

## Service

Second Generation

DVP1013/37

## Service

## Service



This service manual is for DVP1013/37.  
Second Generation model, which is different from the  
previous generation DVP1013/37 models.

For Second Generation model, the serial number begins  
with xx 2A xxxxxxxxxx.  
( OPU Type: Sanyo)

# Service Manual

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Version 1.0

**CLASS 1  
LASER PRODUCT**



3139 785 33200

# 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

### 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
		<b>16, 20, 24bits</b> fs, 44.1, 48, 96kHz
	MP3(ISO 9660)	96,112,128,256,320kbps & 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)	>70dB
Distortion/Noise (1kHz)	>65dB
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 235 mm
Weight	Approximately 2.0kg

### Power consumption

Power supply Rating	120V; 60HZ
Power consumption	<10W
Power consumption in standby mode	<1W

**Specifications subject to change without prior notice.**


# Safety instruction, Warning & Notes

## Safety instruction

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### 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 1M $\Omega$ .
  - 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

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### 1. General

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

- 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 handling should take place as much as possible with a disc loaded inside the player.
- . Text below is placed inside the unit, on the laser cover shield:

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


Notes: Manufactured under licence from Dolby Laboratories. The double-D symbol is trademarks of Dolby Laboratories, Inc. All rights reserved.

## Notes

### Lead-Free requirement for service

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#### IDENTIFICATION:

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](http://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

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The following guideline is a general instruction for how to dismantle the player, Detailed operation done according the set unit.

**Step1:** Remove 4 screws around the Top Cover, then remove the Top Cover (Figure 1).



Figure 1

**Step2:** Dismantling Main Board, first disconnect the 5 connector and release the cable tie, then remove 3 screws to remove the Main board. (Figure 2&3).

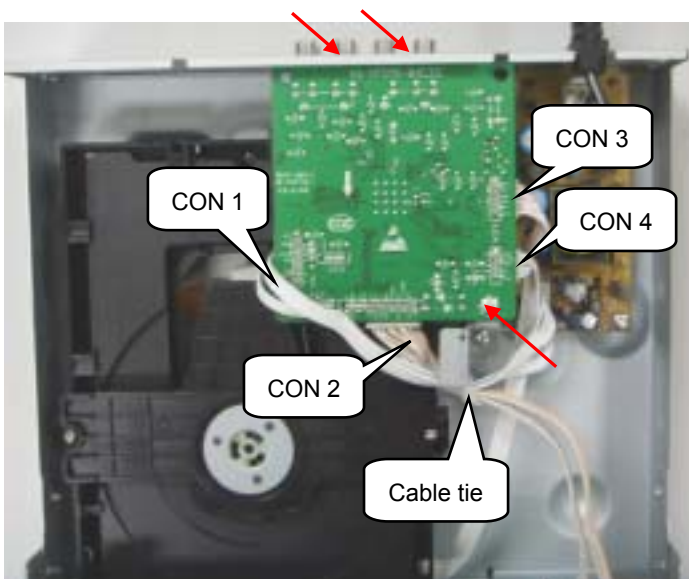


Figure 2



Figure 3

## Mechanical and Dismantling Instructions

### Dismantling Instruction

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**Step3:** If it is necessary to dismantle Loader or Front Panel, It should be remove the Front door assembly first. (Figure 4)

Note: Make sure to operate gently otherwise the guider would be damaged.

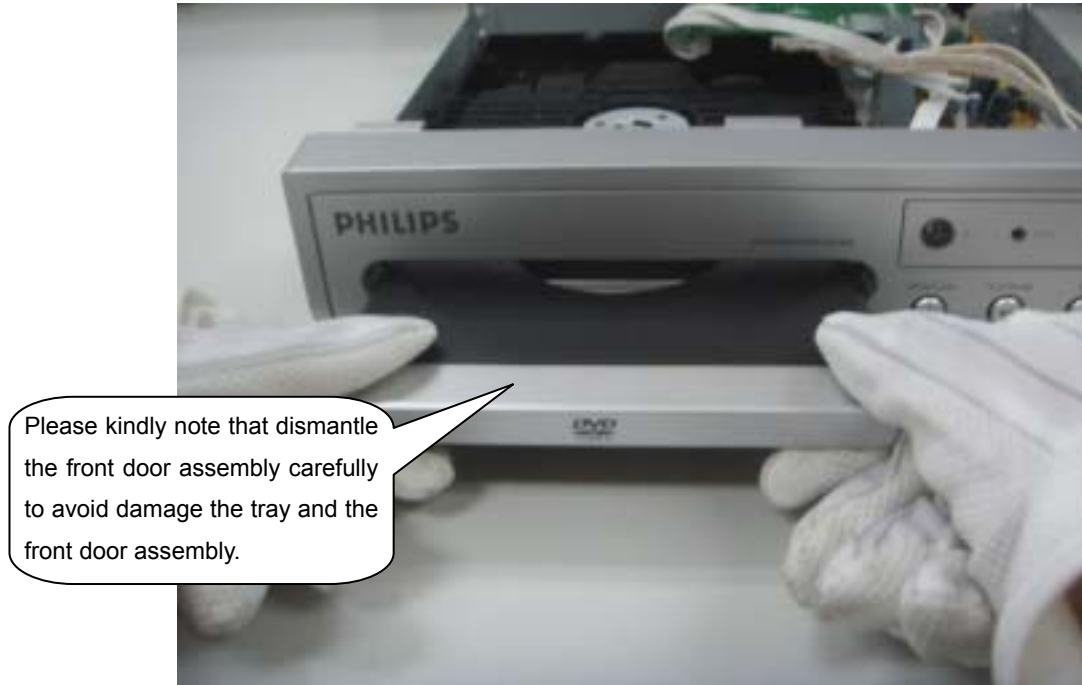


Figure 4

**Step4:** If the tray can't open in normal way, you can make it through the instruction as below (Figure 5).

Note: Make sure to operate gently otherwise the guider would be damaged.

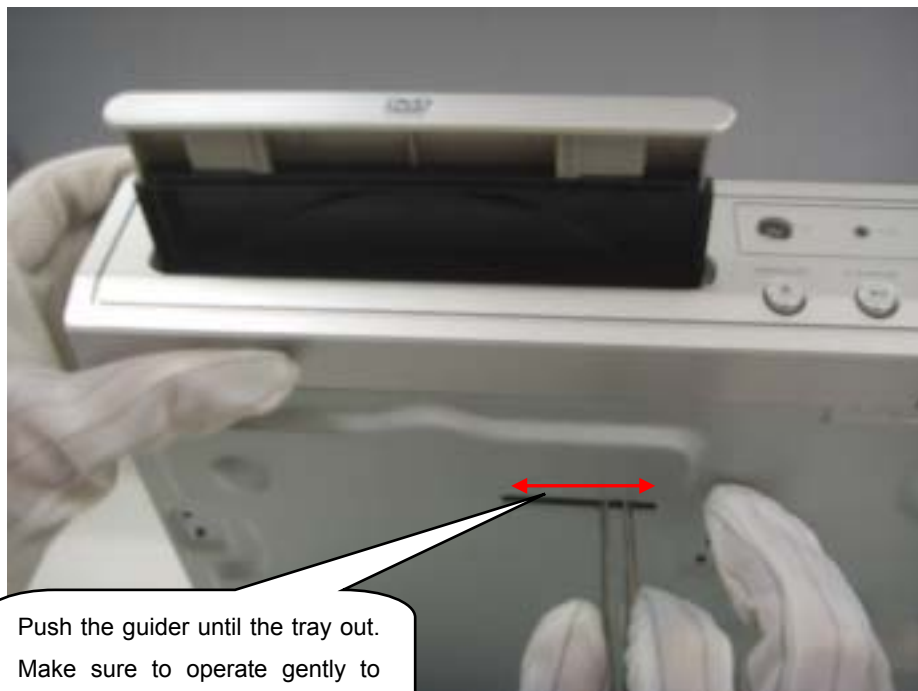


Figure 5

## Mechanical and Dismantling Instructions

### Dismantling Instruction

**Step5:** Dismantling Front Panel, disconnect 2 screws as below instruction, then remove the Front panel( Figure 6).



Figure 6

**Step6:** Remove the 2 screws on Power Board to dismantle the Power Board. (Figure 7)



Figure 7



## 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: DVP10XX (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 tray will automatically close when upgrading complete.

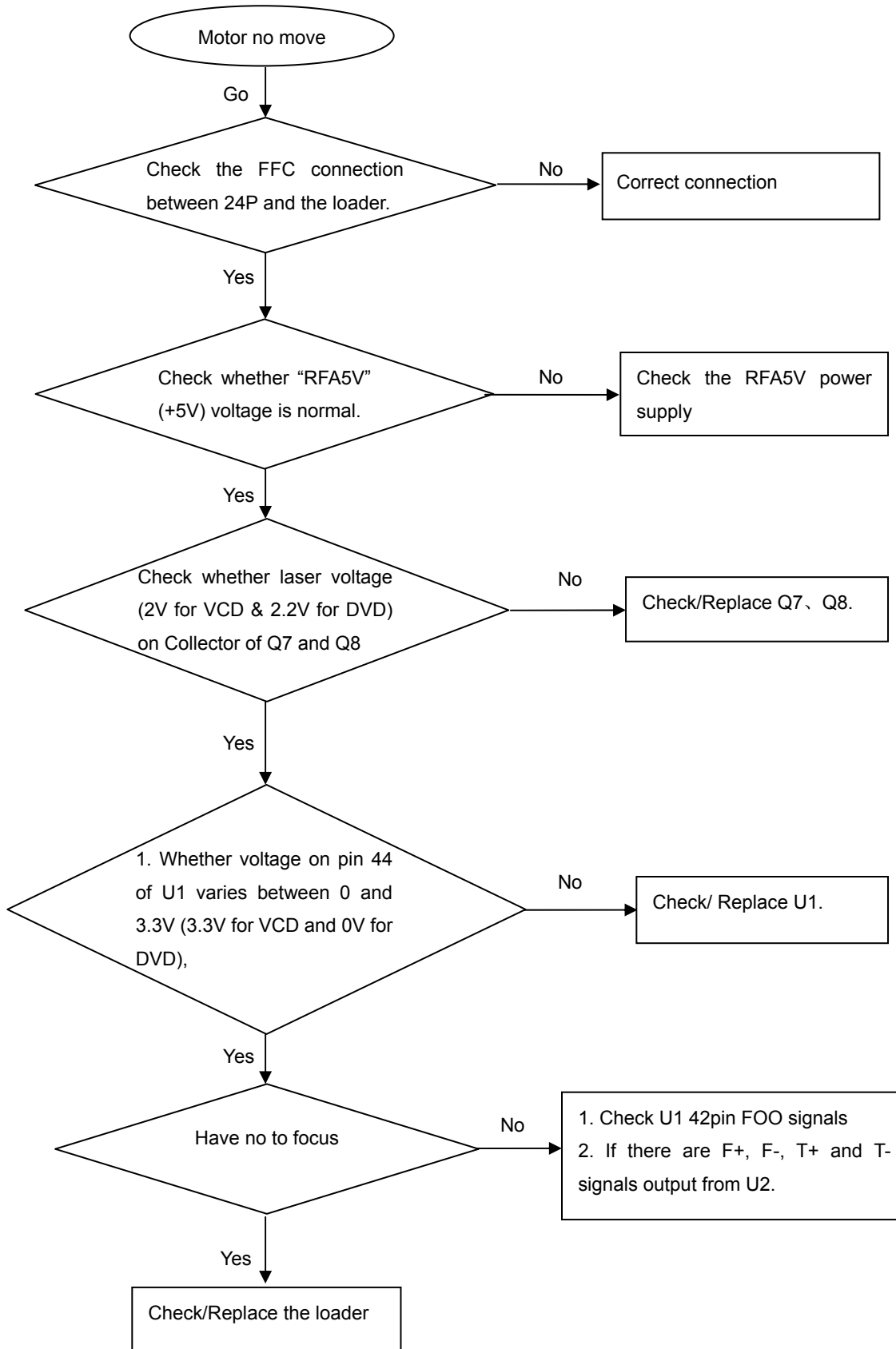
### B. Read out the software versions to confirm upgrading

- 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.

