

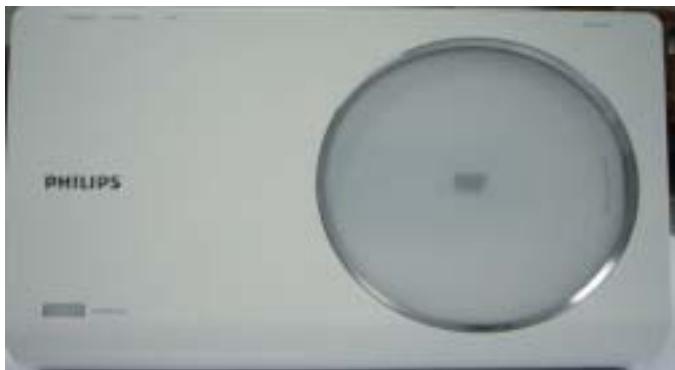
DVD Player Service

DVP6600,DVP6620

Service

DVP6600/93/37
DVP6620/55/98/93

Service



Service Manual

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Version 1.3

**CLASS 1
LASER PRODUCT**



3139 785 32933

PHILIPS

Technical Specifications

TV standard	(PAL/50Hz)	(NTSC/60Hz)	Audio performance	
Number of lines	625	525	DA converter	24bits, 192KHz
Playback	Multi standard	(PAL/NTSC)	DVD	fs 96kHz fs 48kHz
Video performance				
Video DAC	12 bit, 108MHz		SVCD	4Hz----44kHz 4Hz---22kHz fs 48kHz fs 44.1kHz
YPbPr:	0.7Vpp ---- 75 ohm		CD/ VCD	4Hz---20kHz fs 44.1kHz
Video output	1Vpp ----- 75 ohm		Signal-Noise (1kHz)	>90dB
			Dynamic Range (1kHz)	>80dB
			Cross talk (1kHz)	>70dB
			Distortion/Noise (1kHz)	>65dB
			MPEG MP3	MPEG Audio L3
Video format				
Digital Compression	MPEG 2 for DVD, SVCD		Connections	
	MPEG 1 for VCD		YpbPr output	Cinch 3x
	DivX®		Video output	Cinch(yellow)
DVD	50Hz	60Hz	Audio output (L+R)	Cinch (white/red)
Horiz resolution	720 pixels	720 pixels	Digital output	1 coaxial
Vertical resolution	576lines	480 lines		IEC60958 for CDDA/ LPCM
				IEC61937 for MPEG1/2, Dolby Digital
			HDMI Out	
VCD	50Hz	60Hz	Cabinet	
Horiz. resolution	352 pixels	352 pixels	Dimensions (w X h X d)	305 x 186 x 102 mm
Vertical resolution	288lines	240 lines	Weight	Approximately 1.4 kg
Audio format				
Digital	MPEG/AC-3/ PCM	Compressed Digital 16, 20, 24bits fs, 44.1, 48, 96KHz	Power consumption	
	MP3(ISO 9660)	96,112,128,256kbps & variable bit rate fs,32, 44.1,48 kHz	Power supply Rating	110V-120V; 50/ 60HZ
Analogue Sound Stereo			Power consumption	<10W
Dolby surround compatible downmix from Dolby Digital multi-channel sound			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 $1M\Omega$.
 - 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

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 "lightning stroke" and a stripe-marked printing on the printed wiring board, indicate the primary side of the power supply.

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

2. 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

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

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 guidelines show how to dismantle the player.

Step1: Dismantling Ass'y-Bottom Socket . First press the Snap1 at the same time slide the Bottom Socket follow the below sign. then gently remove the Bottom Socket (Figure 1,2).



Figure 1



Figure 2

Mechanical and Dismantling Instructions**Dismantling Instruction**

Step2: Dismantling Top Cover. Slide the Top Cover follow the below arrowhead, then remove the 4 screws. (Figure 3,4)
Note: Make sure to operate gently.

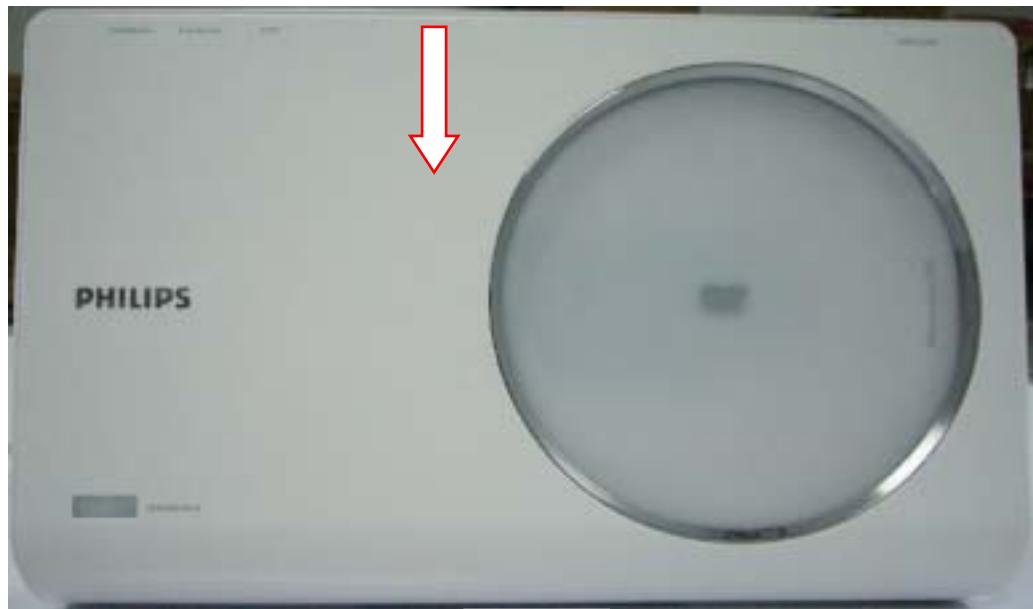


Figure 3



Figure 4

Mechanical and Dismantling Instructions

Dismantling Instruction

Step3: Dismantle the Tray Ass'y . First remove 7 screws around the Tray Ass'y, then disconnect the 1 connector below the Tray Ass'y. (Figure 5,6).

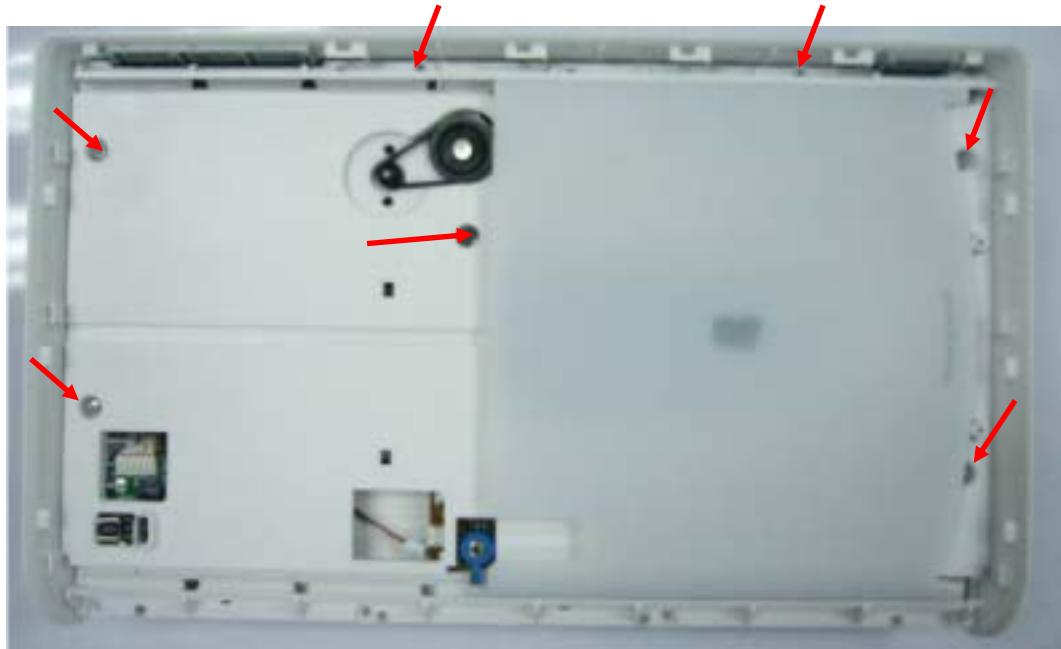


Figure 5



Figure 6

Mechanical and Dismantling Instructions

Dismantling Instruction

Step4: Dismantling Loader, disconnect the 2 connectors aiming in the below figure, and remove 2 screws around the Loader. (Figure 7)

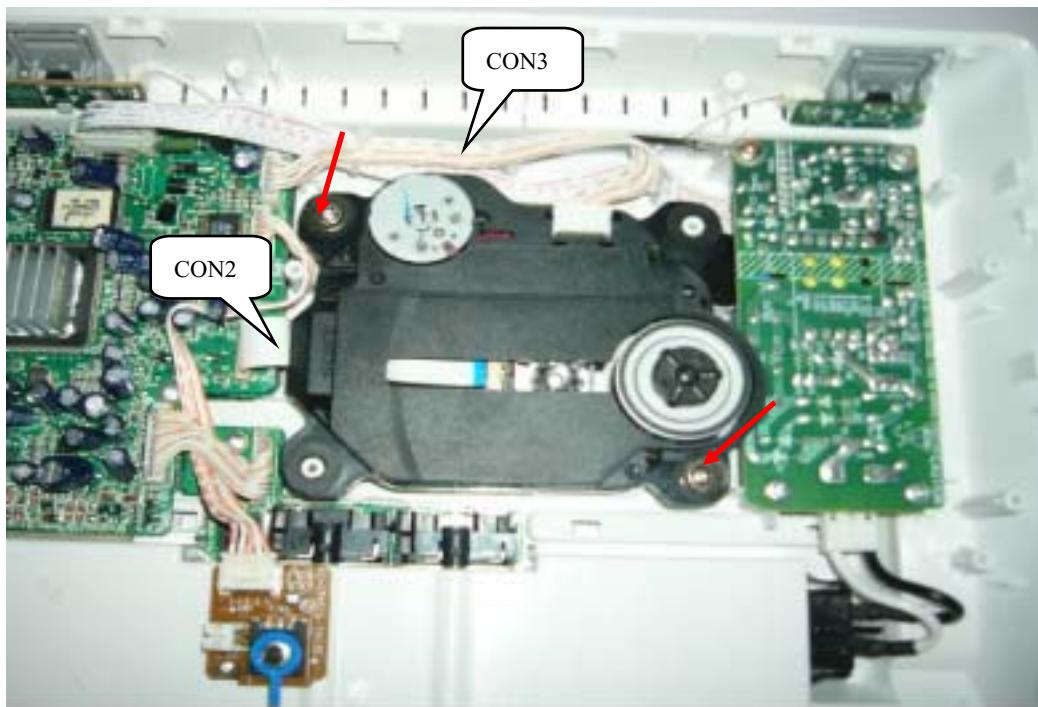


Figure 7

Step5: Dismantling Infra-red Board. Disconnect the 1 connector, then remove 2 screws around the Board. (Figure 8)

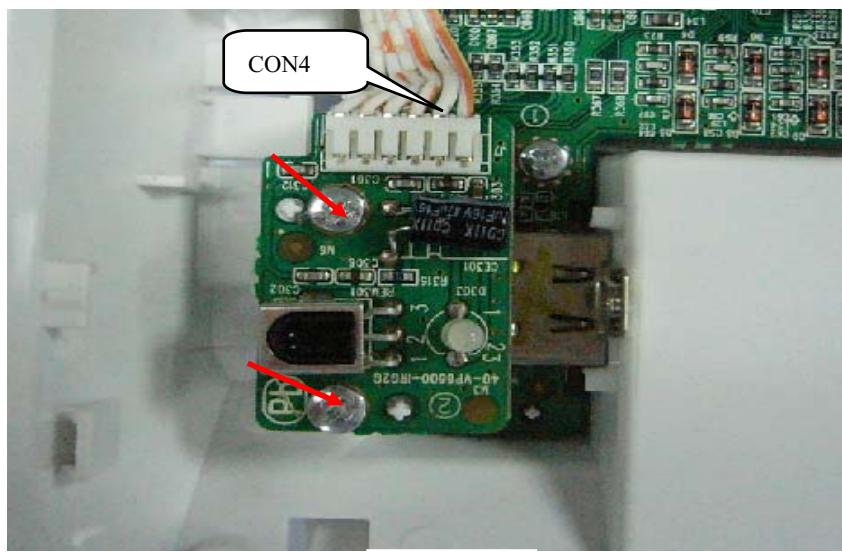


Figure 8

Mechanical and Dismantling Instructions

Dismantling Instruction

Step6: Dismantling Main Board, first disconnect the 4 connectors, and then remove 5 screws. (Figure 9)

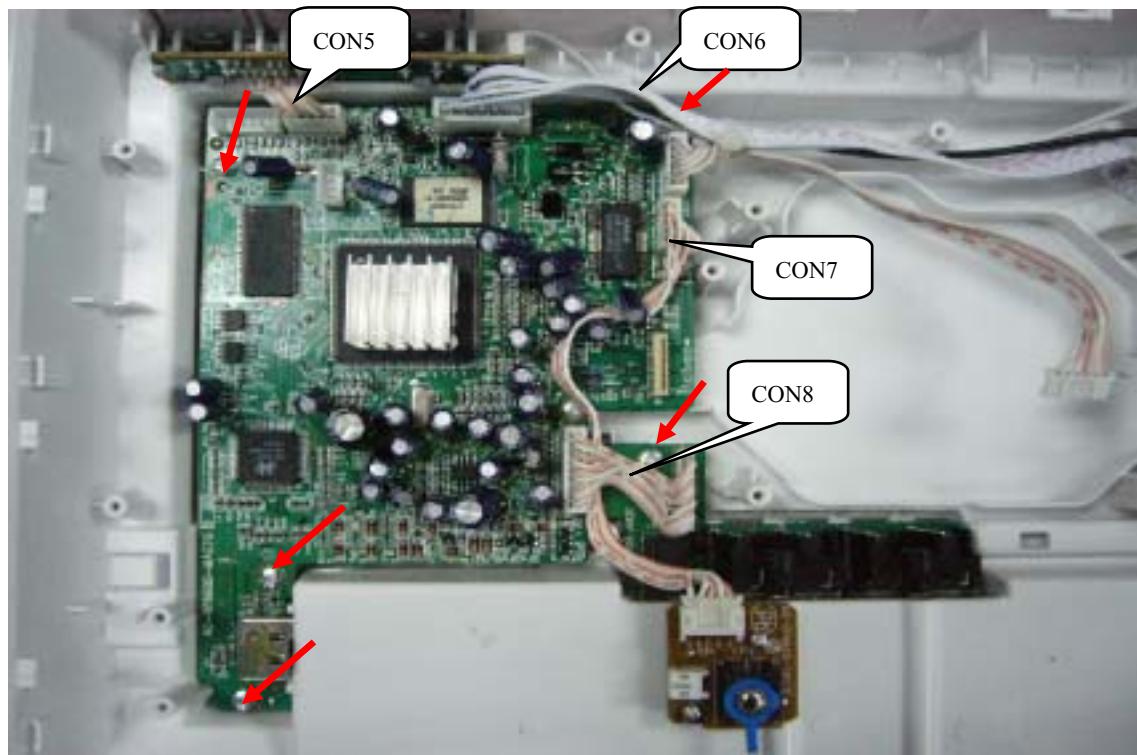


Figure 9

Step7: Dismantling the Power Board. First disconnect the 1 connector, and then remove 3screws around the board. (Figure 10)

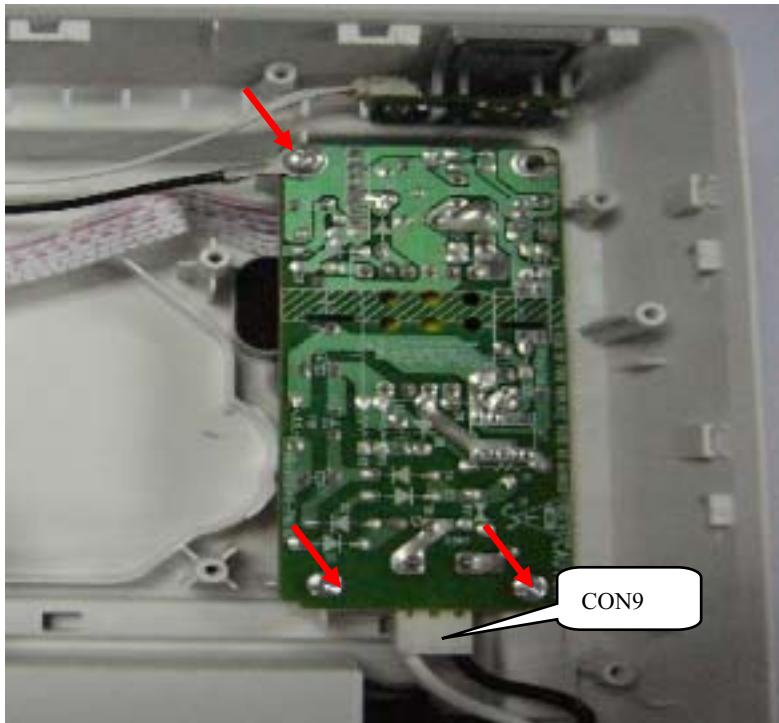


Figure 10

Mechanical and Dismantling Instructions

Dismantling Instruction

Step8: Dismantling Control Board. Disconnect the 1 connector, then release the snaps around the board. (Figure 11)

