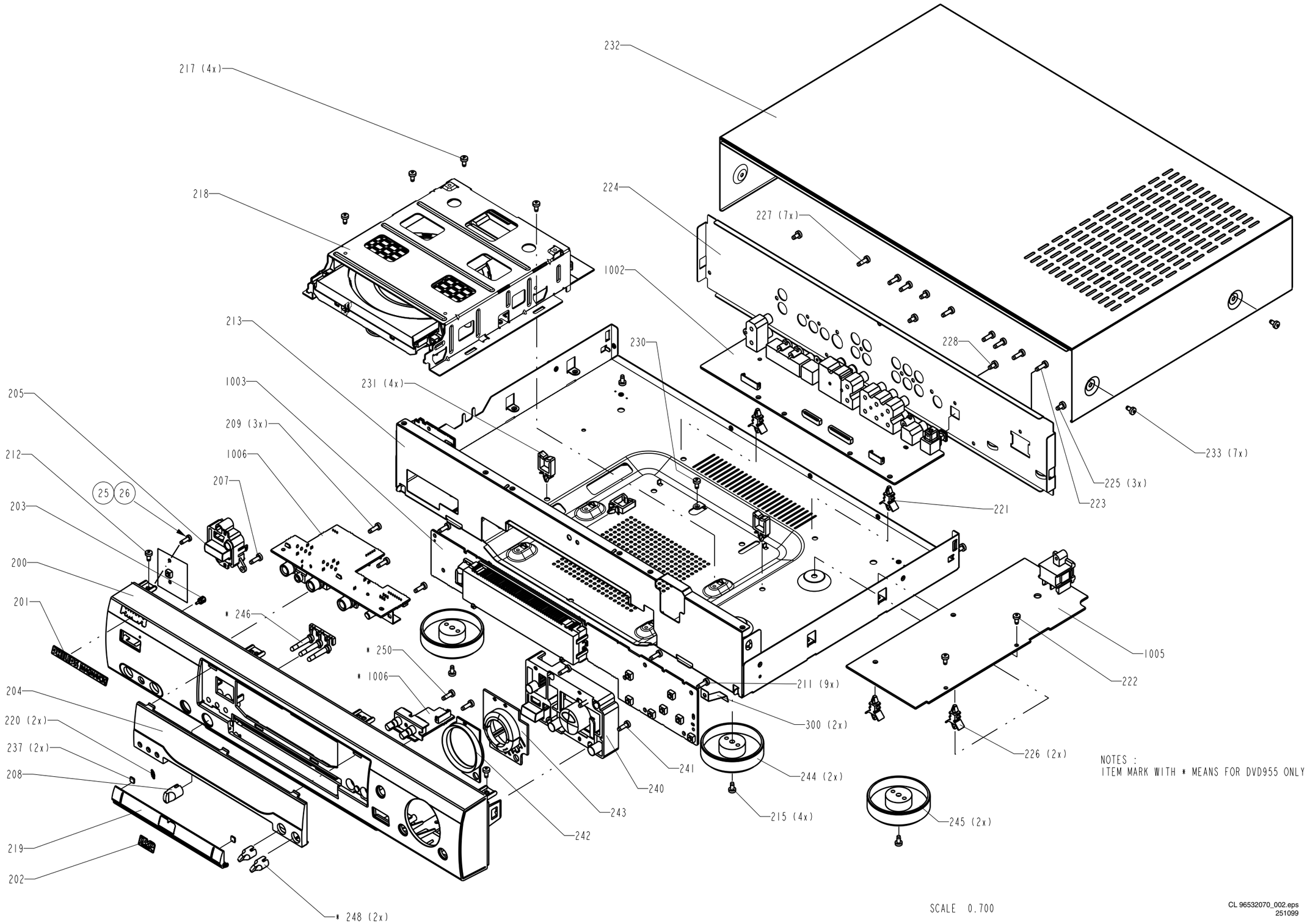
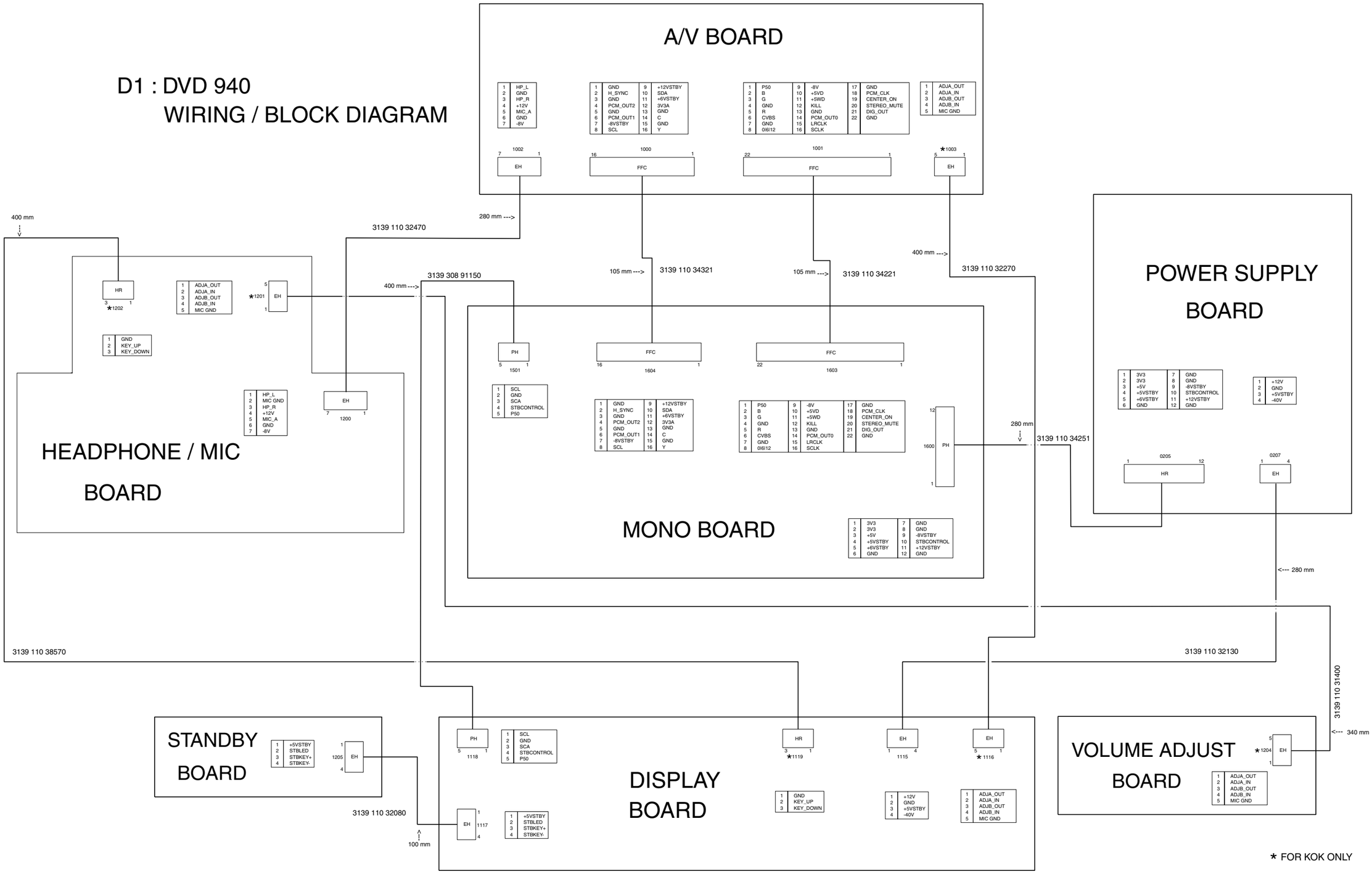
Exploded view



Wiringdiagram

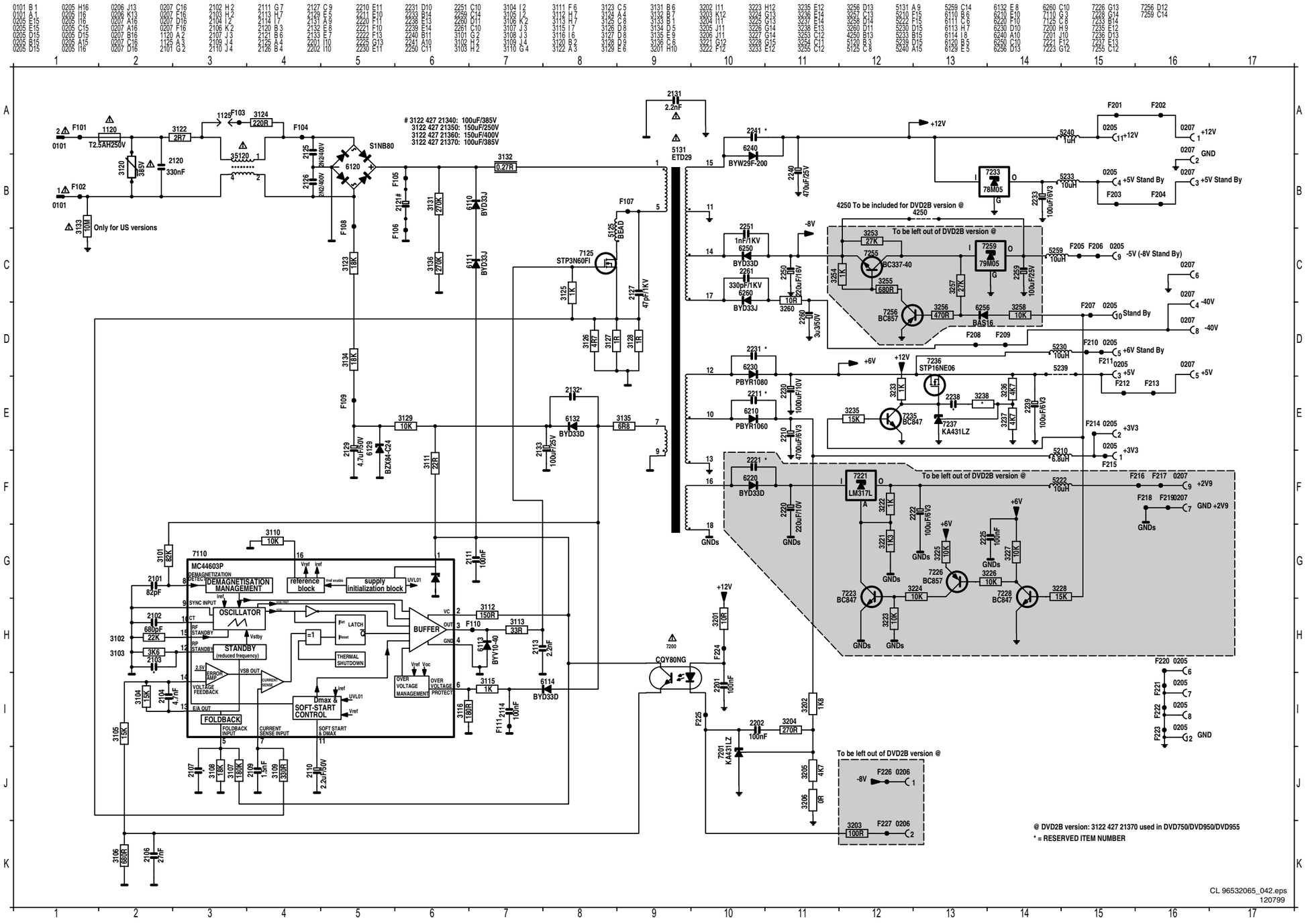


6. Electrical diagrams and Print-layouts

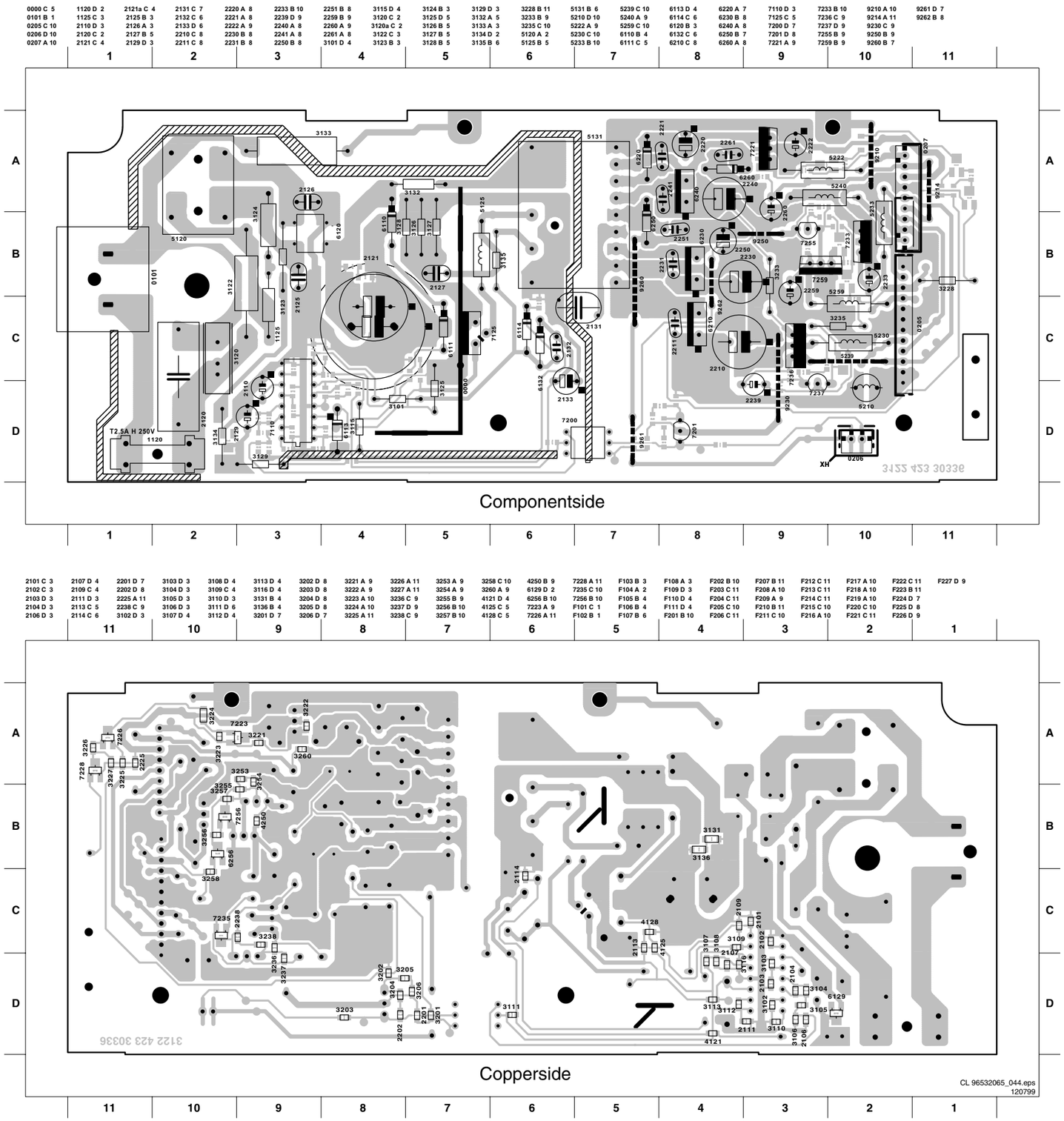
Personal notes:

Power supply

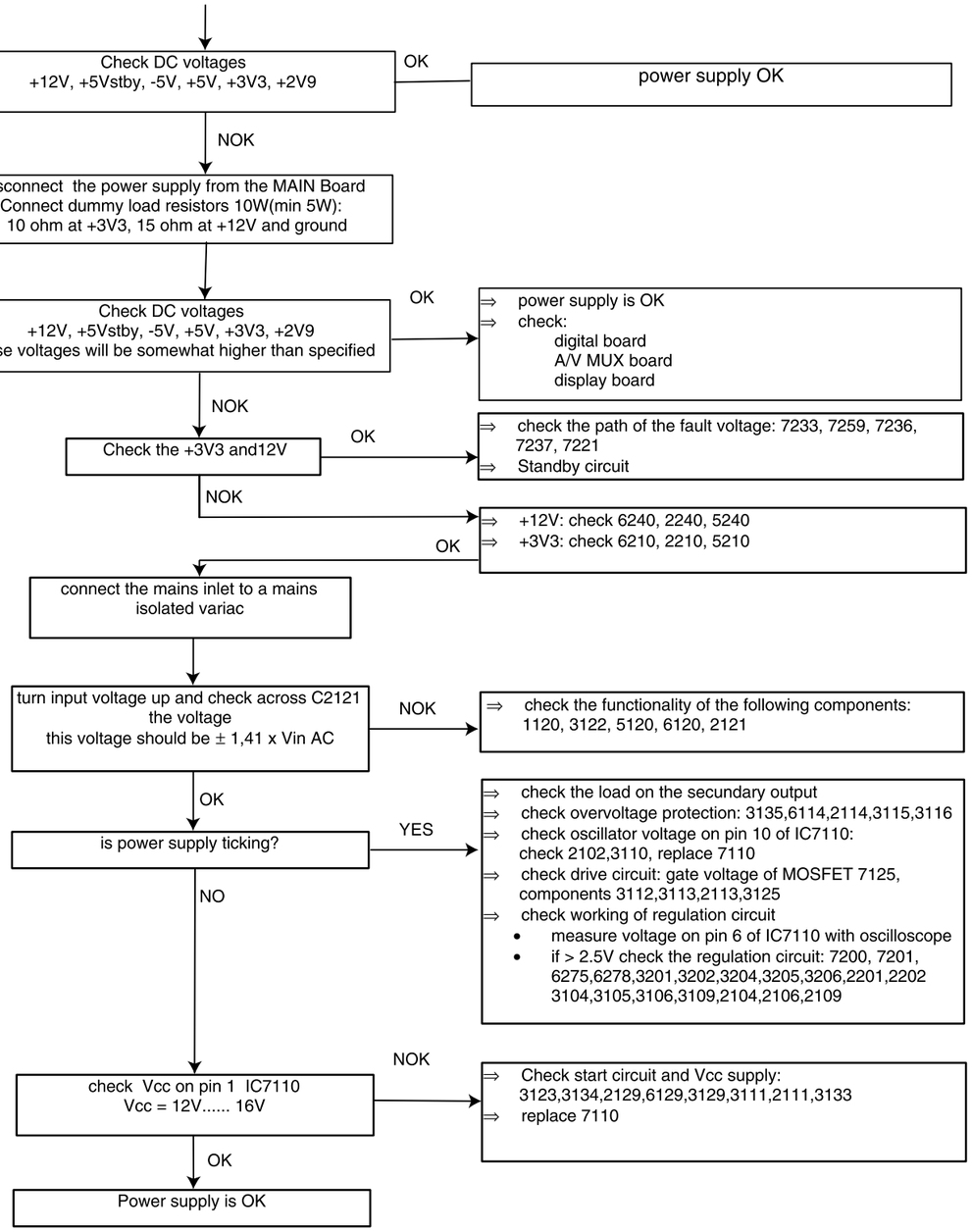
POWER SUPPLY 20PS203



Power supply



TROUBLESHOOTING POWER SUPPLY UNIT 20PS203



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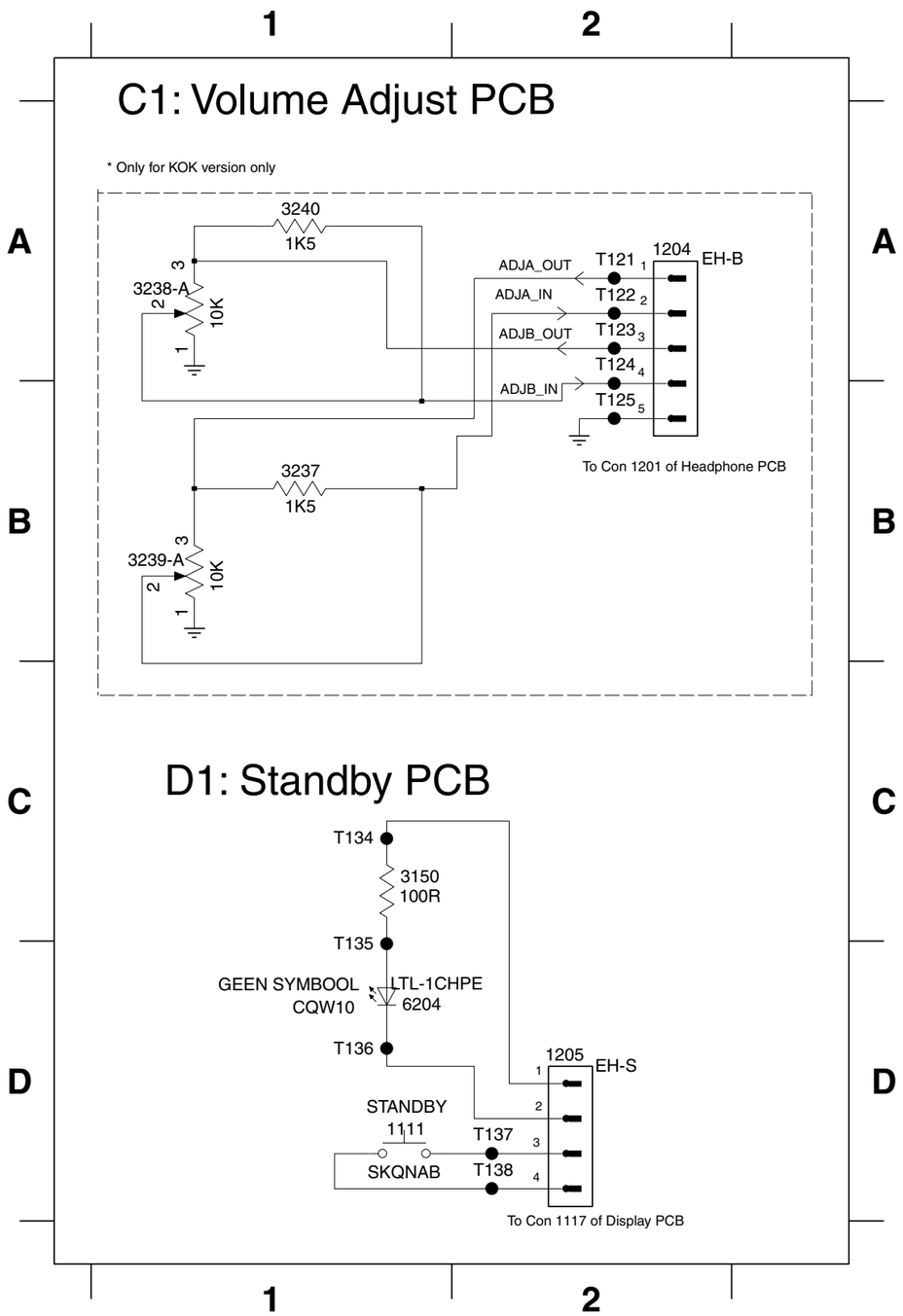
Personal notes:

Volume / Standby PWB



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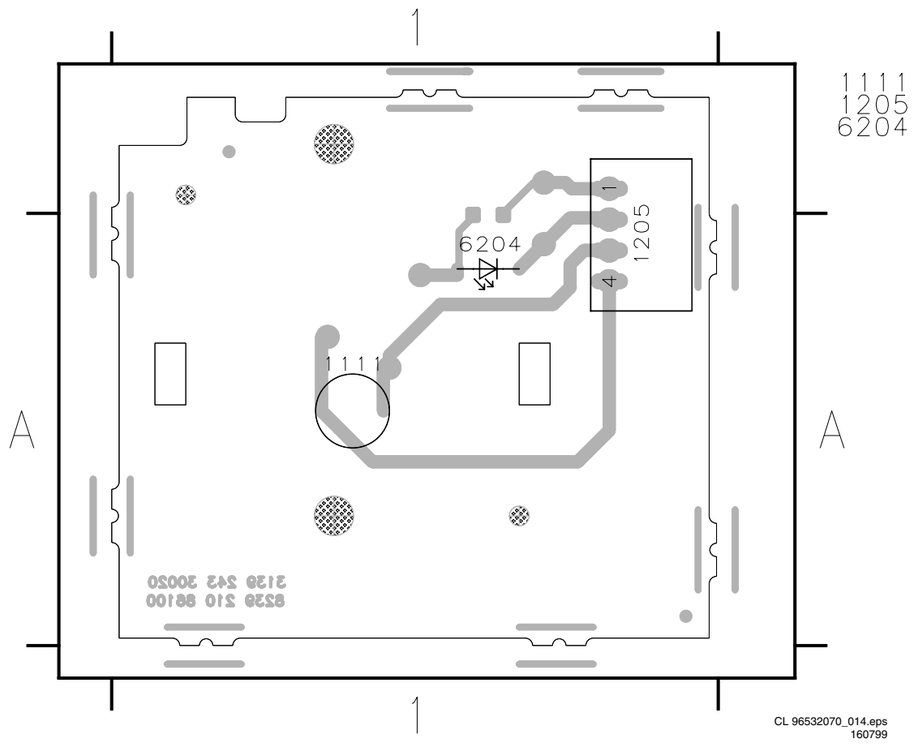
1111 D1
1204 A2
1205 D2
3150 C1
3237 B1
3238-A A1
3239-A B1
3240 A1
6204 D1
T121 A2
T122 A2
T123 A2
T124 A2
T125 B2
T134 C1
T135 D1
T136 D1
T137 D2
T138 D2



