

**DVD Player**

**DVP2008**

Service

**DVP2008/93**

Service

**Service**



# Service Manual

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GB 3139 785 34090

**PHILIPS**

# Technical Specifications

## TV STANDARD

	<b>(PAL/50Hz)</b>	<b>(NTSC/60Hz)</b>
Number of lines	625	525
Playback	Multistandard	(PAL/NTSC)

## VIDEO PERFORMANCE

Video DAC	12 bit, 108 MHz
Y Pb Pr	0.7 V <sub>pp</sub> ~ 75 ohm
Video Output	1 V <sub>pp</sub> ~ 75 ohm

## VIDEO FORMAT

Digital	MPEG 2 for DVD, SVCD
Compression	MPEG 1 for VCD

<b>DVD</b>	<b>50 Hz</b>	<b>60 Hz</b>
Horiz. resolution	720 pixels	720 pixels
Vertical resolution	576 lines	480 lines

<b>VCD</b>	<b>50 Hz</b>	<b>60 Hz</b>
Horiz. resolution	352 pixels	352 pixels
Vertical resolution	288 lines	240 lines

## AUDIO FORMAT

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

Analog Sound Stereo  
Dolby Surround compatible downmix from Dolby  
Digital multi-channel sound

## AUDIO PERFORMANCE

DA Converter	24 bit, 192 kHz
DVD	fs 96 kHz    4 Hz - 44 kHz
	fs 48 kHz    4 Hz - 22 kHz
SVCD	fs 48 kHz    4 Hz - 22 kHz
	fs 44.1kHz    4 Hz - 20 kHz
CD/VCD	fs 44.1kHz    4 Hz - 20 kHz
Signal-Noise (1kHz)	> 90 dB
Dynamic range(1kHz)	> 80 dB
Crosstalk (1kHz)	> 70 dB
Distortion/noise (1kHz)	> 65 dB
MPEG MP3	MPEG Audio L3

## CONNECTIONS

Y Pb Pr Output	Cinch 3x
Video Output cum	
Audio Output*(L+R)	3.5mm jack (1x)
Digital Output	1 coaxial IEC60958 for CDDA / LPCM IEC61937 for MPEG 1/2, Dolby Digital

\* Audio and Video output share one jack at the rear panel of this unit.

## CABINET

Dimensions (w x h x d)	250 x 52 x 250 mm
Weight	Approximately 0.879 kg

## POWER CONSUMPTION

Power Supply Rating	110 V – 240 V; 50/60 Hz
Power consumption	< 10 W
Power consumption in Standby mode	< 1 W

Specifications are subject to change without prior notice.


# Safety instructions, Warnings, Notes

## Safety instructions

---

### 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 (VCD/CD)
	: 10mW (DVD)

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.

## Warnings

---

### 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.

## Warnings, Notes

### Lead-Free requirement for service

#### 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 guidelines show how to dismantle the player.

**Step1:** Dismantle the top cover: remove 9 screws around the bottom cabinet and disconnect 1 connector, then remove the top Cover. (Figure 1 & 2).



Figure 1



Figure 2

## Mechanical and Dismantling Instructions

### Dismantling Instruction

---

**Step2:** If the disc blocked in the loader and disc door can't open in normal way, you can make it through the instruction as below to take out the disc. (Figure 3 & 4)

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

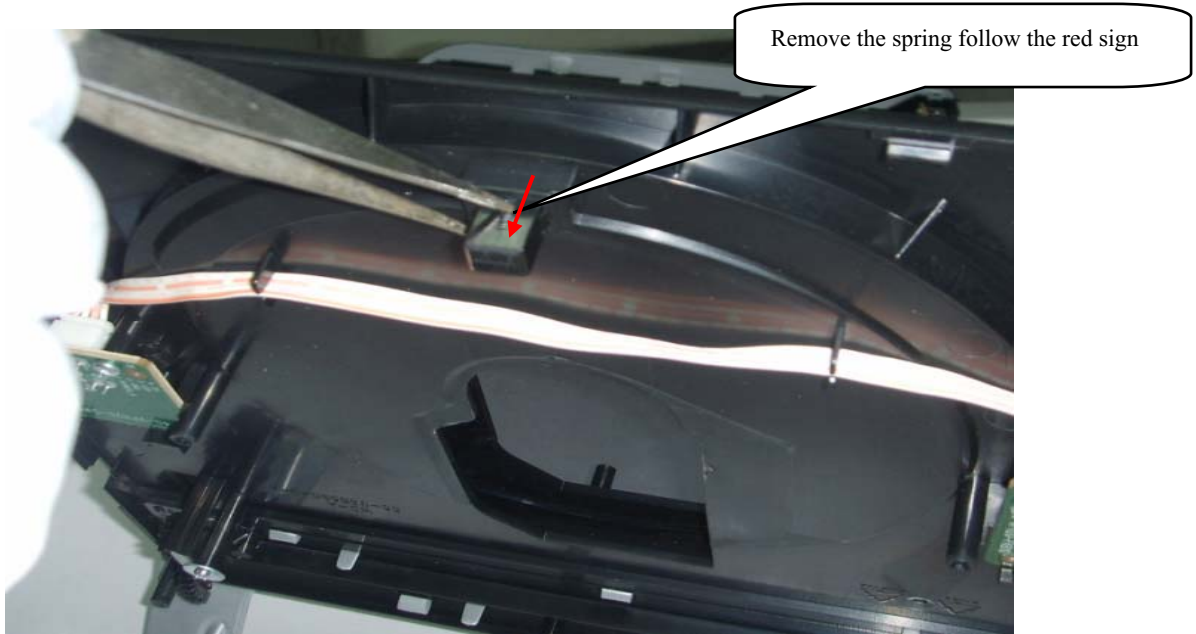


Figure 3

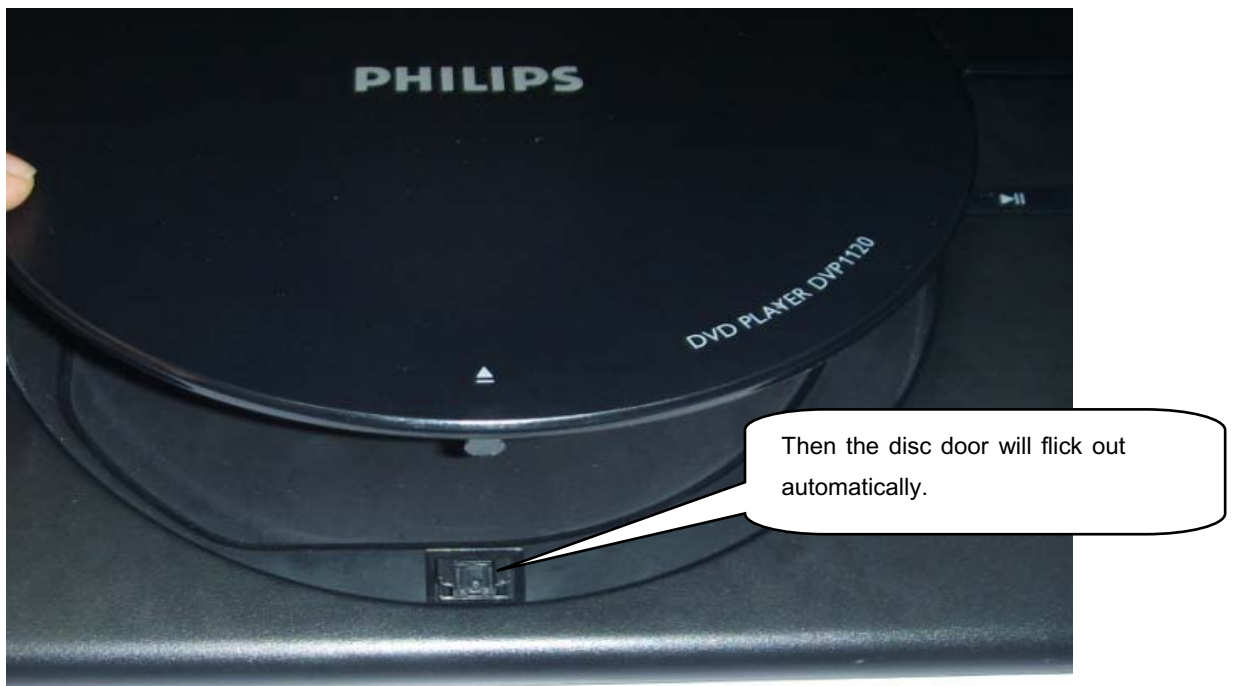


Figure 4

## Mechanical and Dismantling Instructions

### Dismantling Instruction

**Step3:** Dismantling Loader: disconnect the 2 connectors aiming in the figure and 4 screws, then can remove the loader.  
(Figure5)

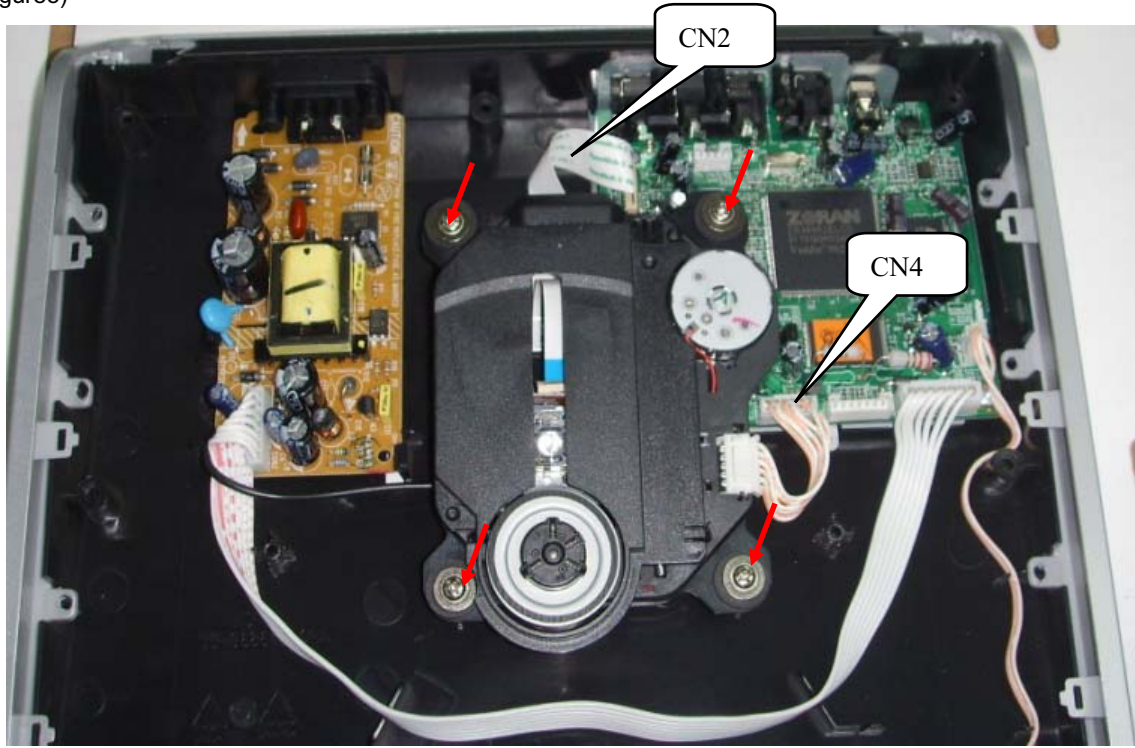


Figure 5

**Step4:** Dismantling main board: disconnect the 2 connectors aiming in the figure and 5 screws, then can remove the main board. (Figure6)

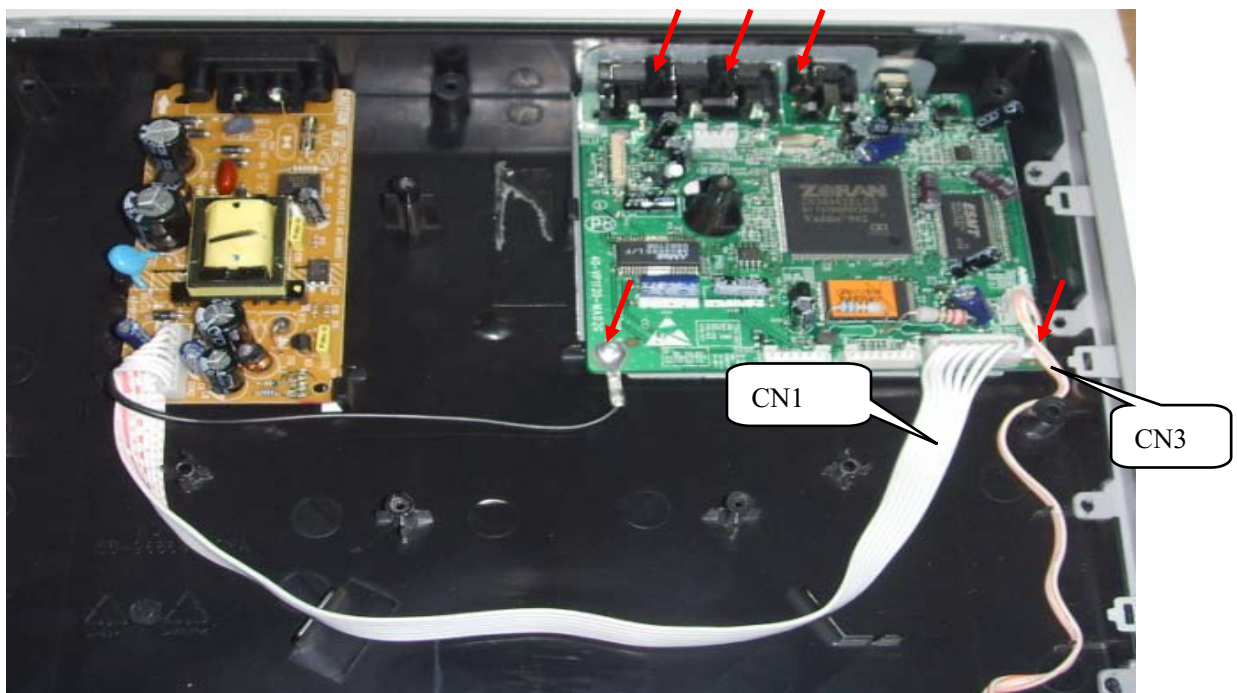


Figure 6



## Mechanical and Dismantling Instructions

### Dismantling Instruction

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**Step5:** Dismantling power board: disconnect the 2 screws, then can remove the power board. (Figure7)