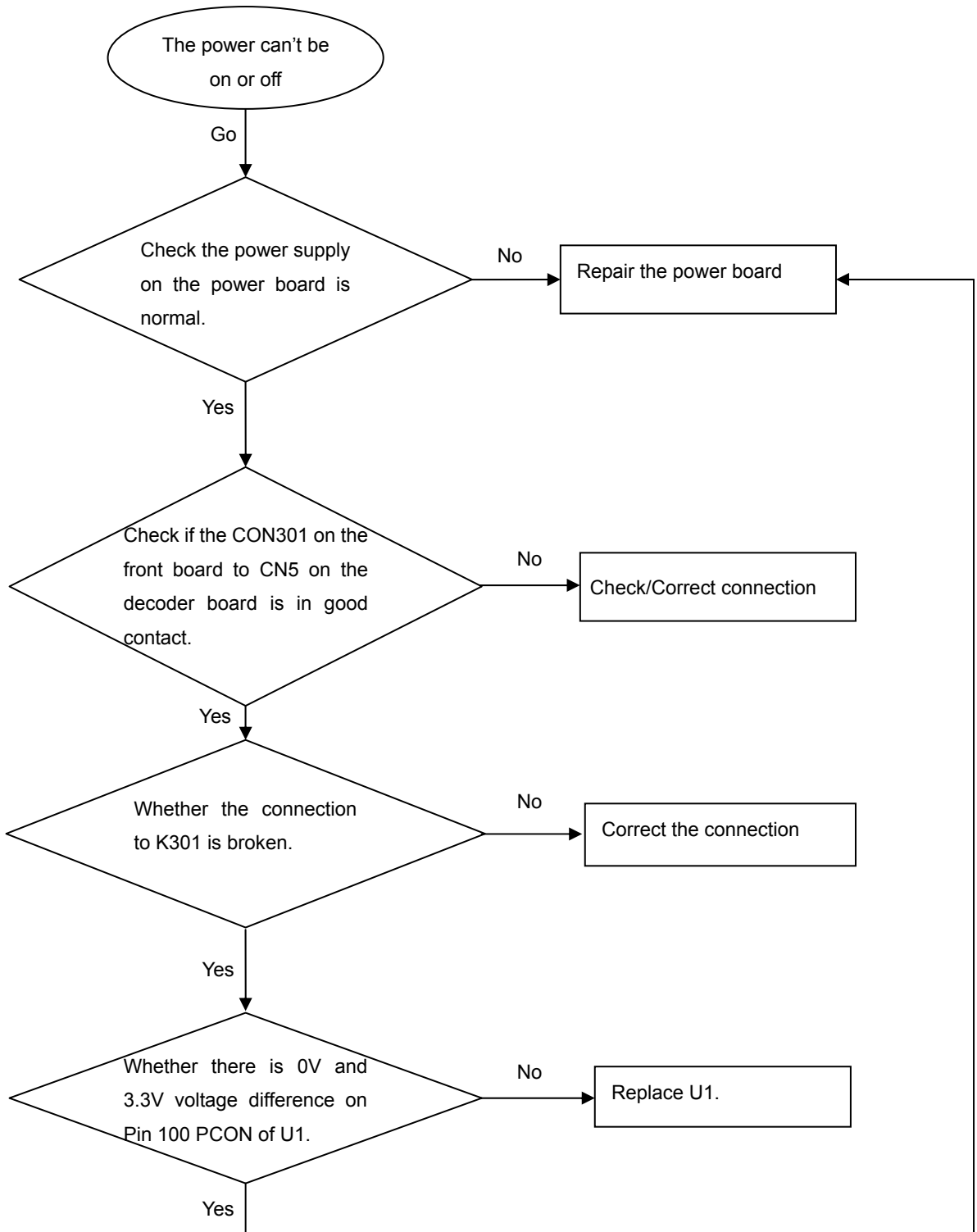
The software version and other information are display on the TV screen as follows:

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

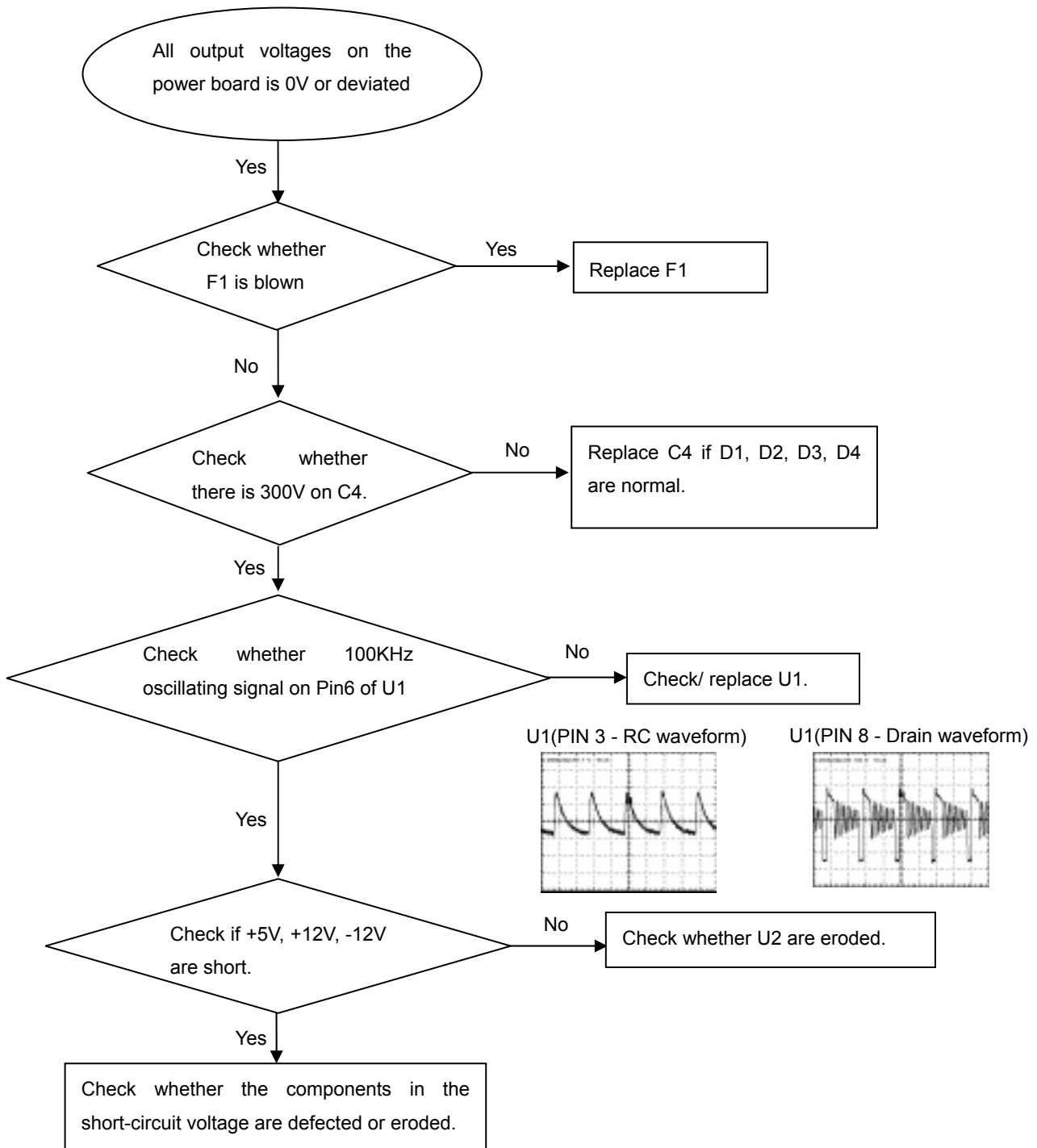
**Caution:** The set must not be power off during upgrading, Otherwise the Main board will be damaged entirely.