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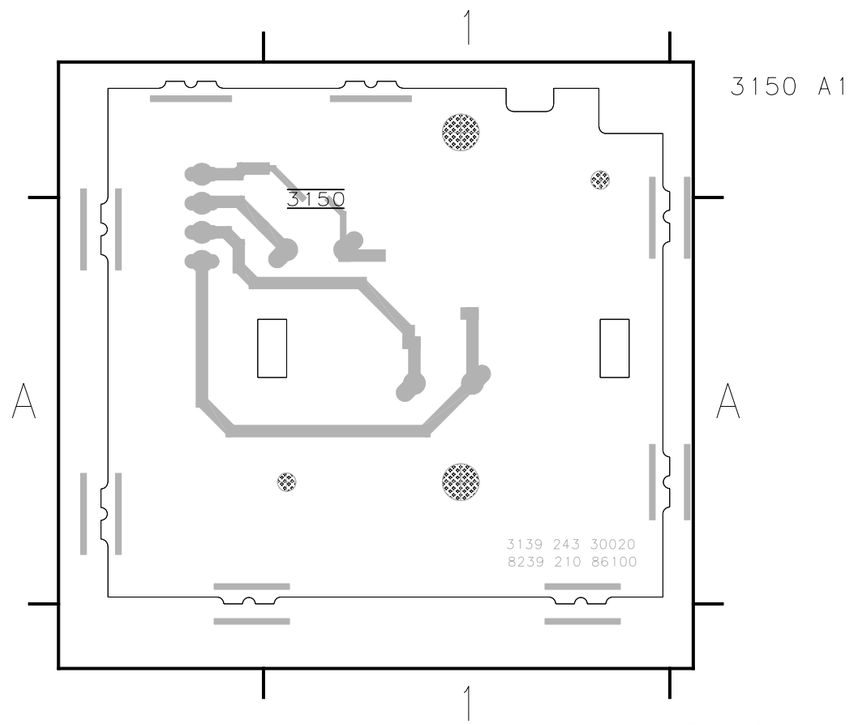

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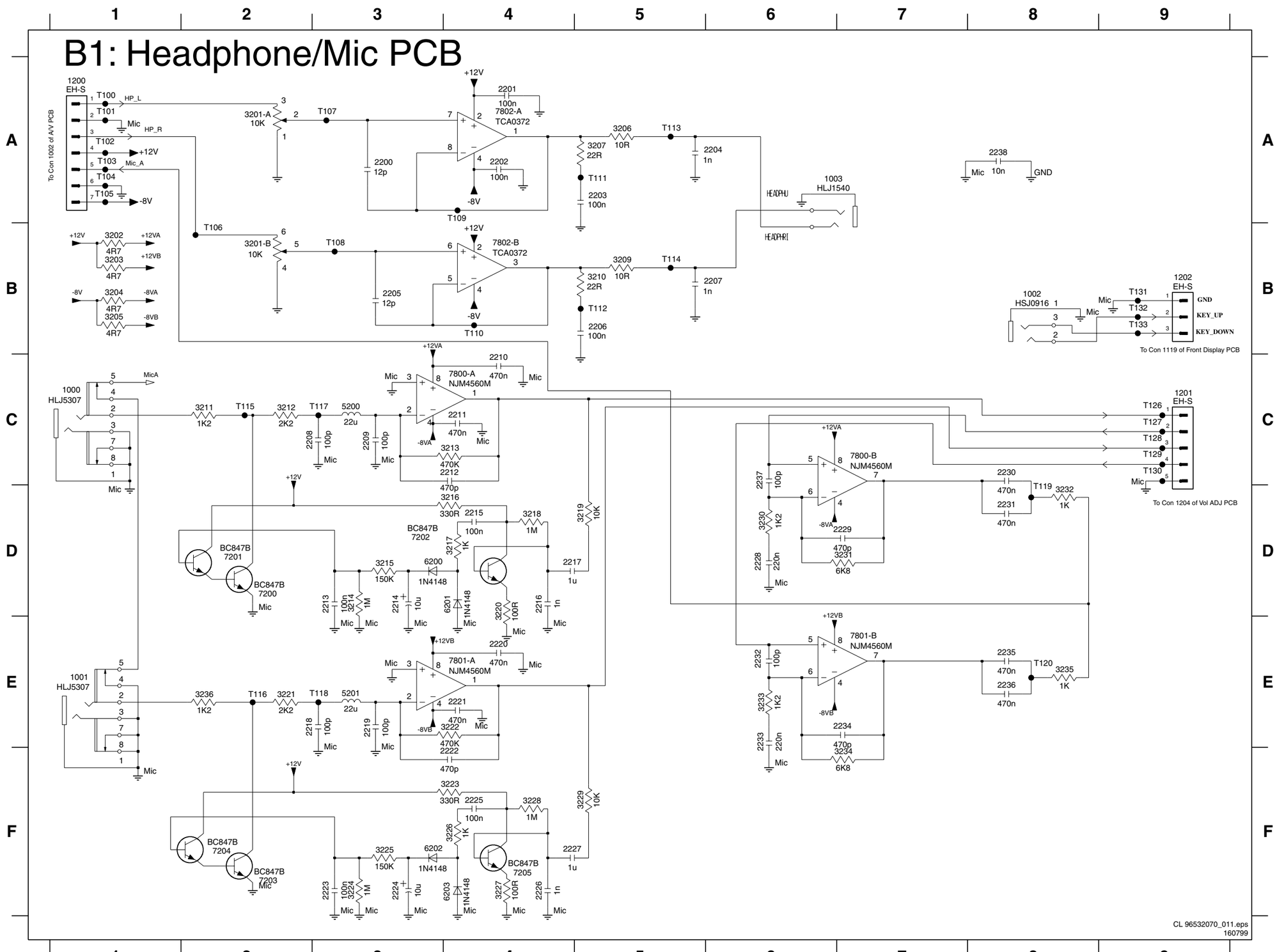
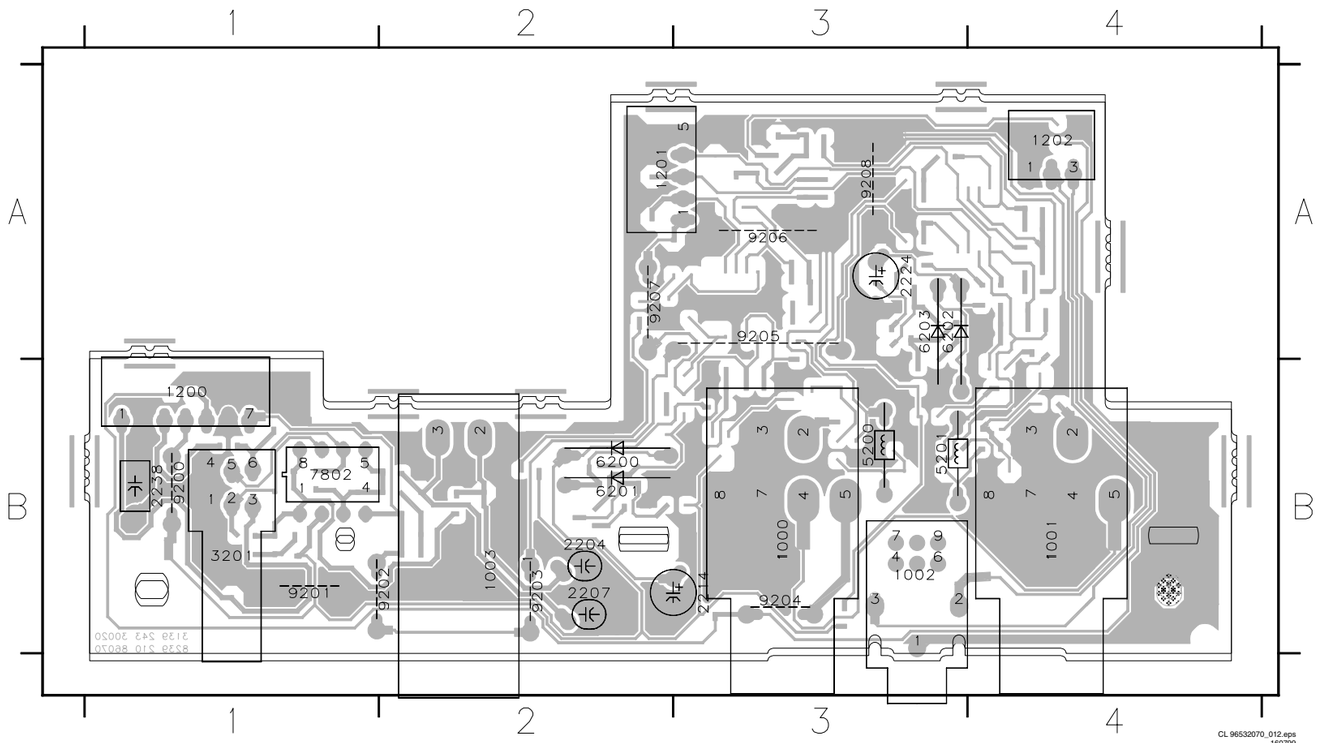
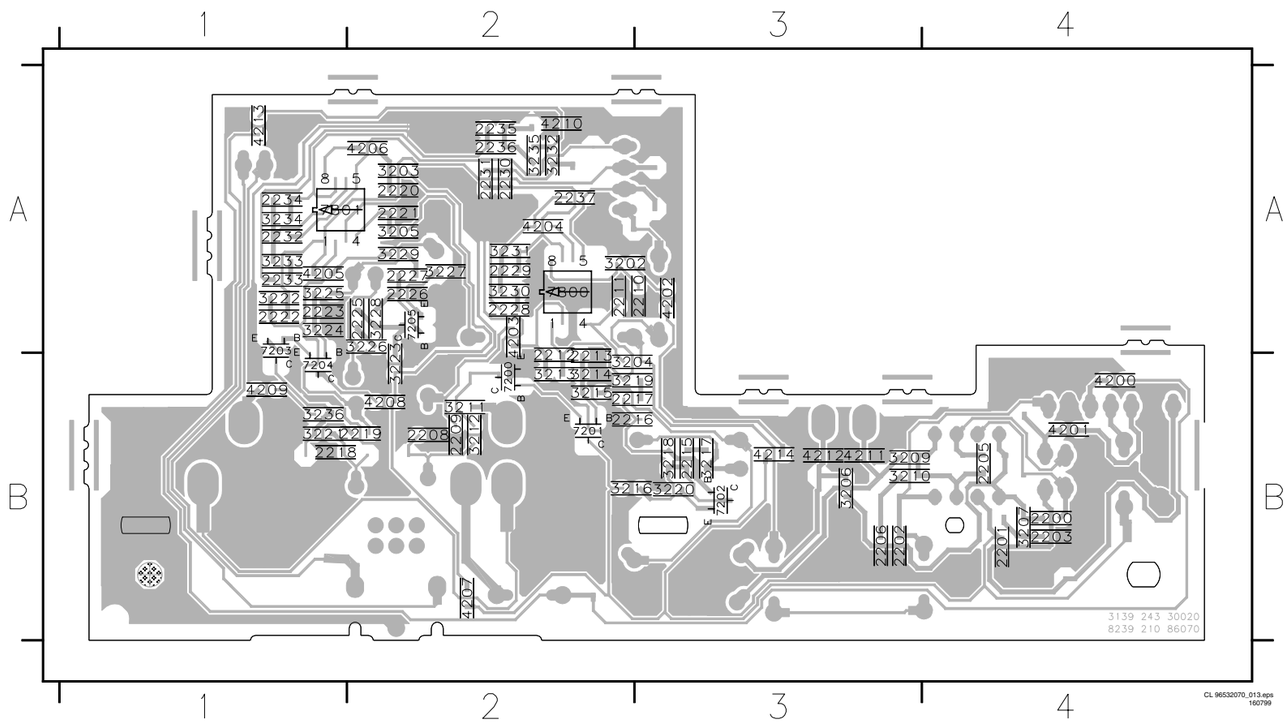
Headphone / Microphone pwb

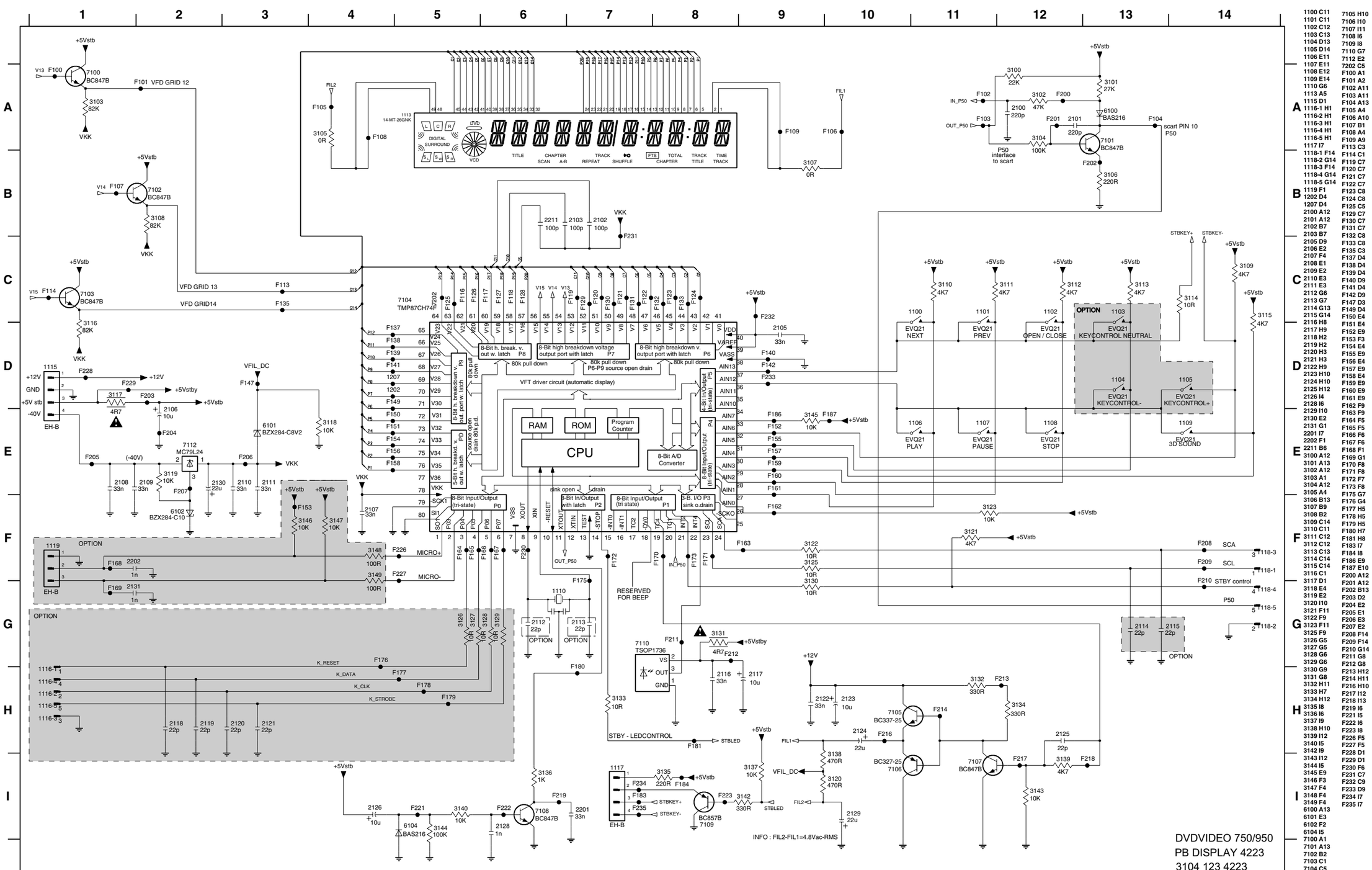


Headphone + vol. control PWB



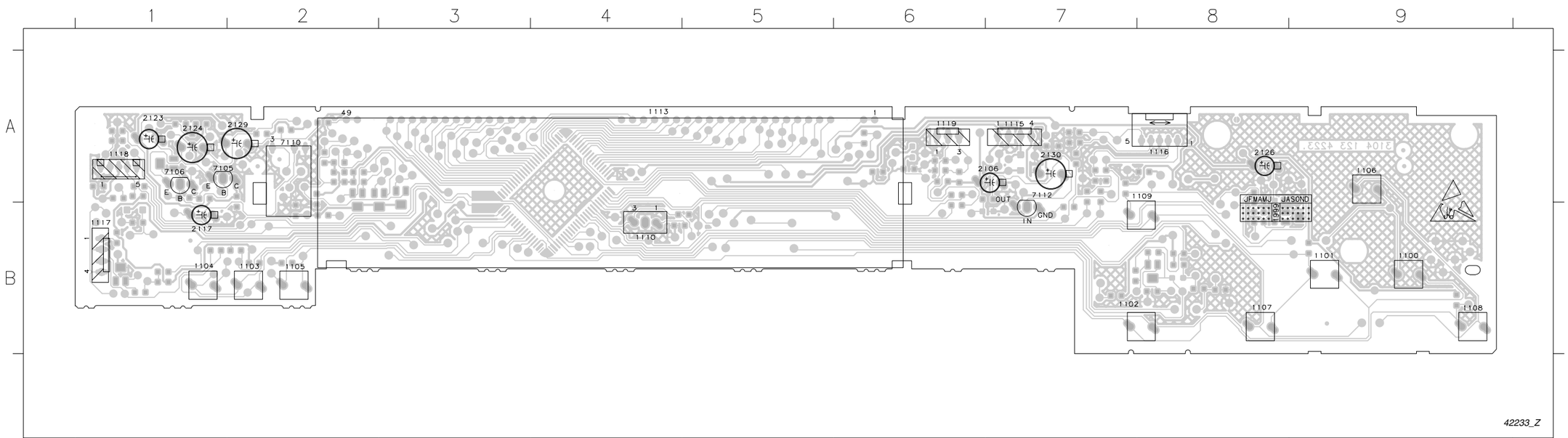


Display

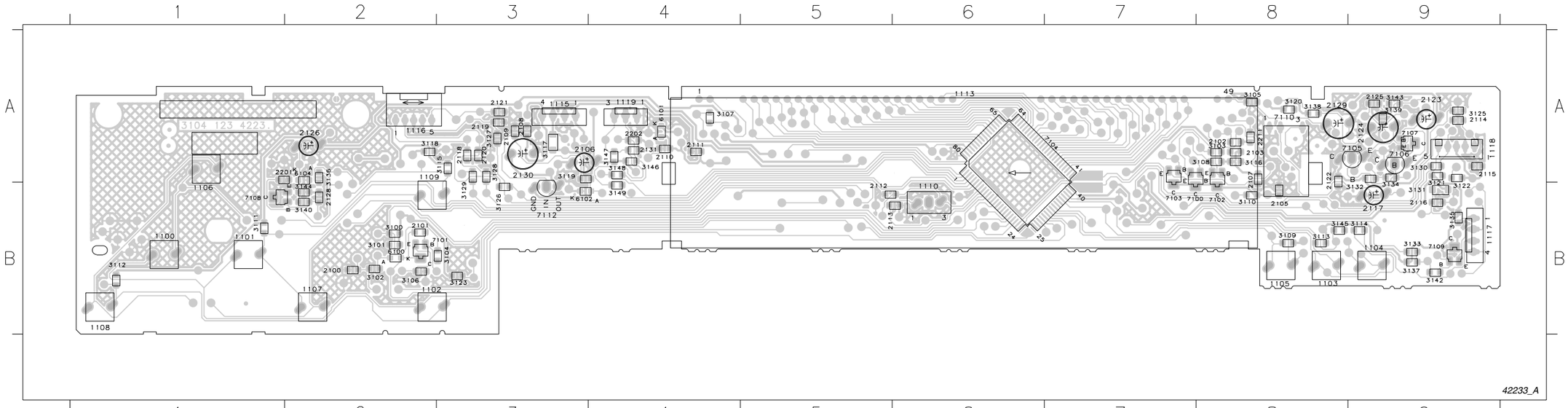


Display PWB

1100 B9 1102 B7 1104 B1 1106 A9 1108 B9 1110 B4 1115 A7 1117 B1 1119 A6 2117 B1 2124 A1 2129 A2 7105 A1 7110 A2
1101 B9 1103 B2 1105 B2 1107 B8 1109 A8 1113 A4 1116 A8 1118 A1 2106 A7 2123 A1 2126 A8 2130 A7 7106 A1 7112 A7



2100 B2 2109 A3 2116 B9 2128 B2 3102 B2 3109 B8 3116 A8 3123 B3 3131 B9 3138 A8 3146 A4 6102 B3 7107 A9
2101 B2 2110 A4 2118 A3 2131 A4 3103 A8 3110 B8 3117 A3 3125 A9 3132 B9 3139 A9 3147 A4 6104 A2 7108 B1
2102 A8 2111 A4 2119 A3 2201 A1 3104 B3 3111 B1 3118 A2 3126 B3 3133 B9 3140 B2 3148 A4 7100 B7 7109 B9
2103 A8 2112 B5 2120 A3 2202 A4 3105 A8 3112 B1 3119 A3 3127 A3 3134 B9 3142 B9 3149 B4 7101 B3 7999 B9
2105 B8 2113 B5 2121 A3 2211 A8 3106 B2 3113 B8 3120 A8 3128 A3 3135 B9 3143 A9 3999 B9 7102 B8
2107 A8 2114 A9 2122 A8 3100 B2 3107 A4 3114 B9 3121 B9 3129 B3 3136 A2 3144 B2 6100 B2 7103 B7
2108 A3 2115 A9 2125 A9 3101 B2 3108 A8 3115 A3 3122 B9 3130 A9 3137 B9 3145 B8 6101 A4 7104 A7



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TROUBLESHOOTING DISPLAY BOARD

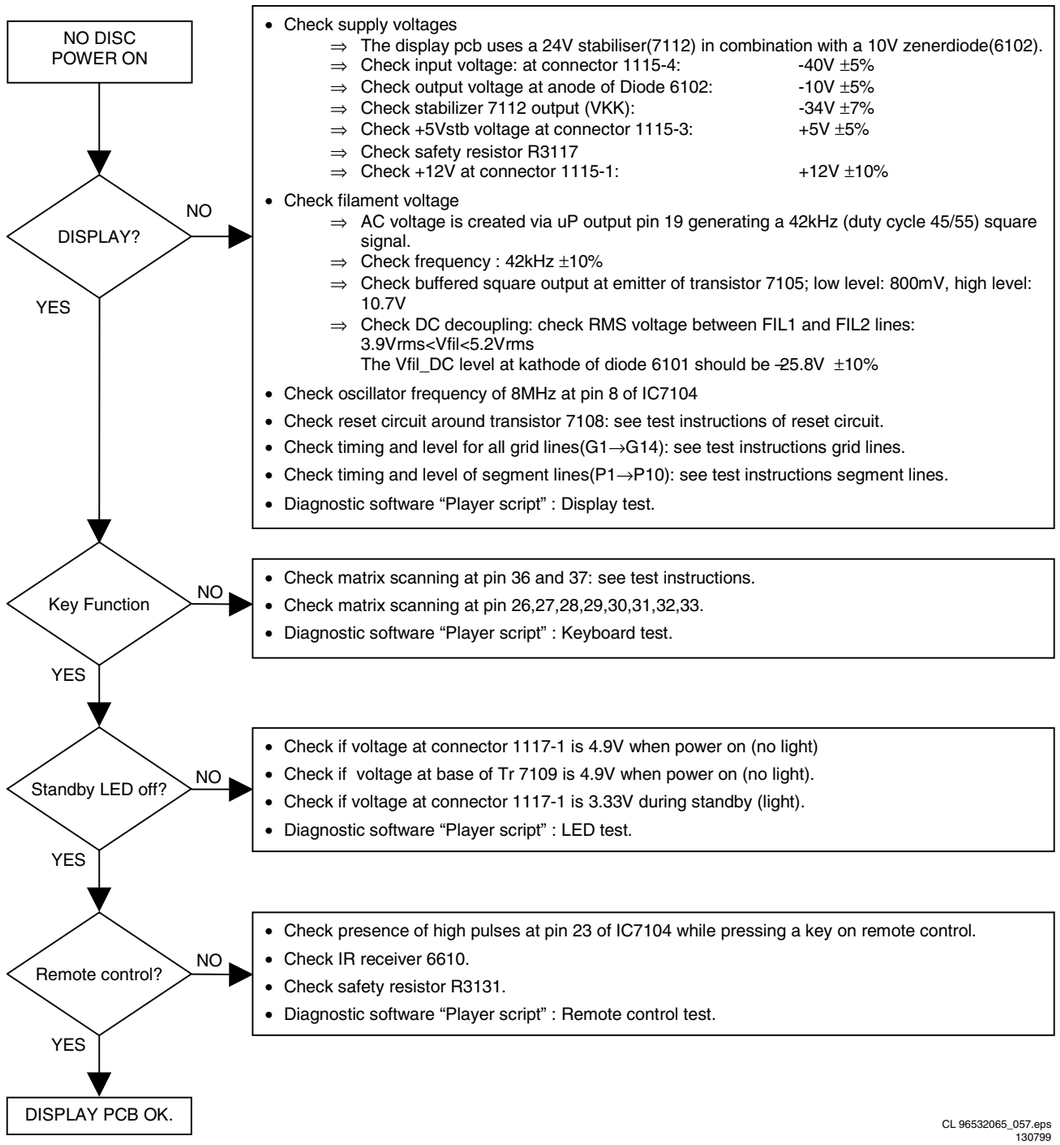

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Figure 6-1

TROUBLESHOOTING A/V BOARD

Testing of A/V board can be done using diagnostic software “Player script”.
Mono board is used to generate a sinus with the soundtest SND-2 or a VIDEO signal with the picture test PIC-1.
See description in chapter “Diagnostic Software : Script Interfaces”