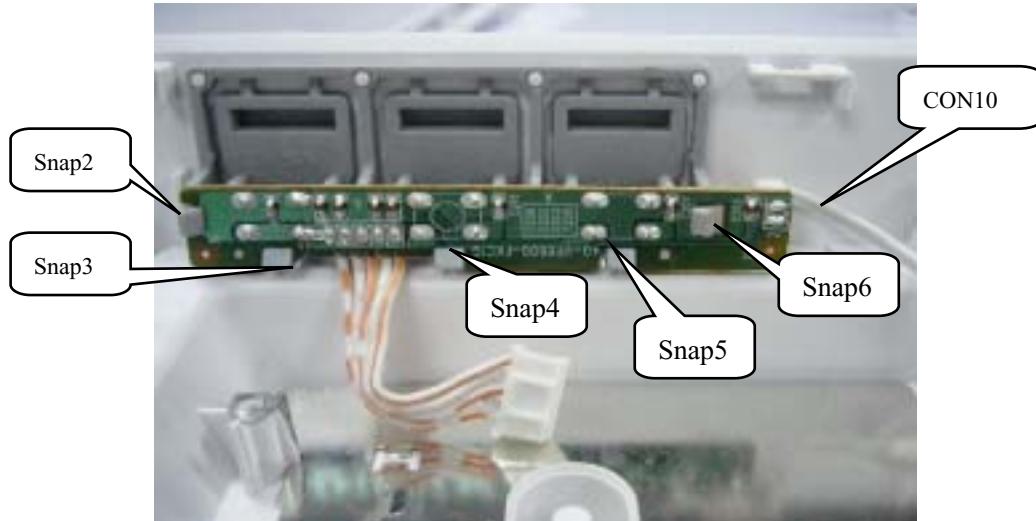


Figure 11

Step9: Dismantling Open Door Board. Release the 2 snaps around the board. (Figure 12)

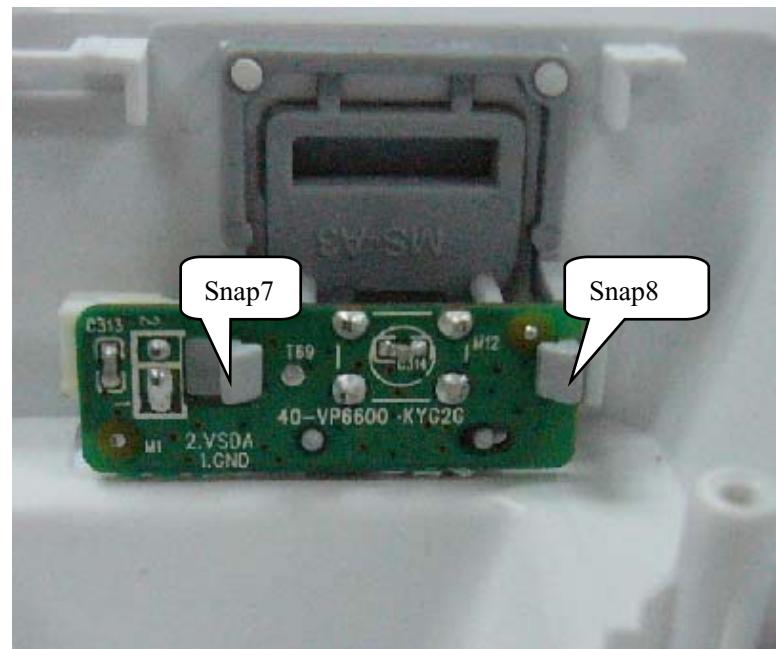


Figure 12

Mechanical and Dismantling Instructions

Dismantling Instruction

Step8: Dismantling CD Door Open/Close Board. Remove the 2 screws around the board. (Figure 13)

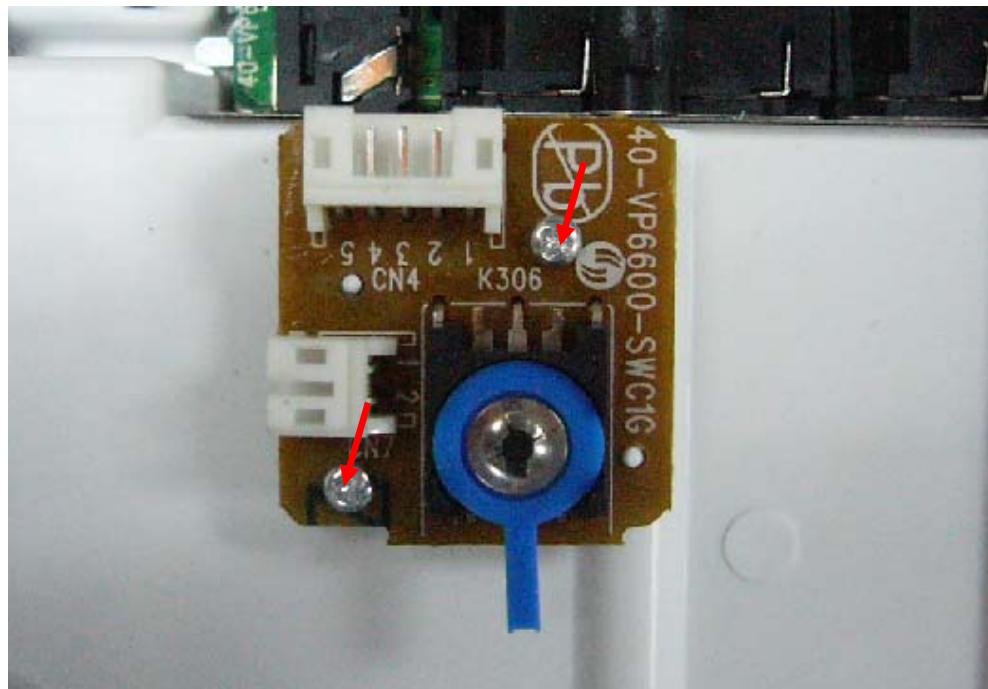


Figure 13

Step9: Dismantling AV Board . Remove the 3screws around the board. (Figure 14)

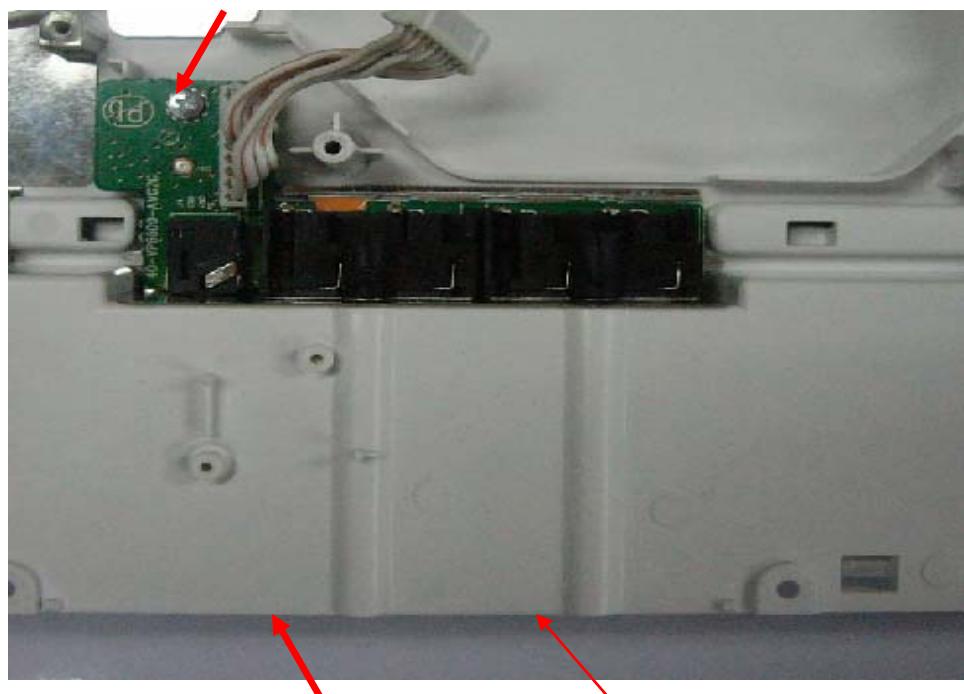


Figure 14

Software upgrade

Preparation to upgrade software

- 1) Start the CD Burning software and create a new CD project (Data Disc) with the following setting:

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 start 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 tray will automatically open when files coping complete, then take out the disc.
 - 5) About 1 minute later, the trace will automatically close when upgrading complete.

C. 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.

The software version and other information are displayed 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)