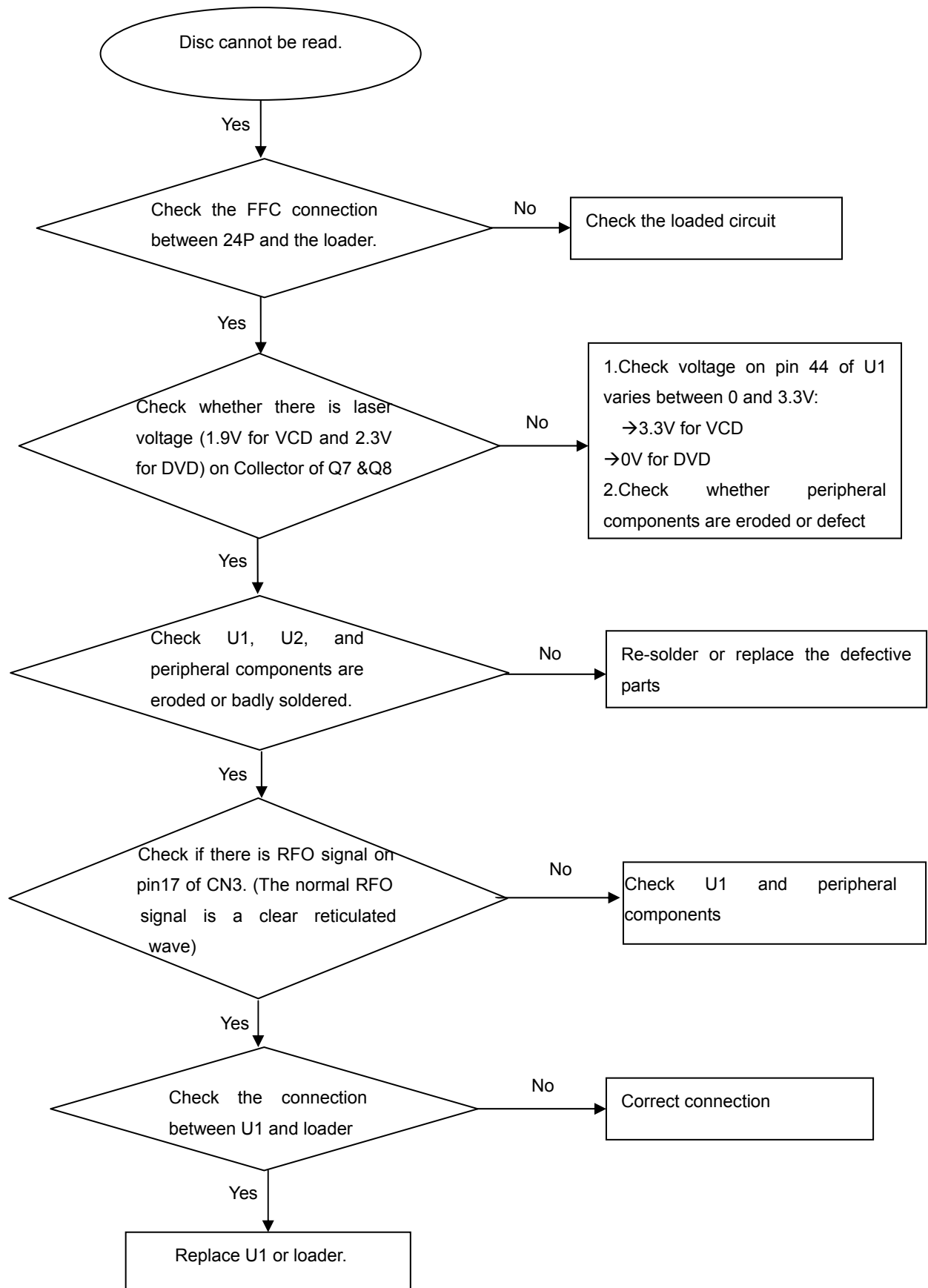
**Spindle motor does not move**

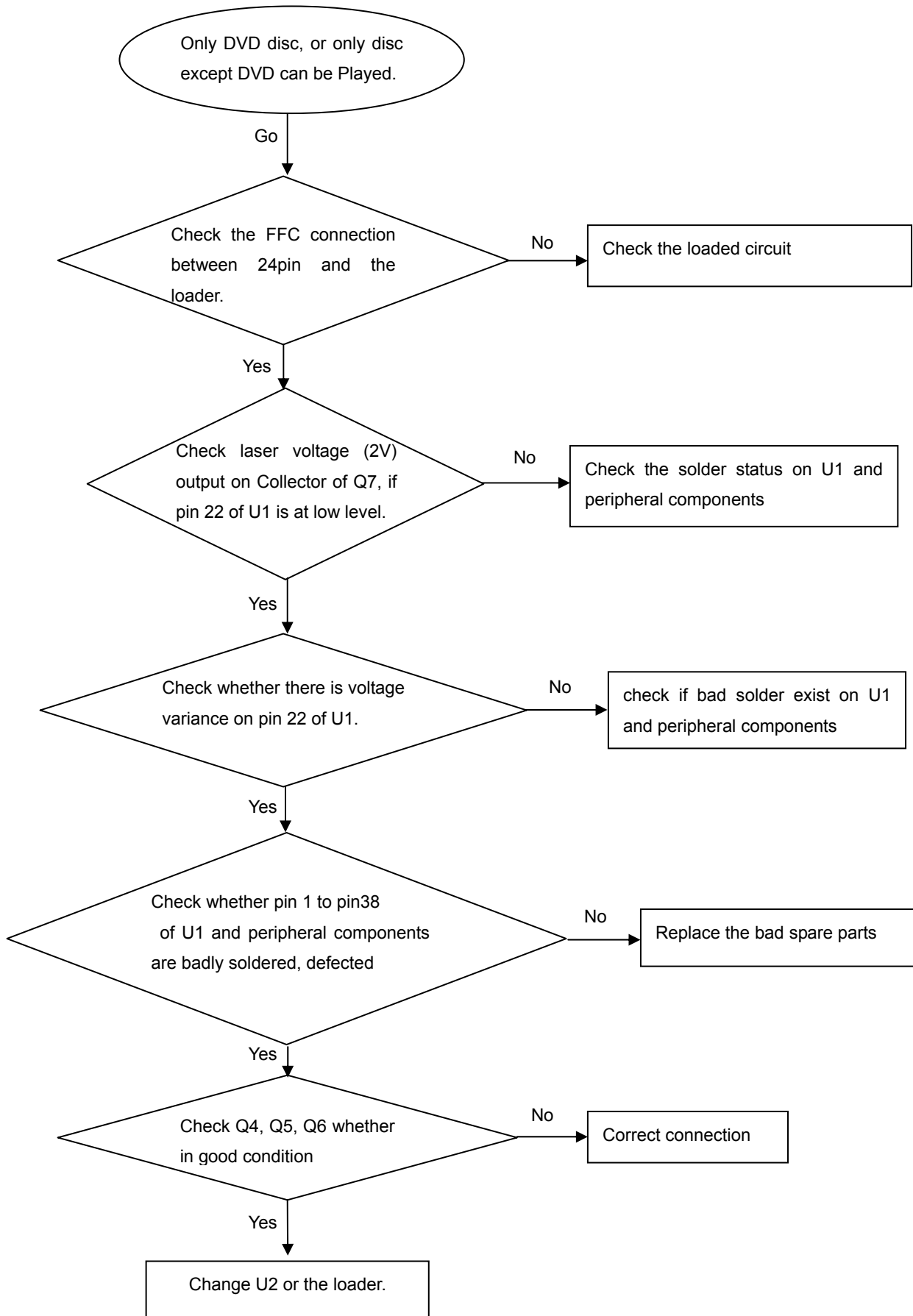
The power can not be on or off

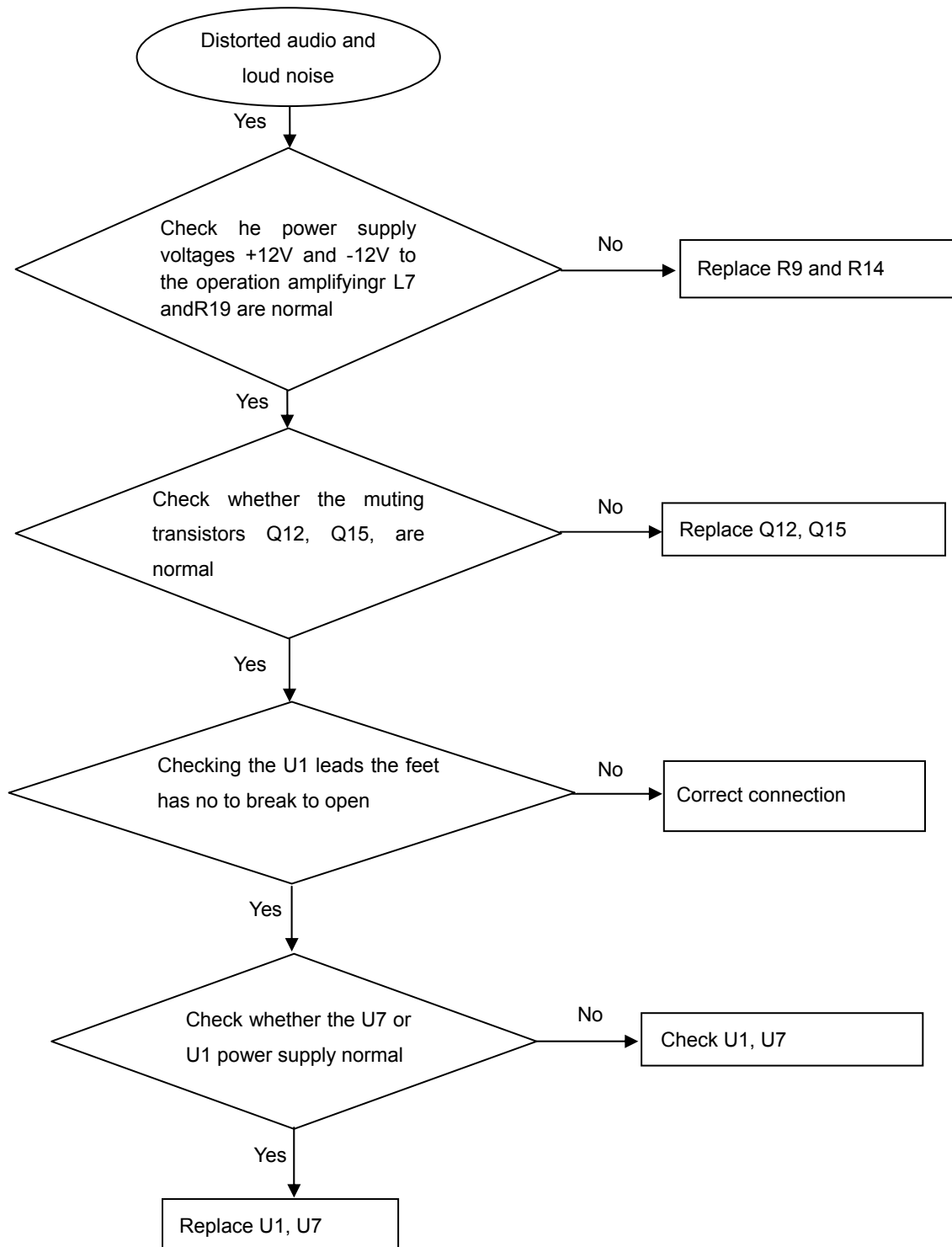


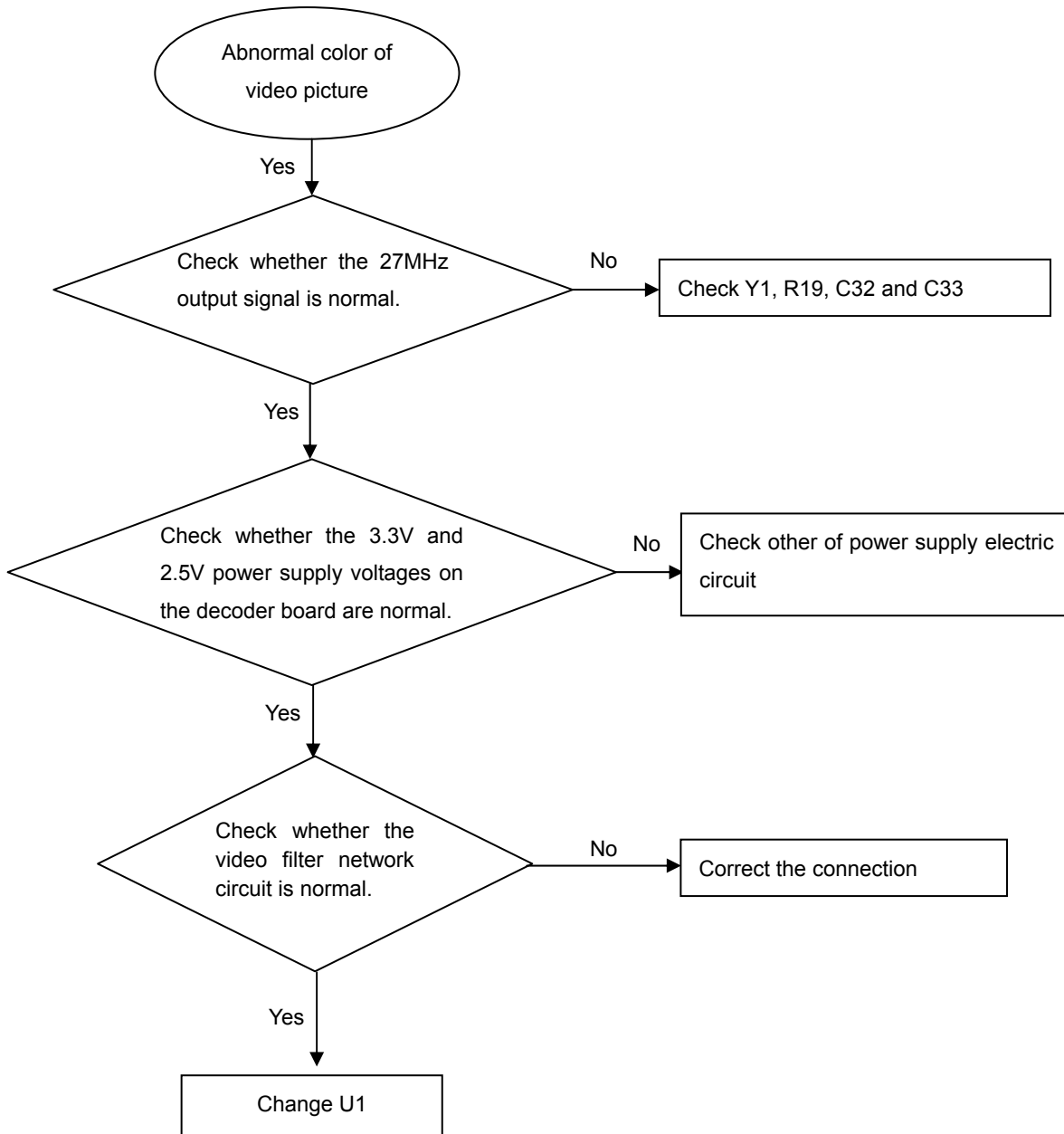
All output voltages on the power board is 0V or deviated.