AUDIO PART

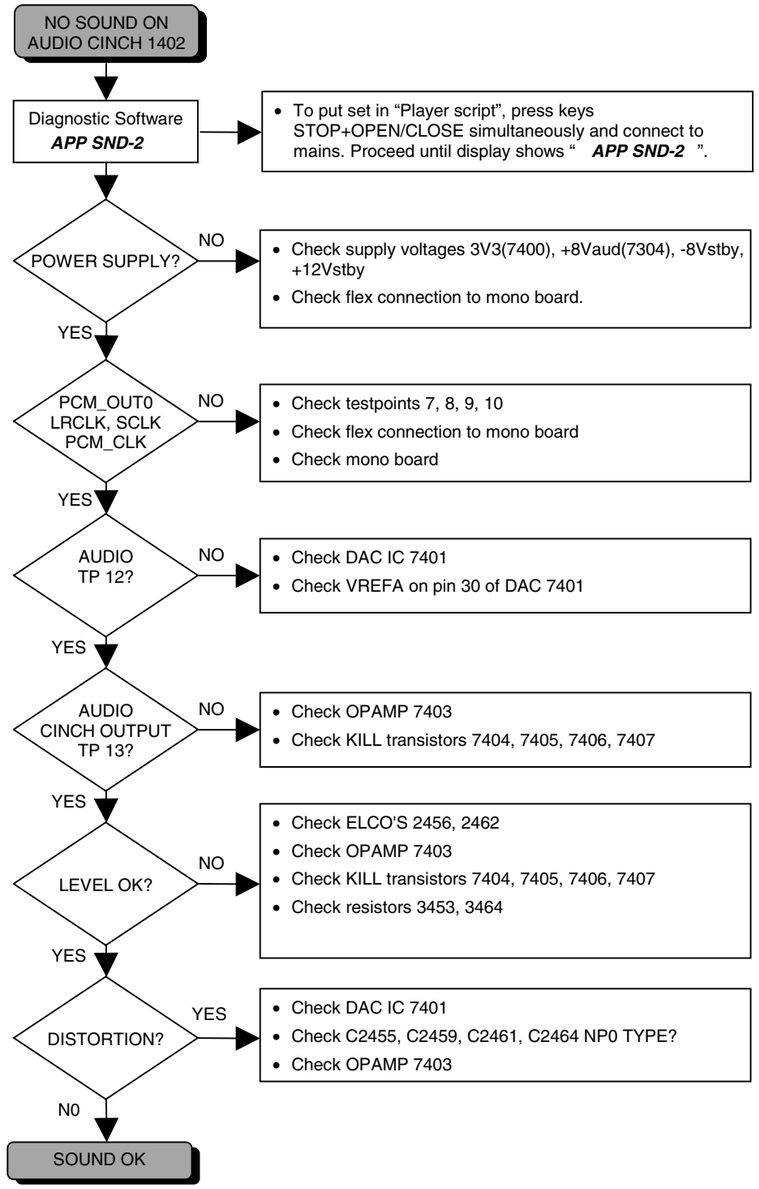

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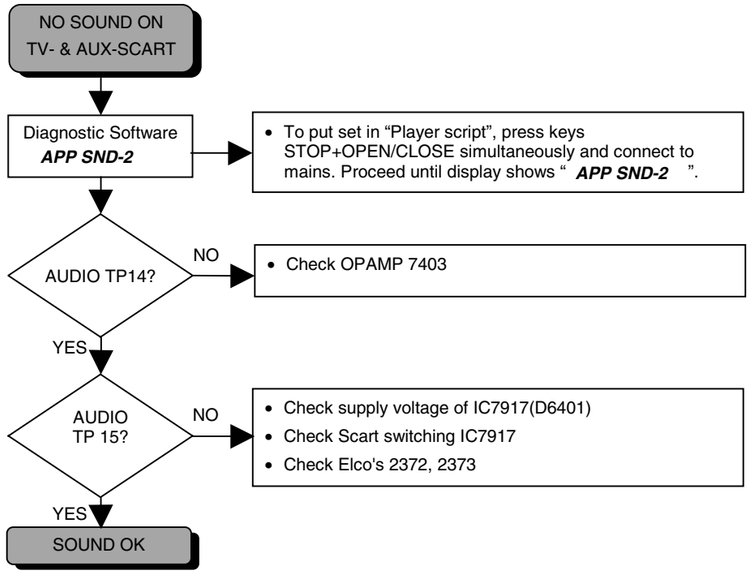
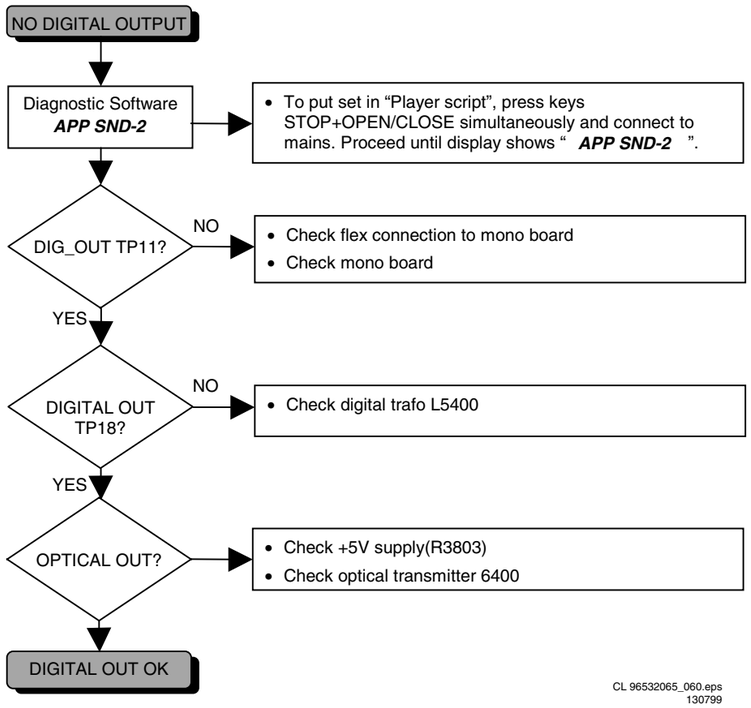
Figure 6-2





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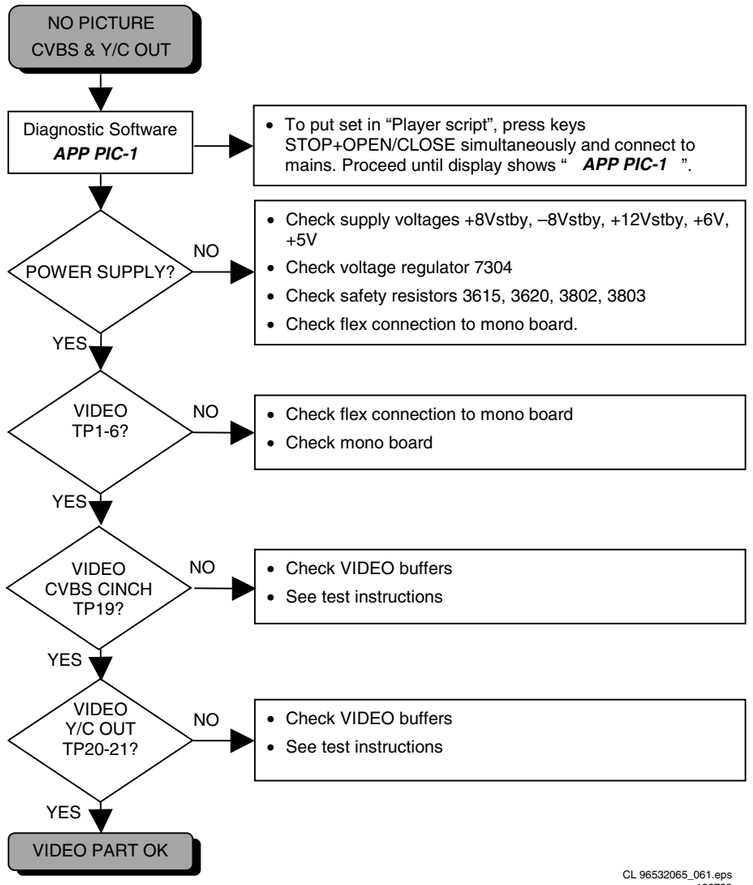
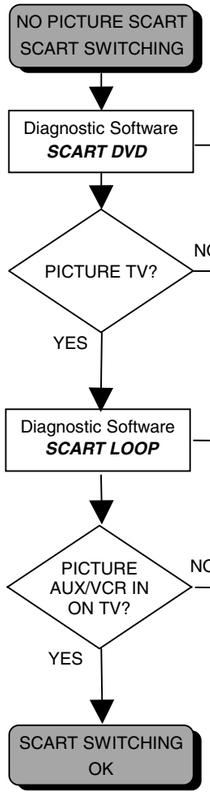
VIDEO PART



CL 96532065_061.eps
130799



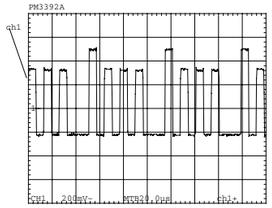
- To put set in “Player script”, press keys STOP+OPEN/CLOSE simultaneously and connect to mains. Proceed until display shows “***SCART DVD***”.

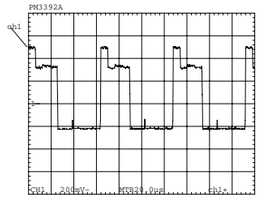
- Check “0/6/12” on connector 1300-8 = +10V
- Check flex connection to mono board
- Check “SELECT” = 0V, “SELECT HIGH” = 0V
- Check transistors 7935, 7943
- Check switches 7900-7905
- Check “SLB_TV: 9V, “FBOUT_TV: 5V
- Check video buffers, see test instructions.

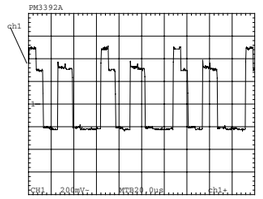
- press NEXT. Display shows:” ***SCART LOOP*** Pressing PREVIOUS will return to “ ***SCART DVD***

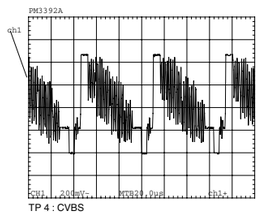
- Check “0/6/12” on connector 1300-8 = 0V
- Check flex connection to mono board
- Check “SELECT” = 6V, “SELECT HIGH” = 12V
- Check transistors 7935, 7943
- Check switches 7900-7905
- Check “SLB_TV = 0V, “FBOUT_TV = 0V.
- Check video buffers, see test instructions.

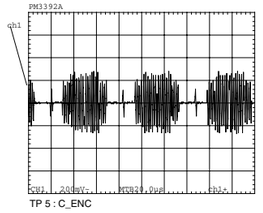
CL 96532065_062.eps
130799

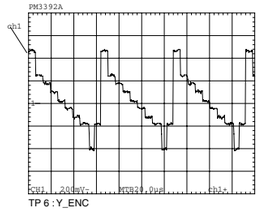

TP 1 : video B

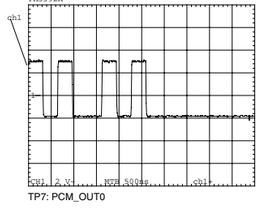

TP 2 : video G

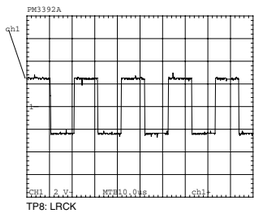

TP 3 : video R

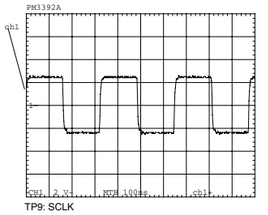

TP 4 : CVBS

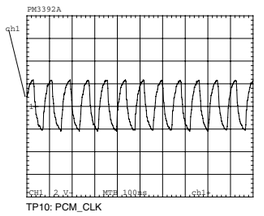

TP 5 : C_ENC

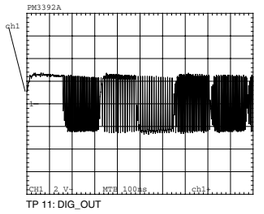

TP 6 : Y_ENC

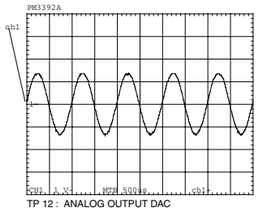

TP7: PCM_OUT0

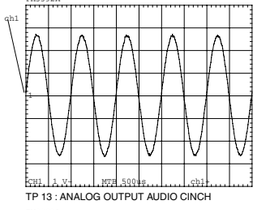

TP8: LRCK

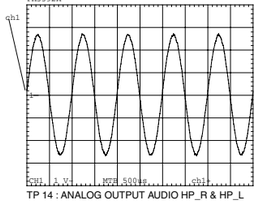

TP9: SCLK

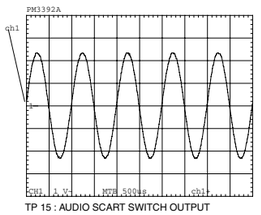

TP10: PCM_CLK

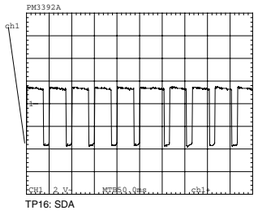

TP 11: DIG_OUT

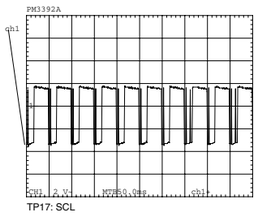

TP 12 : ANALOG OUTPUT DAC

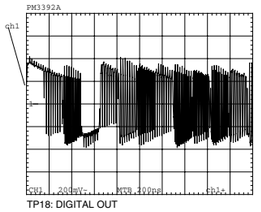

TP 13 : ANALOG OUTPUT AUDIO CINCH

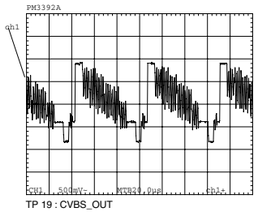

TP 14 : ANALOG OUTPUT AUDIO HP_R & HP_L

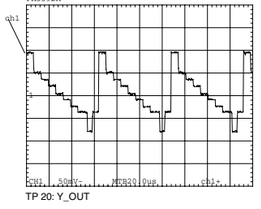

TP 15 : AUDIO SCART SWITCH OUTPUT

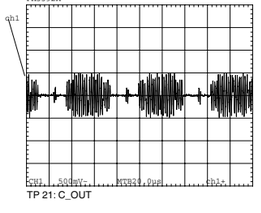

TP16: SDA


TP17: SCL


TP18: DIGITAL OUT


TP 19 : CVBS_OUT


TP 20: Y_OUT


TP 21: C_OUT

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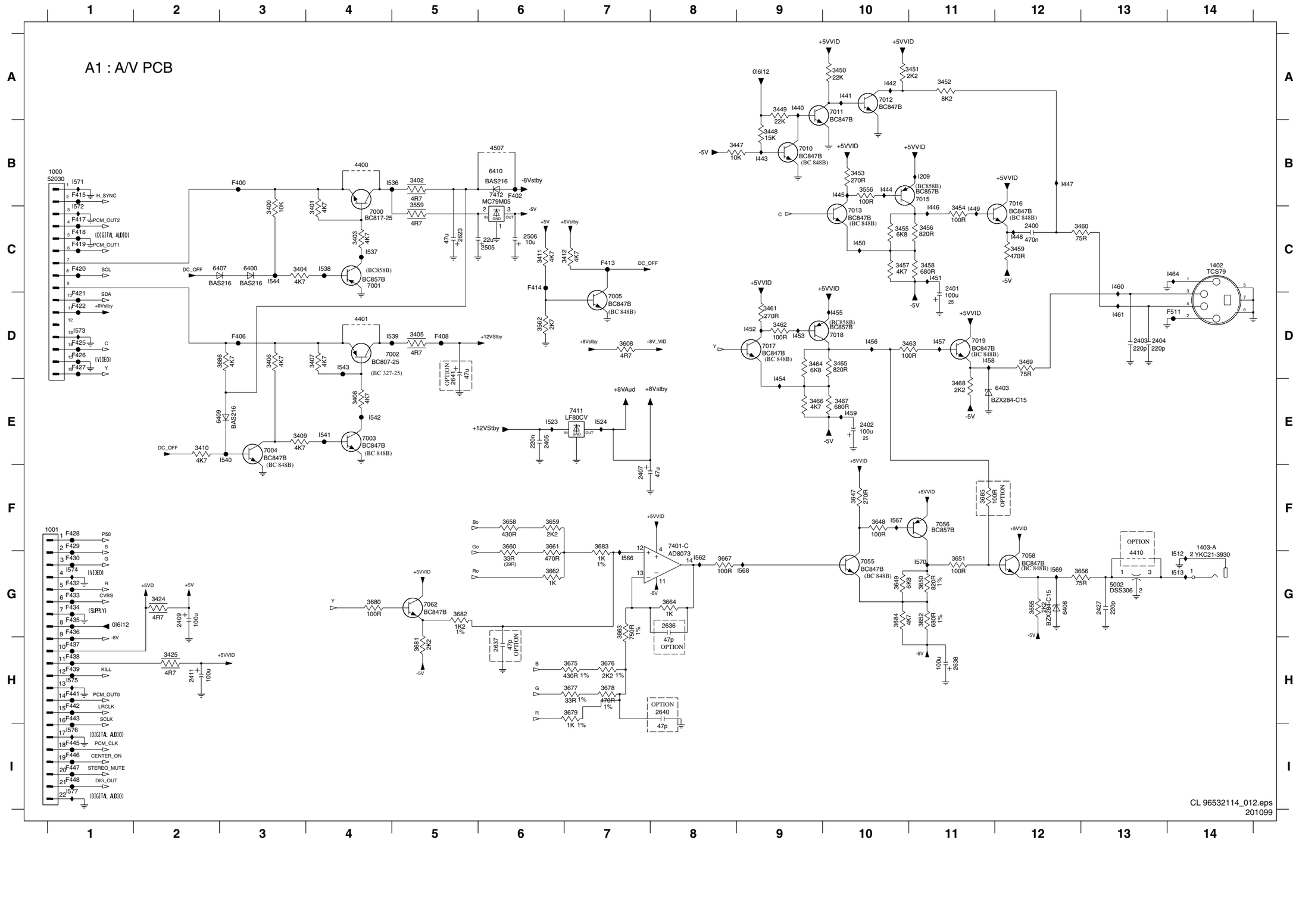
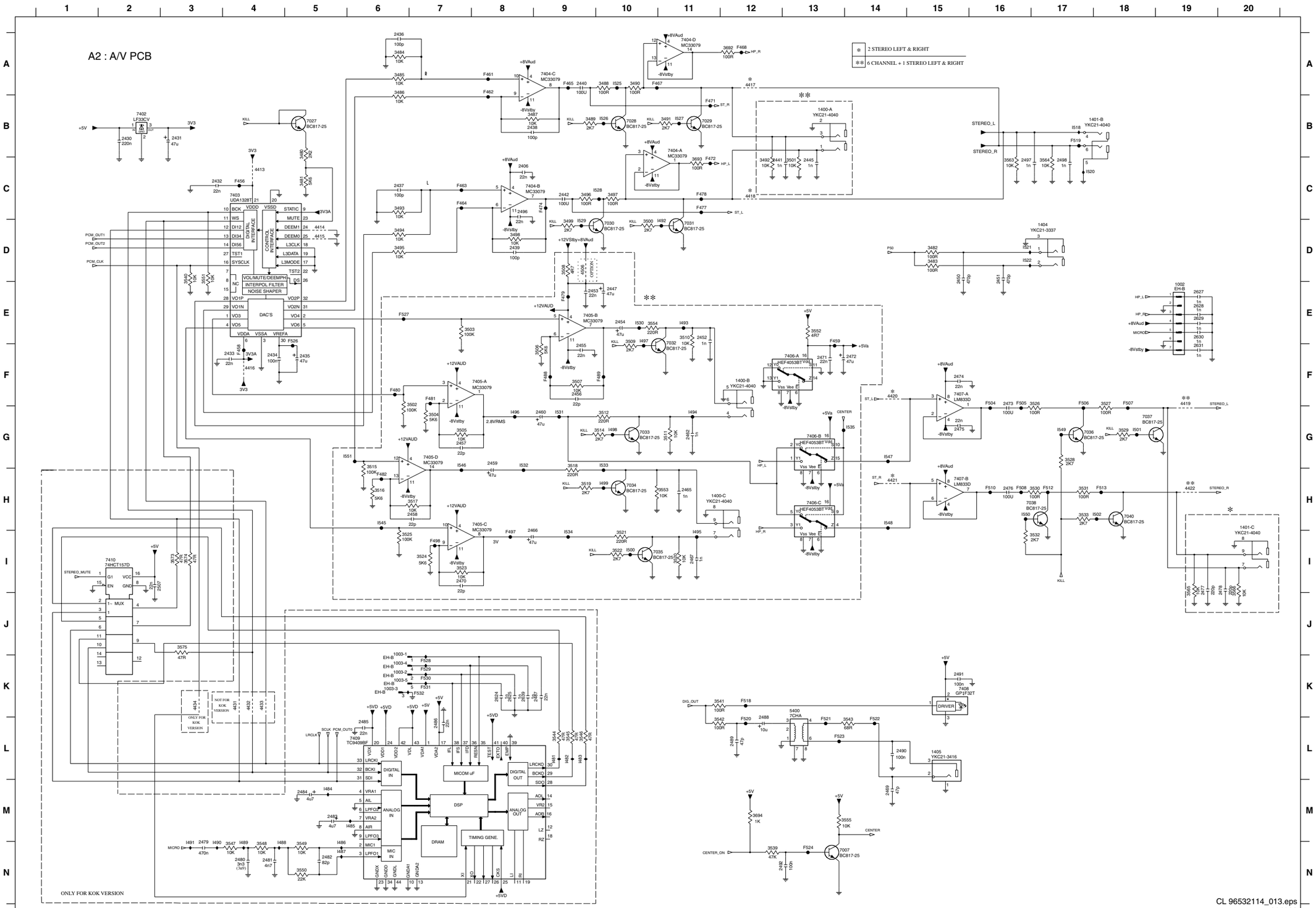
A/V board

A1 : A/V PCB



1000 B1
1001 F1
1402 C14
1403-A F14
2400 C12
2401 C11
2402 E10
2403 D13
2404 D13
2405 E6
2407 F7
2409 G2
2411 H2
2427 G13
2505 C6
2506 C6
2623 C5
2636 G8
2637 H6
2638 H11
2640 H8
2641 D5
3400 C3
3401 C4
3402 B5
3403 C4
3404 C3
3405 D5
3406 D3
3407 D4
3408 E4
3409 E3
3410 E2
3411 C6
3412 C7
3424 G2
3425 H2
3447 B8
3448 B9
3449 A9
3450 A10
3451 A11
3452 A11
3453 B10
3454 C11
3455 C10
3456 C11
3457 C10
3458 C11
3459 C12
3460 C13
3461 D9
3462 D9
3463 D11
3464 D9
3465 D10
3466 E9
3467 E10
3468 E11
3469 D12
3556 B10
3559 C5
3562 D6
3608 D7
3647 F10
3648 F10
3649 G10
3650 G11
3651 G11
3652 G11
3655 G12
3656 G13
3658 F6
3659 F6
3660 F6
3661 F6
3662 G6
3663 G7
3664 G8
3667 G8
3675 H7
3676 H7
3677 H7
3678 H7
3679 H7
3680 G4
3681 H5
3682 G5
3683 F7
3684 G10
3685 F11
3686 D3
4400 B4
4401 D4
4410 G13
4507 B6
5002 G13
6400 C3
6403 E12
6407 C3
6408 G12
6409 E3
6410 B6
7000 C4
7001 C4
7002 D5
7003 E4
7004 E3
7005 D7
7010 B9

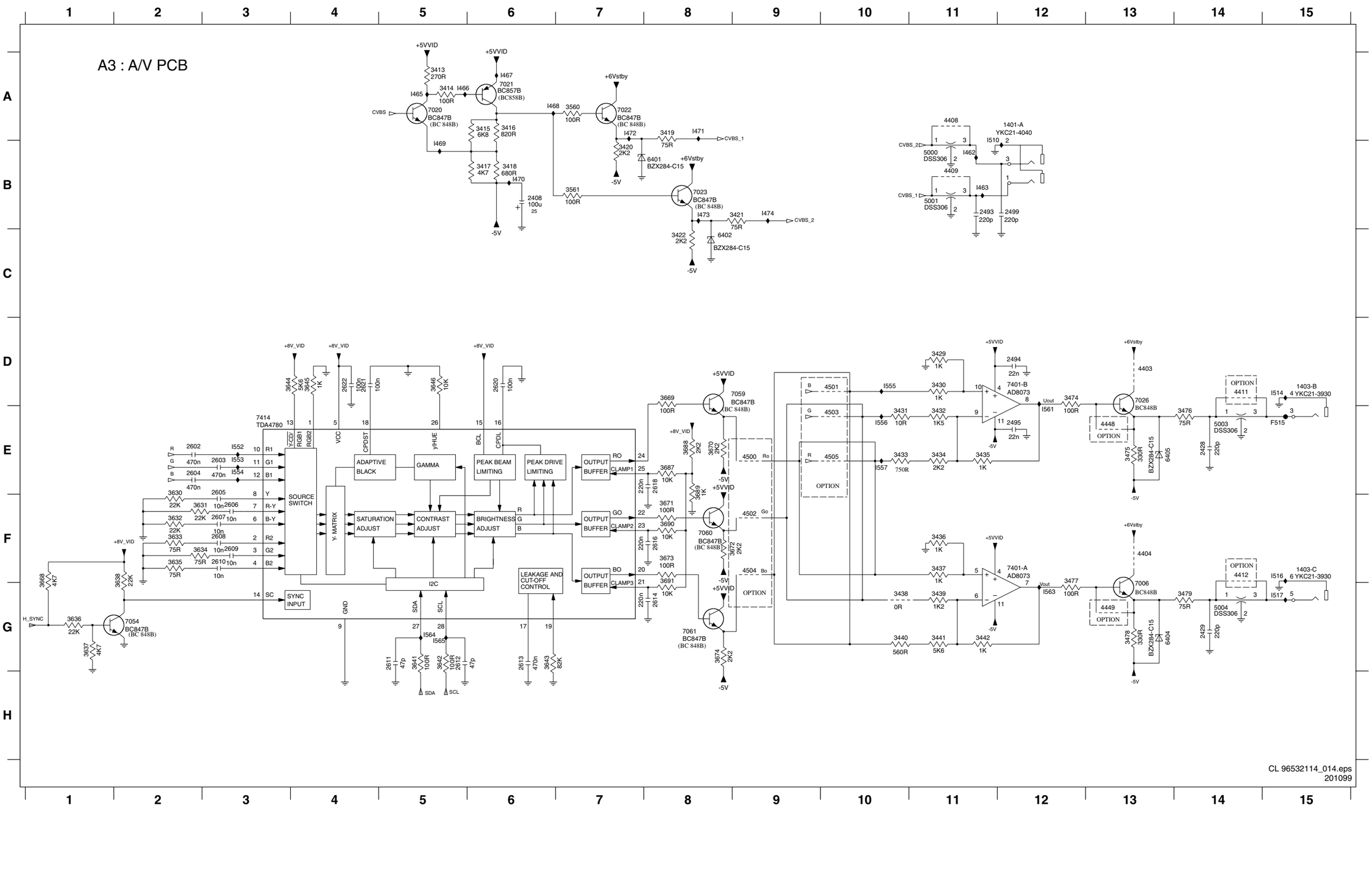
A/V board



A/V board

1401-A A12	2493 B11	2604 E2	2610 F3	2618 E8	3415 A6	3421 B9	3433 E10	3439 G11	3476 E14	3630 F2	3636 G1	3644 D3	3671 F8	3689 E8	4409 B11	4501 D10	5001 B11	6405 E13	7026 D13	7401-B D12	I466 A5	I472 A7	I517 G15	I557 E10
1403-B D15	2494 D12	2605 E3	2611 G5	2620 D6	3416 A6	3422 C8	3434 E11	3440 G10	3477 G12	3631 F2	3637 G1	3645 D4	3672 F9	3690 F8	4411 D14	4502 F9	5003 E14	7006 G13	7054 G2	7414 E3	I467 A6	I473 B8	I552 E3	I561 E12
1403-C F15	2495 E12	2606 F3	2612 G5	2621 D4	3417 B6	3429 D11	3435 E11	3441 G11	3478 G13	3632 F2	3638 F2	3646 D5	3673 F8	3691 G8	4412 F14	4503 E10	5004 G14	7020 A5	7059 D8	F515 E15	I468 A6	I474 B9	I553 E3	I563 G12
2408 B6	2499 B12	2607 F3	2613 G6	2622 D4	3418 B6	3430 D11	3436 F11	3442 G11	3479 G14	3633 F2	3641 G5	3668 F1	3674 G8	4403 D13	4448 E13	4504 F9	6401 B8	7021 A6	7060 F8	I462 B11	I469 B5	I510 A11	I554 E3	I564 G5
2428 E14	2602 E2	2608 F3	2614 G8	3413 A5	3419 A8	3431 E10	3437 F11	3474 D12	3560 A7	3634 F2	3642 G5	3669 D8	3687 E8	4404 F13	4449 G13	4505 E10	6402 C8	7022 A7	7061 G8	I463 B11	I470 B6	I514 D15	I555 D10	I565 G5
2429 G14	2603 E3	2609 F3	2616 F8	3414 A5	3420 B7	3432 E11	3438 G10	3475 E13	3561 B7	3635 F2	3643 G6	3670 E8	3688 E8	4408 A11	4500 E9	5000 B11	6404 G13	7023 B8	7401-A F12	I465 A5	I471 A8	I516 F15	I556 E10	

