DVD Player

DVP3124

DVP3124/55

Service

Service

Service

Service Manual

TABLE OF CONTENTS

CLASS 1 LASER PRODUCT

Published by KC-ET0805 Service Audio Printed in The Netherlands Subject to modification

GB 3139 785 33470

Version 1.0

PHILIPS

Technical Specifications

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

Number of lines	625	525
Playback	Multi standard	(PAL/NTSC)

Video performance

Video DAC	12 bit, 108MHz
YPbPr	0.7Vpp ---- 75 ohm
Video output	1Vpp ----- 75 ohm
RGB（SCART）	0.7Vpp ---- 75 ohm (For Europe Version)

Video format

Digital Compression	MPEG 2 for DVD,SVCD MPEG 1 for VCD	
DVD	**50Hz**	**60Hz**
Horiz resolution	720 pixels	720 pixels
Vertical resolution	576lines	480 lines
VCD	**50Hz**	**60Hz**
Horiz. resolution	352 pixels	352 pixels
Vertical resolution	288lines	240 lines

Audio format

Digital	**MPEG/AC-3/ PCM**	**Compressed Digital** **16, 20, 24bits** fs, 44.1, 48, 96kHz
	MP3(ISO 9660)	96,112,128,256kbps & variable bit rate fs,32, 44.1,48 kHz

Analogue Sound Stereo
Dolby surround compatible downmix from Dolby Digital multi-channel sound

Audio performance

DA converter	24bits, 192KHz	
DVD	fs 96kHz	4Hz----44kHz
	fs 48kHz	4Hz----22kHz
SVCD	fs 48kHz	4Hz----22kHz
	fs 44.1kHz	4Hz----20kHz
CD/ VCD	fs 44.1kHz	4Hz----20kHz
Signal-Noise (1kHz)		>90dB
Dynamic Range (1kHz)		>80dB
Cross talk (1kHz)		>80dB
Distortion/Noise (1kHz)		>80dB
MPEG MP3		MPEG Audio L3

Connections

YPbPr output	Cinch 3x
Video output	Cinch(yellow)
Audio output (L+R)	Cinch (white/red)
Digital output	1 coaxial IEC60958 for CDDA/ LPCM IEC61937 for MPEG1/2, Dolby Digital

Cabinet

Dimensions (w X h X d)	360 x 37 x 209 mm
Weight	Approximately 2 kg

Power consumption

Power supply Rating	110V-240V; 50/60HZ
Power consumption	<10W
Power consumption in standby mode	<1W

Specifications subject to change without prior notice.

Safety instruction, Warning & Notes

Safety instruction

1. General safety

Safety regulations require that during a repair:

. Connect the unit to the mains via an isolation transformer.

. Replace safety components indicated by the symbol ⚠, only by components identical to the original ones. Any other component substitution (other than original type) may increase risk of fire or electrical shock hazard.

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

. Route the wires/cables correctly, and fix them with the mounted cable clamps.

. Check the insulation of the mains lead for external damage.

. Check the electrical DC resistance between the mains plug and the secondary side:

1) Unplug the mains cord, and connect a wire between the two pins of the mains plug.
2) Set the mains switch the "on" position (keep the mains cord unplug).
3) Measure the resistance value between the mains plug and the front panel, controls, and chassis bottom.
4) Repair or correct unit when the resistance measurement is less than 1MΩ.
5) Verify this, before you return the unit to the customer/user (ref. UL-standard no. 1492).
6) Switch the unit "off", and remove the wire between the two pins of the mains plug.

2.Laser safety

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

Laser device unit

Type : Semiconductor laser GaAlAs

Wavelength : 650nm (DVD)

: 780nm (VCD/CD)

Output power : 7mW (DVD)

: 10mW (DVD /CD)

Beam divergence: 60 degree

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

Warning

1.General

. All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD). Careless handing during repair can reduce life drastically. Make sure that, during repair, you are at the same potential as the mass of the set by a wristband with resistance. Keep components and tools at this same potential. Available ESD protection equipment:

1) Complete kit ESD3 (small tablemat, wristband, connection box, extension cable and earth cable) 4822 310 10671.
2) Wristband tester 4822 344 13999.

. Be careful during measurements in the live voltage section. The primary side of the power supply , including the heat sink, carries live mains voltage when you connect the player to the mains (even when the player is “off”!). It is possible to touch copper tracks and/or components in this unshielded primary area, when you service the player. Service personnel must take precautions to prevent touching this area or components in this area. A “lighting stroke” and a stripe-marked printing on the printed wiring board, indicate the primary side of the power supply.

. Never replace modules, or components, while the unit is “on”.

2. Laser

. The use of optical instruments with this product, will increase eye hazard.

. Only qualified service personnel may remove the cover or attempt to service this device, due to possible eye injury.

. Repair handing should take place as much as possible with a disc loaded inside the player.

. Text below is placed inside the unit, on the laser cover shield:

CAUTION: VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN, AVOID EXPOSURE TO BEAM.

Notes

Lead-Free requirement for service

INDENTIFICATION:

Regardless of special logo (not always indicated) 

One must treat all sets from 1.1.2005 onwards, according next rules.

Important note: In fact also products a little older can also be treated in this way as long as you avoid mixing solder-alloys (leaded/ lead-free). So best to always use SAC305 and the higher temperatures belong to this.

Due to lead-free technology some rules have to be respected by the workshop during a repair:

- Use only lead-free solder alloy Philips SAC305 with order code 0622 149 00106. If lead-free solder-paste is required, please contact the manufacturer of your solder-equipment. In general use of solder-paste within workshops should be avoided because paste is not easy to store and to handle.
- Use only adequate solder tools applicable for lead-free solder alloy. The solder tool must be able
  - To reach at least a solder-temperature of 400°C,
  - To stabilize the adjusted temperature at the solder-tip
  - To exchange solder-tips for different applications.
- Adjust your solder tool so that a temperature around 360°C – 380°C is reached and stabilized at the solder joint. Heating-time of the solder-joint should not exceed ~ 4 sec. Avoid temperatures above 400°C otherwise wear-out of tips will rise drastically and flux-fluid will be destroyed. To avoid wear-out of tips switch off un-used equipment, or reduce heat.
- Mix of lead-free solder alloy / parts with leaded solder alloy / parts is possible but PHILIPS recommends strongly to avoid mixed
  solder alloy types (leaded and lead-free). If one cannot avoid, clean carefully the
  solder-joint from old solder alloy and re-solder with new solder alloy (SAC305).
- Use only original spare-parts listed in the Service-Manuals. Not listed standard-material (commodities) has to be purchased at external companies.
- Special information for BGA-ICs:
  - always use the 12nc-recognizable soldering temperature profile of the specific BGA (for de-soldering always use highest lead-free temperature profile, in case of doubt)
  - lead free BGA-ICs will be delivered in so-called 'dry-packaging' (sealed pack including a silica gel pack) to protect the IC against moisture. After opening, dependent of MSL-level seen on indicator-label in the bag, the BGA-IC possibly still has to be baked dry. This will be communicated via AYS-website.
  Do not re-use BGAs at all.
- For sets produced before 1.1.2005, containing leaded soldering-tin and components, all needed spare-parts will be available till the end of the service-period. For repair of such sets nothing changes.
- On our website:
  www.atyourservice.ce.Philips.com

You find more information to:

BGA-de-/soldering (+ baking instructions)
Heating-profiles of BGAs and other ICs used in Philips-sets

You will find this and more technical information within the "magazine", chapter "workshop news".

For additional questions please contact your local repair-helpdesk.

Mechanical and Dismantling Instructions

Dismantling Instruction

The following guideline is a general instruction for how to dismantle the player, Detailed operation done according the set unit.
Step1: Remove 5 screws around the Top Cover, then remove the Top Cover (Figure 1).

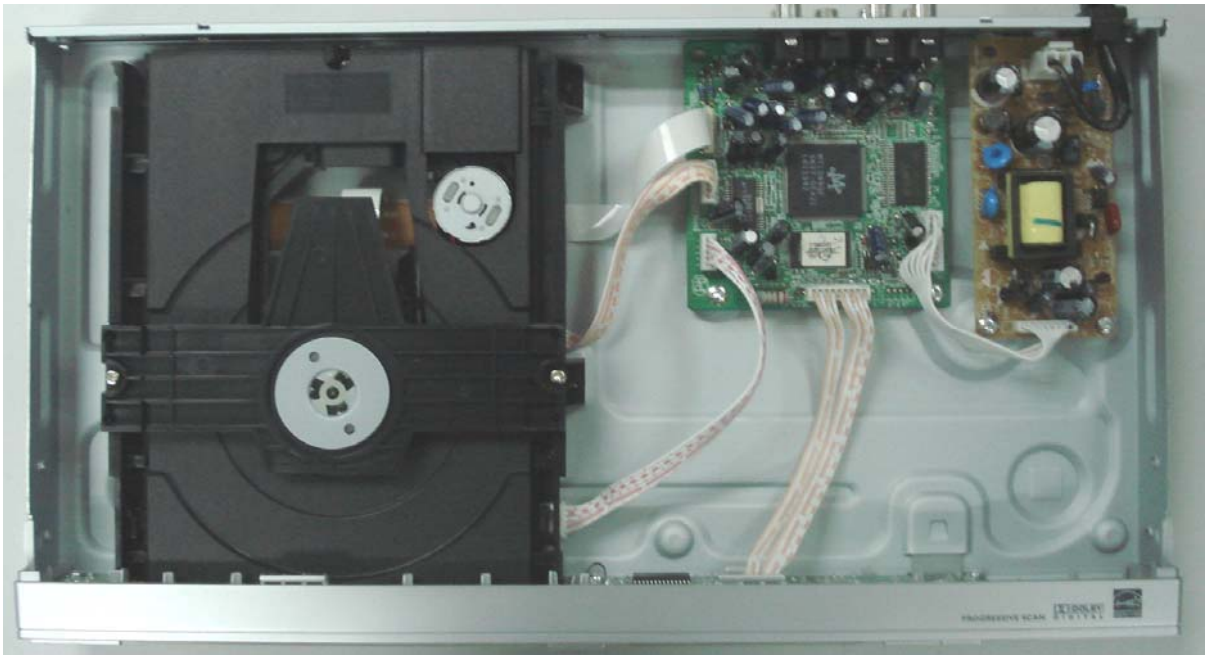


Figure 1

Step2: If it is necessary to dismantle Loader or Front Panel, It should remove the Front door assembly first. (Figure 2)
Note: Make sure to operate gently otherwise the guider would be damaged.

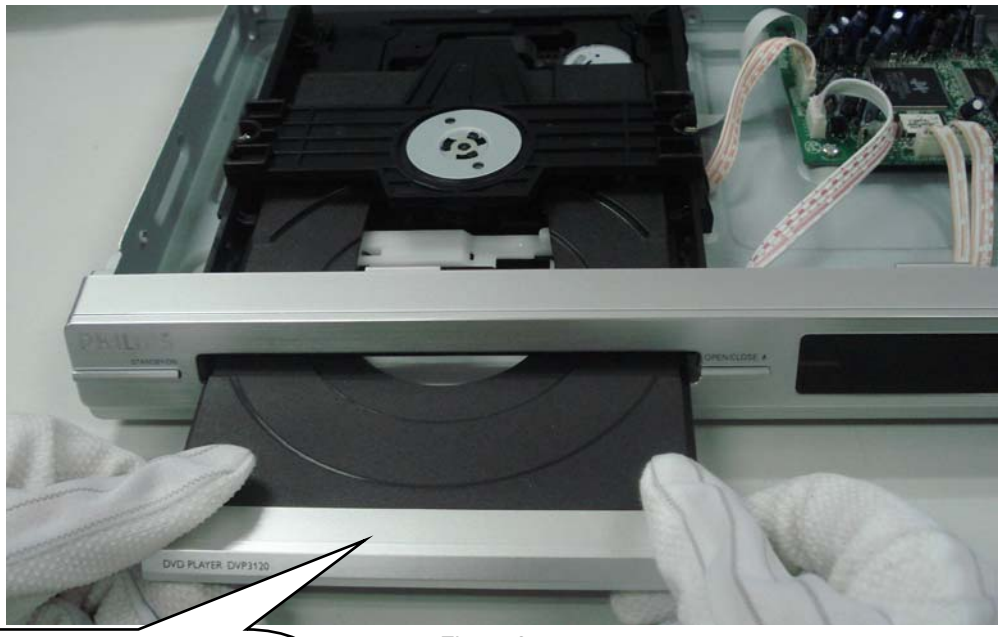


Figure 2

Please kindly note that dismantle the front door assembly carefully to avoid damage tray and the front door assembly.

Mechanical and Dismantling Instructions

Dismantling Instruction

Step3: If the tray can't open in normal way, you can make it through the instruction as below (Figure 3).
Note: Make sure to operate gently otherwise the guider would be damaged.

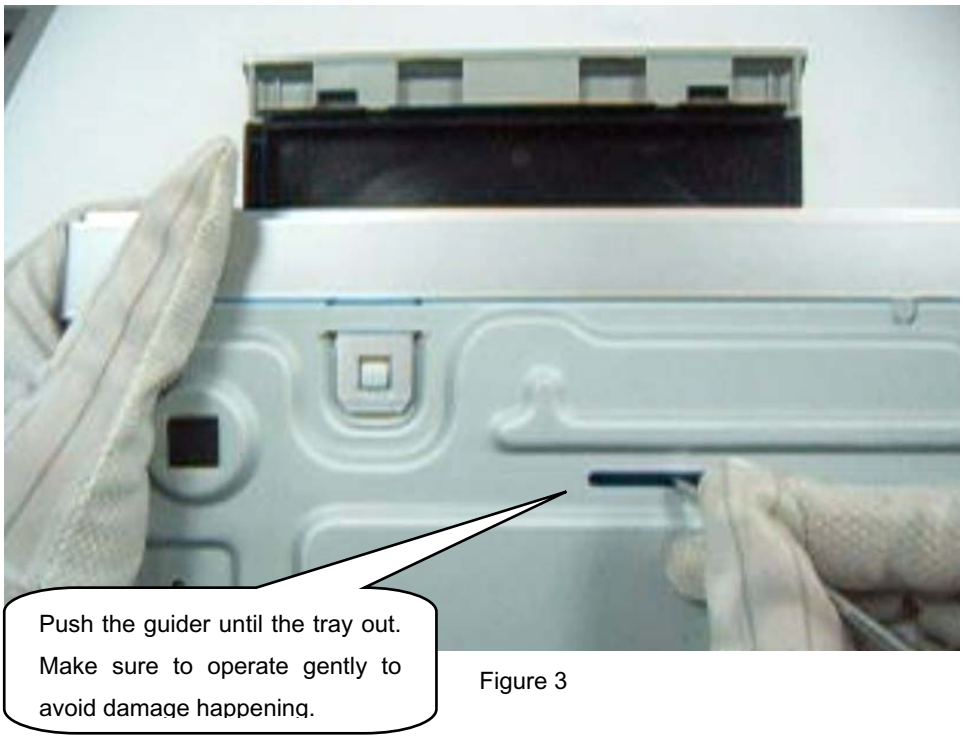


Figure 3

Step4: Dismantling Loader, disconnect the 3 connectors aiming in the below figure, and remove 1 screw around the Loader. (Figure 4)