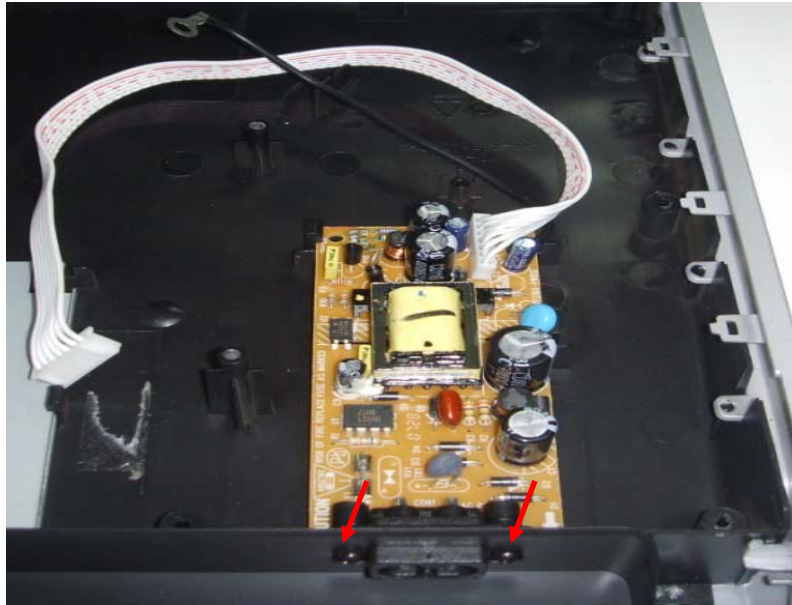


Figure 7

**Step6:** Dismantling IR board: remove the IR board follow the red sign, then can remove the IR board. (Figure8)

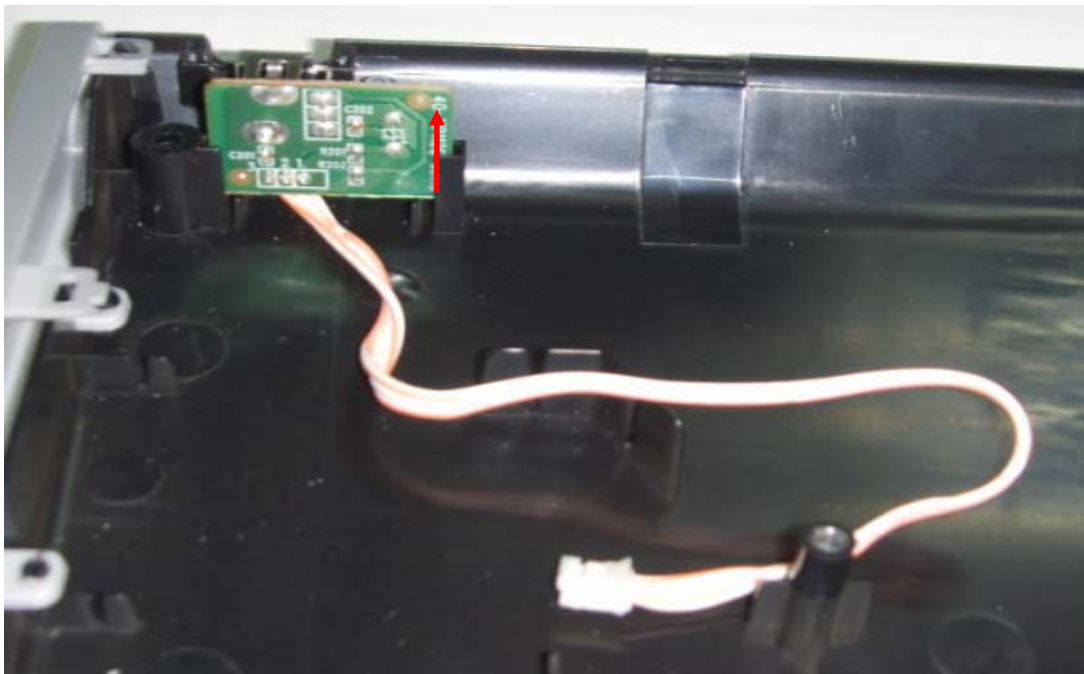


Figure 8

## Mechanical and Dismantling Instructions

### Dismantling Instruction

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**Step6:** Dismantling switch board: disconnect the 2 screws, then can remove the switch board. (Figure9)

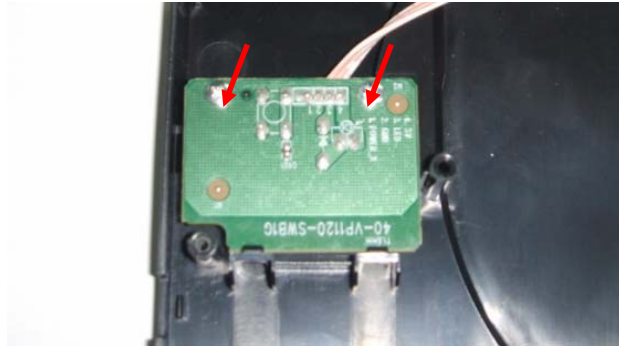


Figure 9

**Step6:** Dismantling the front board: disconnect the 2 screws, then can remove the front board. (Figure10)

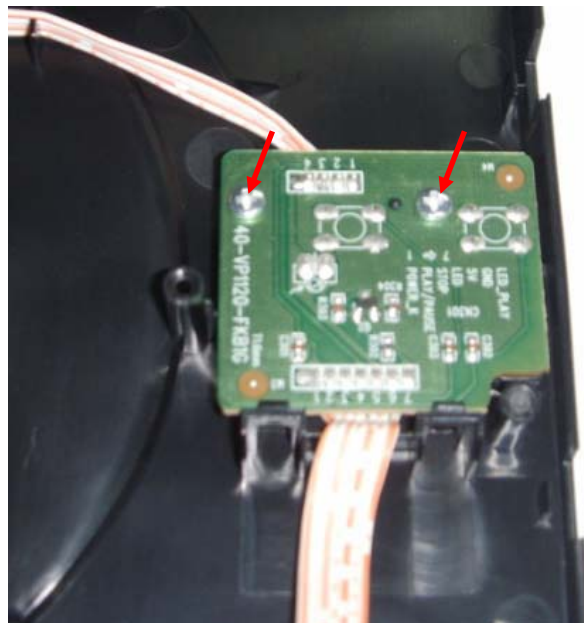


Figure 10

## 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: DVPXXXX (No need the label name)

**Note: It is required capital letter for the File System name, and it no need have the File name during start the CD burning software for Zoran project.**

- 2) Burn the data onto a blank CDR

### A. Procedure for software upgrade:

- 1) Power up the set and insert the prepared Upgrade CDR.
- 2) The set will start reading disc & response with the following display TV screen:  

Loading

Firmware Upgrade Erase and program.

Start      Cancel

Select Start to start upgrade.
- 3) Press <OK> button to confirm, then screen will display :  
Firmware Upgrade Programming, Please Wait...  
Do not Switch the Player Off !
- 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 up the set and open the tray door.
- 2) Press <9><6><6> button to check the software information.

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

BE Version: DVPXXXXXX\_XX.XX

FE Version: DCX.XXXXXX.XX.XX

DSP Version: DSP.XX

Region Code: X

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

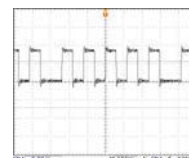
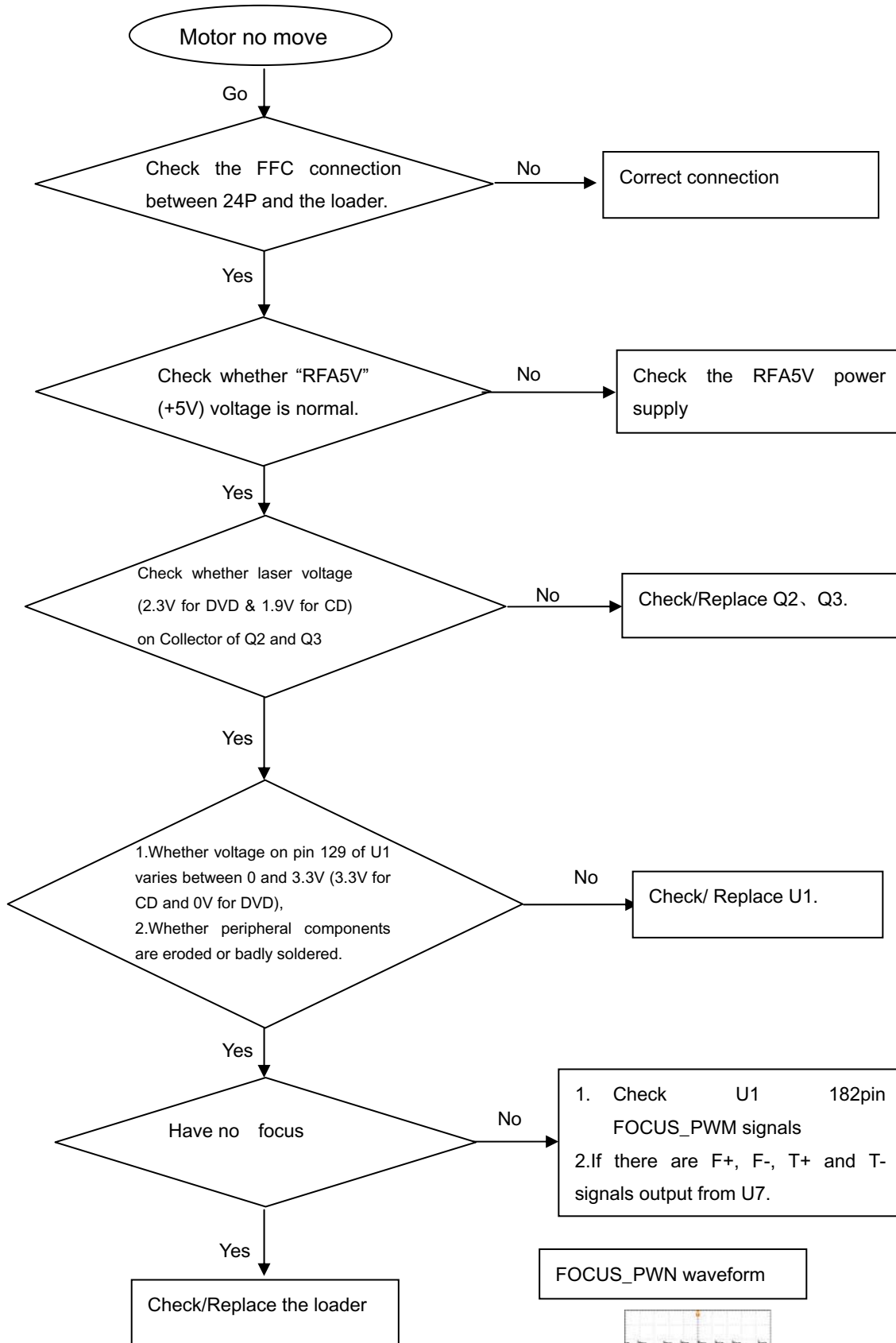
## How to select the right language

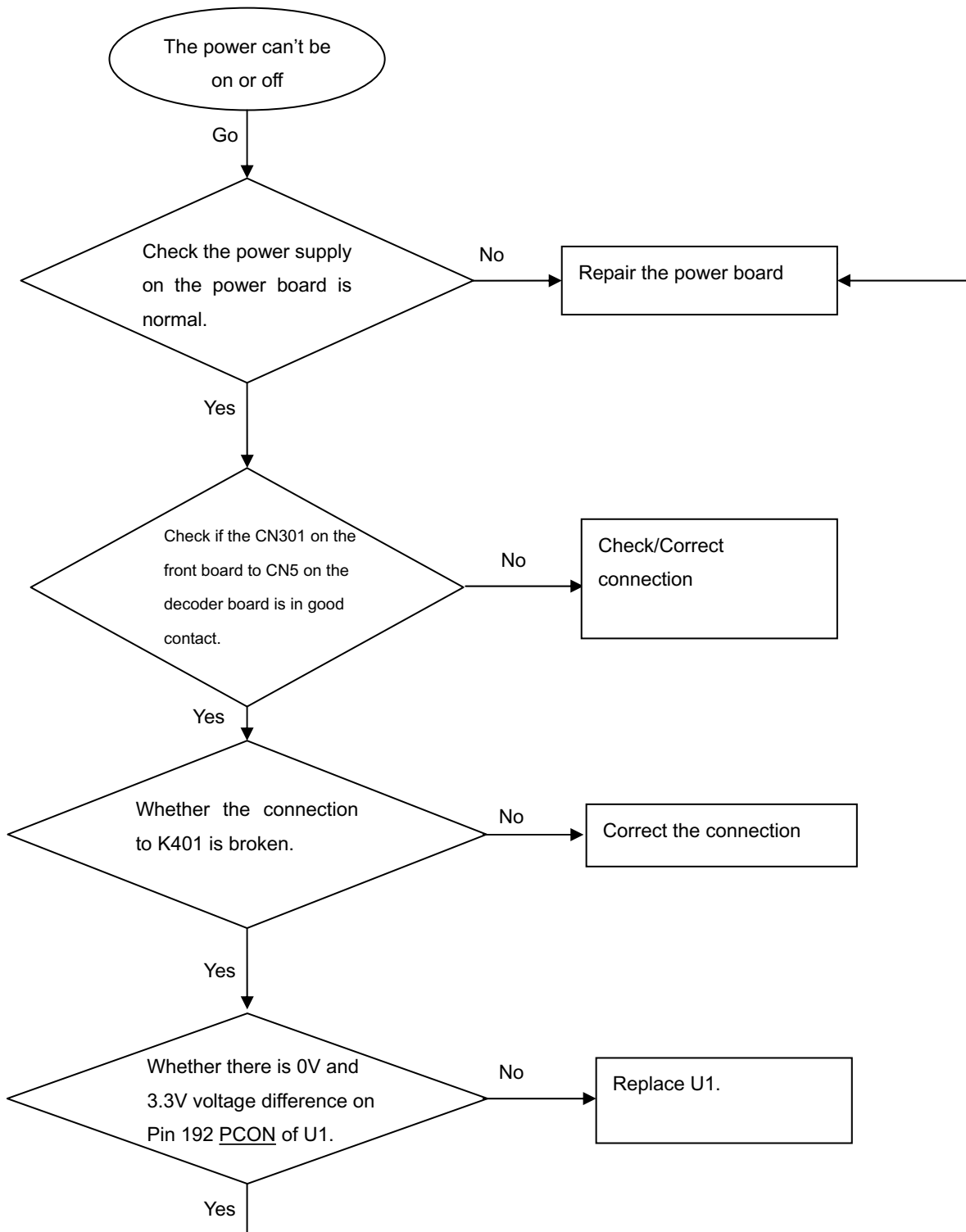
---

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

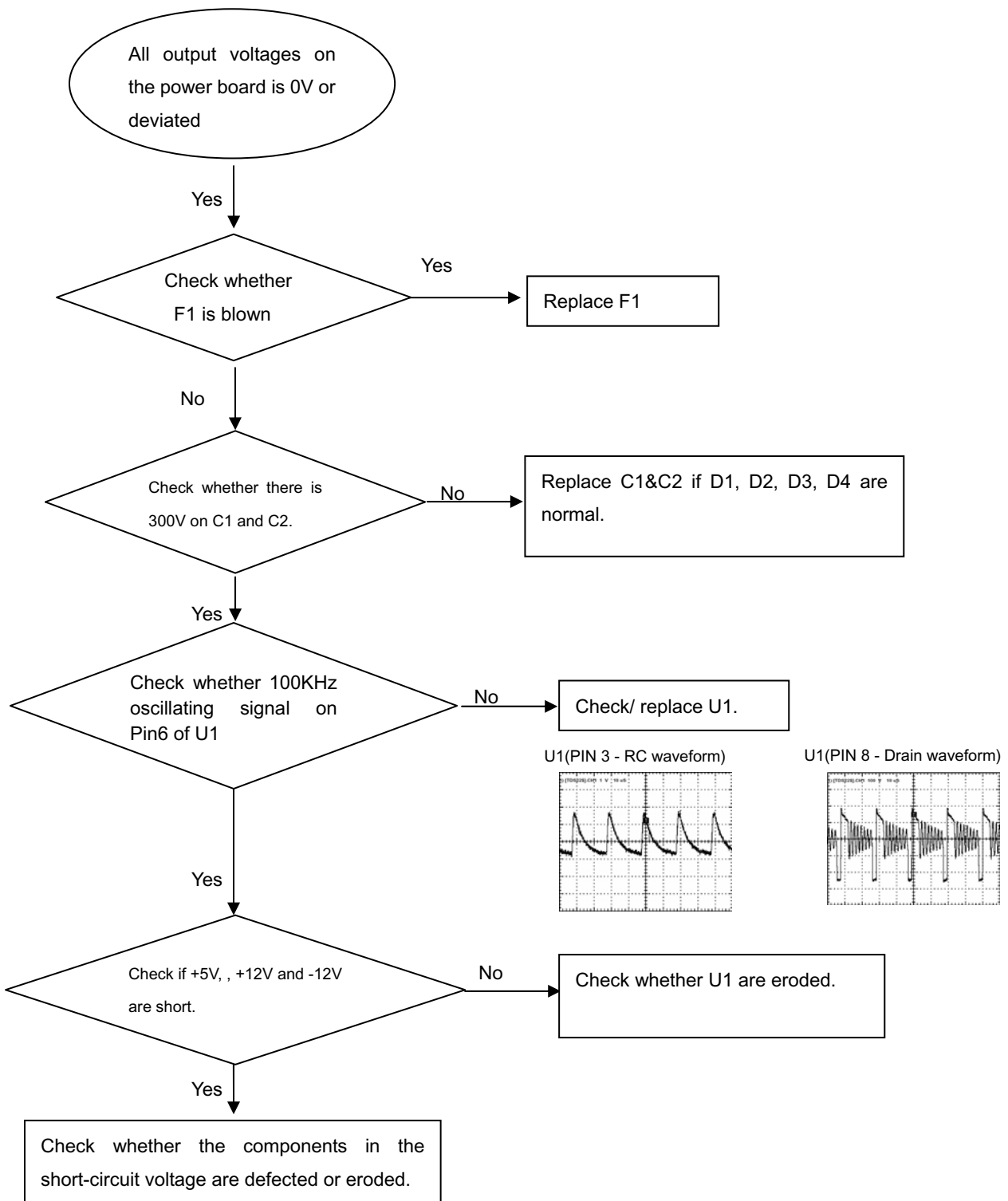
1. Power on the set and open the tray.  
Press “6” “6” “6” “6” and “Audio” button on the remote control.  
After that on the screen it shows:  
PLS INPUT MODEL CODE:
2. Then input the related MODEL CODE “0”.  
After that on the screen it shows:  
DVP × × × × × REGION × OK  
(It means the language has been corrected and the player will be power off automatically.)