A3 : A/V PCB



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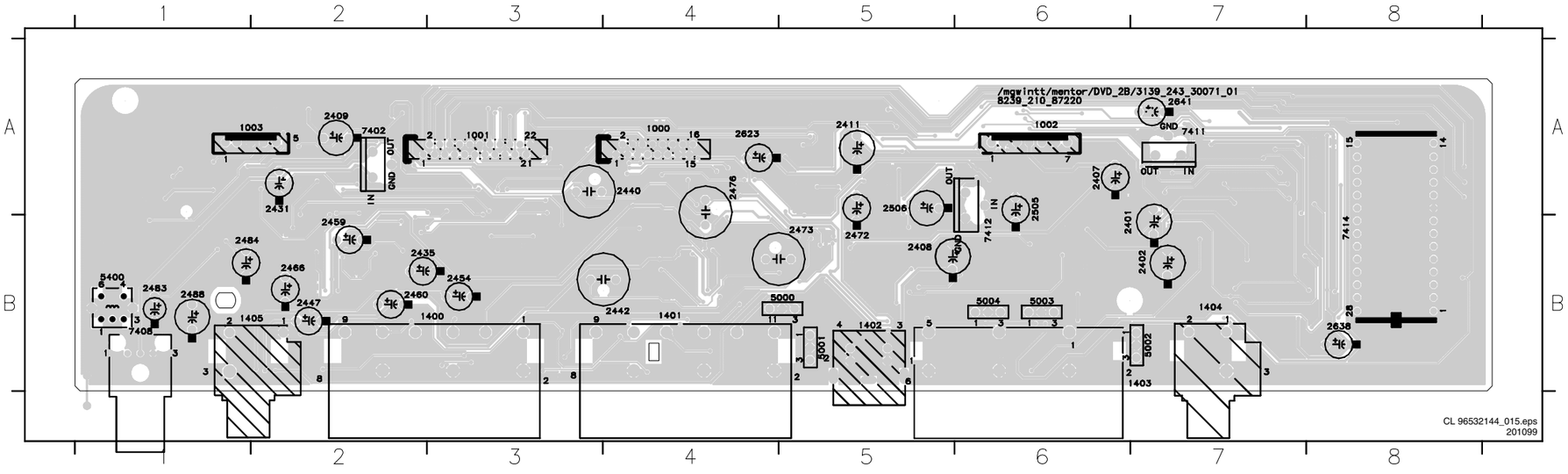
A/V Pwb (component side)

1000 A4 1003 A1 1402 B5 1405 B2 2407 A6 2411 A5 2440 A4 2454 B3 2466 B2 2476 A4 2488 B1 2623 A4 5000 B5 5003 B6 7402 A2 7412 B6
1001 A3 1400 B3 1403 B7 2401 B6 2408 B5 2431 A2 2442 B4 2459 B2 2473 B5 2483 B1 2505 A6 2638 B8 5001 B5 5004 B6 7408 B1 7414 B8
1002 A6 1401 B4 1404 B7 2402 B7 2409 A2 2435 B2 2447 B2 2460 B2 2484 B1 2506 A5 2641 A7 5002 B7 5400 B1 7411 A7



A/V Pwb (copper side)

2400 B4 2450 B2 2479 A8 2507 A7 2622 B1 3406 A4 3425 A6 3450 B3 3468 B4 3490 A5 3508 B7 3527 B5 3550 B8 3608 A3 3649 B2 3672 B2 3690 B1 4417 B6 4506 B7 7006 B3 7029 B6 7062 A2
2403 B4 2451 B2 2480 B8 2600 A1 2624 A7 3407 A4 3429 A2 3451 B3 3469 B4 3491 B6 3509 B6 3528 B5 3551 A6 3630 B1 3650 B2 3673 A1 3691 B1 4418 B6 4507 A3 7007 A4 7030 B6 7401 B2
2404 B4 2452 B3 2481 B8 2603 A1 2625 A8 3408 A4 3430 A2 3452 B3 3470 B4 3492 B6 3510 B6 3529 B5 3552 A4 3631 B1 3651 B2 3674 A1 3692 B5 4419 B5 6400 A3 7010 B3 7031 B6 7403 B5
2405 A7 2453 B7 2482 B8 2604 A1 2627 A8 3409 A4 3431 A2 3453 B3 3471 B4 3493 B6 3511 B6 3530 B5 3553 A7 3632 B1 3652 B2 3675 A1 3693 B5 4420 B5 6401 B4 7011 B3 7032 B7 7404 B5
2406 B5 2455 B7 2485 A7 2605 B1 2628 A3 3410 A3 3432 A2 3454 B3 3472 B4 3494 B6 3512 B6 3531 B5 3554 B6 3633 B1 3653 B3 3676 A1 3694 A4 4421 A5 6402 B4 7012 B3 7033 B6 7405 B7
2427 B3 2456 B7 2486 B8 2606 B1 2629 A3 3411 A2 3433 A2 3455 A3 3473 B4 3495 B6 3513 B6 3532 B5 3555 A4 3634 B1 3654 B2 3677 A2 3695 A4 4422 B5 6403 B4 7013 A2 7034 B7 7406 A4
2428 B3 2457 B7 2487 A7 2607 B1 2630 A3 3412 A2 3434 A2 3456 A3 3474 B4 3496 B6 3514 B6 3533 B5 3556 B2 3635 A1 3655 A3 3678 B2 3696 A4 4431 A6 6404 B4 7014 B3 7035 B7 7407 B5
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2430 A7 2462 B6 2490 B8 2609 B1 2636 B2 3414 B4 3436 B2 3458 A2 3476 B4 3498 B5 3516 B7 3535 B5 3558 A4 3637 A1 3657 A2 3680 A2 3698 A4 4433 A6 6407 A2 7017 B3 7037 B5 7410 A7
2431 B6 2465 B7 2491 B8 2610 B1 2637 A2 3415 B4 3437 B2 3459 B3 3477 B4 3499 B6 3517 B7 3536 B5 3559 A3 3638 A1 3658 A2 3681 A2 4401 A3 4434 A7 6408 B3 7018 B3 7038 B5
2432 A6 2467 B7 2492 A4 2611 B1 2638 A2 3416 B4 3438 B2 3460 B3 3478 B4 3500 B6 3518 B7 3537 B5 3560 B4 3639 B1 3659 A2 3682 A2 4402 A3 4435 A7 6409 A3 7019 B4 7039 B5
2433 A6 2468 B8 2493 B4 2612 B1 2640 A2 3417 B4 3439 B2 3461 B3 3479 B4 3501 B6 3519 B7 3538 B5 3561 B4 3640 B1 3660 A2 3683 A2 4403 B3 4436 A7 6410 A3 7020 B4 7054 A1
2434 B7 2469 B8 2494 B2 2613 A1 3400 A3 3418 B4 3440 B2 3462 B3 3480 B4 3502 A7 3520 B7 3539 A4 3562 B2 3641 B1 3661 A2 3684 B2 4404 B4 4437 B3 4449 B3 6411 A3 7021 B4 7055 B2
2435 A6 2470 B7 2495 A2 2614 B1 3401 A3 3419 B4 3441 B2 3463 B3 3481 B6 3503 A7 3521 B7 3540 A6 3563 B5 3642 B1 3662 A2 3685 B3 4405 B4 4438 B3 4450 B2 6412 B3 7022 B4 7056 B3
2436 A6 2474 A5 2496 A2 2615 B1 3402 A3 3420 B4 3442 B2 3464 B3 3482 B6 3504 A7 3522 B7 3541 B6 3564 B5 3643 A1 3663 A2 3686 B2 4406 B4 4439 B3 4501 A1 7001 A3 7023 B4 7057 B3
2437 B6 2471 A4 2497 B5 2618 B1 3403 A3 3421 B4 3443 B2 3465 B3 3483 B6 3505 B7 3523 B7 3542 B6 3565 B5 3644 A1 3664 B2 3687 B1 4407 B4 4440 B3 4502 B2 7002 A4 7024 B4 7058 B3
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2439 B6 2475 B5 2499 B5 2621 A1 3405 A4 3424 A7 3445 B3 3467 B2 3485 B6 3507 B7 3526 B5 3549 B8 3575 A7 3646 B1 3666 B3 3689 B1 4409 B4 4442 B3 4504 A1 7004 A2 7026 B4 7060 B1
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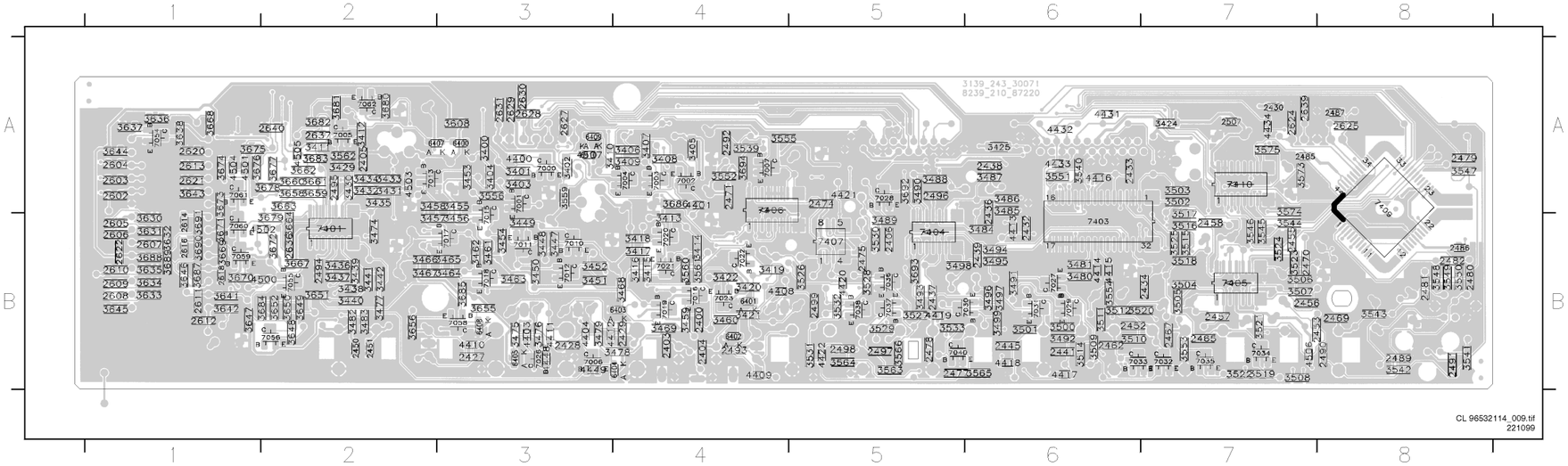

7. DIAGNOSTIC SOFTWARE : SCRIPT INTERFACES

7.1 DEALER SCRIPT

7.1.1 Purpose of Dealer Script

The dealer script can give a diagnosis on a standalone DVD player; no other equipment is needed to perform a number of hardware tests to check if the DVD player is faulty. The diagnosis is simply a "error" or "pass" message; no indication is given of faulty hardware modules. Only tests within the scope of the diagnostic software will be executed hence only faults within this scope can be detected.

7.1.2 Contents of Dealer Script

The dealer script executes all diagnostic nuclei that do not need any user interaction and are meaningful on a standalone DVD player.
The nuclei called in the dealer script are the following (the number after each nucleus name corresponds with the number being on the local display when the nucleus is executed during the dealer script):

Nucleus		Description
VideoColSetupComm	9	Checks the I2C interface with the RGB video processor on the Audio/Video board (only for DVD players with RGB video processor).
VideoScartSwComm	8	Checks the I2C interface with the scart switch on the Audio/Video board
PapChksFl	7	Calculate and verify checksum of FLASH memory.
PapDramWrR	6	Pattern test of all locations in the DRAM(s).
PapI2cDisp	5	Checks the I2C interface with the slave processor on the display PCB.
PapS2bEcho	4	Checks the I2C interface to the basic engine.
PapI2cNvram	3	Checks the I2C interface with the NVRAM.
PapNvramWrR	2	Pattern test of all locations in the NVRAM
CompSdramWrR	1	Pattern test of all locations in the SDRAM(s).

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Figure 7-1

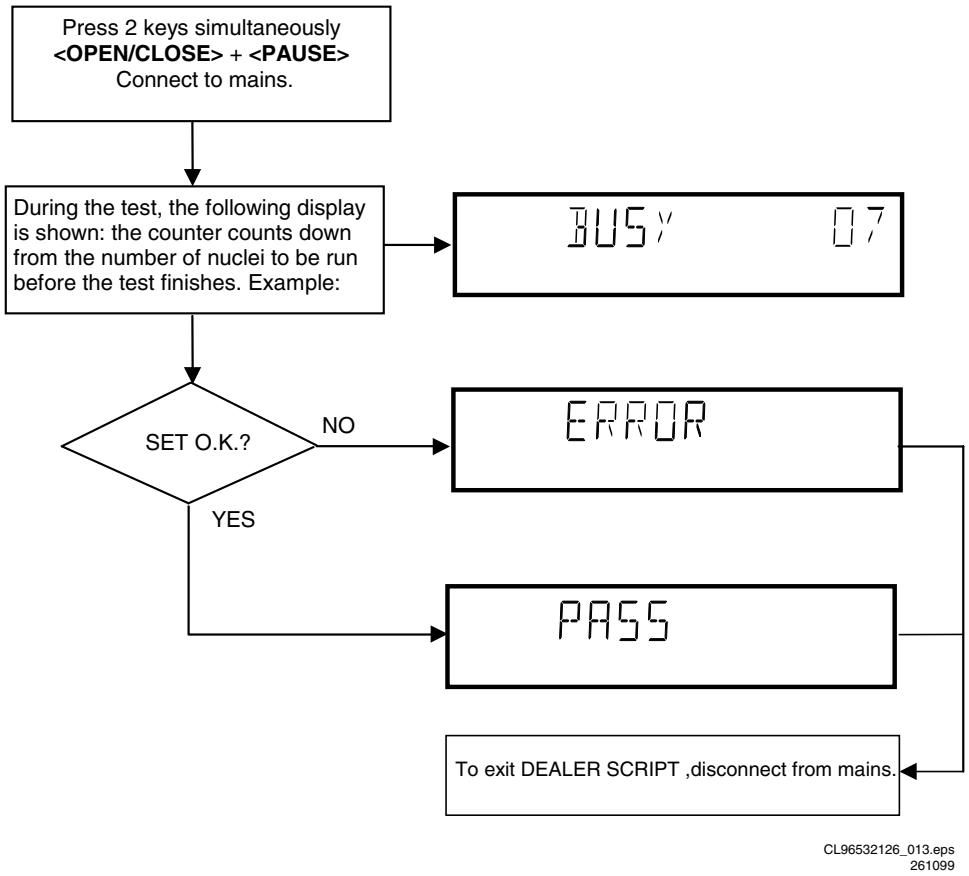

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Figure 7-2

7.2 PLAYER SCRIPT

7.2.1 Purpose of Player Script

The Player script will give the opportunity to perform a test that will determine which of the DVD player's modules are faulty, to read the error log and error bits and to perform an endurance loop test. To successfully perform the tests, the DVD player must be connected to a tv set to check the output of a number of nuclei. For DVDv2b a multi-channel amplifier, a set of 6 boxes and an external video source are necessary to test. To be able to check results of certain nuclei, the player script expects some interaction of the user (i.e. to approve a test picture or a test sound). Some nuclei (e.g. nuclei that test functionality of the Basic Engine module) require that the DVD player itself is opened, to enable the user to observe moving parts and approve their movement visually. Only tests within the scope of the diagnostic software will be executed hence only faults within this scope can be detected.

7.2.2 Contents of Player Script

The player script contains all nuclei that are useful on a DVD player that is connected to a tv-set and help to determine which module of the DVD player is faulty, as well as to read out the contents of the error logs.

7.2.3 Structure of Player Script

The player script consists of a set of nuclei testing the three hardware modules in the DVD player: the Display PWB, the Digital PWB and the Basic Engine.
Nuclei run by the player test need some user interaction; in the next paragraph this interaction is described. The player test is done in two phases:

1. Interactive tests: this part of the player test depends strongly on user interaction and input to determine nucleus results and to progress through the full test. Reading the error log and error bits information can be useful to determine any errors that occurred recently during normal operation of the DVD player.
2. The loop test will perform the same nuclei as the dealer test, but it will loop through the list of nuclei indefinitely.

7.2.4 Survey

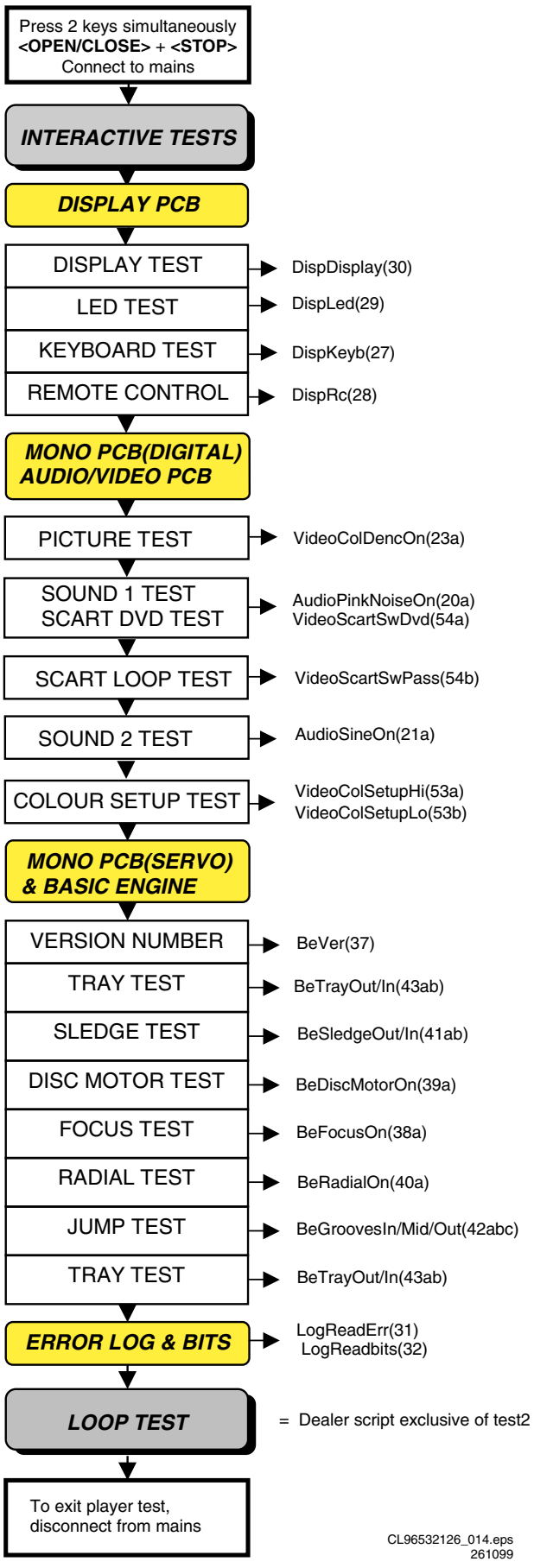

Figure 7-3

7.3 INTERACTIVE TESTS

7.3.1 DISPLAY PCB

DISPLAY TEST

The display test is performed by nucleus DispDisplay. By putting a series of test patterns on the local display, the local display is tested. To step through all different patterns, the user must either press PLAY (pattern is ok) or PAUSE (pattern was incorrect) to proceed to the next pattern. The display of patterns is continued in a cyclic manner until the user presses NEXT. If the user presses NEXT before all display patterns are tested, the DispDisplay nucleus will return TRUE (display test successful).

LED TEST

The LED(s) on the DVD player is (are) tested by nucleus DispLed. The user must check if the LED(s) is (are) lighted; if it is, press PLAY, if it is not, press PAUSE. By pressing NEXT the script will proceed to the next test. If the user presses NEXT before PLAY or PAUSE, the DispLed nucleus will return TRUE (LED test successful).

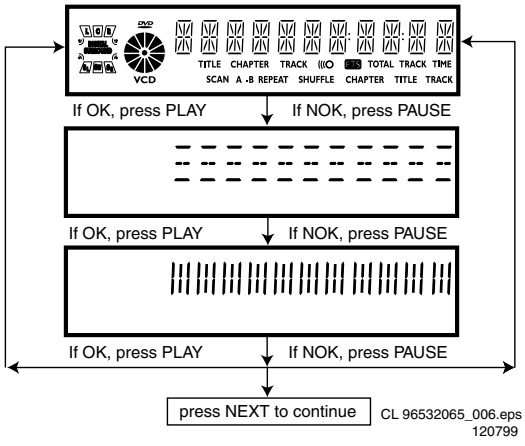

Figure 7-4

KEYBOARD TEST

The keyboard of the DVD player is tested by nucleus DispKeyb. The user is expected to press all keys on the local keyboard once. The code of the key pressed is shown on the local display (1 hexadecimal digit) immediately followed by a (hexadecimal) number indicating how many times that key has been pressed. Example of the local display during this test:

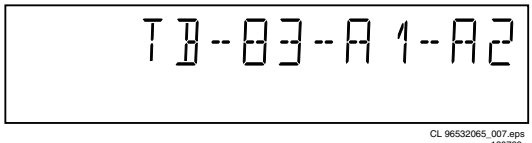

Figure 7-5

The key-codes displayed on the local display will scroll from right to left when the display gets full, the text "tb-" will remain on display.

key id.	key
0	PLAY
1	NEXT
2	PREVIOUS
3	PAUSE
4	STOP
5	OPEN/CLOSE
6	3D-SOUND
A	STANDBY

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261099

Figure 7-6

If any keys are detected more than once (due to hardware error), the key-code is displayed twice (or more), with the second digit increased by 1.
If the user does not press all keys minimally once (in any order), the DispKeys nucleus will return FALSE and cause an error in the overall result of the player script.
The user can leave the keyboard test by pressing the NEXT key on the local display of the DVD player for at least one full second.
The result of the keyboard test is shown on local display as follows:

Figure 7-7

Or

Figure 7-8

Pressing NEXT on the local keyboard again will proceed to the next text.

REMOTE CONTROL TEST

The remote control of the DVD player is tested by nucleus DispRc. The user must press any key on the remote control just once. The codes of the key pressed will be shown on the local display in hexadecimal format. Example:

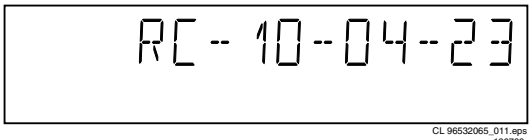


Figure 7-9

In this example 23 is the hexidecimal code of the pressed RC key. The user can leave the remote-control test by pressing NEXT on the local keyboard of the DVD player. The remote control test is successful if a code was received before the user pressed the NEXT key; pressing the NEXT key before pressing a key on the remote control gives an error in the remote control

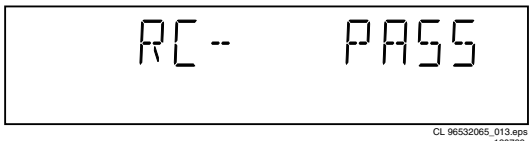
test (note that the remote control test will also fail if a key on the remote control was pressed but no code was received). The remote control test does not check upon the contents of the received code, that is it will not be checked if the received code matches the key pressed. If desired, the user can manually check this code by using a code-table for the remote control key-codes.