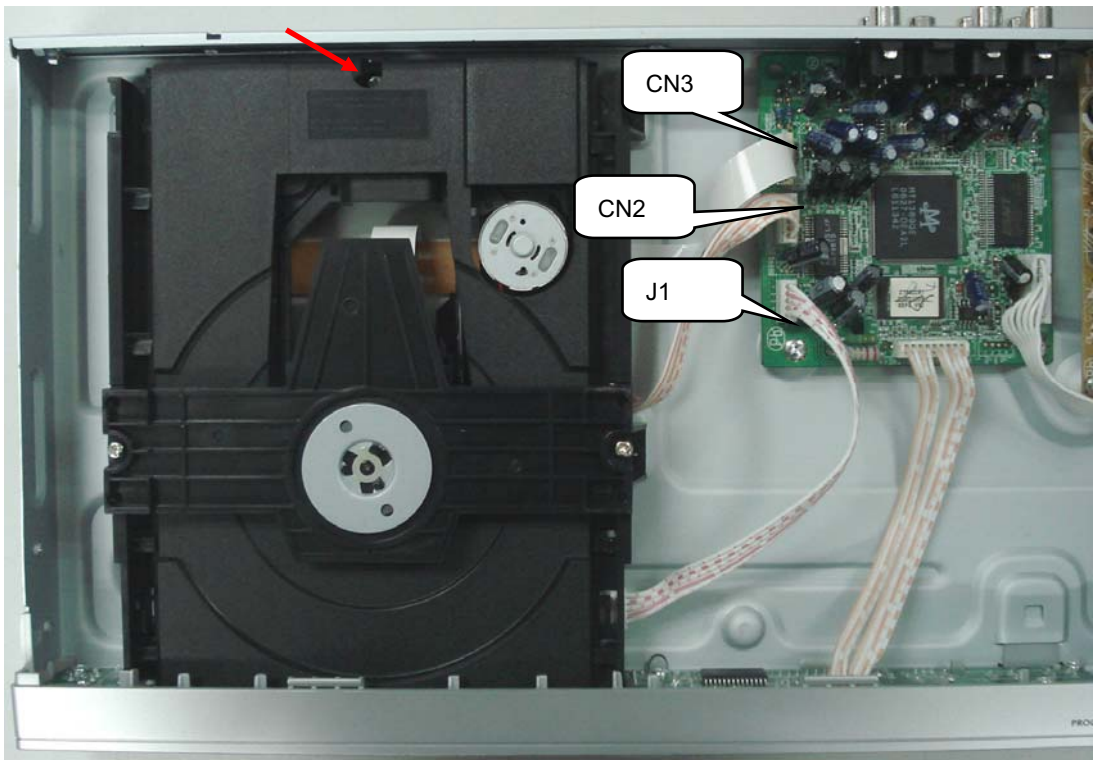


Figure 4

Mechanical and Dismantling Instructions

Dismantling Instruction

Step5: Dismantling Front Panel, disconnect the 3 connector, then release the snaps on the both sides of Front Panel and bottom cabinet , then gently pull the Panel out from the set. (Figure 5 & 6 & 7)

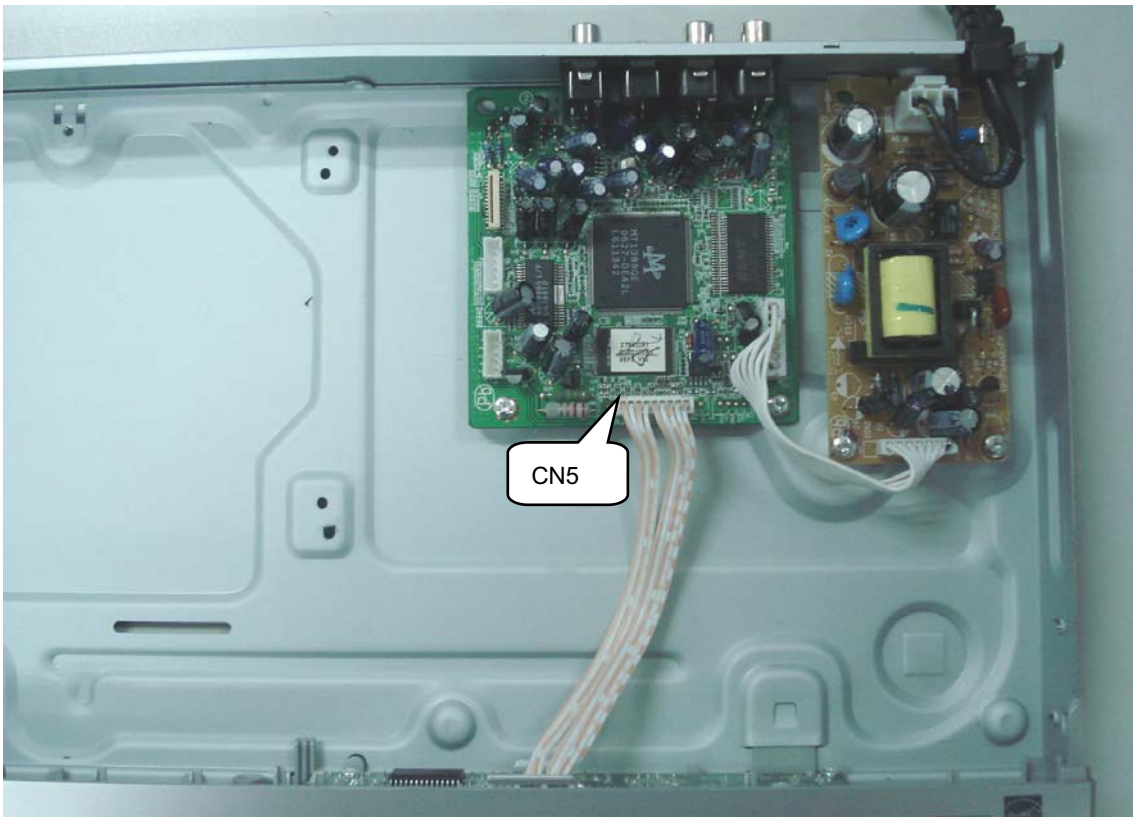


Figure 5

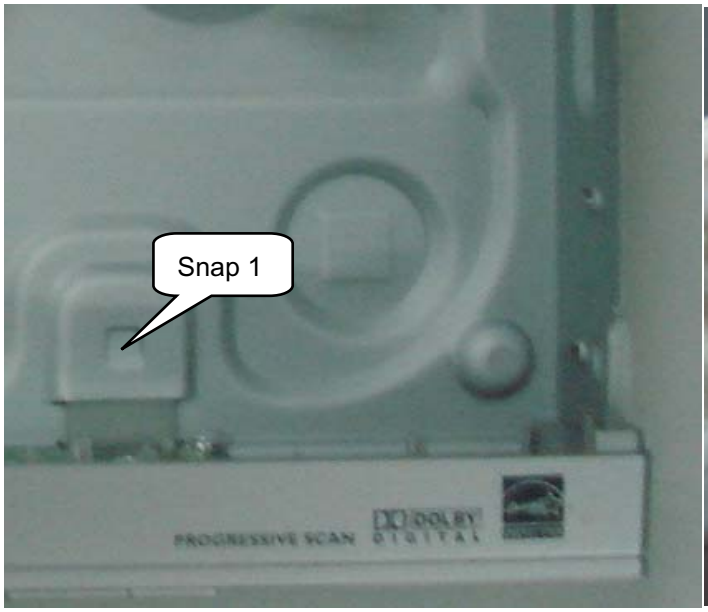


Figure 6

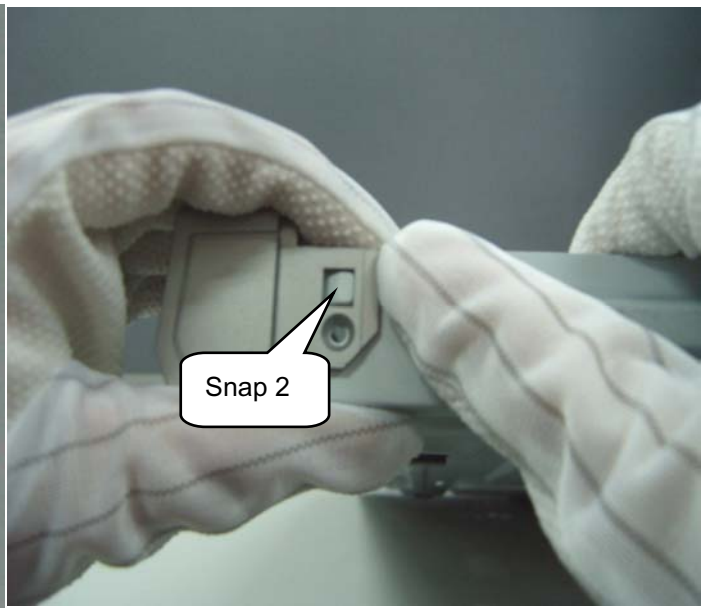


Figure 7

Mechanical and Dismantling Instructions

Dismantling Instruction

Step6: Dismantling Main Board, first disconnect the 1 connector, then remove 4 screws to remove the Main board. (Figure 8)

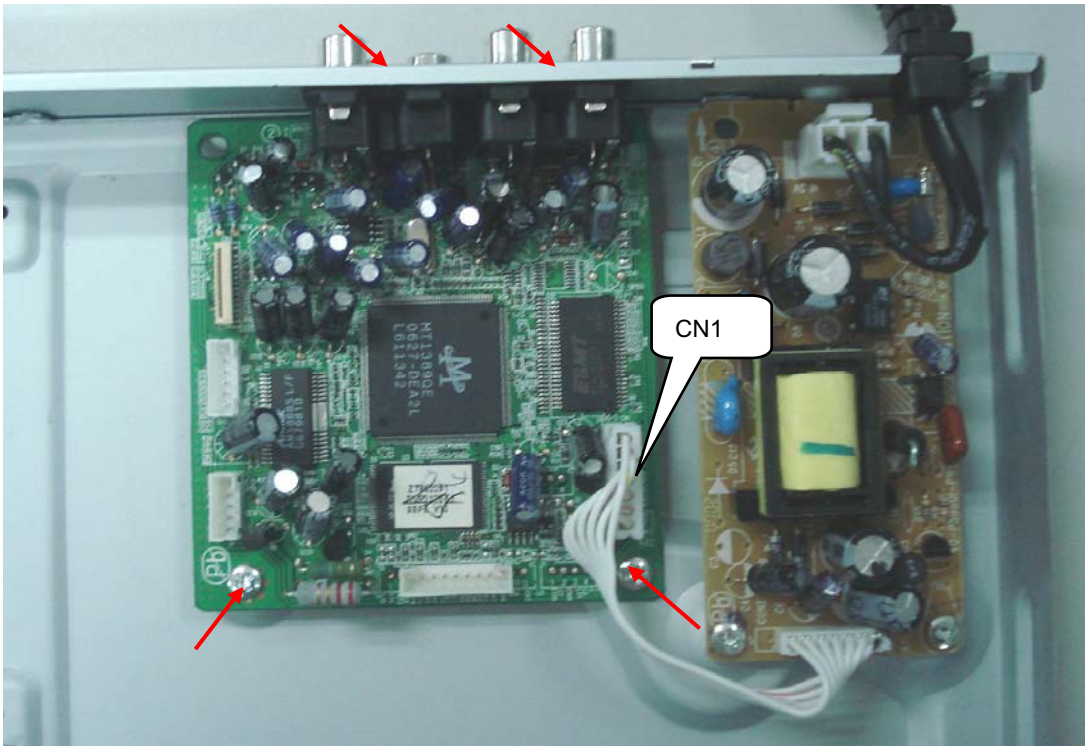


Figure 8

Step7: Remove the 2 screws on Power Board to dismantle the Power Board. (Figure 9)

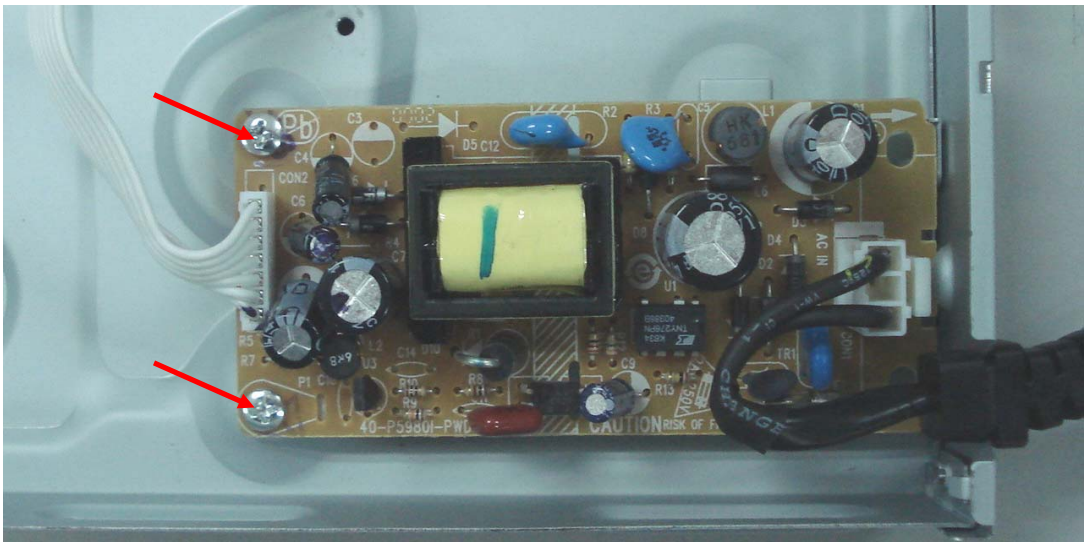


Figure 9

Software upgrade

Preparation to upgrade software

1) Start the CD Burning software and create a new CD project (Data Disc) with the following setting:
   Label: DVP5XXX (No need the label name)
   File Name: DVPXXXX_XX.BIN
   Power on the set and open the tray, then press <5><5> to check the File Name.

Note: It is required capital letter for the File System name

2) Burn the data onto a blank CDR

A. Procedure for software upgrade:

1) Power on the set and insert the prepared Upgrade CDR.
2) The set will starts reading disc & response with the following display TV screen:
   Upgrade File DETECTED
   Upgrade?
   Press Play TO START.
3) Press <OK> button to confirm, then screen will display :
   Files coping…
   UPGRADING…
4) The upgraded disc will automatically out when files coping complete, then take out the disc.
5) About 1 minute later, the trace will automatically close when upgrading complete.

B. Read out the software versions to confirm upgrading

1) Power on the set and press <Setup> button on the remote control.
2) Press<1><3><7><9>button to check the software information.
   The software version and other information are display on the TV screen as follows:

Version	XX.XX.XX.XX (Main version)
SUB-VER	XX.XX.XX.XX (software version of application software)
8032	XX.XX.XX.XX
Servo	XX.XX.XX.XX (software version of Servo)
RISC	XX.XX.XX.XX
DSP	XX.XX.XX.XX
Region Code	X

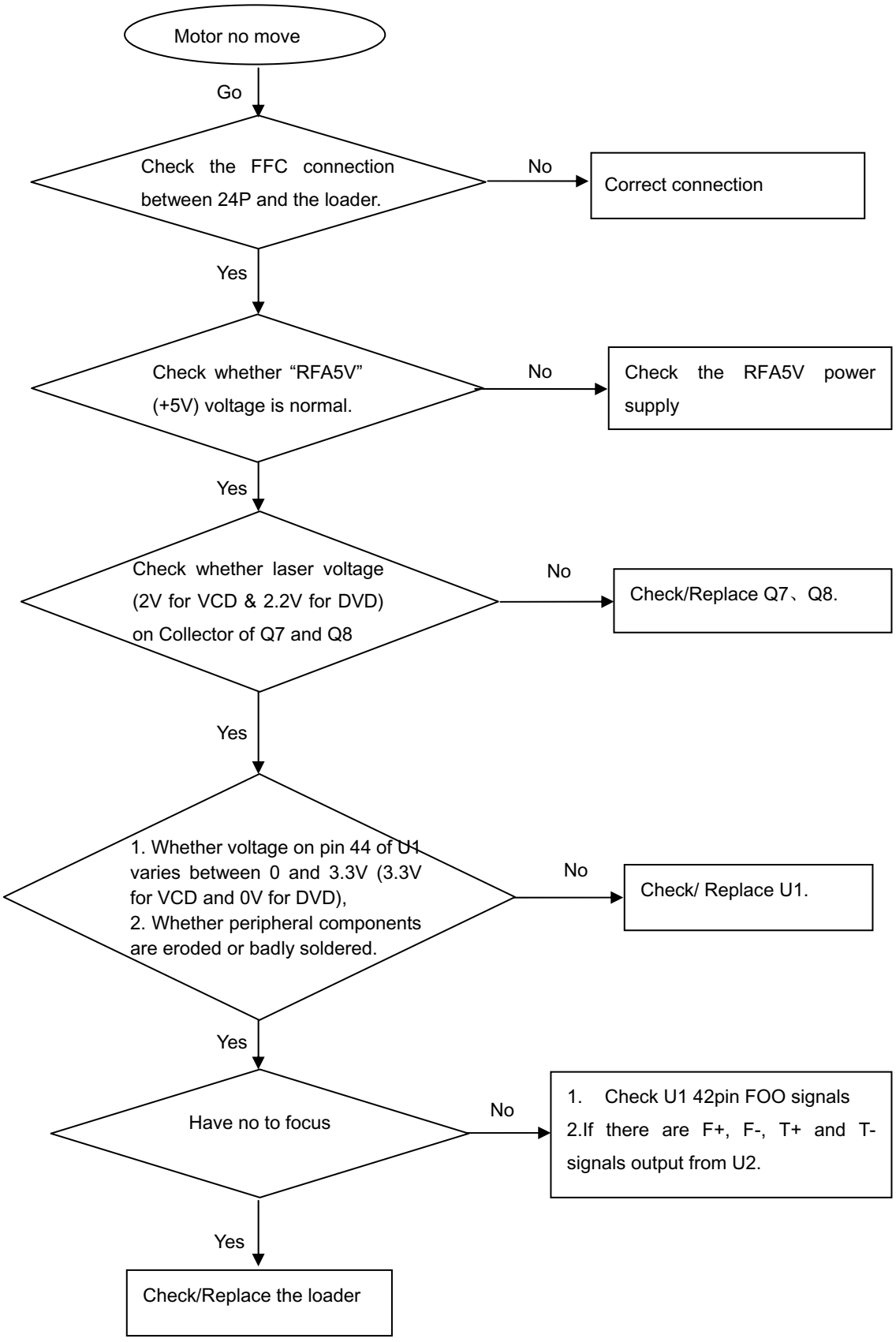
Caution: The set must not be power off during upgrading, Otherwise the Main board will be damaged entirely.