**Disc cannot be read.**

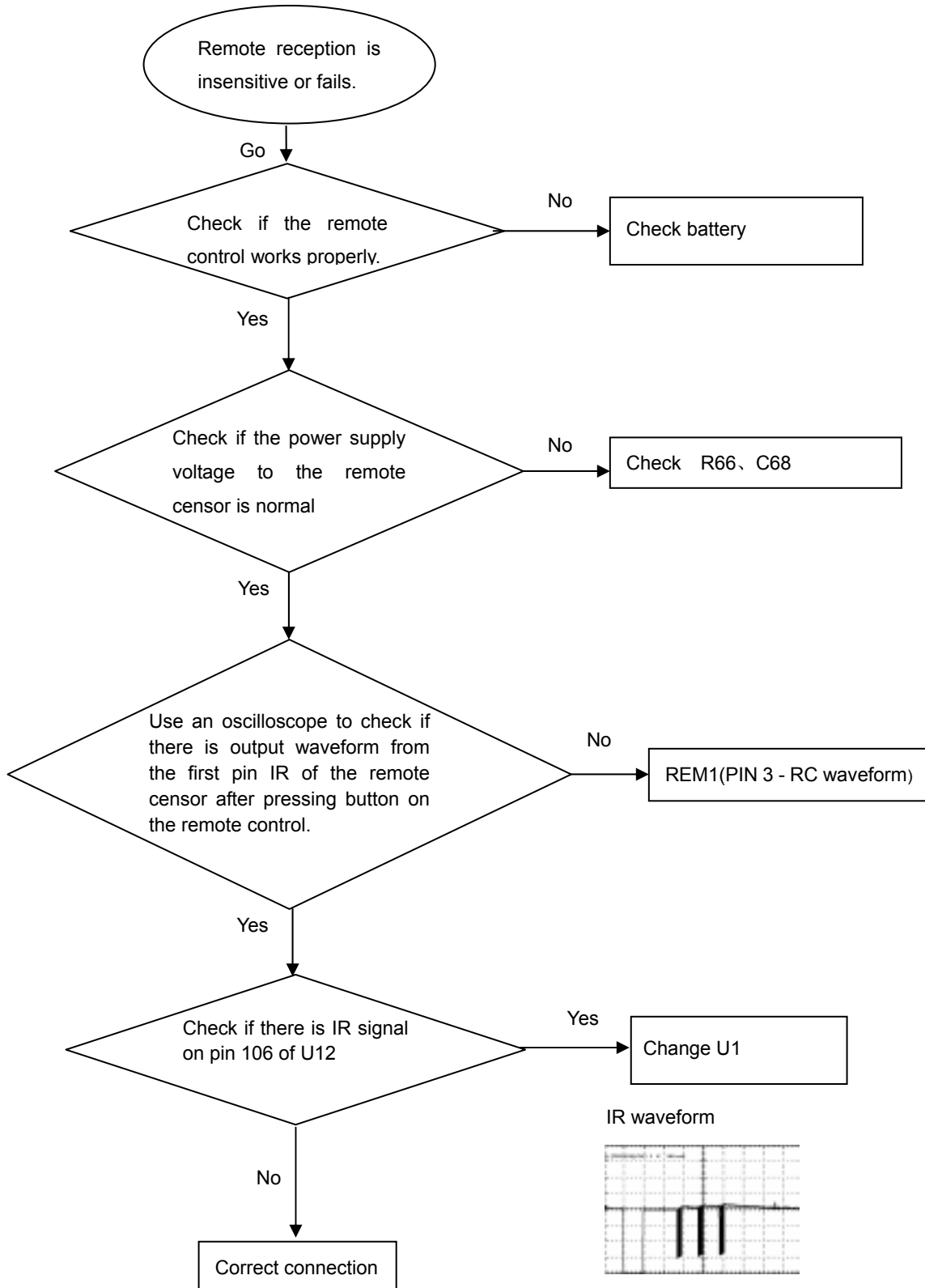
**Only DVD disc or only disc except DVD can be played**

**Distorted audio and loud noise**

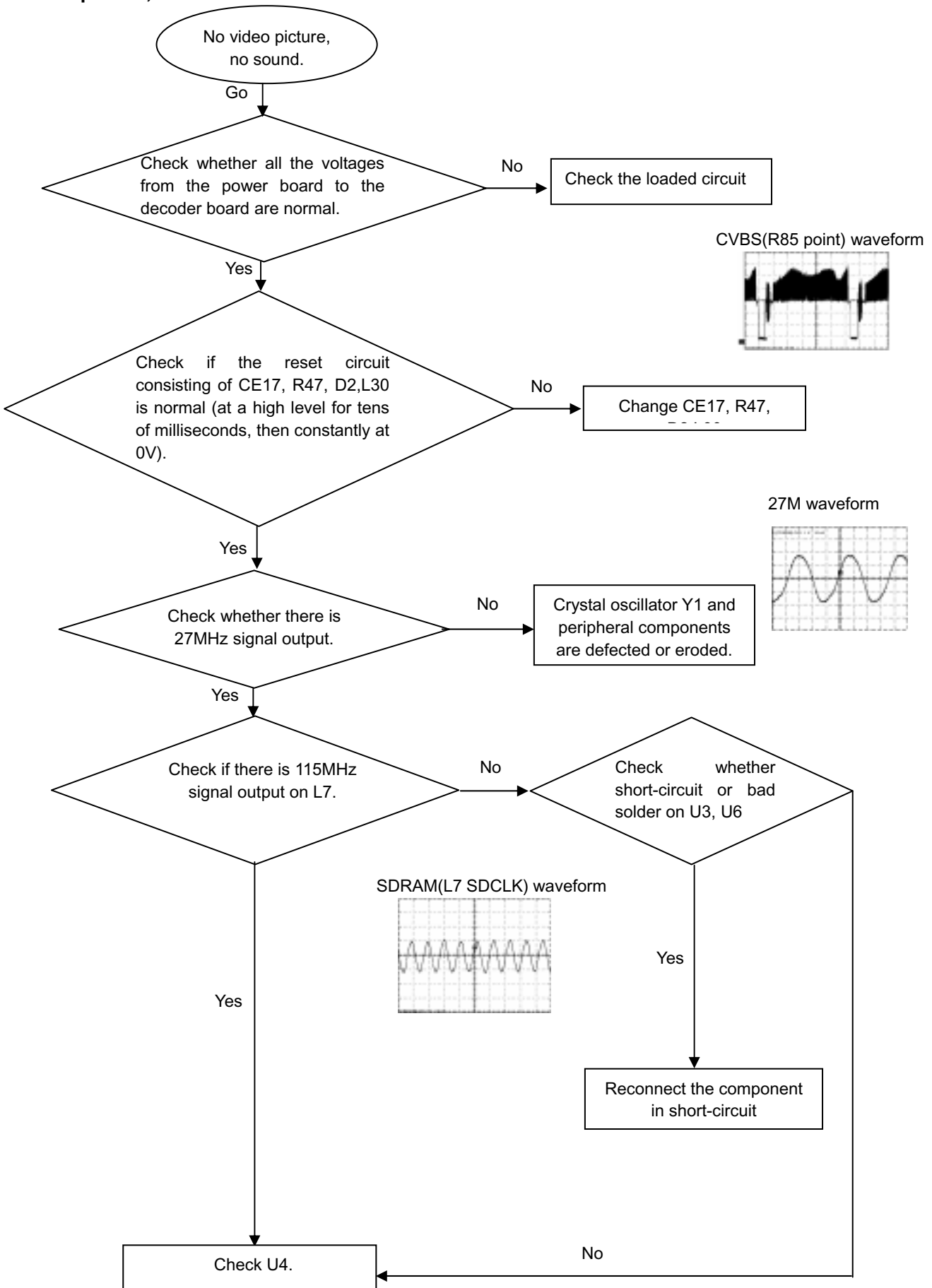
**Abnormal color of video picture**



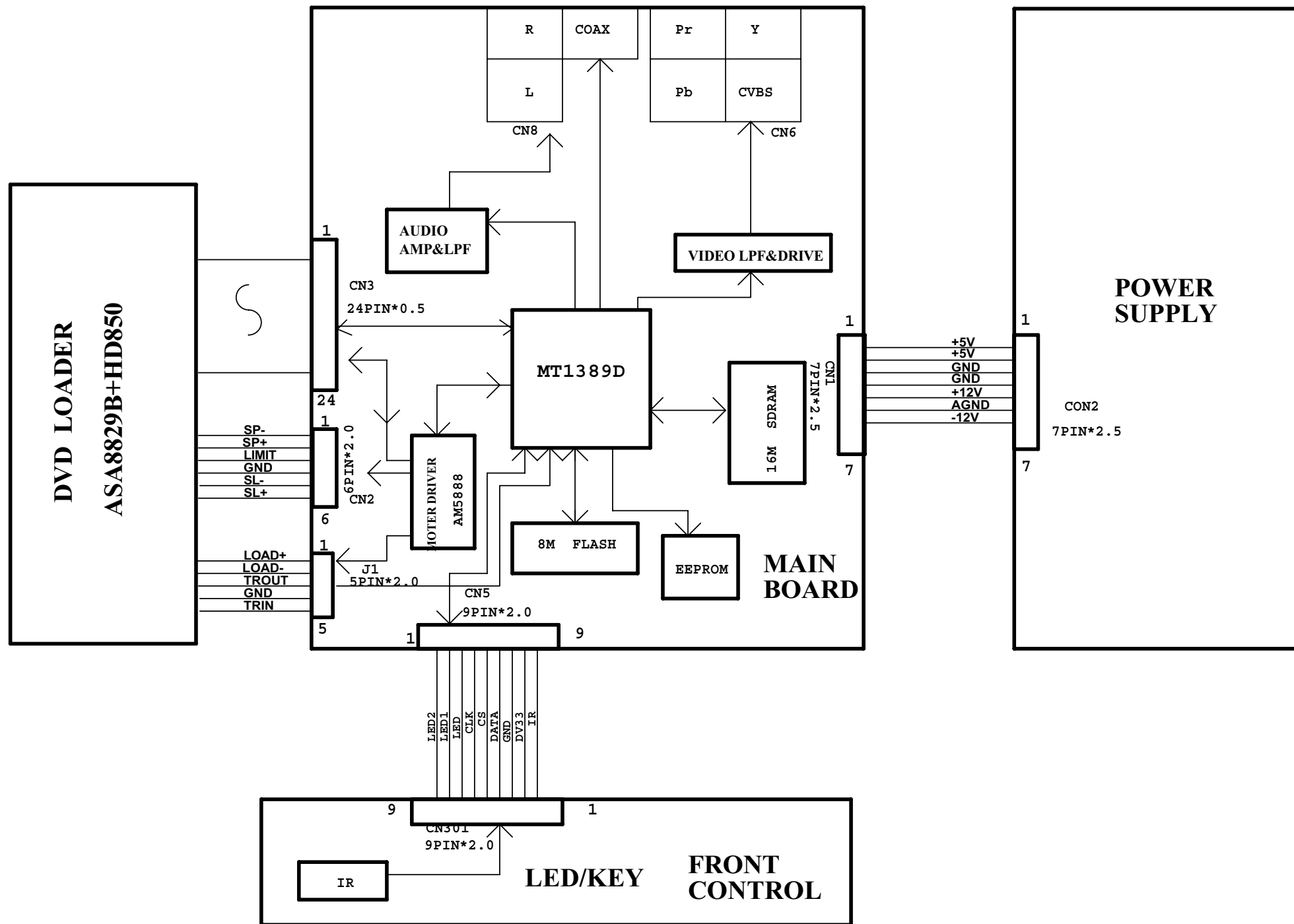
**Remote reception is insensitive or fails.**