RC Key id	Hexadecimal code
STANDBY	**C**
STOP	**31**
PLAY	**2C**
PLAY BACKWARD	**2D**
PAUSE	**30**
STEP FORWARD	**F6**
STEP BACKWARD	**F5**
FORWARD	**28**
FORWARD 4X	**DF**
FORWARD 8X	**E0**
BACKWARD	**29**
BACKWARD 4X	**DE**
BACKWARD 8X	**DD**
SLOW	**22**
SLOW 2	**D8**
SLOW BACKWARD	**23**
SLOW BACKWARD 2	**DB**
NEXT	**20**
PREVIOUS	**21**
CURSOR UP	**58**
CURSOR DOWN	**59**
CURSOR LEFT	**5A**
CURSOR RIGHT	**5B**
OK	**5C**
0	**0**
1	**1**
2	**2**
3	**3**
4	**4**
5	**5**
6	**6**
7	**7**
8	**8**
9	**9**
TOGGLE	**C8**
ANGLE	**85**
AUDIO	**4E**
SUBTITLES	**4B**
SUBTITLE ON/OFF	**E3**
ROOT MENU	**54**
TITLE MENU	**71**
MENU	**D1**
SETUP MENU	**82**
OSD ON/OFF	**F**
RETURN	**83**
RESUME	**D7**
SCAN	**2A**
SHUFFLE	**1C**
REPEAT	**1D**
A/B REPEAT	**3D**
TOGGLE SCART	**43**
OPEN/CLOSE	**42**
FTS	**FB**
KARAOKE	**E4**
OPTION	**FA**

CL 96532065_012.eps
120799

Figure 7-10

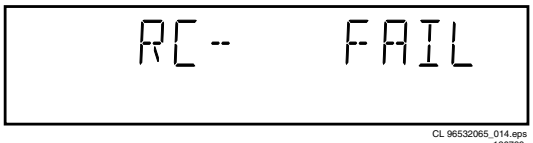
After pressing NEXT, the result of the remote control test is displayed on the local display of the DVD player as follows:



CL 96532065_013.eps
120799

Figure 7-11

Or



CL 96532065_014.eps
120799

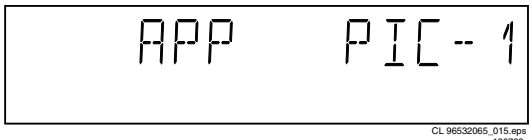
Figure 7-12

Pressing NEXT on the local keyboard again will proceed to the next test.

7.3.2 MONO PCB DIGITAL PART

PICTURE TEST

The picture test is performed by putting a predefined picture (colour bar) on the display (nucleus VideoColDencOn) and asking the user for confirmation. The display will show the following message:



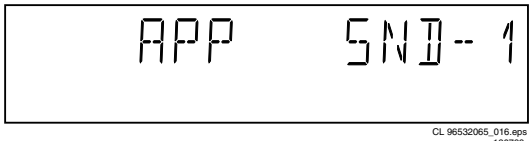
CL 96532065_015.eps
120799

Figure 7-13

By pressing PLAY the user confirms the test, pressing PAUSE will indicate the picture was invisible or incorrect. Pressing NEXT will proceed to the next test

SOUND 1 & SCART DVD TEST

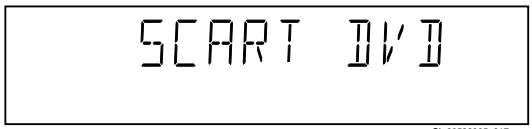
The first soundtest is performed by starting a pink noise sound that needs confirmation from the user (nucleus AudioPinkNoiseOn); the display will show the following message very shortly:



CL 96532065_016.eps
120799

Figure 7-14

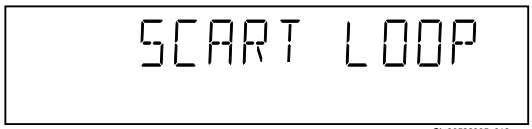
This sound will only be audible from version cut3.1 of Sti5505(item7503 on mono board) onwards. After starting up sound 1, SCART loop-trough will be simultaneously active during this test. SCART loop-trough will be measured with the aid of an external video source.
When entering the SCART loop-trough, the local display indicates:



CL 96532065_017.eps
120799

Figure 7-15

On the TV screen a colour bar (generated by nucleus VideoColDencOn) is visual and the internally generated pinknoise is audible. By pressing PLAY the user confirms the test, pressing PAUSE will indicate the sound was inaudible or incorrect. Pressing NEXT will proceed to the next test; if the user presses NEXT without pressing PLAY or PAUSE first, the result of this test will be TRUE (sound ok). By pressing the NEXT button there will be switched over to the external source, this must become now visible on the TV screen (using the SCART). The local display indicates:

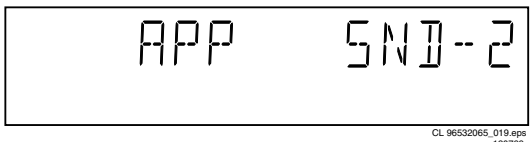


CL 96532065_018.eps
120799

Figure 7-16

The internally generated colour bar is still available on the CVBS and Y/C outputs. And the pinknoise-signal is still available on the cinch audio outputs. By pressing the PREV button, the internal generated colour bar becomes visual again. The test can be left by pressing the NEXT key for more than one second.

SOUND 2 TEST
The second soundtest is performed by producing a sine sound (nucleus AudioSineOn). The signal can be stopped by pressing the STOP-key. The display will show the following message:



CL 96532065_019.eps
120799

Figure 7-17

By pressing PLAY the user confirms the test, pressing PAUSE will indicate that something went wrong. Pressing NEXT will proceed to the next; if the user presses NEXT without pressing PLAY or PAUSE first, the result of this test will be TRUE (sound ok).

Colour set-up test
The colour set-up test is performed by putting the internally generated colour bar in diffferent settings on the TV screen. The first colour bar will be displayed in setting 1. The display will show the following message:

CL96532126_016.eps
261099

Figure 7-18

By pressing the NEXT button, you can go to the second setting. The local display indicates:

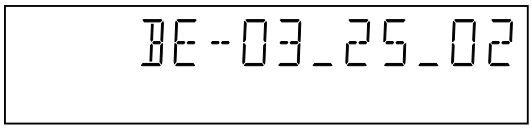
CL96532126_017.eps
261099

Figure 7-19

By pressing the PREVIOUS button, the colour bar with the first setting becomes visual again.
By pressing PLAY the user confirms the test, pressing PAUSE will indicate that something went wrong. The test can be left by pressing the NEXT key for more than one second; if the user presses NEXT without pressing PLAY or PAUSE first, the result of this test will be TRUE (colour set-up ok).

7.3.3 BASIC ENGINE

VERSION NUMBER
In the basic engine tests, the version number of the Basic Engine will be shown first, as the following example:

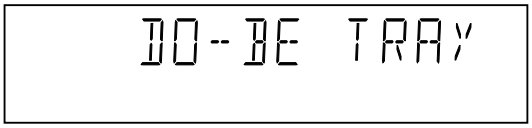


CL96532126_018.eps
261099

Figure 7-20

By pressing the NEXT key, the Basic Engine tests are started.

TRAY TEST
First, the tray is tested. The purpose of this test is also to give the user the opportunity to put a disc in the tray of the DVD player. Some tests on the Basic Engine require that a disc(e.g. DVD MPTD test disc) is present in the player. At the end of the Basic Engine tests this tray test will be repeated solely to enable the user to remove the disc in the tray. The local display will look as follows:

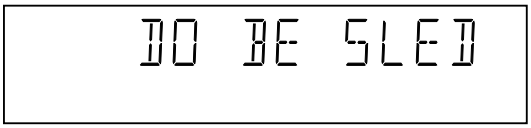


CL 96532065_021.eps
120799

Figure 7-21

By pressing PLAY or PAUSE the user can toggle the position of the tray. Note that this test will not contribute to the test result of the Basic Engine. Pressing NEXT will proceed to the next test, after the tray has been closed (by the software) if it was open.

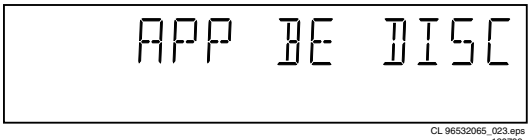
SLEDGE TEST(visual test)
The second Basic Engine test tests the sledge; the user can move the sledge as many times as desired by using PLAY (nucleus BeSledgeOut) and PAUSE (nucleus BeSledgeIn). Pressing NEXT on the local keyboard proceeds to the next test. Note that this test will not contribute to the test result of the Basic Engine. The local display will look as follows during the sledge test:



CL 96532065_022.eps
120799

Figure 7-22

DISC MOTOR TEST(visual test)
The third Basic Engine test tests the disc motor (nucleus BeDiscMotorOn); the local display looks as follows:

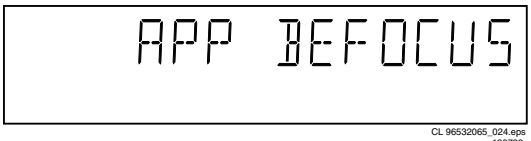


CL 96532065_023.eps
120799

Figure 7-23

By pressing PLAY the user confirms that the disc motor is running; pressing PAUSE indicates the disc motor does not work. Pressing NEXT proceeds to the next test, after a reset of the disc motor (nucleus BeDiscMotorOff). If the user presses NEXT before pressing PLAY or PAUSE, the result of this test will be TRUE (disc motor is running).

FOCUS TEST(visual test)
The fourth Basic Engine test tests the focussing; first focussing is turned on by calling nucleus BeFocusOn. The display will look as follows:

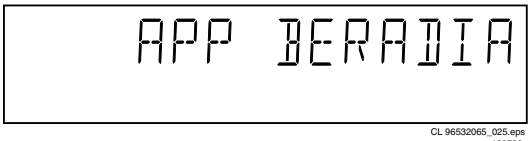


CL 96532065_024.eps
120799

Figure 7-24

By pressing PLAY the user confirms that the focussing was succesful; pressing PAUSE indicates a focussing failure. Pressing NEXT proceeds to the next test after a reset of the focussing (nucleus BeFocusOff); if NEXT is pressed before PLAY or PAUSE, the result of this test will be TRUE (focus successful).

RADIAL TEST(visual & listening test)
The fifth Basic Engine test tests the radial functionality (nucleus BeRadialOn); the local display looks as follows:

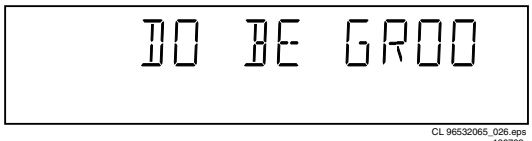


CL 96532065_025.eps
120799

Figure 7-25

By pressing PLAY the user confirms that the radial function worked; pressing PAUSE indicates the function does not work. Pressing NEXT proceeds to the next test, after a reset of the radial (nucleus BeRadialOff). If the user presses NEXT before pressing PLAY or PAUSE, the result of this test will be TRUE (radial successful).

JUMP TEST(listening test)
The sixth and last Basic Engine test tests the jumping by calling nuclei BeGroovesIn, BeGroovesMid and BeGroovesOut. During this test, the local display looks as follows:

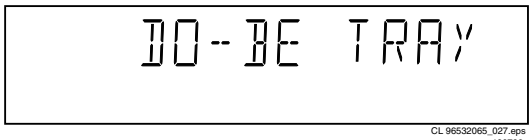


CL 96532065_026.eps
120799

Figure 7-26

The user can switch between the three different types of groove settings by pressing PLAY (forward to next nucleus in the list In-Mid-Out) or PAUSE (backward in the list In-Mid-Out). This is done in a cyclic manner; note that this test will not contribute to the test result of the Basic Engine. Pressing NEXT proceeds to the next test, after the disc motor has been shut off with a call to nucleus BeDiscMotorOff.

TRAY TEST
As a last action for the Basic Engine tests, the tray test is repeated. The local display will look as follows:



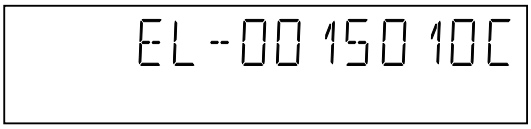
CL 96532065_027.eps
120799

Figure 7-27

This test is meant to give the user the opportunity to remove the disc in the tray. The tray position can be toggled using the PLAY and PAUSE key. The tray will be closed (by the software, if it is open) before proceeding to the next test when the user presses the NEXT key.

ERROR LOG

Reading the error log and error bits information can be useful to determine any errors that occurred recently during normal operation of the DVD player. Reading the error log is done by nucleus LogReadErr. The display during the errorlog readout looks as follows :



CL96532126_019.eps
261099

Figure 7-28

By pressing PLAY or PAUSE the user can move forward or backward (respectively) through the logged error codes. The highlighted number indicates which errorcode is currently on display (in the example above, errorcode number 4 is displayed). If "0000" is displayed at all positions, the error log is empty. Display of the logged errors is done in a cyclic manner. The errorcode with the lowest highlighted number is the most recent. By pressing NEXT on the local keyboard, the user can proceed to the next test.

ERROR BITS

Reading the error bits is done by nucleus LogReadBits. The display during the errorbits readout looks as follows:

CL96532126_020.eps
261099

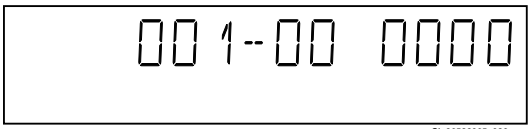
Figure 7-29

Only the set errorbits will be shown by their (decimal) number. Refer to the appropriate documentation for the explanation of each bit number. If the display only shows "EB-0", no error bits were set. By pressing NEXT the user can continue to the next test.
See table below:

Error log / bits table	Read ERROR LOG in player script	Read ERROR BITS in player script
Basic engine errors	Value:	Value:
Command to the Basic Engine not allowed in this stae or unknown command	150101	8
Parameter(s) from the command to the Basic Engine is not valid	150102	7
Sledge could not be moved to the ineer home position	150103	6
Focus failure	150104	5
Turntable motor could not be reached within timeout	150105	4
Radial servo could get on track on the disc	150106	3
PLL could not lock in the accessing or tracking state	150107	2
Subcode or sector information could not be read	150108	1
requested subcode could not be found	150109	16
Tray could not be closed or opened completely	15010A	15
TOC could not be read within timeout	15010B	14
The requested seek on the disc could not be executed	15010C	13
A requested lead is not on the disc	15010D	12
A non existing burst cutting area is requested	15010E	11
S2b communication error	1501F0	10
S2b communication error	1501F1	9
S2b communication error	1501F3	24
S2b communication error	1501F4	23
S2b communication error	1501F5	22
Digital PWB errors		
Communication error with the Sti 5505	90000	32
Communication error with the Sti 5505	90001	31
Disply processor errors		
Communication error with the display processor	190000	40

7.3.4 LOOP TEST

At the start of the loop test, the display will show the result of the interactive player test:



CL 96532065_030.eps
120799

Figure 7-30

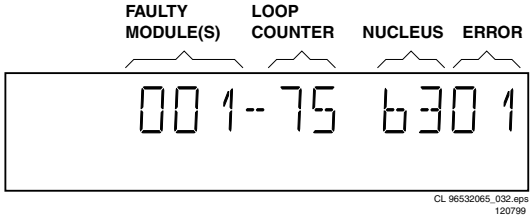
The left side of the display contains a 3-digit code, which can have a value between 000 and 111. These values are to be interpreted as follows:

Displayed Value	Indication for each module		
	Basic Engine	Mono PCB	Display PCB
000	ok	ok	ok
001	ok	ok	faulty
010	ok	faulty	ok
011	ok	faulty	faulty
100	faulty	ok	ok
101	faulty	ok	faulty
110	faulty	faulty	ok
111	faulty	faulty	faulty

CL 96532065_031.eps
120799

Figure 7-31

The loop test will perform the same nuclei as the dealer test, but it will loop through the list of nuclei indefinitely. The display of the DVD player will display not only the three digits indicating correct/faulty modules and the last found error code (as mentioned, faults are detected as far as they can be within the scope of the diagnostic software), but also a loop counter indicating how many times the loop has been gone through. Example:



CL 96532065_032.eps
120799

Figure 7-32

The number after the hyphen indicates the number of times the loop test has been performed; the 4 digits at the right side of the display show the last error that was found when running the loop test: the leftmost two digits of this code indicate which nucleus resulted in a fault; the rightmost two digits refer to the faultcode within that nucleus. For further explanation of this error code, see list of error codes below.

ERROR CODES LOOP TEST

ERROR CODE	NUCLEUS NUMBER	ERROR DESCRIPTION
0601	6	Calculated checksum of FLASH is not correct
0901	9	The DVD DRAM is faulty
1101	11	I2C bus busy before start
1102		NVRAM access time-out
1103		No NVRAM Acknowledge
1104		NVRAM reply time-out
1201	12	I2C bus busy
1202		I2C bus not working
1203		Slave controller not responding
1204		Slave response is not correct
1301	13	Parity error from basic engine to serial
1302		Parity error from serial to basic engine
1303		No communication between serial and basic engine
1304		Communication time-out error
1601	16	The SDRAM is faulty
5201	52	I2c bus busy
5202		I2c bus not working
5203		Colour setup controller not responding
5204		Colour setup controller response not correct
5401	54	I2c bus busy
5402		I2c bus not working
5403		Scart switch controller not responding
5404		Scart switch controller response not correct

CL96532126_021.eps
261099

Figure 7-33

8. Servicing DVD module and MONO board

8.1 Replacing DVD module

The DVD module(Basic Engine and the mono board) has to be exchanged completely in case of failure. A new module for DVD750/001 can be ordered with codenumber 3104 129 51980.
Return the defective unit complete assembled in original package to Philips Consumer Service in Eindhoven

8.2 Reprogramming of new mono boards.

Caution

This information is confidential and may not be distributed. Only a qualified service person should reprogram the mono board.

After replacement of the mono board, all the customer settings and also the region code will be lost.
Reprogramming of the mono board will put the player back in the state in which it has left the factory, i.e. with the default settings and the allowed region code.

Reprogramming is limited to 25 times
When the counter reaches 25, reprogramming is not possible anymore
Reprogramming will be done by way of the remote control.
Put the player in stop mode, no disc loaded.
Press the following keys on the remote control:
<***PLAY***> followed by numerical keys ***<1> <5> <9>***
The display shows: "***- - - - - - - - - - -***"
Press now successively the following keys :

for DVD950/171 : ***<0><0><4> <0><0><0><0><0><0><0><0><0><0>***

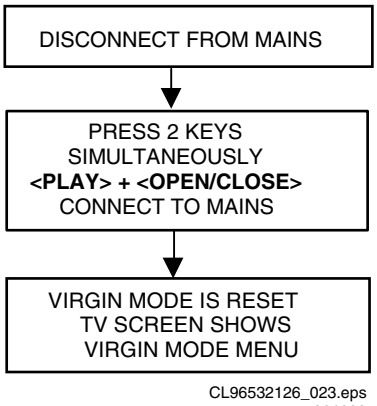
Press <***PLAY***> again.
The TV screen will become BLUE during a short time to confirm that the mono board has been reprogrammed, then the set goes to standby mode.

CL 96532126_026.eps
291099

Figure 8-1

8.3 Reset of Virgin Mode

After the player has been powered up for test by the dealer, it would have gone through the Virgin Mode. It is possible to reset the settings made during that mode before the delivery of player to the customer. This can be done as shown in the following diagram:

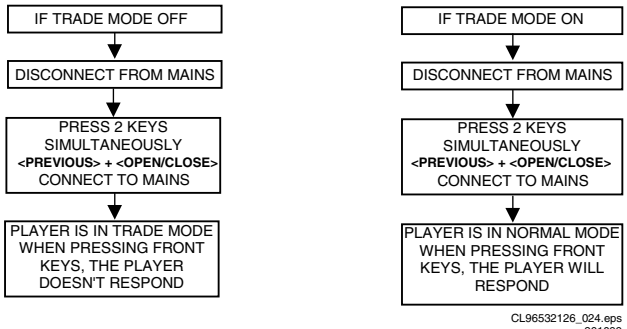


CL96532126_023.eps
261099

Figure 8-2

TRADE MODE

When the player is in Trade Mode, the player cannot be controlled by means of the front key buttons, but only by means of the remote control.



CL96532126_024.eps
261099

Figure 8-3

9. Test instructions Display board

9.1 Display board

9.1.1 Introduction

These test instructions are written for all versions of the display PCB 3104 123 42230.
The contents of the PCB can be split up into next blocks:

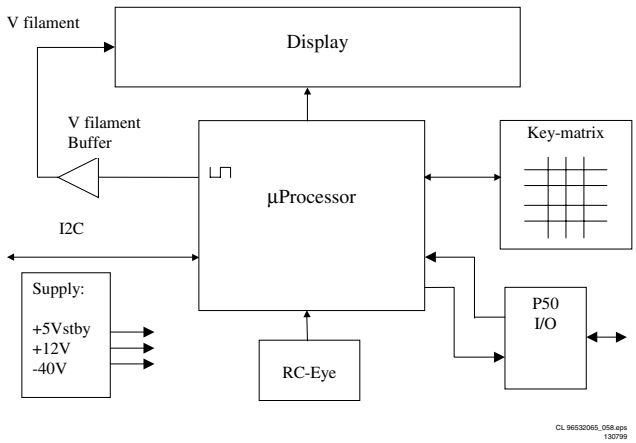


Figure 9-1

9.1.2 Functionality description:

The essential component of the display PCB is the uP (slave). This slave works on an 8MHz resonator and has a reset circuit that is triggered by the +5Vstby. After the reset pulse, the standby control line will release the reset of the host uP. This host uP will then initialise the slave. In addition, when going to stand-by, the slave will put the host uP in reset. When the slave receives the right IR or key code to leave the standby mode, the reset of the host uP will be released.
Other slave functions are:

- Square signal generator to generate the filament voltage, which is required for an AC FTD.
- Generates the grid and segment scanning for the FTD.
- Generates a scanning grid for the keys (separated from display scanning).
- Has inputs for RC (RC5 and RC6) and P50 (P50 controller is built in).

9.1.3 General

- Oscilloscope measurements have been carried out using a Philips PM3392A.
- Impedance of measuring-equipment should be > 1M(.
- To do correct measurements we recommend to use supply 3122 427 21370, which is used in all "second generation B" DVD-players. Make sure that the main 3.3V has a 0.7A load.

9.1.4 Reset

Check next reset timing with an oscilloscope at pin 10 of the (processor.

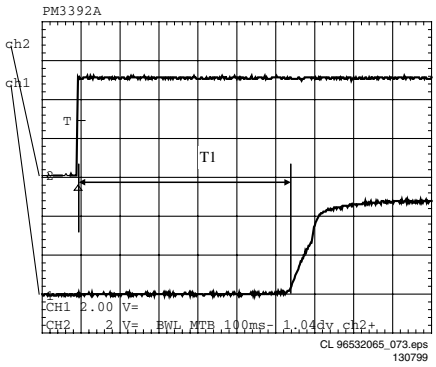


Figure 9-2

Timing: 400msec < T1 > 700msec.
CH1: +5Vstby voltage at power on.
CH2: Voltage at pin 10.

9.1.5 Display steering

Check next timing and level for all grid-lines (G1 r G14).

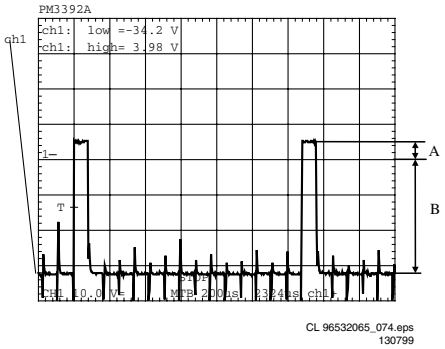


Figure 9-3

1. Check level A: +4V5 (10% for grid lines 1 => 11
2. Check level A: +4V0 (10% for grid lines 12 => 14
3. Check level B: -33V (10%
4. Check timing and levels of segment-lines P1 r P10:

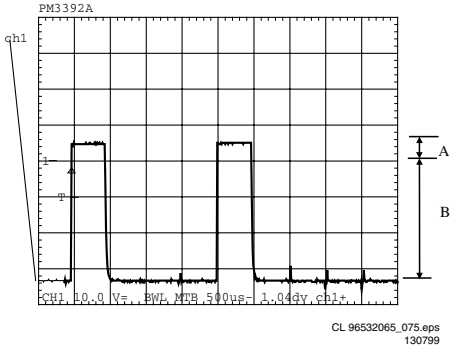


Figure 9-4

Level A:+4V5 (10%
Level B:-33V (10%
The data on these segment lines depend on the characters that are displayed.
The characters can be set by sending I2C commands to the display.
See the Slave URS how to send a display command.

9.1.6 Key-matrix

Connect a extra 10k(pull-up to pin 36 en 37 of the (P and check next matrix scanning at these pins.

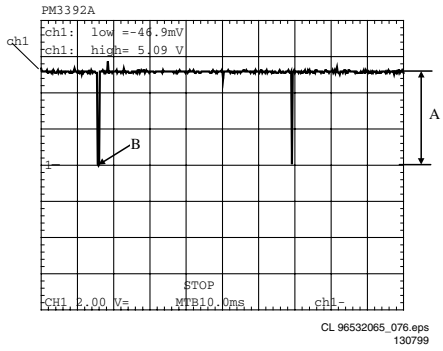


Figure 9-5

Level A: 5.0V (7%
Level B: 0V (200mV
Check matrix scanning from pin 26 until 33 of the (P.
The results should be the same as the diagram above.

9.1.7 I.R. receiver

Check at pin 23 of the (P if this line switches from low (< 0.3V) to high (> 4.5V), while pressing a key on a Philips RC5 or RC6 remote control.

9.1.8 Karaoke interface

The karaoke interface (4 lines) is a single direction communication.
This means that it consists of four uP output lines.
The interface can be checked by setting or resetting these output-ports via the I2C bus.
Send next command via the I2C bus:

Address	:	0x70
Command byte	:	0x24
Data byte	:	xxxxabcd
Wherea	:	a = Karaoke reset.
	:	b = Karaoke data.
	:	c = Karaoke clock.
	:	d = Karaoke strobe.

9.1.9 P50 interface

P50 is a bi-directional serial interface, which is used for communication between video equipment. For European sets, this communication goes via pin 10 of the scart-bus. In other regions, it can be a cinch bus at the back of the set.

1. Keep the uP in reset by short-circuiting emitter and collector of transistor 7108, via resistor 3100 and 3104 transistor 7101 is switched on.
2. Check the voltage at the P50 output connector 1118-5: < 200mV.

When the reset is released the uP output-pin becomes low and transistor 7101 is switched off.

1. Check the voltage at the P50 output connector 1118-5: 4V9 (5%.
2. Check also the uP P50 input (uP pin 20): 5V (5%.
3. Connect the P50 line (connector 1118-5) to ground.
4. Check again the uP P50 input (uP pin 20): <0V3.