How to select the right language

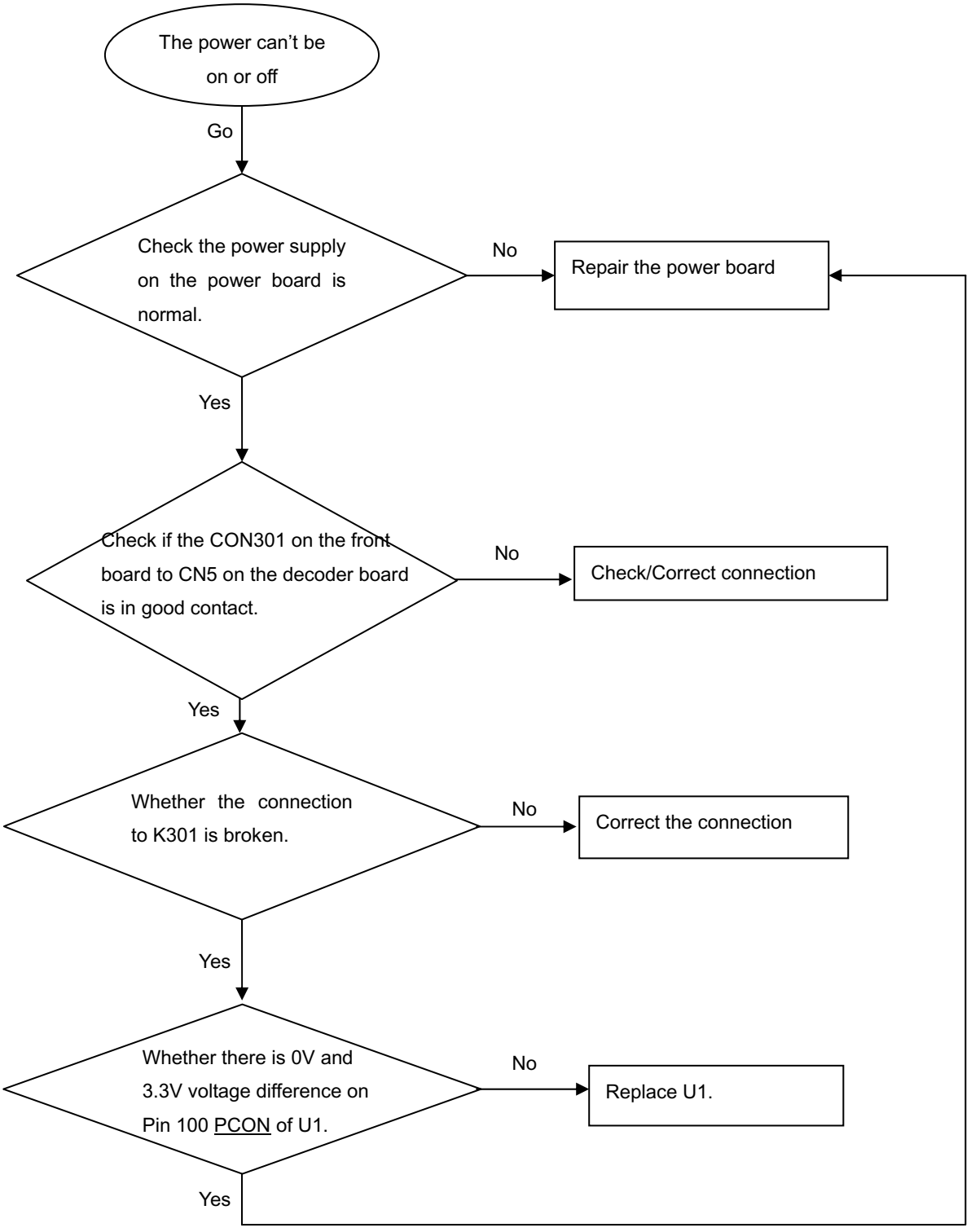
If the language is not right, it can be corrected by the following operation:

1. Power on the set and open the tray.
   Press “6” “6” “6” “6” and “Audio” button on the remote control.
   After that on the screen it shows:
   PLS INPUT MODEL CODE:
2. Then input the related MODEL CODE “1”.
   After that on the screen it shows:
   DVP××××× REGION × OK
   (It means the language has been corrected and the player will be power off automatically.)

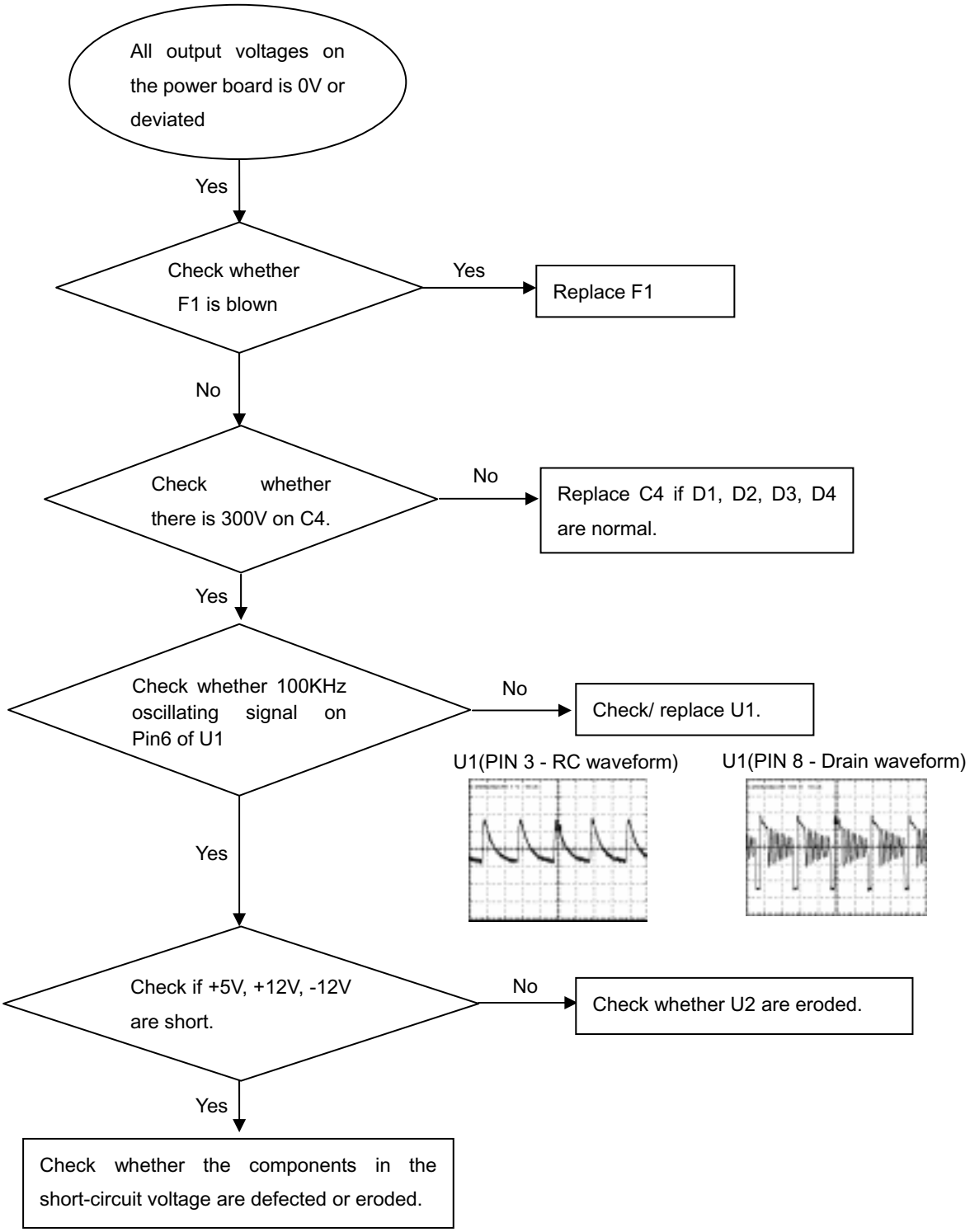
Spindle motor does not move



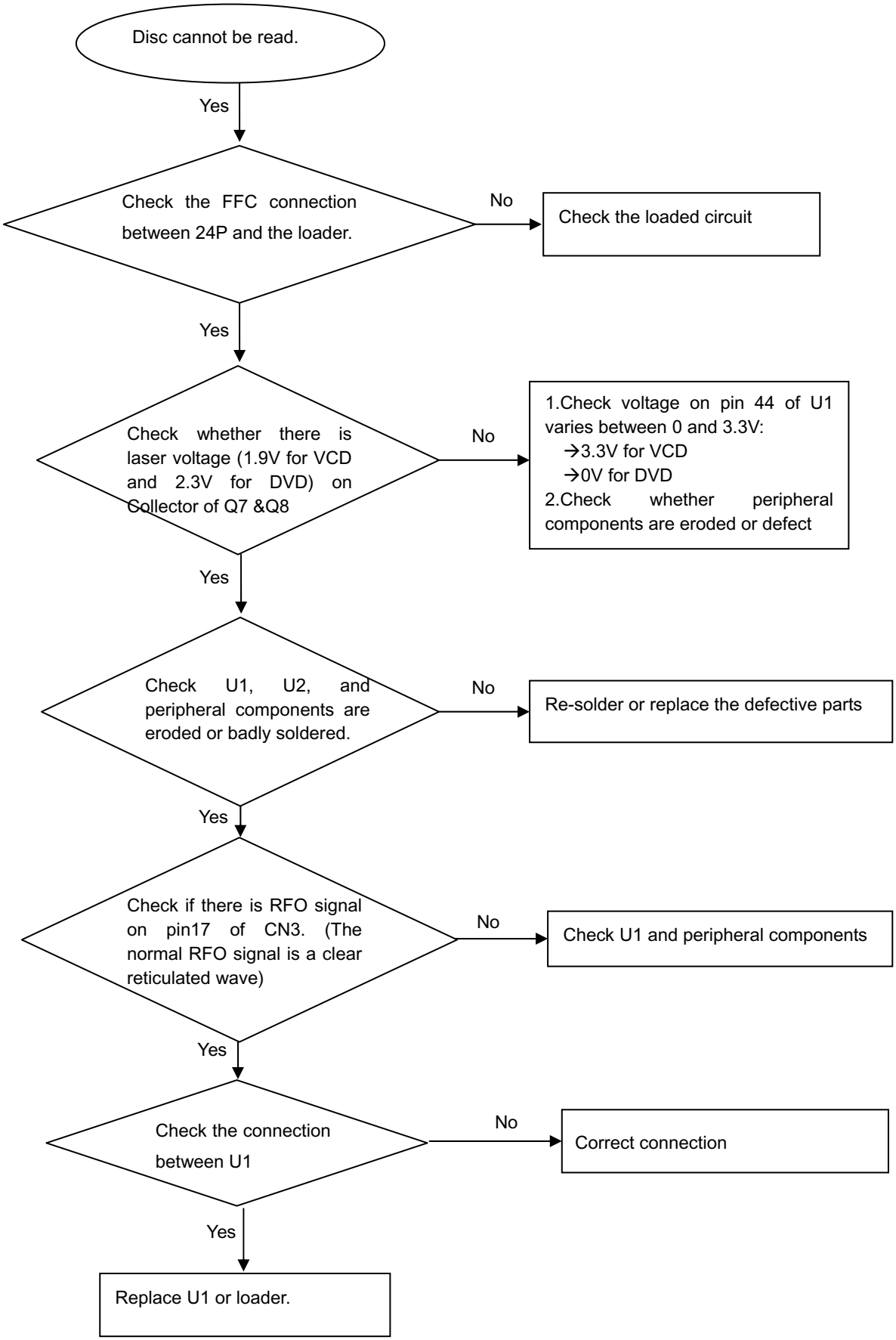
The power can not be on or off



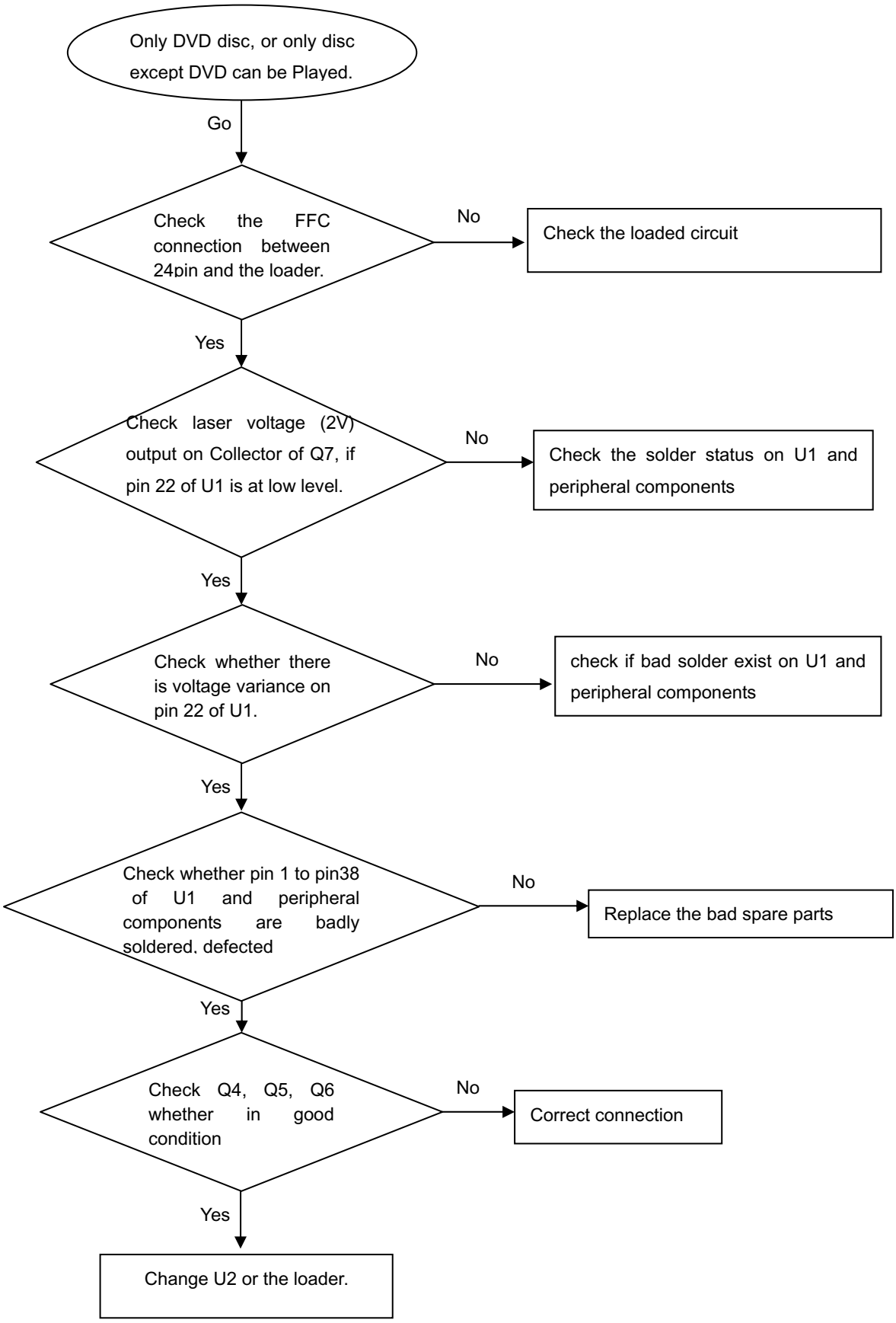
All output voltages on the power board is 0V or deviated.