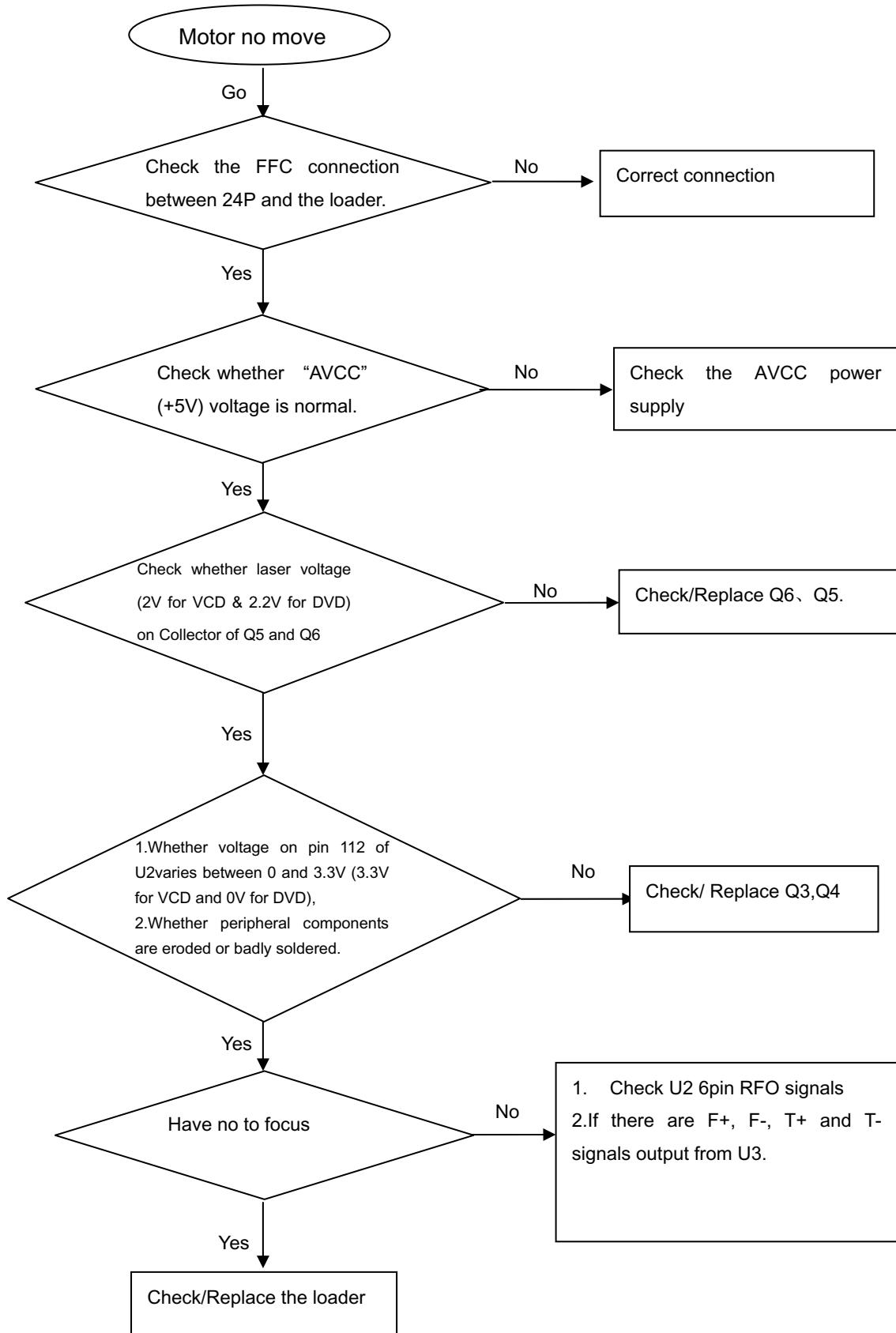
RISC XX.XX.XX.XX

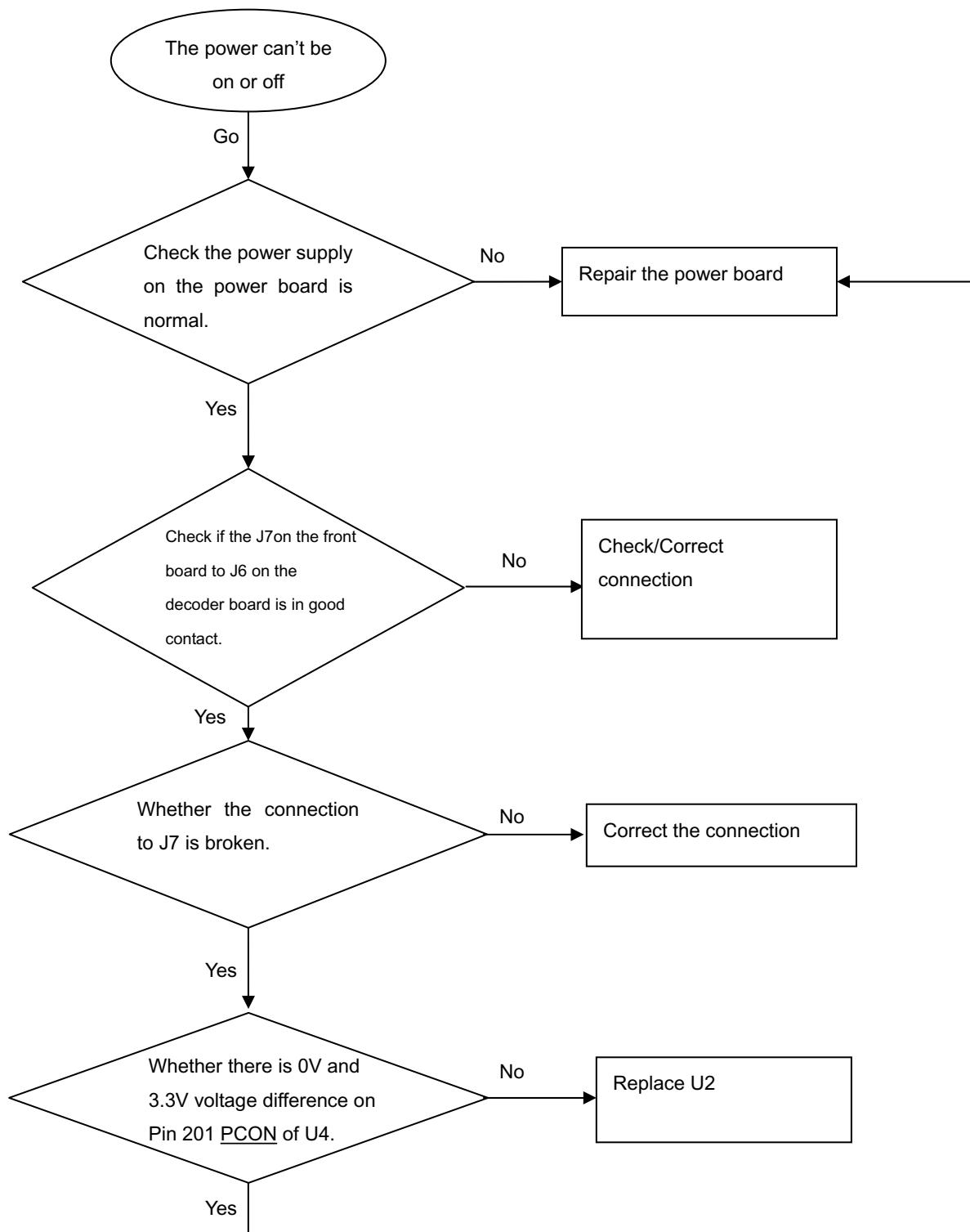
DSP XX.XX.XX.XX

Region Code X>

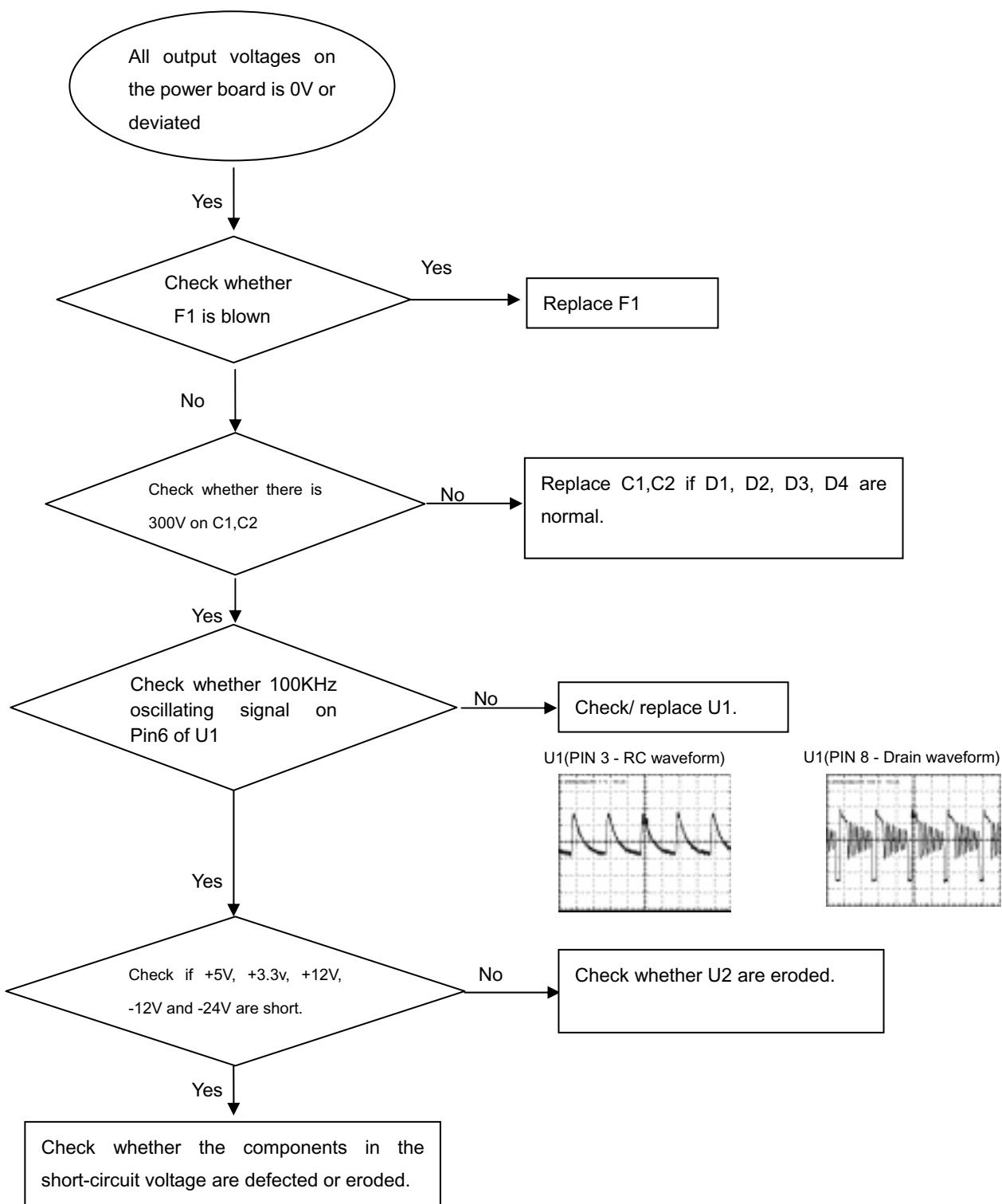
Region Code XX

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

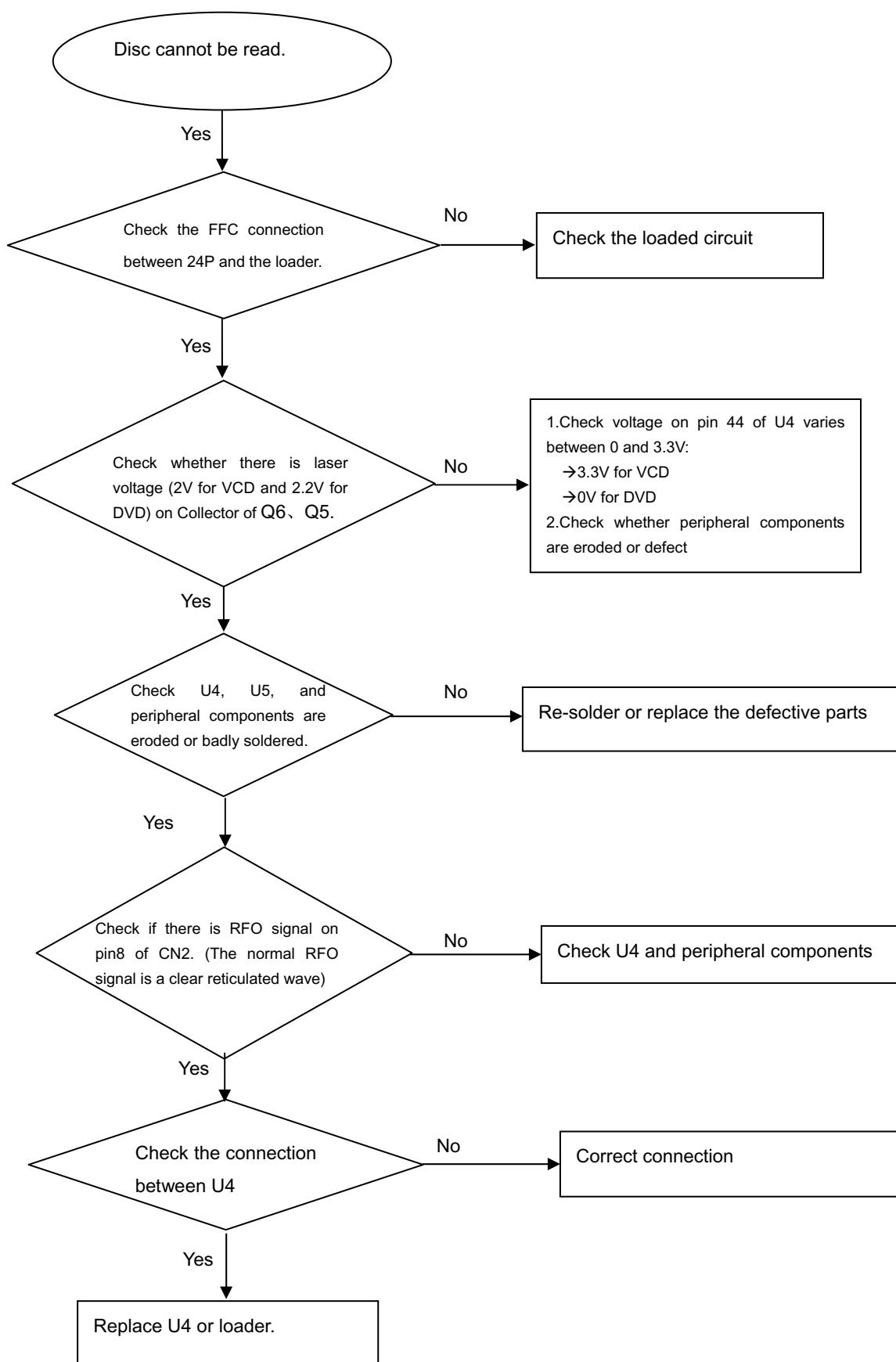
Spindle motor does not move

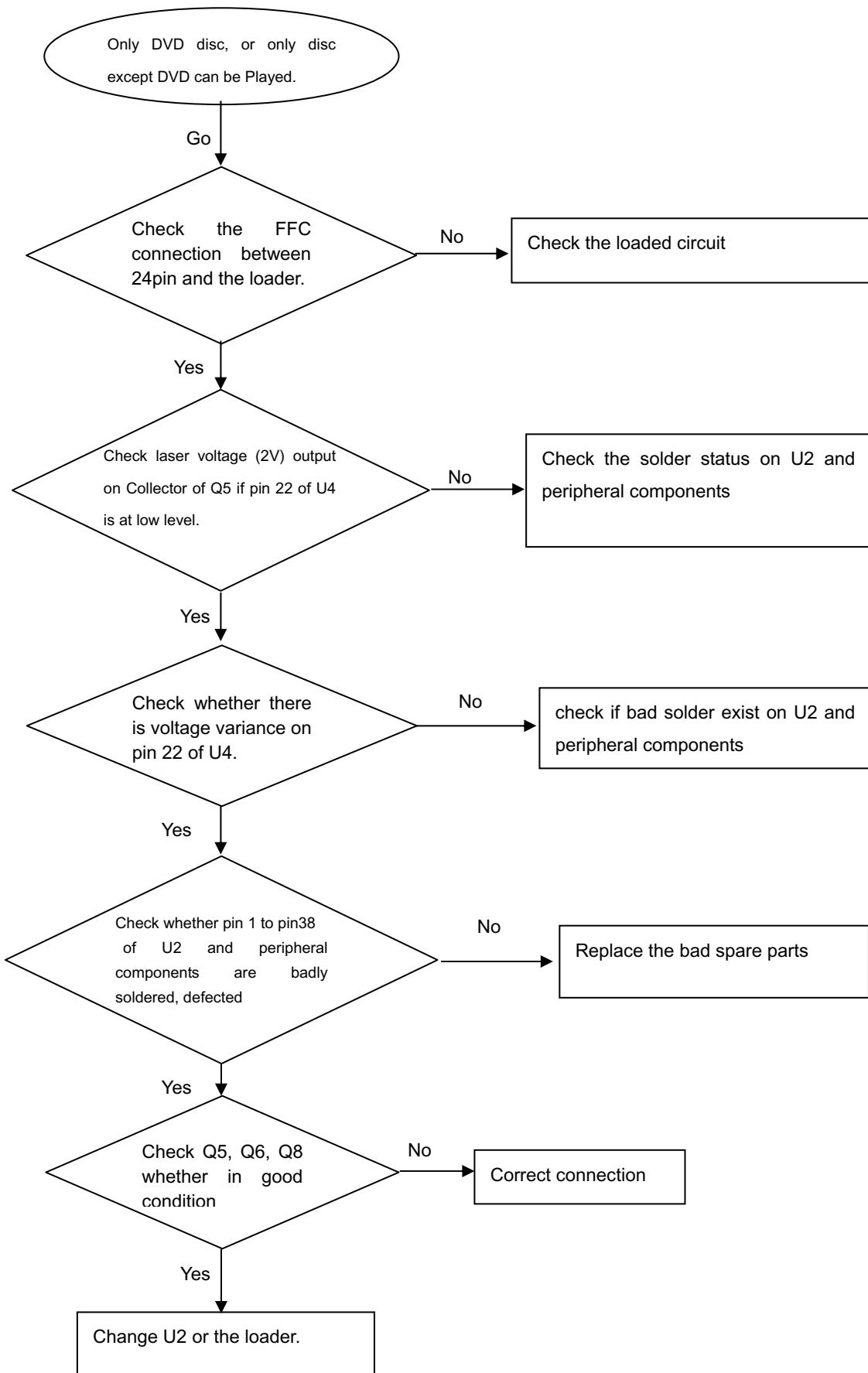
The power can not be on or off

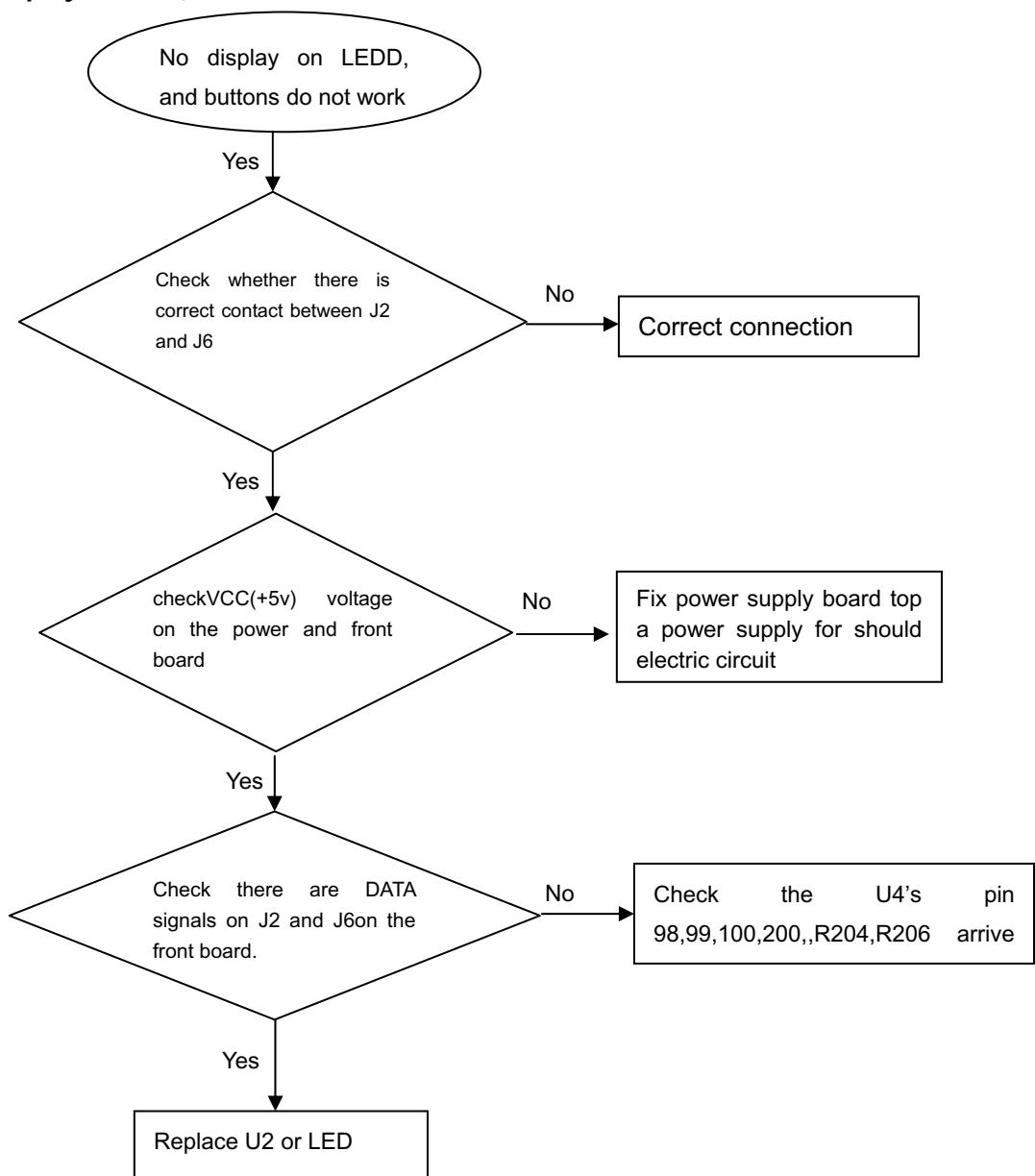
All output voltages on the power board is 0V or deviated.