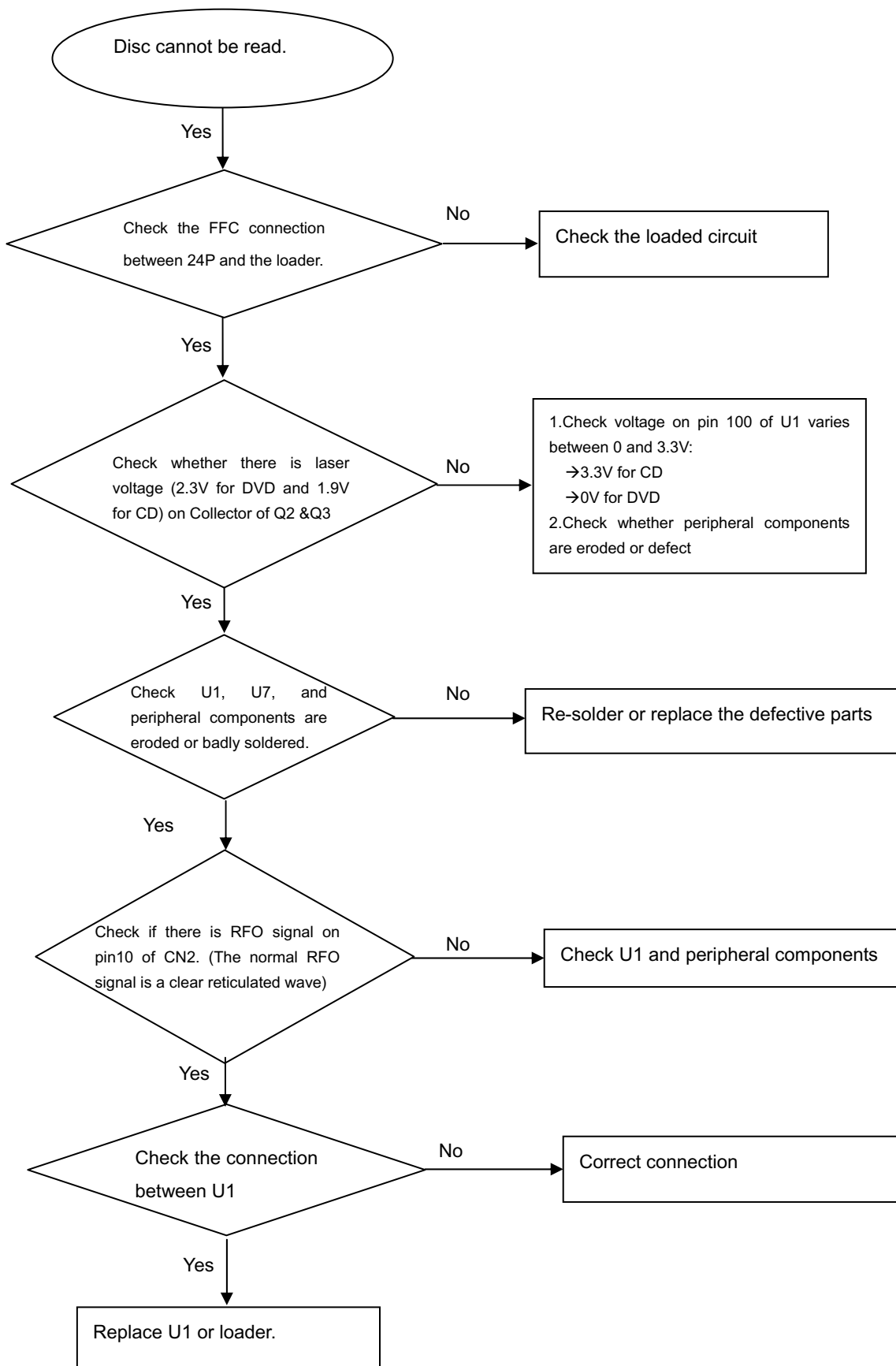
**Spindle motor does not move**



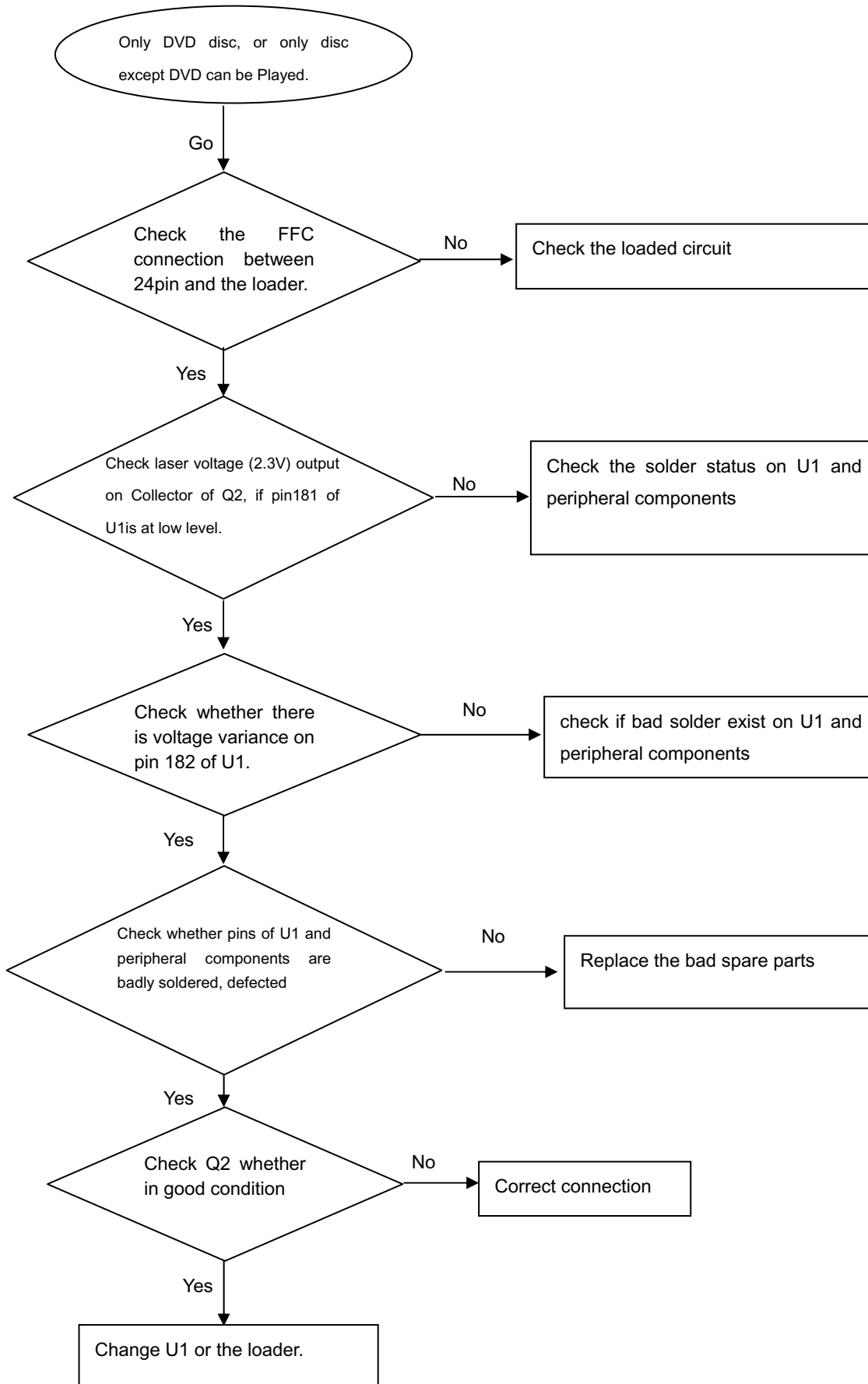
**The power can not be on or off**

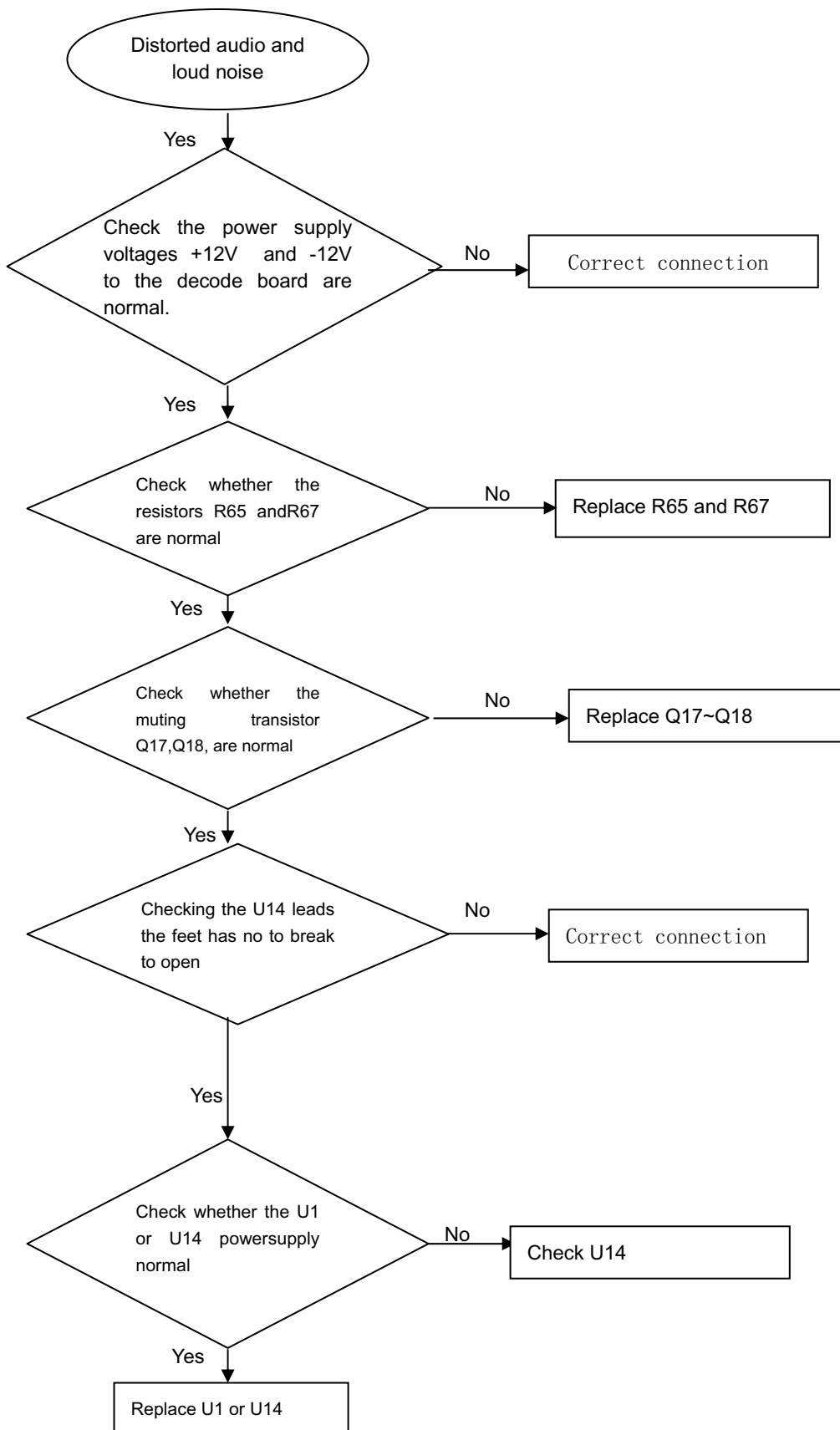
**All output voltages on the power board is 0V or deviated.**