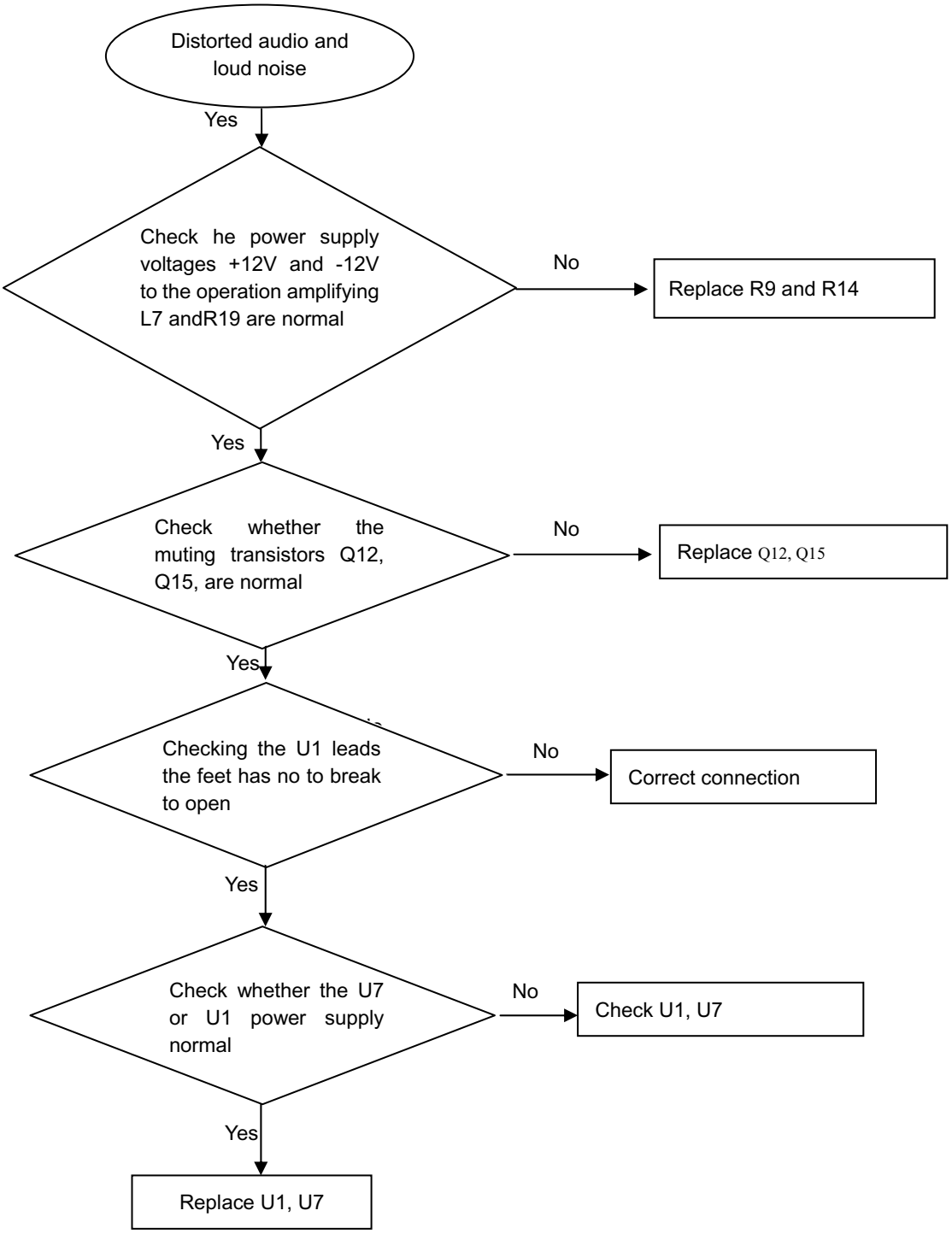
Disc cannot be read.



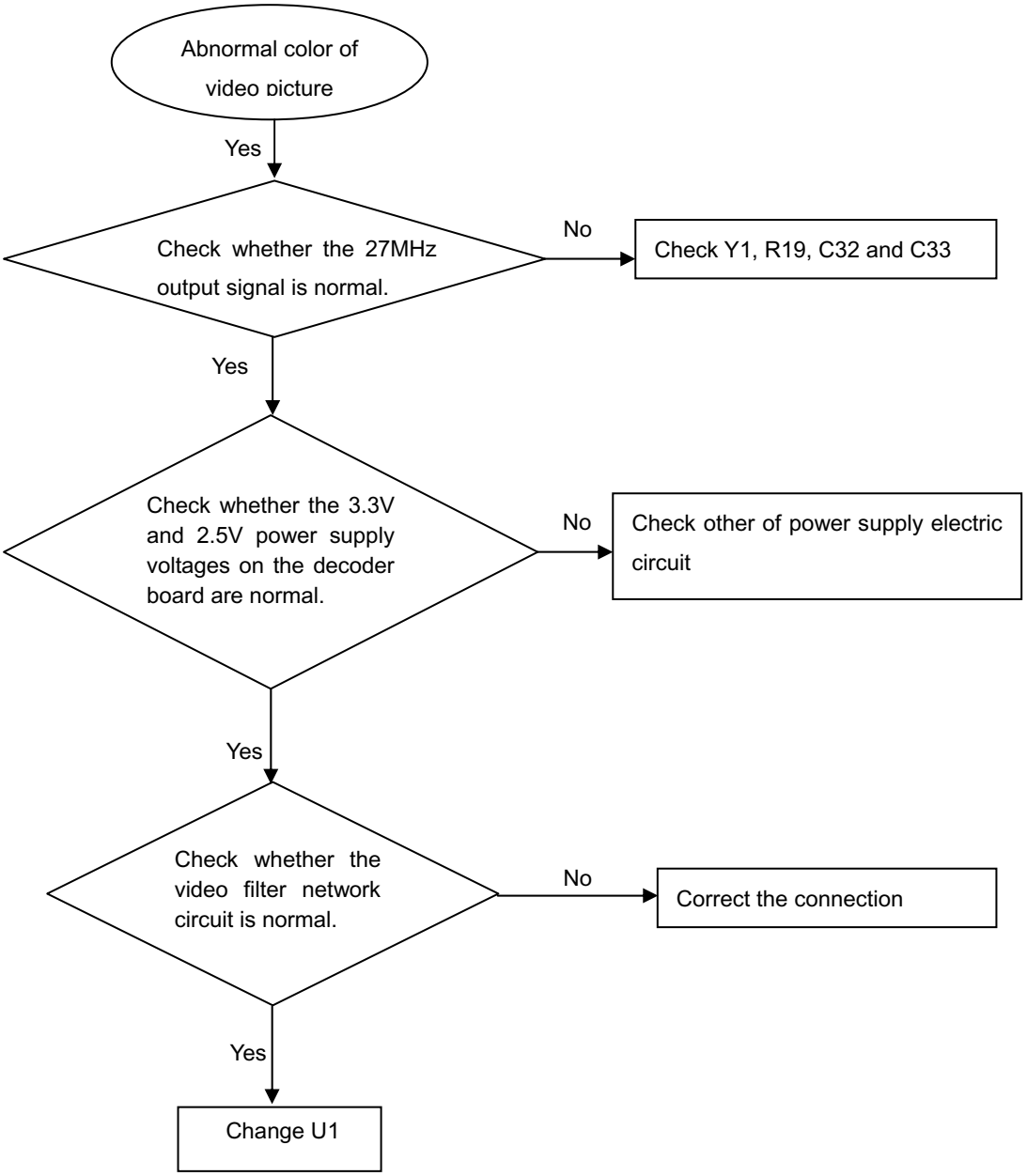
Only DVD disc or only disc except DVD can be played



