DVD Player

DVP3156, DVP3160K，DVP3166(K)

Service

Service

Service

DVP3160K/55/77/78

DVP3166/94,DVP3166X/94

DVP3166K/93

DVP3156/93

Service Manual

TABLE OF CONTENTS

Page

. Technical Specifications…….....1-2
. Safety Instruction, Warning & Notes…….....1-3
. Mechanical and Dismantling Instructions…….....2-1
. Region Code, Software Version& Upgrades…….....3-1
. Trouble Shooting Chart……..4-1
. Wiring Diagram……..……..5-1
. Electrical Diagrams and Print-layouts..……..……..... 6-1
. Set Mechanical Exploded View.....……..……..…… 7-1
. Revision List.....……..…….....8-1

Published by TCL-ET 0734 Service Audio Printed in The Netherlands Subject to modification

Version 1.1

CLASS 1
LASER PRODUCT

GB 3139 785 32471

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 DivX®	
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)		>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 210 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) Pb

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: 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 be remove the Front door assembly first. (Figure 2)
Note: Make sure to operate gently otherwise the guider would be damaged.

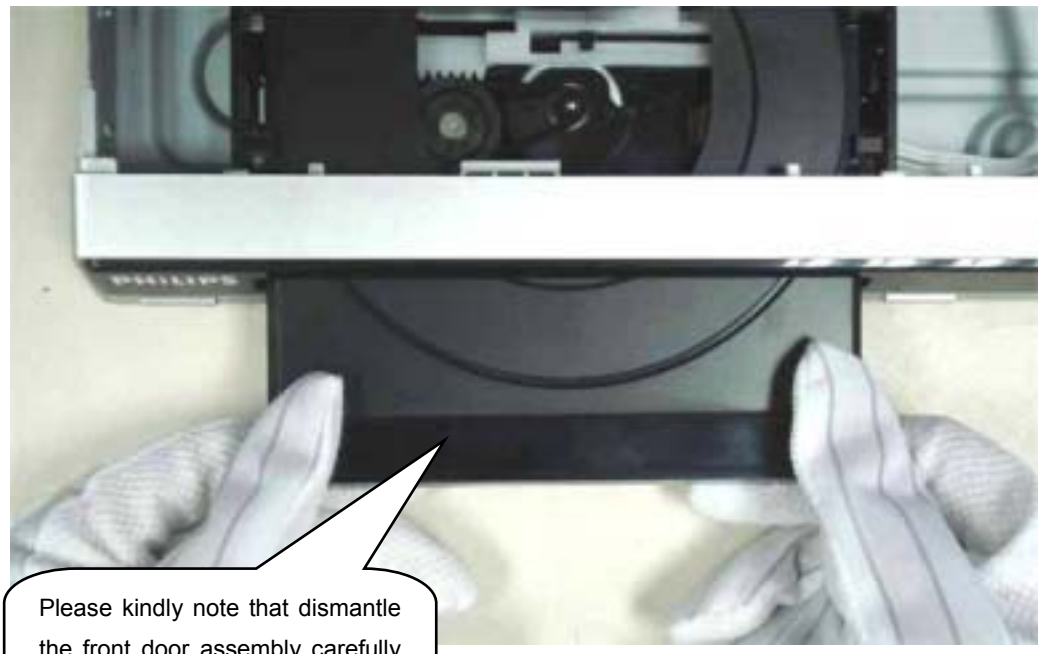


Figure 2

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.

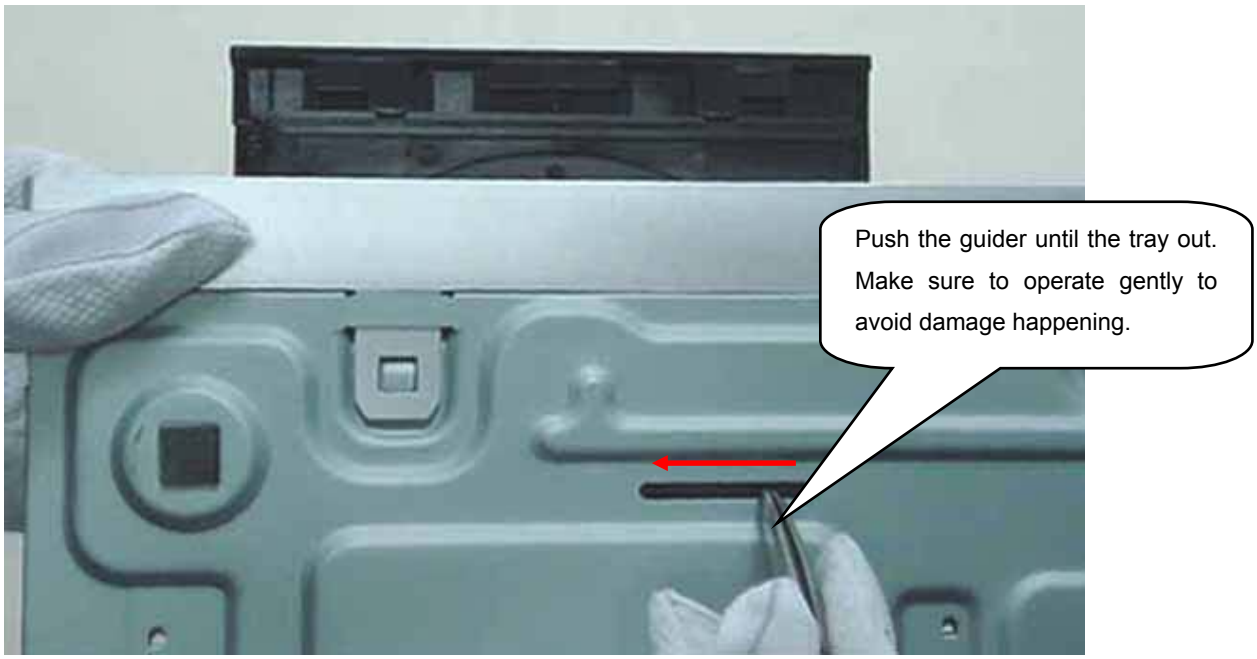


Figure 3

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

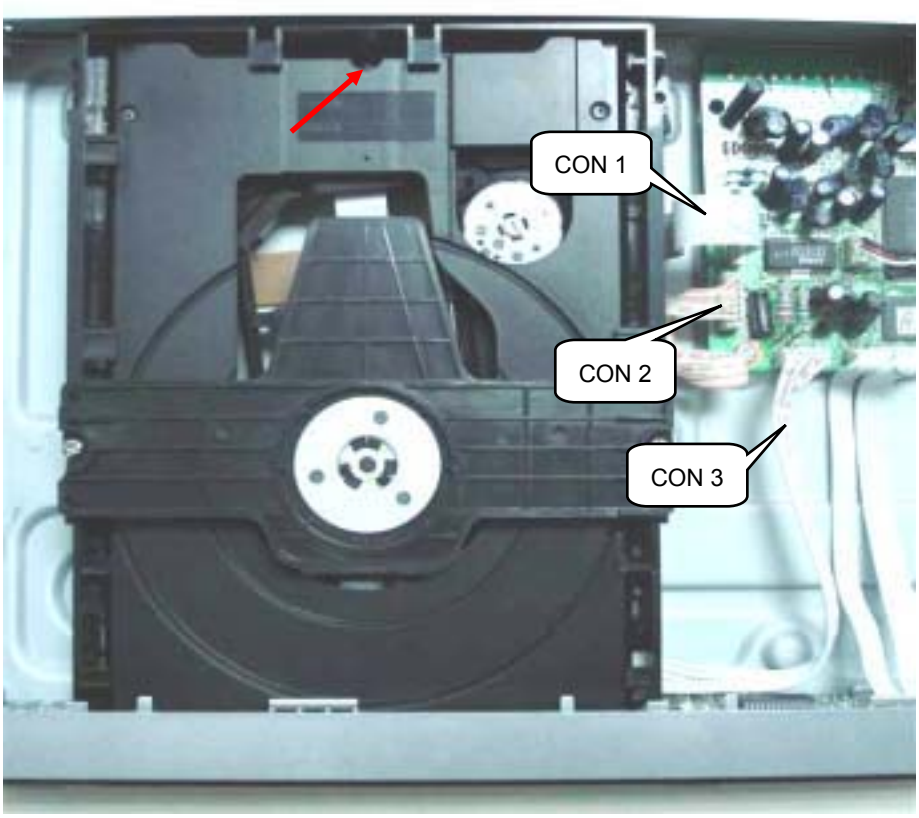


Figure 4

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)

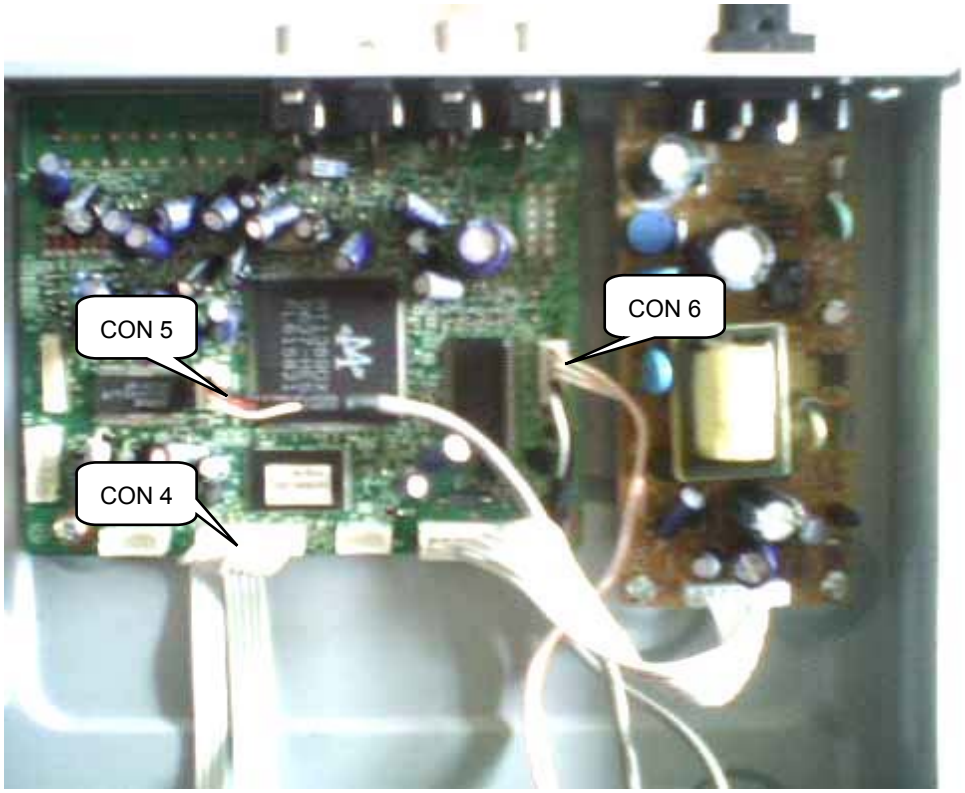


Figure 5

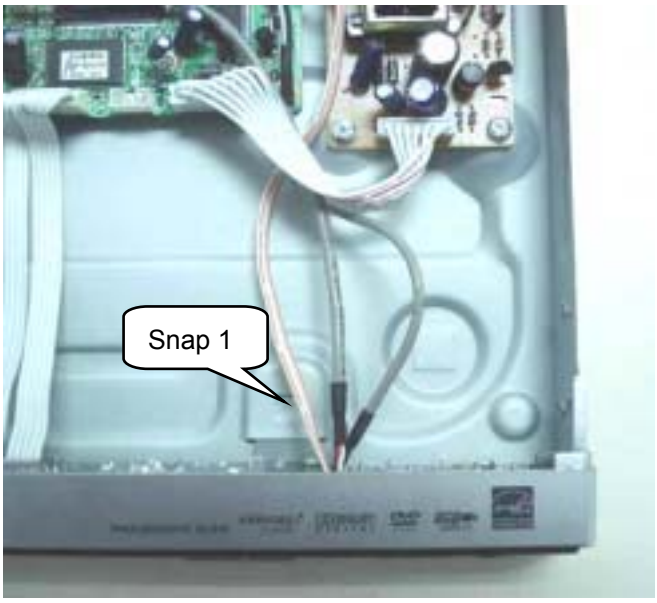


Figure 6

Figure 7

Mechanical and Dismantling Instructions

Dismantling Instruction

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

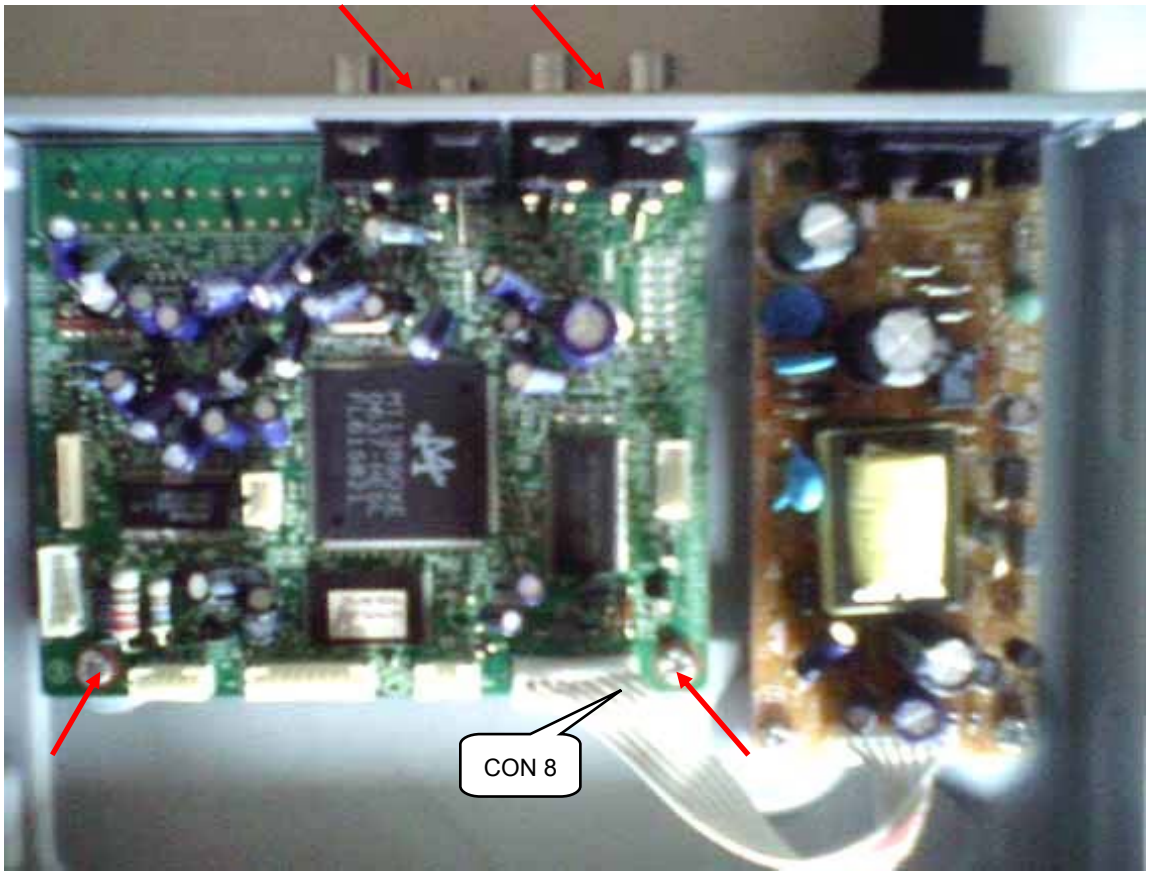


Figure 8

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: DVP3XXX (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

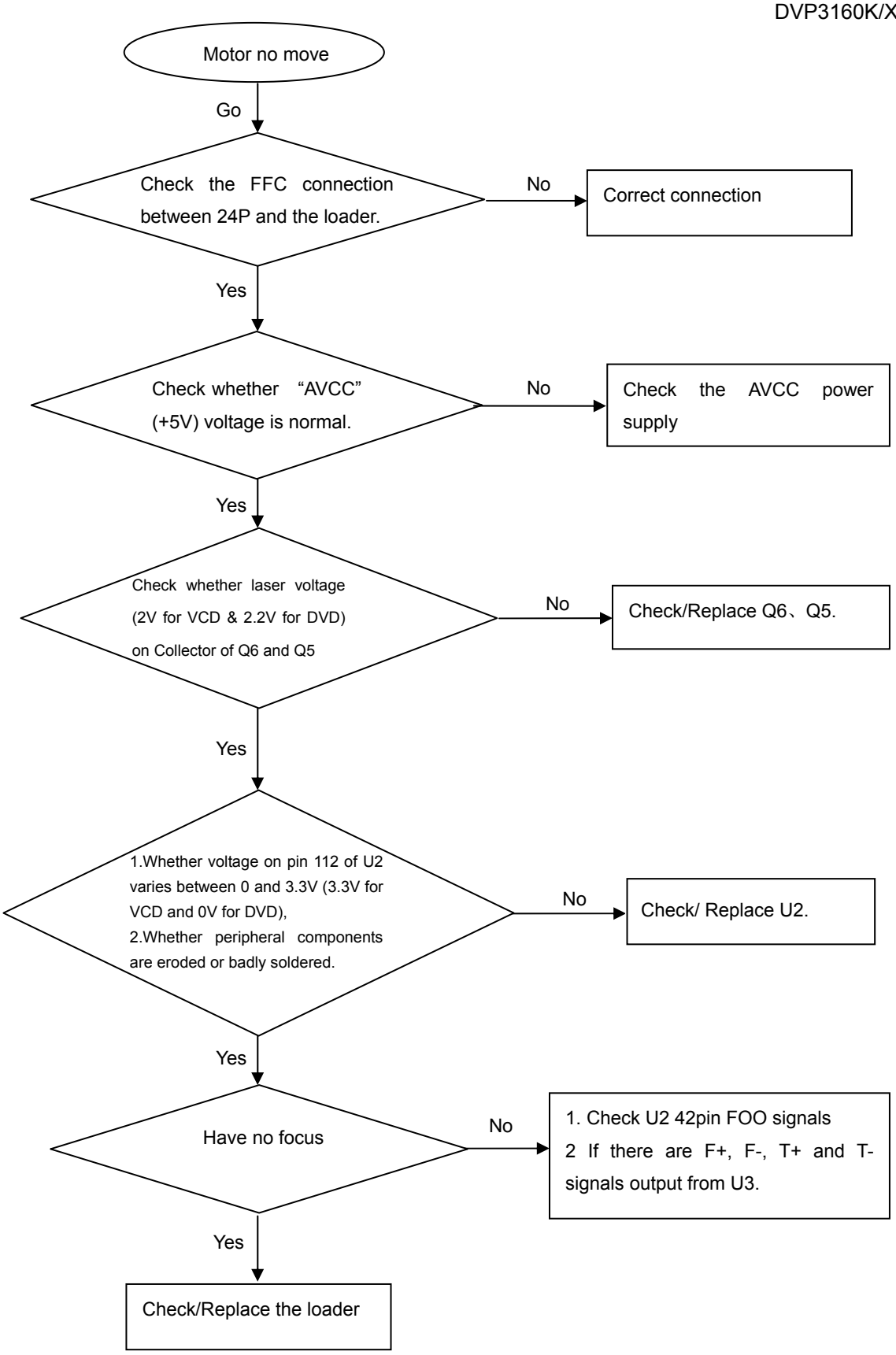
1) Power on the set and press <Setup> button on the remote control.
2) Press<1><3><7><9>button to check the software information.
   The software version and other information are display on the TV screen as follows:

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.