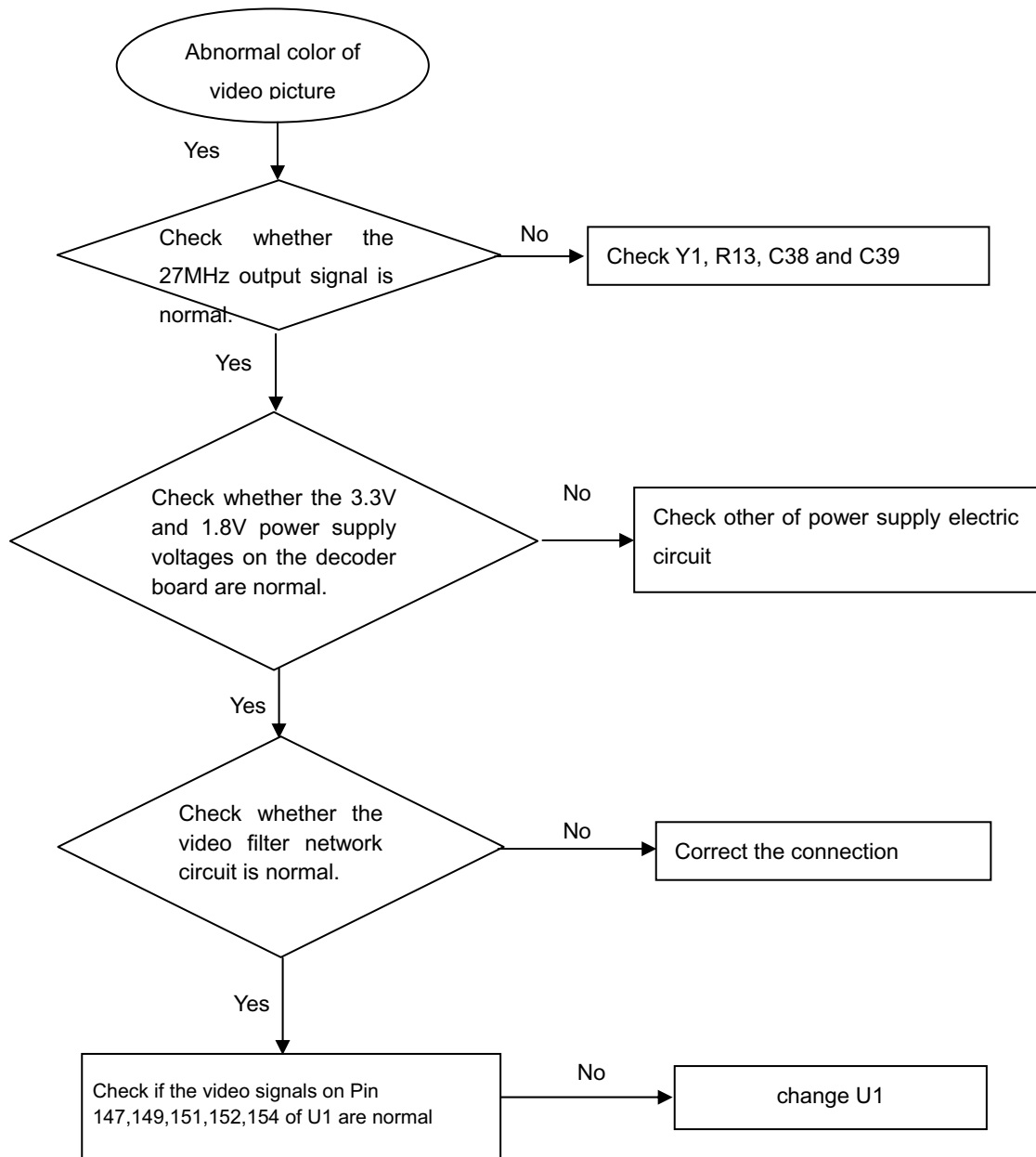


**Disc cannot be read.**

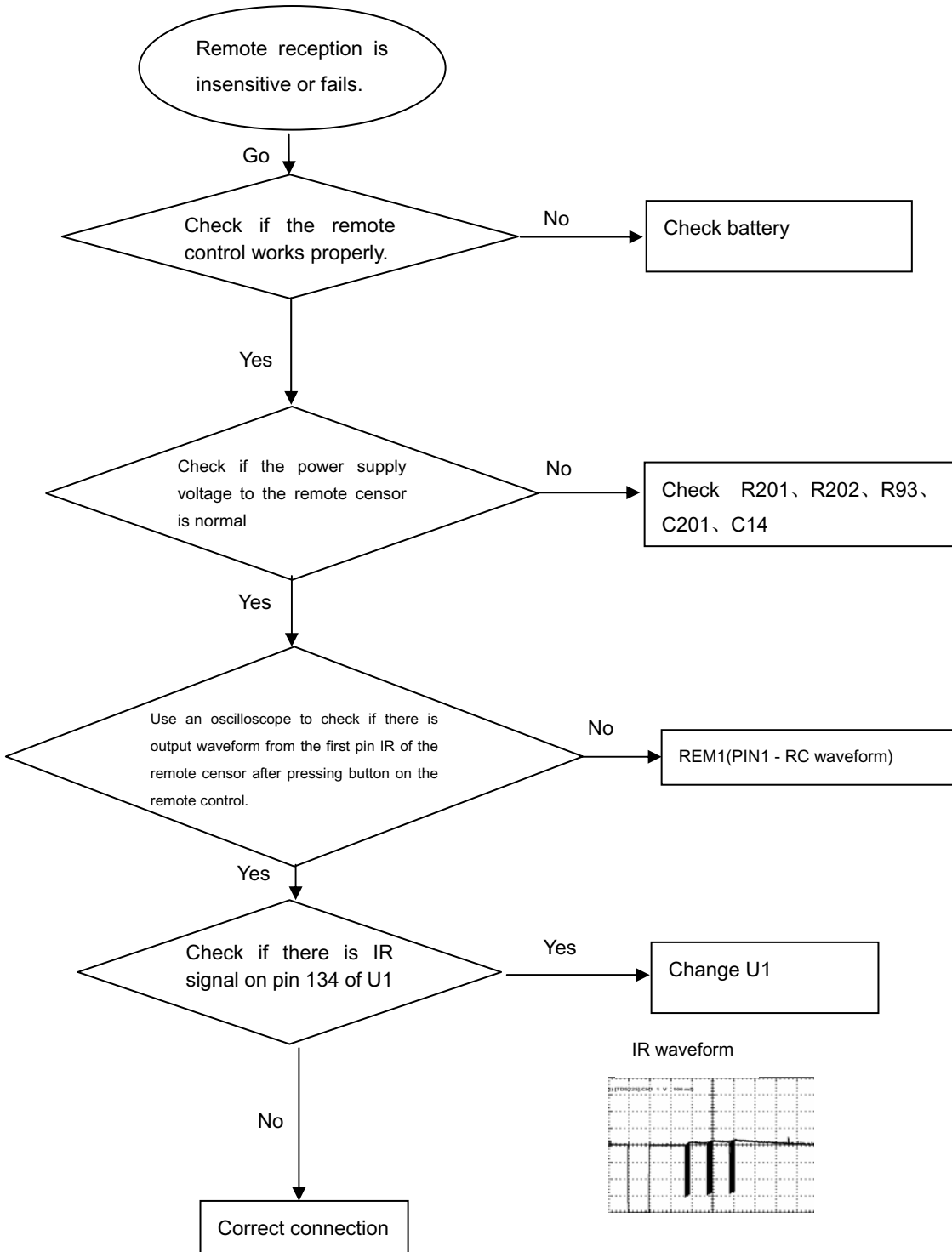


**Only DVD disc or only disc except DVD can be played**

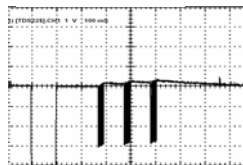
**Distorted audio and loud noise**

**Abnormal color of video picture**

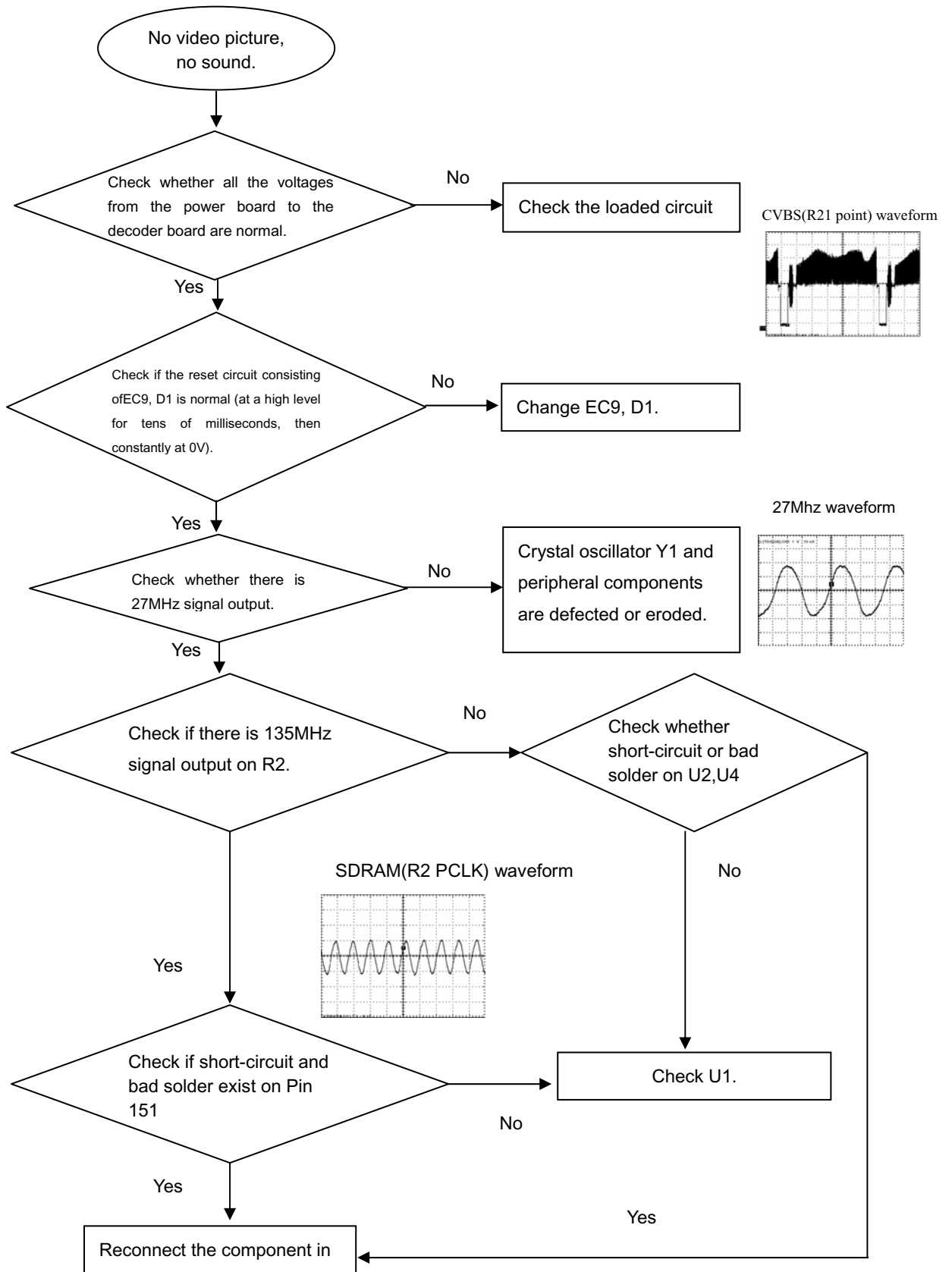
**Remote reception is insensitive or fails.**



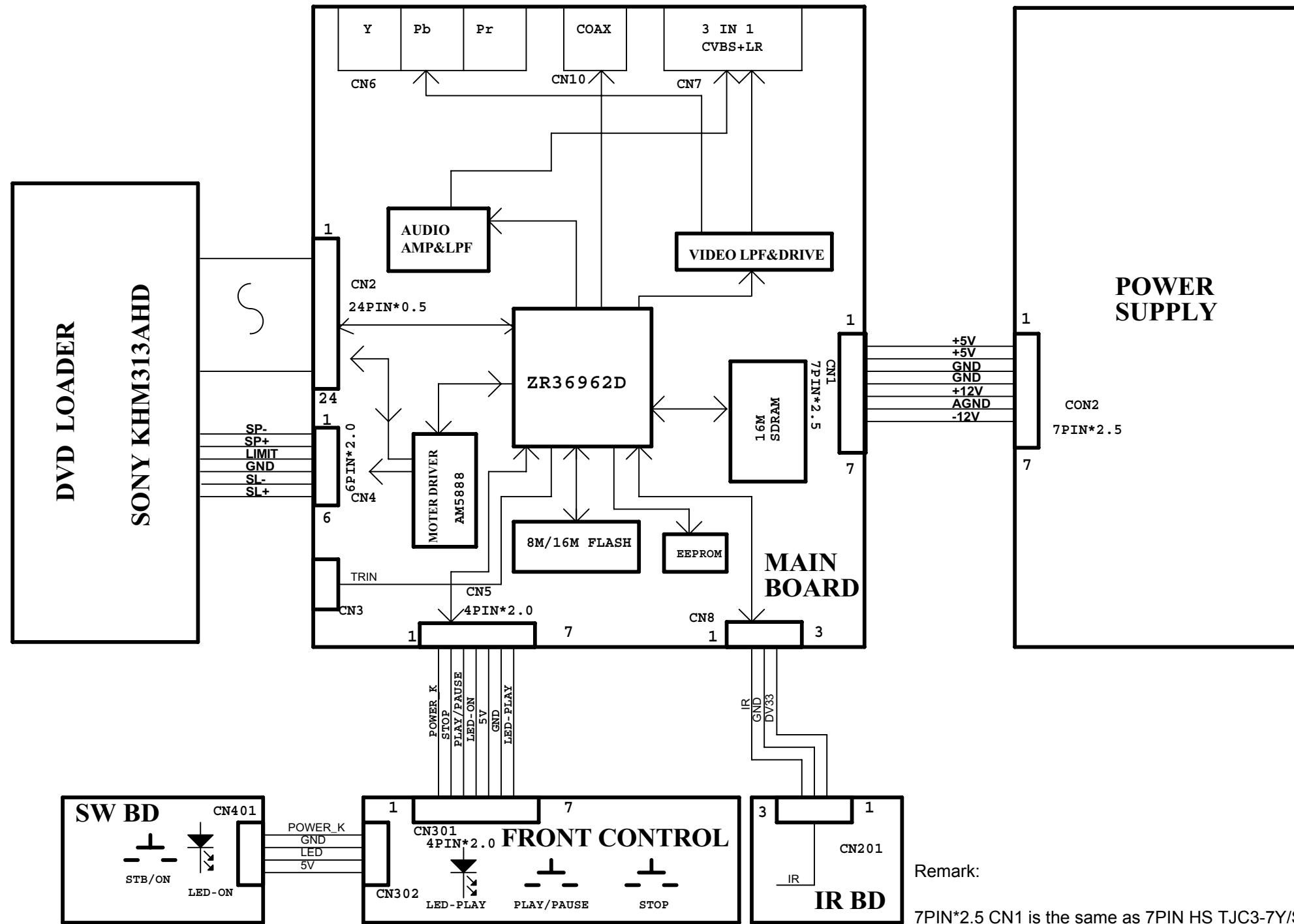
IR waveform



**No video picture, no sound.**



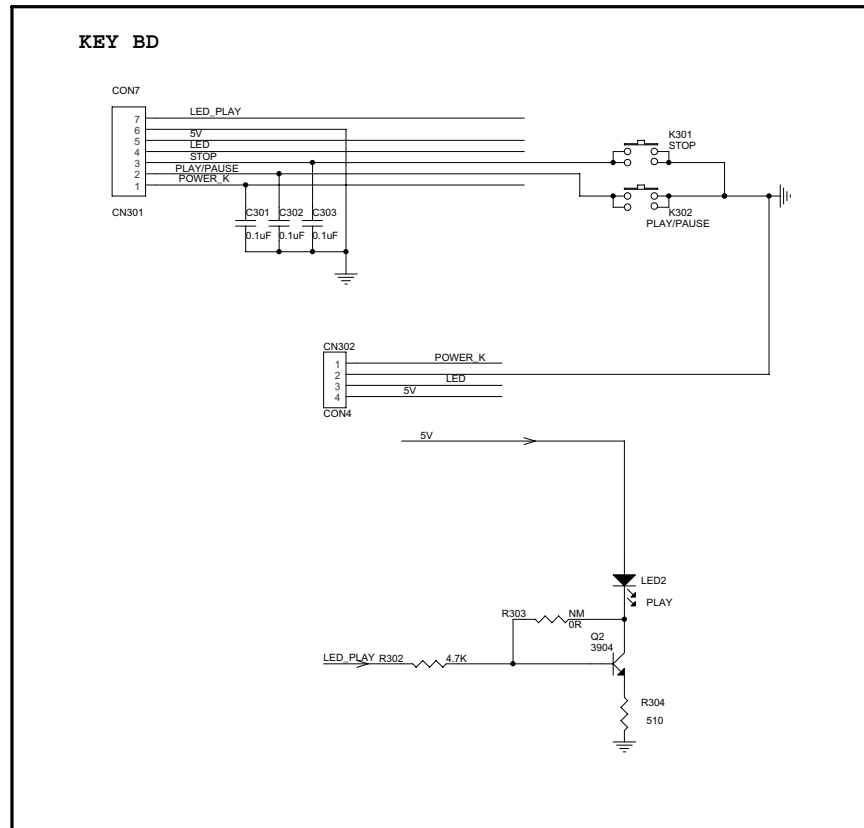
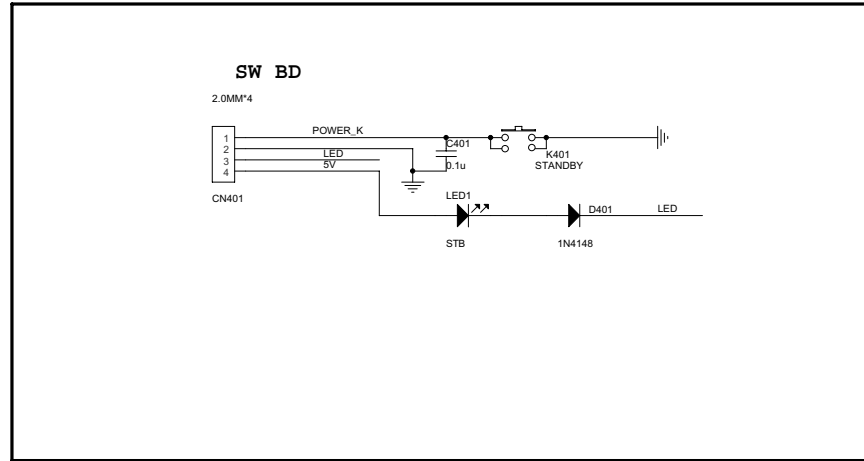
### DVP2008 WIRING DIAGRAM