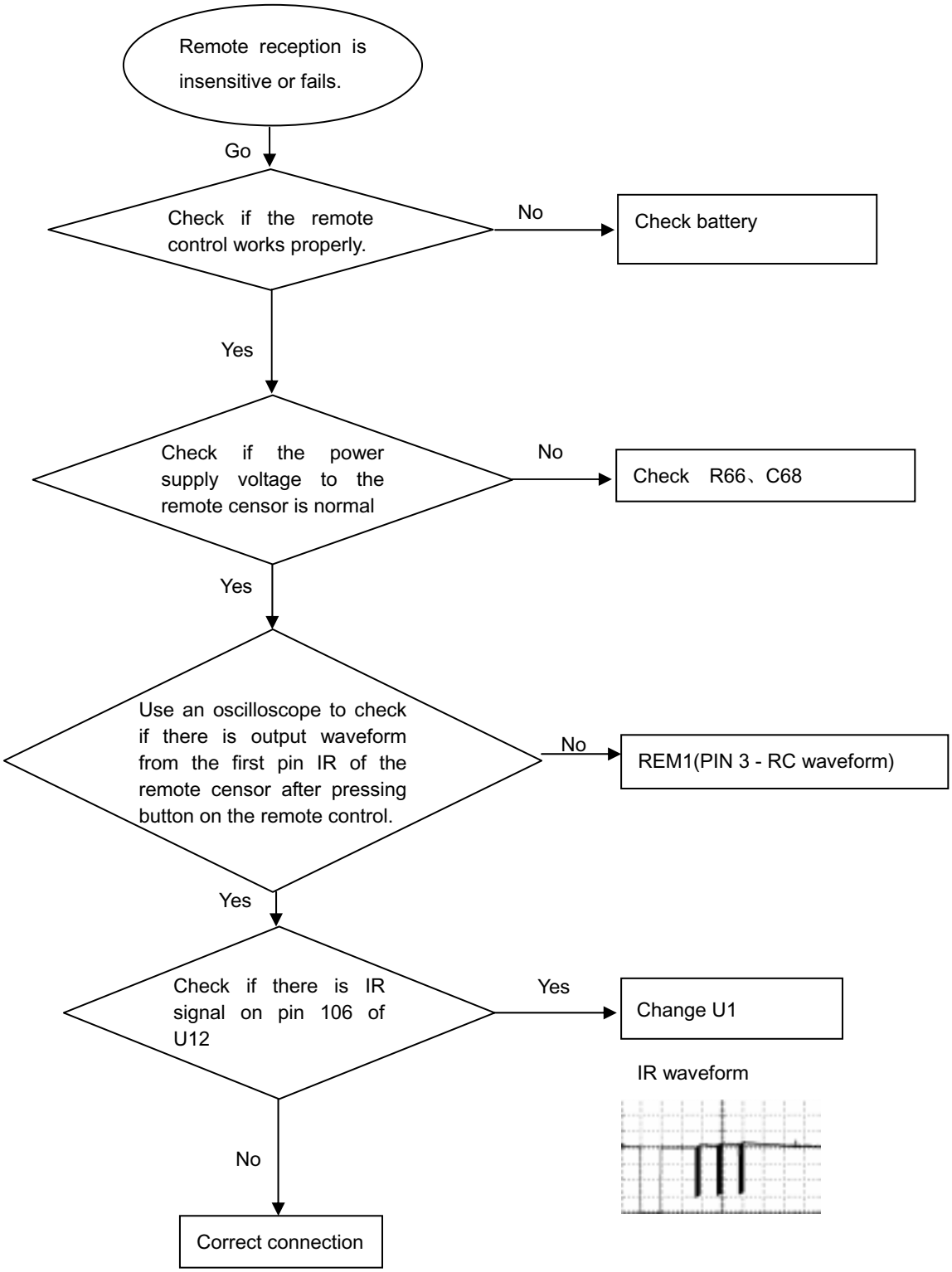
Distorted audio and loud noise



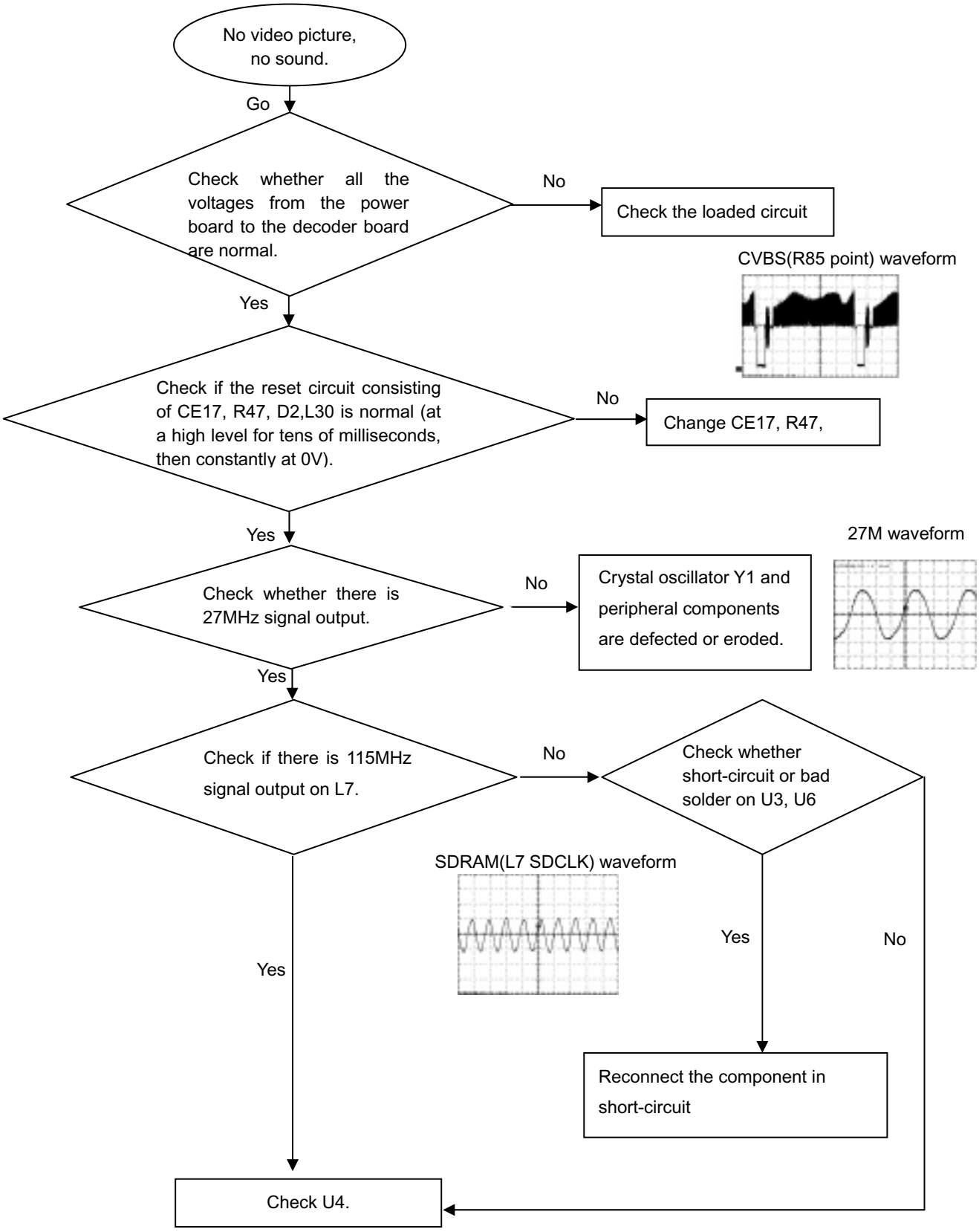
Abnormal color of video picture



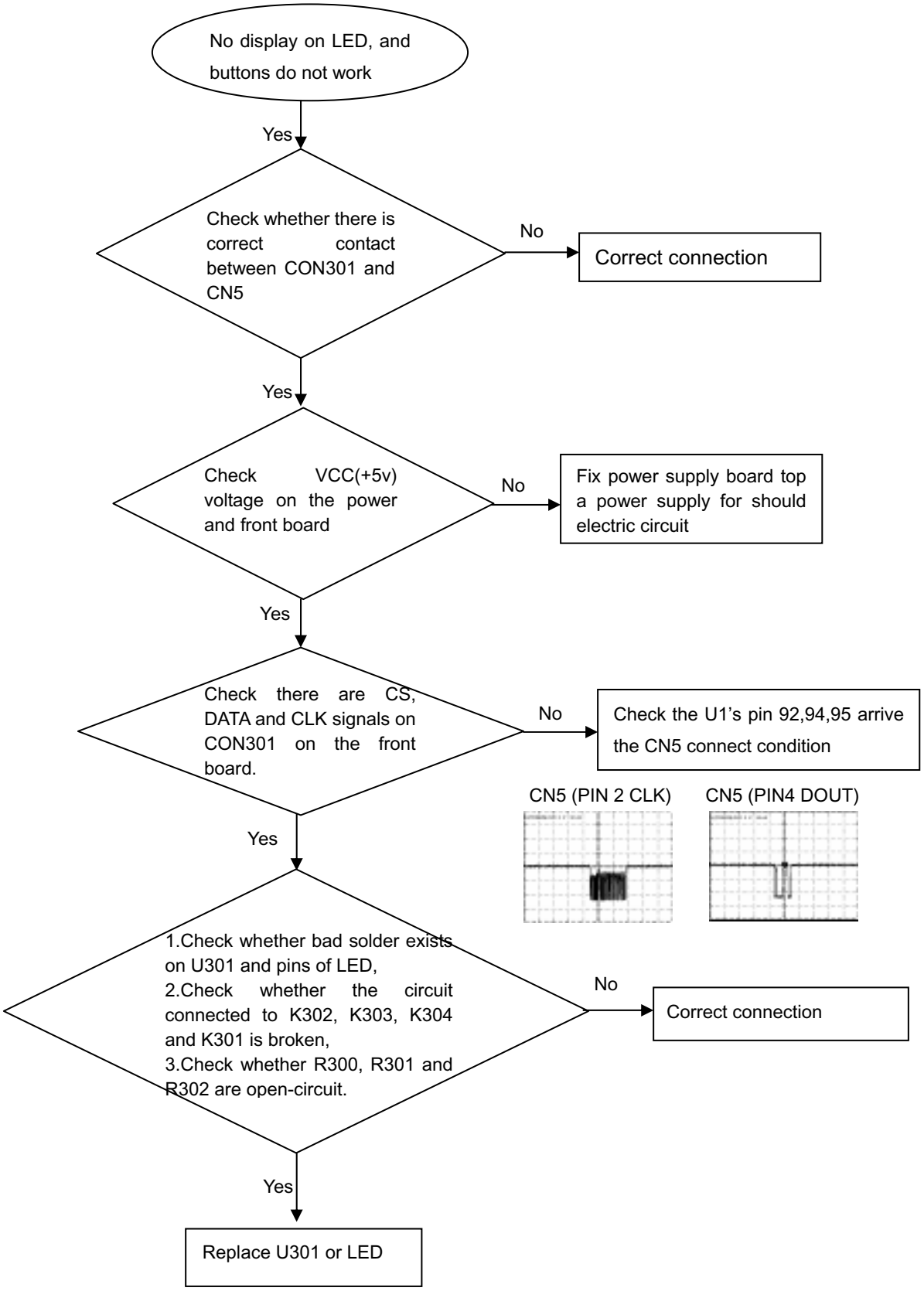
Remote reception is insensitive or fails.



No video picture, no sound.

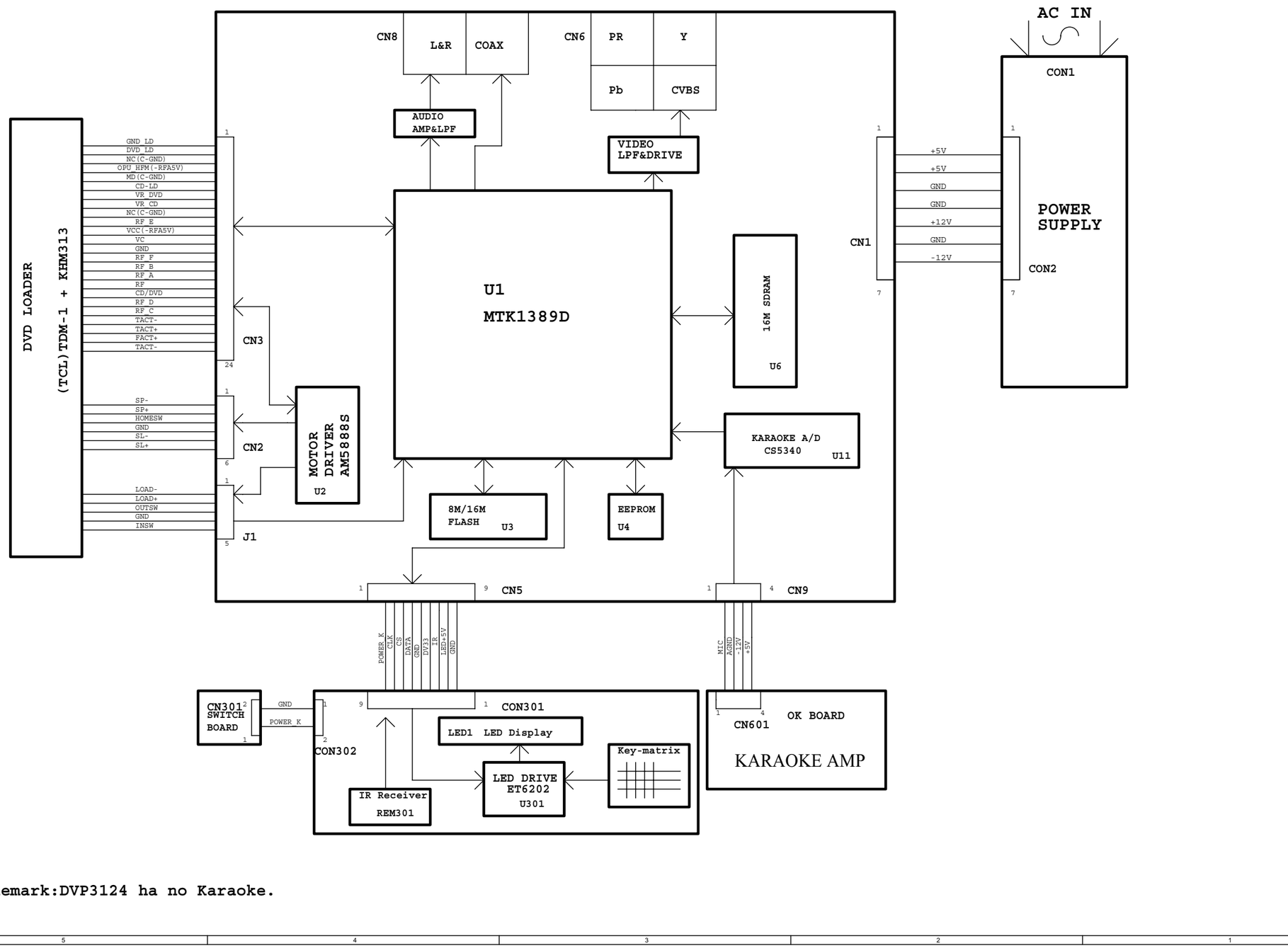


No display on LED, and buttons do not work



5-1

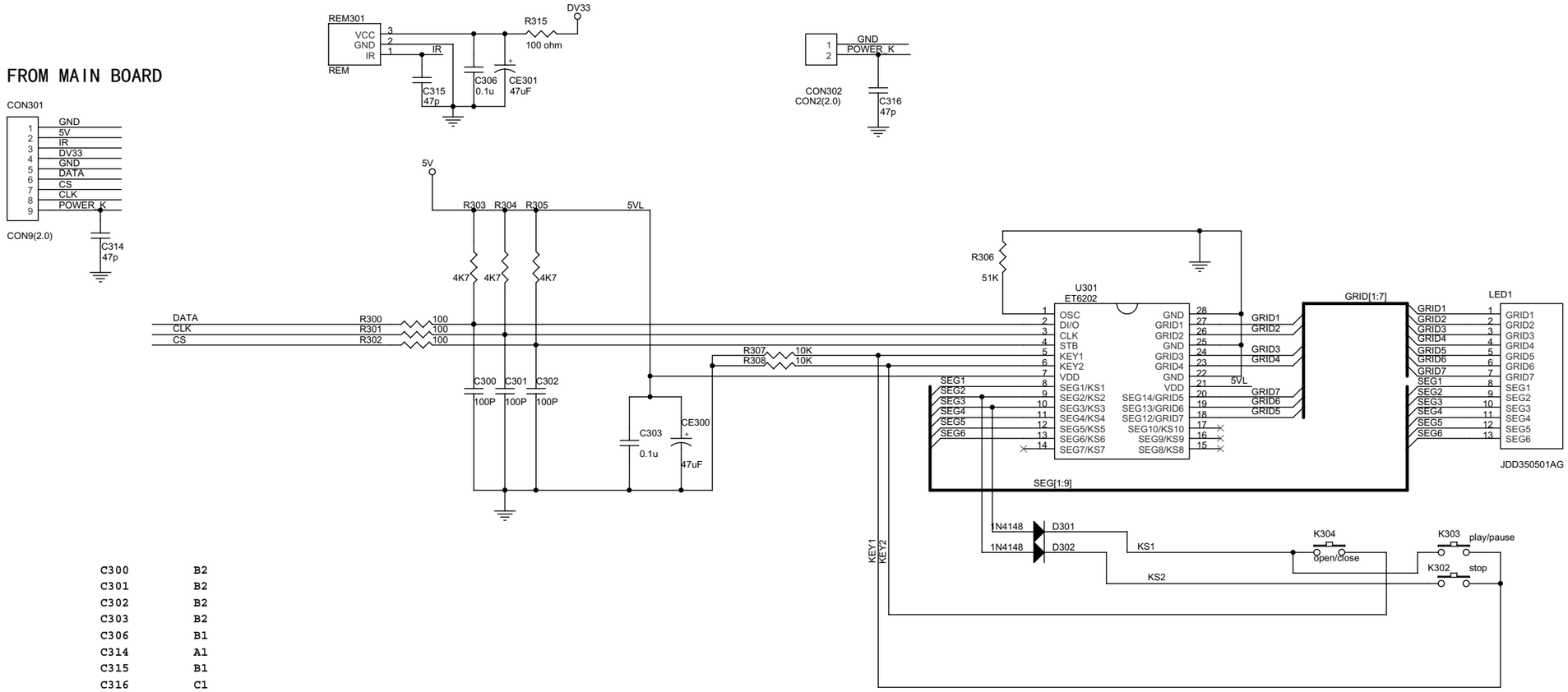
DVP3124/55 WIRING DIAGRAM



Remark:DVP3124 ha no Karaoke.

6-1

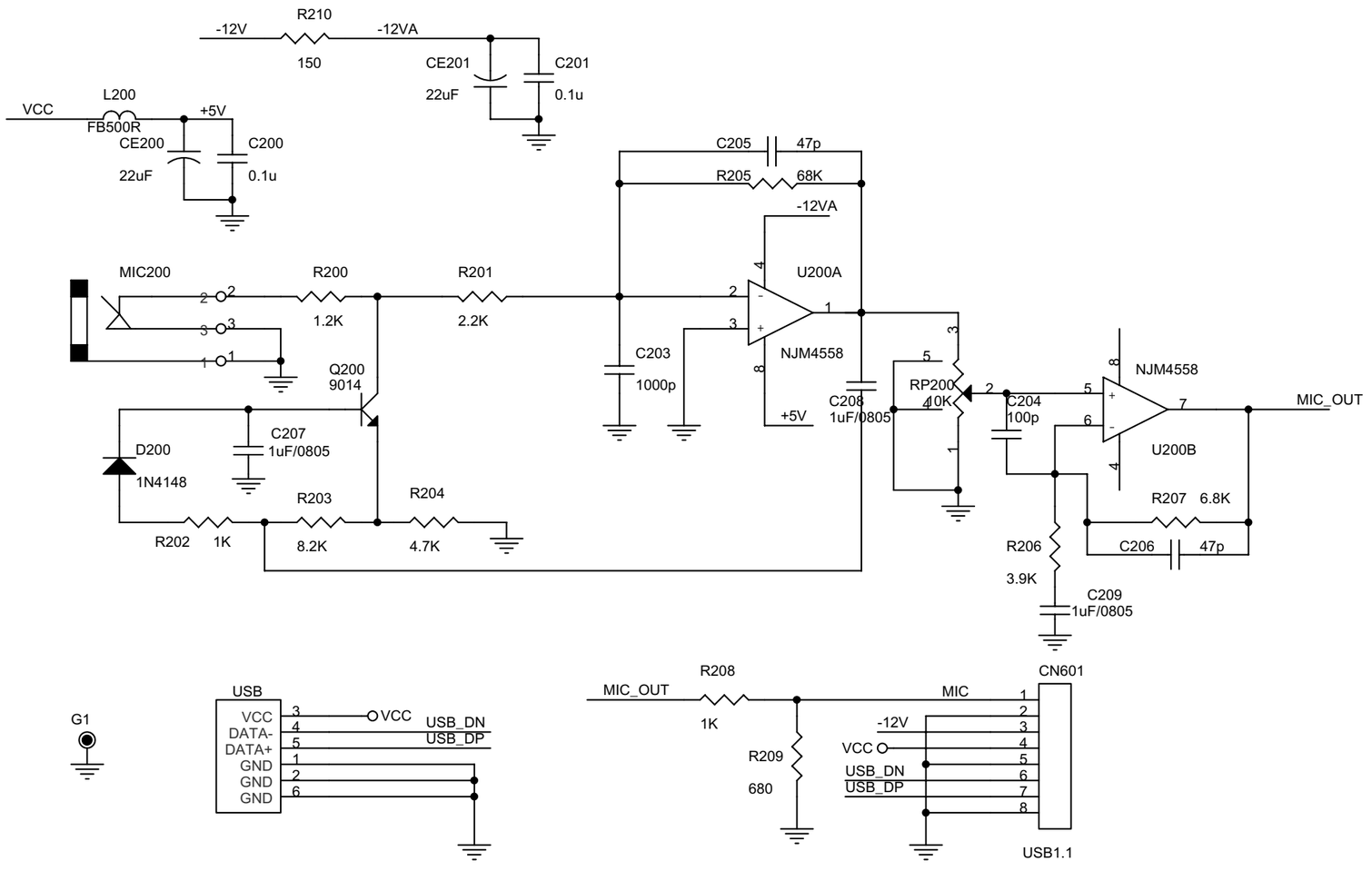
Front Board Electric Diagram for DVP3124/55