10. Current mode power supply 30PS203

10.1 Blockdiagram

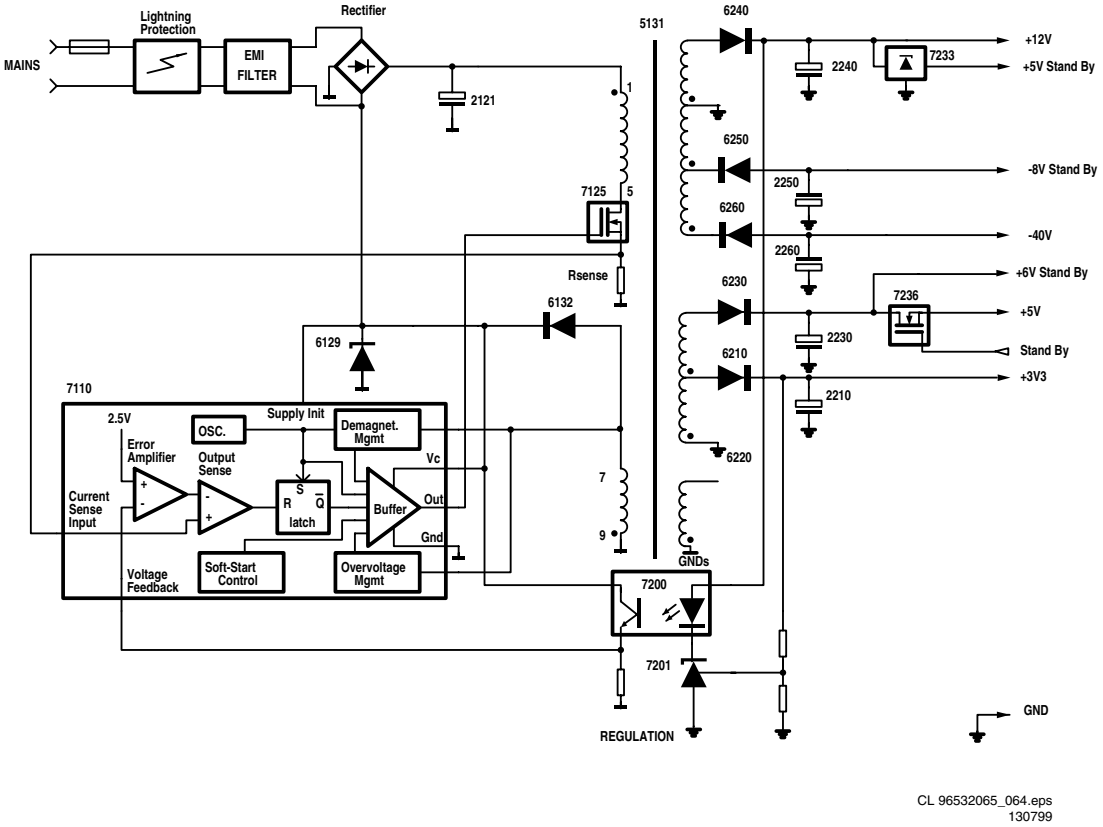


Figure 10-1

10.1.1 Function description of the current mode power supply

MOSFET 7125 is used as a power switch controlled by the controller IC 7110. When the switch is closed, energy is transferred from the mains into the transformer. This energy is then supplied to the load when the switch is opened. By control of the switched-on time, the energy transferred in each cycle is regulated so that the output voltages are independent of load or input voltage variations. The controlling device MC44603P is an integrated pulse width modulator. A clock signal initiates power pulses at a fixed frequency. The termination of each output pulse occurs when an analogue of the inductor current reaches a threshold established by the error signal. In this way the error signal actually controls the peak inductor current on cycle-by-cycle basis.

10.2 General description of MC44603

The MC44603 is an enhanced high performance controller that is specifically designed for Off-line and dc-to dc converter applications. This device has the unique ability of automatically changing operating modes if the converter output is overloaded., unloaded, or shorted. The MC44603 has several distinguishing features when compared to conventional SMPS controllers. These features consist of a foldback facility for overload protection, a standby mode when the converter output is slightly loaded, a demagnetisation detection for reduced switching stresses on transistor and diodes, and a high current totem pole output ideally suited for driving a power MOSFET. It can also be used for driving a bipolar transistor in low power converters. It is optimised to operate in discontinuous mode but can also operate in continuous mode. Its advanced design allows use in current mode or voltage mode control applications.

10.3 Pin connections

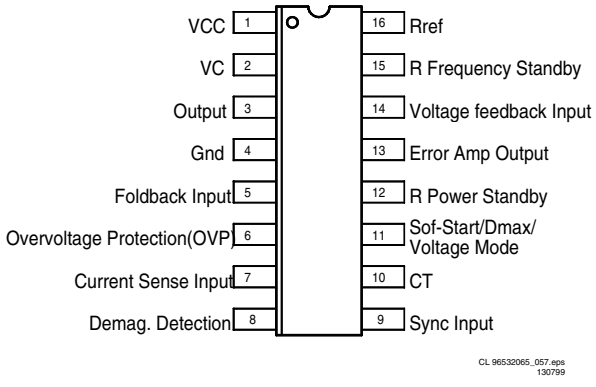


Figure 10-2

10.4 Blockdiagram of MC44603

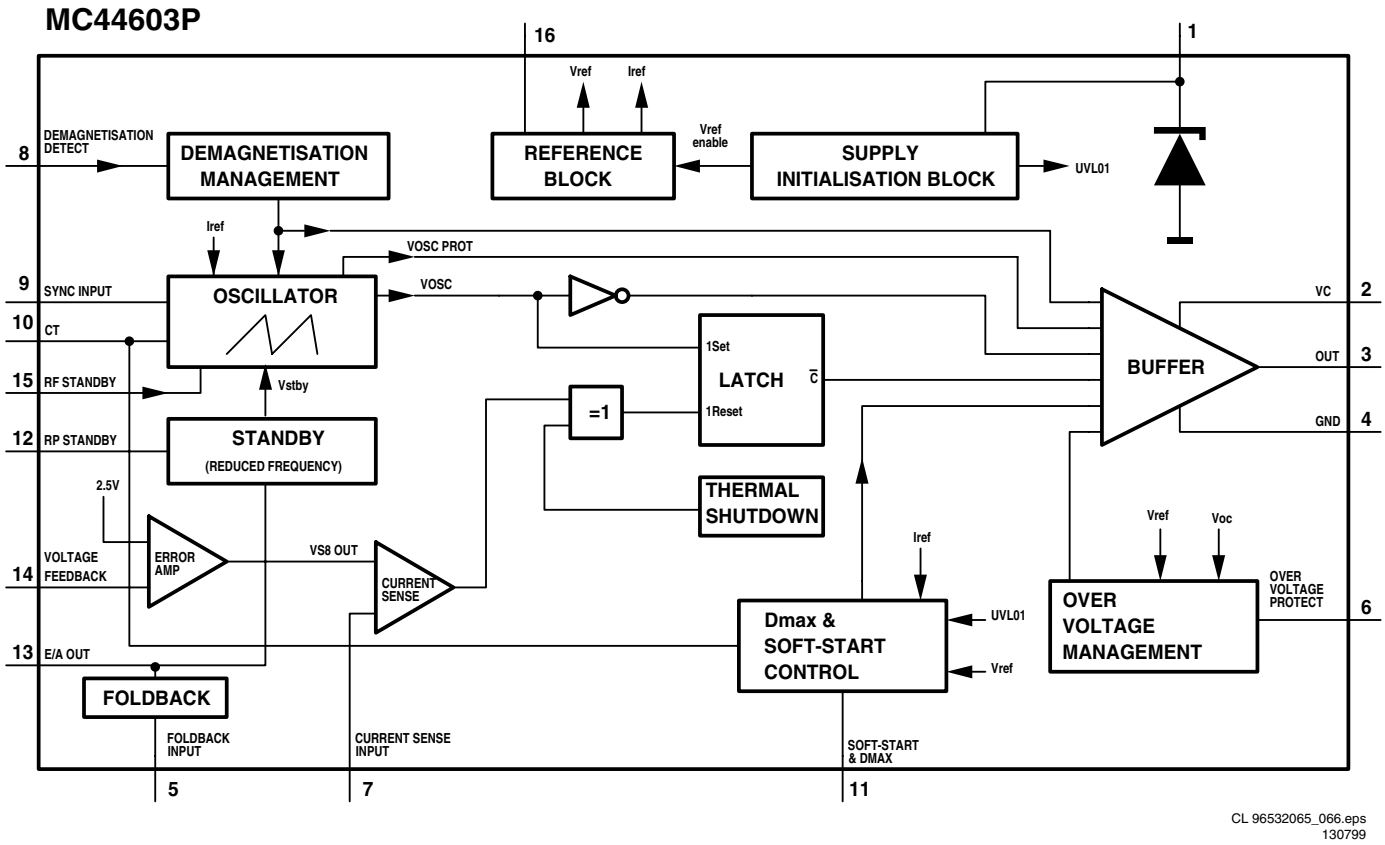


Figure 10-3

10.5 Pin function description

Pin function description

Pin	Name	Description
1	VCC	This pin is the positive supply of the IC. The operating voltage range after start-up is 9.0 to 14.5 V.
2	VC	The output high state (VOH) is set by the voltage applied to this pin.
3	Output	Peak currents up to 750 mA can be sourced or sunk, suitable for driving either MOSFET or Bipolar transistors.
4	Gnd	The groundpin is a single return, typically connected back to the power source.
5	Foldback Input	The foldback function provides overload protection.
6	Overvoltage Protection	When the overvoltage protection pin receives a voltage greater than 2.5V, the device is disabled and requires a complete restart sequence.
7	Current Sense Input	A voltage proportional to the current flowing into the power switch is connected to this input.
8	Demagnetisation Detection	A voltage delivered by an auxiliary transformer winding provides to the demagnetisation pin an indication of the magnetisation state of the flyback transformer. A zero voltage detection corresponds to complete core saturation.
9	Synchronisation Input	The synchronisation input pin can be activated with either a negative pulse going from a level between 0.7V and 3.7V to Gnd or a positive pulse going from a level between 0.7V and 3.7V up to a level higher than 3.7V. The oscillator runs free when Pin 9 is connected to Gnd.
10	C_T	The normal mode oscillator frequency is programmed by the capacitor CT choice together with the Rref resistance value. CT, connected between Pin 10 and Gnd, generates the oscillator sawtooth.
11	Soft-Start/Dmax/Voltage-Mode	A capacitor, resistor or a voltage source connected to this pin limits the switching duty-cycle. This pin can be used as a voltage mode control input. By connecting Pin 11 to Ground, the MC44603 can be shut down.
12	RP Standby	A voltage level applied to the RP Standby pin determines the output power level at which the oscillator will turn into the reduced frequency mode of operation(i.e. standby mode). An internal hysteresis comparator allows to return in the normal mode at a higher output power level.
13	E/A Out	The error amplifier output is made available for loop compensation.
14	Voltage Feedback	This is the inverting input of the Error Amplifier. It can be connected to the switching power supply output through an optical (or other) feedback loop.
15	RF Standby	The reduced frequency or standby frequency programming is made by the RF Standby resistance choice.

Figure 10-4

10.6 Operating description

The input voltage Vcc(pin 1) is monitored by a comparator with hysteresis, enabling the circuit at 14.5V and disabling the circuit below 7.5V. The error amplifier compares a voltage Vfb(pin 14) related to the output voltage of the power supply, with an internal 2.5V reference. The current sense comparator compares the output of the error amplifier with the switch current Isense(pin 7) of the power supply. The output of the current sense comparator resets a latch, which is set every cycle by the oscillator. The output stage is a totem pole, capable of driving a MOSFET directly.

10.6.1 Start-up sequence

t1: Charging the capacitor at Vcc
C2129 will be charged via R3123 and R3134, C2133 and C2111 via R3129. The output is switched off during t1.

t2: Charging of output capacitors
When the input voltage of the IC exceeds 14.5V, the circuit is enabled and starts to produce output pulses. The current consumption of the circuit increases to about 17mA, depending on the external loads of the IC. At first, the capacitor at the Vcc pin will discharge because the primary auxiliary voltage, coming from winding 7-9 is below the Vcc voltage. At some moment during t2, the primary auxiliary voltage reaches the same level as Vcc. The Vcc voltage is now determinated by this primary auxiliary voltage.

t3: regulation
The output voltage of the power supply is in regulation

t4: overload
When the output is shortened, the supply voltage of the circuit will decrease and after some time drop below the lower threshold voltage. At that moment, the output will be disabled and the process of charging the Vcc capacitor starts again. If the output is still shorted at the next t2 phase, the complete start-and stop sequence will repeat. The power supply comes in a hiccup mode

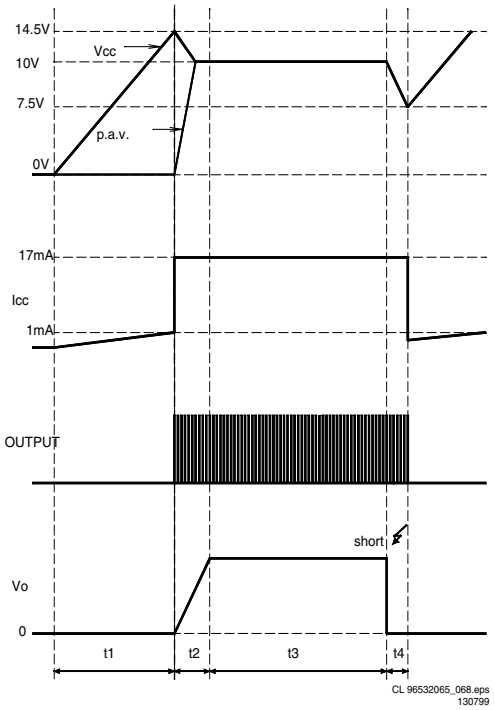


Figure 10-5 Start-up sequence

10.7 Regulation

Figure B shows the most relevant signals during the regulation phase of the power supply.
The oscillator voltage ramps up and down between V1 and V2. The voltage at the current sense terminal is compared every cycle with the output of the error amplifier Vcomp. The output is switched off when the current sense level exceeds the level at the output of the error amplifier.

1. TimeON phase : A drain current will flow from the positive supply at pin 1 of the transformer through the transformer's primary winding, the MOSFET and Rsense to ground. As the positive voltage at pin 1 of the transformer is constant, the current will increase linearly and create a ramp dependent on the mains voltage and the inductance of the primary winding. A certain amount of energy is stored in the transformer in the form of a magnetic field. The polarity of the voltages at the secundary windings is such that the diodes are non-conducting.
2. TimeDIODE phase : When the MOSFET is switched off, energy is no longer supplied to the tranformer. The inductance of the tranformer now tries to maintain the current which has been flowing through it at a constant level. The polarity of the voltage from the transformer therefore becomes reversed. This results in a current flow through the tranformer's secondary winding via the diodes, electrolytic capacitors and the load. This current is also ramp shaped but decreasing.
3. TimeDEAD phase : when the stored energy has been supplied to the load, the current in the secondary windings stops flowing. At this point the drain voltage of the MOSFET will drop to the voltage of C2121 with a ringing caused by the Drain-Source capacitance with the primary inductance.

The oscillator will start a next cyclus which consists of the described three phases. The time of the different phases depends on the mains voltage and the load.
TimeDEAD is maximum at an input of 400VDC and minimum load, it will be zero at an input of 100VDC and overload.

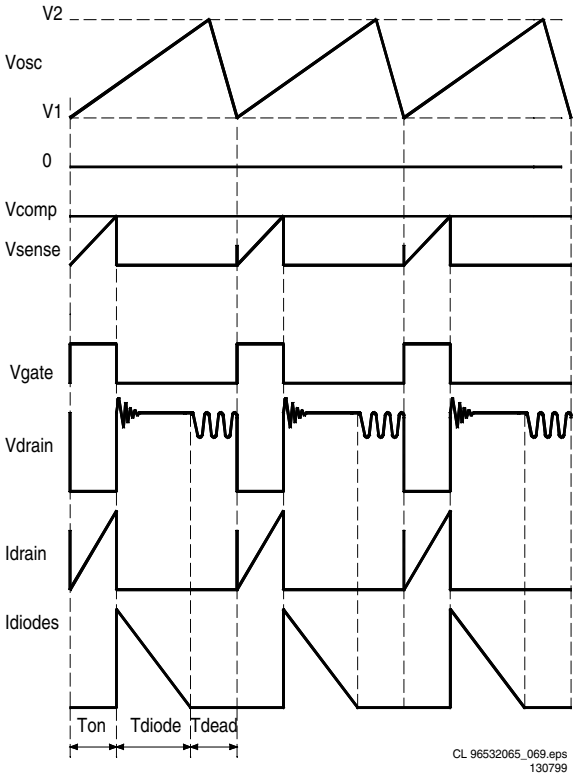
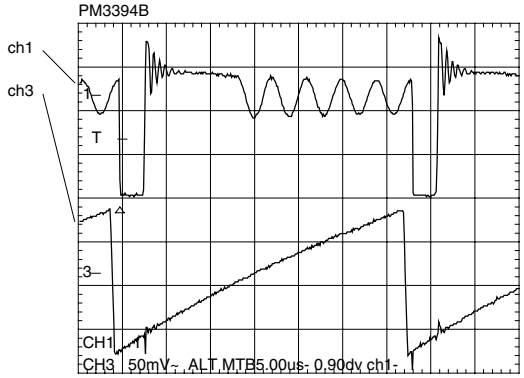


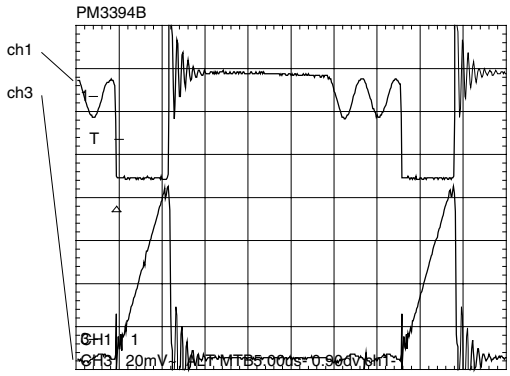
Figure 10-6 Regulation

10.8 Oscillograms

ch1 : Drain voltage
ch2 : Drain current
ch3 : Gate voltage



ch1 : Drain voltage
ch2 : Oscillator voltage



ch1 : Drain voltage
ch3 : Sense voltage

CL 96532065_070.eps
130799

Figure 10-7

10.9 Circuit description

10.9.1 Input circuit

The input circuit consists of a lightning protection circuit and an EMI filter.
The lightning protection comprises R3120, gasarrestor 1125 and R3124. The EMI filter is formed by C2120, L5120, C2125 and C2126. It prevents inflow of noises into the mains.

10.9.2 Primary rectifier/smoothing circuit

The AC input is rectified by rectifier bridge 6120 and smoothed into C2121. The voltage over C2121 is approximately 300V. It can vary from 100V to 390V.

10.9.3 Start circuit and Vcc supply

This circuit is formed by R3123, R3134, C2129, D6129, R3129, R3111, C2133 and C2111.
When the power plug is connected to the mains voltage, the stabilised voltage over D6129(24V) will charge C2133 via R3129. When the voltage reaches 14.5V across C2111, the control circuit of IC7110 is turned on and the regulation starts. During regulation, Vcc of IC7110 will be supplied by the rectified voltage from winding 7-9 via R3135, D6132 and C2133.

10.9.4 Control circuit

The control circuit exists of IC7110, C2102, 2104, 2107, 2109, 2110, R3102, 3103, 3104, 3107, 3108, 3109 and 3110. The frequency of the oscillator is defined by C2102 and R3110.
Power switch circuit
This circuit comprises MOSFET 7125, Rsense 3126, 3127 and 3128, R3125 , C2127, L5125, R3112 and R3113. R3125 is a pull-down resistor to remove static charges from the gate of the MOSFET.

10.9.5 Regulation circuit

The regulation circuit comprises opto-coupler 7200 which isolates the error signal from the control IC on the primary side and a reference component 7201. The TL431(7201) can be represented by two components:

- a very stable and accurate reference diode
- a high gain amplifier

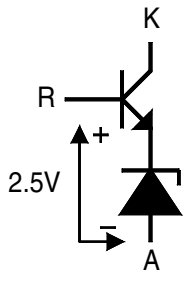


Figure 10-8

TL431 will conduct from cathode to anode when the reference is higher than the internal reference voltage of about 2.5V. If the reference voltage is lower, the cathode current is almost zero. The cathode current flows through the LED of the opto-coupler. The collector current of the opto-coupler flows through R3106, producing an error voltage, connected to voltage feedback pin 14 of IC7110.

10.9.6 Demagnetisation

The auxiliary winding (7-9) voltage is used to detect magnetic saturation of the transformer core and connected via R3101 to pin 8 of IC7110. During the demagnetisation phase, the output will be disabled.

10.9.7 Overvoltage protection circuit

This circuit consist of D6114, C2114, R3115 and R3116.
When the regulation circuit is interrupted due to an error in the control loop, the regulated output voltage will increase (overvoltage). This overvoltage is sensed on the primary winding 7-9.
When an overvoltage longer than 2.0 (s is detected, the output is disabled until VCC is removed and then re-applied. The power supply will come in a hiccup mode as long as the error in the control loop is present.

10.9.8 Secondary rectifier/smoothing circuit

There are 5 rectifier/smoothing circuits on the secondary side. Each voltage depends on the number of windings of the transformer.
The +5Vstby power supply is derived from the +12Vstby by voltage regulator 7233, C2233 and L5233.
The -5V voltage is regulated by voltage regulator 7259 and will be switched off via D6256, T7256 and T7255 during standby (control signal STAND BY is high). When jumper 4250 is mounted instead of this circuit, a supply voltage -8Vstby will be present at pin 9 of connector 0205. -5V is used in DVD730 MK II, DVD 930 MK II and DVD710. -8Vstby is used in DVD750 and DVD950.
The +5V power supply is derived from +6Vstby by the loader-up circuit formed by MOSFET 7236, reference component 7237, R3236, R3237 and C2239. This voltage will be switched off during STAND BY via T7235.
The 3V3 power supply is regulated by the control loop (7201, 7200, 7110) of the switched mode PSU.

11. List of abbreviations

SIGNAL NAME	DESCRIPTION
0/6/12	Scart switch control signal A/V board. 0V : loop through (AUX to TV), 6V : play 16:9 format, 12V : play 4:3 format
B	Buffered Video input Blue from DVD monoboard
B/C SWITCHING	Circuit for bi-directional switching of Blue and Chroma on dual scart. Switches between virtual ground (75 ohm) and video output buffer.
BC_AUX	Blue or Chroma input from AUX-scart
BC_TV	Blue or Chroma output to TV-scart
BO	Blue output from RGB video processor
BOUT_TV	Blue output to TV-scart
C_ENC	Buffered Chroma input from DVD monoboard
C_OUT	Chroma output to S-Video output buffer
CENTER	Control signal from monoboard to switch STEREO OUTPUT cinch to mono.
CVBS	Buffered Composite video input from DVD monoboard
DC_OFF	Control signal to switch off -8Vstby and +12Vstby during standby
DIG_OUT	Digital out
FBIN_AUX	Fast blanking input from AUX-scart
FBOUT_TV	Fast blanking output to TV-scart
G	Buffered Video input Green from DVD monoboard
GIN_AUX	Video input Green from AUX-scart
GO	Green output from RGB video processor
GOUT_TV	Video output Green to TV-scart
HP_L	Headphone left output
HP_R	Headphone right output
HSYNC	Horizontal synchronization for RGB video processor.
KILL	Kill control signal for audio outputs and for soft mute of DAC
LIN_AUX	Audio input left from AUX-scart
LIN_TV	Audio input left from TV-scart
LOUT_AUX	Audio output left to AUX-scart
LOUT_TV	Audio output left to TV-scart
LRCLK	Left/Right clock
P50	Bi-directional interface used for communication between video equipment
PCM_CLK	Audio system clock for DAC
PCM_OUT[0:2]	Audio serial output data
R	Buffered Video input Red from DVD monoboard
RCIN_TV	Red or Chroma input from TV-scart
RCOUT_TV	Red or Chroma output to TV-scart
RIN_AUX	Audio input right from AUX-scart
RIN_TV	Audio input right from TV-scart
RO	Red output from RGB video processor
ROUT_AUX	Audio output right to AUX-scart
ROUT_TV	Audio output right to TV-scart
SCL	I2C bus clock
SCLK	Audio serial bit clock
SDA	I2C bus data
ST_L	Stereo left output (not used)
ST_R	Stereo right output (not used)
STEREO_L	Audio cinch output left
STEREO_MUTE	Control signal from monoboard to switch on stereo mute circuit (option)
STEREO_R	Audio cinch output right
Y_ENC	Buffered Luma input from DVD monoboard
Y_OUT	Luma output to S-Video output buffer
YCVBSIN_AUX	Luma or CVBS input from AUX-scart
YCVBSIN_TV	Luma or CVBS input from TV-scart
YCVBSOUT_AUX	Luma or CVBS output to AUX-scart
YCVBSOUT_TV	Luma or CVBS output to TV-scart

12. Spare parts list

loader assy

Various

0001	9305 023 61001	VAL3000
0003	4822 404 10982	SUSPENSION
0004	4822 404 10982	SUSPENSION
0005	4822 404 10982	SUSPENSION
0006	4822 404 10982	SUSPENSION

monoboard

Various

1101	2422 025 15963	CON BM H 24P F 0.50 FFC SMD R
1102	2422 025 16158	CON BM H 8P F 1.00 FFC 0.3 R
1200	2422 540 98428	RES CER SM 8M467 CSTCC8.46MHz R
1300	2422 540 98426	RES CER SM 6MHz CSTCC6.00MHz R
1301	4822 267 51454	CONN. 11P FEMALE
1603	2422 025 16389	CON BM V 22P F 1.00 FFC 0.3 R