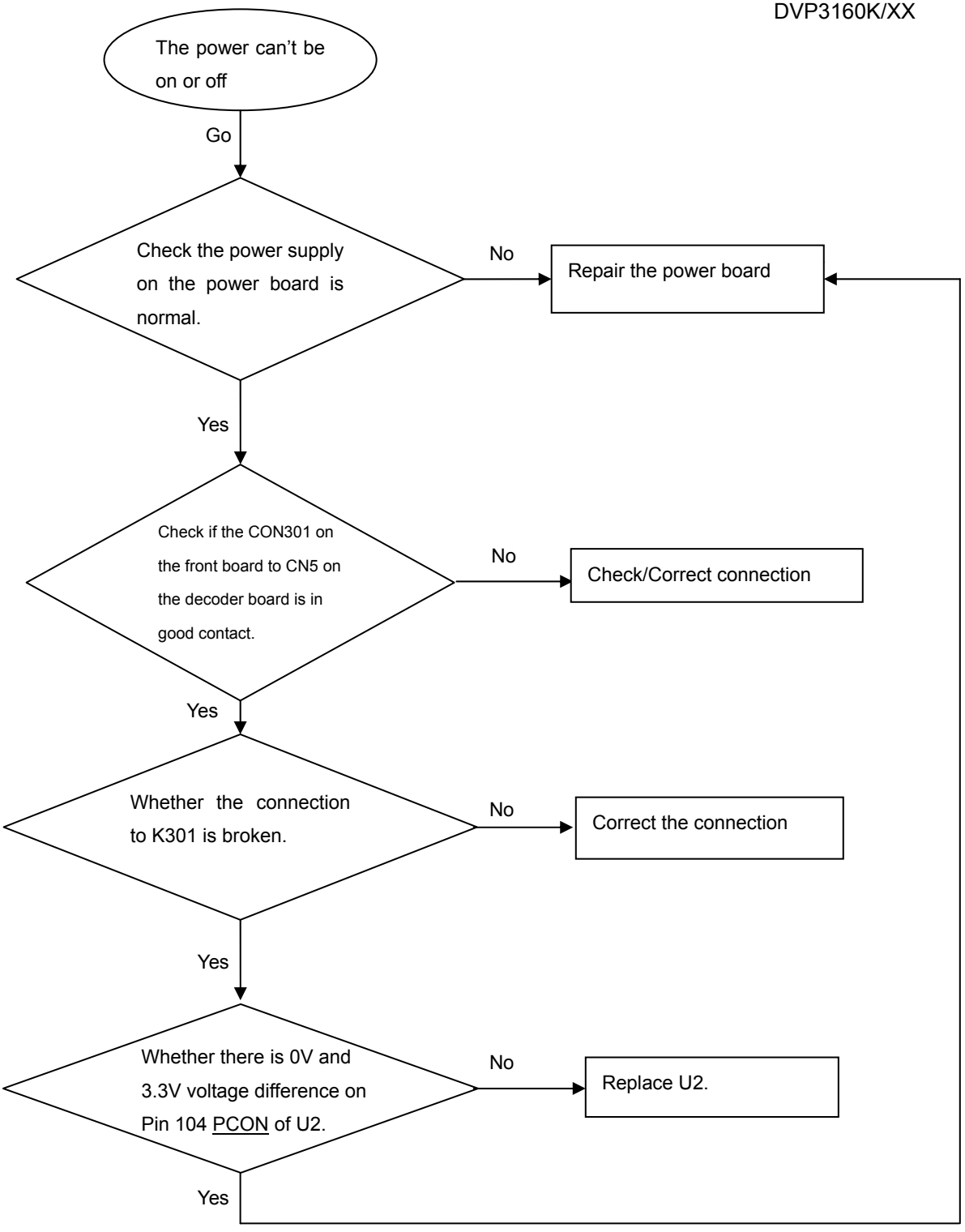
Spindle motor does not move

Remark: Trouble shooting chart for DVP3160K/XX



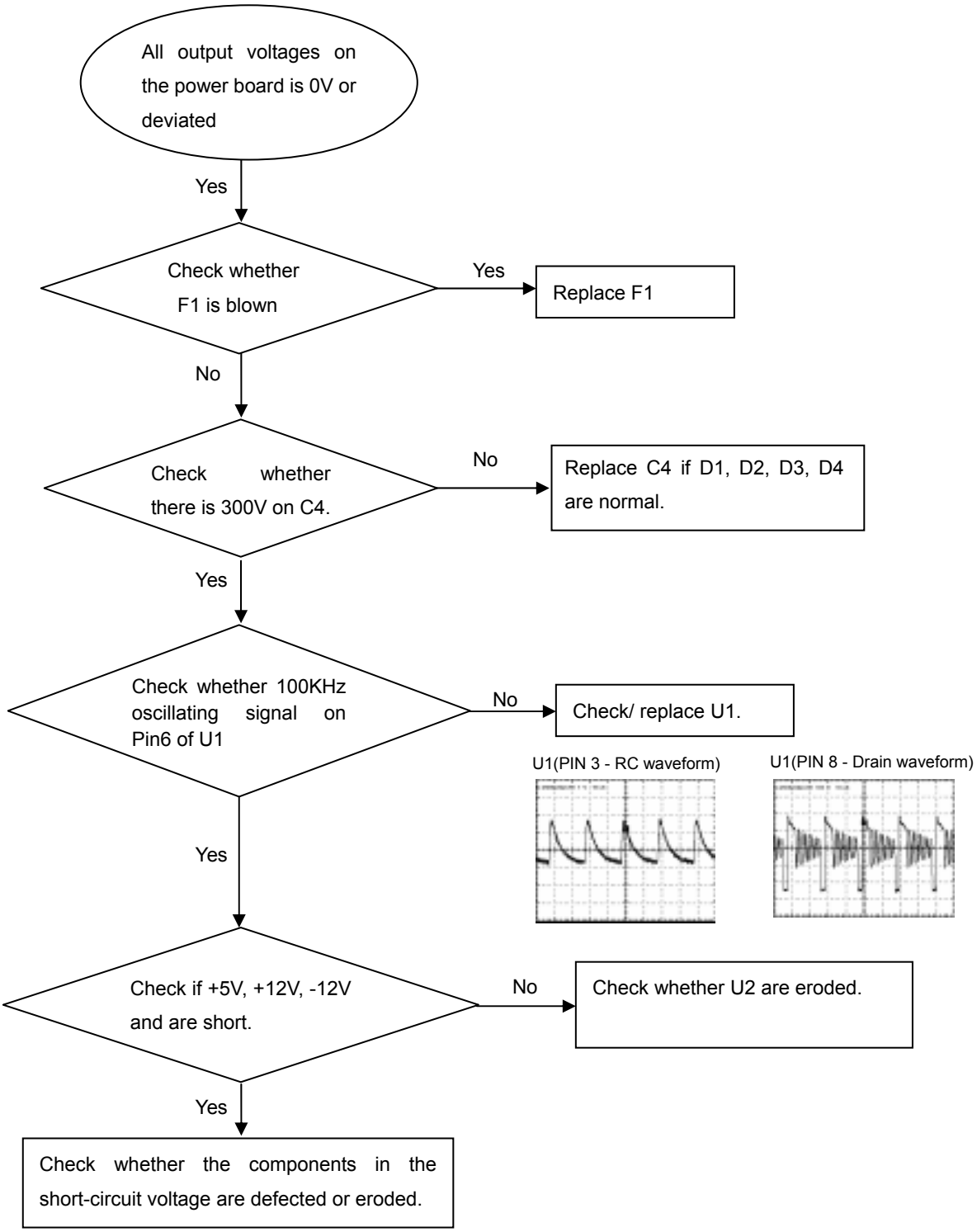
The power can not be on or off

Remark: Trouble shooting chart for DVP3160K/XX



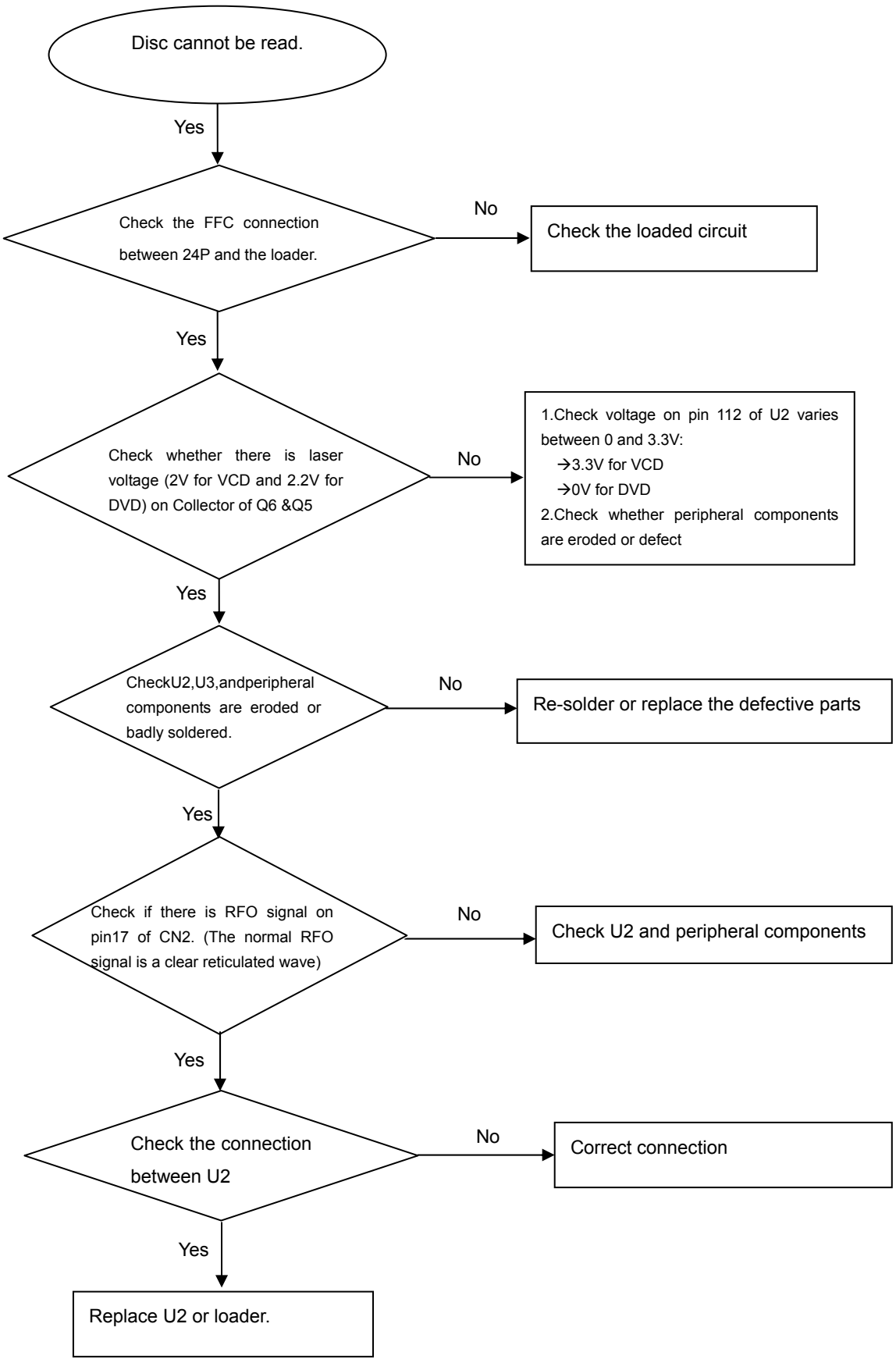
All output voltages on the power board is 0V or deviated.

Remark: Trouble shooting chart for DVP3160K/XX



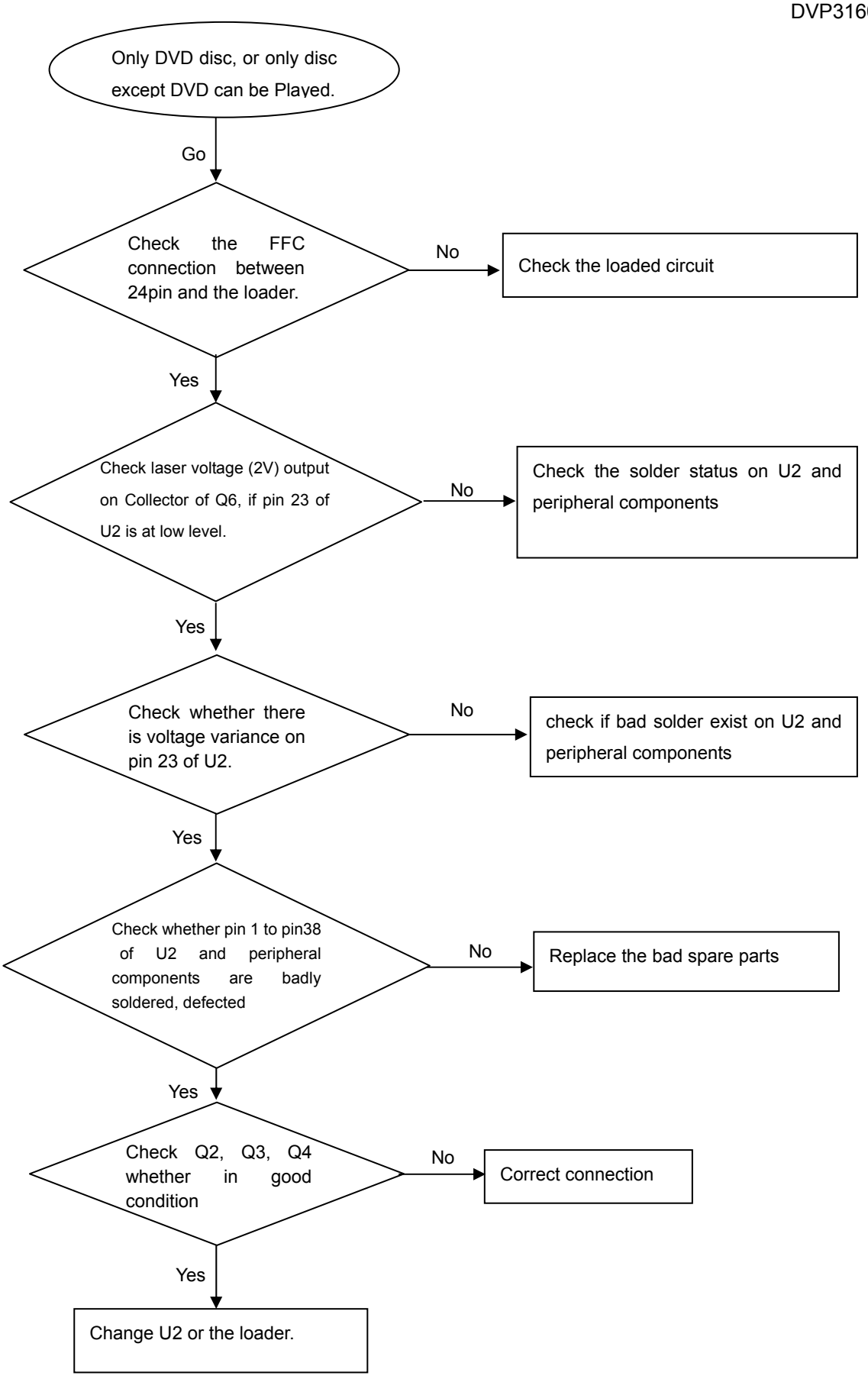
Disc cannot be read.

Remark: Trouble shooting chart for DVP3160K/XX



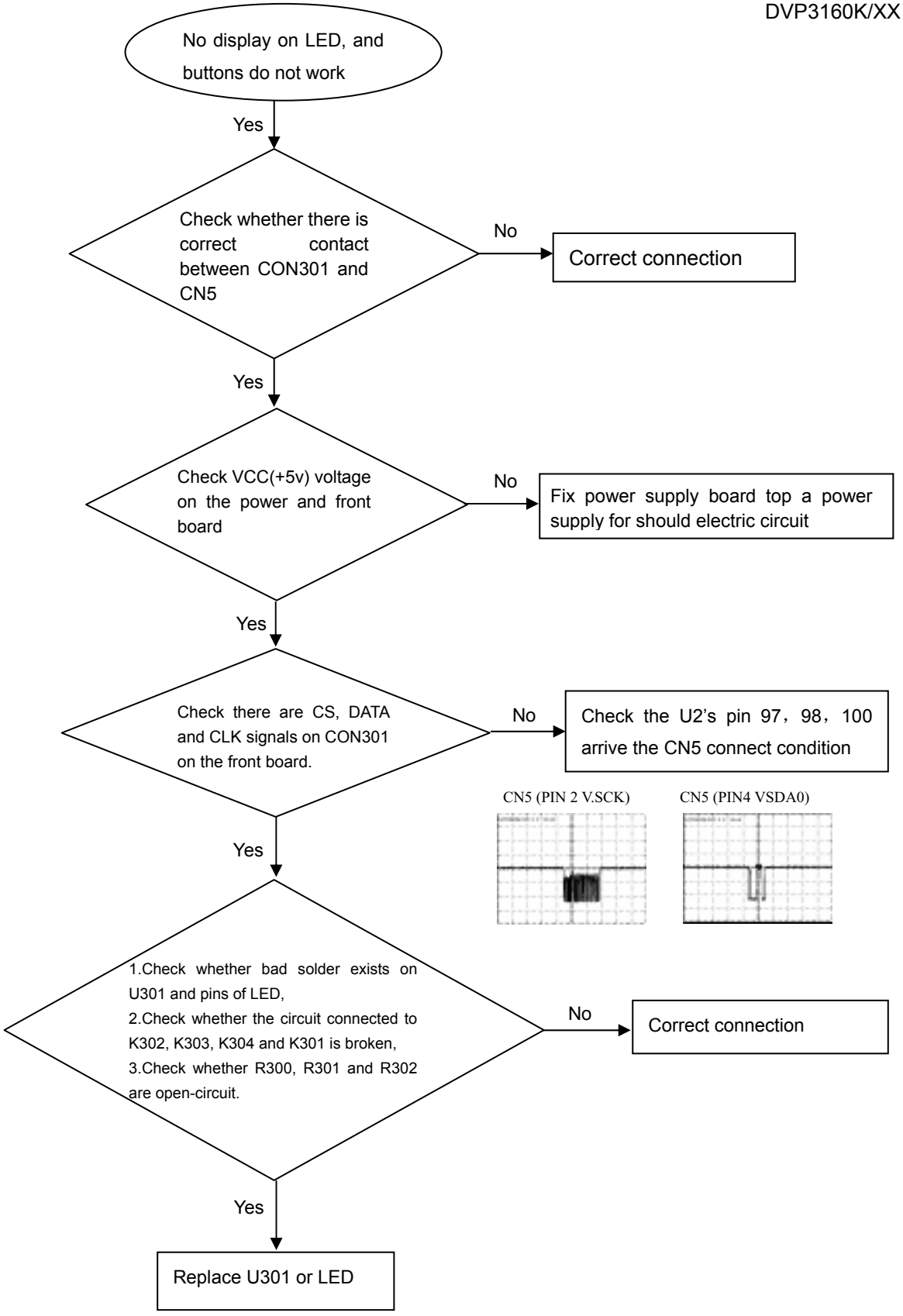
Only DVD disc or only disc except DVD can be played

Remark: Trouble shooting chart for DVP3160K/XX



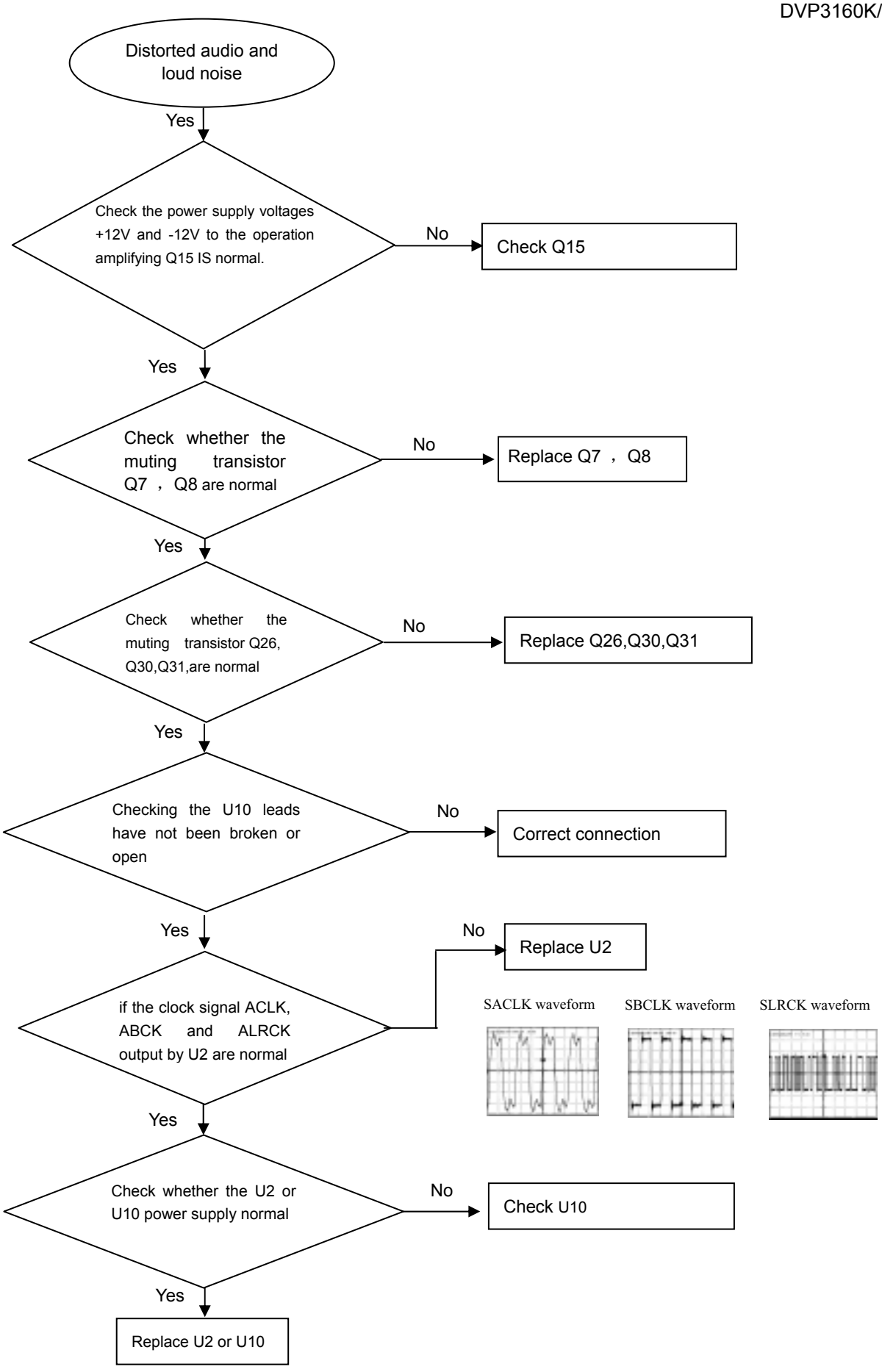
No display on LEDD, and buttons do not work