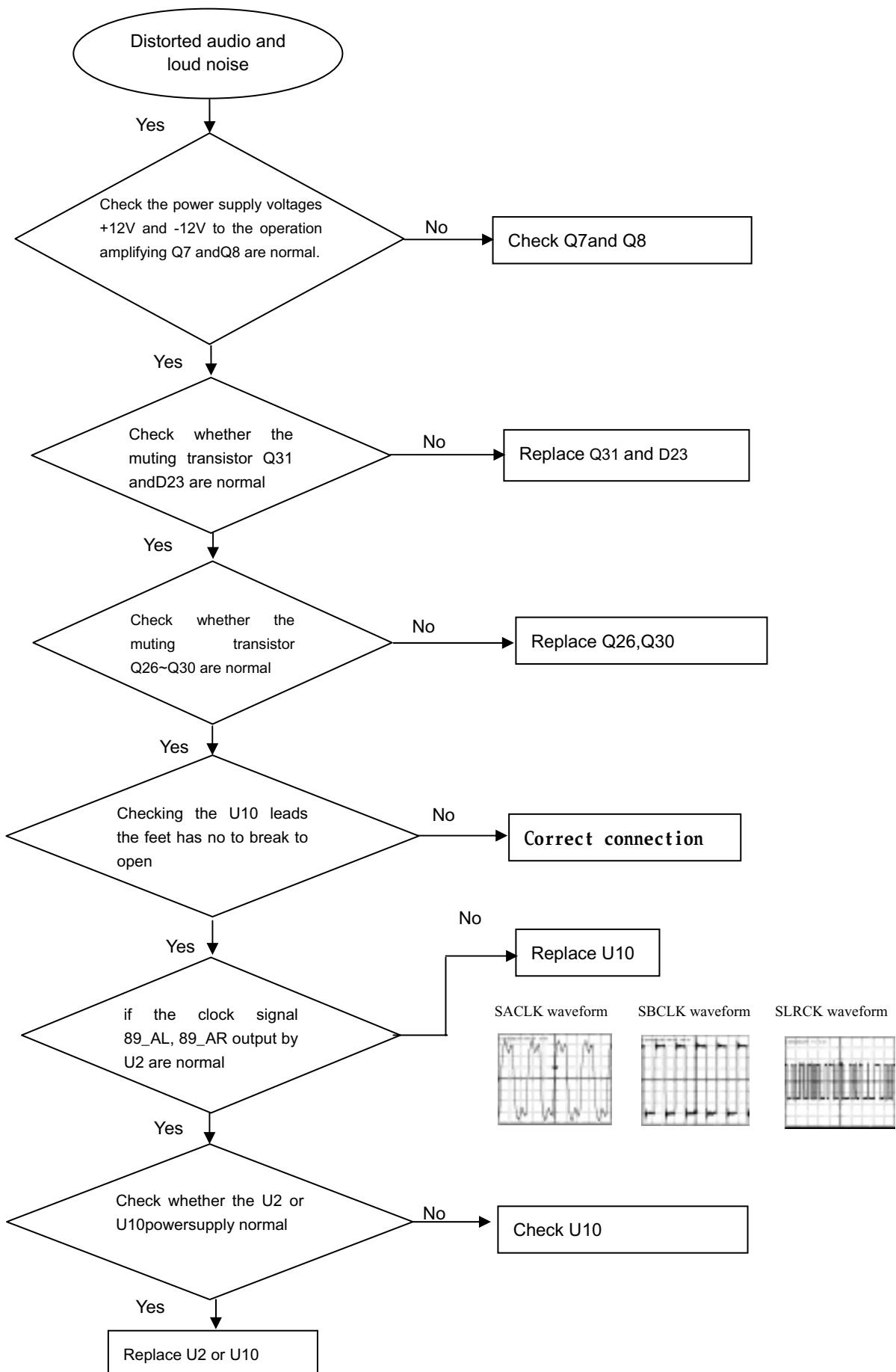


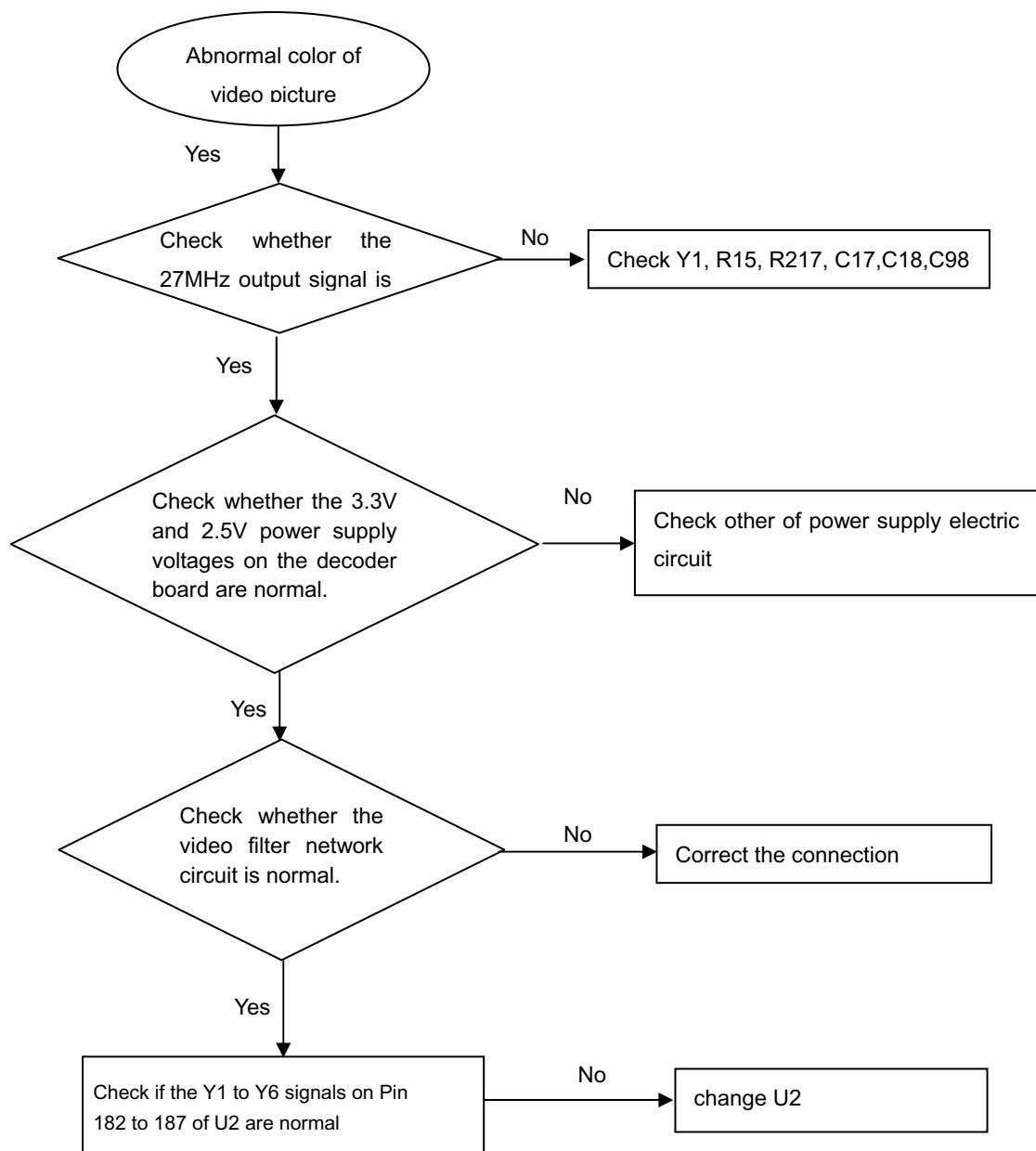
Disc cannot be read.



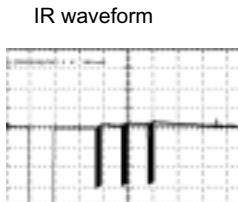
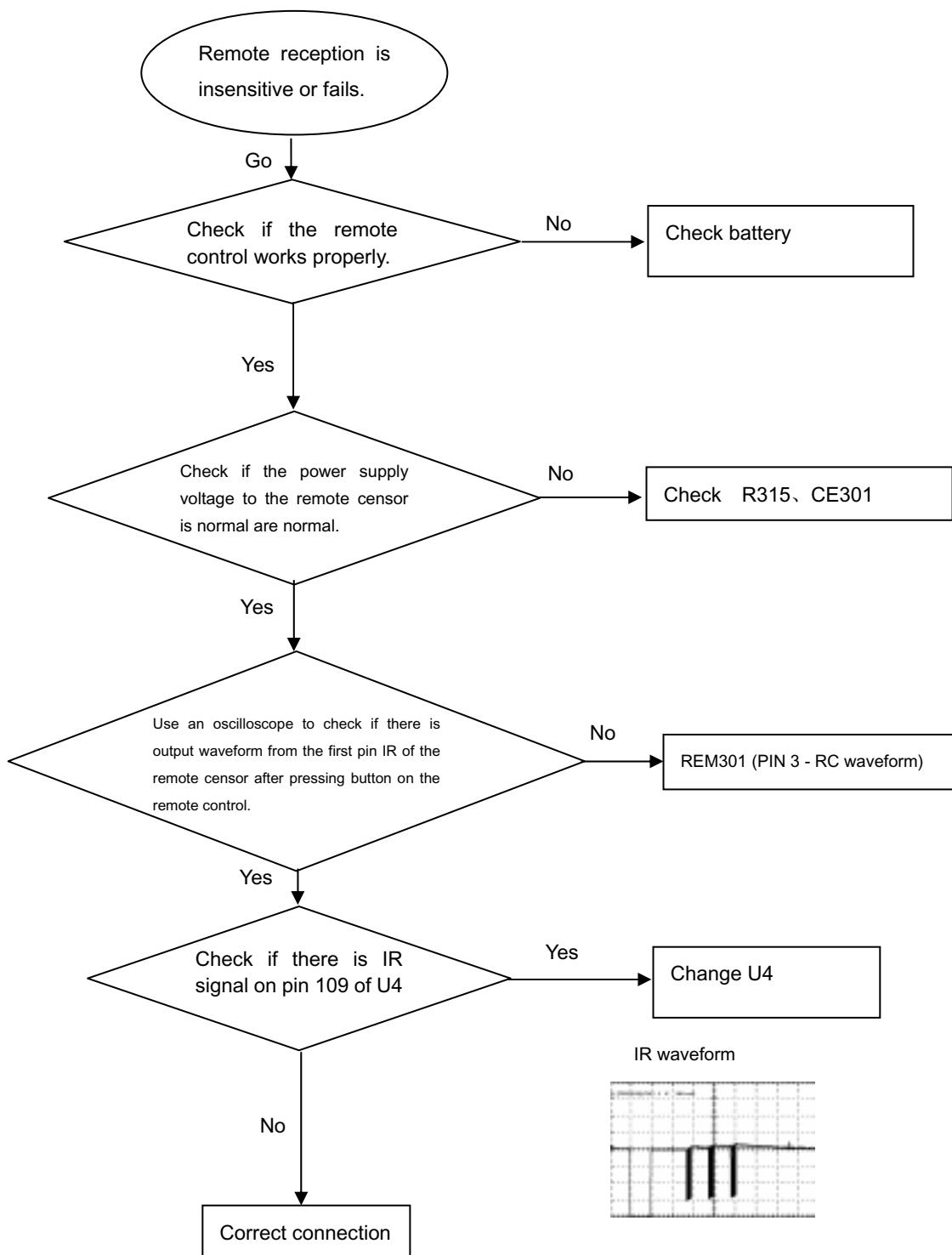
Only DVD disc or only disc except DVD can be played

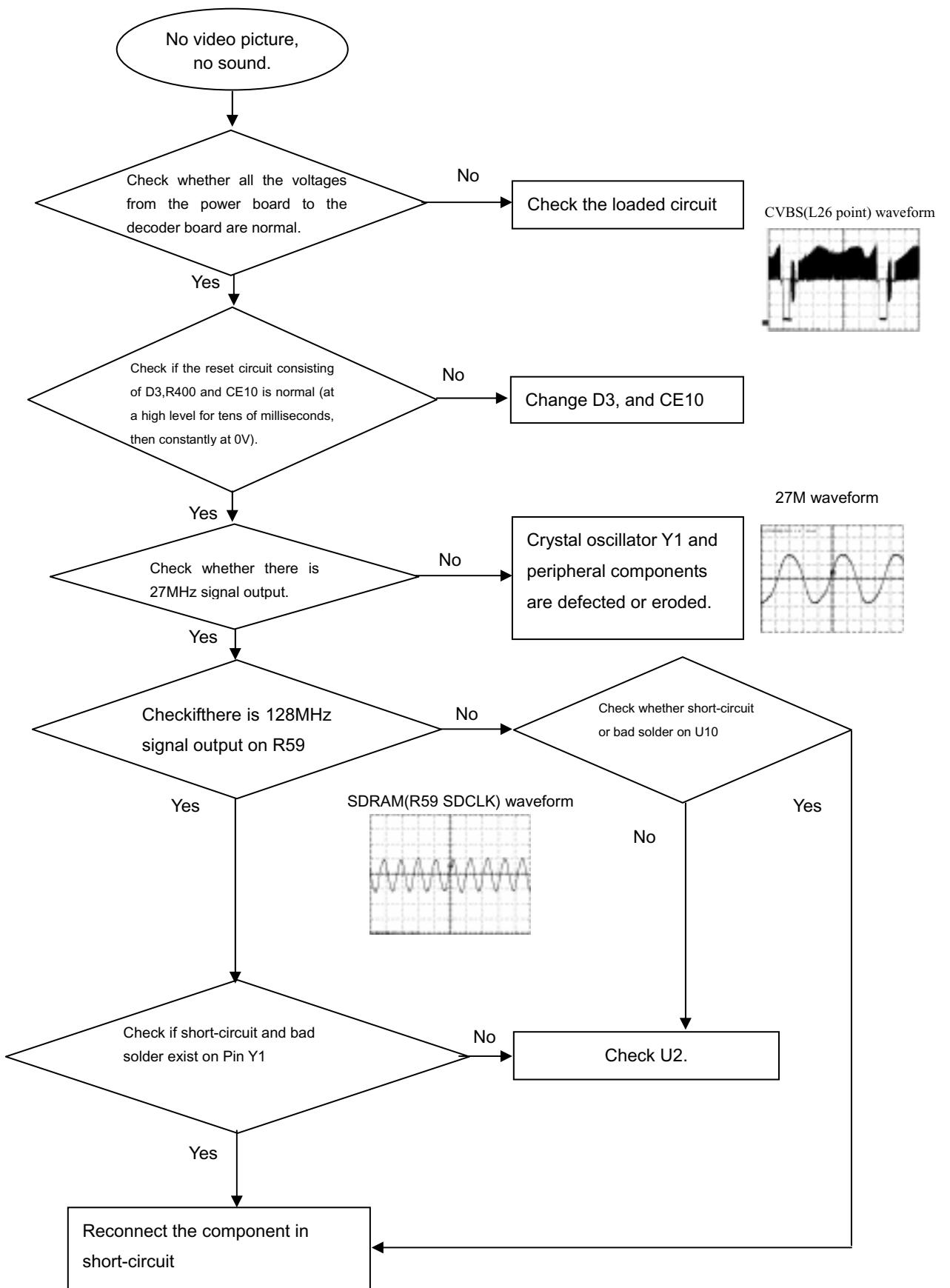
No display on LED, and buttons do not work

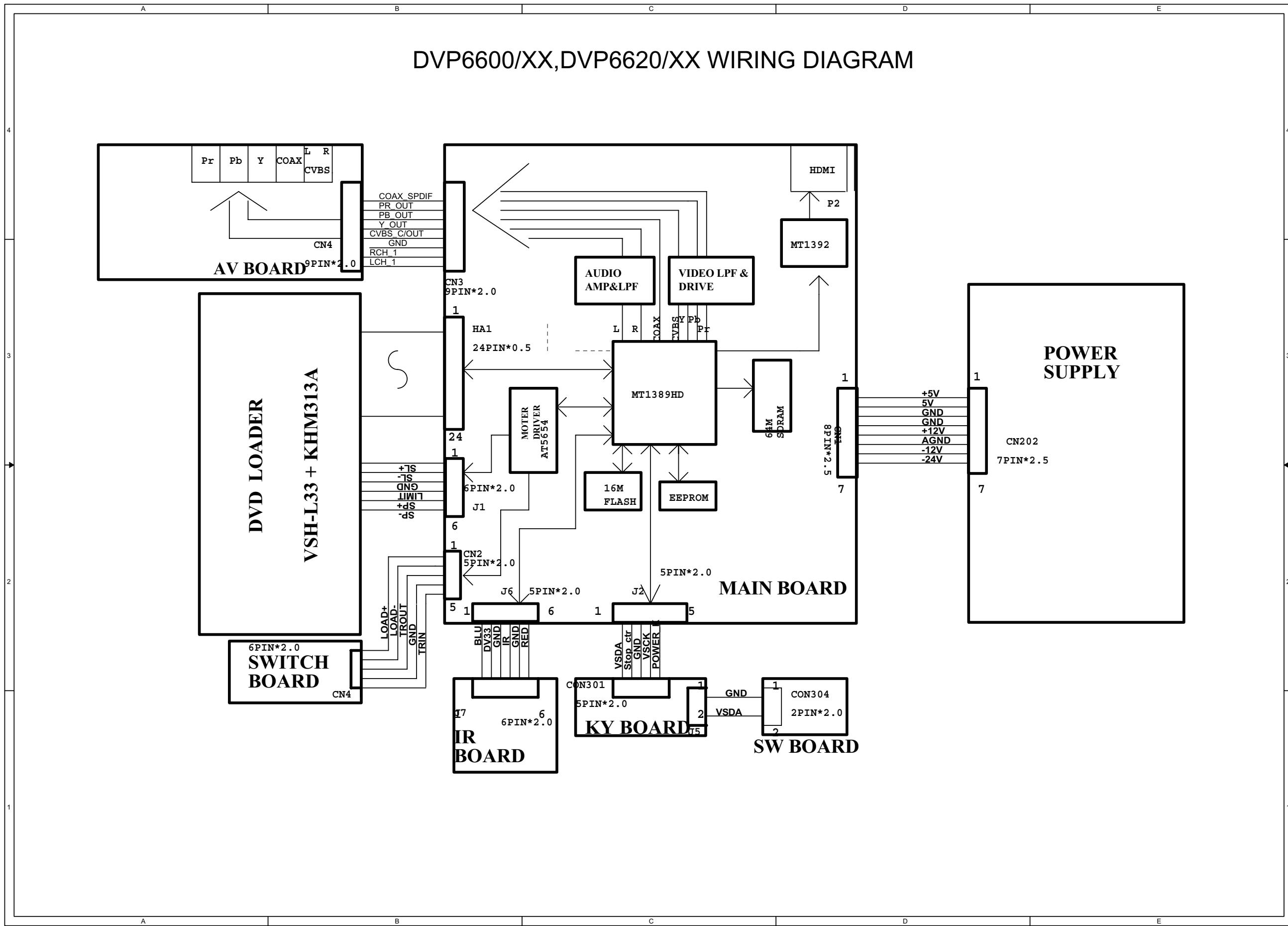
Distorted audio and loud noise

Abnormal color of video picture

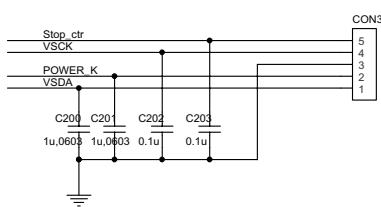
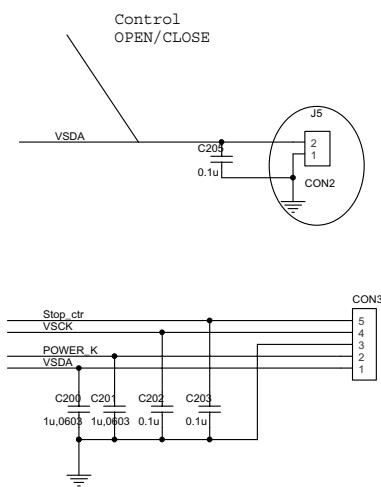
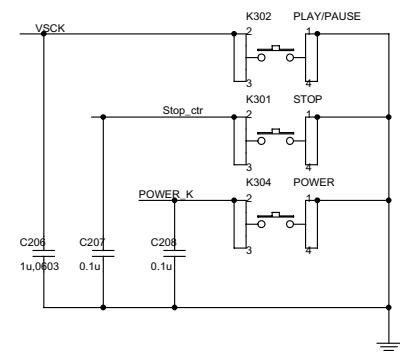
Remote reception is insensitive or fails.