⊣⊢

2100	4822 126 14305	100nF 10% 16V 0603
2101	4822 126 14305	100nF 10% 16V 0603
2102	4822 124 80151	47µF 16V
2103	4822 126 13193	4.7nF 10% 63V
2105	4822 122 33777	47pF 5% 63V
2108	4822 126 14305	100nF 10% 16V 0603
2109	4822 126 14305	100nF 10% 16V 0603
2110	5322 126 11579	3.3nF 10% 63V
2113	4822 126 14305	100nF 10% 16V 0603
2114	4822 126 14305	100nF 10% 16V 0603
2115	4822 126 14494	22nF 10% 25V 0603
2116	4822 126 14494	22nF 10% 25V 0603
2117	4822 126 14494	22nF 10% 25V 0603
2118	4822 126 14305	100nF 10% 16V 0603
2119	4822 126 14305	100nF 10% 16V 0603
2121	4822 126 14305	100nF 10% 16V 0603
2122	4822 126 14305	100nF 10% 16V 0603
2123	4822 126 14508	180pF 5% 50V 0603
2124	4822 126 14508	180pF 5% 50V 0603
2125	4822 126 14305	100nF 10% 16V 0603
2126	4822 126 14305	100nF 10% 16V 0603
2127	4822 126 14494	22nF 10% 25V 0603
2128	4822 126 14305	100nF 10% 16V 0603
2129	4822 126 14305	100nF 10% 16V 0603
2130	4822 126 14508	180pF 5% 50V 0603
2132	4822 126 14305	100nF 10% 16V 0603
2141	4822 126 14305	100nF 10% 16V 0603
2144	4822 122 33741	10pF 10% 50V
2146	4822 122 33761	22pF 5% 50V
2147	4822 122 33761	22pF 5% 50V
2148	4822 122 33752	15pF 5% 50V
2149	4822 122 33752	15pF 5% 50V
2150	4822 122 33752	15pF 5% 50V
2151	4822 122 33752	15pF 5% 50V
2152	4822 126 13879	220nF 20% 16V
2153	4822 122 33761	22pF 5% 50V
2200	4822 126 14305	100nF 10% 16V 0603
2201	4822 126 14305	100nF 10% 16V 0603
2202	4822 126 14305	100nF 10% 16V 0603
2203	4822 126 14305	100nF 10% 16V 0603
2204	4822 126 14305	100nF 10% 16V 0603
2205	4822 126 14305	100nF 10% 16V 0603
2206	4822 126 14549	33nF 16V O6O3
2207	5322 126 11578	1nF 10% 50V 0603
2208	4822 126 14305	100nF 10% 16V 0603
2209	4822 126 14305	100nF 10% 16V 0603
2210	5322 126 11578	1nF 10% 50V 0603
2212	4822 126 14305	100nF 10% 16V 0603
2213	4822 126 14305	100nF 10% 16V 0603
2214	4822 126 14494	22nF 10% 25V 0603
2215	4822 124 23237	22µF 6.3V
2216	5322 126 11578	1nF 10% 50V 0603
2300	4822 126 14305	100nF 10% 16V 0603
2301	4822 126 14305	100nF 10% 16V 0603
2302	4822 126 14305	100nF 10% 16V 0603
2303	4822 124 80349	47µF 20% 6.3V
2304	4822 126 14494	22nF 10% 25V 0603
2305	4822 126 14494	22nF 10% 25V 0603
2306	4822 124 23002	10µF 16V
2307	4822 126 14494	22nF 10% 25V 0603
2309	4822 126 14305	100nF 10% 16V 0603
2310	4822 126 14305	100nF 10% 16V 0603
2314	4822 126 14305	100nF 10% 16V 0603
2315	4822 126 14305	100nF 10% 16V 0603
2316	4822 122 33752	15pF 5% 50V
2404	4822 126 14305	100nF 10% 16V 0603
2405	4822 126 14305	100nF 10% 16V 0603
2406	4822 126 14305	100nF 10% 16V 0603
2407	4822 126 14305	100nF 10% 16V 0603
2410	4822 126 14305	100nF 10% 16V 0603
2411	4822 126 14305	100nF 10% 16V 0603
2412	4822 126 14305	100nF 10% 16V 0603
2413	4822 126 14305	100nF 10% 16V 0603
2414	4822 126 14305	100nF 10% 16V 0603
2415	4822 126 14305	100nF 10% 16V 0603
2416	4822 126 14305	100nF 10% 16V 0603
2417	4822 126 14305	100nF 10% 16V 0603
2418	4822 126 14305	100nF 10% 16V 0603
2419	4822 124 12095	100µF 20% 16V
2420	4822 124 12095	100µF 20% 16V
2500	4822 126 14305	100nF 10% 16V 0603
2502	3198 030 74780	EL SM 35V 4U7 PM20 COL R
2503	4822 126 14305	100nF 10% 16V 0603
2504	4822 122 31765	100pF 2% 63V
2505	4822 126 14494	22nF 10% 25V 0603
2506	4822 124 23002	10µF 16V
2507	4822 126 14305	100nF 10% 16V 0603
2508	5322 126 11579	3.3nF 10% 63V
2509	4822 126 14241	0603 50V 330P COL R
2510	4822 126 14305	100nF 10% 16V 0603
2511	4822 126 14305	100nF 10% 16V 0603
2512	4822 126 14305	100nF 10% 16V 0603
2513	4822 126 14305	100nF 10% 16V 0603
2514	4822 126 14305	100nF 10% 16V 0603
2515	4822 126 14305	100nF 10% 16V 0603
2516	4822 126 14305	100nF 10% 16V 0603
2517	4822 126 14305	100nF 10% 16V 0603
2518	4822 126 14305	100nF 10% 16V 0603
2519	4822 126 14305	100nF 10% 16V 0603
2520	4822 126 14305	100nF 10% 16V 0603
2521	4822 126 14305	100nF 10% 16V 0603
2522	4822 126 14305	100nF 10% 16V 0603
2523	4822 126 14305	100nF 10% 16V 0603
2524	4822 126 14305	100nF 10% 16V 0603
2525	4822 126 14305	100nF 10% 16V 0603
2526	4822 126 14305	100nF 10% 16V 0603
2527	4822 126 14305	100nF 10% 16V 0603
2528	4822 126 14305	100nF 10% 16V 0603
2529	4822 126 14305	100nF 10% 16V 0603
2530	3198 030 74780	EL SM 35V 4U7 PM20 COL R
2531	3198 030 74780	EL SM 35V 4U7 PM20 COL R
2532	4822 122 31765	100pF 2% 63V
2533	4822 122 31765	100pF 2% 63V
2600	4822 126 14494	22nF 10% 25V 0603
2601	4822 126 14247	0603 50V 1N5 COL R
2602	4822 126 14247	0603 50V 1N5 COL R
2603	4822 126 14305	100nF 10% 16V 0603
2604	4822 124 12095	100µF 20% 16V
2605	4822 126 14494	22nF 10% 25V 0603
2606	4822 124 12095	100µF 20% 16V
2607	4822 124 12095	100µF 20% 16V
2608	4822 124 23002	10µF 16V
2609	4822 124 80151	47µF 16V
2610	4822 126 14305	100nF 10% 16V 0603
2611	4822 124 12095	100µF 20% 16V
2614	4822 126 13956	68pF 5% 63V CASE 0603
2615	4822 126 13956	68pF 5% 63V CASE 0603
2616	4822 126 13956	68pF 5% 63V CASE 0603
2617	4822 126 13956	68pF 5% 63V CASE 0603
2618	4822 126 14305	100nF 10% 16V 0603
2619	4822 126 14305	100nF 10% 16V 0603
2620	4822 126 13956	68pF 5% 63V CASE 0603
2621	4822 126 13956	68pF 5% 63V CASE 0603
2622	4822 126 13956	68pF 5% 63V CASE 0603
2623	4822 126 13956	68pF 5% 63V CASE 0603
2624	4822 126 13956	68pF 5% 63V CASE 0603
2625	4822 126 13956	68pF 5% 63V CASE 0603
2626	4822 126 13956	68pF 5% 63V CASE 0603
2627	4822 126 13956	68pF 5% 63V CASE 0603
2632	4822 124 12095	100µF 20% 16V
2633	4822 124 12095	100µF 20% 16V

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3100	4822 117 11152	4Ω7 5%
3101	4822 051 30103	10k 5% 0.062W
3103	4822 051 20228	2Ω2 5% 0.1W
3104	4822 051 20228	2Ω2 5% 0.1W
3105	4822 051 30562	5k6 5% 0.063W 0603 RC21 RST SM
3106	4822 051 20228	2Ω2 5% 0.1W
3107	4822 051 20228	2Ω2 5% 0.1W
3110	4822 051 30681	680Ω 5% 0.062W
3113	3198 021 90030	TECHNICAL SPECIFICATION
3114	4822 051 30273	27k 5% 0.062W
3116	4822 051 30471	470Ω 5% 0.062W
3117	4822 117 12917	1Ω 5% 0.062W CASE0603
3118	4822 051 30471	470Ω 5% 0.062W
3119	4822 051 30101	100Ω 5% 0.062W
3120	4822 051 30223	22k 5% 0.062W
3121	2322 734 69109	RST SM 0805 RC12H 91Ω ΠM1 P
3122	4822 117 11151	1Ω 5%
3125	4822 117 13613	2Ω2 5% 0603
3126	4822 117 13613	2Ω2 5% 0603
3127	4822 051 20228	2Ω2 5% 0.1W
3128	4822 051 20228	2Ω2 5% 0.1W
3129	4822 051 30479	47Ω 5% 0.062W
3130	3198 021 90030	TECHNICAL SPECIFICATION
3131	4822 051 20228	2Ω2 5% 0.1W
3132	4822 051 20228	2Ω2 5% 0.1W
3134	4822 117 11383	12k 1% 0.1W
3135	4822 051 30123	12k 5% 0.062W
3136	4822 051 30103	10k 5% 0.062W
3137	4822 051 30103	10k 5% 0.062W
3138	4822 051 30123	12k 5% 0.062W
3139	4822 051 30101	100Ω 5% 0.062W
3140	4822 117 11152	4Ω7 5%
3141	4822 051 30223	22k 5% 0.062W
3142	4822 051 30101	100Ω 5% 0.062W
3143	4822 051 30123	12k 5% 0.062W
3144	2322 734 69109	RST SM 0805 RC12H 91Ω ΠM1 P
3145	4822 051 30101	100Ω 5% 0.062W
3146	4822 051 30103	10k 5% 0.062W
3148	4822 051 30101	100Ω 5% 0.062W
3149	4822 051 30103	10k 5% 0.062W
3150	4822 051 30123	12k 5% 0.062W
3151	4822 051 30223	22k 5% 0.062W
3152	4822 117 13613	2Ω2 5% 0603
3153	4822 117 13613	2Ω2 5% 0603
3154	4822 117 12139	22Ω 5% 0.062W
3155	4822 051 30101	100Ω 5% 0.062W
3157	4822 051 30393	39k 5% 0.062W
3158	4822 051 30271	270Ω 5% 0.062W
3159	4822 051 30101	100Ω 5% 0.062W
3160	4822 051 30273	27k 5% 0.062W
3161	4822 051 30271	270Ω 5% 0.062W
3162	4822 051 30271	270Ω 5% 0.062W
3163	4822 051 30271	270Ω 5% 0.062W
3164	4822 051 30331	330Ω 5% 0.062W
3165	3198 021 90030	TECHNICAL SPECIFICATION
3166	4822 117 13613	2Ω2 5% 0603
3167	4822 117 13632	100k 1% 0603 0.62W
3168	4822 051 30103	10k 5% 0.062W
3169	4822 117 11151	1Ω 5%
3170	4822 051 30221	220Ω 5% 0.062W
3171	4822 051 30474	470k 5% 0.062W
3172	4822 117 11152	4Ω7 5%
3173	4822 051 30101	100Ω 5% 0.062W
3174	4822 051 30223	22k 5% 0.062W
3175	4822 051 30223	22k 5% 0.062W
3176	4822 117 13632	100k 1% 0603 0.62W
3178	4822 051 30273	27k 5% 0.062W
3179	3198 021 90030	TECHNICAL SPECIFICATION
3180	4822 051 30223	22k 5% 0.062W
3181	3198 021 90030	TECHNICAL SPECIFICATION
3182	3198 021 90030	TECHNICAL SPECIFICATION
3184	4822 117 12902	8k2 1% 0.063W 0603

3185	4822 051 30562	5k6 5% 0.063W 0603 RC21 RST SM
3187	4822 051 30331	330Ω 5% 0.062W
3194	4822 051 30479	47Ω 5% 0.062W
3199	4822 051 30101	100Ω 5% 0.062W
3200	4822 051 30103	10k 5% 0.062W
3201	4822 117 11748	2Ω2 1206 5% FUSE
3202	4822 117 11748	2Ω2 1206 5% FUSE
3203	4822 051 30105	1M 5% 0.062W
3204	4822 051 30331	330Ω 5% 0.062W
3205	4822 051 30103	10k 5% 0.062W
3206	4822 051 30103	10k 5% 0.062W
3208	4822 051 30272	2k7 5% 0.062W
3209	4822 051 30472	4k7 5% 0.062W
3210	4822 051 30392	3k9 5% 0.063W 0603
3211	4822 051 30472	4k7 5% 0.062W
3212	4822 117 11152	4Ω7 5%
3213	4822 117 11152	4Ω7 5%
3214	4822 051 30392	3k9 5% 0.063W 0603
3215	4822 051 30103	10k 5% 0.062W
3216	3198 021 90030	TECHNICAL SPECIFICATION
3218	3198 021 90030	TECHNICAL SPECIFICATION
3219	4822 051 30103	10k 5% 0.062W
3220	4822 051 30103	10k 5% 0.062W
3221	4822 051 30103	10k 5% 0.062W
3222	4822 117 11949	11k 1% 0.1W
3223	4822 117 11949	11k 1% 0.1W
3224	4822 051 30151	150Ω 5% 0.062W
3225	4822 051 20274	270k 5% 0.1W
3226	4822 051 30103	10k 5% 0.062W
3227	4822 051 30472	4k7 5% 0.062W
3228	4822 051 30103	10k 5% 0.062W
3229	4822 051 30123	12k 5% 0.062W
3230	4822 051 30472	4k7 5% 0.062W
3231	4822 051 30103	10k 5% 0.062W
3232	4822 117 13613	2Ω2 5% 0603
3234	4822 117 12902	8k2 1% 0.063W 0603
3235	4822 117 13632	100k 1% 0603 0.62W
3236	4822 051 30472	4k7 5% 0.062W
3300	4822 117 11152	4Ω7 5%
3301	4822 051 30105	1M 5% 0.062W
3302	4822 051 30221	220Ω 5% 0.062W
3304	4822 051 30272	2k7 5% 0.062W
3305	4822 051 30272	2k7 5% 0.062W
3306	4822 117 12903	1k8 1% 0.063W 0603
3309	4822 051 30103	10k 5% 0.062W
3310	4822 051 30223	22k 5% 0.062W
3311	4822 051 30223	22k 5% 0.062W
3312	4822 051 30472	4k7 5% 0.062W
3313	4822 051 30472	4k7 5% 0.062W
3316	4822 051 20108	1Ω 5% 0.1W
3317	4822 051 20108	1Ω 5% 0.1W
3318	4822 051 30472	4k7 5% 0.062W
3319	4822 051 30479	47Ω 5% 0.062W
3320	4822 051 30472	4k7 5% 0.062W
3321	4822 051 30682	6k8 5% 0.062W
3322	4822 117 11145	4k7 1% 0.1W
3323	4822 117 11145	4k7 1% 0.1W
3324	4822 117 13632	100k 1% 0603 0.62W
3325	4822 051 30682	6k8 5% 0.062W
3326	4822 051 30479	47Ω 5% 0.062W
3327	4822 051 30682	6k8 5% 0.062W
3328	4822 051 30223	22k 5% 0.062W
3329	4822 051 30223	22k 5% 0.062W
3330	4822 051 30223	22k 5% 0.062W
3404	4822 051 30103	10k 5% 0.062W
3405	3198 021 90030	TECHNICAL SPECIFICATION
3408	3198 021 90030	TECHNICAL SPECIFICATION
3409	4822 051 30103	10k 5% 0.062W
3411	3198 021 90030	TECHNICAL SPECIFICATION
3412	3198 021 90030	TECHNICAL SPECIFICATION
3413	4822 051 30103	10k 5% 0.062W
3500	4822 051 30332	3k3 5% 0.062W
3501	4822 051 30332	3k3 5% 0.062W
3502	4822 051 30223	22k 5% 0.062W
3503	4822 051 30103	10k 5% 0.062W
3504	4822 051 30103	10k 5% 0.062W
3505	4822 051 30103	10k 5% 0.062W
3506	4822 051 30103	10k 5% 0.062W
3507	4822 051 30472	4k7 5% 0.062W
3508	4822 051 30689	68Ω 5% 0.063W 0603 RC21 RST SM
3509	4822 051 30103	10k 5% 0.062W
3511	4822 051 30332	3k3 5% 0.062W
3512	4822 051 30332	3k3 5% 0.062W
3513	4822 051 30103	10k 5% 0.062W
3514	4822 051 30103	10k 5% 0.062W
3515	4822 051 30103	10k 5% 0.062W
3516	4822 051 30103	10k 5% 0.062W
3517	4822 051 30332	3k3 5% 0.062W
3519	4822 051 30103	10k 5% 0.062W
3520	4822 051 30103	10k 5% 0.062W
3521	4822 051 30103	10k 5% 0.062W
3522	4822 051 30103	10k 5% 0.062W
3523	4822 051 30332	3k3 5% 0.062W
3524	4822 051 30689	68Ω 5% 0.063W 0603 RC21 RST SM
3525	4822 051 30103	10k 5% 0.062W
3526	4822 051 30103	10k 5% 0.062W
3527	4822 051 30109	10Ω 5% 0.062W
3528	4822 051 30109	10Ω 5% 0.062W
3529	4822 051 30109	10Ω 5% 0.062W
3530	4822 051 30109	10Ω 5% 0.062W
3531	4822 051 30109	10Ω 5% 0.062W
3532	4822 051 30109	10Ω 5% 0.062W
3533	3198 021 90030	TECHNICAL SPECIFICATION
3534	4822 051 30103	10k 5% 0.062W
3535	4822 051 30153	15k 5% 0.062W
3536	4822 051 30101	100Ω 5% 0.062W
3537	4822 051 30331	330Ω 5% 0.062W
3538	4822 051 30681	680Ω 5% 0.062W
3539	4822 051 30101	100Ω 5% 0.062W
3541	4822 051 30101	100Ω 5% 0.062W
3542	4822 051 30101	100Ω 5% 0.062W
3545	4822 051 30221	220Ω 5% 0.062W
3605	4822 051 30103	10k 5% 0.062W
3606	4822 117 12925	47k 1% 0.063W 0603
3607	4822 117 13632	100k 1% 0603 0.62W
3608	4822 117 13632	100k 1% 0603 0.62W
3609	4822 117 13632	100k 1% 0603 0.62W
3610	4822 051 30103	10k 5% 0.062W
3611	4822 051 30103	10k 5% 0.062W
3612	4822 051 30103	10k 5% 0.062W
3613	4822 051 30103	10k 5% 0.062W
3614	4822 051 30103	10k 5% 0.062W
3615	4822 051 30103	10k 5% 0.062W
3616	4822 051 30103	10k 5% 0.062W
3618	4822 051 30223	22k 5% 0.062W
3619	4822 051 30223	22k 5% 0.062W
3620	4822 051 30101	100Ω 5% 0.062W
3621	4822 051 30101	100Ω 5% 0.062W
3622	4822 051 30101	100Ω 5% 0.062W
3623	4822 051 30101	100Ω 5% 0.062W
3624	4822 051 30101	100Ω 5% 0.062W
3625	4822 051 30101	100Ω 5% 0.062W
3626	4822 051 30102	1k 5% 0.062W
3627	4822 051 30471	470Ω 5% 0.062W
3628	4822 051 30471	470Ω 5% 0.062W
3629	4822 051 30472	4k7 5% 0.062W
3630	4822 051 30101	100Ω 5% 0.062W
3631	2322 704 64301	RST SM 0603 RC22H 430Ω ΠM1 P
3632	2322 704 64301	RST SM 0603 RC22H 430Ω ΠM1 P
3633	2322 704 64301	RST SM 0603 RC22H 430Ω ΠM1 P
3635	4822 051 30682	6k8 5% 0.062W
3636	4822 051 30682	6k8 5% 0.062W
3637	4822 051 30332	3k3 5% 0.062W
3639	4822 051 30689	68Ω 5% 0.063W 0603 RC21 RST SM
3640	3198 021 90030	TECHNICAL SPECIFICATION
3641	3198 021 90030	TECHNICAL SPECIFICATION
3642	4822 051 30103	10k 5% 0.062W
3643	3198 021 90030	TECHNICAL SPECIFICATION
3644	3198 021 90030	TECHNICAL SPECIFICATION
3646	3198 021 90030	TECHNICAL SPECIFICATION
3647	2322 704 64301	RST SM 0603 RC22H 430Ω ΠM1 P
3648	2322 704 64301	RST SM 0603 RC22H 430Ω ΠM1 P
3650	3198 021 90030	TECHNICAL SPECIFICATION
3651	2322 704 64301	RST SM 0603 RC22H 430Ω ΠM1 P
3653	3198 021 90030	TECHNICAL SPECIFICATION
3654	2322 704 64301	RST SM 0603 RC22H 430Ω ΠM1 P
3655	2322 704 64301	RST SM 0603 RC22H 430Ω ΠM1 P
3656	2322 704 64301	RST SM 0603 RC22H 430Ω ΠM1 P
3657	2322 704 64301	RST SM 0603 RC22H 430Ω ΠM1 P
3658	4822 051 30102	1k 5% 0.062W
3659	4822 051 30102	1k 5% 0.062W
3660	4822 051 30102	1k 5% 0.062W
3661	2322 704 64301	RST SM 0603 RC22H 430Ω ΠM1 P
3662	4822 051 30102	1k 5% 0.062W
3663	4822 051 30102	1k 5% 0.062W
3664	2322 704 64301	RST SM 0603 RC22H 430Ω ΠM1 P
3665	4822 117 12139	22Ω 5% 0.062W
3667	4822 051 30331	330Ω 5% 0.062W

5200	4822 157 11717	BLM31P500SPT
5300	4822 157 11717	BLM31P500SPT
5301	4822 157 11717	BLM31P500SPT
5400	4822 157 11499	BLM11P600SPT
5401	4822 157 11499	BLM11P600SPT
5501	4822 157 70299	2.2µH (NL322522T-2R2J)
5502	4822 157 70299	2.2µH (NL322522T-2R2J)
5503	4822 157 71206	BLM21A601SPT
5600	4822 157 71206	BLM21A601SPT
5601	4822 157 11499	BLM11P600SPT
5602	4822 157 70652	22µH (NL322522T-220J)
5603	4822 157 71206	BLM21A601SPT
5604	4822 157 70652	22µH (NL322522T-220J)
5605	4822 157 70652	22µH (NL322522T-220J)
5606	4822 157 70652	22µH (NL322522T-220J)
5607	4822 157 70652	22µH (NL322522T-220J)
5608	4822 157 70652	22µH (NL322522T-220J)
5609	4822 157 11717	BLM31P500SPT
5610	4822 157 11717	BLM31P500SPT

6200	4822 130 83757	BAS216
6301	9322 128 69685	S1D
6302	9322 128 69685	S1D
6303	9322 128 69685	S1D
6600	4822 130 11528	1PS76SB10

7100	4822 130 60511	BC847B
7102	9352 632 76518	TZA1023HL
7103	4822 209 17229	BA5938FM
7104	4822 209 30095	LM833D
7105	4822 209 32073	MC34072D
7109	4822 209 15083	AN78M09
7200	4822 209 17231	SAA7399HL
7201	5322 209 31276	SN74HCT573DW
7202	3104 123 95180	FLASH ASSY BASIC ENGINE DVD 2B
7203	4822 130 60373	BC856B
7304	4822 209 16877	BA6856FP
7310	4822 209 15899	CY7C199-15C
7311	9352 637 83557	IC SM SAA7335HL/E/M2 (PHSE) Y
7312	4822 130 60373	BC856B
7315	4822 130 60511	BC847B
7401	9322 132 01668	AM29LV160B
7404	9322 143 18668	MT48LC1M16A1TG-6S
7405	9322 143 18668	MT48LC1M16A1TG-6S
7501	4822 130 60511	BC847B
7503	9322 144 88671	IC SM STI5505EVB (ST00) Y
7504	4822 242 10838	27MHZ 120P FX0-31FT
7505	4822 209 17377	M24C32-WMN6/PROG
7600	5322 209 71568	PC74HCT14T
7604	4822 130 60511	BC847B
7605	4822 209 17398	LD1117DT33
7607	4822 130 60511	BC847B
7608	4822 130 60373	BC856B
7609	4822 130 60373	BC856B
7610	4822 130 60511	BC847B
7611	4822 209 16261	74HCT365D
7612	4822 130 60511	BC847B
7613	4822 130 60511	BC847B
7614	4822 130 60511	BC847B
7615	4822 130 60511	BC847B
7616	4822 209 16062	MK2742-03S
7617	4822 130 60511	BC847B
7618	4822 130 60511	BC847B

9100	3198 021 90030	TECHNICAL SPECIFICATION
9101	3198 021 90030	TECHNICAL SPECIFICATION
9200	3198 021 90030	TECHNICAL SPECIFICATION
9202	3198 021 90030	TECHNICAL SPECIFICATION
9203	3198 021 90030	TECHNICAL SPECIFICATION
9204	3198 021 90030	TECHNICAL SPECIFICATION
9205	3198 021 90030	TECHNICAL SPECIFICATION
9206	3198 021 90030	TECHNICAL SPECIFICATION
9208	3198 021 90030	TECHNICAL SPECIFICATION
9209	3198 021 90030	TECHNICAL SPECIFICATION
9210	3198 021 90030	TECHNICAL SPECIFICATION
9300	3198 021 90030	TECHNICAL SPECIFICATION
9301	3198 021 90030	TECHNICAL SPECIFICATION
9313	3198 021 90030	TECHNICAL SPECIFICATION
9314	3198 021 90030	TECHNICAL SPECIFICATION
9501	3198 021 90030	TECHNICAL SPECIFICATION
9502	3198 021 90030	TECHNICAL SPECIFICATION
9503	3198 021 90030	TECHNICAL SPECIFICATION
9504	3198 021 90030	TECHNICAL SPECIFICATION
9505	3198 021 90030	TECHNICAL SPECIFICATION
9506	3198 021 90030	TECHNICAL SPECIFICATION
9516	3198 021 90030	TECHNICAL SPECIFICATION
9517	3198 021 90030	TECHNICAL SPECIFICATION
9518	3198 021 90030	TECHNICAL SPECIFICATION
9519	3198 021 90030	TECHNICAL SPECIFICATION
9520	3198 021 90030	TECHNICAL SPECIFICATION

PSU

Various

0009	4822 265 11253	FUSE HOLDER 2P
0101▲	4822 265 31016	
1120▲	4822 253 30383	19181 (2,5A)
1125	4822 252 60151	DSP-501N-A21F