Remark: Trouble shooting chart for DVP3160K/XX



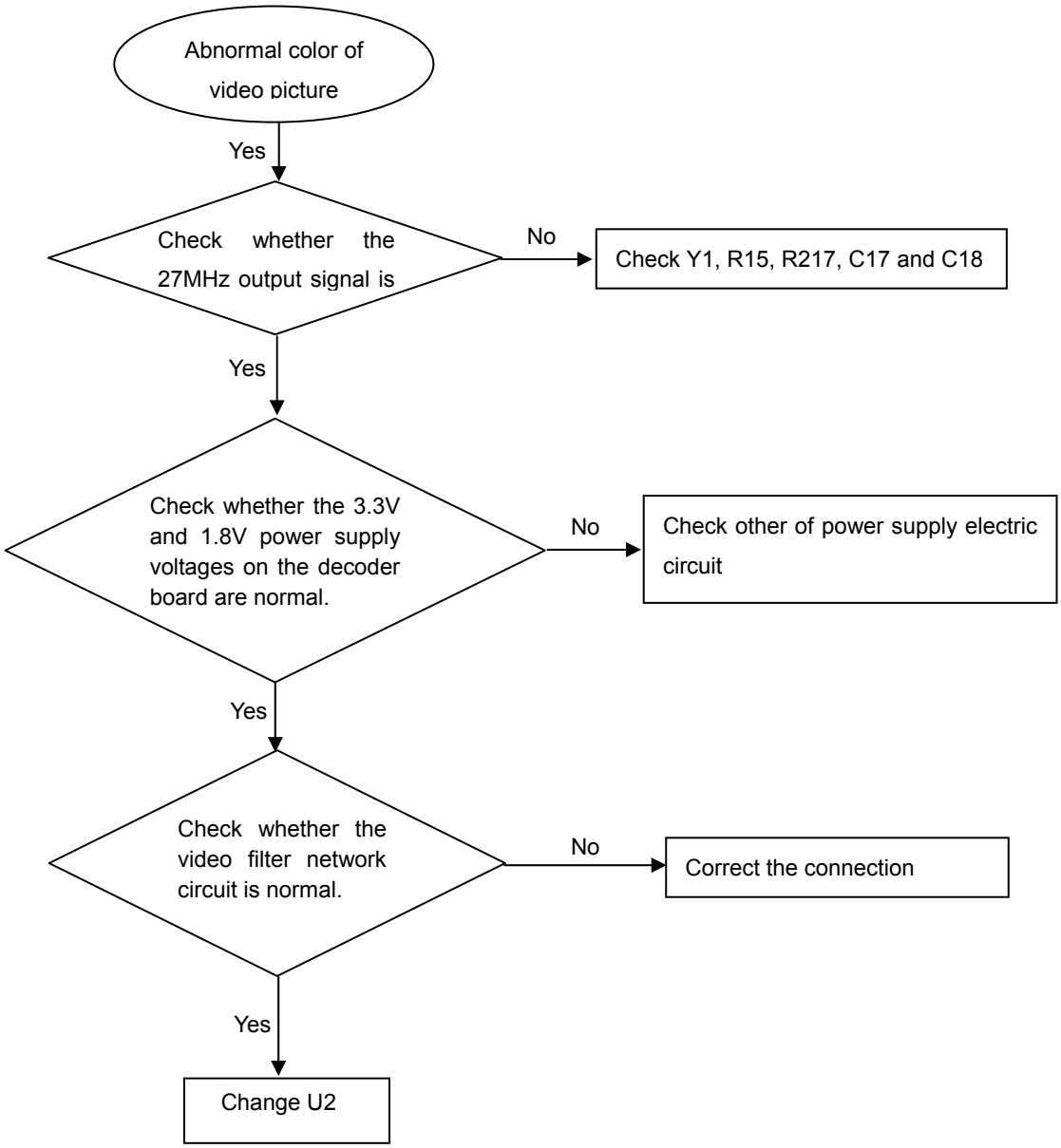
Distorted audio and loud noise

Remark: Trouble shooting chart for DVP3160K/XX



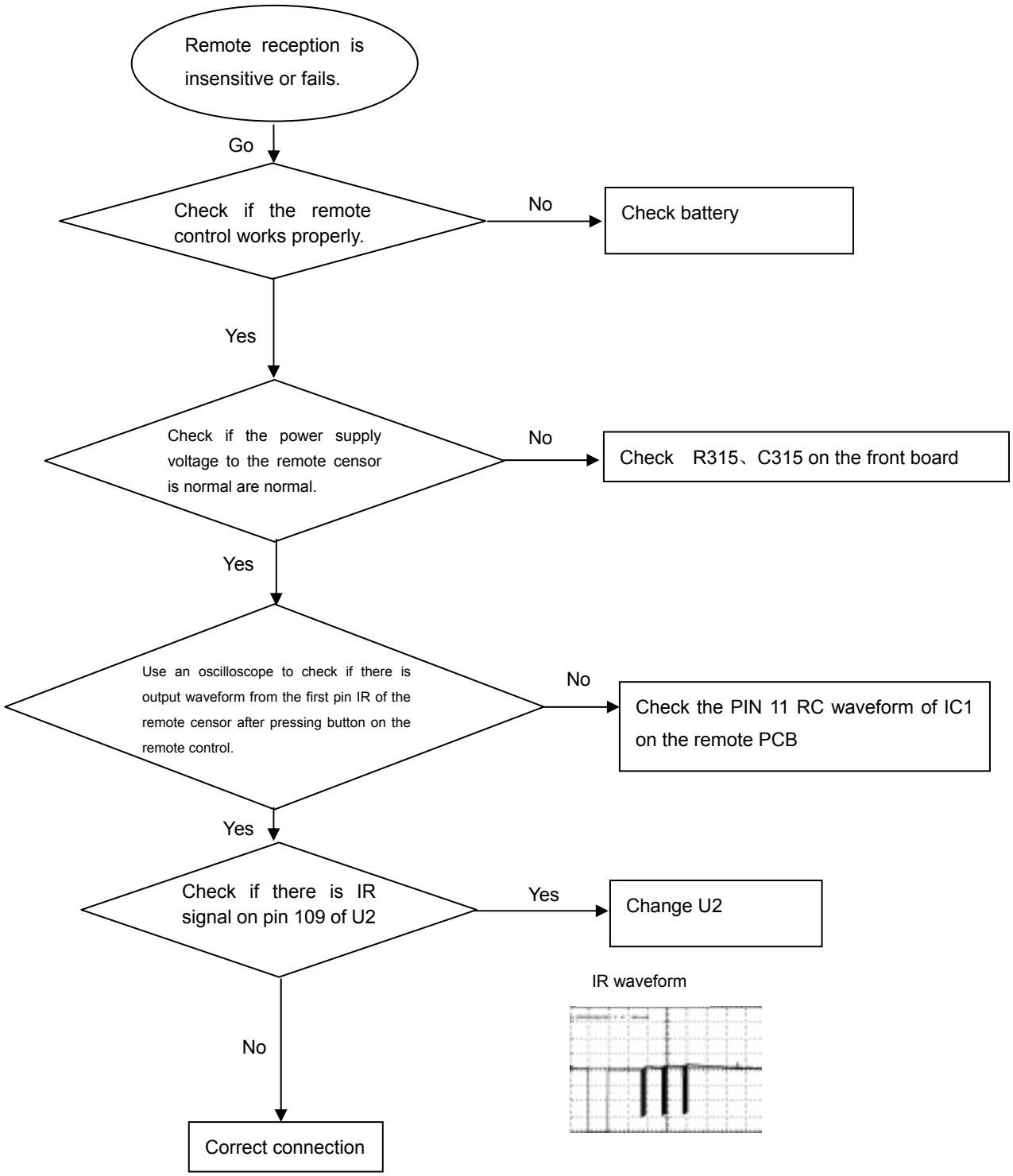
Abnormal color of video picture

Remark: Trouble shooting chart for DVP3160K/XX



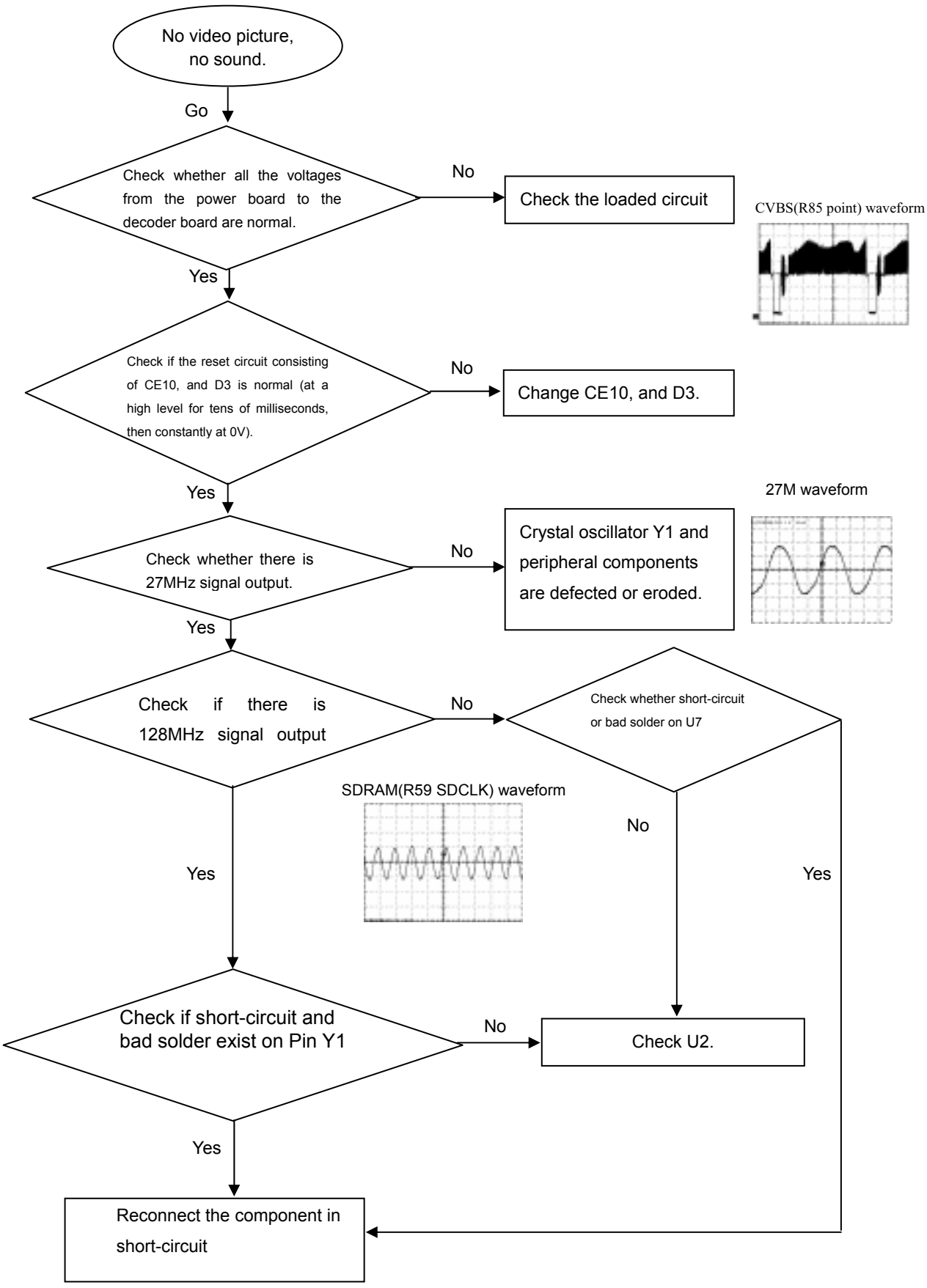
Remote reception is insensitive or fails.

Remark: Trouble shooting chart for DVP3160K/XX



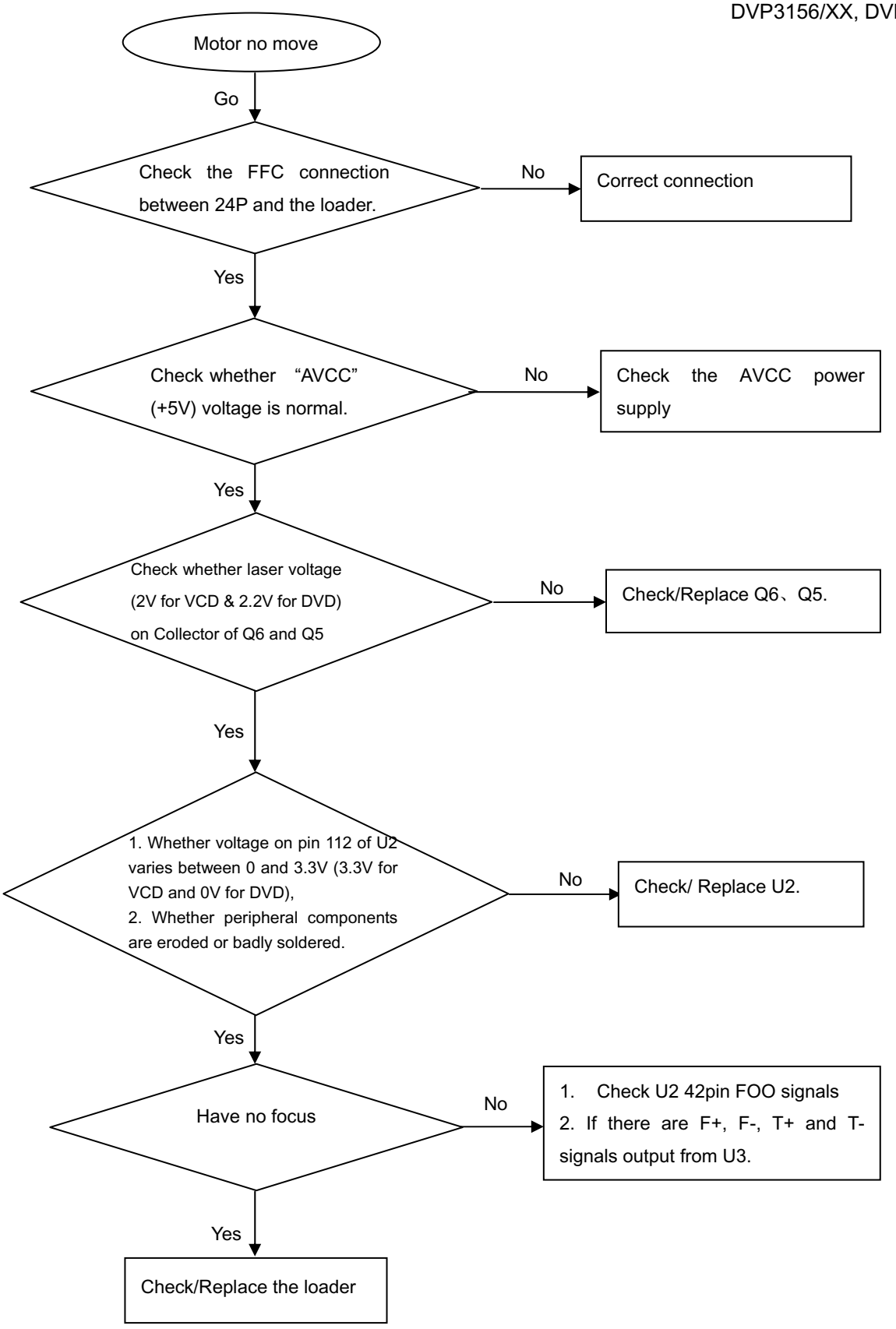
No video picture, no sound.

Remark: Trouble shooting chart for DVP3160K/XX



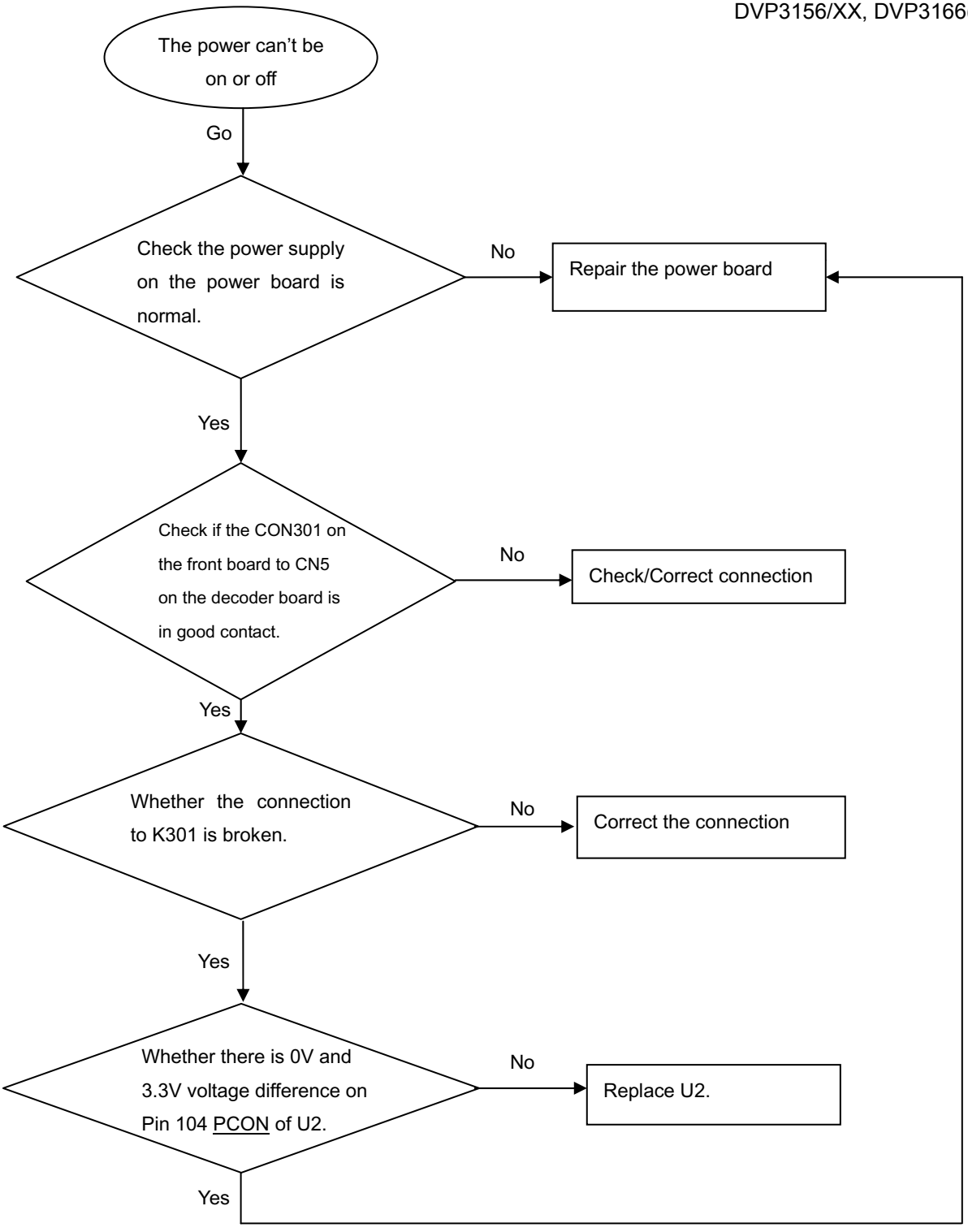
Spindle motor does not move

Remark: Trouble shooting chart for DVP3156/XX, DVP3166(K)/XX



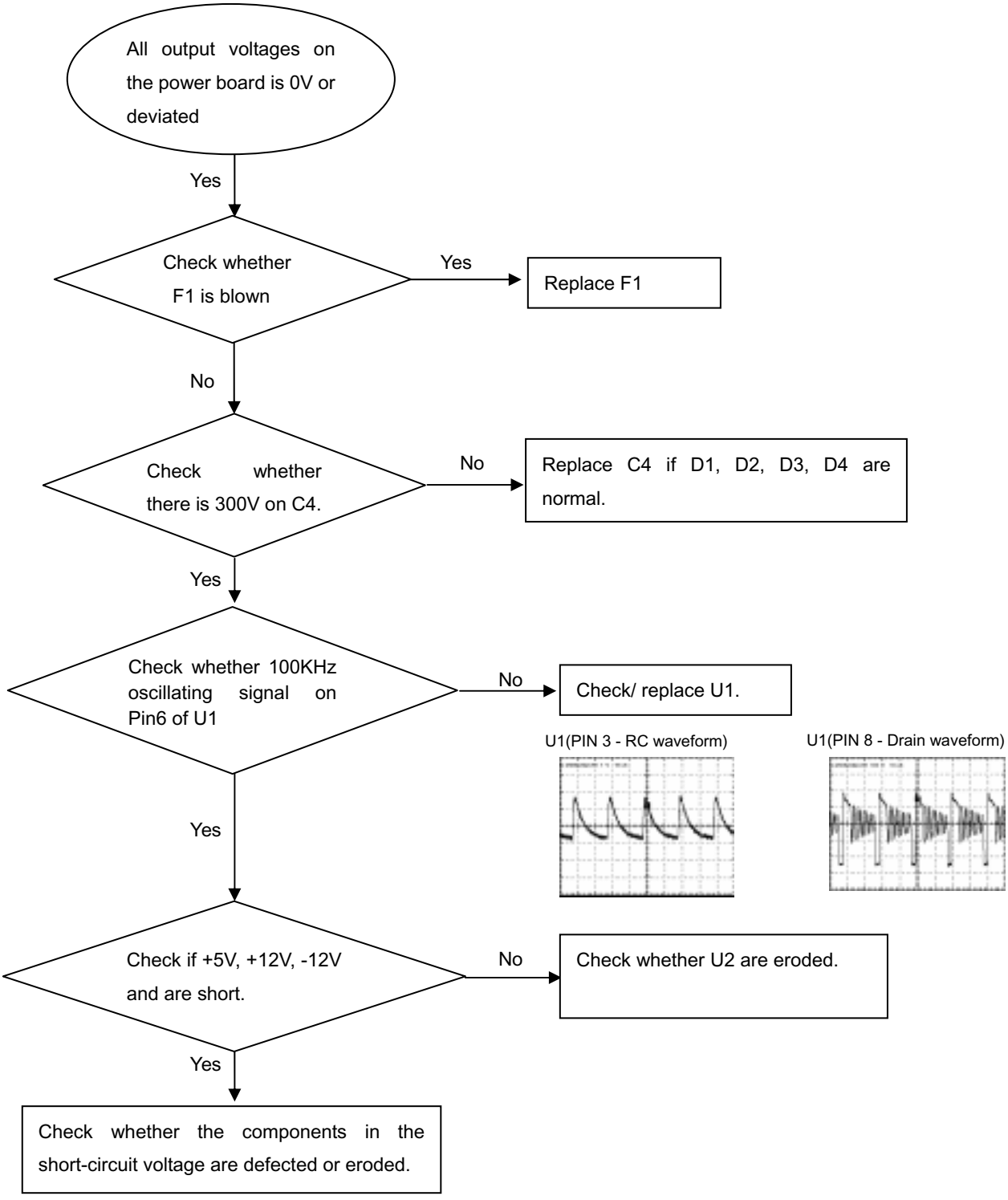
The power can not be on or off

Remark: Trouble shooting chart for
DVP3156/XX, DVP3166(K)/XX



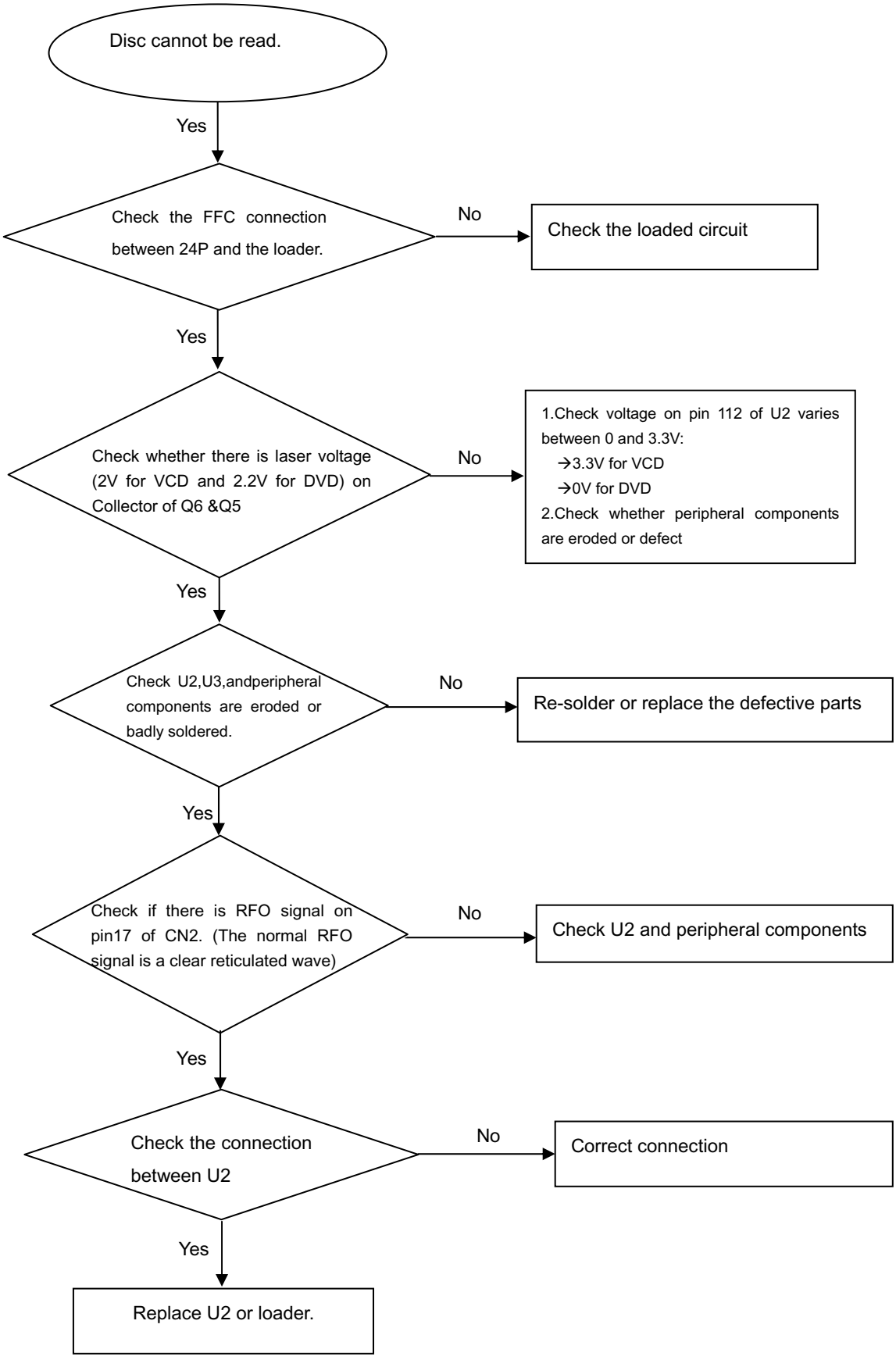
All output voltages on the power board is 0V or deviated.

Remark: Trouble shooting chart for DVP3156/XX, DVP3166(K)/XX



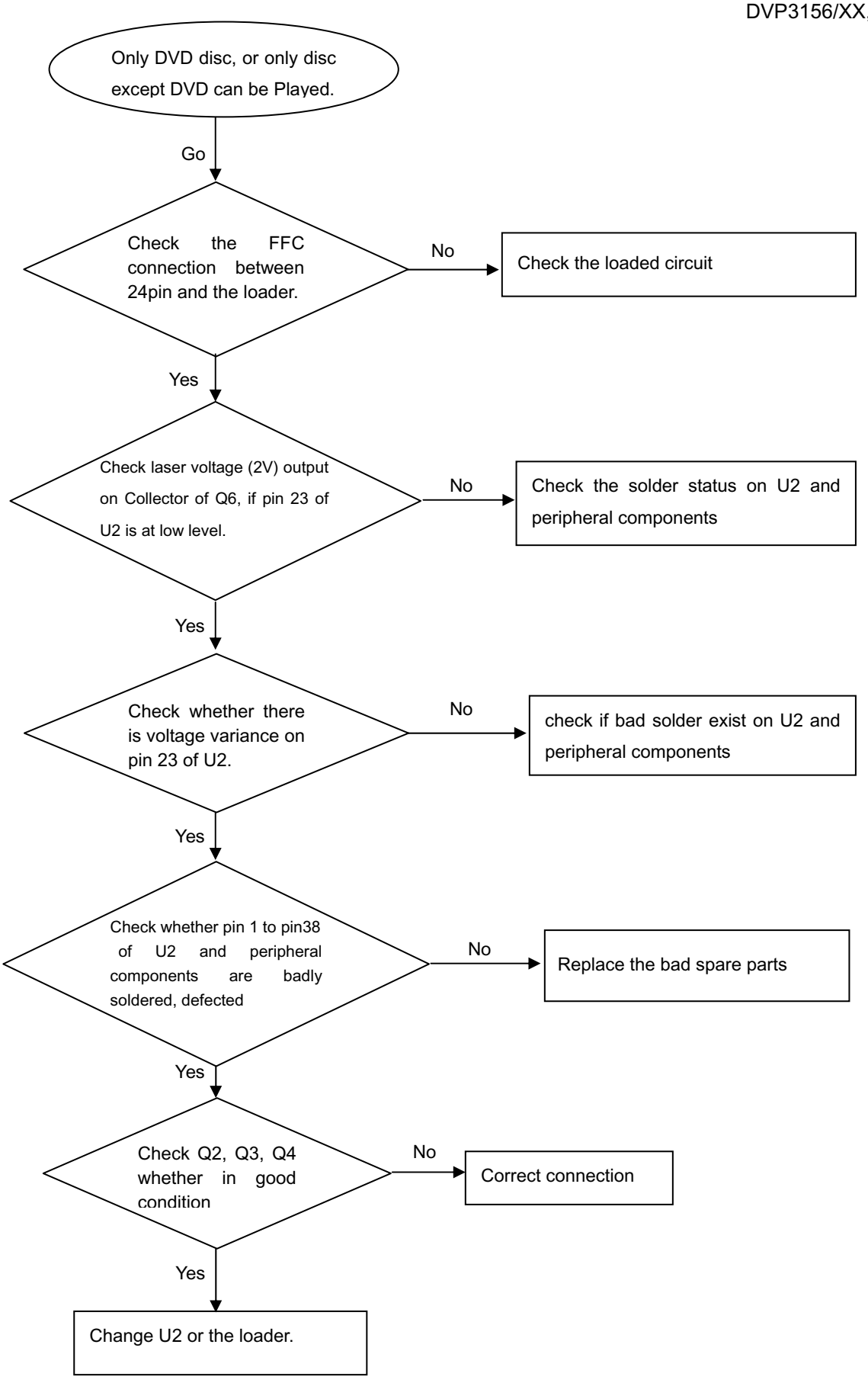
Disc cannot be read.