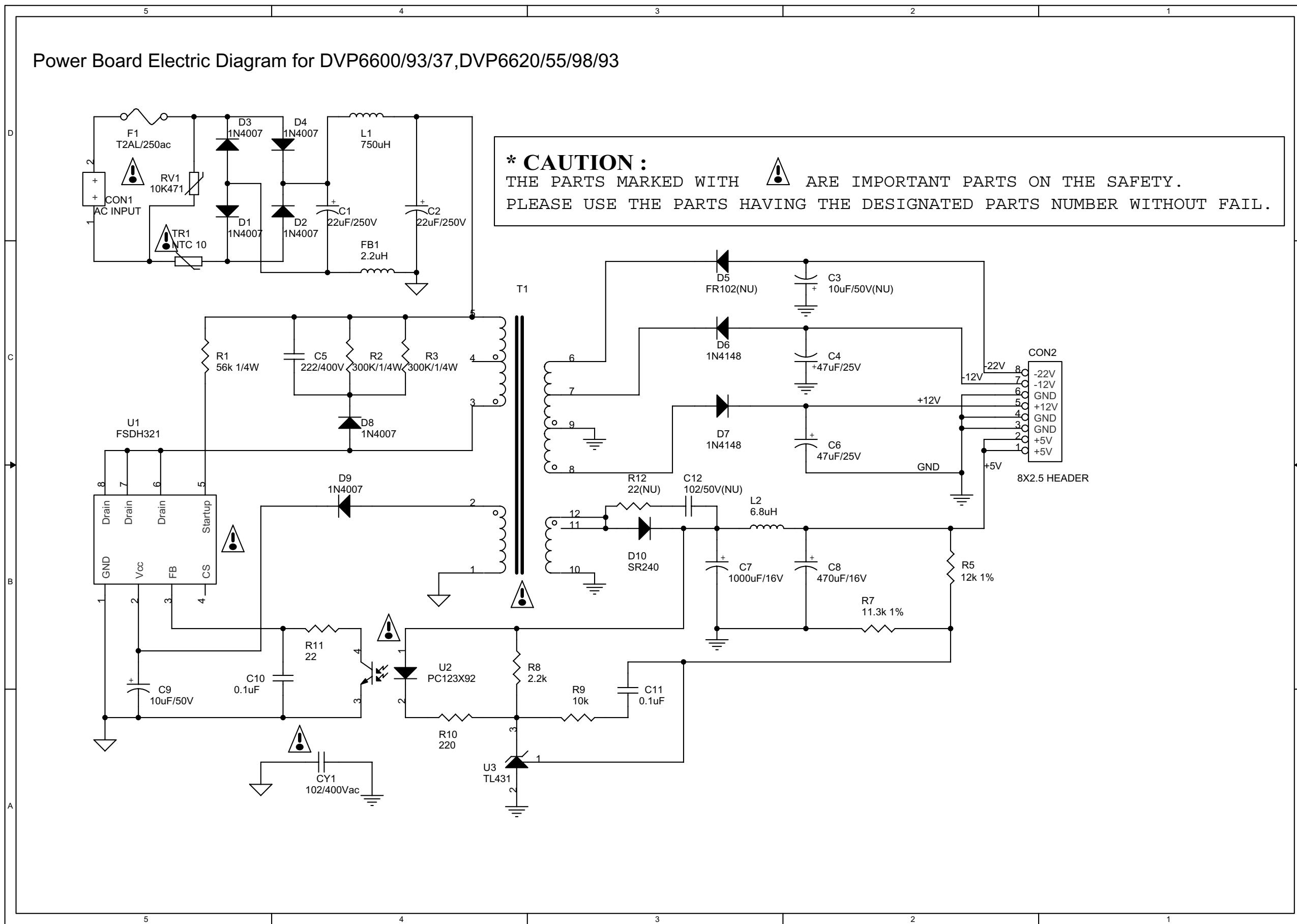


No video picture, no sound.



Control Board Electric Diagram for DVP6600/93/37,DVP6620/55/98/93

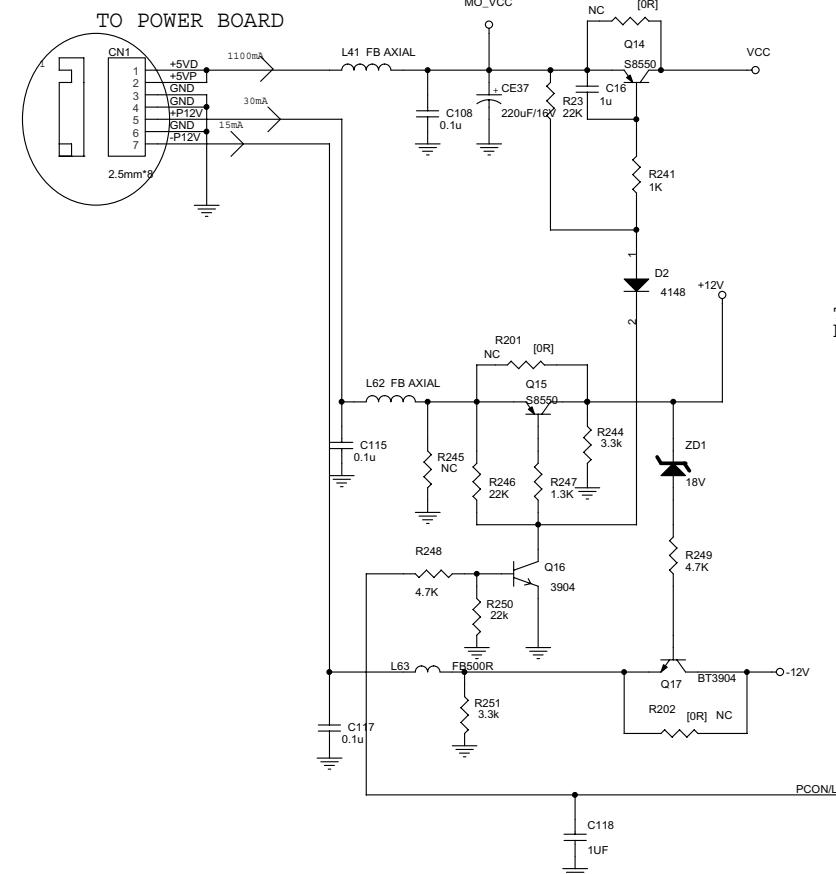




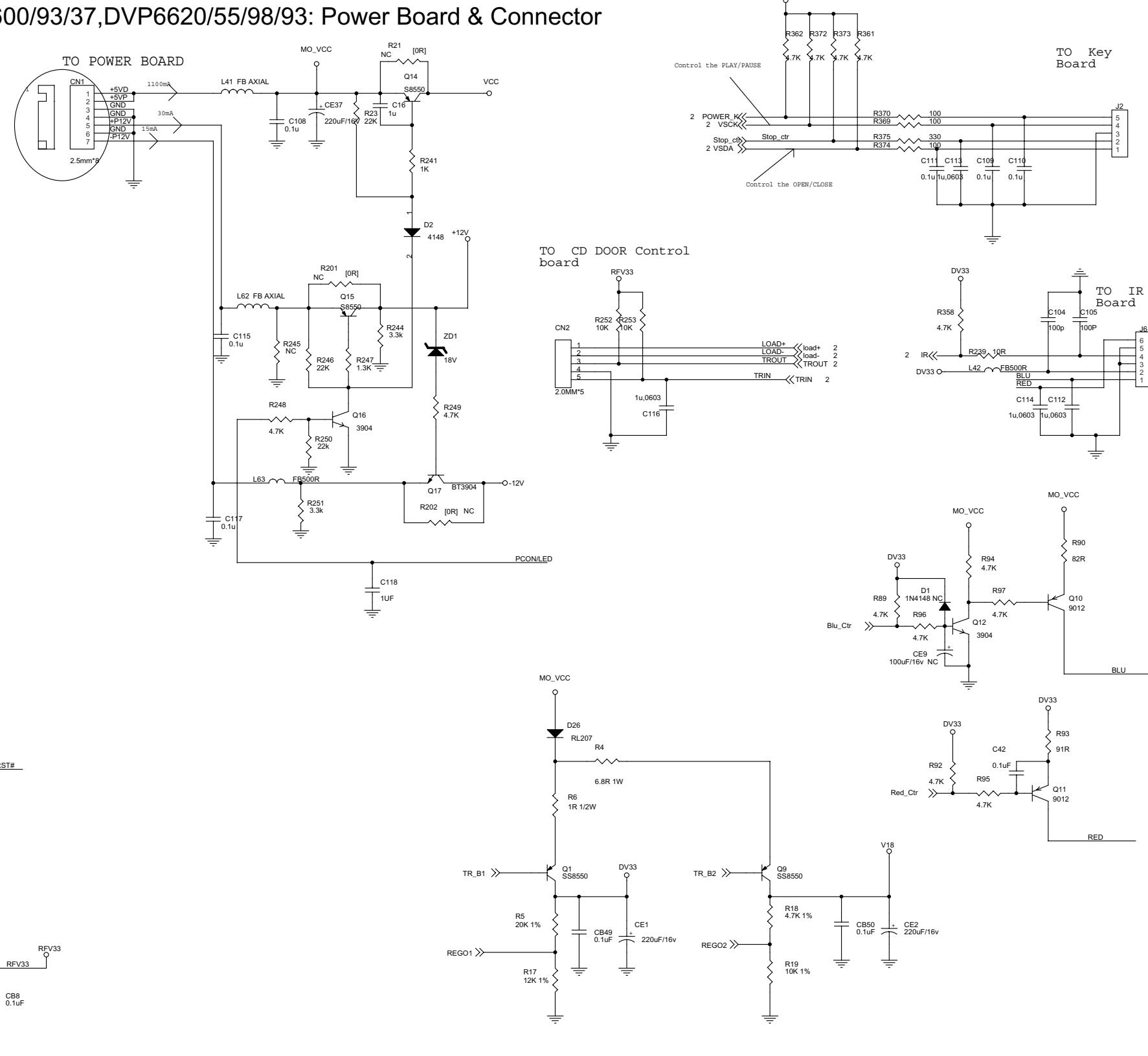
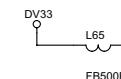
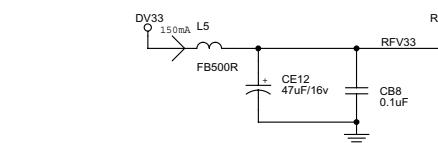
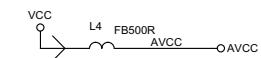
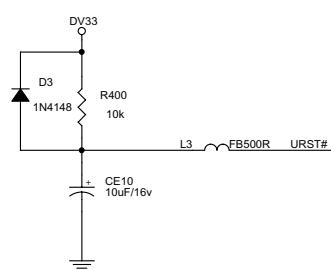
Main Board Electric Diagram for DVP6600/93/37,DVP6620/55/98/93: Power Board & Connector

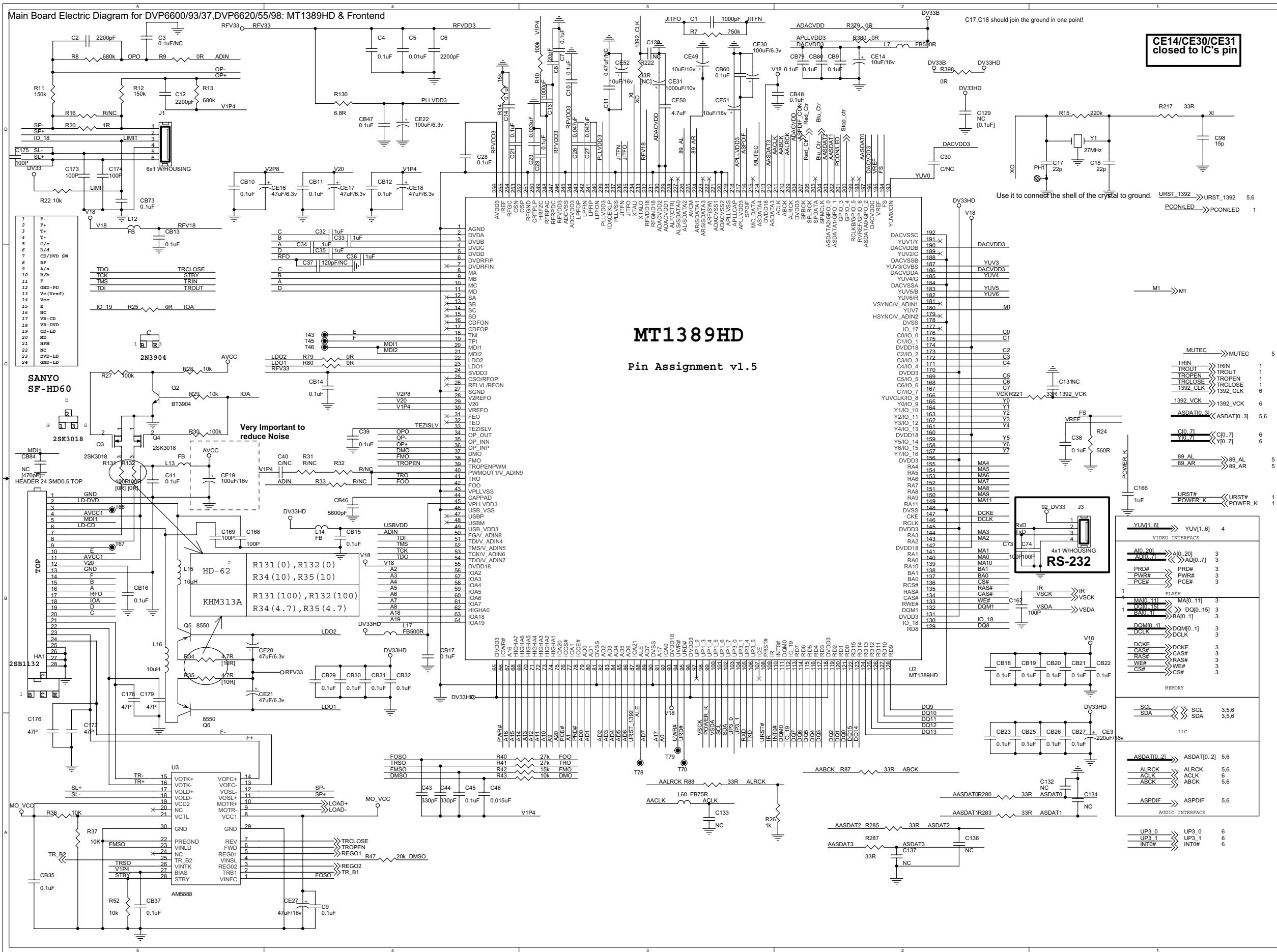
**MT1389HD (LQFP256) DVD MP Board for SANYO HD62/SONY KHM313AAAPUH w/MT1392 HDMI
MD0278**