C300	B2
C301	B2
C302	B2
C303	B2
C306	B1
C314	A1
C315	B1
C316	C1
CE300	C2
CE301	B1
CON301	A1
CON302	C1
D301	D2
D302	D2
K302	E3
K303	E2
K304	D2
LED1	E2
R300	B2
R301	B2
R302	B2
R303	B2
R304	B2
R305	B2
R306	C1
R307	C2
R308	C2
R315	B1
REM301	B1
U301	D2

6-2

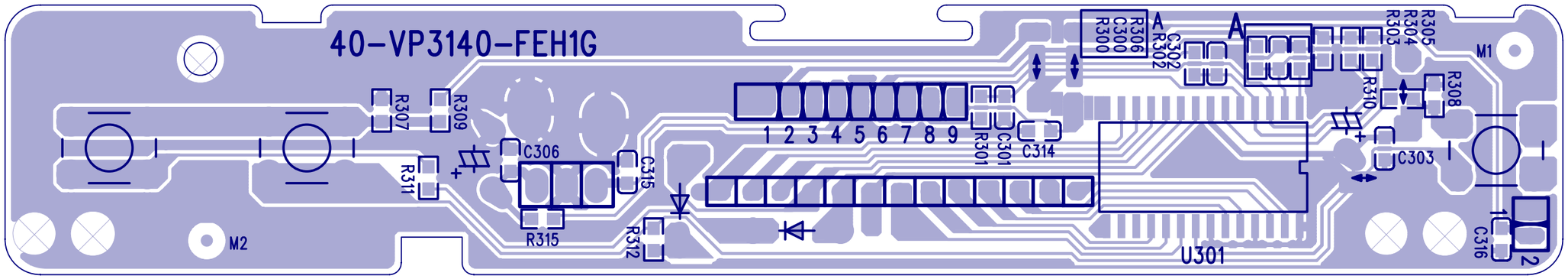
OK+USB Board Electric Diagram for DVP3124/55



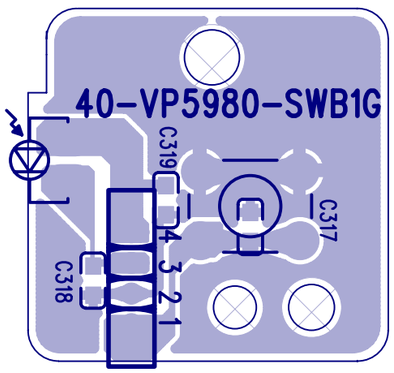
C200	A1
C201	B1
C203	B2
C204	C2
C205	C1
C206	D2
C207	A2
C208	C2
C209	D2
CE200	A1
CE201	B1
CN601	D3
D200	A2
G1	A3
L200	A1
MIC200	A1
Q200	B2
R200	B1
R201	B1
R202	A2
R203	B2
R204	B2
R205	C1
R206	D2
R207	D2
R208	C3
R209	C3
R210	B1
RP200	C2
U200A	C1
U200B	D2
USB	A3

6-3

Front Board Print-Layout (Bottom Side) for DVP3124/55

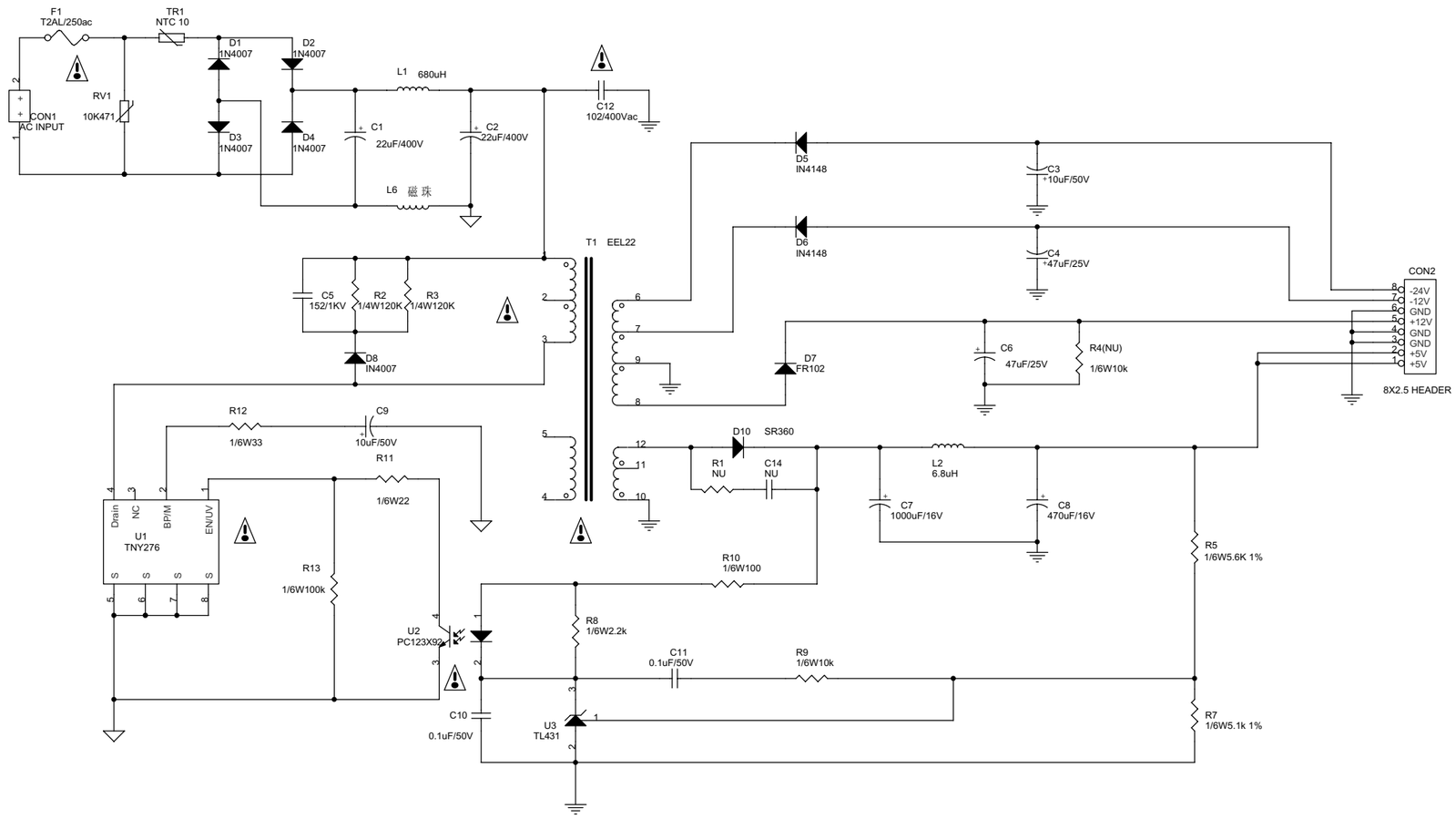


Switch Board Print-Layout (Bottom Side) for DVP3124/55



6-4

Power Board Electric Diagram for DVP3124/55



C1	B1
C10	B3
C11	B3
C12	B1
C14	C2
C2	B1
C3	C1
C4	C2
C5	B2
C6	C2
C7	C2
C8	C2
C9	B2
CON1	A1
CON2	D2
D1	A1
D10	C2
D2	B1
D3	A1
D4	B1
D5	C1
D6	C1
D7	C2
D8	B2
F1	A1
L1	B1
L2	C2
L6	B1
R1	C2
R10	C3
R11	B2
R12	A2
R13	B3
R2	B2
R3	B2
R4 (NU)	C2
R5	D2
R7	D3
R8	B3
R9	C3
RV1	A1
T1	B2
TR1	A1
U1	A2
U2	B3
U3	B3

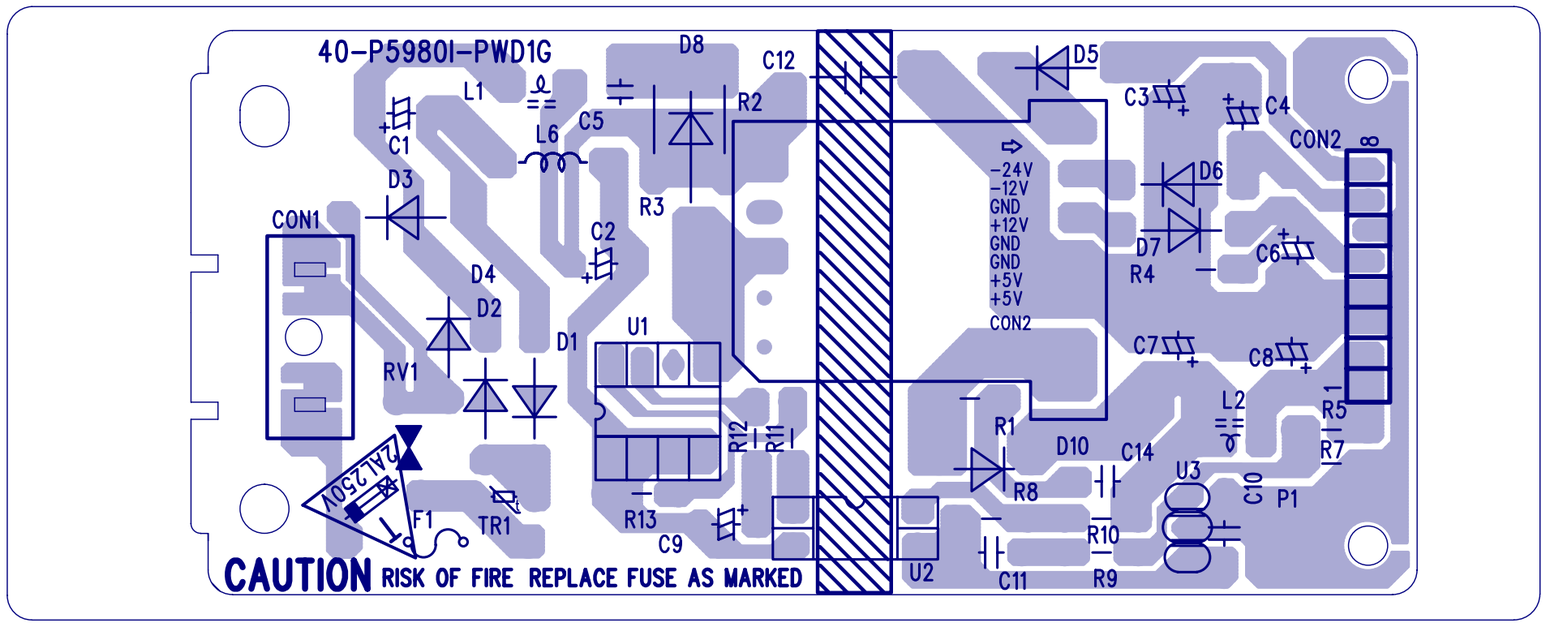
*** CAUTION :**

THE PARTS MARKED WITH ⚠ ARE IMPORTANT PARTS ON THE SAFETY.

PLEASE USE THE PARTS HAVING THE DESIGNATED PARTS NUMBER WITHOUT FAIL.

6-5

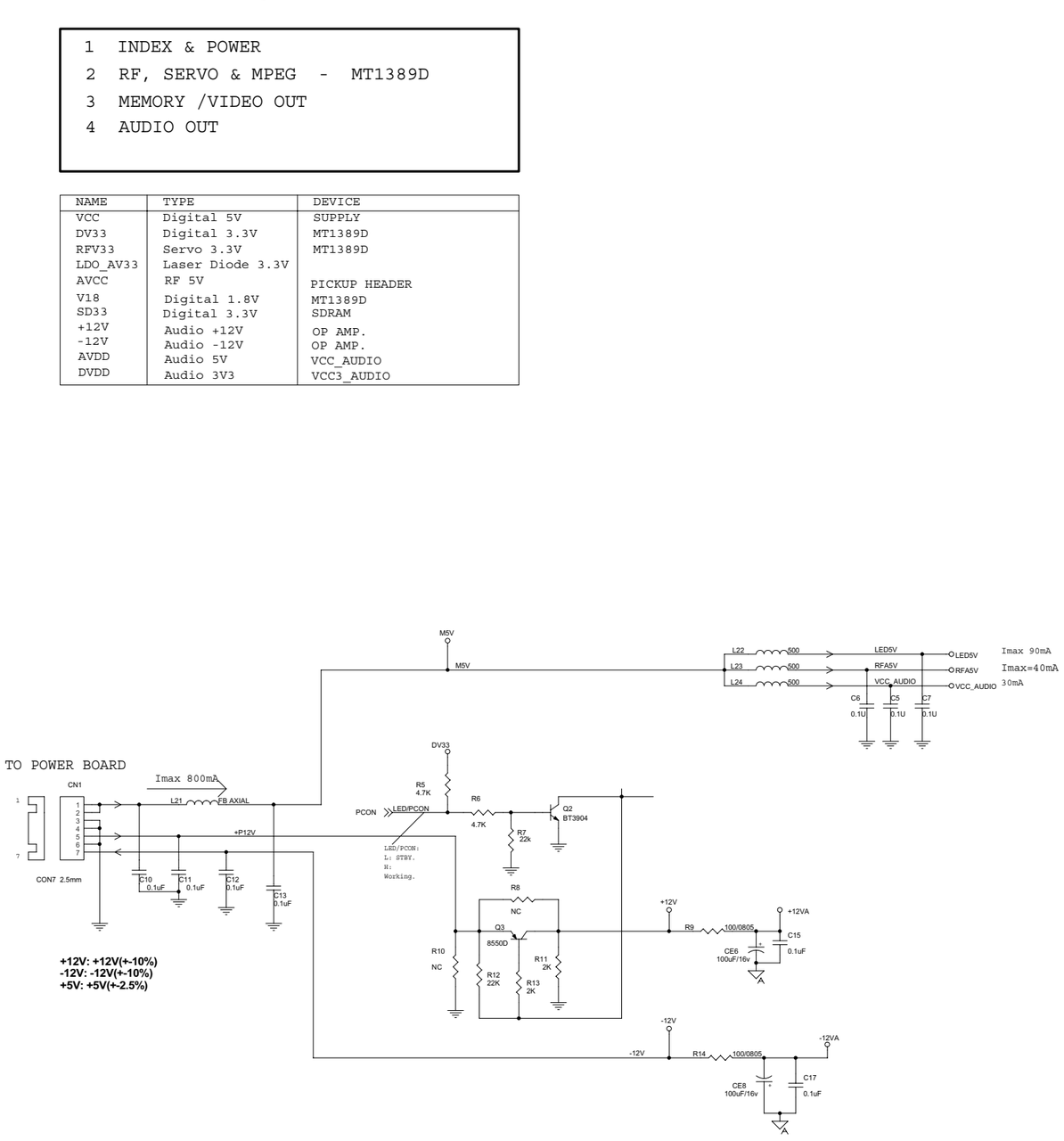
Power Board Print-Layout (Bottom Side) for DVP3124/55