Remark:

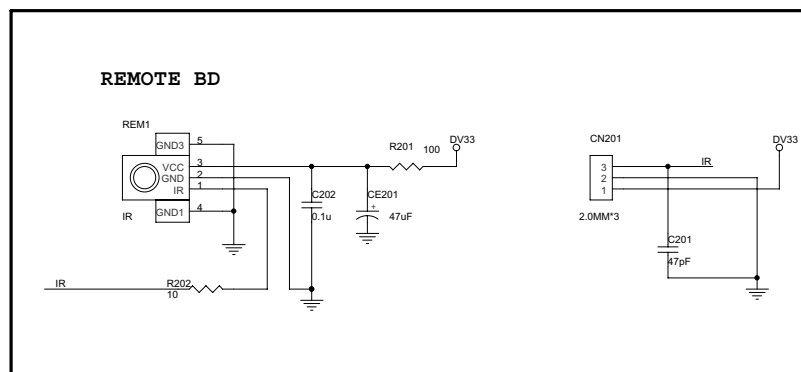
- 7PIN\*2.5 CN1 is the same as 7PIN HS TJC3-7Y/SCN-7P L=280MM
- 24 PIN\*0.5 CN2 is the same as HS 24PIN
- 6PIN \*2.0 CN4 is the same as 6PIN HS PH-6Y/PH-6Y L=40MM
- 7PIN\*2.0 CN5 is the same as 7PIN CABLE PH-7Y/SAN-7P L=100MM
- 3PIN CN8 is the same as 3PIN HS PH-3Y/SAN-3P L=160MM

### Front Board & Switch Board Electric Diagram



C301	B2
C302	B2
C303	B2
C401	B1
CN301	A2
CN302	B3
CN401	A1
D401	B1
K301	B2
K302	B2
K401	B1
LED1	B1
LED2	B3
Q2	B3
R302	B3
R303	B3
R304	B3

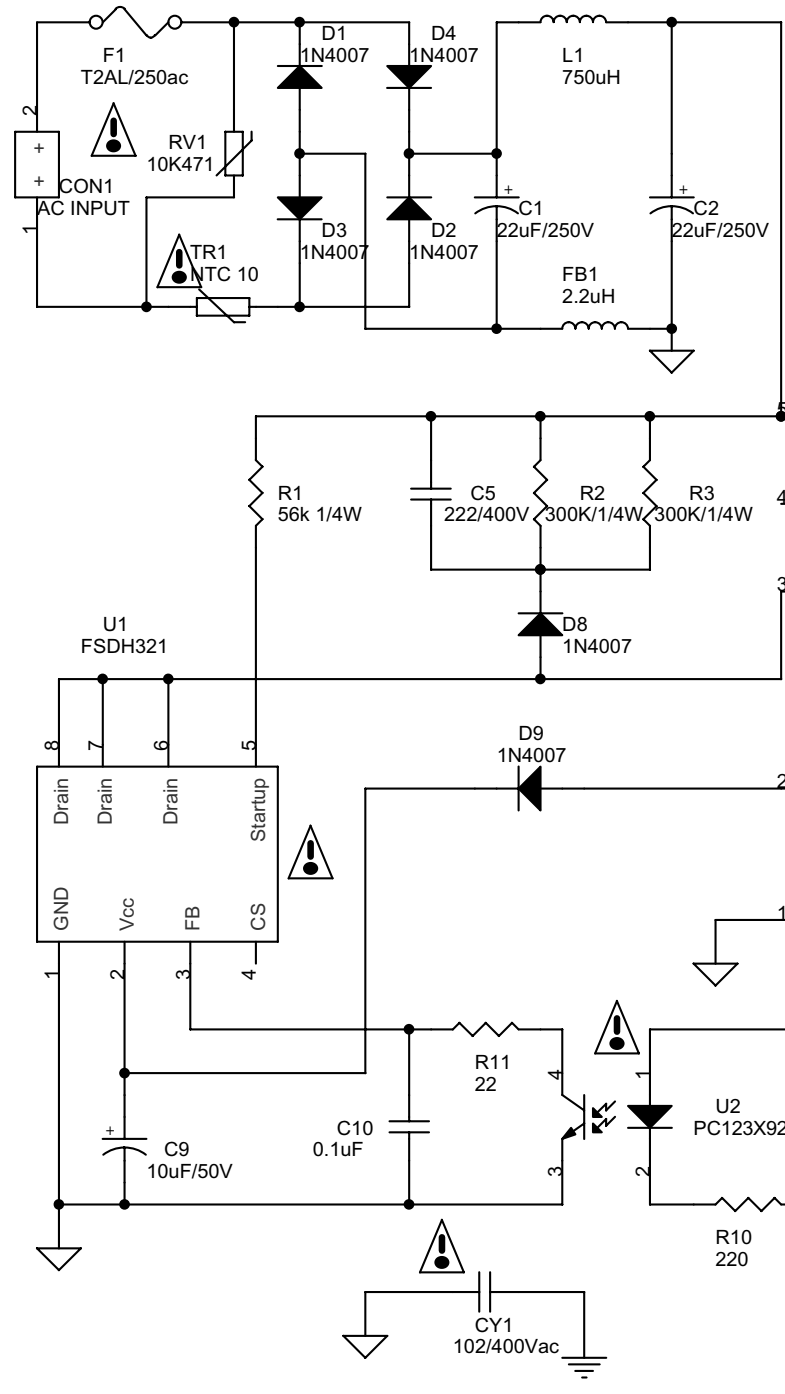
# Infrared Board Electric Diagram



C201	C2
C202	B2
CE201	B2
CN201	B2
R201	B2
R202	B2
REM1	B2



Power Board Electric Diagram

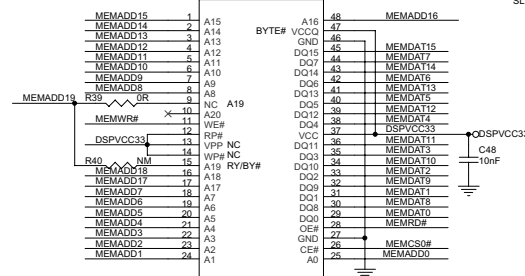


**\* CAUTION :**  
 THE PARTS MARKED WITH  ARE IMPORTANT PARTS ON THE SAFETY.  
 PLEASE USE THE PARTS HAVING THE DESIGNATED PARTS NUMBER WITHOUT FAIL.

C1	B1	D8	B2
C10	A3	D9	B2
C11	C3	F1	A1
C12	C2	FB1	B1
C2	B1	L1	B1
C3	C1	L2	C3
C4	C2	R1	A2
C5	A2	R10	B3
C6	C2	R11	A3
C7	C3	R12	C2
C8	C3	R2	B2
C9	A3	R3	B2
CON1	A1	R5	D3
CON2	D2	R7	D3
CY1	B4	R8	B3
D1	A1	R9	B3
D10	C3	RV1	A1
D2	A1	T1	B2
D3	A1	TR1	A1
D4	A1	U1	A2
D5	C1	U2	B3
D6	C2	U3	B3
D7	C2		

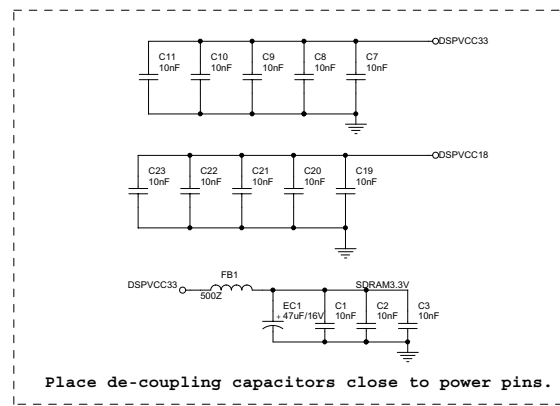
# MAIN Board Electric Diagram : Vaddis\_SDRAM\_Fla

Flash speed <= 70 nS.  
If plan to use 90ns  
Flash, it needs to be  
verified by s/w.

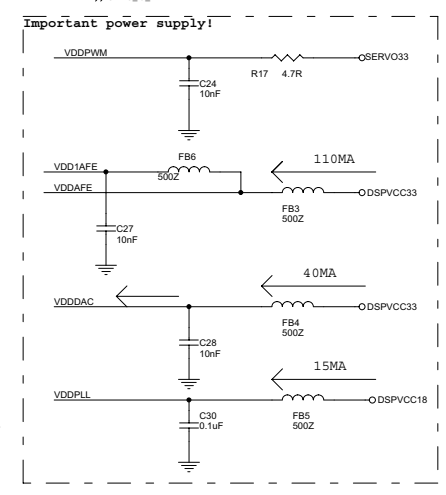
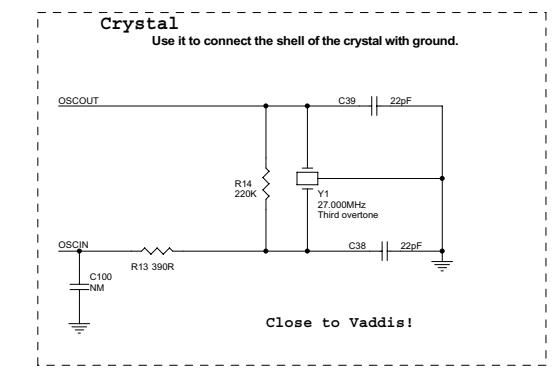
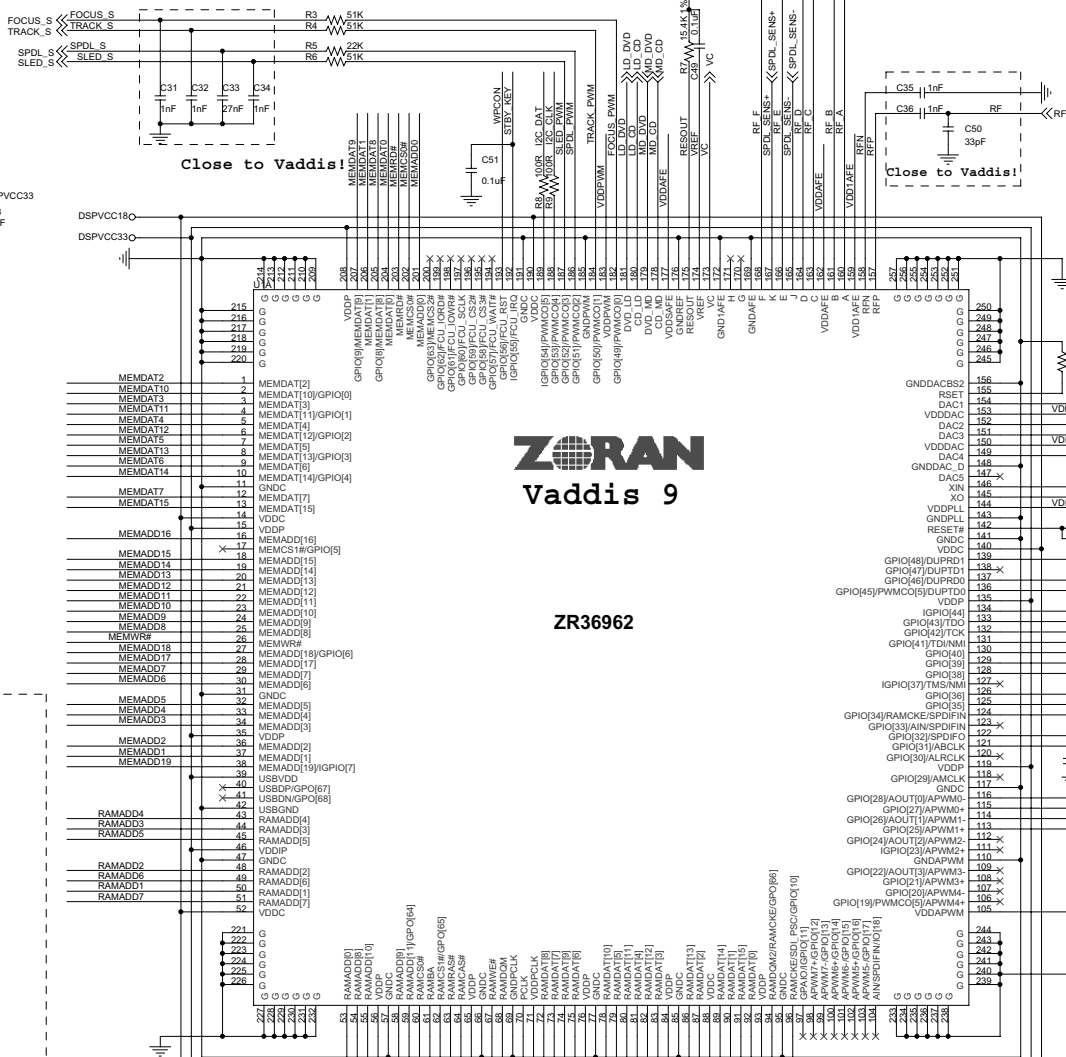
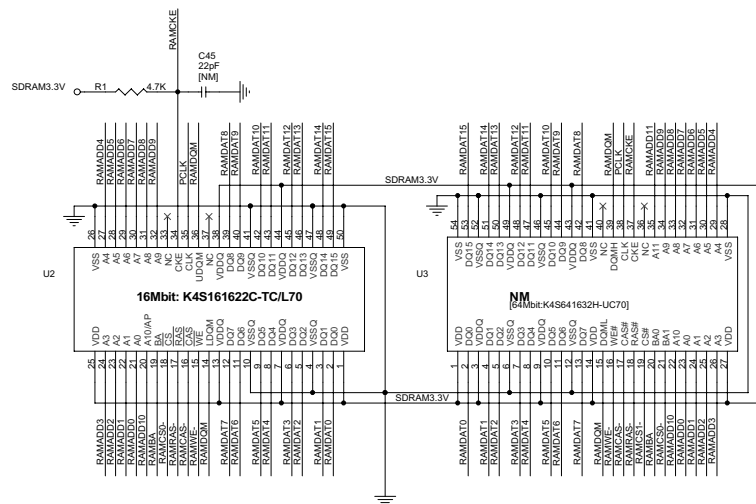


Flash select	R39	R40
Intel	NM	0R
AMD/SST	0R	NM

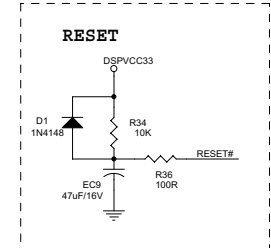
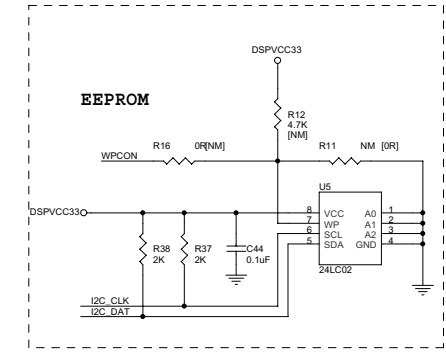
BOOTSEL	JP3	JP2
Play	OPEN	OPEN
Download	OPEN	CLOSE
SW debug	CLOSE	OPEN