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2101	4822 126 13695	82pF 1% 63V
2102	5322 126 10733	680pF 5% 50V
2104	5322 126 10223	4.7nF 10% 63V
2106	4822 122 33735	27nF 10% 63V
2109	5322 122 31865	1.5nF 10% 63V
2110	4822 124 22652	2.2µF 20% 50V
2111	4822 126 14585	100nF 10% 50V
2113	4822 122 33127	2.2nF 10% 63V
2114	4822 126 14585	100nF 10% 50V
2125	4822 121 51598	2.2nF 5% 400V
2126	4822 121 51598	2.2nF 5% 400V
2127	4822 126 14525	47pF 5% 1KV
2129	4822 124 23057	4.7µF 20% 50V
2131▲	4822 126 14497	2.2nF 20% 250V
2133	4822 124 40207	100µF 20% 25V
2201	4822 122 33496	100nF 10% 63V
2202	4822 126 14585	100nF 10% 50V
2210	4822 124 12343	4700µF 6.3V
2230	4822 124 22779	1000µF 10V
2233	4822 124 41584	100µF 20% 10V
2239	4822 124 41584	100µF 20% 10V
2240	4822 124 81147	470µF 20% YK 25V
2250	4822 124 41545	220µF 20% 16V
2251	4822 122 33799	1nF 10% B 1KV
2260	4822 124 80637	3.3µF 20% 100V
2261	4822 126 14535	330pF 10% 1KV

3101	4822 116 52304	82k 5% 0.5W
3102	4822 051 20223	22k 5% 0.1W
3103	4822 051 20362	3k6 5% 0.1W
3104	4822 116 83933	15k 1% 0.1W
3105	4822 116 83933	15k 1% 0.1W
3106	4822 117 10361	680Ω 1% 0.1W
3107	4822 051 20184	180k 5% 0.1W
3108	4822 117 10965	18k 1% 0.1W
3109	4822 117 13577	330Ω 1% RC12H 0805 1.25W
3110	4822 117 10833	10k 1% 0.1W
3111	4822 051 20229	22Ω 5% 0.1W
3112	4822 117 10353	150Ω 1% 0.1W
3113	4822 051 20339	33Ω 5% 0.1W
3115	4822 050 21002	1k 1% 0.6W
3116	4822 117 11448	180Ω 1% 0.1W
3120	4822 116 21217	1M A/423V 800V
3122	4822 117 13515	2Ω7 3W AC03 WW
3123	4822 116 52251	18k 5% 0.5W
3124	4822 116 83872	220Ω 5% 0.5W
3125	4822 050 21002	1k 1% 0.6W
3126	4822 116 81753	4Ω7 5% 0.5W
3127	4822 116 80176	1Ω 5% 0.5W
3128	4822 116 80176	1Ω 5% 0.5W
3129	4822 050 21003	10k 1% 0.6W
3131	4822 051 10274	270k 2% 0.25W
3133	5322 116 64007	10M 5% 1W
3134	4822 116 52251	18k 5% 0.5W
3135	4822 117 13636	6Ω8 5% SFR16
3136	4822 051 10274	270k 2% 0.25W
3201	4822 051 20109	10Ω 5% 0.1W
3202	4822 117 11141	1k8 1% 0.1W
3204	4822 117 11504	270Ω 1% 0.1W
3205	4822 117 11145	4k7 1% 0.1W
3206	4822 051 20008	0Ω jumper . (0805)
3233	4822 050 21002	1k 1% 0.6W
3235	4822 116 52244	15k 5% 0.5W
3236	4822 117 11145	4k7 1% 0.1W
3237	4822 117 11145	4k7 1% 0.1W
3260	4822 051 20109	10Ω 5% 0.1W
4xxx	4822 051 10008	0Ω 5% 0.25W (1206)
4xxx	4822 051 20008	0Ω 5% 0.25W (0805)

5120▲	4822 157 53348	TER CHOKE ASSY CU15D3
5125	4822 157 11411	100mH z
5131▲	4822 146 11138	SWITCH MODE TRAFO
5210	4822 157 11722	6.8µH 20% 7.7X9.5
5230	4822 157 51462	10µH 10% 4X9.8MM LAL04T100K
5233	4822 157 51462	10µH 10% 4X9.8MM LAL04T100K
5240	4822 157 51195	1 µH 20% 4X9.8MM AXIAL
5259	4822 157 51462	10µH 10% 4X9.8MM LAL04T100K

6110	4822 130 42606	BYD33J
6111	4822 130 42606	BYD33J
6114	4822 130 42488	BYD33D
6120	4822 130 83707	SINB80
6129	5322 130 80122	BZX84-C24
6132	4822 130 42488	BYD33D
6210	4822 130 11577	PBYR1080
6230	4822 130 11577	PBYR1080
6250	4822 130 42488	BYD33D
6260	4822 130 42606	BYD33J

7110	4822 209 15684	MC44603AP
7125	4822 130 63787	STP4NA60FI
7200▲	4822 130 91451	CQY80NG
7201	4822 209 17373	KA431LZTA
7233	5322 209 86445	LM7805CT
7235	4822 130 42705	BC847
7236	4822 130 11578	STP16NE06
7237	4822 209 17373	KA431LZTA

Front PCB

Various

0001	3139 244 00130	FTD HOLDER

A/V panel

Various

1000	2422 025 16525	CON BM V 16P F 1.00 FFC 0.3 R
1001	2422 025 16526	CON BM V 22P F 1.00 FFC 0.3 R
1400	2422 026 05048	CON BM CINCH H 6P F B
1401	2422 026 05051	CON BM CINCH H 4P F B
1402	4822 267 10994	4P, MDIN
1403	2422 026 05049	CON BM CINCH H 3P F
1404	2422 026 05052	CON BM CINCH H 2P F GNGN B
1405	4822 267 31729	

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2400	4822 126 13482	470nF 80/20% 16V
2401	4822 124 40207	100µF 20% 25V
2402	4822 124 40207	100µF 20% 25V
2403	4822 122 33575	220pF 5% 63V CASE
2404	4822 122 33575	220pF 5% 63V CASE
2405	4822 126 13473	220nF 80-20% 50V
2406	5322 122 32654	22nF 10% 63V
2407	4822 124 40433	47µF 20% 25V
2408	4822 124 40207	100µF 20% 25V
2409	4822 124 40207	100µF 20% 25V
2411	4822 124 40207	100µF 20% 25V
2430	4822 126 14076	220nF 25V. P8020
2431	4822 124 40433	47µF 20% 25V
2432	5322 122 32654	22nF 10% 63V
2433	5322 122 32654	22nF 10% 63V
2434	4822 126 14585	100nF 10% 50V
2435	4822 124 40433	47µF 20% 25V
2436	5322 122 32531	100pF 5% 50V
2437	5322 122 32531	100pF 5% 50V
2438	5322 122 32531	100pF 5% 50V
2439	5322 122 32531	100pF 5% 50V
2440	4822 124 22339	100UE 16V
2441	5322 126 10511	1nF 5% 50V
2442	4822 124 22339	100UE 16V
2445	5322 126 10511	1nF 5% 50V
2447	4822 124 40433	47µF 20% 25V
2450	5322 122 32268	470pF 10% 50V
2451	5322 122 32268	470pF 10% 50V
2452	5322 126 10511	1nF 5% 50V
2453	5322 122 32654	22nF 10% 63V
2454	4822 124 40433	47µF 20% 25V
2455	5322 122 32654	22nF 10% 63V
2456	5322 122 32658	22pF 5% 50V
2457	5322 122 32658	22pF 5% 50V
2458	5322 122 32658	22pF 5% 50V
2459	4822 124 40433	47µF 20% 25V
2460	4822 124 40433	47µF 20% 25V
2462	5322 126 10511	1nF 5% 50V
2465	5322 126 10511	1nF 5% 50V
2466	4822 124 40433	47µF 20% 25V
2467	5322 126 10511	1nF 5% 50V
2469	4822 126 13692	47pF 1% 63V
2470	5322 122 32658	22pF 5% 50V
2471	5322 122 32654	22nF 10% 63V
2472	4822 124 40433	47µF 20% 25V
2473	4822 124 22339	100UE 16V
2474	5322 122 32654	22nF 10% 63V
2475	5322 122 32654	22nF 10% 63V
2476	4822 124 22339	100UE 16V
2488	4822 124 40248	10µF 20% 63V
2489	4822 126 13692	47pF 1% 63V
2490	4822 126 14585	100nF 10% 50V
2491	4822 126 14585	100nF 10% 50V
2492	4822 126 14585	100nF 10% 50V
2494	5322 122 32654	22nF 10% 63V
2495	5322 122 32654	22nF 10% 63V
2496	5322 122 32654	22nF 10% 63V
2497	5322 126 10511	1nF 5% 50V
2498	5322 126 10511	1nF 5% 50V
2505	4822 124 81151	22µF 50V
2506	4822 124 40248	10µF 20% 63V
2602	4822 126 13482	470nF 80/20% 16V
2603	4822 126 13482	470nF 80/20% 16V

2604	4822 126 13482	470nF 80/20% 16V
2605	4822 122 33177	10nF 20% 50V
2606	4822 122 33177	10nF 20% 50V
2607	4822 122 33177	10nF 20% 50V
2608	4822 122 33177	10nF 20% 50V
2609	4822 122 33177	10nF 20% 50V
2610	4822 122 33177	10nF 20% 50V
2611	4822 126 13692	47pF 1% 63V
2612	4822 126 13692	47pF 1% 63V
2613	4822 126 13482	470nF 80/20% 16V
2614	4822 126 14076	220nF 25V. P8020
2616	4822 126 14076	220nF 25V. P8020
2618	4822 126 14076	220nF 25V. P8020
2620	4822 126 14585	100nF 10% 50V
2621	4822 126 14585	100nF 10% 50V
2622	4822 126 14585	100nF 10% 50V
2623	4822 124 40433	47µF 20% 25V
2624	5322 126 10511	1nF 5% 50V
2625	5322 126 10511	1nF 5% 50V
2627	5322 126 10511	1nF 5% 50V
2628	5322 126 10511	1nF 5% 50V
2629	5322 126 10511	1nF 5% 50V
2630	5322 126 10511	1nF 5% 50V
2631	5322 126 10511	1nF 5% 50V
2638	4822 124 40207	100µF 20% 25V
2639	5322 126 10511	1nF 5% 50V

3400	4822 117 10833	10k 1% 0.1W
3401	4822 051 20472	4k7 5% 0.1W
3402	4822 117 11152	4Ω7 5%
3403	4822 051 20472	4k7 5% 0.1W
3404	4822 051 20472	4k7 5% 0.1W
3405	4822 117 11152	4Ω7 5%
3406	4822 051 20472	4k7 5% 0.1W
3407	4822 051 20472	4k7 5% 0.1W
3408	4822 051 20472	4k7 5% 0.1W
3409	4822 051 20472	4k7 5% 0.1W
3410	4822 051 20472	4k7 5% 0.1W
3411	4822 051 20472	4k7 5% 0.1W
3412	4822 051 20472	4k7 5% 0.1W
3413	4822 117 11504	270Ω 1% 0.1W
3414	4822 051 20101	100Ω 5% 0.1W
3415	4822 117 11507	6k8 1% 0.1W
3416	4822 117 11454	820Ω 1% 0.1W
3417	4822 051 20472	4k7 5% 0.1W
3418	4822 117 10361	680Ω 1% 0.1W
3419	4822 117 11927	75Ω 1% 0.1W
3420	4822 117 11449	2k2 1% 0.1W
3421	4822 117 11927	75Ω 1% 0.1W
3422	4822 117 11449	2k2 1% 0.1W
3424	4822 117 11152	4Ω7 5%
3425	4822 117 11152	4Ω7 5%
3429	5322 117 12487	1k RC12G 1% 0.125W
3430	5322 117 12487	1k RC12G 1% 0.125W
3431	4822 117 12635	10Ω 1% 0.125W
3432	4822 117 11139	1k5 1% 0.1W
3433	2120 108 93474	RST SM 0805 ERJ6ΩN 750Ω PM1
3434	2120 108 92619	RST SM0805 ERJ6ΩN 2κ2ΠM1
3435	5322 117 12487	1k RC12G 1% 0.125W
3436	5322 117 12487	1k RC12G 1% 0.125W
3437	5322 117 12487	1k RC12G 1% 0.125W
3438	4822 051 20008	0Ω jumper . (0805)
3439	2120 108 92616	RST SM 0805 ERJ6ΩN 1κ2 ΠM1
3440	4822 117 11953	560Ω 1% 0.1W
3441	2120 108 92625	RST SM 0805 ERJ6ΩN 5κ6ΠM1
3442	5322 117 12487	1k RC12G 1% 0.125W
3447	4822 117 10833	10k 1% 0.1W
3448	4822 116 83933	15k 1% 0.1W
3449	4822 051 20223	22k 5% 0.1W
3450	4822 051 20223	22k 5% 0.1W
3451	4822 117 11449	2k2 1% 0.1W
3452	4822 051 20822	8k2 5% 0.1W
3453	4822 117 11504	270Ω 1% 0.1W
3454	4822 051 20101	100Ω 5% 0.1W
3455	4822 117 11507	6k8 1% 0.1W
3456	4822 117 11454	820Ω 1% 0.1W
3457	4822 051 20472	4k7 5% 0.1W
3458	4822 117 10361	680Ω 1% 0.1W
3459	4822 051 20471	470Ω 5% 0.1W
3460	4822 117 11927	75Ω 1% 0.1W
3461	4822 117 11504	270Ω 1% 0.1W
3462	4822 051 20101	100Ω 5% 0.1W
3463	4822 051 20101	100Ω 5% 0.1W
3464	4822 117 11507	6k8 1% 0.1W
3465	4822 117 11454	820Ω 1% 0.1W
3466	4822 051 20472	4k7 5% 0.1W
3467	4822 117 10361	680Ω 1% 0.1W
3468	4822 117 11449	2k2 1% 0.1W
3469	4822 117 11927	75Ω 1% 0.1W
3474	4822 051 20008	0Ω jumper . (0805)
3476	4822 117 11927	75Ω 1% 0.1W
3477	4822 051 20008	0Ω jumper . (0805)
3479	4822 117 11927	75Ω 1% 0.1W
3480	4822 117 11449	2k2 1% 0.1W
3481	4822 051 20562	5k6 5% 0.1W 0805
3482	4822 051 20101	100Ω 5% 0.1W
3483	4822 051 20101	100Ω 5% 0.1W
3484	4822 117 10833	10k 1% 0.1W
3485	4822 117 10833	10k 1% 0.1W
3486	4822 117 10833	10k 1% 0.1W
3487	4822 117 10833	10k 1% 0.1W
3488	4822 051 20101	100Ω 5% 0.1W
3489	4822 117 12955	2k7 1% 0.1W 0805
3490	4822 051 20101	100Ω 5% 0.1W
3491	4822 117 12955	2k7 1% 0.1W 0805
3492	4822 117 10833	10k 1% 0.1W
3493	4822 117 10833	10k 1% 0.1W
3494	4822 117 10833	10k 1% 0.1W
3495	4822 117 10833	10k 1% 0.1W
3496	4822 051 20101	100Ω 5% 0.1W
3497	4822 051 20101	100Ω 5% 0.1W
3498	4822 117 10833	10k 1% 0.1W
3499	4822 117 12955	2k7 1% 0.1W 0805
3500	4822 117 12955	2k7 1% 0.1W 0805
3501	4822 117 10833	10k 1% 0.1W
3502	4822 117 10837	100k 1% 0.1W
3503	4822 117 10837	100k 1% 0.1W
3504	4822 051 20562	5k6 5% 0.1W 0805
3505	4822 117 10833	10k 1% 0.1W
3506	4822 051 20562	5k6 5% 0.1W 0805
3507	4822 117 10833	10k 1% 0.1W
3509	4822 117 12955	2k7 1% 0.1W 0805
3510	4822 117 10833	10k 1% 0.1W
3511	4822 117 10833	10k 1% 0.1W
3512	4822 117 11503	220Ω 1% 0.1W
3514	4822 117 12955	2k7 1% 0.1W 0805
3515	4822 117 10837	100k 1% 0.1W
3516	4822 051 20562	5k6 5% 0.1W 0805
3517	4822 117 10833	10k 1% 0.1W
3518	4822 117 11503	220Ω 1% 0.1W
3519	4822 117 12955	2k7 1% 0.1W 0805
3520	4822 117 10833	10k 1% 0.1W
3521	4822 117 11503	220Ω 1% 0.1W
3522	4822 117 12955	2k7 1% 0.1W 0805
3523	4822 117 10833	10k 1% 0.1W
3524	4822 051 20562	5k6 5% 0.1W 0805
3525	4822 117 10837	100k 1% 0.1W
3526	4822 051 20101	100Ω 5% 0.1W
3527	4822 051 20101	100Ω 5% 0.1W
3528	4822 117 12955	2k7 1% 0.1W 0805
3529	4822 117 12955	2k7 1% 0.1W 0805
3530	4822 051 20101	100Ω 5% 0.1W
3531	4822 051 20101	100Ω 5% 0.1W
3532	4822 117 12955	2k7 1% 0.1W 0805
3533	4822 117 12955	2k7 1% 0.1W 0805
3539	4822 117 10834	47k 1% 0.1W
3540	4822 117 10833	10k 1% 0.1W
3541	4822 051 20101	100Ω 5% 0.1W
3542	4822 051 20101	100Ω 5% 0.1W
3543	4822 117 12521	68Ω 1% 0.1W
3551	4822 117 10833	10k 1% 0.1W
3552	4822 051 20478	4Ω7 5% 0.1W
3553	4822 117 10833	10k 1% 0.1W
3554	4822 117 11503	220Ω 1% 0.1W
3555	4822 051 20101	100Ω 5% 0.1W
3556	4822 051 20101	100Ω 5% 0.1W
3559	4822 117 11152	4Ω7 5%
3560	4822 051 20101	100Ω 5% 0.1W
3561	4822 051 20101	100Ω 5% 0.1W
3562	4822 117 12955	2k7 1% 0.1W 0805
3563	4822 117 10833	10k 1% 0.1W
3564	4822 117 10833	10k 1% 0.1W
3608	4822 051 20478	4Ω7 5% 0.1W
3630	4822 051 20223	22k 5% 0.1W
3631	4822 051 20223	22k 5% 0.1W
3632	4822 051 20223	22k 5% 0.1W
3633	4822 117 11927	75Ω 1% 0.1W
3634	4822 117 11927	75Ω 1% 0.1W
3635	4822 117 11927	75Ω 1% 0.1W
3636	4822 051 20223	22k 5% 0.1W
3638	4822 051 20223	22k 5% 0.1W
3641	4822 051 20101	100Ω 5% 0.1W
3642	4822 051 20101	100Ω 5% 0.1W
3643	4822 117 11149	82k 1% 0.1W
3644	4822 051 20562	5k6 5% 0.1W 0805
3645	4822 051 10102	1k 2% 0.25W
3646	4822 117 10833	10k 1% 0.1W
3647	4822 117 11504	270Ω 1% 0.1W
3648	4822 051 20101	100Ω 5% 0.1W
3649	4822 117 11507	6k8 1% 0.1W
3650	4822 117 11454	820Ω 1% 0.1W
3651	4822 051 20101	100Ω 5% 0.1W
3652	4822 117 10361	680Ω 1% 0.1W
3655	4822 117 11449	2k2 1% 0.1W
3656	4822 117 11927	75Ω 1% 0.1W
3658	4822 117 11452	430Ω 1% 0.1W
3659	2120 108 92619	RST SM0805 ERJ6ΩN 2κ2ΠM1
3660	2322 734 63309	RST SM 0805 RC12H 33Ω ΠM1 P
3661	2120 108 92612	RST SM 0805 ERJ6ΩN 470Ω PM1 R
3662	5322 117 12487	1k RC12G 1% 0.125W
3663	2120 108 93474	RST SM 0805 ERJ6ΩN 750Ω PM1
3664	5322 117 12487	1k RC12G 1% 0.125W
3667	4822 051 20101	100Ω 5% 0.1W
3669	4822 051 20101	100Ω 5% 0.1W
3670	4822 117 11449	2k2 1% 0.1W
3671	4822 051 20101	100Ω 5% 0.1W
3672	4822 117 11449	2k2 1% 0.1W
3673	4822 051 20101	100Ω 5% 0.1W
3674	4822 117 11449	2k2 1% 0.1W
3675	4822 117 11452	430Ω 1% 0.1W
3676	2120 108 92619	RST SM0805 ERJ6ΩN 2κ2ΠM1
3677	2322 734 63309	RST SM 0805 RC12H 33Ω ΠM1 P
3678	2120 108 92612	RST SM 0805 ERJ6ΩN 470Ω PM1 R
3679	5322 117 12487	1k RC12G 1% 0.125W
3680	4822 051 20101	100Ω 5% 0.1W
3681	4822 117 11449	2k2 1% 0.1W
3682	2120 108 92616	RST SM 0805 ERJ6ΩN 1κ2 ΠM1
3683	5322 117 12487	1k RC12G 1% 0.125W
3684	4822 051 20472	4k7 5% 0.1W
3686	4822 051 20472	4k7 5% 0.1W
4xxx	4822 051 10008	0Ω 5% 0.25W (1206)
4xxx	4822 051 20008	0Ω 5% 0.25W (0805)

5000	4822 242 10756	DSS306-92Y5S221M100
5001	4822 242 10756	DSS306-92Y5S221M100
5002	4822 242 10756	DSS306-92Y5S221M100
5003	4822 242 10756	DSS306-92Y5S221M100
5004	4822 242 10756	DSS306-92Y5S221M100
5400	4822 157 70601	100µH (920927085A)

6400	4822 130 83757	BAS216
6401	4822 130 11087	BZX284-C15
6402	4822 130 11087	BZX284-C15
6403	4822 130 11087	BZX284-C15
6404	4822 130 11087	BZX284-C15
6405	4822 130 11087	BZX284-C15
6407	4822 130 83757	BAS216
6408	4822 130 11087	BZX284-C15
6409	4822 130 83757	BAS216
6410	4822 130 83757	BAS216

7000	4822 130 42804	BC817-25
7001	4822 130 60373	BC856B
7002	5322 130 60845	BC807-25
7003	4822 130 60511	BC847B
7004	4822 130 60511	BC847B
7005	4822 130 60511	BC847B
7007	4822 130 42804	BC817-25
7010	4822 130 60511	BC847B
7011	4822 130 60511	BC847B
7012	4822 130 60511	BC847B
7013	4822 130 60511	BC847B
7015	4822 130 60373	BC856B
7016	4822 130 60511	BC847B
7017	4822 130 60511	BC847B
7018	4822 130 60373	BC856B
7019	4822 130 60511	BC847B
7020	4822 130 60511	BC847B
7021	4822 130 60373	BC856B
7022	4822 130 60511	BC847B

7023	4822 130 60511	BC847B
7027	4822 130 42804	BC817-25
7028	4822 130 42804	BC817-25
7029	4822 130 42804	BC817-25
7030	4822 130 42804	BC817-25
7031	4822 130 42804	BC817-25
7032	4822 130 42804	BC817-25
7033	4822 130 42804	BC817-25
7034	4822 130 42804	BC817-25
7035	4822 130 42804	BC817-25
7036	4822 130 42804	BC817-25
7037	4822 130 42804	BC817-25
7038	4822 130 42804	BC817-25
7040	4822 130 42804	BC817-25
7054	4822 130 60511	BC847B
7055	4822 130 60511	BC847B
7056	4822 130 60373	BC856B
7058	4822 130 60511	BC847B
7059	4822 130 60511	BC847B
7060	4822 130 60511	BC847B
7061	4822 130 60511	BC847B
7062	4822 130 60511	BC847B
7401	9322 141 80668	AD8073
7402	4822 209 16978	LF33CV
7403	4822 209 17423	UAD1328T
7404	4822 209 32071	MC33079D
7405	4822 209 32071	MC33079D
7406	5322 209 11296	74HC4053N
7407	4822 209 30095	LM833D
7408	4822 130 10845	GP1F32T
7411	9322 140 82687	LF80C
7412	4822 209 72684	L7905CV
7414	4822 209 16256	TDA4780/V4

Headphone pcb

Various

1003	4822 267 31453	
1111	4822 276 13775	SWITCH

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2200	4822 122 33926	12pF 50V
2201	4822 126 14585	100nF 10% 50V
2202	4822 126 14585	100nF 10% 50V
2203	4822 126 14585	100nF 10% 50V
2204	5322 122 31647	1nF 10% 63V
2205	4822 122 33926	12pF 50V
2206	4822 126 14585	100nF 10% 50V
2207	5322 122 31647	1nF 10% 63V
2238	5322 122 34098	10nF 10% 63V

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3150	4822 051 20101	100Ω 5% 0.1W
3201	4822 101 21199	10kX2 20% 0.025W
3206	4822 051 20109	10Ω 5% 0.1W
3207	4822 051 20229	22Ω 5% 0.1W
3209	4822 051 20109	10Ω 5% 0.1W
3210	4822 051 20229	22Ω 5% 0.1W
3240	4822 117 11139	1k5 1% 0.1W

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6204	4822 130 82978	LTL-16KPE-P

7802	4822 209 62059	TCA0372DP1

Various

Various

0200	3139 247 50120	CAB FRONT DVD950/171 PNT PRT
0201	4822 459 10887	
0202	3139 240 00010	DVD LOGO
0203	3139 244 00160	LIGHT CONDUCTOR DVD950
0219	3139 247 50220	DOOR DVD950 PNT PRT
0220	3139 241 20110	DOOR SPRING
0232	3139 247 50340	COVER TOP
0240	3139 247 50240	BUTTON UN PLAY
0242	3139 247 50320	ORNAMENT RING
0243	3139 247 50300	BUTTON UN NEXT
0244	4822 462 11174	LEG SILVER DVD825
0245	4822 462 11174	LEG SILVER DVD825
1002	3139 248 80060	
1005	3122 427 21750	POWER SUPPLY UNIT
1014	3139 110 34220	FFC FOIL 22P/105/22P BD B
1018	3139 110 34230	FFC FOIL 16P/105/16P BD B

Foot plastic

Various

0001	4822 462 42158	FOOT BLACK

accessories

Various

0381	2422 076 00304	CABLE CINCH/CINCH 1M5 YE/RD/WH
0384	4822 219 10404	RC8401/01
0385▲	4822 321 11466	MAINS CORD /17
0386	4822 321 61849	
0387	3139 246 10010	IFU DVD950/171