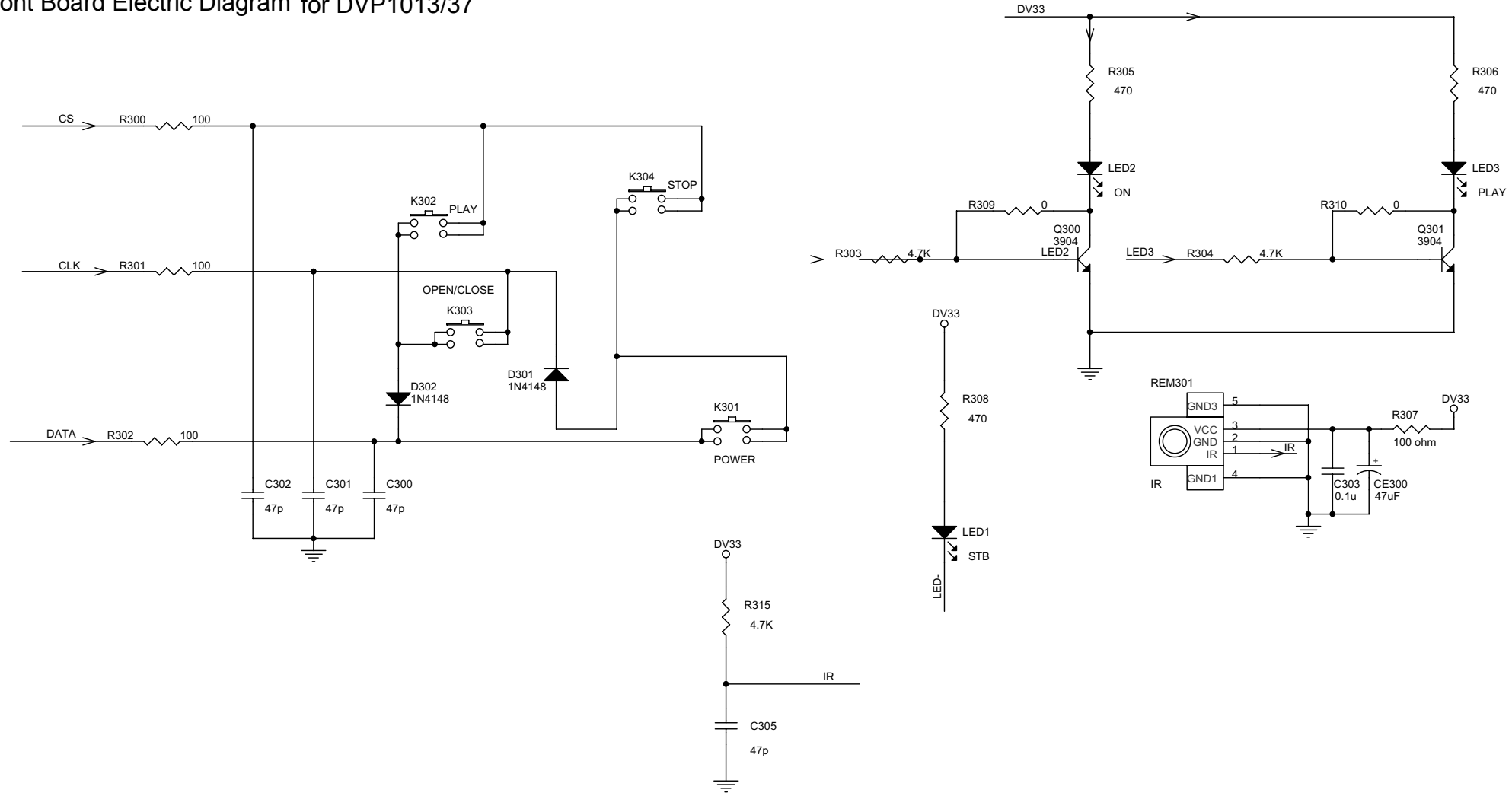
**No video picture, no sound.**



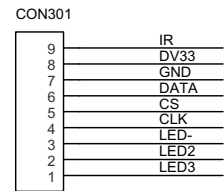
### DVP1013/37 WIRING DIAGRAM



Front Board Electric Diagram for DVP1013/37



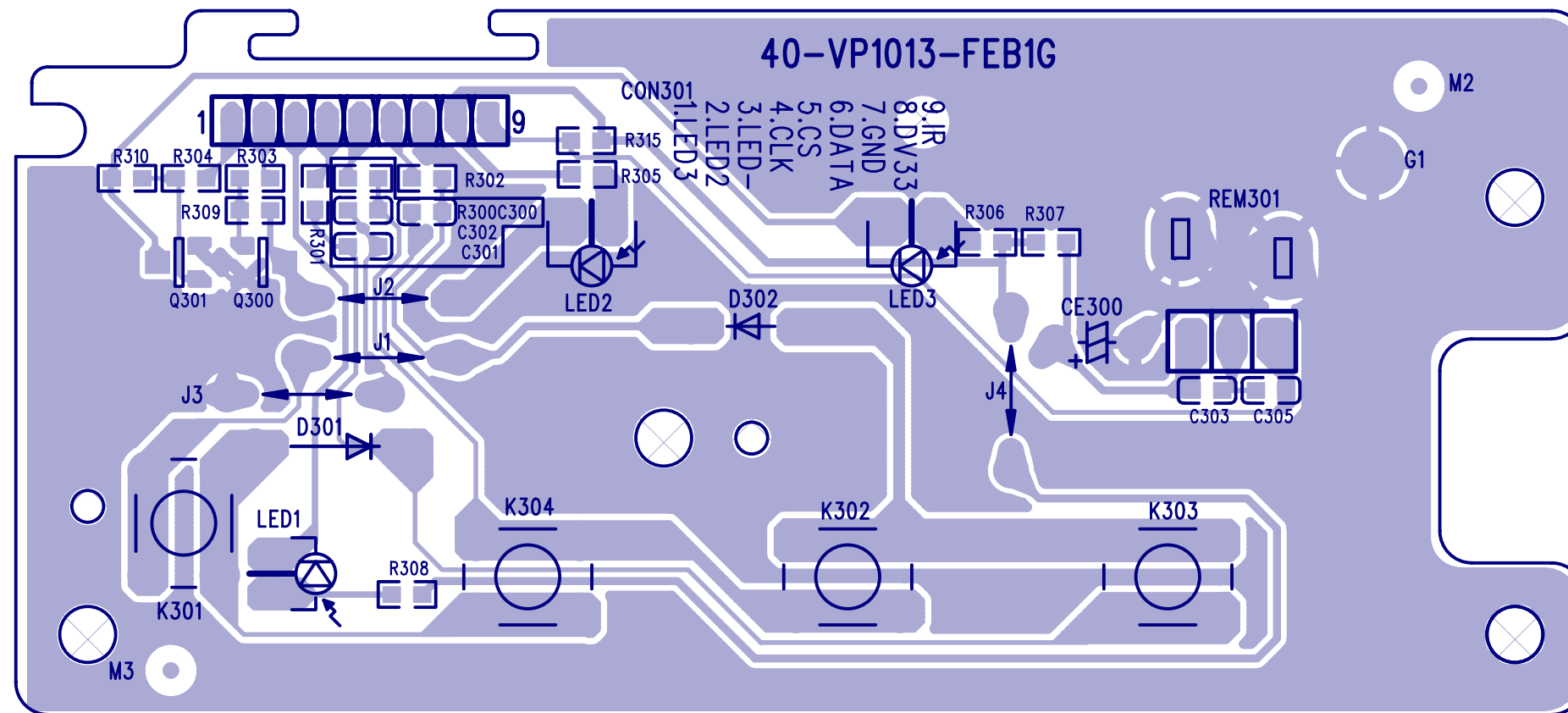
FROM MAIN BOARD



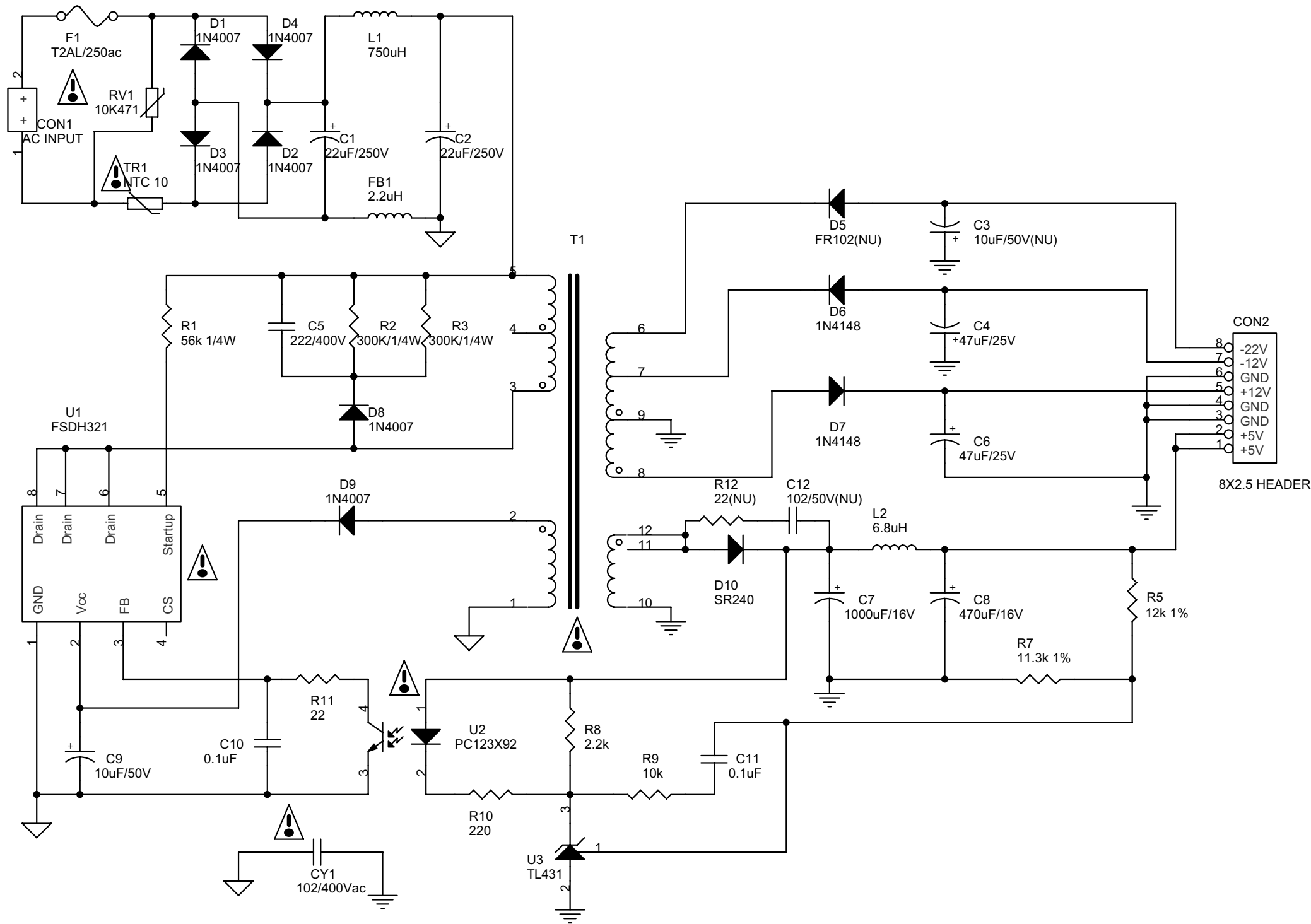
CON9(2,0)