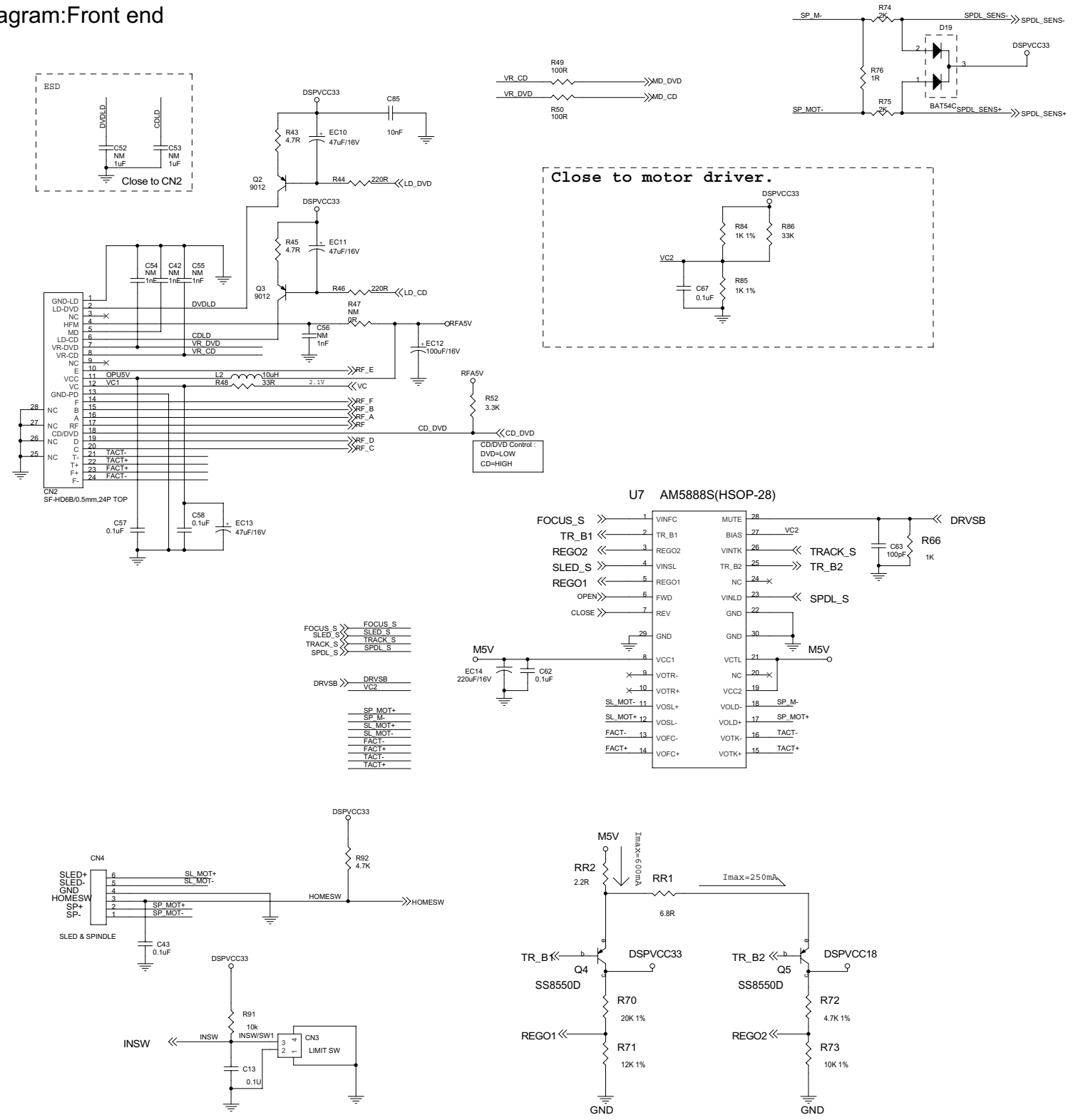
Place de-coupling capacitors close to power pins.



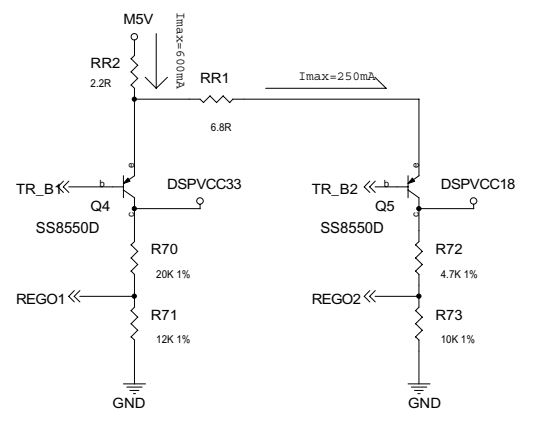
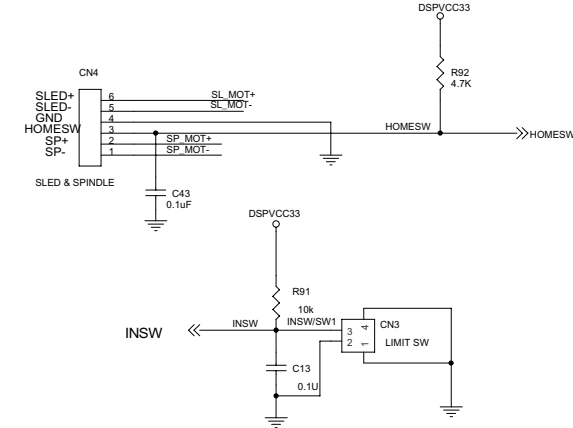
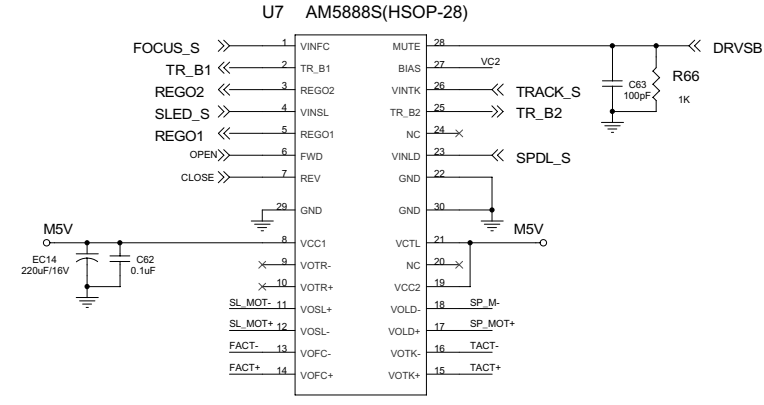
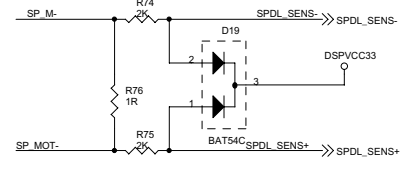
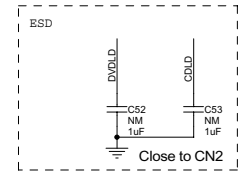
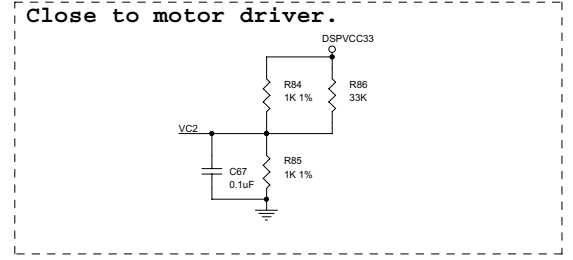
- C1 A3 EC20 C3
- C10 A2 EC9 B4
- C100 C1 FB1 A3
- C11 A2 FB3 D2
- C15 C3 FB30 B3
- C16 C2 FB4 D2
- C17 B3 FB5 D3
- C18 C2 FB6 D2
- C19 A3 JP3 A2
- C2 A3 R1 A3
- C20 A3 R10 C1
- C21 A3 R11 C4
- C22 A3 R12 C3
- C23 A3 R13 D1
- C24 D2 R14 D1
- C27 D2 R16 C4
- C28 D2 R17 D2
- C3 A3 R19 D2
- C30 D3 R2 B3
- C31 B1 R20 D2
- C32 B1 R21 D2
- C33 B1 R22 D2
- C34 B1 R3 B1
- C35 C1 R34 B4
- C36 C1 R36 B4
- C37 B3 R37 C4
- C38 D1 R38 C4
- C39 D1 R39 A1
- C4 D3 R4 B1
- C44 C4 R40 A1
- C45 A3 R41 A2
- C48 A1 R42 A2
- C49 C1 R5 B1
- C5 D3 R51 C3
- C50 C1 R6 B1
- C51 B1 R7 C1
- C6 D3 R8 B1
- C7 A2 R9 B1
- C70 C2 U1 B1
- C71 C2 U2 A4
- C8 A2 U3 A4
- C9 A2 U4 A1
- D1 B4 Y1 D1
- EC1 A3



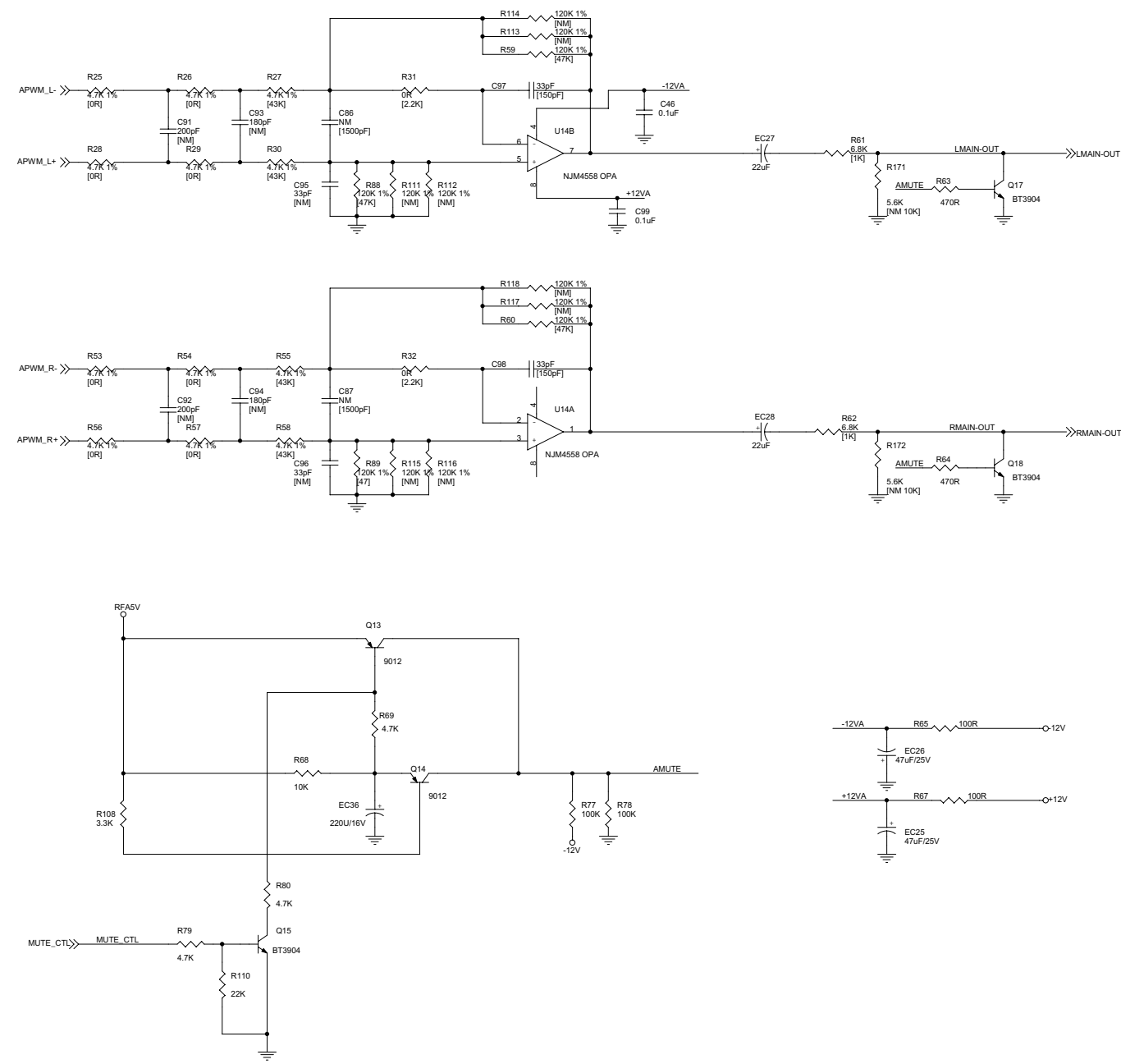
MAIN Board Electric Diagram:Front end



C13	B4
C42	A2
C43	A4
C52	A1
C53	A1
C54	A2
C55	A2
C56	B2
C57	A2
C58	A2
C62	B3
C63	C2
C67	C2
C85	B1
CN2	A2
CN3	B4
CN4	A3
D19	C1
EC10	B1
EC11	B1
EC12	B2
EC13	B2
EC14	B3
L2	B2
Q2	B1
Q3	B2
Q4	C4
Q5	C4
R43	B1
R44	B1
R45	B1
R46	B2
R47	B2
R48	B2
R49	B1
R50	B1
R52	B2
R66	C2
R70	C4
R71	C4
R72	C4
R73	C4
R74	C1
R75	C1
R76	C1
R84	C1
R85	C2
R86	C1
R91	B4
R92	B3
RR1	C3
RR2	C3
U7	C2