Remark: Trouble shooting chart for DVP3156/XX, DVP3166(K)/XX



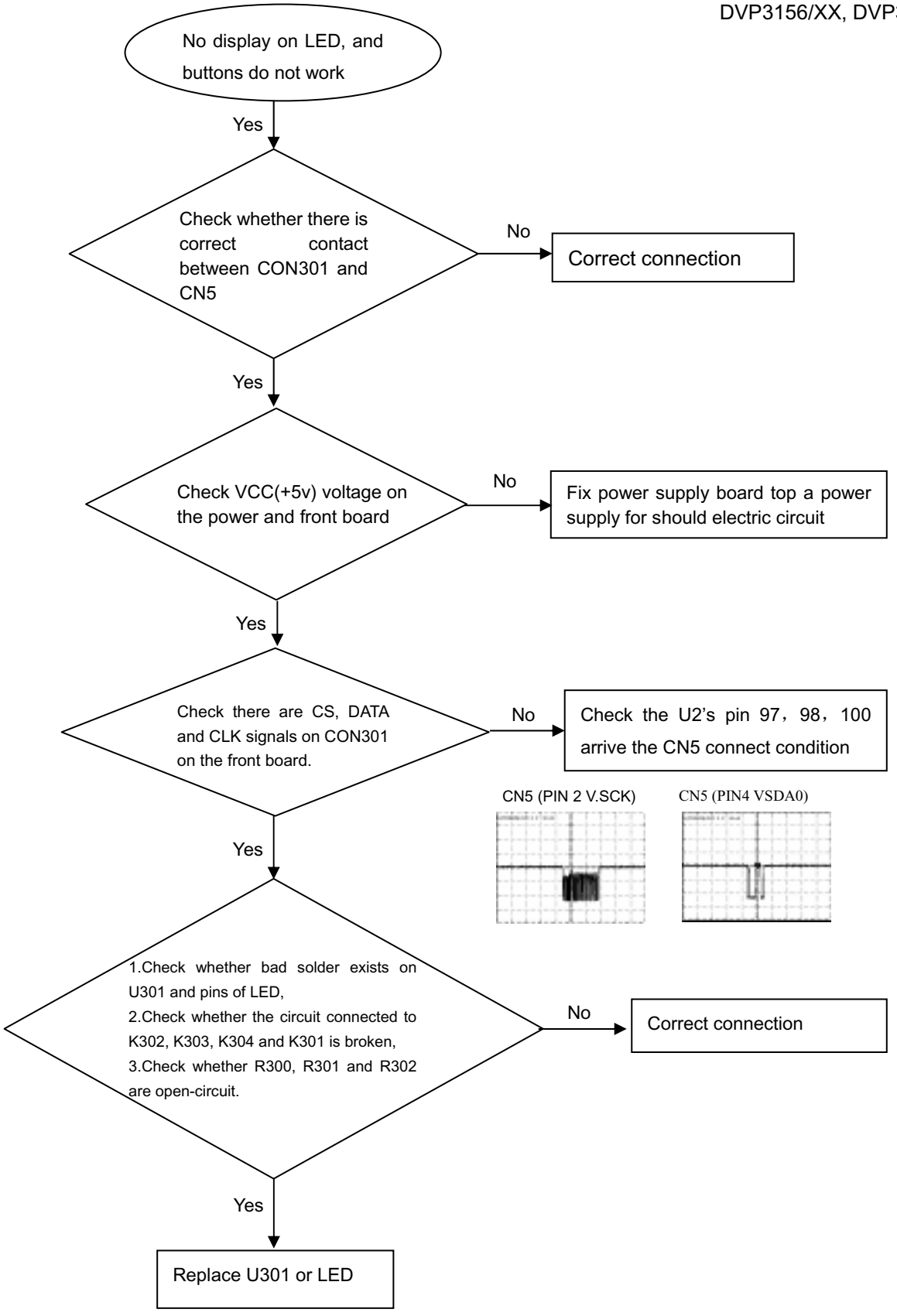
Only DVD disc or only disc except DVD can be played

Remark: Trouble shooting chart for DVP3156/XX, DVP3166(K)/XX



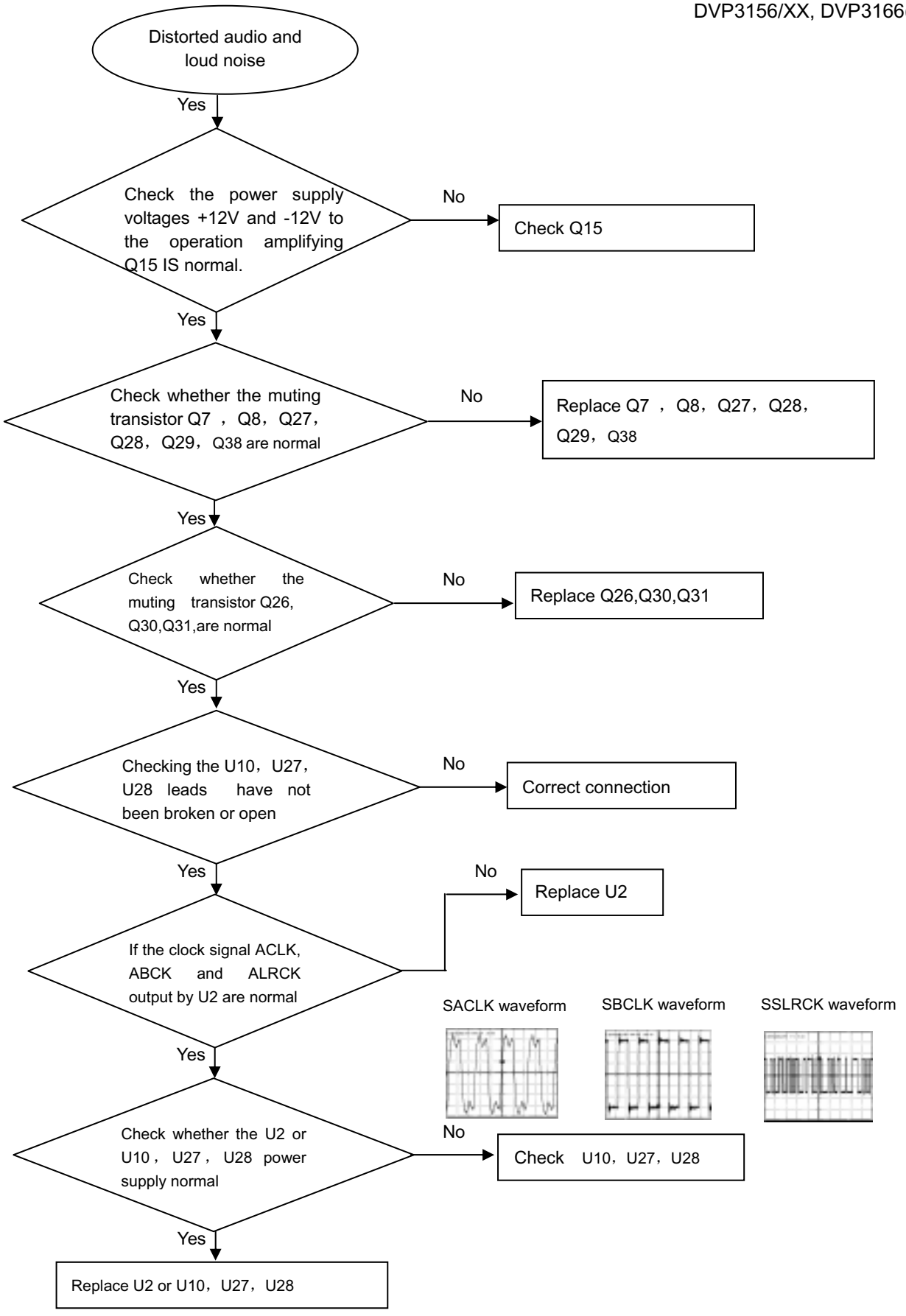
No display on LEDD, and buttons do not work

Remark: Trouble shooting chart for DVP3156/XX, DVP3166(K)/XX



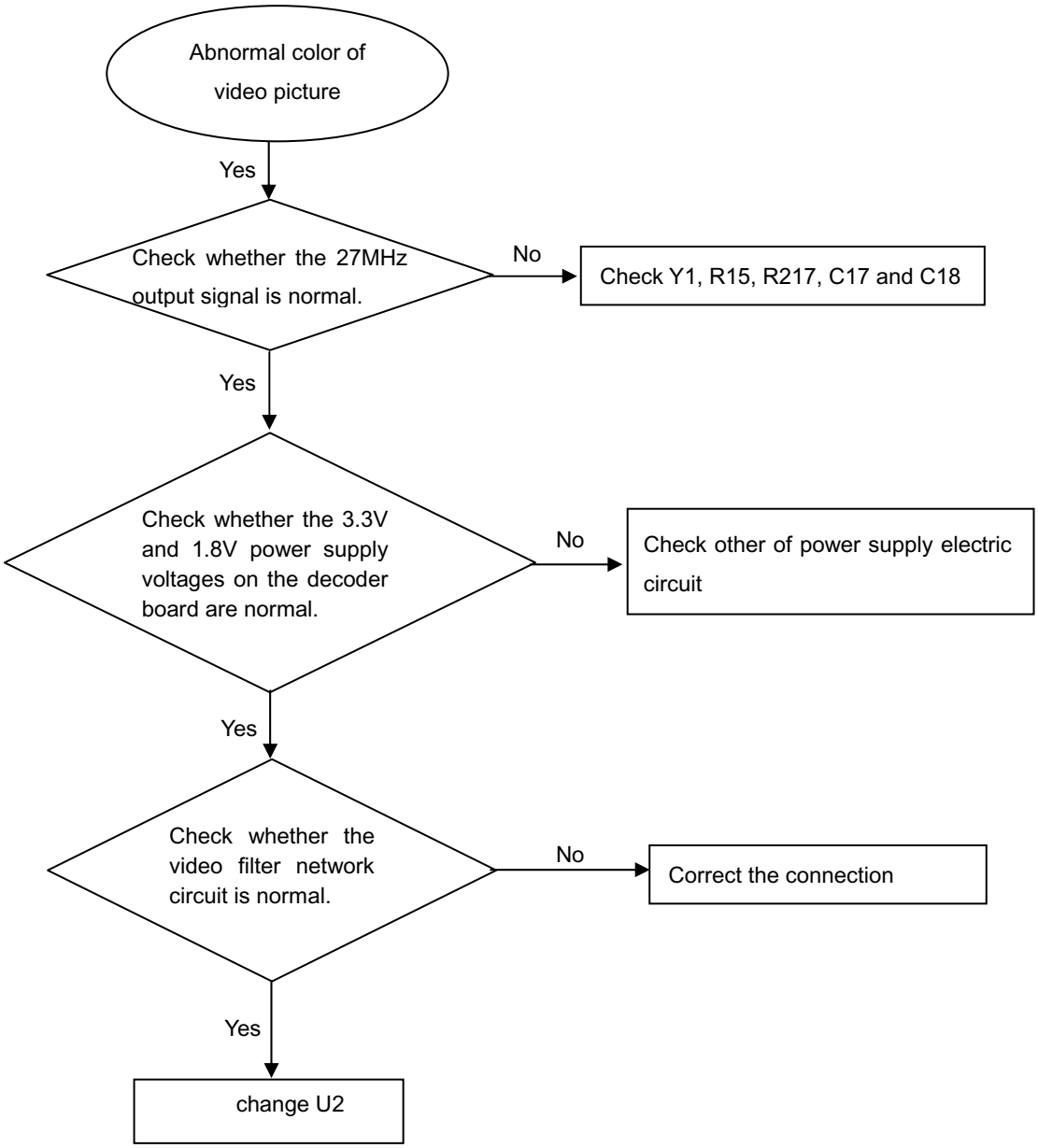
Distorted audio and loud noise

Remark: Trouble shooting chart for DVP3156/XX, DVP3166(K)/XX



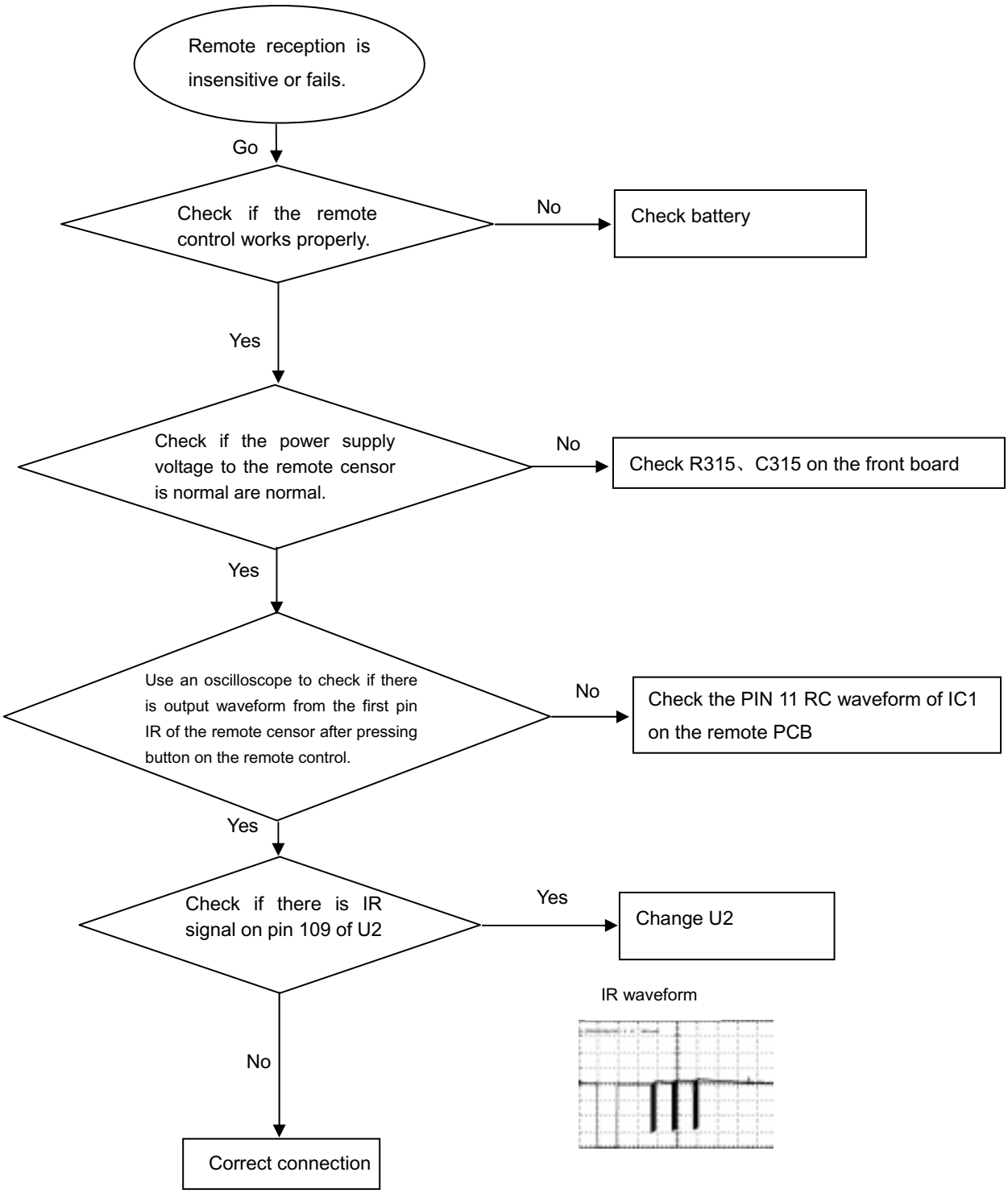
Abnormal color of video picture

Remark: Trouble shooting chart for DVP3156/XX, DVP3166(K)/XX



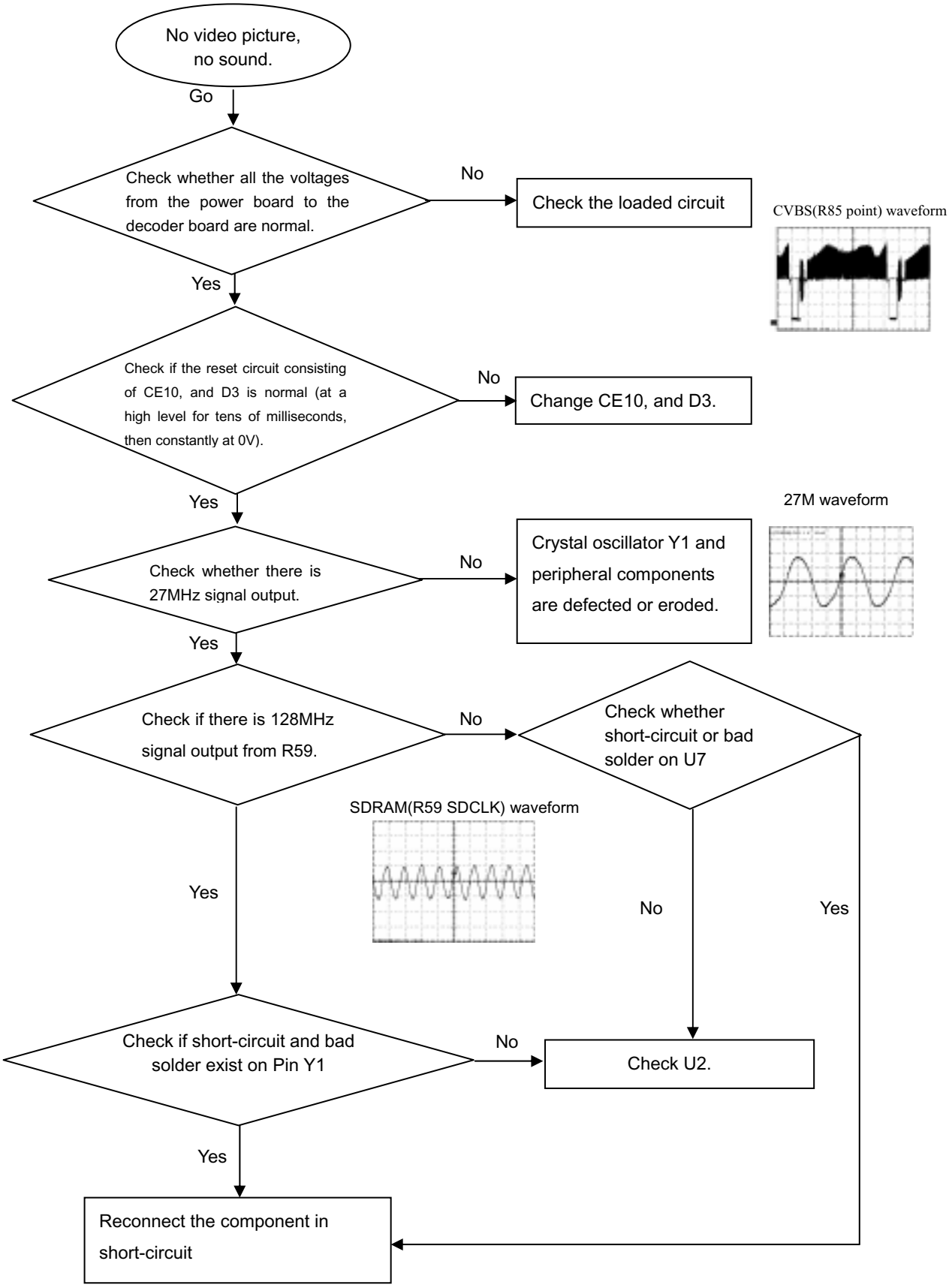
Remote reception is insensitive or fails.

Remark: Trouble shooting chart for DVP3156/XX, DVP3166(K)/XX



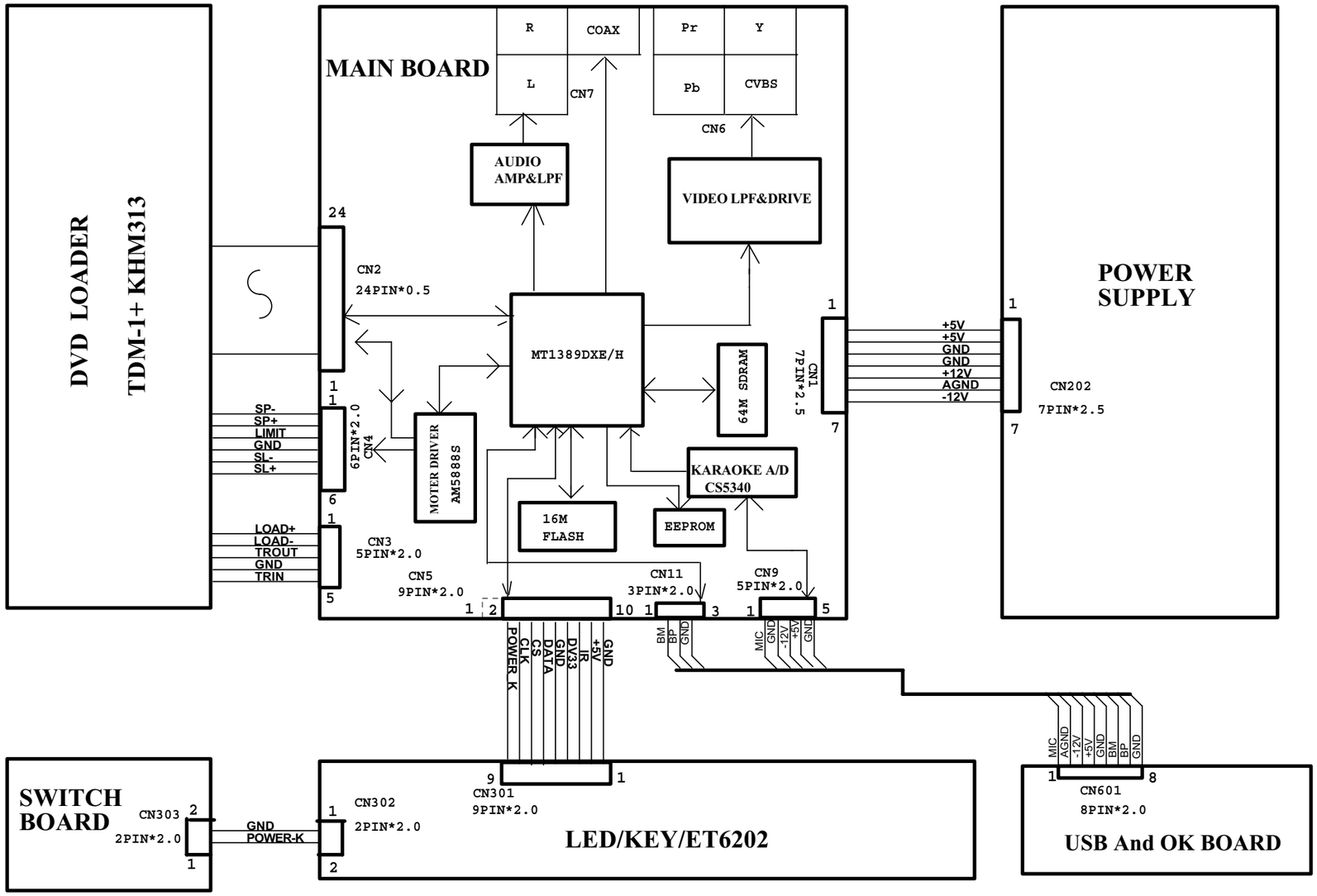
No video picture, no sound.