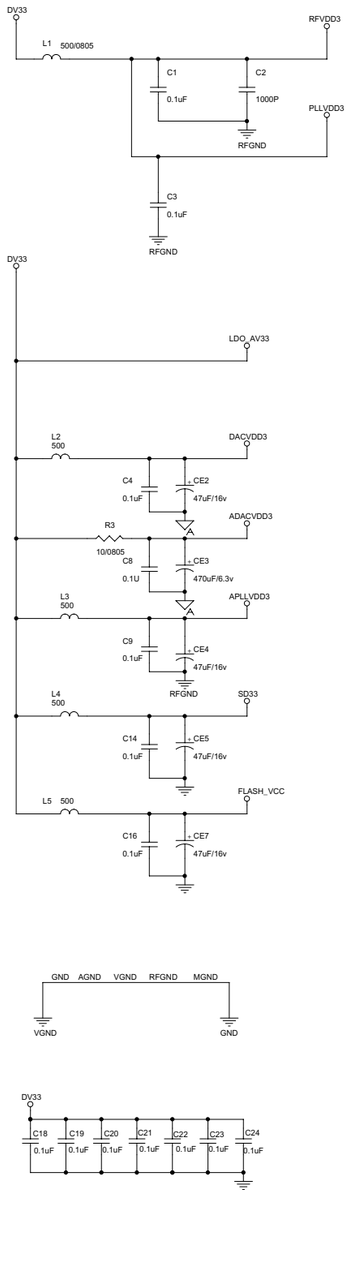


6-6

n Board Electric Diagram for DVP3124/55: INDEX

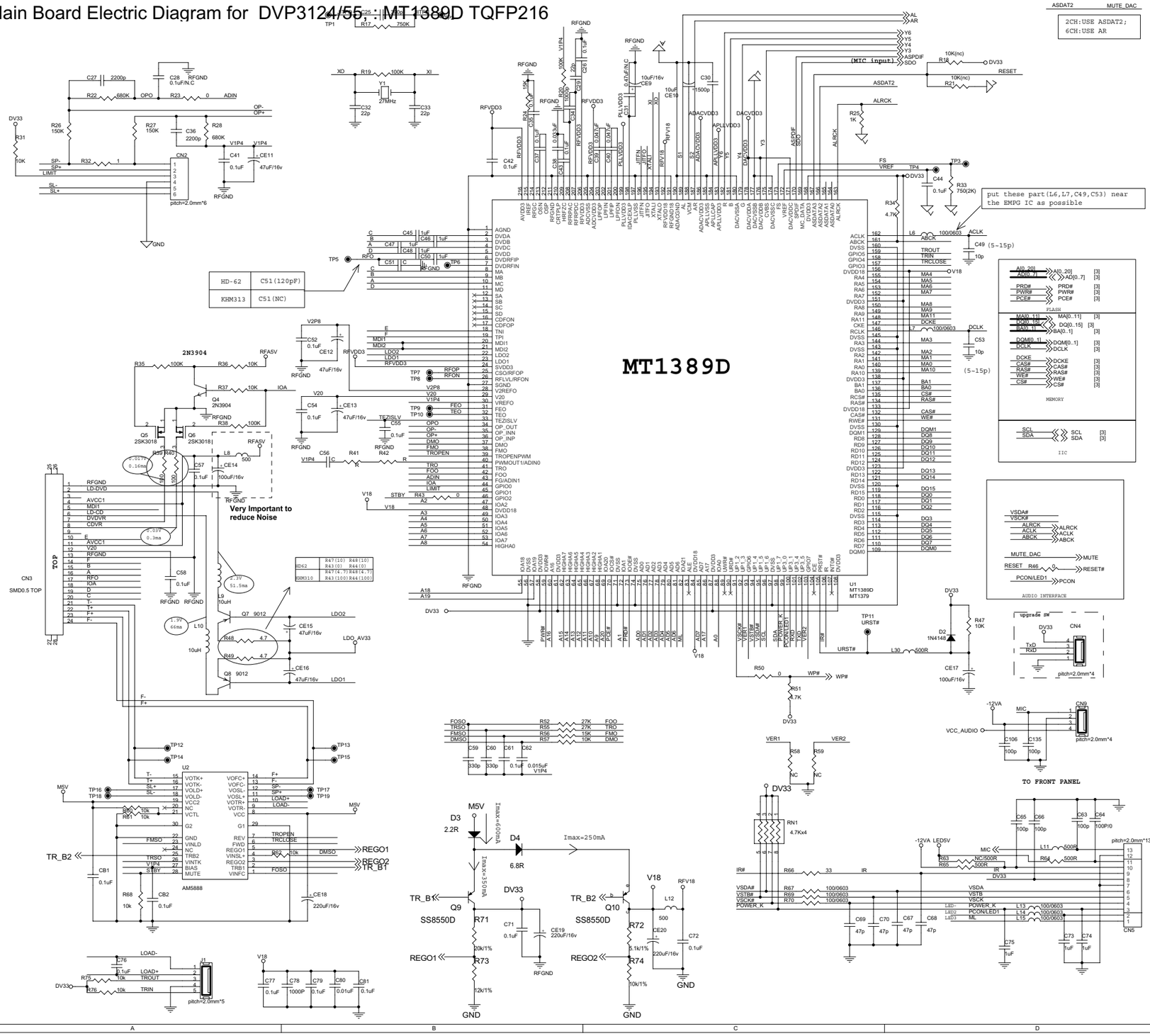
NAME	TYPE	DEVICE
VCC	Digital 5V	SUPPLY
DV33	Digital 3.3V	MT1389D
RFV33	Servo 3.3V	MT1389D
LDO_AV33	Laser Diode 3.3V	
AVCC	RF 5V	PICKUP HEADER
V18	Digital 1.8V	MT1389D
SD33	Digital 3.3V	SDRAM
+12V	Audio +12V	OP AMP.
-12V	Audio -12V	OP AMP.
AVDD	Audio 5V	VCC_AUDIO
DVDD	Audio 3V3	VCC3_AUDIO





6-7

Main Board Electric Diagram for DVP3124/55 : MT1389D TQFP216

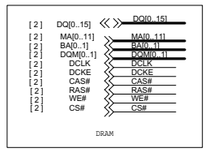


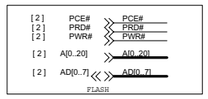
CB1	A4	C66	D4	R38	A2
CB2	A4	C67	C4	R39	A2
CE9	C1	C68	D4	R40	A2
CE10	C1	C69	C4	R41	B2
CE11	A1	C70	C4	R42	B2
CE12	B2	C71	B4	R43	B2
CE13	B2	C72	C4	R46	D3
CE14	A2	C73	D4	R47	D3
CE15	A3	C74	D4	R48	A3
CE16	A3	C75	D4	R49	A3
CE17	D3	C76	A4	R50	C3
CE18	B4	C77	A4	R51	C3
CE19	B4	C78	A4	R52	B3
CE20	C4	C79	B4	R55	B3
CN2	A1	C80	B4	R56	B3
CN3	A2	C81	B4	R57	B3
CN4	D3	C106	D3	R58	C3
CN5	D4	C135	D3	R59	C3
CN9	D3	D2	D3	R60	A4
C25	B1	D3	B4	R61	A4
C26	B1	D4	B4	R62	A4
C27	A1	J1	A4	R63	D4
C28	A1	L6	D1	R64	D4
C29	B1	L7	D2	R65	D4
C30	C1	L8	A2	R66	C4
C31	C1	L9	A3	R67	C4
C32	B1	L10	A3	R68	A4
C33	B1	L11	D4	R69	C4
C34	B1	L12	C4	R70	C4
C35	B1	L13	D4	R71	B4
C36	A1	L14	D4	R72	C4
C37	B1	L15	D4	R73	B4
C38	B1	L30	C3	R74	C4
C39	B1	Q4	A2	R75	A4
C40	C1	Q5	A2	R76	A4
C41	A1	Q6	A2	TP1	B1
C42	B1	Q7	A3	TP2	B1
C43	B1	Q8	A3	TP3	D1
C44	D1	Q9	B4	TP4	D1
C45	B1	Q10	C4	TP5	B1
C46	B1	RN1	C4	TP6	B2
C47	B1	R17	B1	TP7	B2
C48	B1	R18	D1	TP8	B2
C49	D1	R19	B1	TP9	B2
C50	B1	R20	B1	TP10	B2
C51	B2	R21	D1	TP11	C3
C52	B2	R22	A1	TP12	A3
C53	D2	R23	A1	TP13	B3
C54	B2	R24	B1	TP14	A3
C55	B2	R25	C1	TP15	B3
C56	B2	R26	A1	TP16	A3
C57	A2	R27	A1	TP17	B3
C58	A3	R28	A1	TP18	A3
C59	B3	R31	A1	TP19	B3
C60	B3	R32	D1	U1	B1
C61	B3	R33	D1	U2	A3
C62	B3	R34	C1	Y1	B1
C63	D4	R35	A2		
C64	D4	R36	A2		
C65	D4	R37	A2		

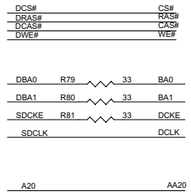
model	R63	R64,R65	C64	CN5	L14,L15
DVP3110	NC	500FB	100P	1--13pin	100R
DVP3120	500FB	NC	0R RES	3--11pin	NC

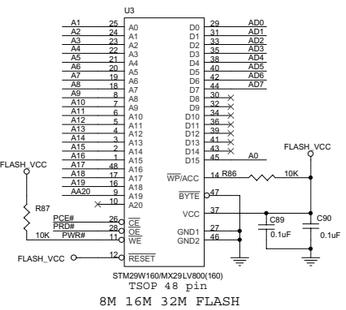
6-8

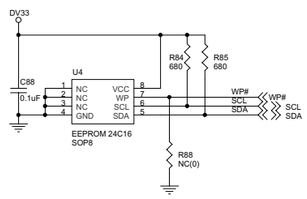
Main Board Electric Diagram for DVP3124/55: SDRAM & FLASH&VIDEO OUT

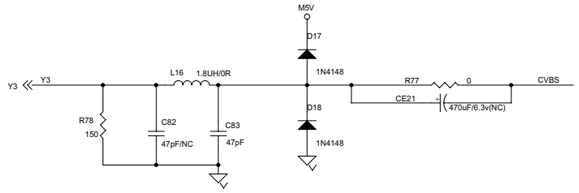


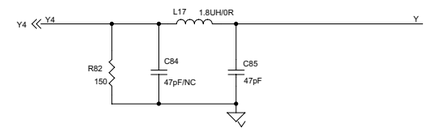


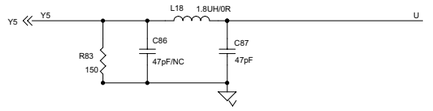


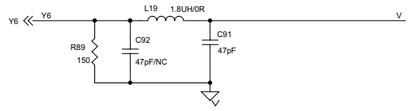


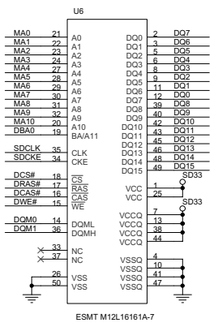


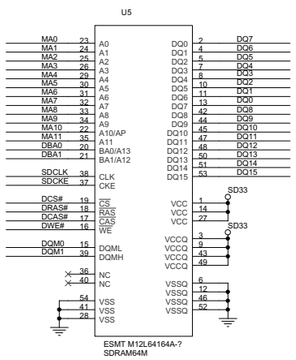


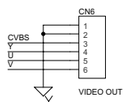


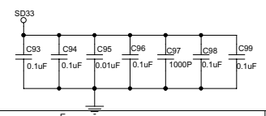








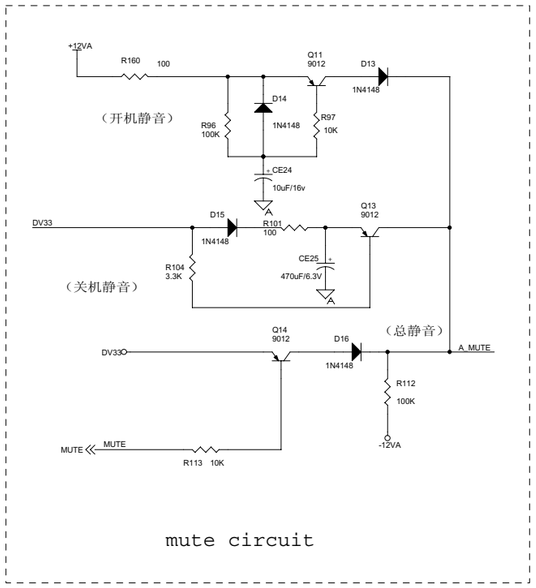


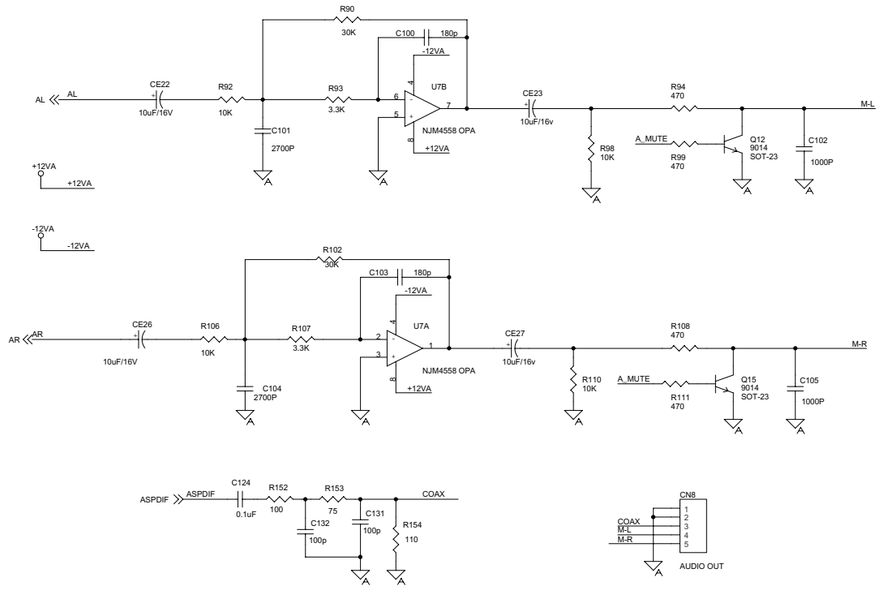


CE21	D1
CN6	D3
C82	D1
C83	D1
C84	D2
C85	D2
C86	D2
C87	D2
C88	B2
C89	A2
C90	A2
C91	D3
C92	D3
C93	A4
C94	A4
C95	A4
C96	A4
C97	A4
C98	A4
C99	A4
D17	D1
D18	D1
L16	D1
L17	D1
L18	D2
L19	D3
R77	D1
R78	D1
R79	B1
R80	B1
R81	B1
R82	D2
R83	D2
R84	C2
R85	C2
R86	A2
R87	A2
R88	C2
R89	D3
U3	A2
U4	B2
U5	B3
U6	A3