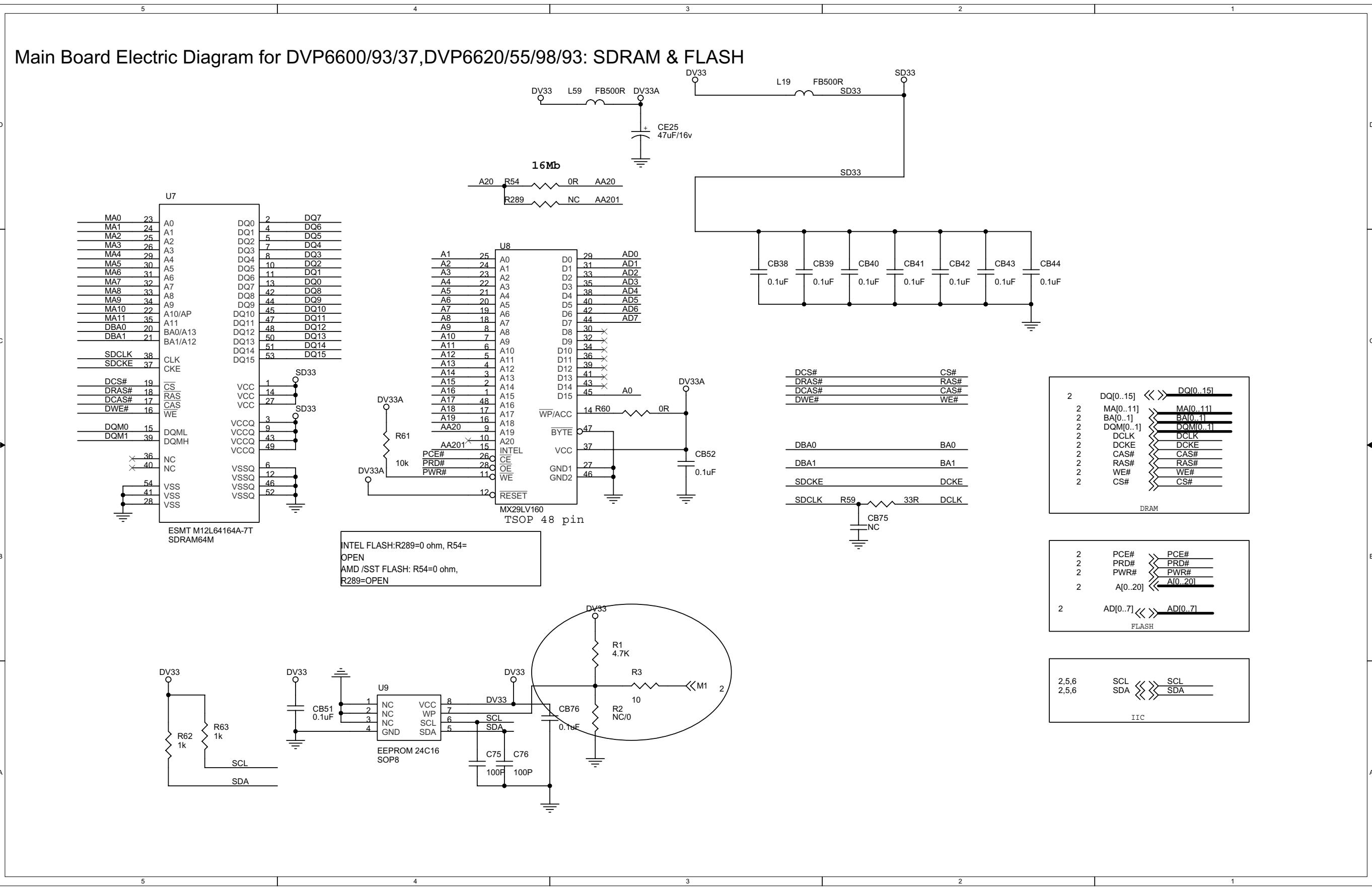
NAME	TYPE	DEVICE
VCC	Digital 5V	SUPPLY
DV33	Digital 3.3V	MT1389E
RFV33	Servo 3.3V	MT1389E
AV33	Laser Diode 3.3V	
V18	Digital 1.8V	MT1389E
SD33	Digital 3.3V	SDRAM
+12V	Audio +12V	OP AMP.
-12V	Audio -12V	OP AMP.
AVDD5	Audio 5V	Audio DAC
DVDD3	Audio 3.3V	Audio DAC



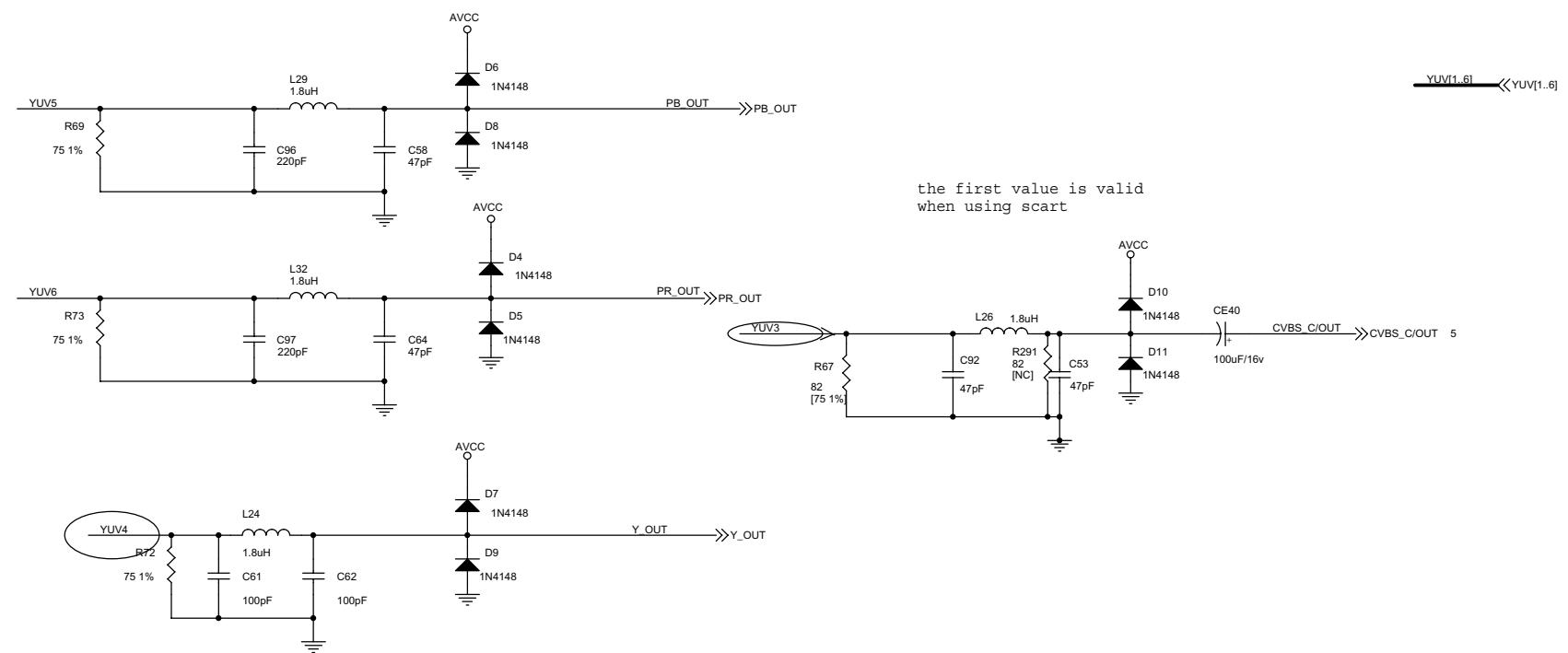
RESET Circuit



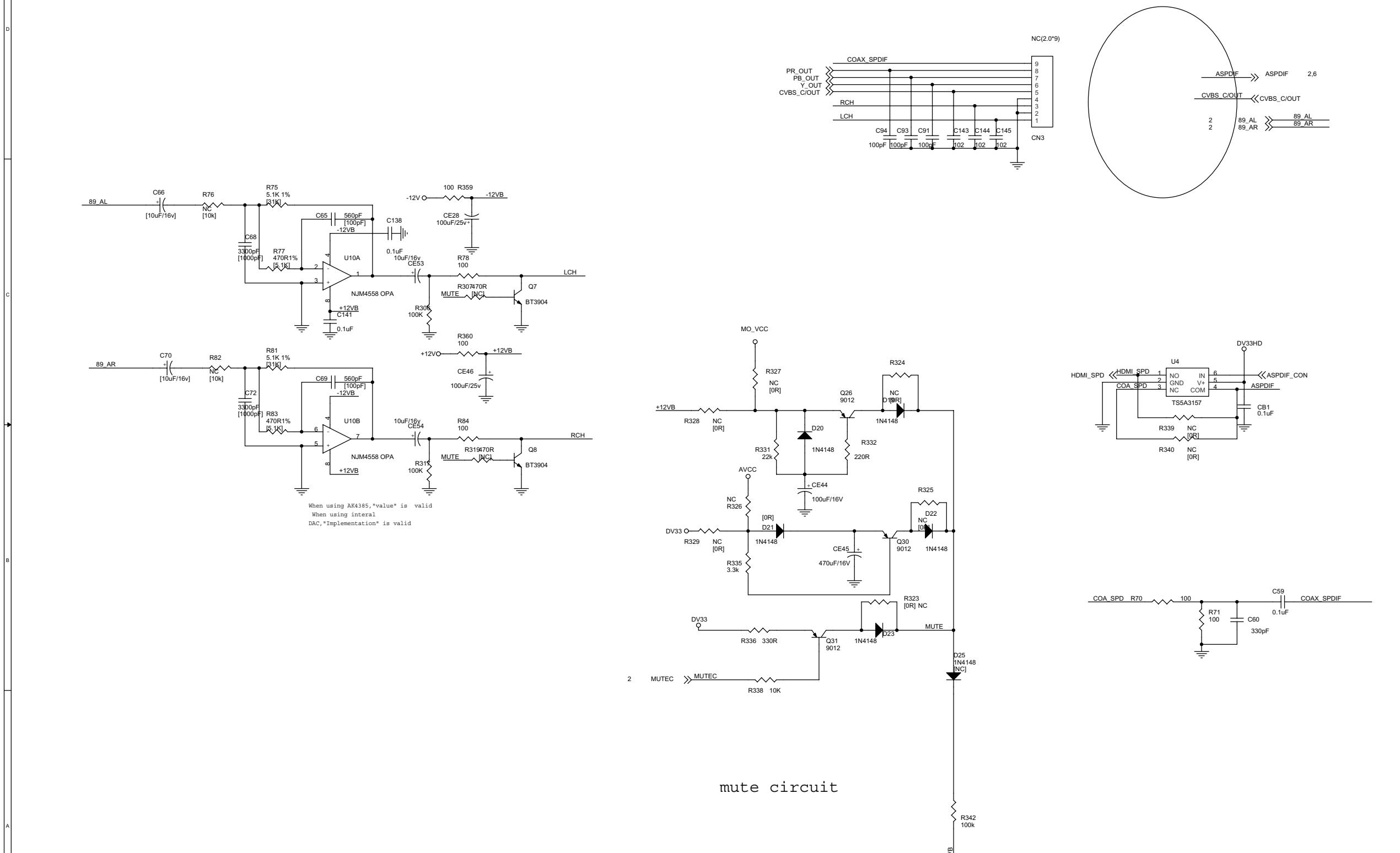




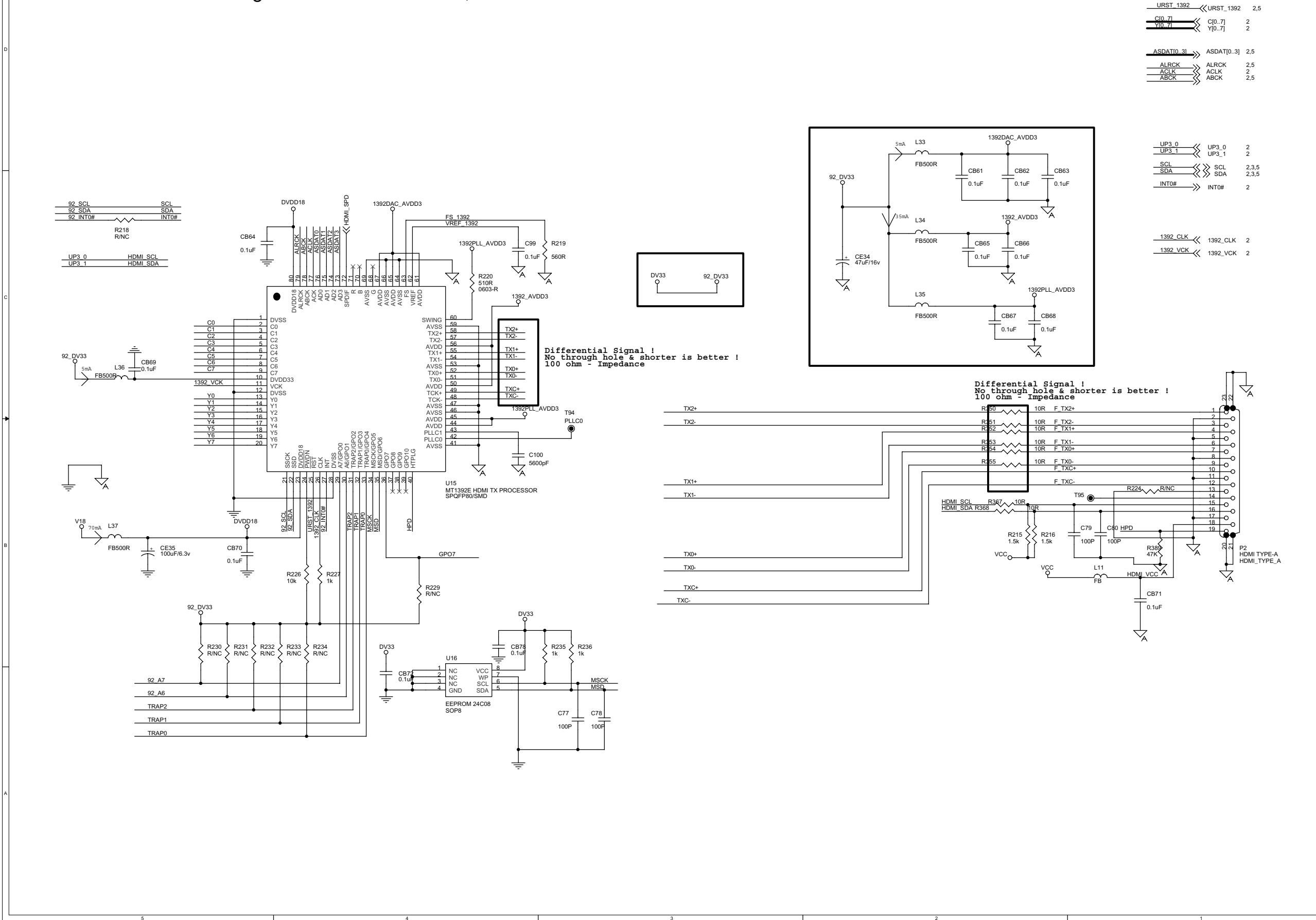
Main Board Electric Diagram for DVP6600/93/37,DVP6620/55/98/93: VIDEO OUT



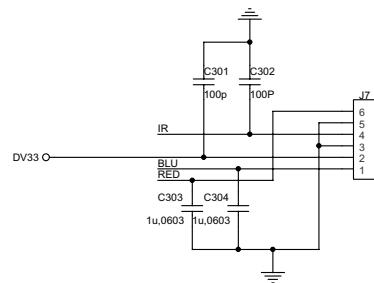
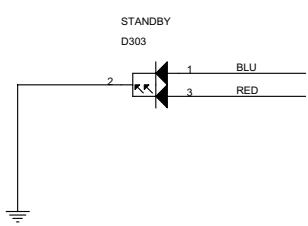
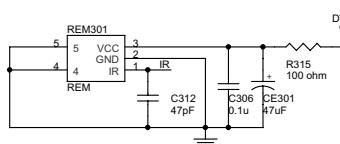
Main Board Electric Diagram for DVP6600/93/37,DVP6620/55/98/93:AUDIO OUT

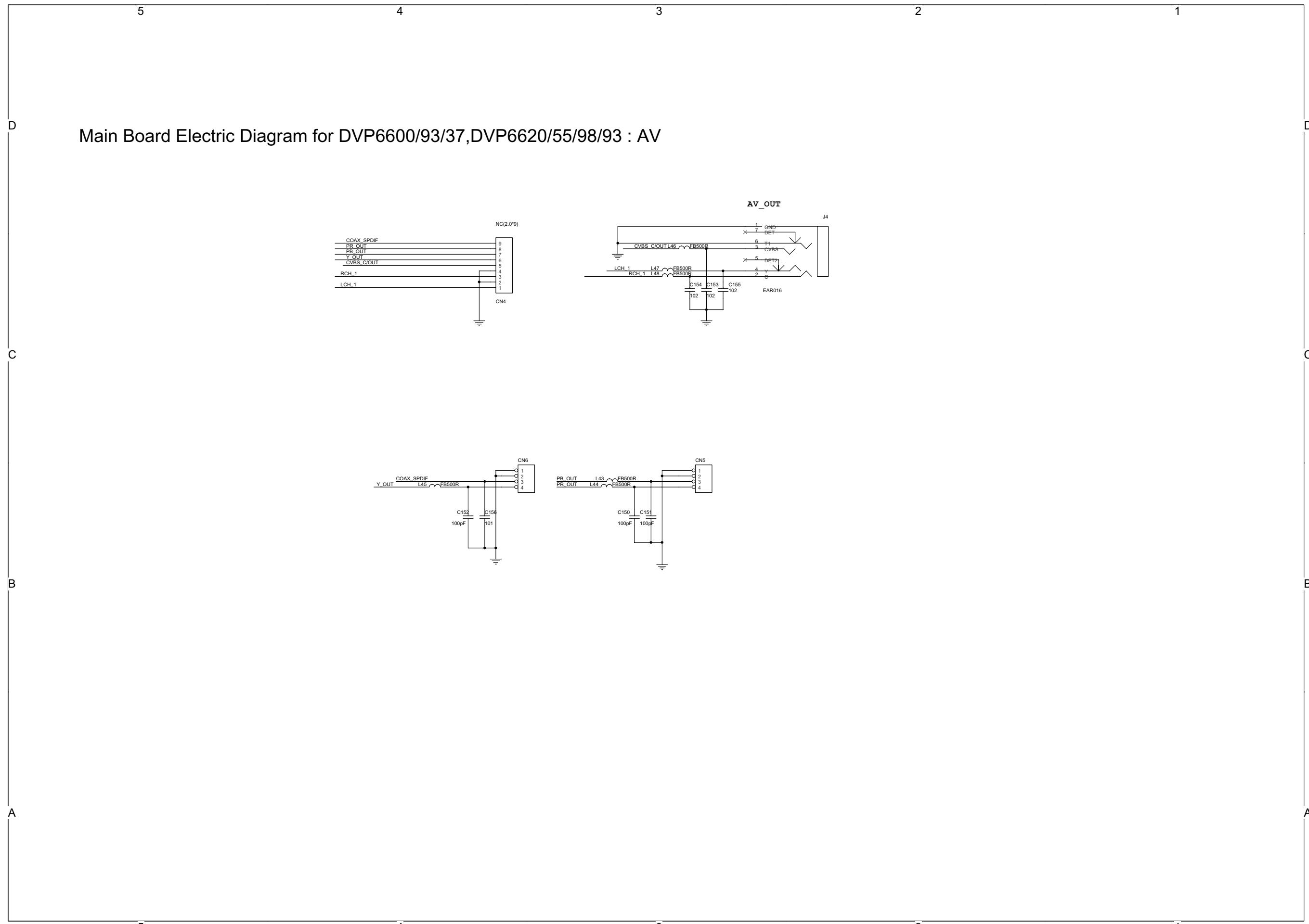


Main Board Electric Diagram for DVP6600/93/37,DVP6620/55/98/93: HDMI OUT MT1392&KARAOK