C1	A4	EC9	C4
C10	A4	FB1	A4
C100	D2	FB3	D1
C11	A4	FB30	B4
C15	C4	FB4	D2
C16	C3	FB5	D2
C17	B4	FB6	C1
C18	C3	JP2	A3
C19	A4	JP3	A3
C2	A4	Q1	C4
C20	A4	R1	B4
C21	A4	R10	C2
C22	A4	R11	A4
C23	A4	R12	A4
C24	C1	R13	D2
C27	C1	R14	D2
C28	C2	R16	A4
C3	A4	R17	D1
C30	C2	R19	C3
C31	B2	R2	B4
C32	B2	R20	C3
C33	B2	R21	C3
C34	B2	R22	C3
C35	C2	R3	B1
C36	C2	R33	C4
C37	B4	R34	C4
C38	D2	R35	C4
C39	D1	R36	C4
C4	A4	R37	A4
C44	A4	R38	A4
C45	B4	R39	A2
C48	A2	R4	B1
C49	C1	R40	A2
C5	A4	R41	A3
C50	C2	R42	A3
C51	B2	R5	B1
C6	A4	R51	C4
C7	A4	R6	B1
C8	A4	R7	C1
C84	C4	R8	B2
C9	A4	R9	B2
CN109	A4	U1A	B2
D1	C4	U2	B4
EC1	A4	U4	A1
EC20	C4	U5	A4

Front Board Print-Layout (Bottom Side) for DVP1013/37



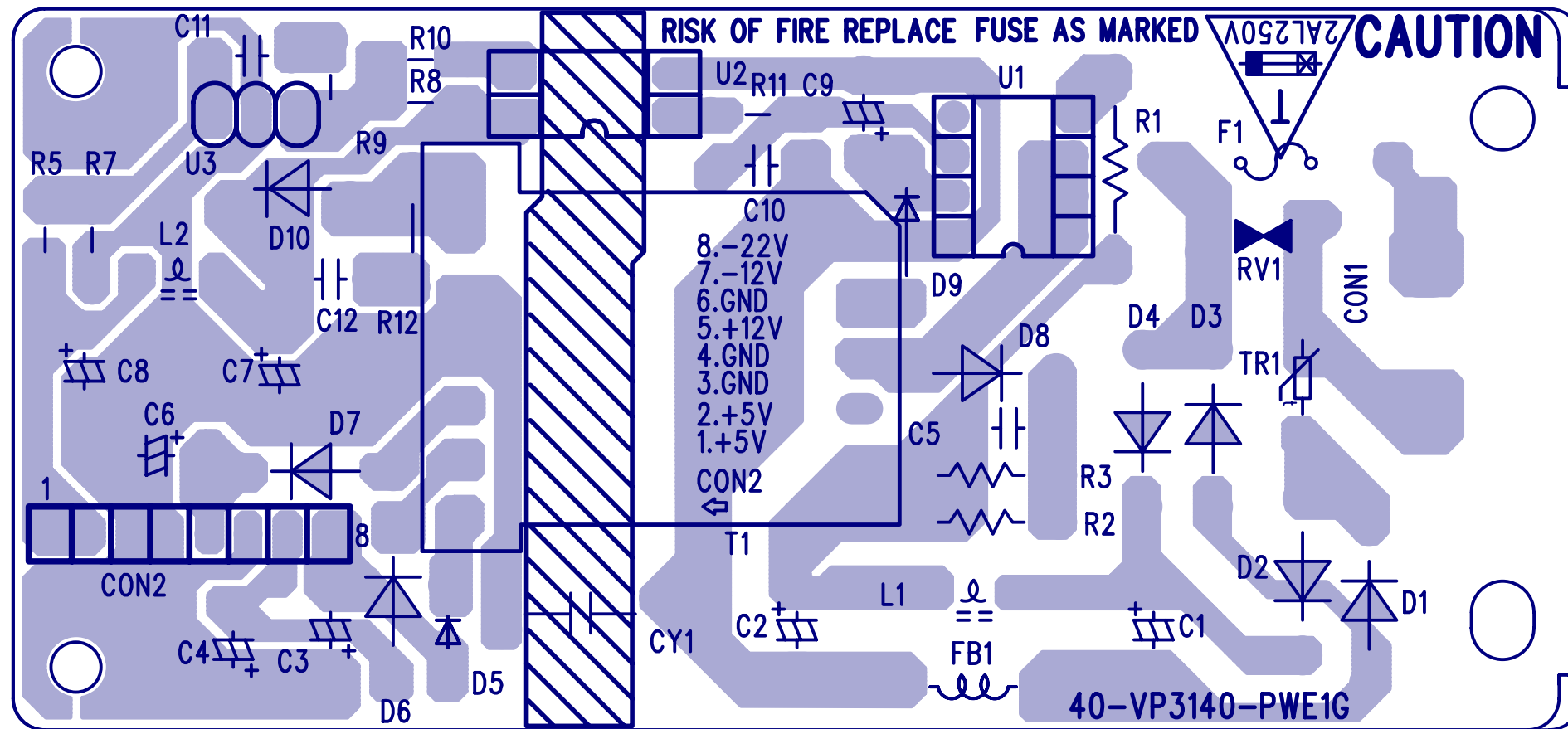
Power Board Electric Diagram for DVP1013/37



C1	B1
C10	A3
C11	C3
C12	C2
C2	B1
C3	C1
C4	C2
C5	A2
C6	C2
C7	C3
C8	C3
C9	A3
CON1	A1
CON2	D2
CY1	B4
D1	A1
D10	C3
D2	A1
D3	A1
D4	A1
D5	C1
D6	C2
D7	B2
D9	B2
F1	A1
FB1	B1
L1	B1
L2	C3
R1	A2
R10	B3
R11	A3
R12	C2
R2	B2
R3	B2
R5	D3
R7	D3
R8	B3
R9	B3
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.

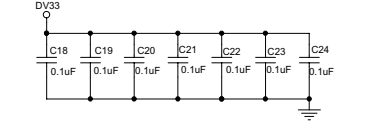
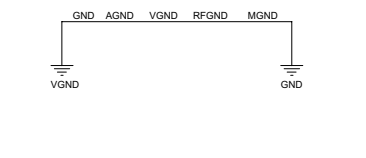
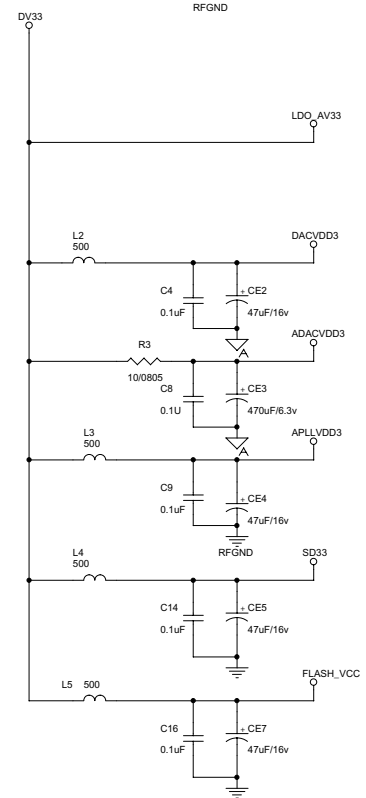
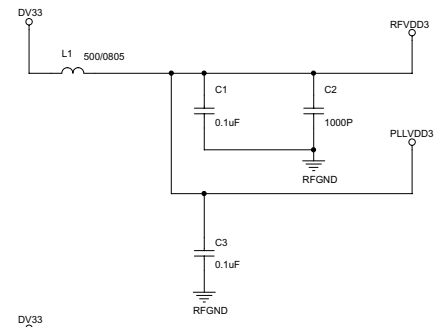
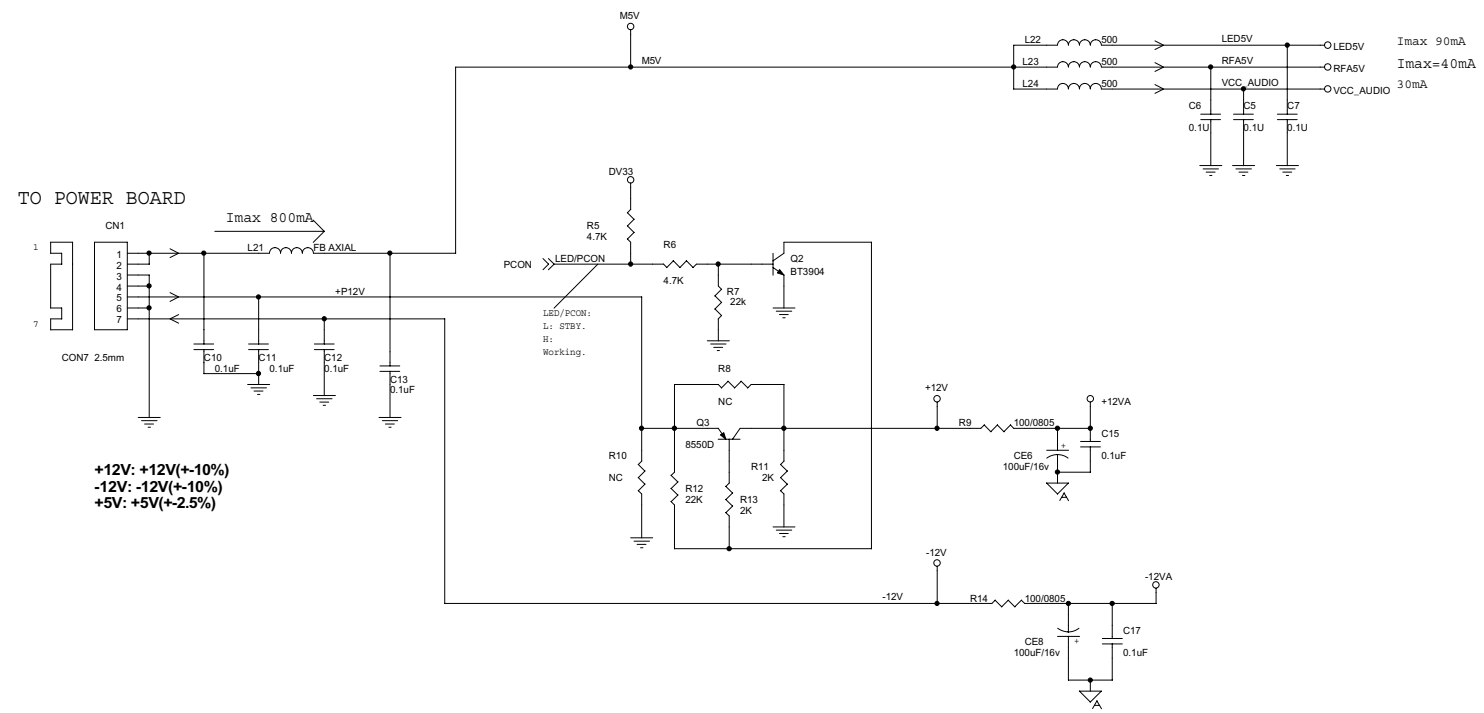
Power Board Print-Layout (Bottom Side) for DVP1013/37