Remark: Trouble shooting chart for DVP3156/XX, DVP3166(K)/XX



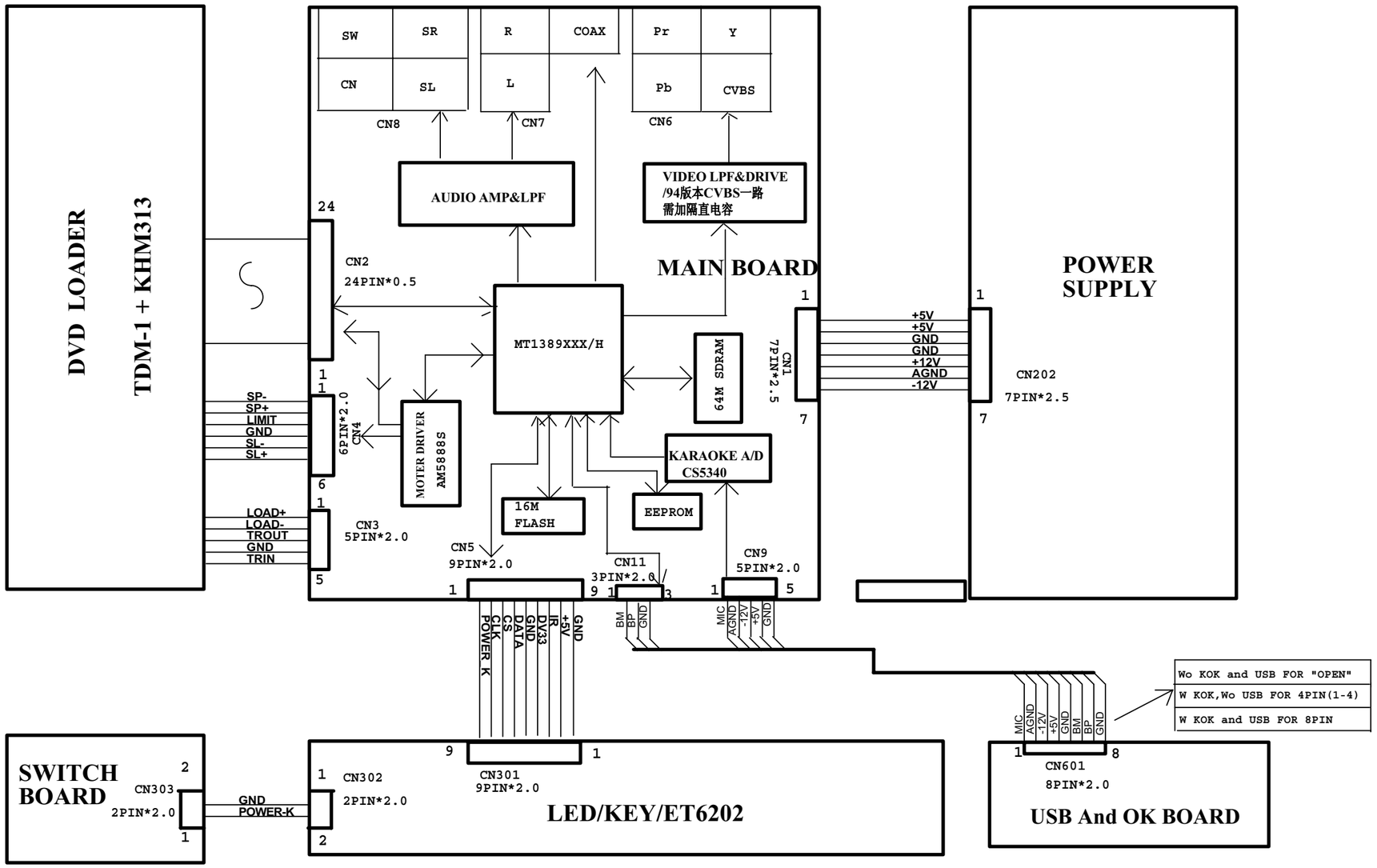
5-1

DVP3160K/XX WIRING DIAGRAM



5-2

DVP3156/XX, DVP3166(k)/XX WIRING DIAGRAM



Remarks: DVP3156,3166 version has no KOK output.

6-1

Front Board Electric Diagram for DVP3160K/XX, DVP3166(K)/XX

FROM MAIN BOARD

CON301
1 GND
2 5V
3 IR
4 DV33
5 GND
6 DATA
7 CS
8 CLK
9 POWER_K
CON9(2.0)
C314 47p

REM301
VCC 3
GND 2
IR 1
REM
IR
C315 47p
C306 0.1u
CE301 47uF
R315 100 ohm
DV33

CON302
CON2(2.0)
1 GND
2 POWER_K
C316 47p

5V
R303 R304 R305 5VL
4K7 4K7 4K7

DATA R300 100
CLK R301 100
CS R302 100

C300 C301 C302
100P 100P 100P

C303 0.1u
CE300 47uF

R307 10K
R308 10K

R306 51K

U301
ET6202
1 OSC
2 DI/O
3 CLK
4 STB
5 KEY1
6 KEY2
7 VDD
8 SEG1/KS1
9 SEG2/KS2
10 SEG3/KS3
11 SEG4/KS4
12 SEG5/KS5
13 SEG6/KS6
14 SEG7/KS7
28 GND
27 GRID1
26 GRID2
25 GND
24 GRID3
23 GRID4
22 GND
21 VDD
20 SEG14/GRID5
19 SEG13/GRID6
18 SEG12/GRID7
17 SEG10/KS10
16 SEG9/KS9
15 SEG8/KS8

GRID1 GRID2 GRID3 GRID4 GRID5 GRID6 GRID7
5VL
SEG1 SEG2 SEG3 SEG4 SEG5 SEG6
SEG[1:9]

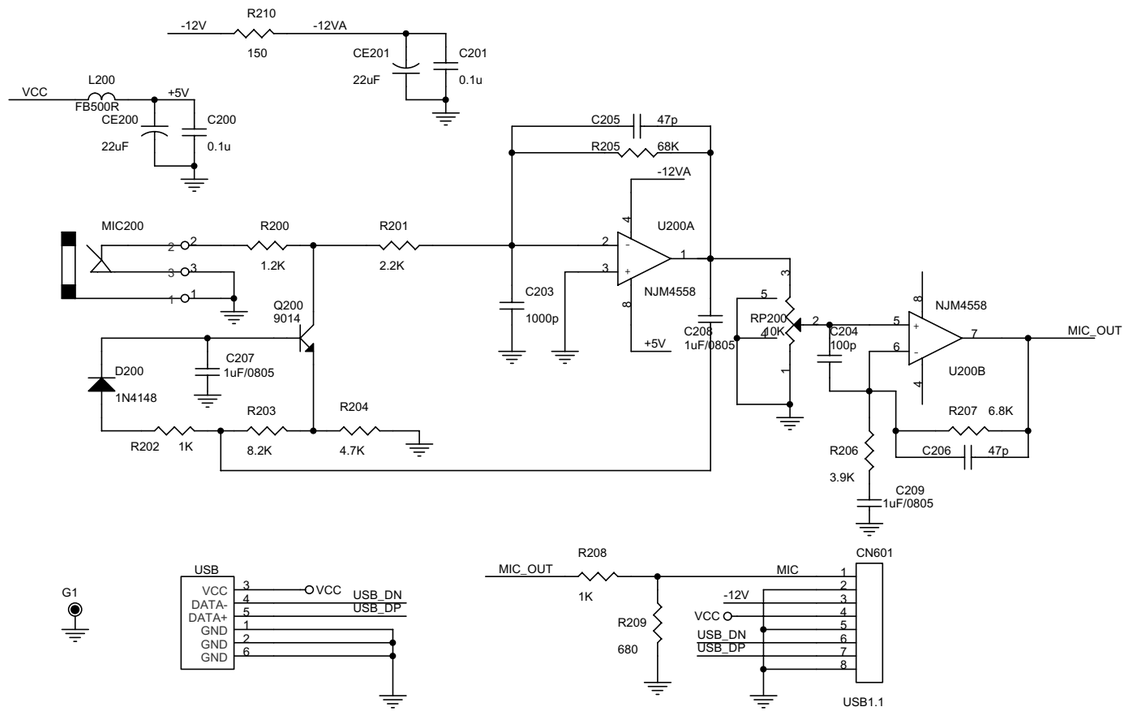
GRID[1:7]
LED1
GRID1 1
GRID2 2
GRID3 3
GRID4 4
GRID5 5
GRID6 6
GRID7 7
SEG1 8
SEG2 9
SEG3 10
SEG4 11
SEG5 12
SEG6 13
JDD350501AG

1N4148 D301
1N4148 D302
KEY1
KEY2
KS1
KS2
K304 open/close
K303 play/pause
K302 stop

C306	A2
C303	B2
D302	B4
D301	B4
R303	B2
R304	B2
R305	B2
R307	B3
R308	B3
C314	A1
C315	A2
C316	A3
CE300	B3
CE301	A2
R306	A4
R315	A2
C300	B2
C301	B2
C302	B2
R300	B2
R301	B2
R302	B2
CON302	A3
CON301	A1
U301	B4
LED1	B5
REM301	A2
K304	B4
K303	B5
K302	C5

6-2

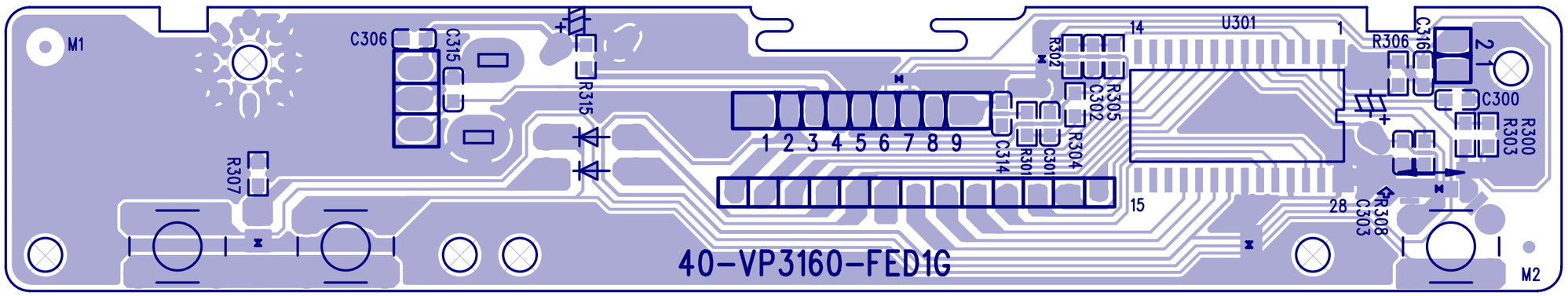
USB + OK Board Electric Diagram for DVP3160K/XX, DVP3166(K)/XX



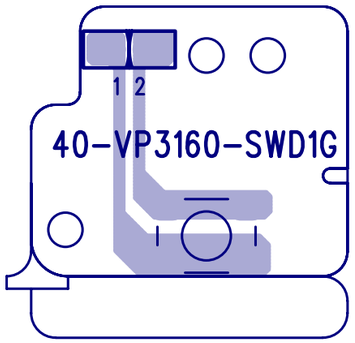
C200	A1
C201	A2
R200	A1
R208	B2
R202	B1
D200	B1
C207	B1
C208	A2
C209	B3
R201	A2
R206	B3
R204	B1
R207	B3
R203	B1
RP200	A3
CE201	A2
CE200	A1
C206	B3
C205	A2
R205	A2
C204	A3
R210	A1
R209	B2
C203	A2
Q200	A1
L200	A1
U200A	A2
U200B	A3
G1	B1
CN601	B3
USB	B1
MIC200	A1

6-3

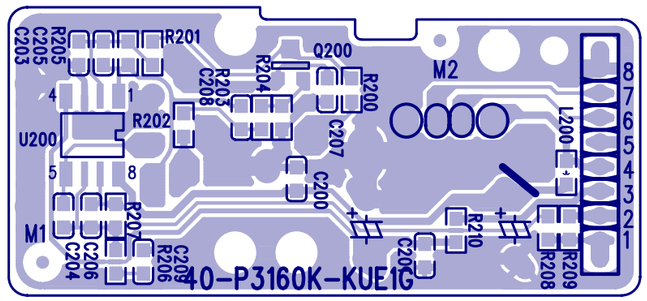
Front Board Print-Layout (Bottom Side) for DVP3160K/XX, DVP3166(K)/XX



Switch Board Print-Layout (Bottom Side) for DVP3160K/XX, DVP3166(K)/XX



USB+OK Board Print-Layout (Bottom Side) for DVP3160K/XX, DVP3166(K)/XX



6-4

Front Board Electric Diagram for DVP3156/XX

FROM MAIN BOARD

CON301
CON9(2.0)
GND
5V
IR
DV33
GND
DATA
CS
CLK
POWER_K
C314 47p

REM301
REM
VCC
GND
IR
R315 100 ohm
DV33
C315 47p
C306 0.1u
CE301 47uF

CON302
CON2(2.0)
GND
POWER_K
C316 47p

5V
R303 R304 R305
4K7 4K7 4K7
5VL

DATA
CLK
CS
R300 100
R301 100
R302 100

C300 C301 C302
100P 100P 100P
C303 0.1u
CE300 47uF

R306 51K
R307 10K
R308 10K

U301
ET6202
OSC
DI/O
CLK
STB
KEY1
KEY2
VDD
SEG1/KS1
SEG2/KS2
SEG3/KS3
SEG4/KS4
SEG5/KS5
SEG6/KS6
SEG7/KS7
GND
GRID1
GRID2
GND
GRID3
GRID4
GND
VDD
SEG14/GRID5
SEG13/GRID6
SEG12/GRID7
SEG10/KS10
SEG9/KS9
SEG8/KS8
5VL

GRID[1:7]
SEG[1:9]

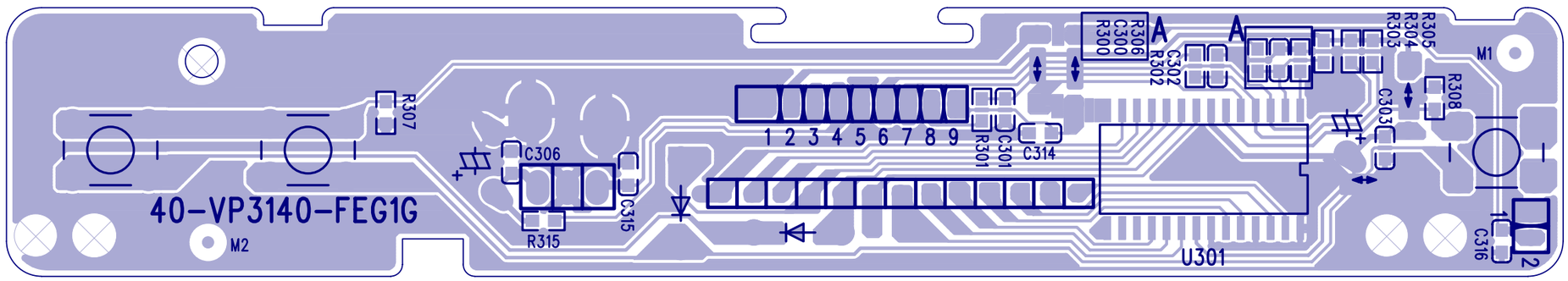
LED1
JDD350501AG

D301 1N4148
D302 1N4148
KS1
KS2
KEY1
KEY2
K304 open/close
K303 play/pause
K302 stop

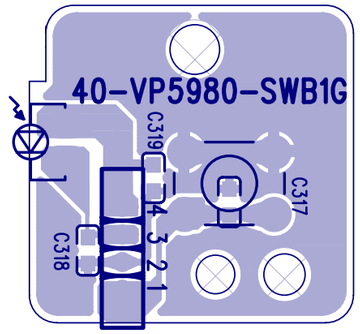
C300	B2
C301	B2
C302	B2
C303	B2
C306	B1
C314	A1
C315	B1
C316	C1
CE300	C2
CE301	B1
CON301	A1
CON302	C1
D301	D2
D302	D2
K302	E3
K303	E2
K304	D2
LED1	E2
R300	B2
R301	B2
R302	B2
R303	B2
R304	B2
R305	B2
R306	C1
R307	C2
R308	C2
R315	B1
REM301	B1
U301	D2

6-5

Front Board Print-Layout (Bottom Side) for DVP3156/XX

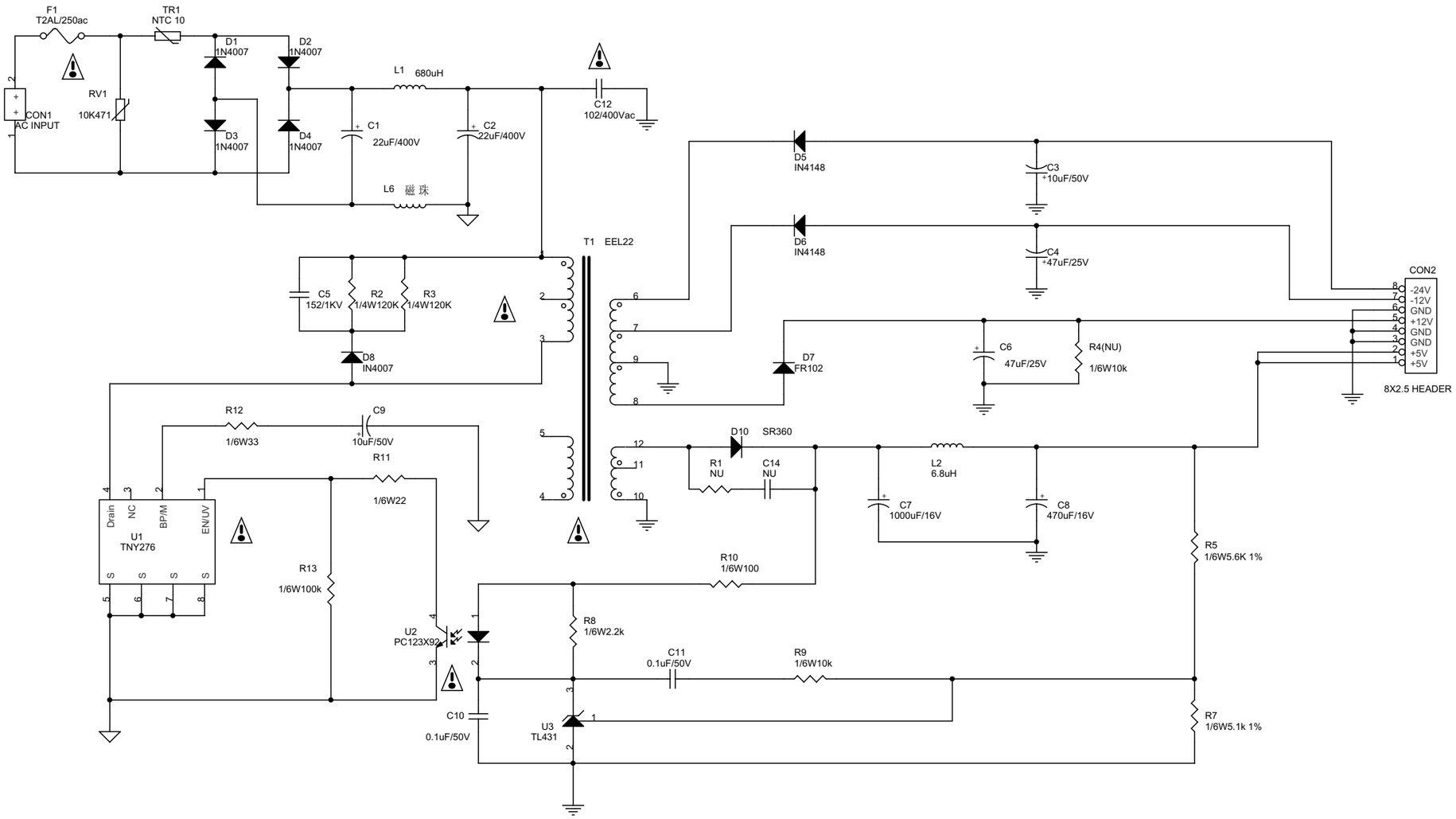


Switch Board Print-Layout (Bottom Side) for DVP3156/XX



6-6

Power Board Electric Diagram for DVP3156/XX, DVP3160K/XX, DVP3166(K)/XX



C1	A1
C10	B1
C11	B2
C12	A2
C14	B2
C2	A1
C3	A3
C4	A3
C5	A1
C6	A2
C7	B2
C8	B3
C9	B1
CON1	A1
CON2	A3
D1	A1
D10	B2
D2	A1
D3	A1
D4	A1
D5	A2
D6	A2
D7	A2
D8	A1
F1	A1
L1	A1
L2	B2
L6	A1
R1	B2
R10	B2
R11	B1
R12	B1
R13	B1
R2	A1
R3	A1
R4	A3
R5	B3
R7	B3
R8	B2
R9	B2
RV1	A1
T1	A2
TR1	A1
U1	B1
U2	B1
U3	B2

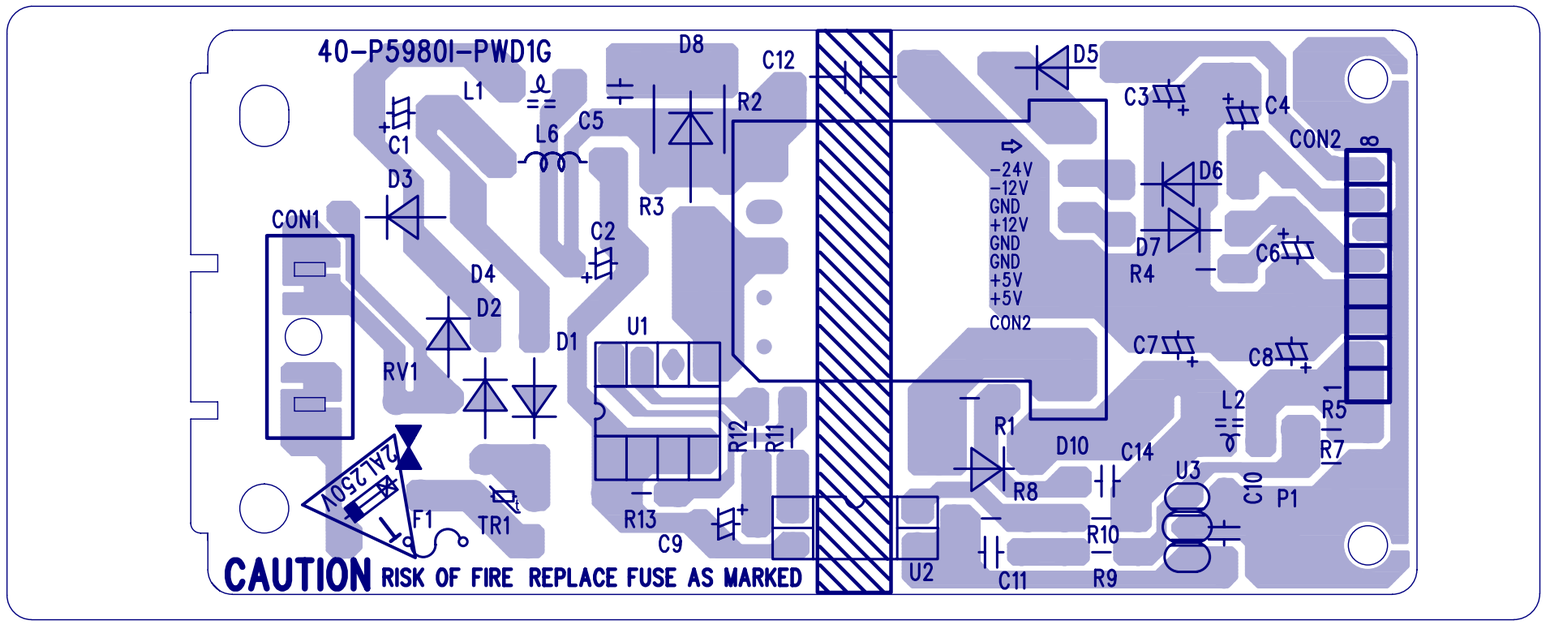
*** CAUTION :**

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

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

6-7

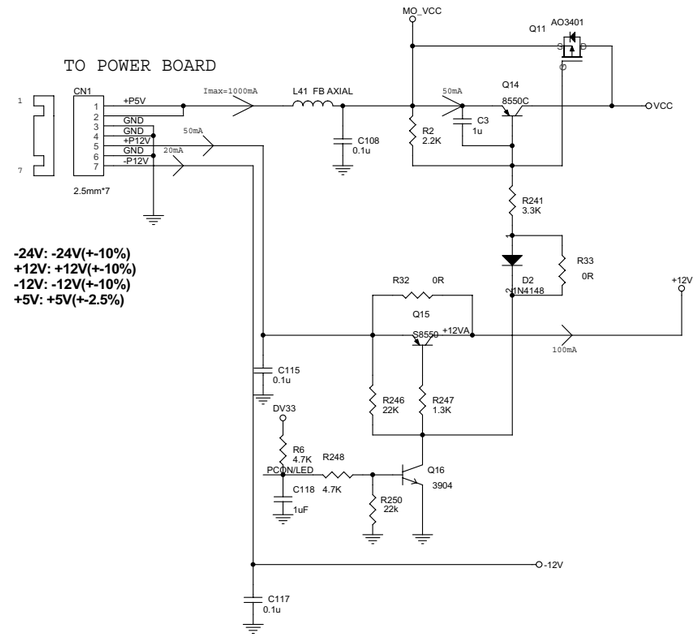
Power Board Print-Layout (Bottom Side) for DVP3156/XX, DVP3160K/XX, DVP3166(K)/XX