Main Board Electric Diagram for DVP6600/93/37,DVP6620/55/98/93: IR





5

4

3

2

1

D

D

C

C

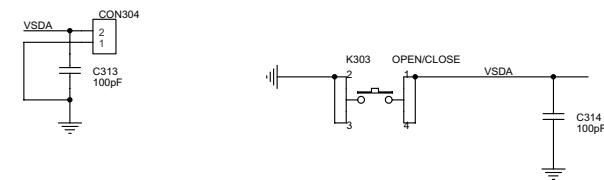
B

B

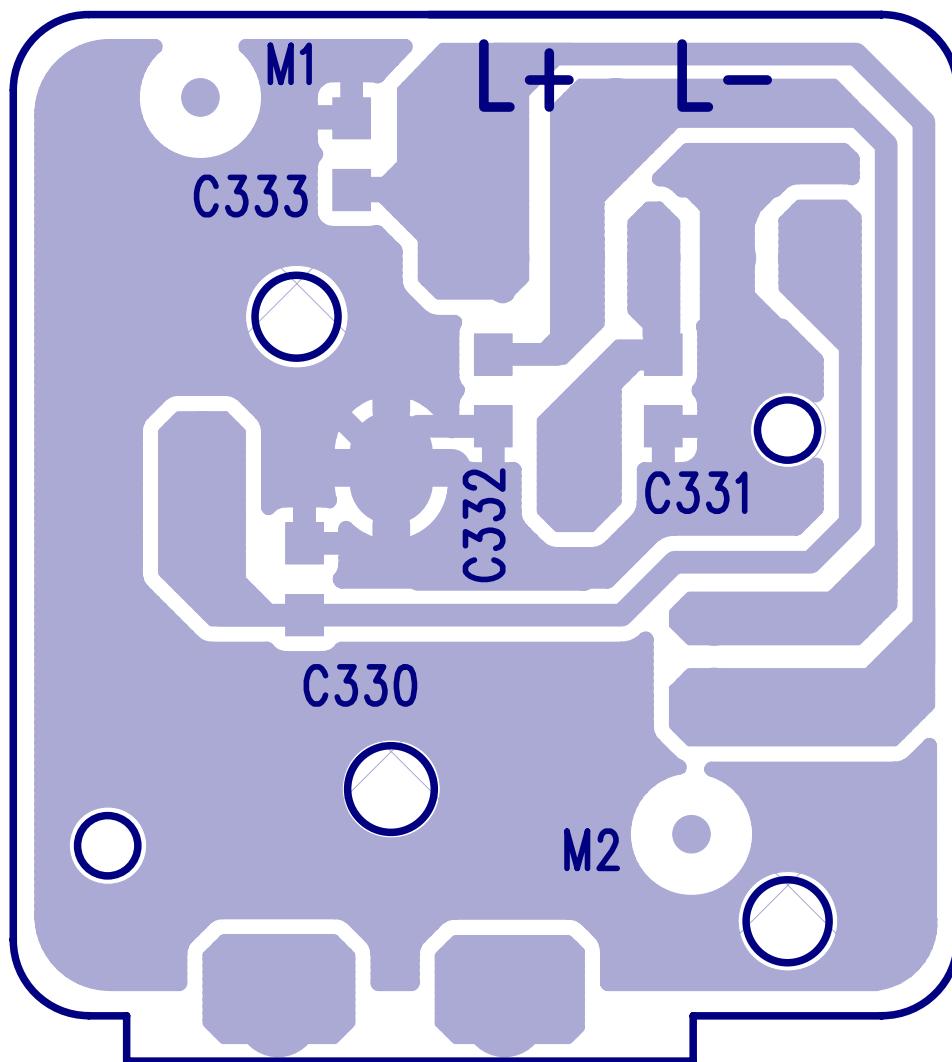
A

A

Main Board Electric Diagram for DVP6600/93/37,DVP6620/55/98/93 : OPEN/CLOSE KY



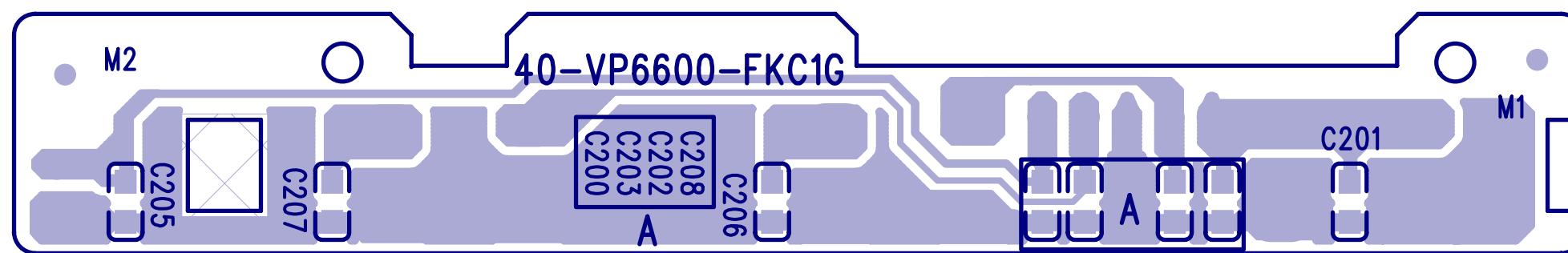
Switch Board Print_Layout (Bottom Side) for DVP6600/93/37,DVP6620/55/98/93



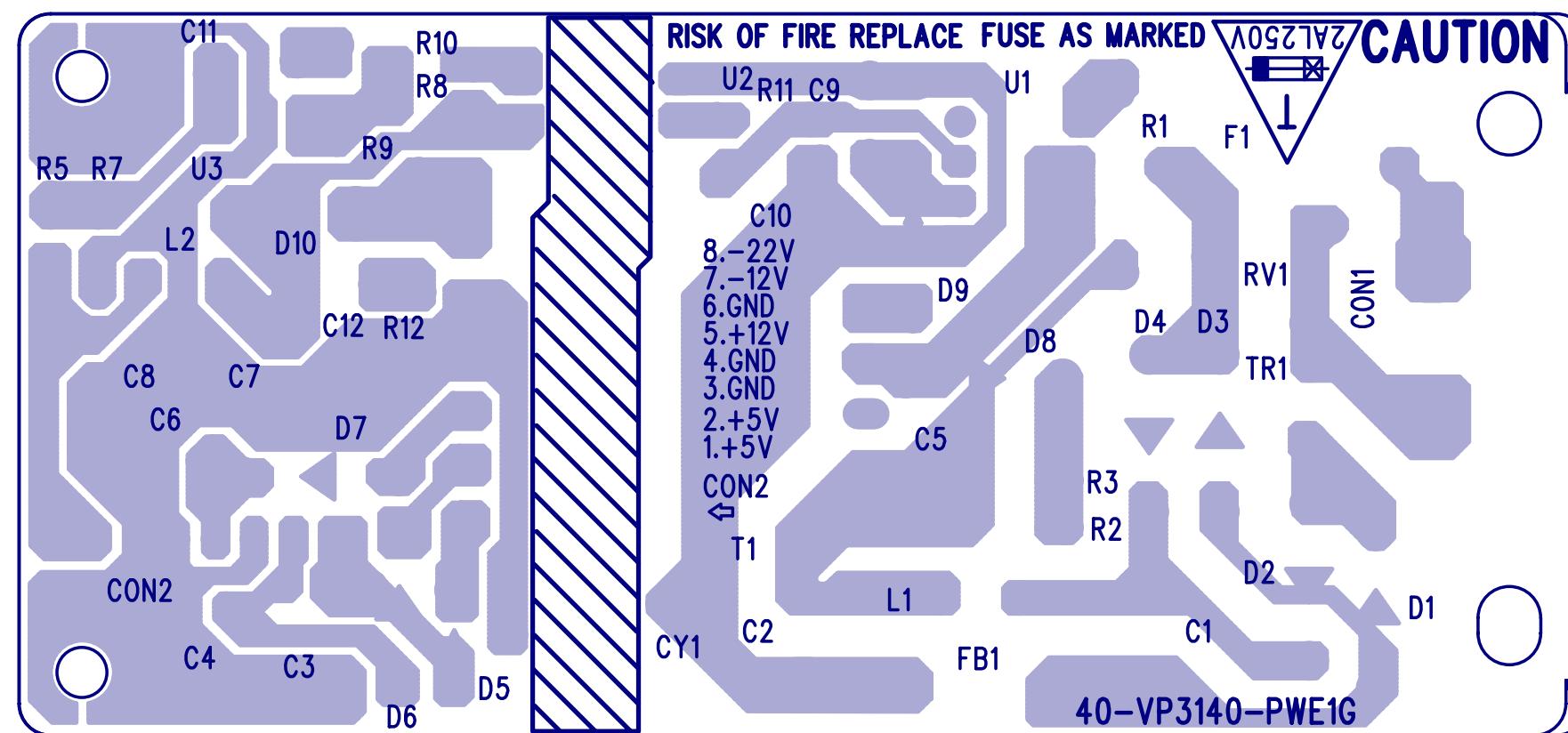
6-13

6-13

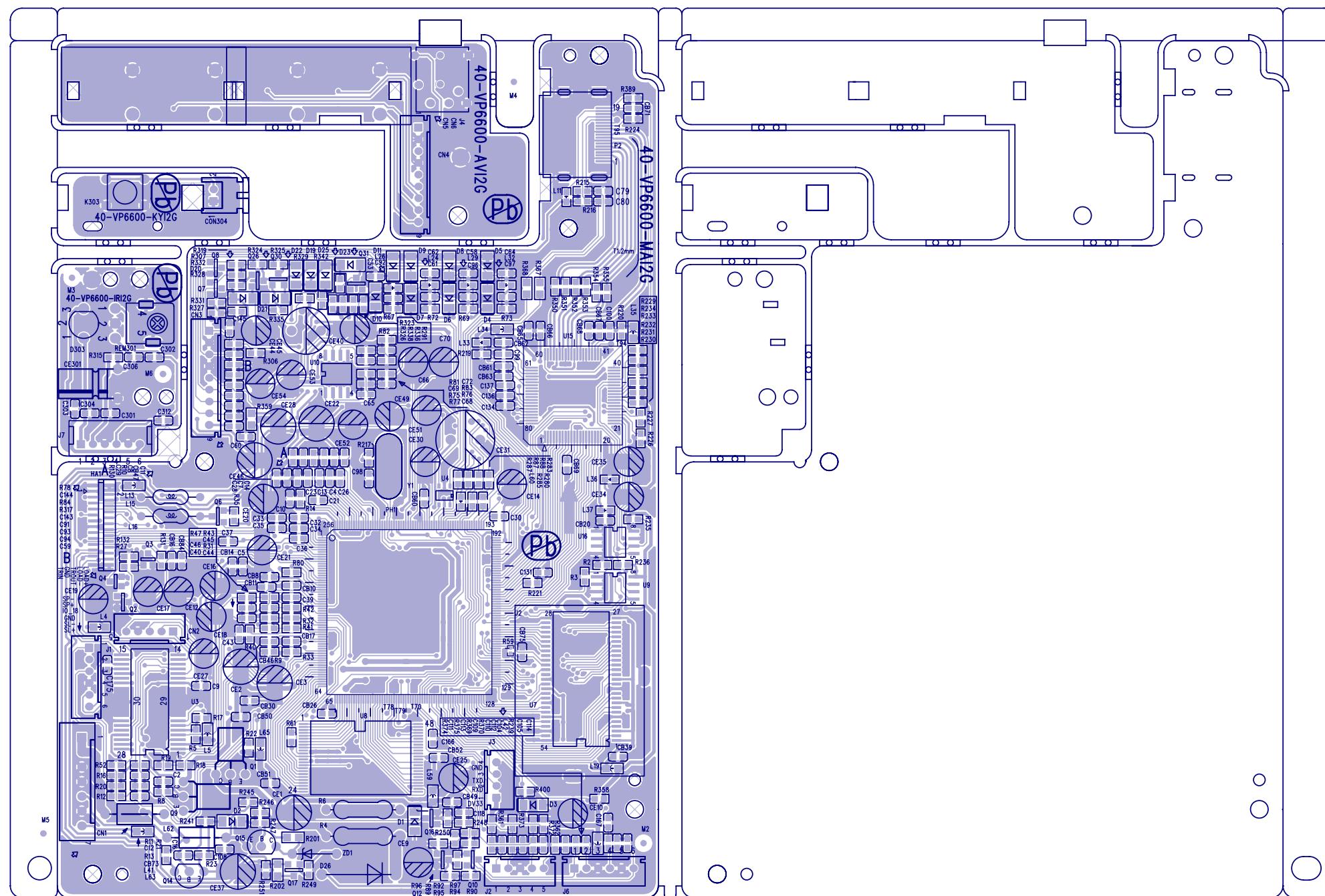
Control Board Print_Layout (Bottom Side) for DVP6600/93/37,DVP6620/55/98/93



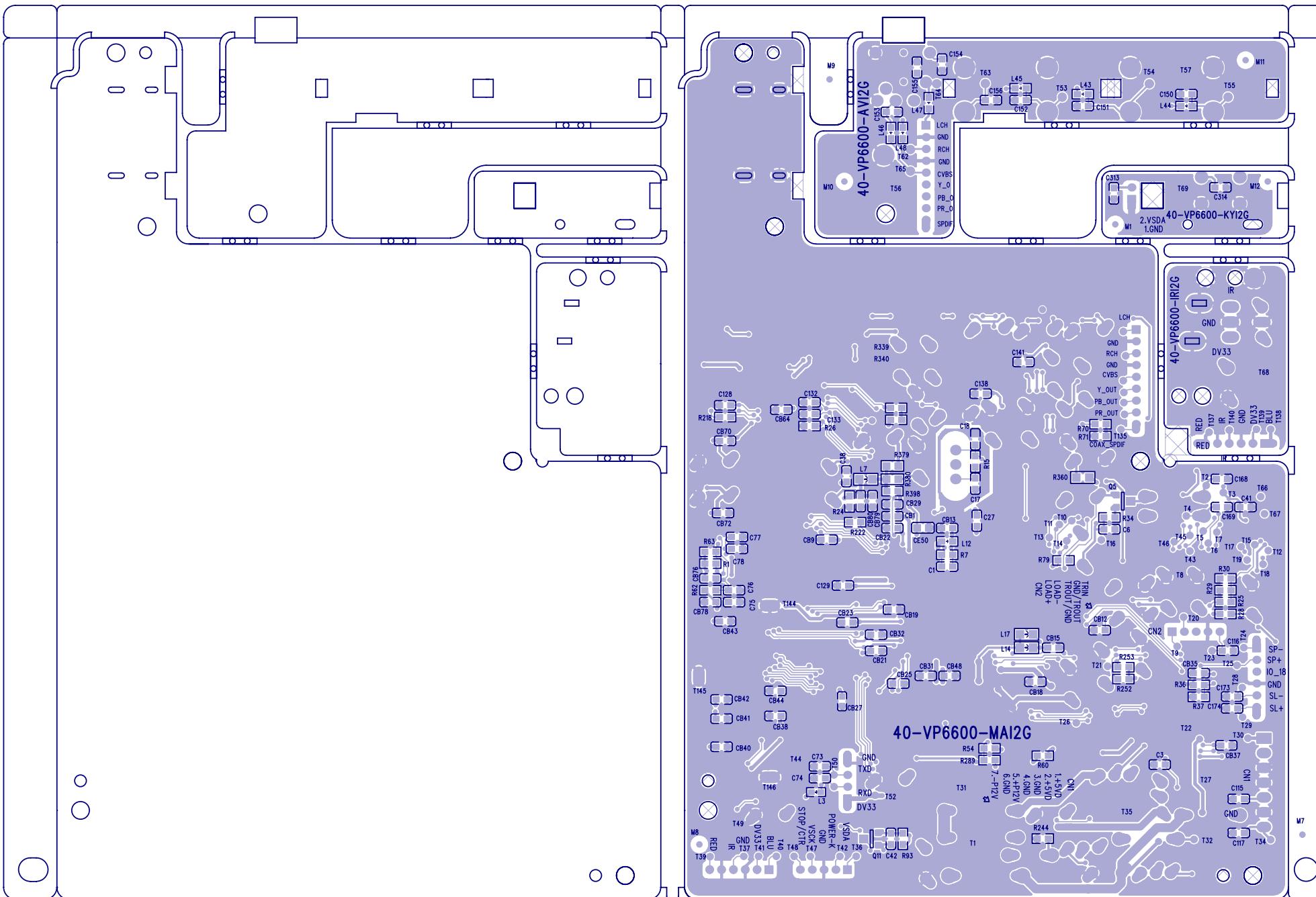
Power Board Print_Layout (Bottom Side) for DVP6600/93/37,DVP6620/55/98/93