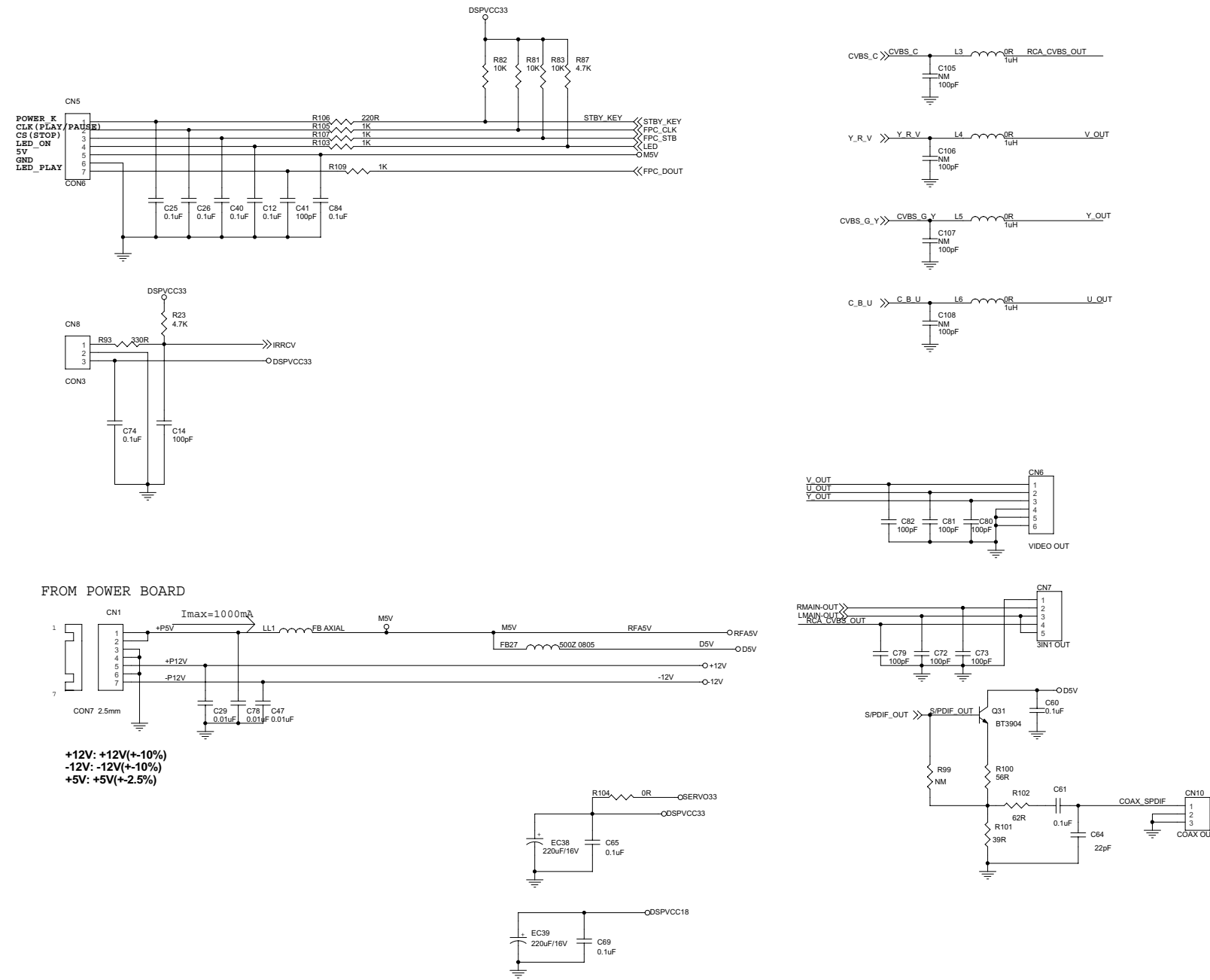


### MAIN Board Electric Diagram: Audio Input\_Output



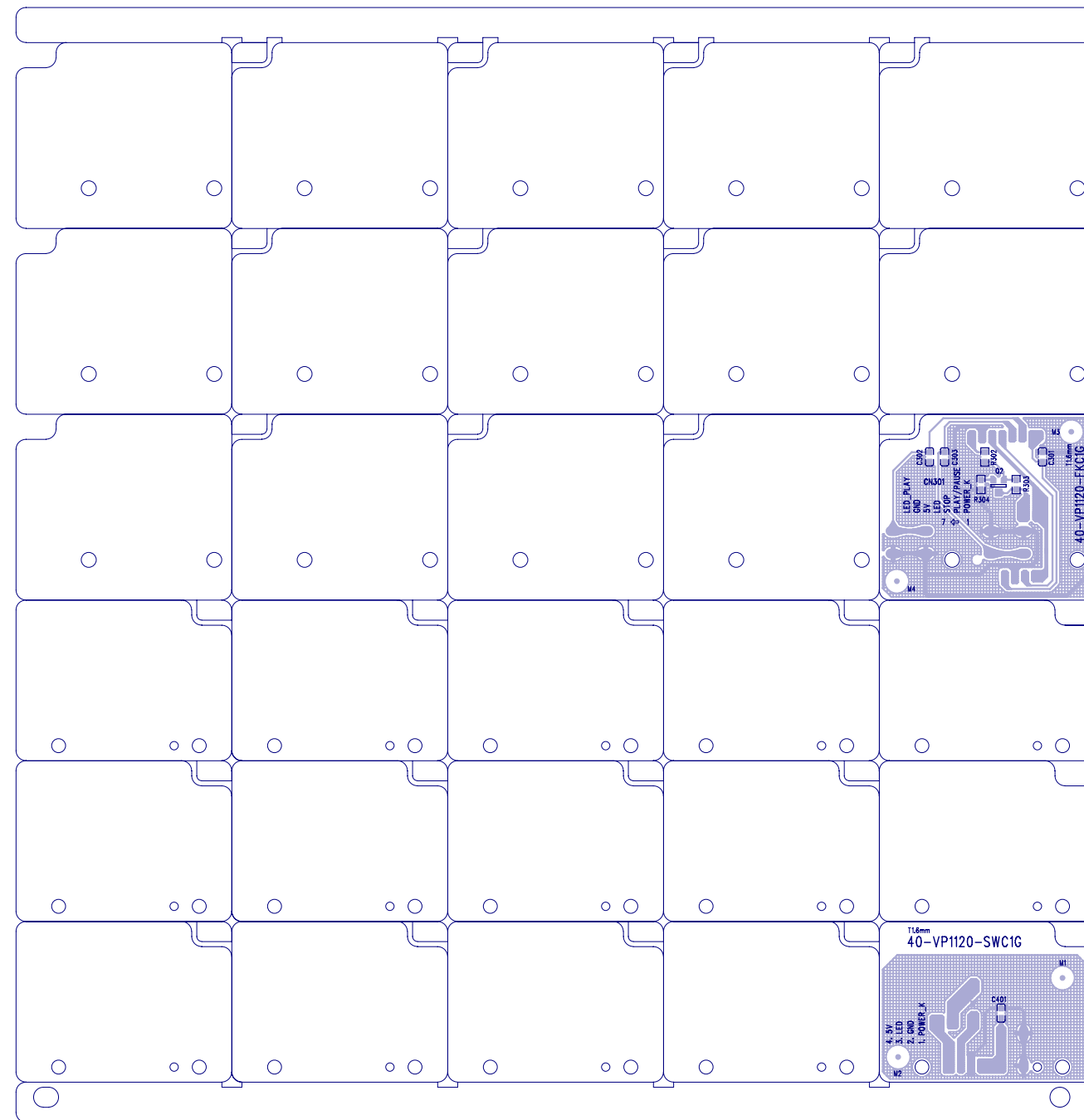
C46	B1
C86	A1
C87	A2
C91	A1
C92	A2
C93	A1
C94	A2
C95	A1
C96	A2
C97	B1
C98	B2
C99	B1
EC25	C3
EC26	C3
EC27	B1
EC28	B2
EC36	B3
Q13	B2
Q14	B3
Q15	A3
Q17	C1
Q18	C2
R108	A3
R110	A3
R111	B1
R112	B1
R113	B1
R114	B1
R115	B2
R116	B2
R117	B2
R118	B2
R171	C1
R172	C2
R25	A1
R26	A1
R27	A1
R28	A1
R29	A1
R30	A1
R31	B1
R32	B2
R53	A2
R54	A2
R55	A2
R56	A2
R57	A2
R58	A2
R59	B1
R60	B2
R61	C1
R62	C2
R63	C1
R64	C2
R65	C3
R67	C3
R68	A3
R69	B3
R77	B3
R78	B3
R79	A3
R80	A3
R88	A1
R89	A2
U14A	B2
U14B	B1

MAIN Board Electric Diagram: Power\_Video Out\_

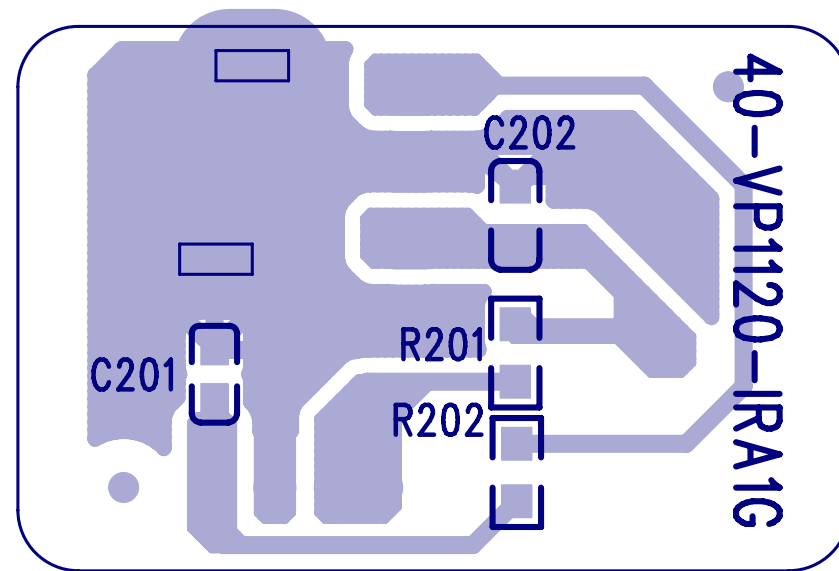


C105	C1
C106	C1
C107	C2
C108	C2
C12	A1
C14	A2
C25	A1
C26	A1
C29	A3
C40	A1
C41	B1
C47	B3
C60	C3
C61	D3
C64	D3
C65	B4
C69	B4
C72	C3
C73	C3
C74	A2
C78	A3
C79	C3
C80	C2
C81	C2
C82	C2
C84	B1
CN1	A3
CN10	D3
CN5	A1
CN6	C2
CN7	D3
CN8	A2
EC38	B4
EC39	B4
FB27	B3
L3	C1
L4	C1
L5	C1
L6	C2
LL1	B3
Q31	C3
R100	C3
R101	C3
R102	C3
R103	B1
R104	B4
R105	B1
R106	B1
R107	B1
R109	B1
R23	A2
R81	B1
R82	B1
R83	B1
R87	B1
R93	A2
R99	C3

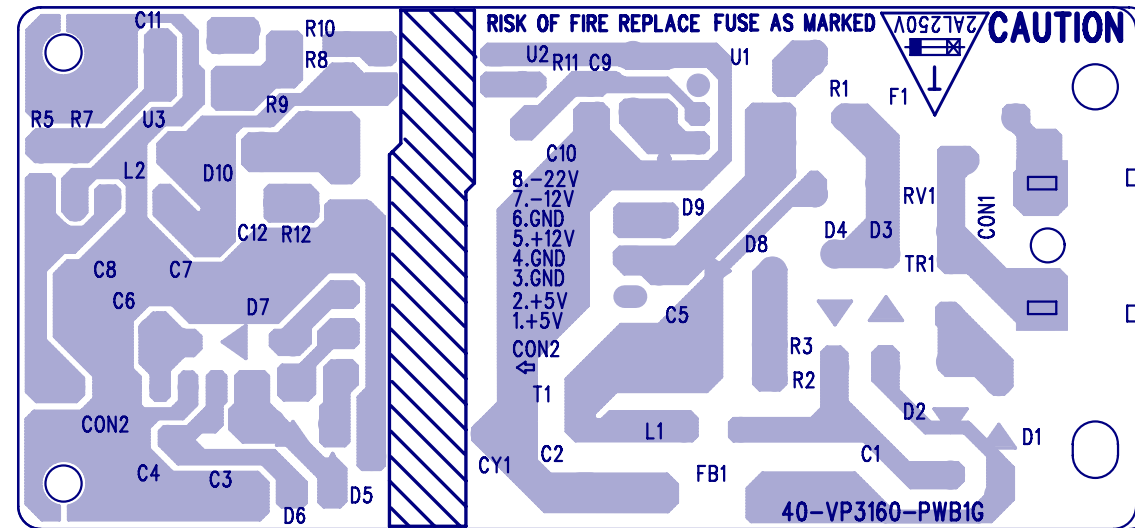
### Front Board & Switch Board Print\_Layout (Bottom Side)



Infrared Board Print\_Layout (Bottom Side)

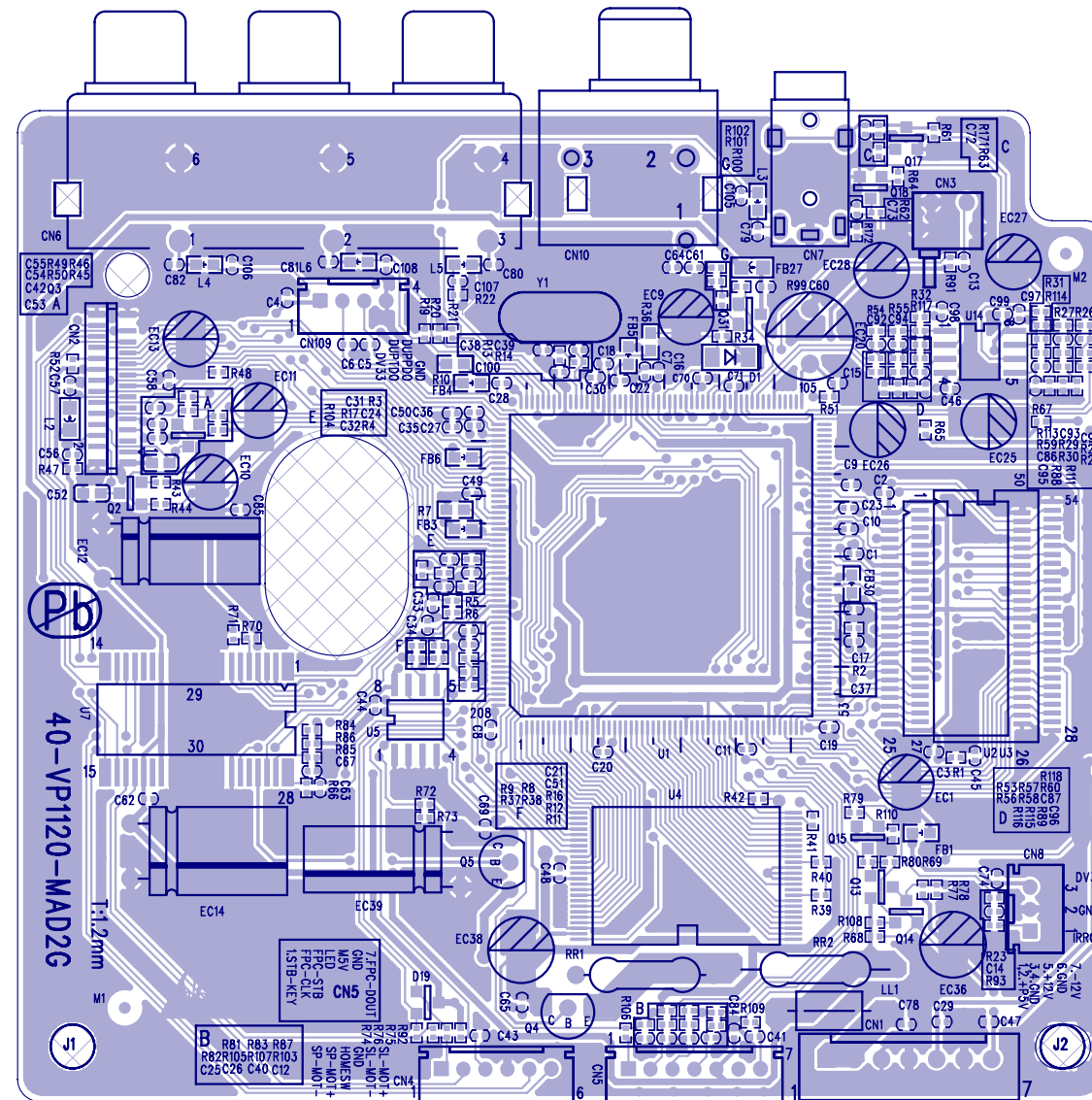


Power Board Print\_Layout (Bottom Side)