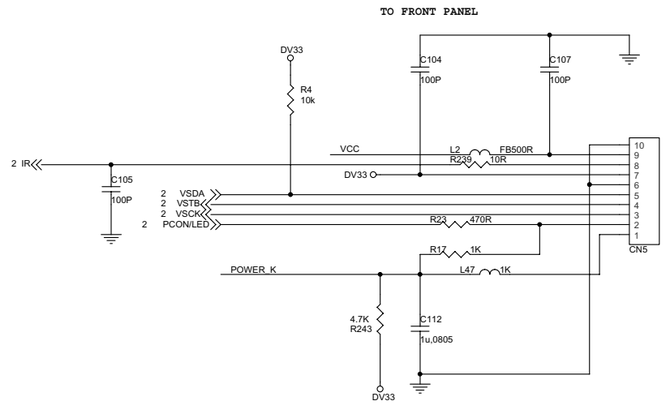
6-8

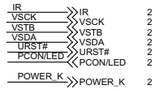
Main Board Electric Diagram for DVP3160K/XX: POWER&CONNECTOR

MT1389HD (LQFP256) DVD MP Board for SONY KHM313AAA

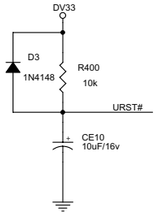


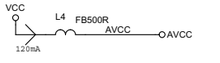
-24V: -24V(+-10%)
+12V: +12V(+-10%)
-12V: -12V(+-10%)
+5V: +5V(+-2.5%)

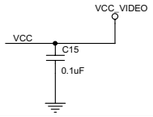


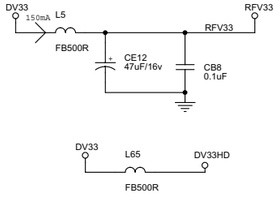


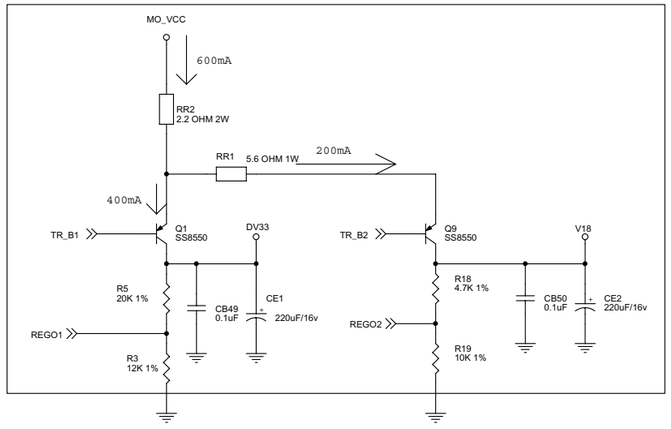
RESET Circuit











C105	A4
C108	A3
C112	A5
C118	B3
C3	A3
C51	A5
C52	A5
C53	A5
CB49	D3
CB50	D4
CB8	D2
CE1	D3
CE10	C1
CE12	D2
CE2	D4
CN1	A2
CN5	A5
D2	A3
D3	C1
L2	A5
L4	D1
L41	A3
L42	A5
L47	A5
L5	D2
L65	D2
Q1	D3
Q11	A3
Q14	A3
Q15	A3
Q16	B3
Q9	D4
R17	A5
R18	D4
R19	D4
R2	A3
R23	A5
R239	A5
R241	A3
R243	A4
R246	B3
R247	B3
R248	B3
R250	B3
R3	D3
R33	A3
R4	A4
R400	C1
R5	D3
R6	B3
RR1	C3
RR2	C3

6-9

Main Board Electric Diagram for DVP3160K/XX: MT1389HD&FRONTEND

MT1389HD

Pin Assignment v1.5

C17,C18 should join the ground in one point!

CE14/CE30/CE31 closed to IC's pin

Use it to connect the shell of the crystal to ground.

Very Important to reduce Noise

HD-62	R131(0),R132(0) R34(10),R35(10)
KHM313A	R131(100),R132(100) R34(4.7),R35(4.7)

RS-232

TOP

U2 MT1389HD

U3 AM5888

CN2 6x1 W/HOUSING

CN4 6x1 W/HOUSING

CN10 4x1 W/HOUSING

CN3 2.0MM*5

HEADER 24 SMD0.5 TOP

Q1 2N3904

Q2 BT3904

Q3 2SK3018

Q4 2SK3018

Q5 9012

Q6 9012

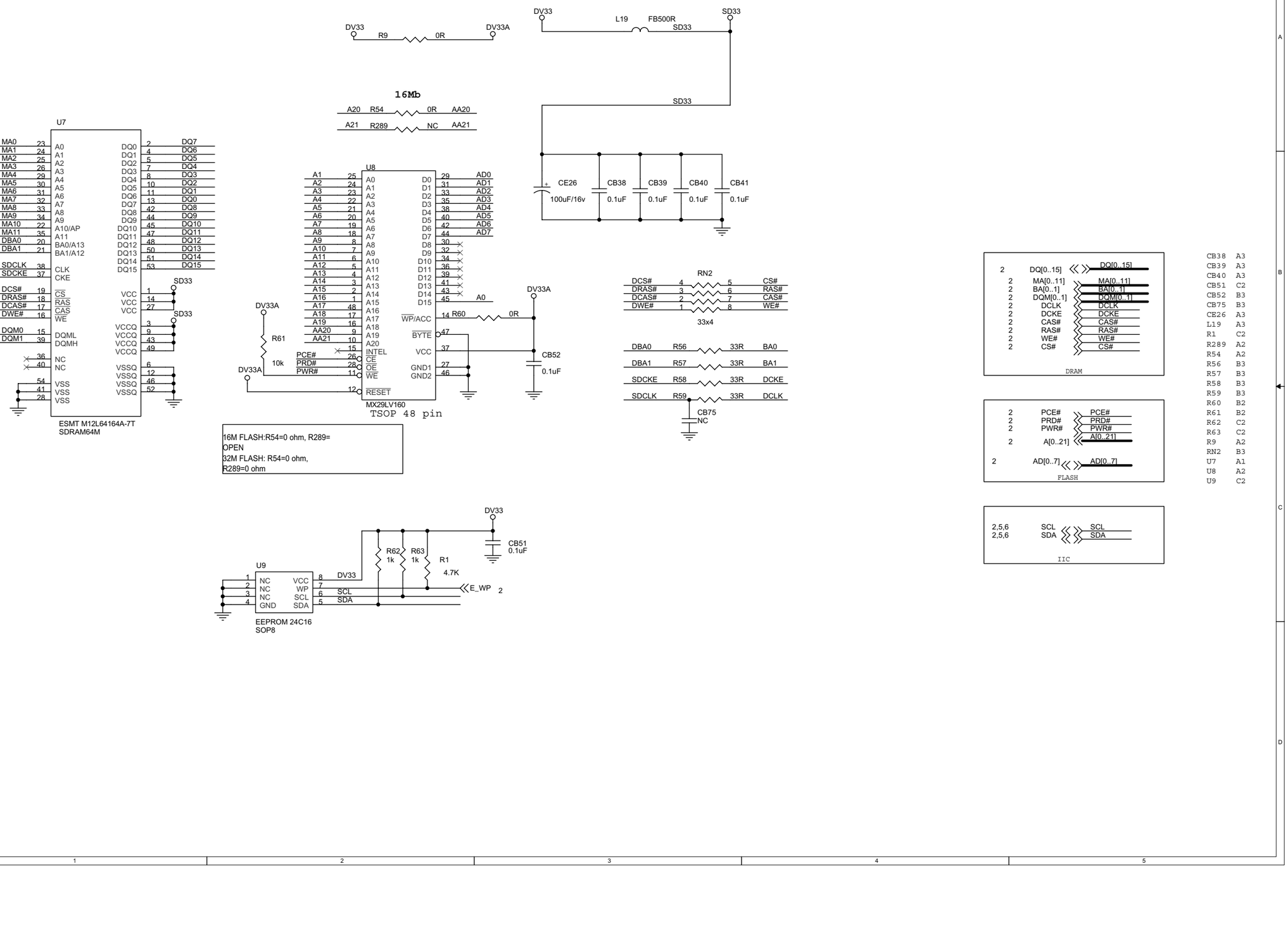
Y1 27MHz

F2 500MA

D1 MBRX120

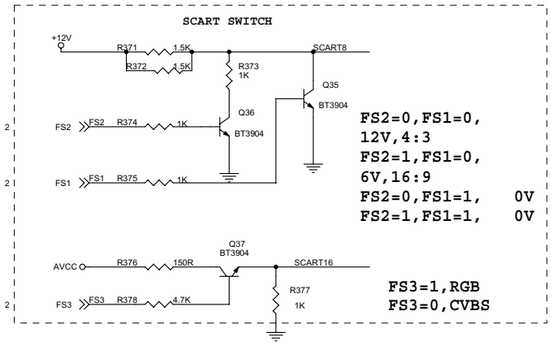
6-10

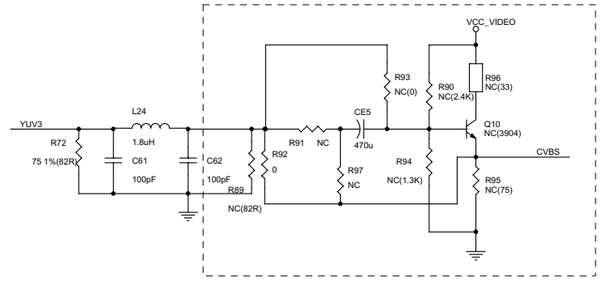
Main Board Electric Diagram for DVP3160K/XX: SDRAM & FLASH

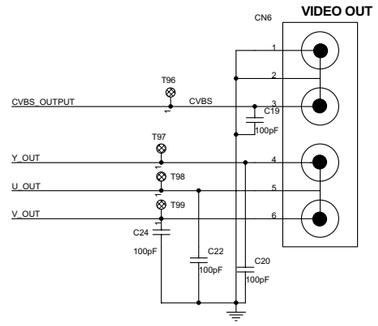


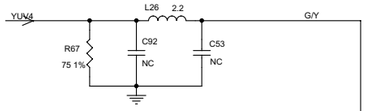
6-11

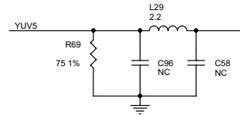
Main Board Electric Diagram for DVP3160K/XX: VIDEO OUT

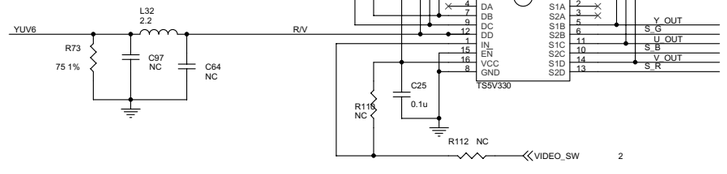


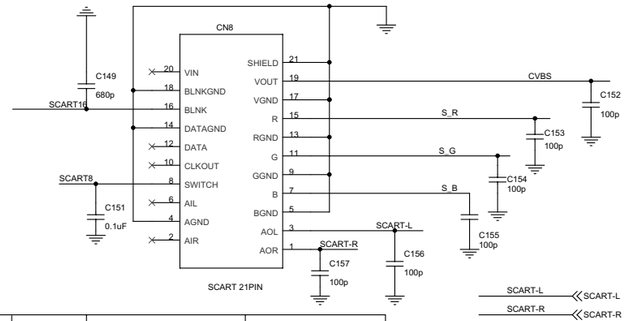




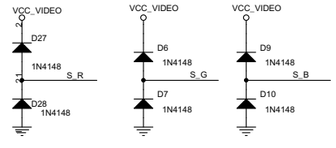








SCART-L <<SCART-L 2
SCART-R <<SCART-R 2



YUV[3..6] <<YUV[3..6] 2

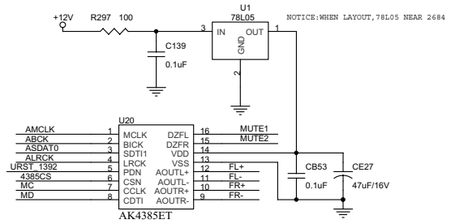
FS3	FS1	FS2	SCART8	SCART16
1	0	0	12V (9.5V - 12V 4:3)	3V (RGB)
1	0	1	6V (5V - 8V 16:9)	3V (RGB)
0				0V (CVBS)
	1		0V (TV MODE)	

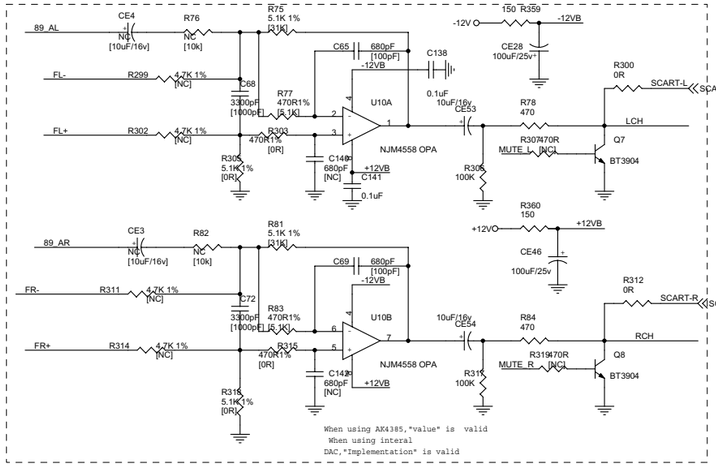
When have no SCART, this inside of circle a piece is"OPEN"

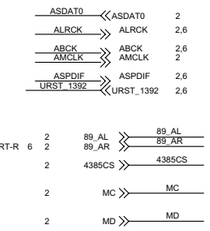
C151	C1	R119	C4
C25	C4	R120	C4
R92	A3	CN8	C1
R372	B1	U19	C4
R371	B1	CN6	A4
L24	A2	T96	A4
R373	B1	T97	A4
R374	B1	T98	A4
R375	B1	T99	A4
R377	B1		
D6	D2		
D7	D2		
D9	D3		
D10	D3		
L26	B3		
L29	C3		
L32	C3		
R378	B1		
R72	A2		
R67	B3		
R69	C3		
R73	C3		
C62	A3		
C61	A2		
C20	A4		
C24	A4		
C22	A4		
C19	A4		
C152	C2		
C153	C2		
C154	C2		
C155	C2		
C156	C2		
C157	C2		
R376	B1		
CE5	A3		
C149	C1		
Q35	B1		
Q36	B1		
Q37	B1		
R93	A3		
R94	A3		
R90	A3		
R96	A3		
R95	A3		
R89	A3		
Q10	A3		
C53	B3		
C58	C3		
C64	C3		
C92	B3		
C96	C3		
C97	C3		
D28	D2		
D27	D2		
R97	A3		
R91	A3		
R110	C3		
R112	C4		
R115	C4		

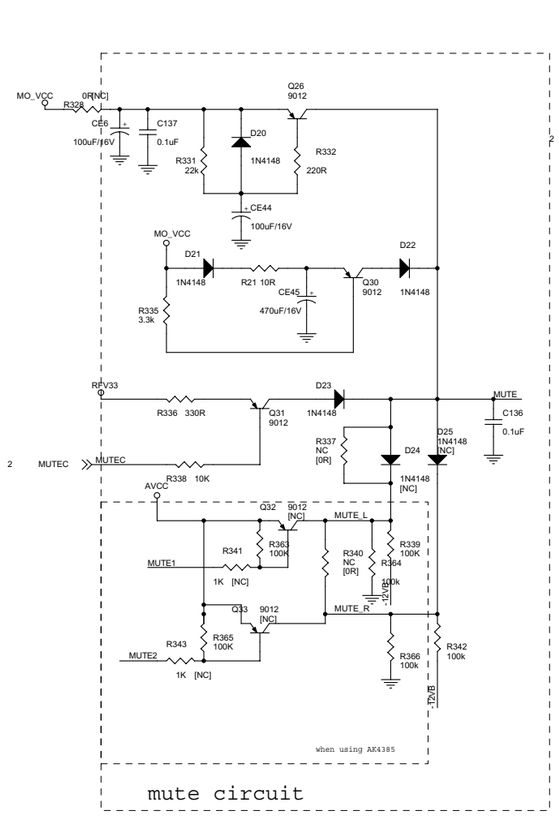
6-12

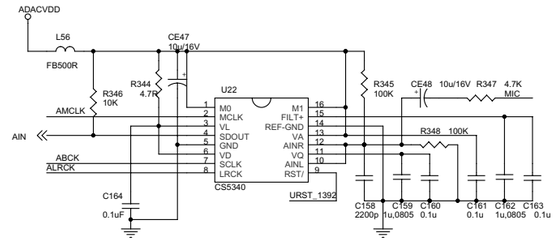
Main Board Electric Diagram for DVP3160K/XX: AUDIO OUT & SCART

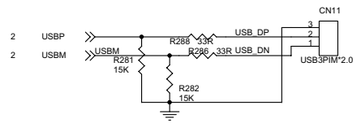


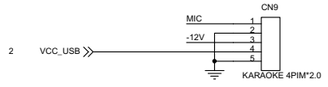


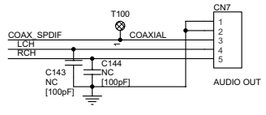


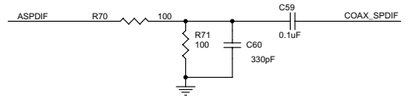








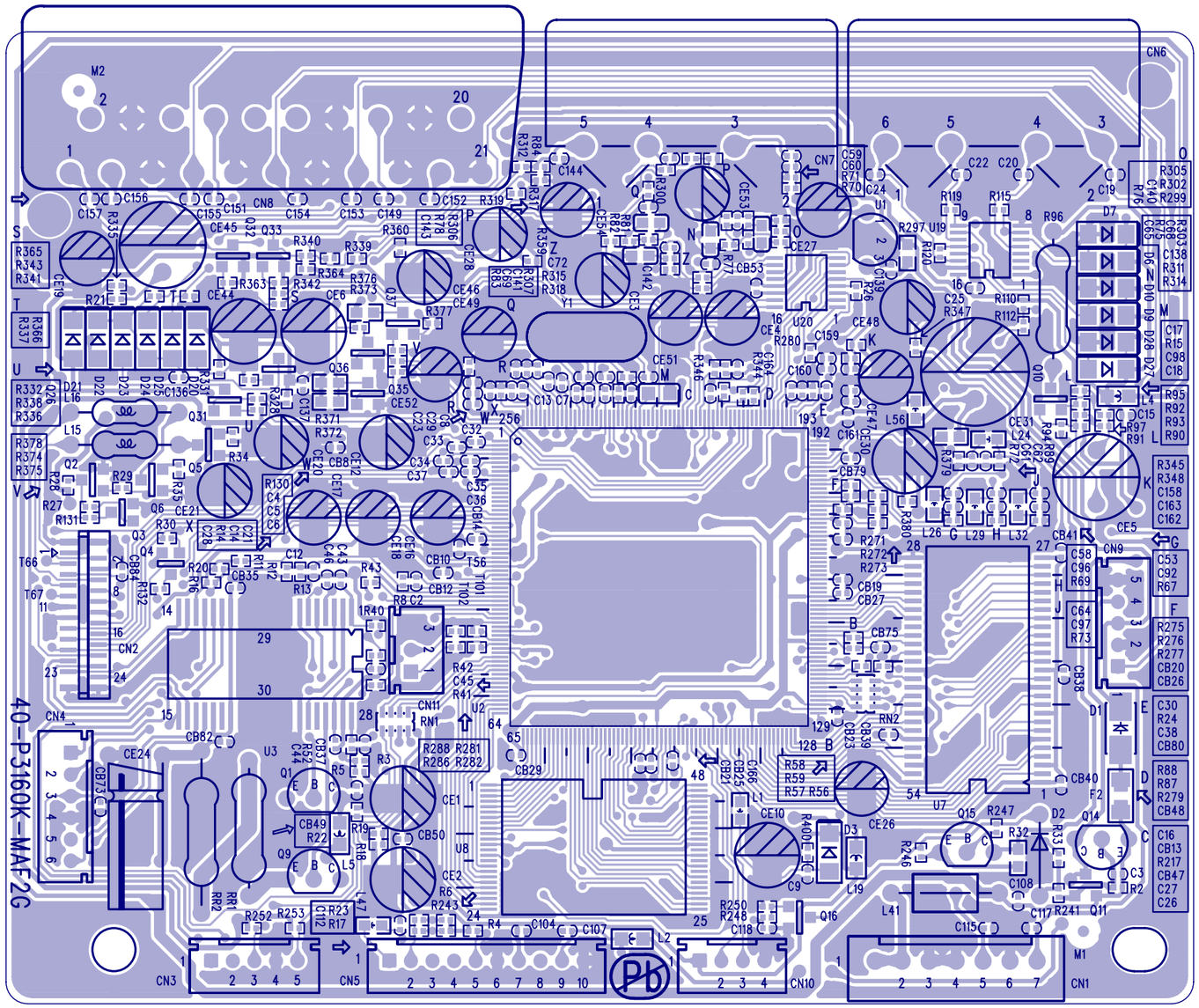




C59	C4	CE4	C1
C136	C2	CE46	A4
C137	B1	CE28	A4
C138	A3	R71	C4
C139	A1	R70	C4
C141	A3	R297	A1
CB53	A1	R359	A3
C164	C2	R360	A4
C160	B3	R332	B1
C161	B3	R336	C1
C163	B3	C60	C4
R300	A4	R315	A3
R312	A4	R303	A3
R328	B1	R83	A3
R341	C1	R77	A3
R343	D1	R319	A4
D20	B1	R307	A4
D21	C1	CE45	C1
D22	C1	R84	A4
D23	C1	R78	A4
D24	C1	C65	A3
D25	C1	C140	A3
R341	C1	C142	A3
R343	D1	C158	B3
D20	B1	C68	A3
D21	C1	C72	A3
D22	C1	Q26	B1
D23	C1	Q30	C1
D24	C1	Q31	C1
D25	C2	Q32	D1
C159	B3	U20	A1
C162	B3	CN7	B4
R335	C1	Q7	A4
R299	A3	Q8	A4
R302	A3	U22	B2
R311	A3	L56	B2
R314	A3	CN9	D3
R347	B3	CE3	A3
R344	B2	CE4	A3
R75	A3	C144	B4
R81	A3	C143	B4
R305	A3	R82	A3
R318	B3	R76	A3
R346	B2	R337	C1
R338	C1	R340	C1
R21	C1	U10B	A3
CE48	B3	U10A	A3
CE47	B2	CN11	C3
CE54	A3	T100	B4
CE53	A3		
R281	C3		
R282	C3		
R331	B1		
R288	C3		
R286	C3		
CE27	A2		
U1	A1		
R306	A3		
R317	A3		
R339	C1		
R363	C1		
R365	D1		
R342	D2		
R345	B3		
R348	B3		
R364	C1		
R366	D1		
CE6	B1		