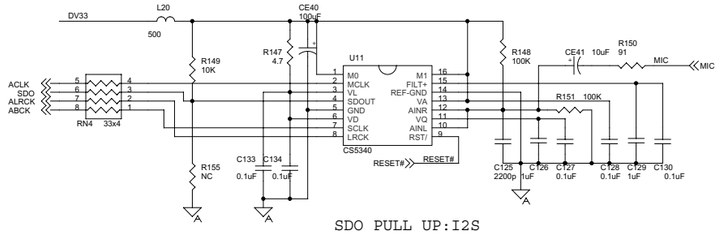
6-9

Main Board Electric Diagram for DVP3124/55: Audio out





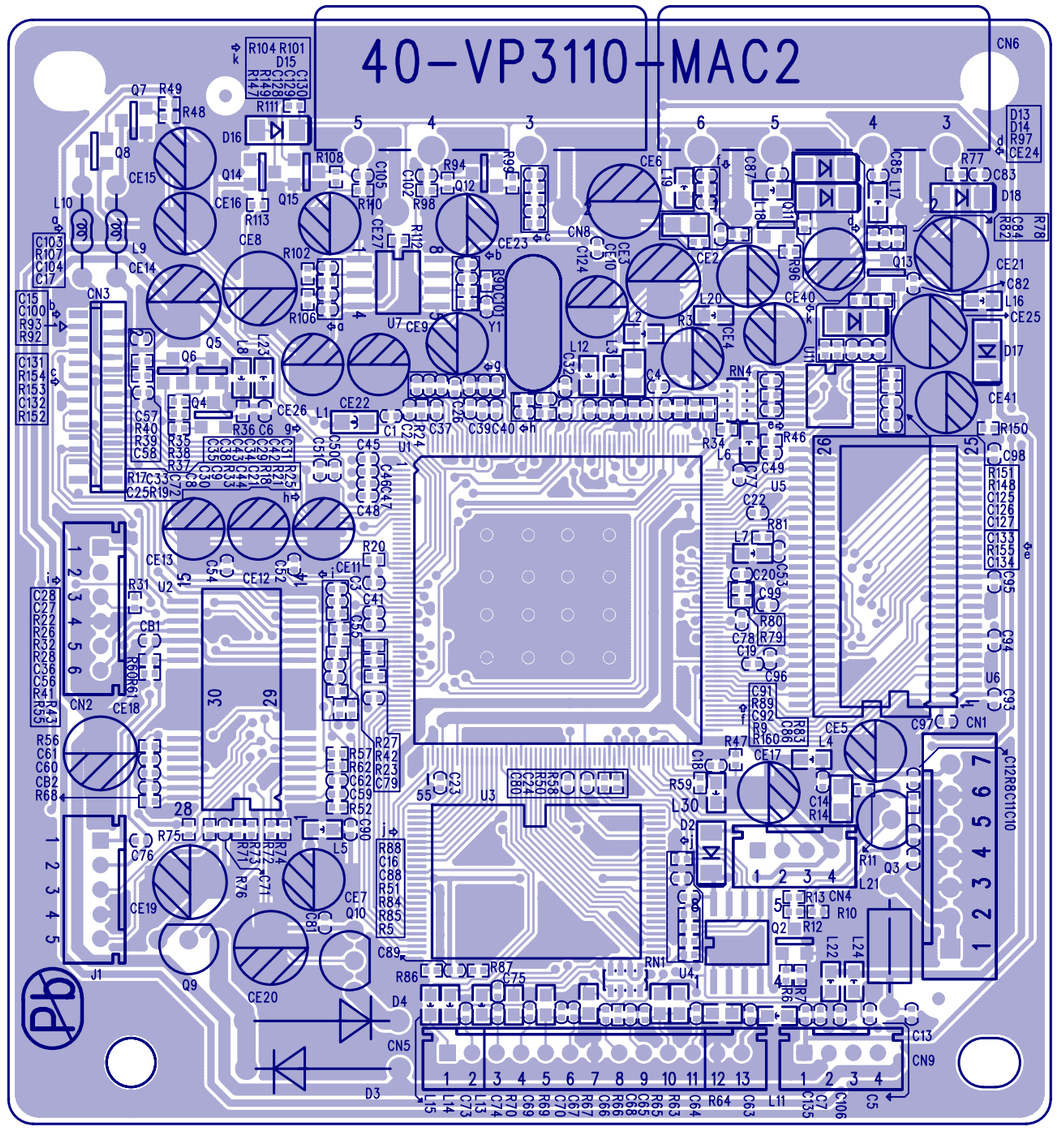
CE22	C1
CE23	D1
CE24	A1
CE25	A1
CE26	C1
CE27	D1
CE40	A3
CE41	B3
CN8	D2
C100	C1
C101	C1
C102	D1
C103	C1
C104	C2
C105	D2
C124	C2
C125	B3
C126	B3
C127	B3
C128	B3
C129	B3
C130	B3
C131	C2
C132	C2
C133	A3
C134	A3
D13	B1
D14	A1
D15	A1
D16	B2
L20	A3
Q11	A1
Q12	D1
Q13	B1
Q14	A2
Q15	D2
RN4	A3
R90	C1
R92	C1
R93	C1
R94	D1
R96	A1
R97	A1
R98	D1
R99	D1
R101	A1
R102	C1
R104	A1
R106	C1
R107	C1
R108	D1
R110	D2
R111	D2
R112	B2
R113	A2
R147	A3
R148	B3
R149	A3
R150	B3
R151	B3
R152	C2
R153	C2
R154	C2
R155	A3
R160	A1
U7A	C1
U7B	C1
U11	B3



SDO PULL UP:I2S
M0,M1 PULL UP:CLOCK SLAVE,ALL SPEED MODES

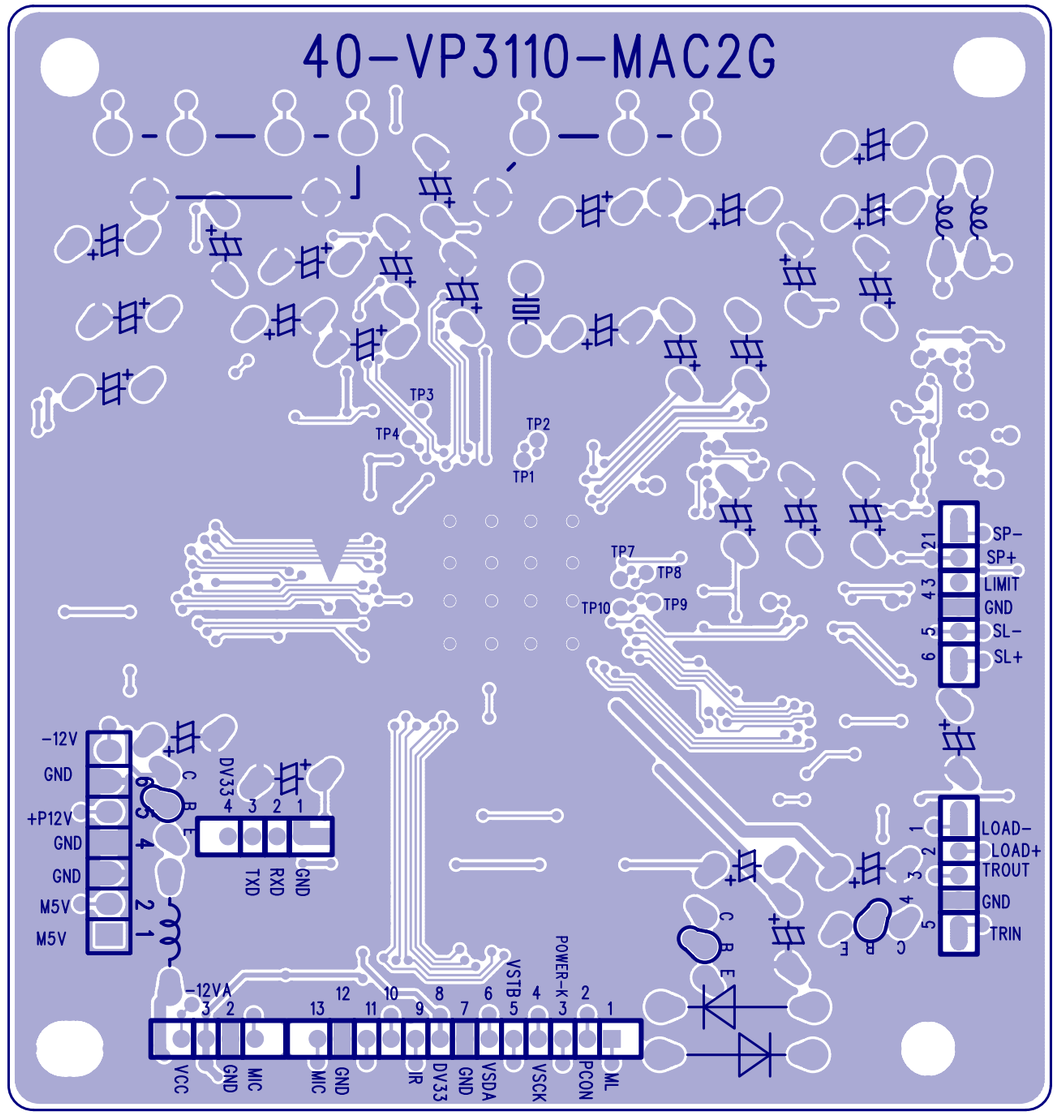
6-10

Main Board Print-Layout (Top Side) for DVP3124/55

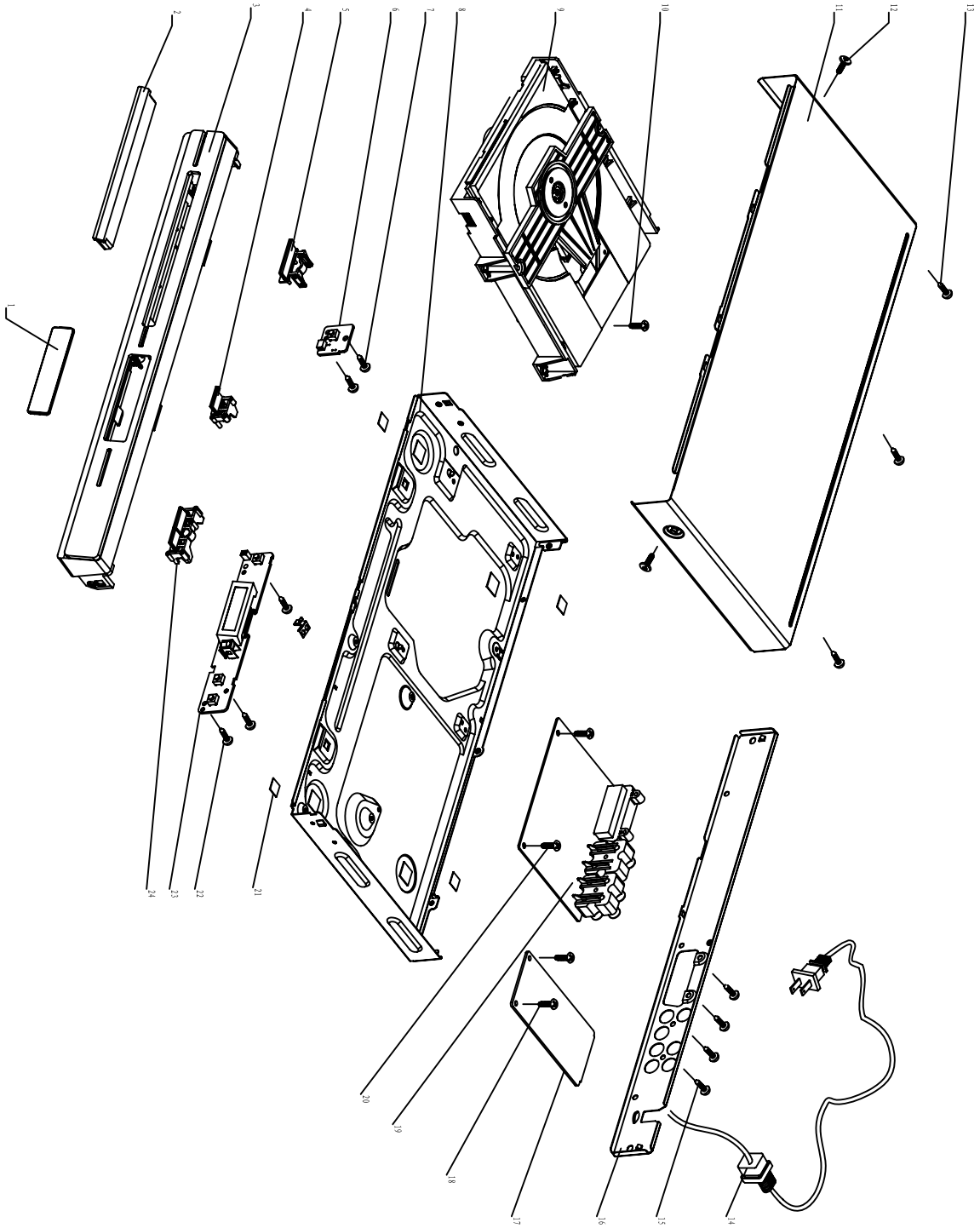


6-11

Main Board Print-Layout (Bottom Side) for DVP3124/55



DVP3124/55 Mechanical Exploded View



Remark: It's a general Mechanical Exploded View for DVP3124/55, Detailed information please refer to Model set.
Ass'y1 is the assembled component for location 1,3,4,5,24

Electrical PARTS LIST

No	12NC No.	Part Name	Q'ty
⚠ **17**	**996510002667**	**ASS'Y-PW BD**	**1**
D1	996510011047	DIODE IN4007	1
D10	996510010902	SR240	1
D2	996510011047	DIODE IN4007	1
D3	996510011047	DIODE IN4007	1
D4	996510011047	DIODE IN4007	1
D6	996500014043	DIODE FR102 (FAST RECOVERY)	1
D7	996500014043	DIODE FR102 (FAST RECOVERY)	1
D8	996510011047	DIODE IN4007	1
D9	996510011047	DIODE IN4007	1
L1	996510009942	COIL WIDTH	1
L2	996500032509	COIL SL0811-6R8K2R4	1
T1	996510009662	TRANSFORMER CONV	1
U1	996510009660	FSDH321	1
U2	996500024838	PC123X9YFZ	1
U3	996510009661	adjustable shunt regulator	1
19	**996510001804**	**ASS'Y- MAIN BD**	**1**
D30	996510009859	SCHOTTKY DIODES BAT54S SOP-23	1
D31	996510009859	SCHOTTKY DIODES BAT54S SOP-23	1
D32	996510009859	SCHOTTKY DIODES BAT54S SOP-23	1
D33	996510009859	SCHOTTKY DIODES BAT54S SOP-23	1
L10	996500014082	COIL CHOKE 10UH +/-10%	1
L9	996500014082	COIL CHOKE 10UH +/-10%	1
Q10	996510009671	TRANSISTOR	1
Q11	996510009670	TRANSISTOR SMT 3CG9012M	1
Q12	996510009669	SMD.TRANSISTOR MMBT3904LT1 NPN	1
Q13	996510009670	TRANSISTOR SMT 3CG9012M	1
Q14	996510009670	TRANSISTOR SMT 3CG9012M	1
Q15	996510009669	SMD.TRANSISTOR MMBT3904LT1 NPN	1
Q2	996510009669	SMD.TRANSISTOR MMBT3904LT1 NPN	1
Q3	996510009671	TRANSISTOR	1
Q4	996510009669	SMD.TRANSISTOR MMBT3904LT1 NPN	1
Q5	996510009769	N Channel MOSFET 2SK3108	1
Q6	996510009769	N Channel MOSFET 2SK3108	1
Q7	996510009670	TRANSISTOR SMT 3CG9012M	1
Q8	996510009670	TRANSISTOR SMT 3CG9012M	1
Q9	996510009671	TRANSISTOR	1
U1	996510009862	IC MT1389QE/D	1
U2	996510009674	IC AM5888IC	1
U3	996510009841	3.3V 16MFLASH EN29LV160AT-70TC	1
U4	996500024284	IC EEPROM 8K M24C08	1
U5	996510009863	64M SDRAM TSOP54 M12L64164A-7T	1
U7	996500032494	IC AS4558M	1
Y1	996510009675	27MCL20PF	1
23	**996510001164**	**ASS'Y-FB BD**	**1**
D301	996510009664	DIODE 1N4148 (SWITCHING)	1
D302	996510009664	DIODE 1N4148 (SWITCHING)	1
LED1	996510009666	LED	1
REM301	996510010903	IR RECEIVER MODULE 14MM 5V	1
U301	996510009665	IC ET6202 SOP-2	1
6	**996510001163**	**ASS'Y-SW BD**	**1**
9	**996510002887**	**ASS'Y-LOADER**	**1**
OPU	996510006029	Sony OPU	1

MECHANICAL & ACCESSORIES PARTS LIST

No	12NC No.	Part Name	Q'ty
11	**996510007452**	**TOP COVER**	**1**
⚠ **14**	**996510001175**	**POWER CORD**	**1**
16	**996510011724**	**BACK PANEL**	**1**
2	**996510008404**	**FRONT DOOR**	**1**
21	**996510006463**	**PAD**	**1**
8	**996510001229**	**BOTTOM CABINET**	**1**
A1	**996510011723**	**ASS'Y - FRONT CABINET**	**1**
AVCAB	**996510001106**	**VIDEO CABLE 1500mm**	**1**
CN1	**996510001904**	**CABLE HS 7P 2468#26 60**	**1**
CN2	**996510001222**	**HS 6P PH-6Y/PH-6Y**	**1**
CN3	**996510001108**	**24PIN FLAT WIRE**	**1**
CN5	**996510001172**	**HS 9PIN**	**1**
⚠ **FUSE**	**996510001780**	**FUSE 2A 250V 5X20MM**	**1**
J1	**996510004063**	**CABLE PH-5Y/PH-5Y L=130MM**	**1**
RC	**996510001806**	**REMOTE CONTROL**	**1**

REVISION LIST

Version 1.0
* Initial release