# Main Board Electric Diagram: INDEX for DVP1013/37

- 1 INDEX & POWER
- 2 RF, SERVO & MPEG - MT1389D
- 3 MEMORY /VIDEO OUT
- 4 AUDIO OUT

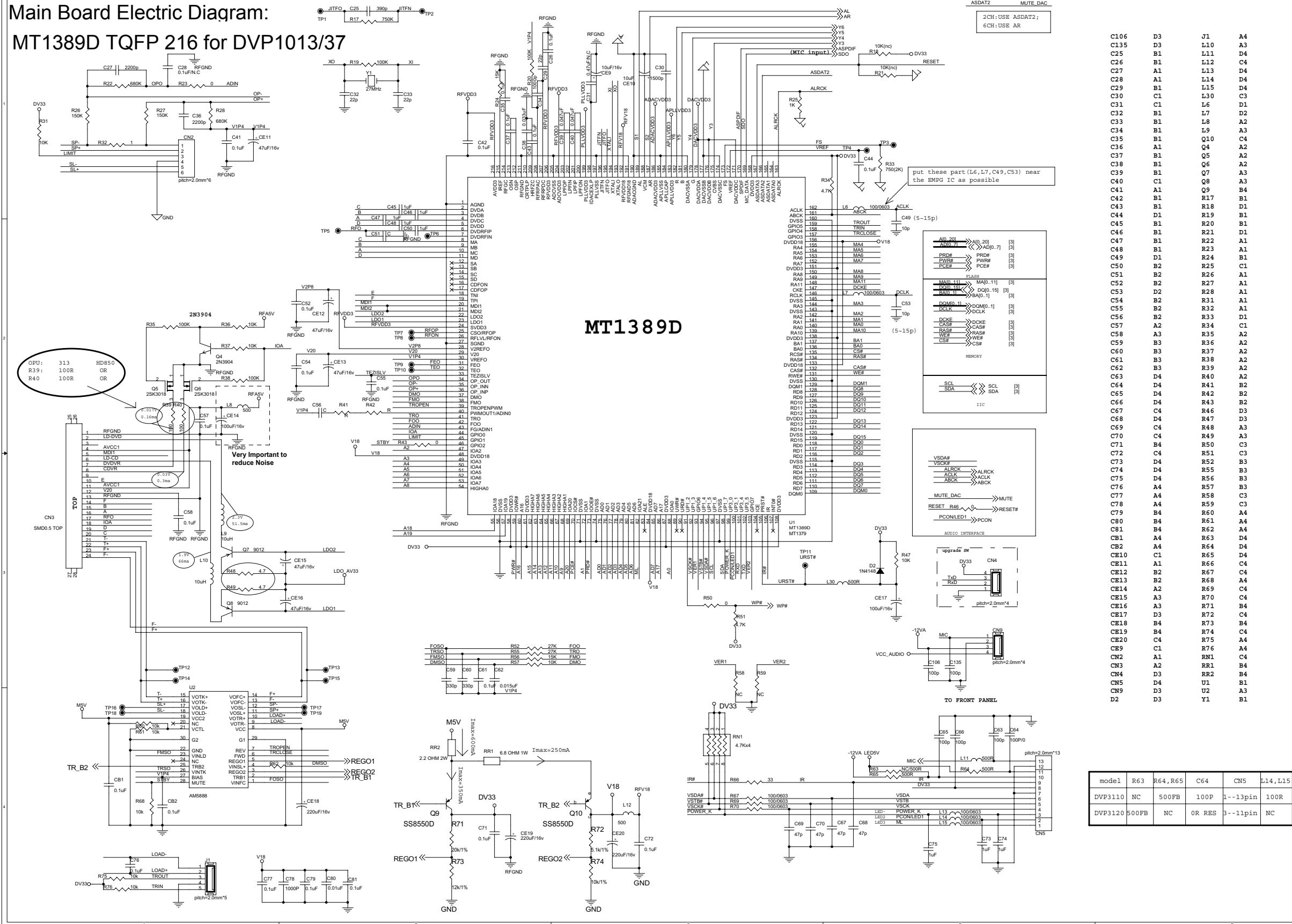
NAME	TYPE	DEVICE
VCC	Digital 5V	SUPPLY
DV33	Digital 3.3V	MT1389D
RFV33	Servo 3.3V	MT1389D
LDO_AV33	Laser Diode 3.3V	
AVCC	RF 5V	PICKUP HEADER
V18	Digital 1.8V	MT1389D
SD33	Digital 3.3V	SDRAM
+12V	Audio +12V	OP AMP.
-12V	Audio -12V	OP AMP.
AVDD	Audio 5V	VCC_AUDIO
DVDD	Audio 3V3	VCC3_AUDIO



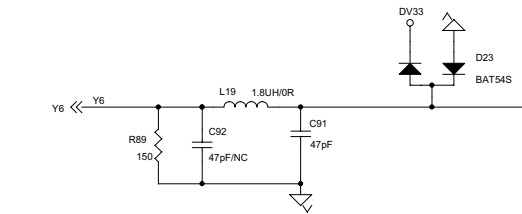
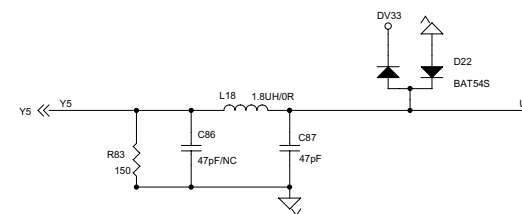
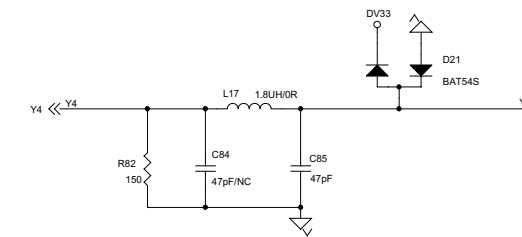
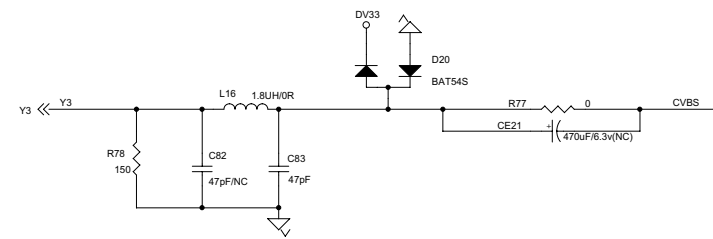
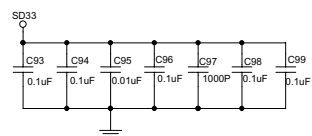
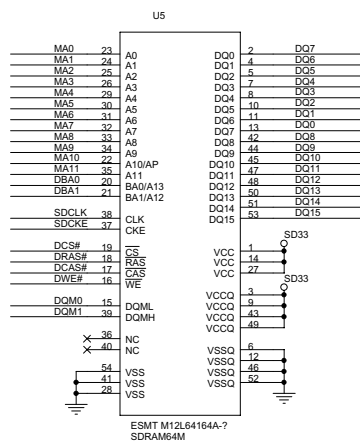
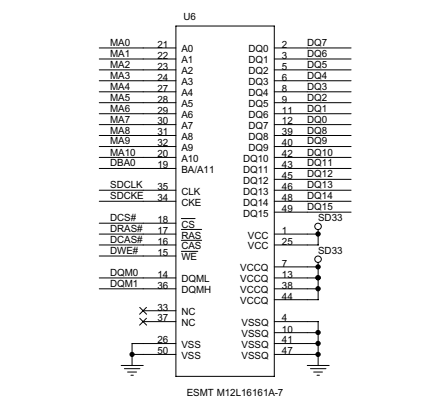
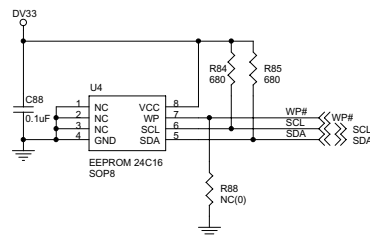
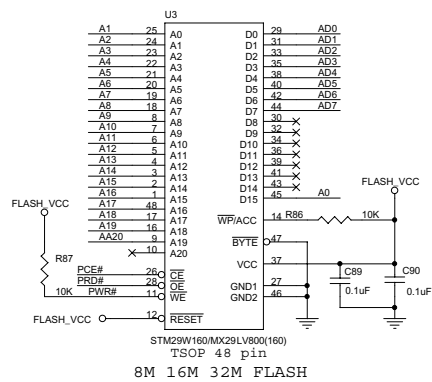
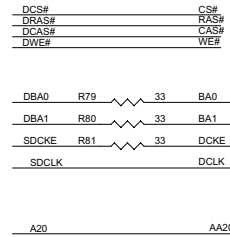
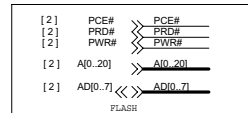
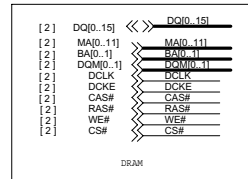
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- C10 A3
- C11 A3
- C12 A3
- C13 A3
- C14 D3
- C15 C4
- C16 D3
- C17 C4
- C18 D4
- C19 D4
- C2 D1
- C20 D4
- C21 D4
- C22 D4
- C23 D4
- C24 D4
- C3 D1
- C4 D2
- C5 C3
- C6 C3
- C7 C3
- C8 D2
- C9 D2
- CE2 D2
- CE3 D2
- CE4 D2
- CE5 D3
- CE6 C4
- CE7 D3
- CE8 C4
- CN1 A3
- L1 D1
- L2 D2
- L21 A3
- L22 C3
- L23 C3
- L24 C3
- L3 D2
- L4 D3
- L5 D3
- Q2 B3
- Q3 B3
- R10 B4
- R11 B4
- R12 B4
- R13 B4
- R14 B4
- R3 D2
- R5 B3
- R6 B3
- R7 B3
- R8 B3
- R9 B3



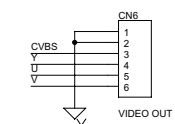
# Main Board Electric Diagram: MT1389D TQFP 216 for DVP1013/37