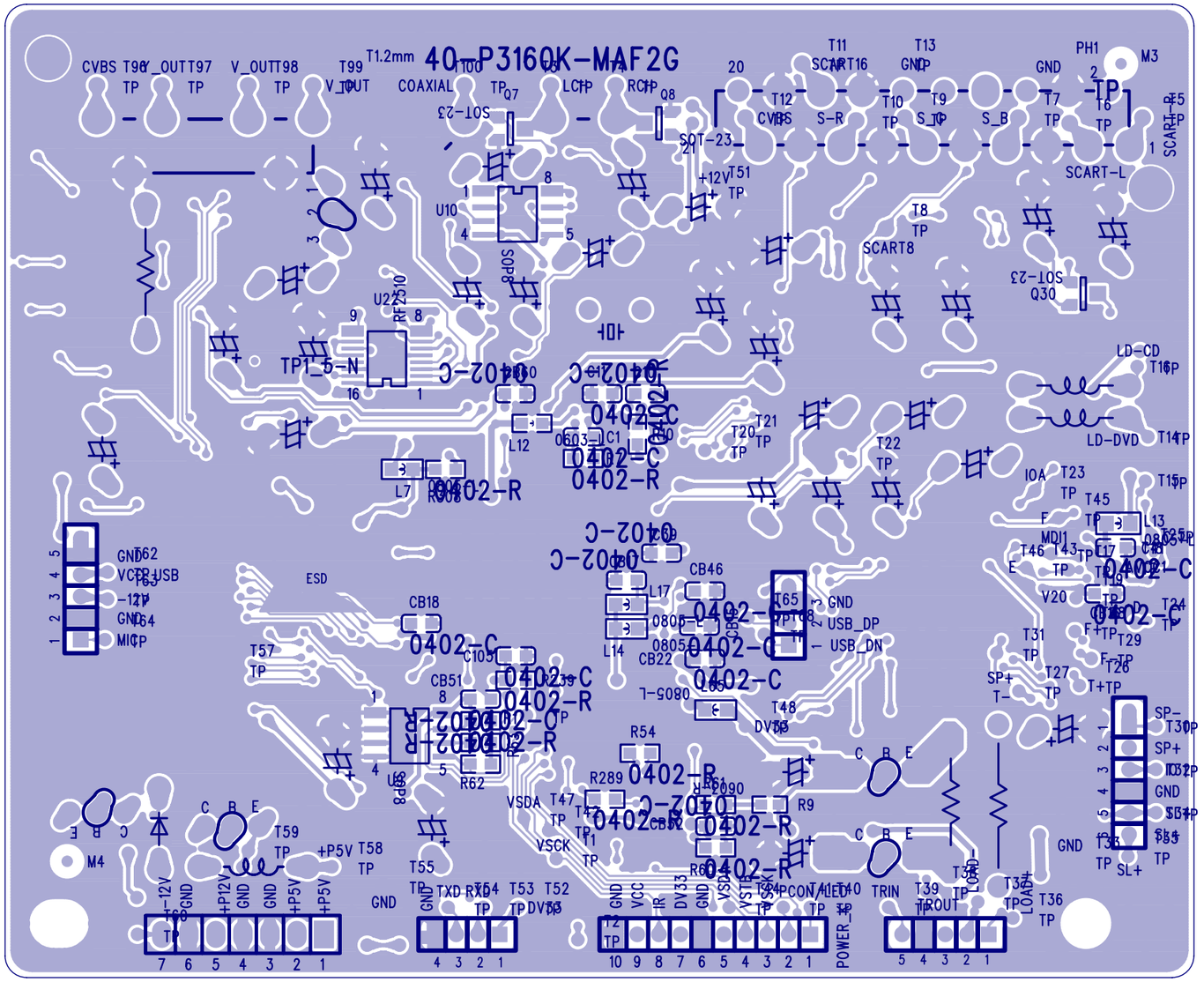
6-13

Main Board Print-Layout (Top Side) for DVP3160K/XX



6-14

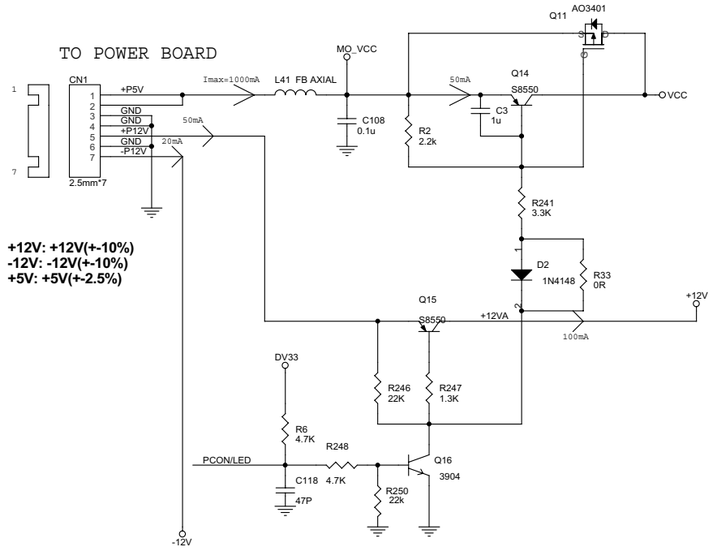
Main Board Print-Layout (Bottom Side) for DVP3160K/XX

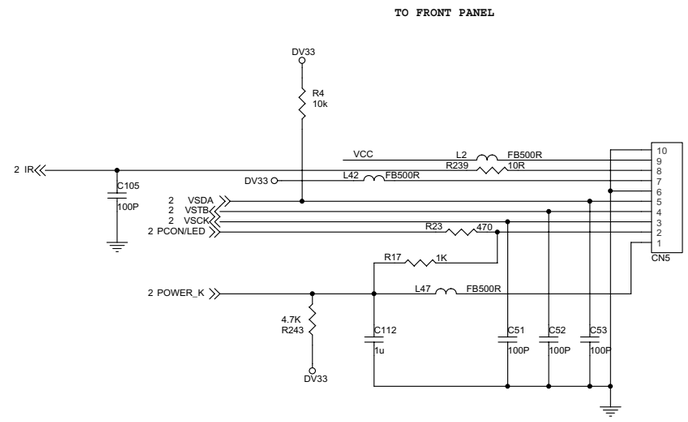


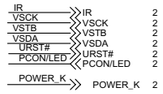
6-15

Main Board Electric Diagram for DVP3156/XX, DVP3166(K)/XX: POWER&&CONNECTOR

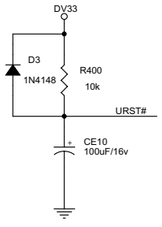
MT1389HD (LQFP256) DVD MP Board for SONY KHM313AAA

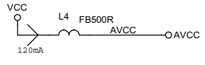


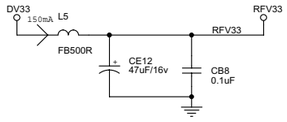


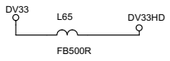


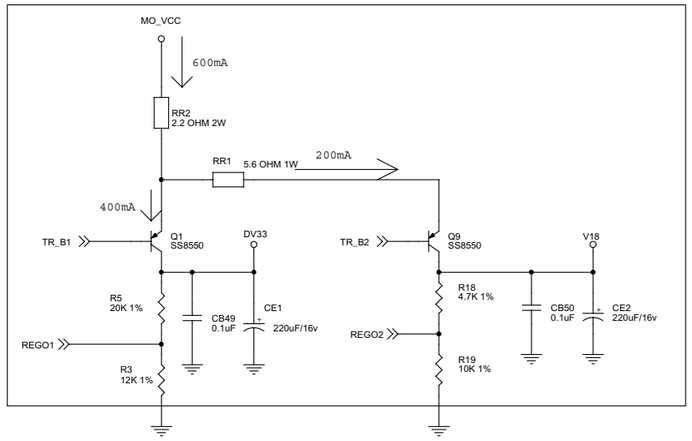
RESET Circuit







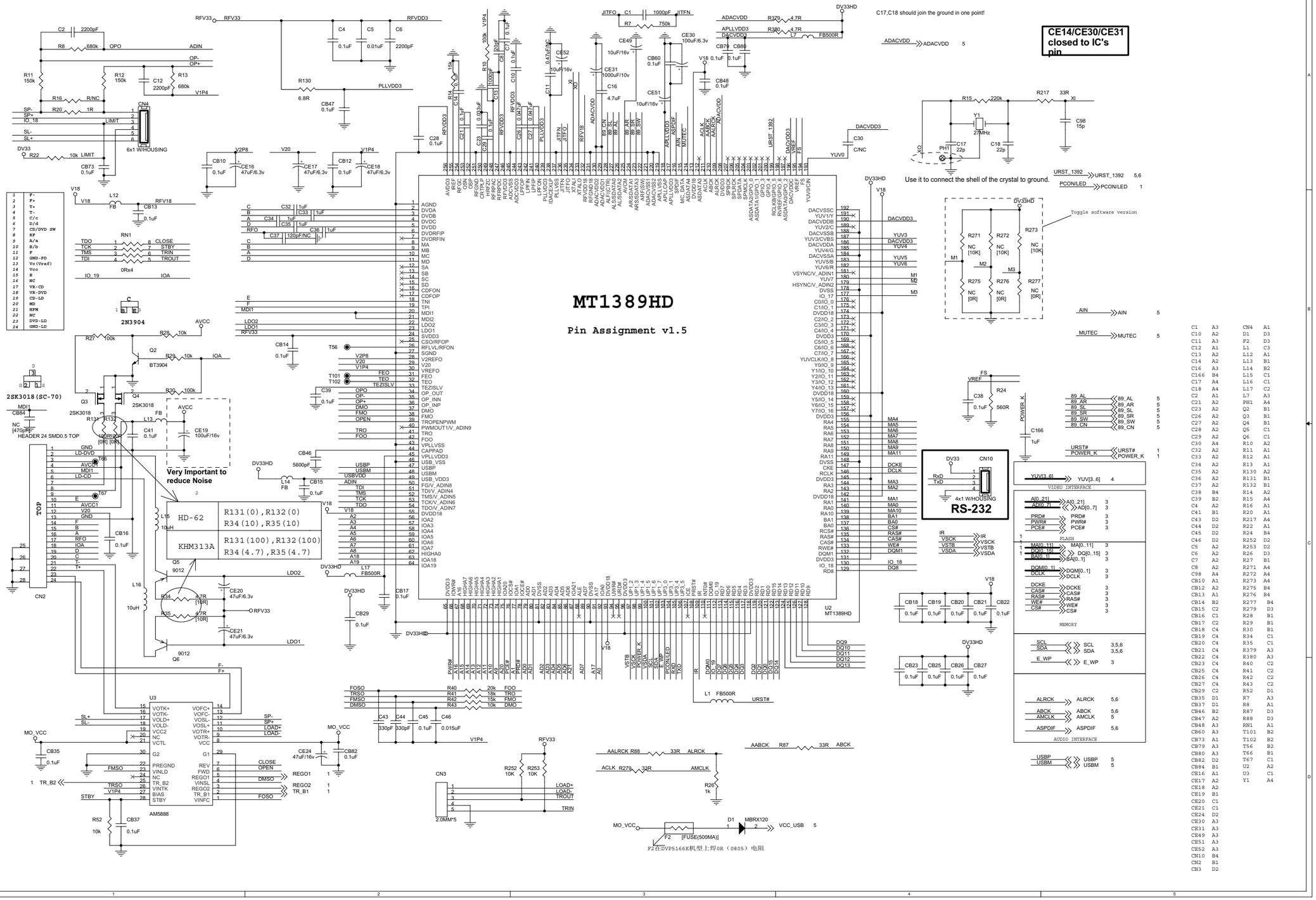




C105	A4
C108	A3
C112	A5
C118	B3
C3	A3
C51	A5
C52	A5
C53	A5
CB49	D3
CB50	D4
CB8	D2
CE1	D3
CE10	C1
CE12	D2
CE2	D4
CN1	A2
CN5	A5
D2	A3
D3	C1
L2	A5
L4	D1
L41	A3
L42	A5
L47	A5
L5	D2
L65	D2
Q1	D3
Q11	A3
Q14	A3
Q15	A3
Q16	B3
Q9	D4
R17	A5
R18	D4
R19	D4
R2	A3
R23	A5
R239	A5
R241	A3
R243	A4
R246	B3
R247	B3
R248	B3
R250	B3
R3	D3
R33	A3
R4	A4
R400	C1
R5	D3
R6	B3
RR1	C3
RR2	C3

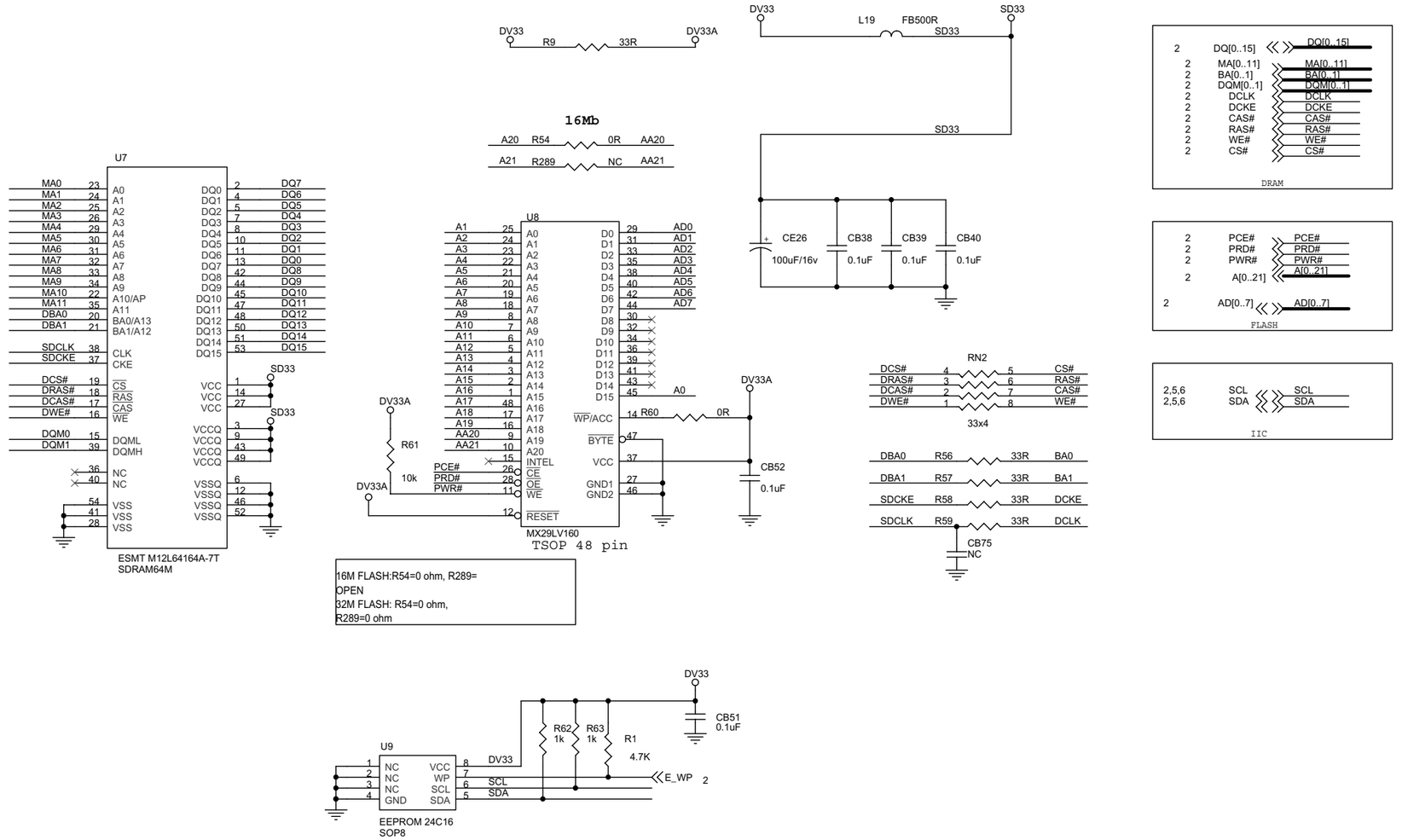
6-16

Main Board Electric Diagram for DVP3156/XX, DVP3166(K)/XX: MT1389HD&FRONTEND



6-17

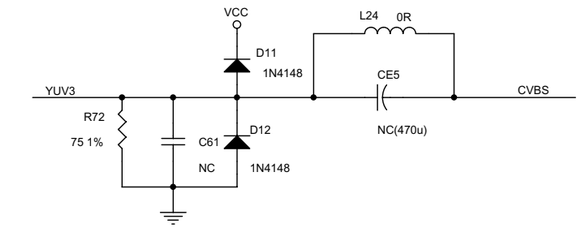
Main Board Electric Diagram for DVP3156/XX,DVP3166(K)/XX: SDRAM & FLASH

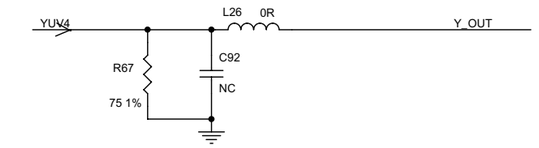


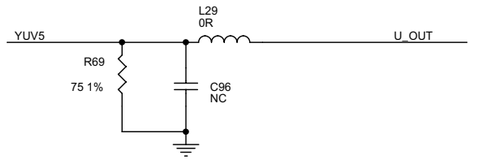
CB38	A3
CB39	A3
CB40	A3
CB51	C2
CB52	B3
CB75	B3
CE26	A3
L19	A3
R1	C2
R289	A2
R54	A2
R56	B3
R57	B3
R58	B3
R59	B3
R60	B2
R61	B2
R62	C2
R63	C2
R9	A2
RN2	B3
U7	A1
U8	A2
U9	C2

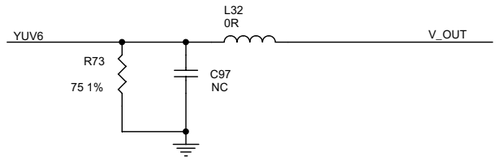
6-18

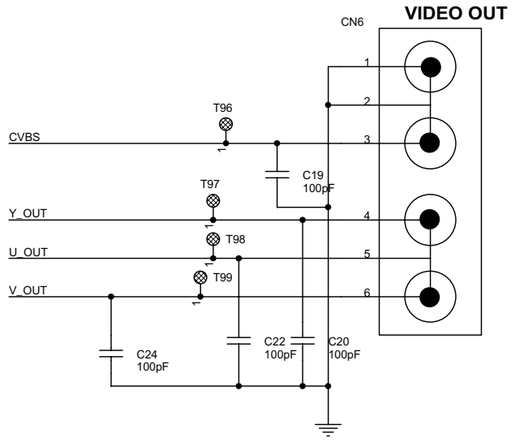
Main Board Electric Diagram for DVP3156/XX, DVP3166(K)/XX: VIDEO OUT

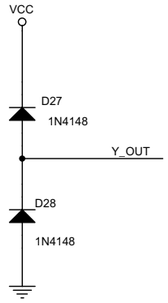


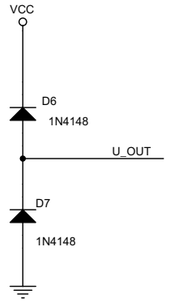


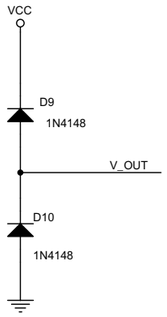


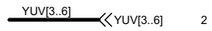








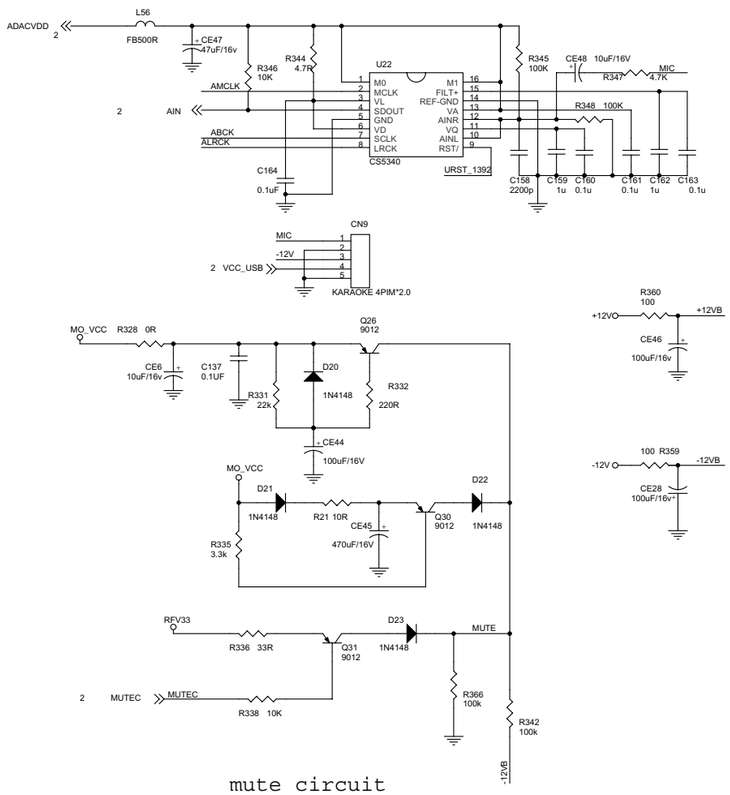




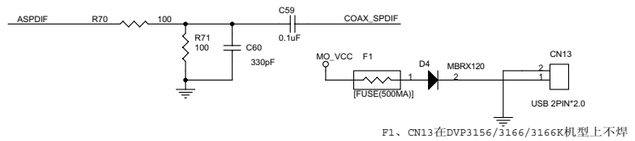
L24	A2
L26	B2
L29	B2
L32	C2
D6	B3
D7	C3
D9	B4
D10	C4
D11	A2
D12	A2
D27	B3
D28	C3
R69	B1
R72	A1
R73	C1
R67	B1
C19	A3
C20	B3
C22	B3
C24	B3
CE5	A2
C61	A2
C92	B2
C96	B2
C97	C2
CN6	A4
T96	A3
T97	A3
T98	B3
T99	B3

6-19

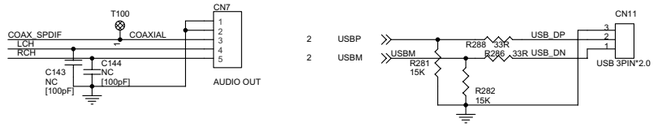
Main Board Electric Diagram for DVP3156/XX, DVP3166(K)/XX: AUDIO OUT