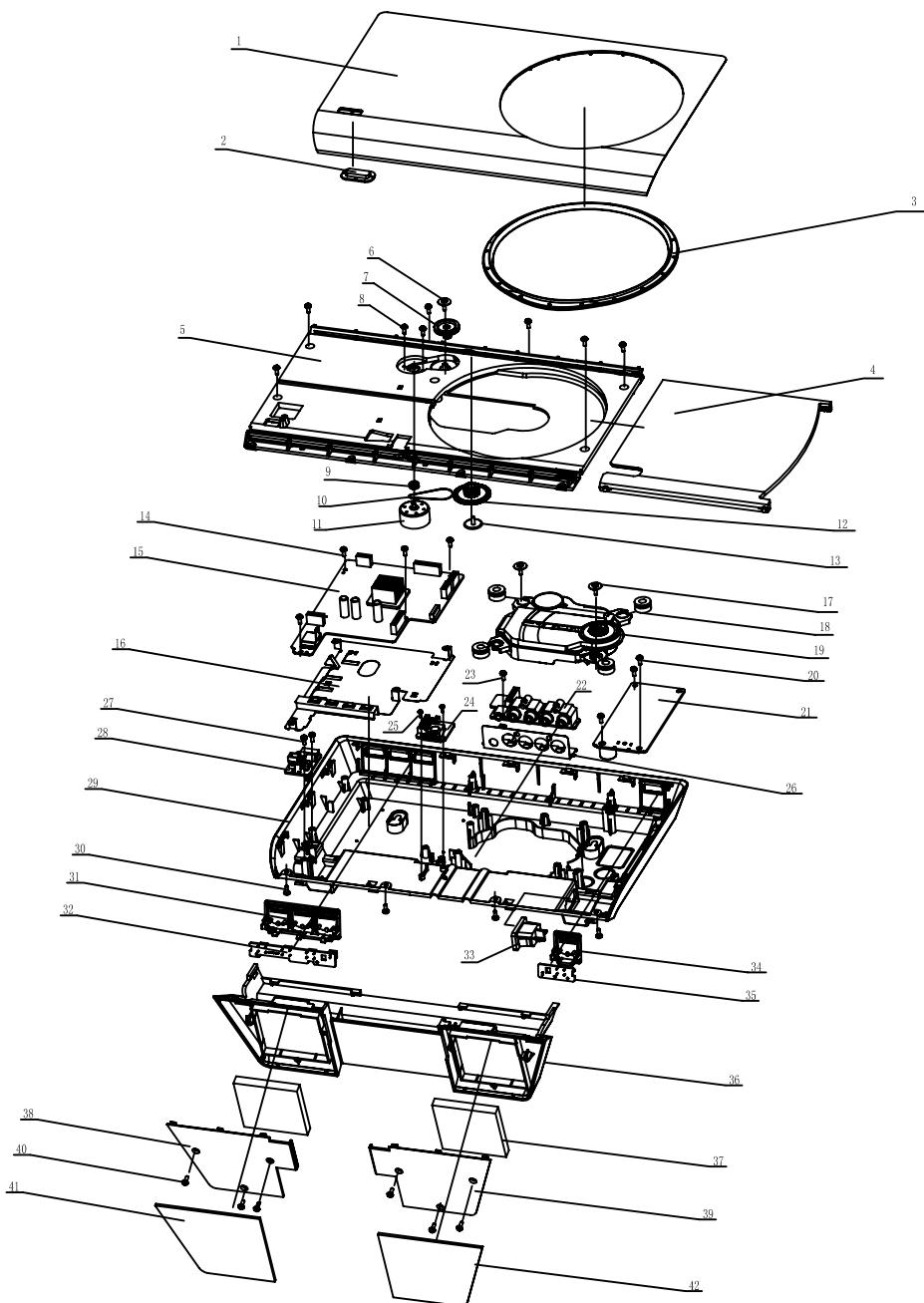
Main Board /AV Board / IR Board /Switch Board Print_Layout (Top Side) for DVP6600/93/37,DVP6620/55/98/93



Main Board /AV Board / IR Board /Switch Board Print_Layout (Bottom Side) for DVP6600/93/37,DVP6620/55/98/93



DVP6600/93/37,DVP6620/55/98/93 Mechanical Exploded View



It's a general Mechanical Exploded View for DVP6600/93/37, Detailed information please refer to Model set.

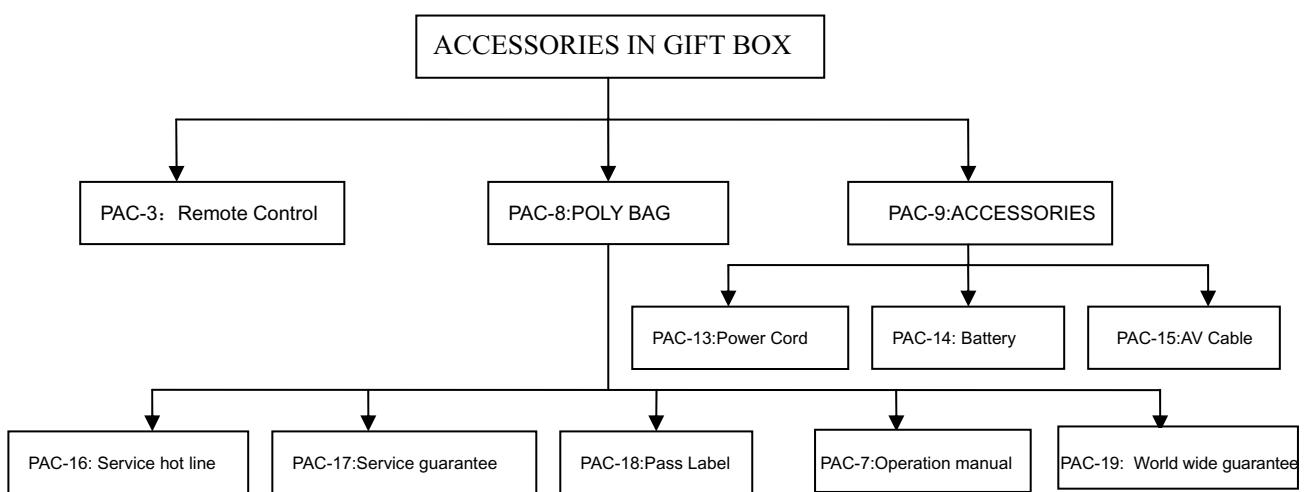
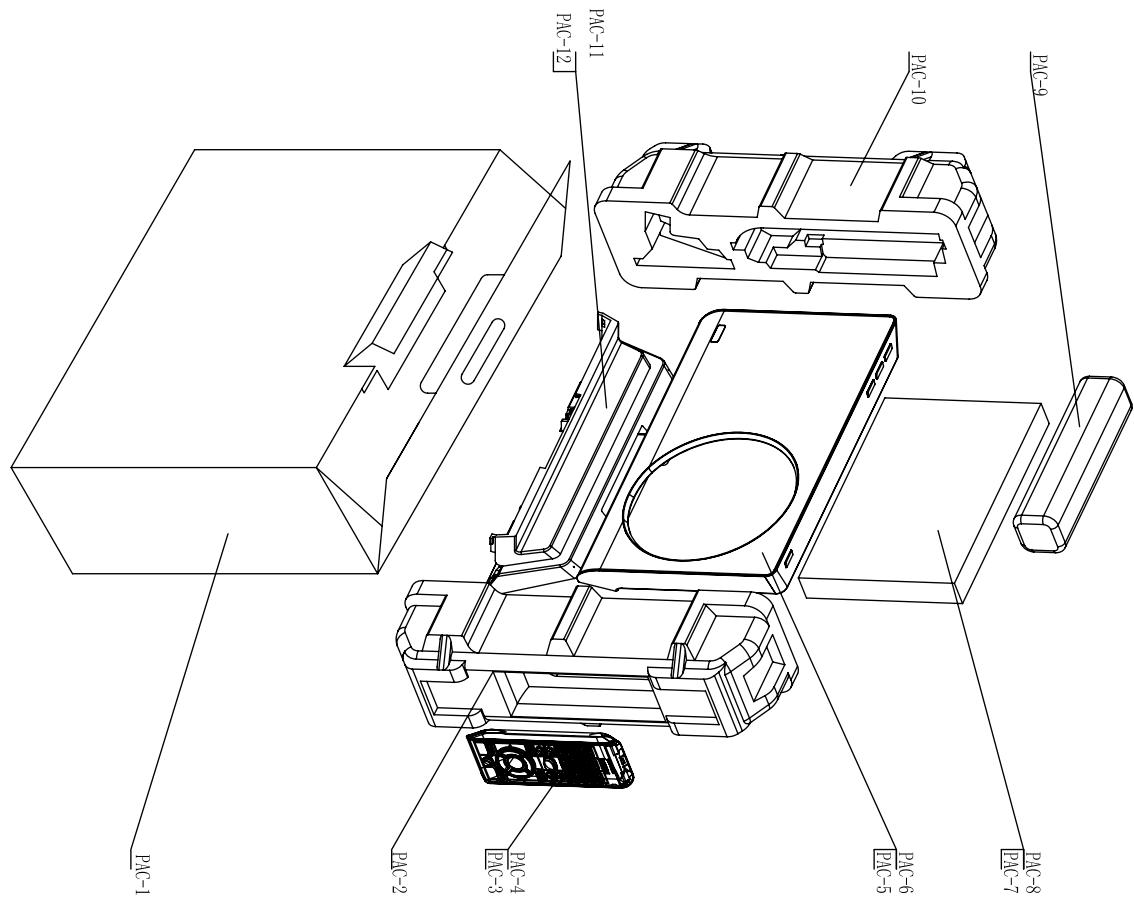
A1 is assembled component for location 1,2,3

A2 is assembled component for location 29,31,34 .

A3 is assembled component for location 36,37,38,39,40,41,42.

A4 is assembled component for location 4,5,6,7,8,9,10,11,12,13

DVP6600/93 Packing View



DVP6620/93 Spare Part List

Electrical PARTS LIST

No	12NC No.	Part Name	Q'ty
15	996510006348	ASSY- MAIN BD	1
18	996510006858	IR Board	1
19	996510015378	DVD LOADER(AHD OPU)	1
⚠ 21	996510006349	ASSY- PW BD	1
22	996510006350	AV BD	1
24	996510006353	ASSY- SW BD	1
32	996510006352	ASSY- SW BD	1
35	996510006351	ASSY- SW BD	1

MECHANICAL & ACCESSORIES PARTS LIST

No	12NC No.	Part Name	Q'ty
10	996510011365	STRAP	1
11	996510011366	MOTOR	1
12	996510011362	ATHEY WHEEL	1
3RCAM	996510007599	3RCA/M TO 3RCA/M L=1.5M	1
4	996510009931	CD DOOR	1
5	996510011744	Tray frame	1
6621	996510000409	FLEX CABLE	1
6622	996510006356	PH-6Y/JC-6Y,L=130	1
6623	996510006357	PH-5Y/JC20-5Y L=40	1
6624	996510006358	PH-9Y/SAN-9Y L=40	1
6625	996510001222	HS 6P PH-6Y/PH-6Y	1
7	996510011363	ATHEY WHEEL	1
9	996510011364	MOTOR WHEEL	1
A1	996510011361	Assy-Front Cover	1
A2	996510009932	Assy-Rear Panel	1
A3	996510007604	Assy-Bottom Socket	1
⚠ FUSE	996510001780	FUSE 2A 250V 5X20MM	1
PAC1	996510009930	DISPLAY BOX	1
PAC10	996510006860	RIGHT POLYFOAM	1
⚠ PAC13	996510009517	POWER CORD	1
PAC15	996510008503	AUDIO CABLE	1
PAC16	996500042132	SERVICE HOT LINE	1
PAC17	996500033761	SERVICE GUARANTEE	1
PAC19	996510008988	WORLD-WIDE GUARANTEE	1
PAC2	996510006859	LEFT POLYFOAM	1
PAC3	996510007598	REMOTE CONTROL	1
PAC7	996510009929	OPERATION MANUAL	1
PAC8	996510008699	POLYFOAM	1
QSGC	996510009102	QUG IN S-CHINESE	1
QSGE	996510009103	QUG IN UK-ENGLISH	1

DVP6600/93/37 and DVP6620/55/98 Spare Part List

ENCASING & ACCESSORIES PARTS LIST				SCREW LIST				
	No	12NC	Part Name	Q'ty	No	12NC	Part Name	Q'ty
	A1	996510006364	Ass'y-Top Cover for DVP6600/93/37	1	-	996510008699	POLYBAM for DVP6600/93 DVP6620/55/98	1
			Ass'y-Top Cover for DVP6620/98		D-BOX	996510007601	DISPLAY BOX for DVP6620/55	1
		996510007603	Ass'y-Top Cover for DVP6620/55			996510007608	DISPLAY BOX for DVP6620/98	
4	996510006363	CD Door for DVP6600/93/37	1				DISPLAY BOX for DVP6600/37	
		996510009931	CD DOOR for DVP6620/55/98			996510008700	DISPLAY BOX for DVP6600/93	
	A4	996510006367	OTHER PART for DVP6600/93	1	⚠	-	POWER CORD for DVP6620/55	1
		996510006367	OTHER PART for DVP6600/37			996510001537	POWER CORD for DVP6620/98	
		996510007606	OTHER PART for DVP6620/55/98			996510006371	POWER CORD for DVP6600/37	
15	996510006348	Main Board for DVP6600/93,DVP6620/55/98	1	SCREWS				
16	-	Shield for DVP6600/37	1	13	-	SCREW		1
		Shield for DVP6620/55		14	-	S/T SCREW B 2.6 X 8 BF		4
18	-	Rubber PAD	4	17	-	SCREW		2
19	996500035358	DVD Loader for DVP6600/93,DVP6620/55/98	1	20	-	S/T SCREW B 3 X 8 BF		3
⚠ 21	-	Power Board for DVP6600/37	1	23	-	S/T SCREW B 3 X 8 BF		1
	996510006349	Power Board for DVP6600/93,DVP6620/55/98		25	-	Binding Head Screw		1
22	996510006350	AV Board for DVP6600/93/37,DVP6620/55/98	1	27	-	S/T SCREW B 2.6 X 8 BF		2
24	996510006353	ASSY- SW BD for DVP6600/93/37,DVP6620/55/98	1	30	-	S/T SCREW		4
26	-	Shield	1	Connector parts&FUSE				
28	996510006858	IR Board for DVP6600/93, DVP6620/55/98	1	3RCA/M	996510007599	3RCA/M TO 3RCA/M L=1.5M for DVP6620/55/98		1
A2	996510006366	Ass'y-Rear Panel for DVP6600/93	1	3RCA/M	-	3RCA/M TO 3RCA/M L=1.5M for DVP6600/37		1
	-	Ass'y-Rear Panel for DVP6600/37		⚠ F1	996510001780	FUSE for DVP6600/93		1
	996510007605	Ass'y-Rear Panel for DVP6620/55/98		HA1	996510000409	HS 24PIN for DVP6600/93,DVP6620/55/98		1
32	996510006352	ASSY- SW BD for DVP6600/93/37,DVP6620/55/98	1	J7	996510006356	PH-6Y/JC-6Y,L=130 for DVP6600/93,DVP6620/55/98		1
33	-	Connector	1	6623	996510006357	PH-5Y/JC20-5Y L=40 for DVP6600/93,DVP6620/55/98		1
35	996510006351	ASSY- SW BD for DVP6600/93/37,DVP6620/55/98	1	6602	996510006398	PH-5Y/JC20-5Y L=40		1
A3	-	Ass'y-Bottom Socket for DVP6600/37/93	1	CN4	996510006358	PH-9Y/SAN-9Y L=40 for DVP6600/93,DVP6620/55/98		1
	996510007604	Ass'y-Bottom Socket for DVP6620/55/98			996510001222	PH-6Y/PH-6Y for DVP6600/93,DVP6620/55/98		1
Accessories parts								
RC	996510007598	REMOTE CONTROL for DVP6620/55/98	1					
	996510006354	REMOTE CONTROL for DVP6600/37/93						
⚠	996510006362	POWER CORD FOR DVP6600/93	1					
	996510008988	WORLD-WIDE GUARANTEE for DVP6600/93						
IFU	996510007600	OPERATION MANUAL for DVP6620/55	1					
	-	OPERATION MANUAL for DVP6600/37						
	996510007607	OPERATION MANUAL for DVP6620/98						
	996510006359	OPERATION MANUAL for DVP6600/93						

REVISION LIST

Version 1.0

* Initial release

Version 1.1

*Include /98/55 for DVP6620 models

*Updated the ENCASING&ACCESSORIES PARTS LIST

* Updated the MECHANICAL PARTS LIST

Version 1.2

*Correction of Partcode to Philips 12nc

Version 1.3

* Include /93 for DVP6620 model

*Updated the ENCASING&ACCESSORIES PARTS LIST

*Updated the MECHANICAL PARTS LIST