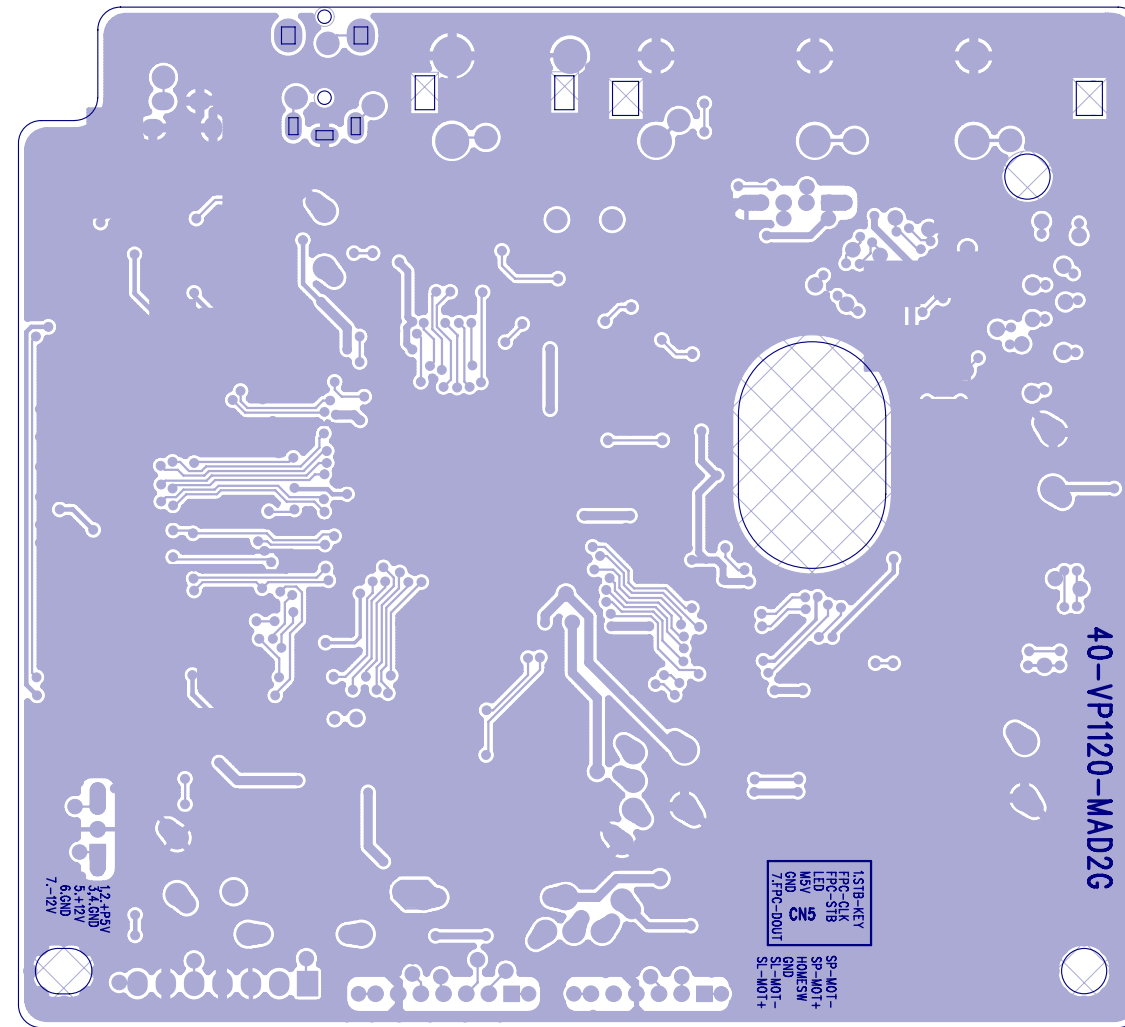




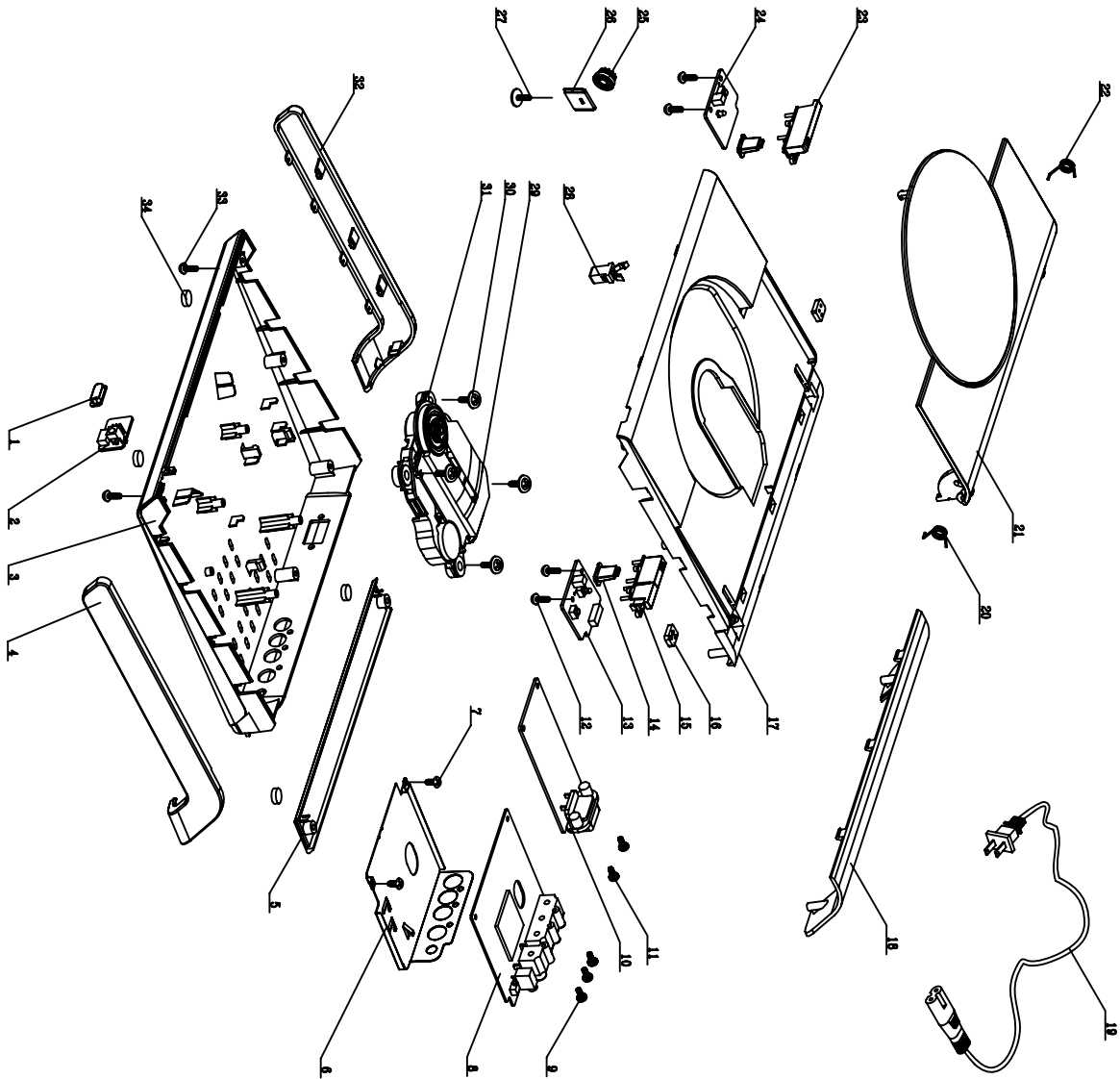
Main Board Print\_Layout (Top Side)



Main Board Print\_Layout (Bottom Side)



## DVP2008/93 Mechanical Exploded View

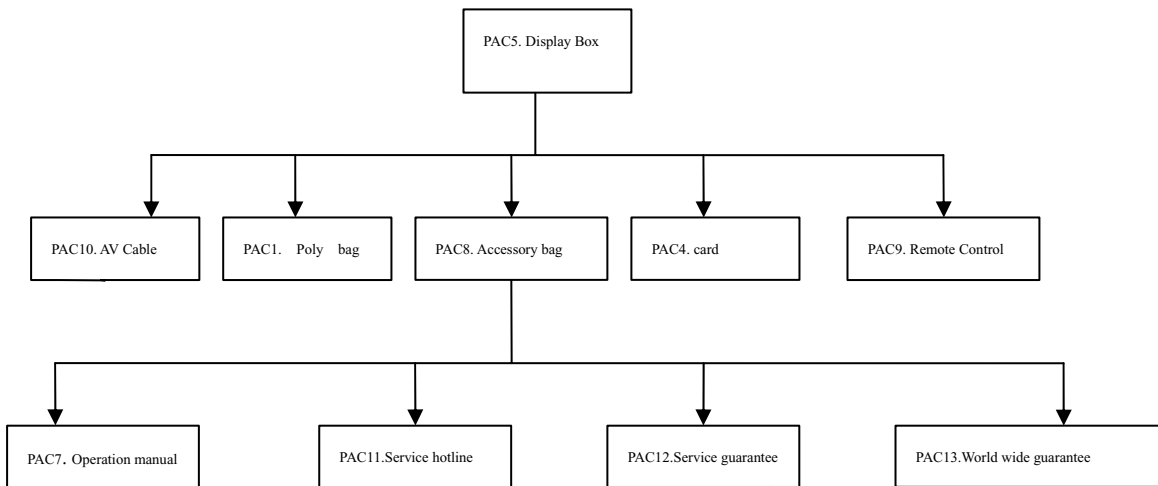
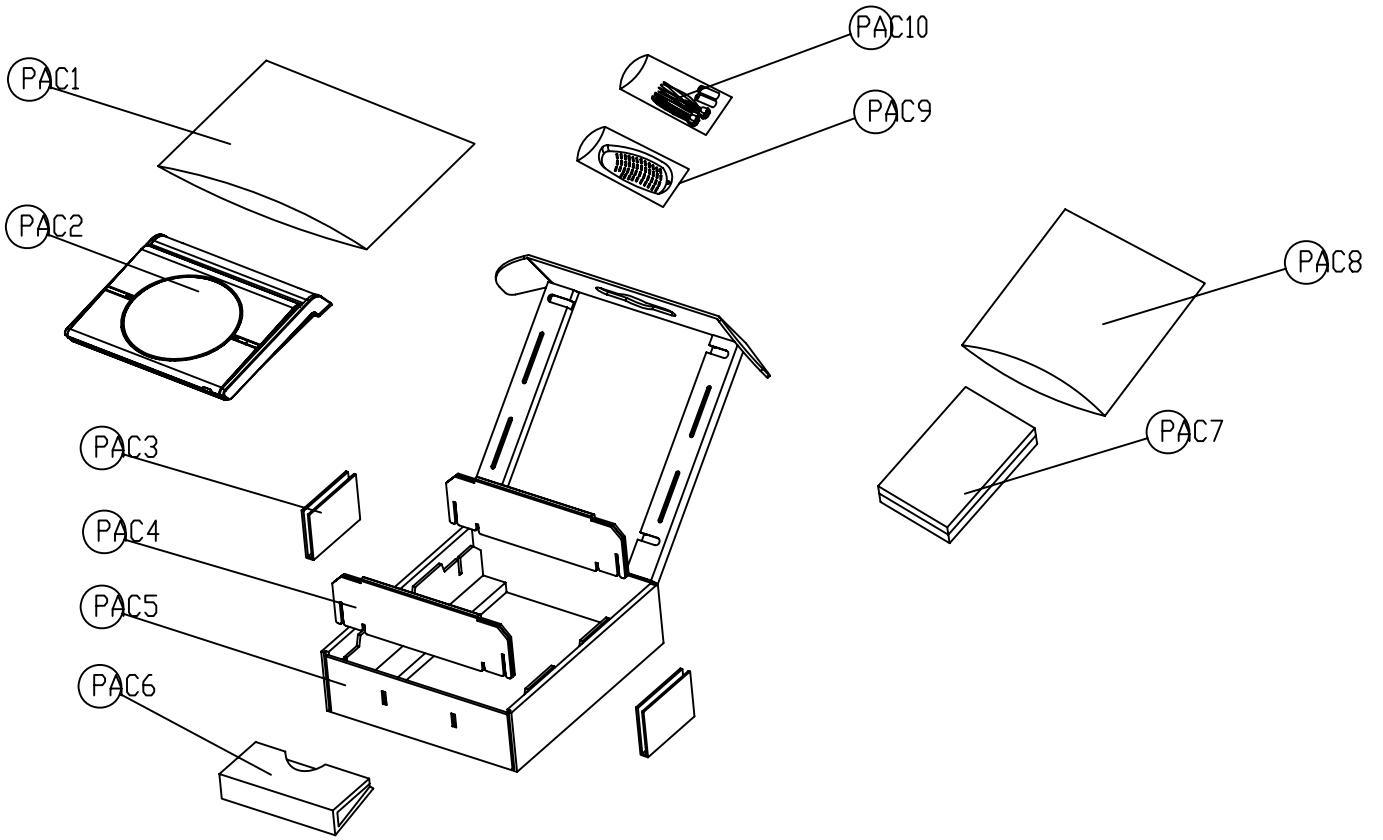


It's a general Mechanical Exploded View for DVP2008/93,  
Detailed information please refer to Model set.

ASSY1 is assembled by loaction 3,4,5,32

ASSY2 is assembled by loaction 14,15,16,17,20,21,22,23,25,26,27,28

DVP2008/93 Packing View



Electrical PARTS LIST				MECHANICAL & ACCESSORIES PARTS LIST			
No	12NC No.	Part Name	Q'ty	No	12NC No.	Part Name	Q'ty
⚠ 10	996510008499	ASSY- PW BD	1	1	996510008515	LENS	1
D1	996510011047	DIODE IN4007	1	18	996510016250	REAR CABINET	1
D10	996510010902	SR240	1	⚠ 19	996510009517	POWER CORD	1
D2	996510011047	DIODE IN4007	1	34	996520032686	RUBBER FOOT	1
D3	996510011047	DIODE IN4007	1	ASSY1	996510016248	ASSY - BOTTOM CABINET	1
D4	996510011047	DIODE IN4007	1	ASSY2	996510016249	ASSY - FRONT CABINET	1
D6	996500014043	DIODE FR102 (FAST RECOVERY)	1	PAC10	996510008503	AUDIO CABLE	1
D7	996500014043	DIODE FR102 (FAST RECOVERY)	1	CN1	996510008504	7P HS TJC3-7Y/SCN-7P L=280MM	1
D8	996510011047	DIODE IN4007	1	CN2	996510000409	FLEX CABLE	1
D9	996510011047	DIODE IN4007	1	CN302	996510008506	4PIN HS PH-4Y/SAN-4P L=220	1
⚠ F1	996510001780	FUSE 2A 250V 5X20MM	1	CN4	996510008508	6PIN HS PH-6Y/PH-6Y L=40MM	1
L1	996510009942	COIL WIDTH	1	CN5	996510012668	7PIN CABLE	1
L2	996500032509	COIL SL0811-6R8K2R4	1	CN8	996510012669	3PIN HS	1
T1	996510009662	TRANSFORMER CONV	1	PAC1	996520032687	POLYBAG	1
U1	996510009660	FSDH321	1	PAC11	996500042132	SERVICE HOT LINE	1
U2	996500024838	PC123X9YFZ	1	PAC12	996500033761	SERVICE GUARANTEE	1
U3	996510009661	adjustable shunt regulator	1	PAC13	996510008988	WORLD-WIDE GUARANTEE	1
13	996510008502	ASSY- FB BD	1	PAC4	996510016247	CARD	1
LED2	996510012666	LED BT-502BUW-31-470E-A6	1	PAC5	996510016246	Display BOX	1
2	996510008501	ASSY- IR BD	1	PAC7	996510016245	OPERATION MANUAL	1
REM1	996510012667	RECEIVER MODULE AT138BV3T-10	1	PAC8	996510007475	ACCESSORY BAG	1
24	996510008500	ASSY- SW BD	1	PAC9	996510016244	REMOTE CONTROL	1
29	996510015378	DVD LOADER(AHD OPU)	1				
8	996510009513	ASSY- MAIN BD	1				
D1	996510009667	SMD. SWITCHING DIODE LL4148	1				
D19	996510009668	BAT54C	1				
Q13	996510009670	TRANSISTOR SMT 3CG9012M	1				
Q14	996510009670	TRANSISTOR SMT 3CG9012M	1				
Q15	996510009669	SMD.TRANSISTOR MMBT3904LT1 NPN	1				
Q17	996510009669	SMD.TRANSISTOR MMBT3904LT1 NPN	1				
Q18	996510009669	SMD.TRANSISTOR MMBT3904LT1 NPN	1				
Q2	996510009670	TRANSISTOR SMT 3CG9012M	1				
Q3	996510009670	TRANSISTOR SMT 3CG9012M	1				
Q31	996510009669	SMD.TRANSISTOR MMBT3904LT1 NPN	1				
Q4	996510009671	TRANSISTOR	1				
Q5	996510009671	TRANSISTOR	1				
U1	996510009723	IC ZR36962	1				
U14	996500032494	IC AS4558M	1				
U2	996510009676	SDRAM M12L16161A-7T	1				
U4	996510009673	16m Flash 70ns 3.3V TSOP-48	1				
U5	996500024284	IC EEPROM 8K M24C08	1				
U7	996510009674	IC AM5888IC	1				
Y1	996510009675	27MCL20PF	1				

## REVISION LIST

Version 1.0

\* Initial release