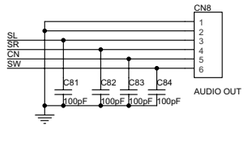


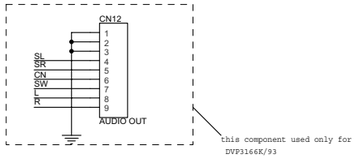
mute circuit



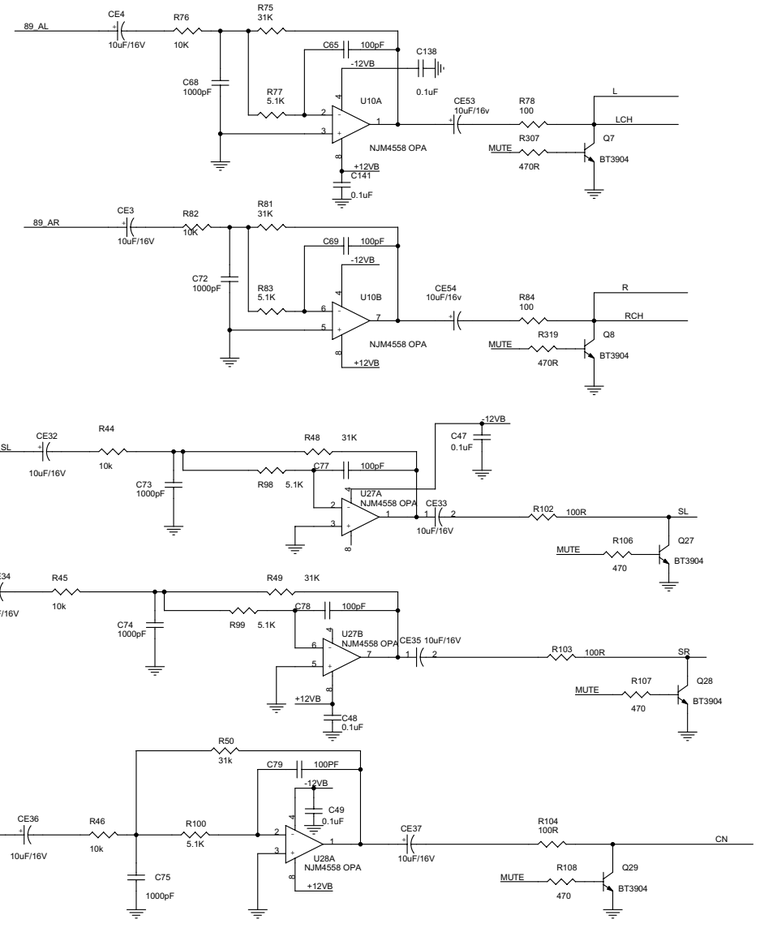
F1、CN13在DVP3156/3166/3166K机型上不焊







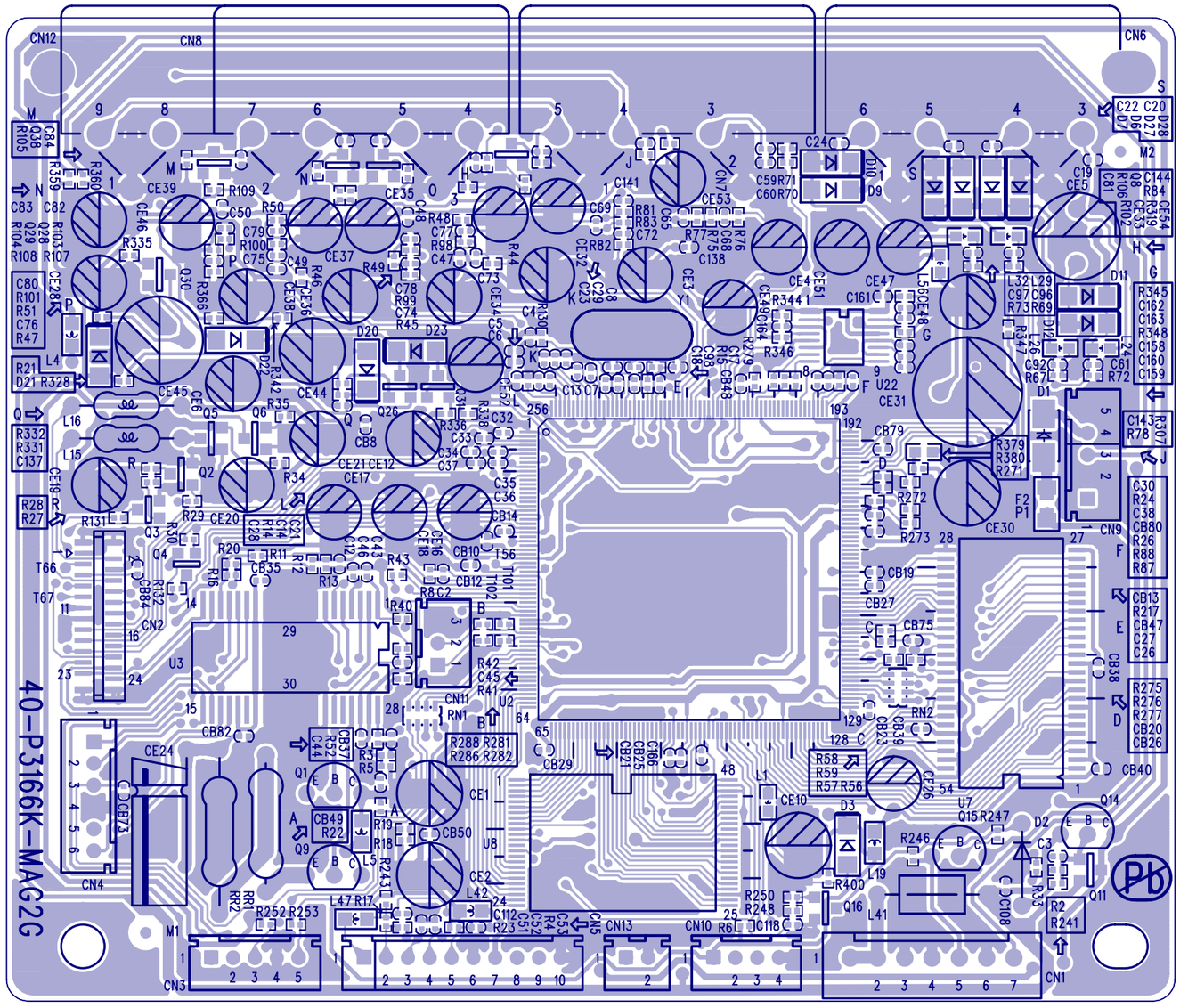
this component used only for DVP3166K/93



C137	A1	R307	A4
C138	A3	R319	A4
C141	A3	R328	A1
C143	C1	R331	B1
C144	C1	R332	B1
C158	A2	R335	B1
C159	A2	R336	B1
C160	A2	R338	B1
C161	A2	R342	B2
C162	A2	R344	A1
C163	A2	R345	A2
C164	A1	R346	A1
C47	B3	R347	A2
C48	B3	R348	A2
C49	C3	R359	B2
C50	C3	R360	A2
C59	C1	R366	B2
C60	C1	R44	B3
C65	A3	R45	B2
C68	A3	R46	C3
C69	A3	R47	C3
C72	A3	R48	B3
C73	B3	R49	B3
C74	B3	R50	B3
C75	C3	R51	C3
C76	C3	R70	C1
C77	B3	R71	C1
C78	B3	R75	A3
C79	D1	R76	A3
C80	D1	R77	A3
C83	D1	R81	A3
C84	D1	R82	A3
CE28	B2	R83	A3
CE3	A3	R84	A4
CE32	B2	R98	B3
CE33	B3	R99	B3
CE34	B2	T100	C1
CE35	B3	U10A	A3
CE36	C2	U10B	A3
CE37	C3	U22	A1
CE38	C2	U27A	B3
CE39	C3	U27B	B3
CE4	A3	U28A	C3
CE44	B1	U28B	C3
CE45	B1		
CE46	A2		
CE47	A1		
CE48	A2		
CE53	A3		
CE54	A3		
CE6	A1		
CN11	C2		
CN12	D2		
CN13	C2		
CN7	C1		
CN8	D1		
CN9	A1		
D20	A1		
D21	B2		
D22	A1		
D23	B1		
D4	C2		
F1	C2		
L56	A1		
Q26	A1		
Q27	B4		
Q28	B4		
Q29	C4		
Q30	B1		
Q31	B1		
Q38	C4		
Q7	A4		
Q8	A4		
R100	C3		
R101	C3		
R102	B4		
R103	B4		
R104	C4		
R105	C4		
R106	B4		
R107	B4		
R108	C4		
R109	C4		
R21	B1		
R281	C2		
R282	C2		
R286	C2		
R288	C2		

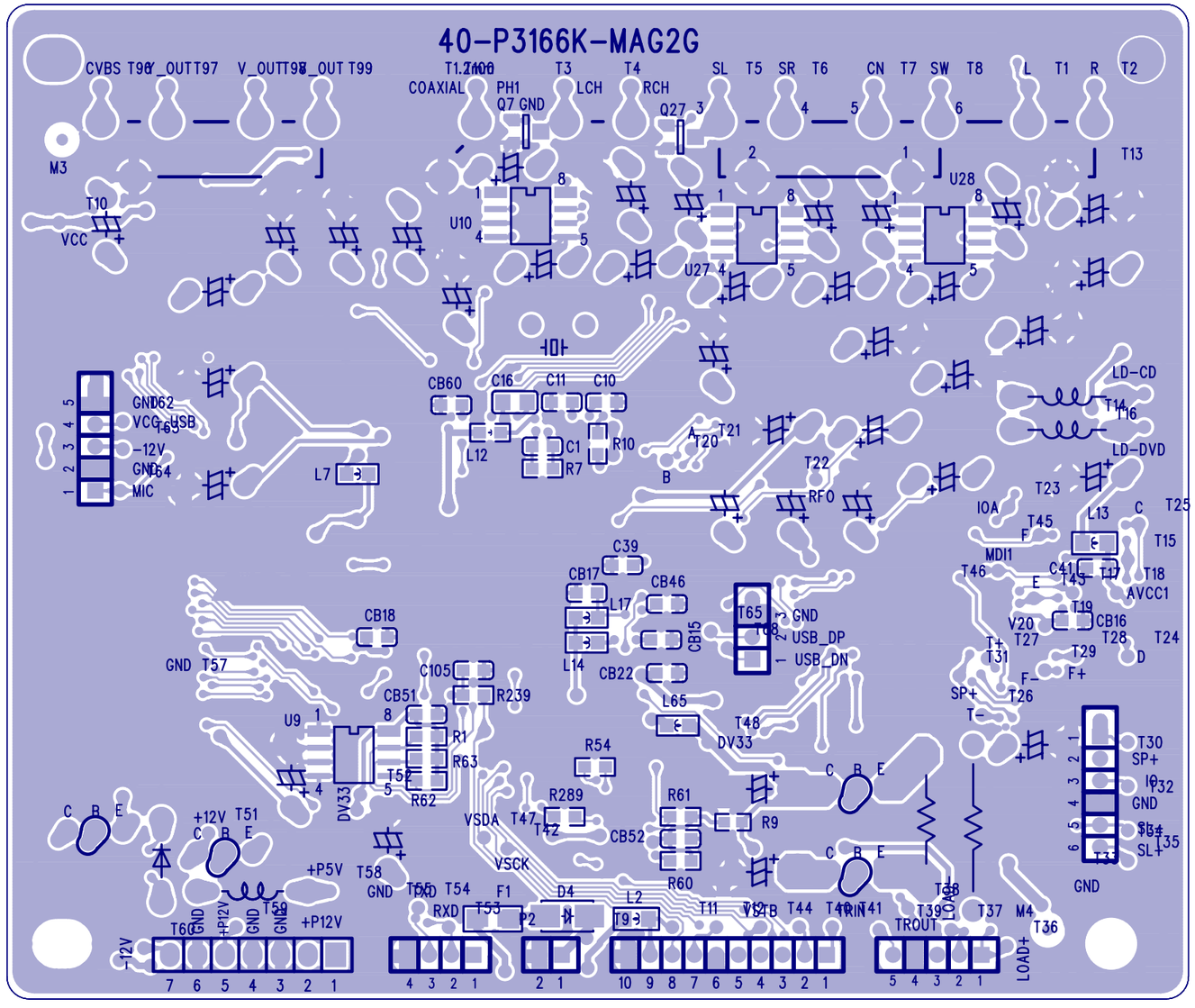
6-20

Main Board Print-Layout (Top Side) for DVP3156/XX, DVP3166(K)/XX

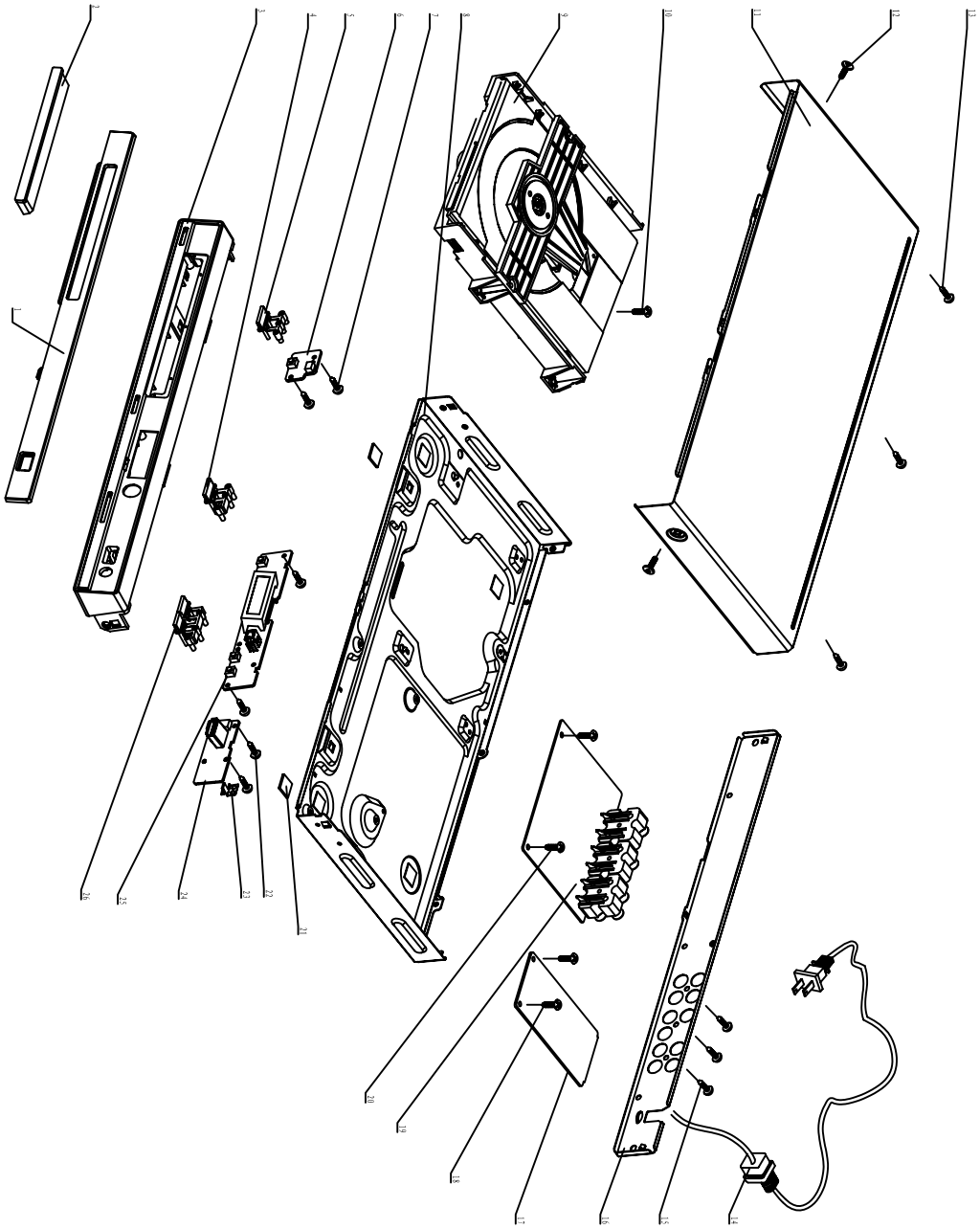


6-21

Main Board Print-Layout (Bottom Side) for DVP3156/XX, DVP3166(K)/XX



DVP3156/XX, DVP3166/XX Mechanical Exploded View



Remark: It's a general Mechanical Exploded View for DVP3156/XX, DVP3166/XX, Detailed information please refer to Model set.

Ass'y1 is the assembled component for location 1,3,4,5,26

7-2

ENCASING & ACCESSORIES PARTS LIST

No	12NC No.	Part Name	Q'ty
Ass'y1	996510001686	Front panel Ass'y for DVP3166/94 ,DVP3166x/94	1
	996510001679	Front panel Ass'y for DVP3156/93	
2	996510001685	Front Door Ass'y for DVP3166/94,DVP3166x/94	1
	996510001678	Front Door Ass'y for DVP3156/93	
6	996510001188	Ass'y-Switch Board for DVP3166/94,DVP3166x/94	1
	996510001163	Ass'y-Switch Board for DVP3156/93	
8	996510001177	Bottom Cover	1
9	996510001166	Loader	1
11	996510001178	Top Cover	1
14	996510001179	Power Cord for DVP3166/94 ,DVP3166x/94	1
	996510001206	Power Cord for DVP3156/93	
16	996510001687	Rear Cabinet DVP3166/94	1
	996510001681	Rear Cabinet DVP3156/93	
17	996510001200	Ass'y-Power Board for DVP3166/94	1
	996510001673	Ass'y-Power Board for DVP3156/93	
	996510001687	Back Panel for DVP3166/94,DVP3166x/94	
18	996510001200	Ass'y Power Board for DVP3166/94,DVP3166x/94	1
19	996510001683	Ass'y-Main Board for DVP3166/94 ,DVP3166x/94	1
	996510001672	Ass'y-Main Board for DVP3156/93	
21	996510001680	Rubber Pad	1
23	/	Grounding Pad	1
24	996510001674	Ass'y-USB Board	1
25	996510001189	Ass'y-Front Board for DVP3166/94	
	996510001164	Ass'y-Front Board for DVP3156/93	1
26	996510001674	Ass'y - US BD	1
27	996510001189	Ass'y-FB BD DVP3166/94,DVP3166x/94	1

SCREW LIST

No	12NC No.	Part Name	Q'ty
1	/		2
7	/	S/T SCREW B 2.6 X 8 BF	
10	/	MACHINE SCREW	1
12	/	M/C SCREW TRIANGLE W 3 X 6	2
13	/	TRIANGLE M/C SCREW B 3 X 6	3
15	/	S/T SCREW B 3 X 8 BF	
18	/	TRIANGLE M/C SCREW B 3 X 6	3
20	/	TRIANGLE M/C SCREW B 3 X 6	2
22	/	S/T SCREW B 2.6 X 8 BF	2

Accessory

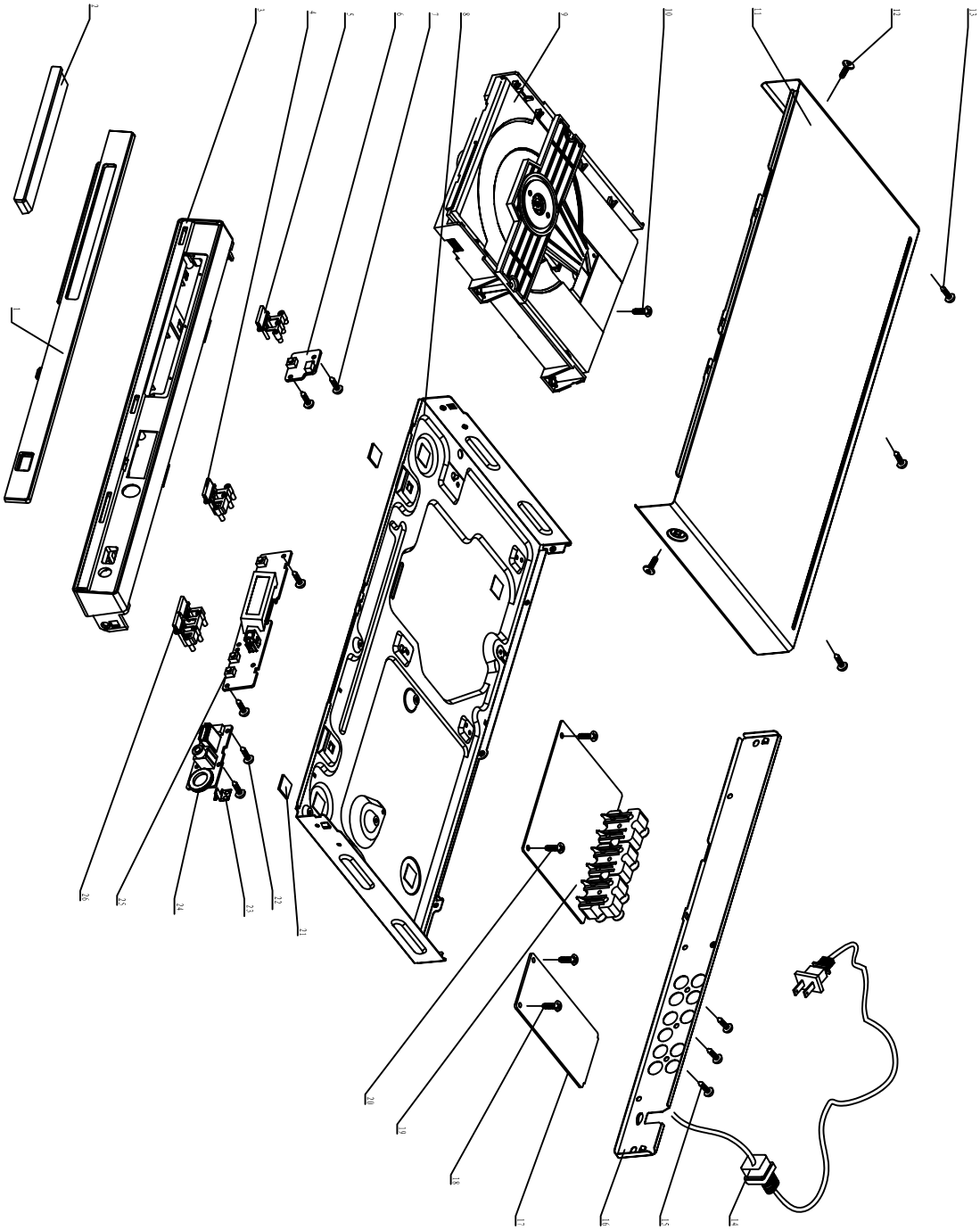
RC	996510001675	REMOTE CONTROL for DVP3156/93	1
RC	996500035359	REMOTE CONTROL for DVP3166/94	1
AV	996510001106	VIDEO CABLE 1500mm	1
DBOX	996510001677	DISPLAY BOX for DVP3156/93	1
LBuffer	996510001203	RIGHT BUFFER	1
Rbuffer	996510001202	LEFT BUFFER	1

Cable

CN601	996510001676	CABLE 5PIN PITCH=2.0	1
CON2	996510001169	TJC3-7Y/SCN-7P L=80MM	1
CON3	996510001172	HS 9PIN	1
CON3	996510001171	2P HS for DVP3156/93	1
CN1	996510001169	TJC3-7Y/SCN-7P L=80MM	1
CN2	996510001168	24PIN HS 1	1
CN4	996510001170	6PIN HS 1	1
CN1	996510001193	PH-2Y/SAW-2P L=170MM for DVP3166/94	1
MAIN	996510001192	PH-5Y/PH-5Y L=130MM	1
5P	996510001192	PH-5Y/PH-5Y L=130MM DVP3166/94,DVP3166x/94	1

Note:Only the parts mentioned in this list are normal service spare parts

DVP3160K/XX,DVP3166K/XX Mechanical Exploded View



Remark: It's a general Mechanical Exploded View for DVP3160K/XX, DVP3166K/XX , Detailed information please refer to Model set.

Ass'y1 is the assembled component for location 1,3,4,5,26

ENCASING & ACCESSORIES PARTS LIST

No	12NC No.	Part Name	Q'ty
Ass'y1	996510001196	Front panel Ass'y for DVP3160K/55/77/78	1
	/	Front panel Ass'y for DVP3166K/93	
2	996510001685	Front Door Ass'y	1
6	996510001188	Ass'y-Switch Board	1
8	996510001177	Bottom Cabinet	1
9	996510001166	Loader	1
11	996510001178	Top Cover	1
14	996510001175	Power Cord for DVP3160K/55	1
	996510001227	Power Cord for DVP3160K/77	
	/	Power Cord for DVP3160K/78	
	996510001206	Power Cord for DVP3166K/93	
16	996510001198	Rear Cabinet for DVP3160K/55	1
	/	Rear Cabinet for DVP3160K/77/78	
	/	Rear Cabinet for DVP3166K/93	
18	996510001200	Ass'y-Power Board for DVP3160K /77/78, DVP3166K/93	1
	996510001190	Ass'y-Power Board for DVP3160K/55	
19	996510001187	Ass'y-Main Board for DVP3160K/55 /77/78	1
	/	Ass'y-Main Board for DVP3166K/93	
21	996510001680	Rubber Pad	2
23	/	Grounding Pad	1
24	996510001191	Ass'y-USB+OK Board	1
25	996510001189	Ass'y-Front Board	1

SCREW LIST

No	12NC No.	Part Name	Q'ty
7	/	S/T SCREW B 2.6 X 8 BF	2
10	/	MACHINE SCREW	1
12	/	M/C SCREW TRIANGLE W 3 X 6	2
13	/	TRIANGLE M/C SCREW B 3 X 6	3
15	/	S/T SCREW B 3 X 8 BF	3
17	/	TRIANGLE M/C SCREW B 3 X 6	2
20	/	TRIANGLE M/C SCREW B 3 X 6	2
22	/	S/T SCREW B 2.6 X 8 BF	2

Note:Only the parts mentioned in this list are normal service spare parts

8-1

REVISION LIST

Version 1.0
*Initial release

Version 1.1
Include DVP3166X/ 94 models

Remark: This Service manual only for Philips Service repairment, Please Don't transmitt or forward it to others.