# Main Board Electric Diagram: SDRAM & FLASH & VIDEO OUT for DVP1013/37

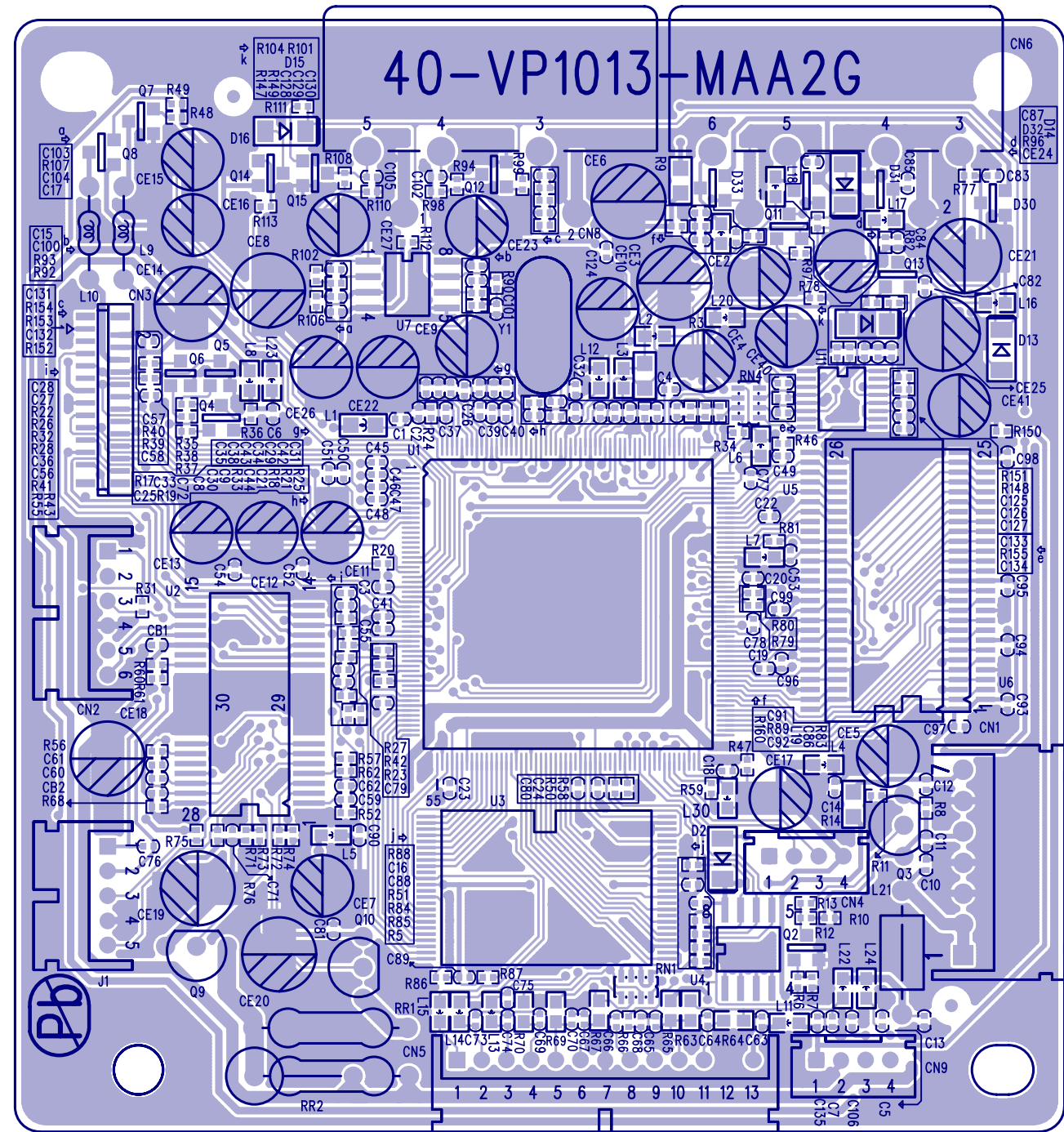


- C82 D1
- C83 D1
- C84 D2
- C85 D2
- C86 D2
- C87 D2
- C88 B2
- C89 A2
- C90 A2
- C91 D3
- C92 D3
- C93 A4
- C94 A4
- C95 A4
- C96 A4
- C97 A4
- C98 A4
- C99 A4
- CE21 D1
- CN6 D3
- D20 D1
- D21 D1
- D22 D2
- D23 D3
- L16 D1
- L17 D1
- L18 D2
- L19 D3
- R77 D1
- R78 D1
- R79 B1
- R80 B1
- R81 B1
- R82 D2
- R83 D2
- R84 C2
- R85 C2
- R86 A2
- R87 A2
- R88 C3
- R89 D3
- U3 A2
- U4 B2
- U5 B3
- U6 A3

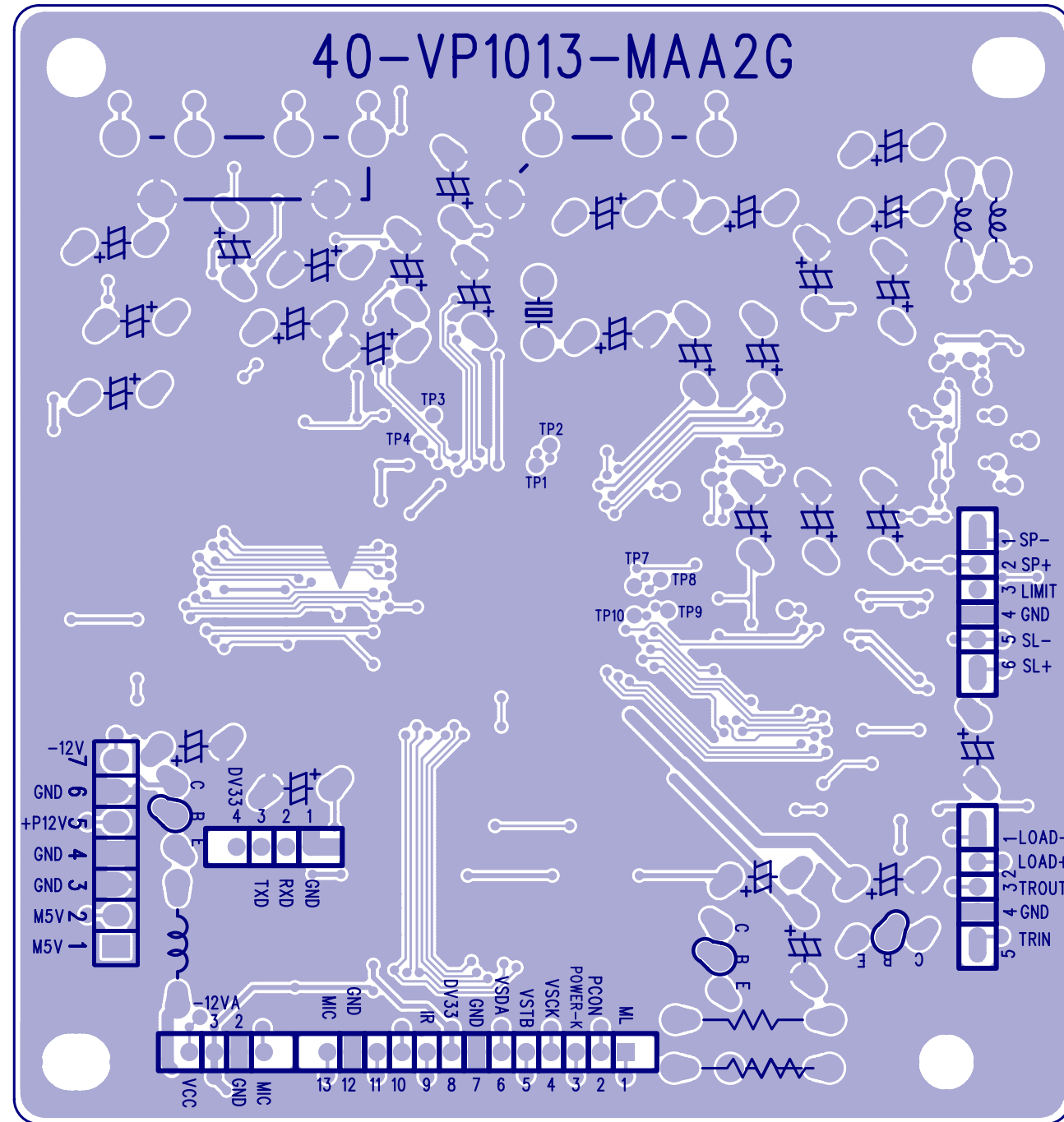




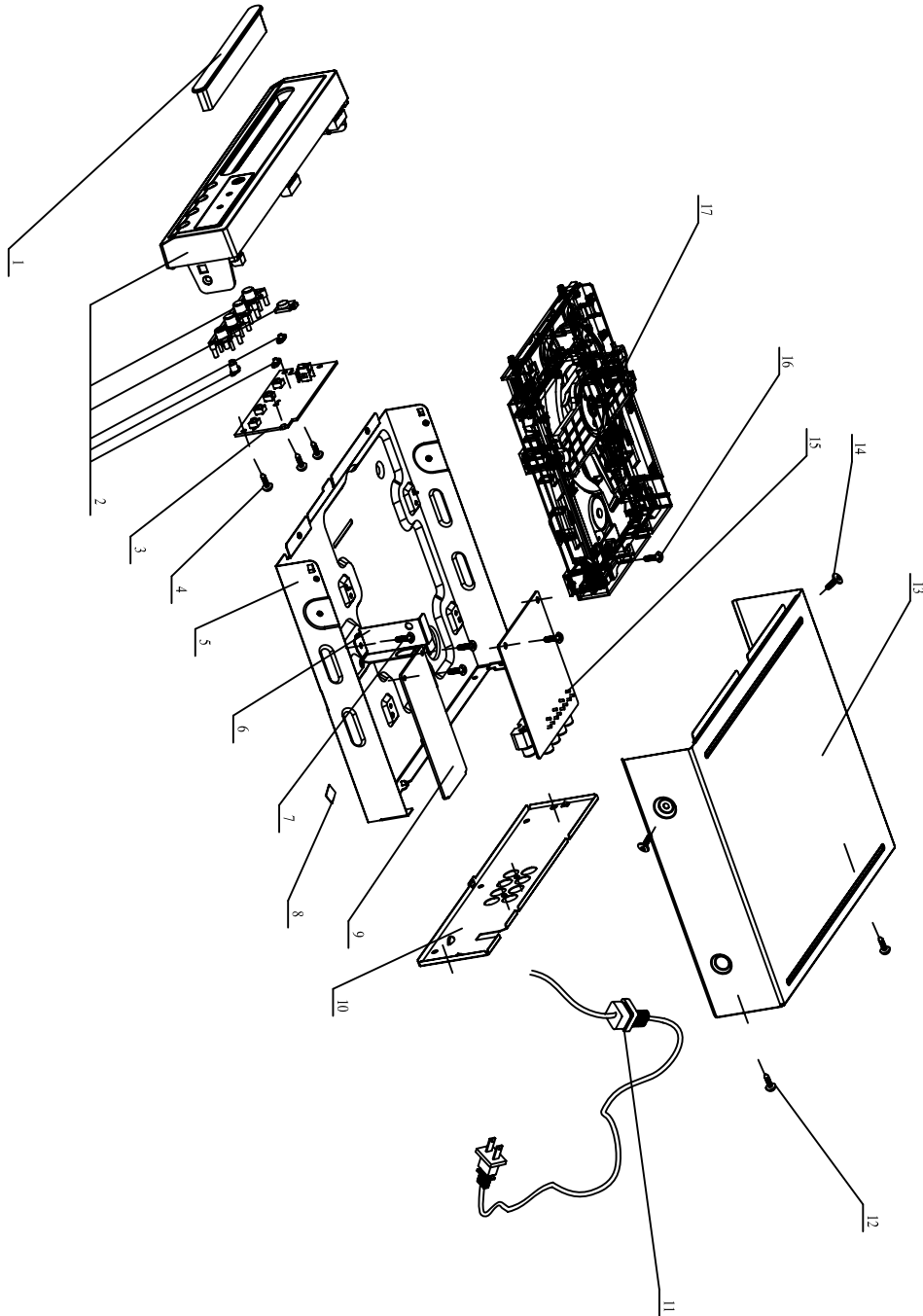
Main Board Print-Layout (Top Side) for DVP1013/37



Main Board Print-Layout (Bottom Side) for DVP1013/37



## DVP1013/XX Mechanical Exploded View



## Remark:

It's a general Mechanical Exploded View for DVP1013/XX, Detailed information please refer to Model set.

**ENCASING & ACCESSORIES PARTS LIST**

No	12NC No.	Part Name	Q'ty
1	996520000258	Front door	1
2	996510008770	ASS'Y-FRONT CABINET	1
3	996520000257	Ass'y-FB BD	1
5	996520000253	Bottom Cabinet	1
6	996510008772	Supporter	1
8	-	Pad	4
 9	996520000265	Ass'y-PW BD	1
10	996510008771	Back Panel	1
 11	996520000262	Power Cord	1
13	996520000264	Top Cover	1
15	996510008764	Ass'y-Main Board	1
17	996510008765	DVD Loader (Sanyo OPU)	1

**Accessory**

CN3	996510001528	CABLE 24P HS	1
CON2	996520000260	CABLE HS 7PIN	1
CON301	996510001767	CABLE 9PIN (PH-9Y/JC20-9Y)	1
J1	996510005284	CABLE HS 5P 2468#26 150MM PH	1
PAC1	996510008768	CARD	1
PAC10	996510008766	OPERATION MANUAL	1
PAC2	996510008769	CARD	1
PAC3	996510008767	B0X	1
PAC5	996510008510	POLYBAG	1
PAC8	996510001106	VIDEO CABLE 1500mm	1
PAC9	996510001806	REMOTE CONTROL	1

**SCREW LIST**

No	12NC No.	Part Name	Q'ty
4	-	S/T SCREW B 3 X 8 BF	3
7	-	Triangle M/C Screw B3*6	1
12	-	Trangle M/C SCREW B3*6	2
14	-	Triangle M/C Screw 3*6	2
16	-	Machine Screw	1

## REVISION LIST

Version 1.0

\* Initial release