

SERVICE MANUAL

MODEL: LEDV2282FHD

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1.PRECAUTIONS

Prior to shipment from the factory, the products are strictly inspected to conform with recognized product safety and Electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

1-1.Safety Precautions

1) Before returning an instrument to the customer, always make a safety check of the entire instrument, including, but not limited to, the following items:

(1) Be sure that no built-in protective devices are defective or have been defeated during servicing.

(1) Protective shields are provided to protect both the technician and the customer. Correctly replace all missing protective shields, including any removed for servicing convenience.

(2) When reinstalling the chassis and/or other assembly in the cabinet, be sure to put back in place all protective devices, including, but not limited to, nonmetallic control knobs, insulating fish papers, adjustment and compartment covers/shields, and isolation resistor/capacitor networks. Do not operate this instrument or permit it to be operated without all protective devices correctly installed and functioning.

(2) Be sure that there are no cabinet openings through which adults or children might be able to insert their fingers and contact a hazardous voltage. Such openings include, but are not limited to, excessively wide cabinet ventilation slots, and an improperly fitted and/or incorrectly secured cabinet back cover.

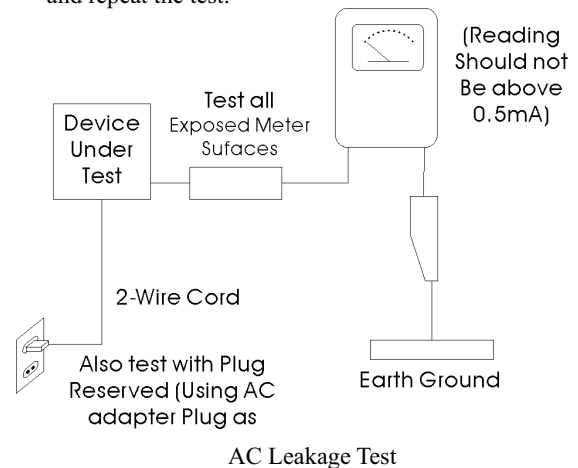
(3) Leakage Current Hot Check-With the instrument completely reassembled, plug the AC line cord directly into a 120V AC outlet. (Do not use an isolation transformer during this test.) Use a leakage current tester or a metering system that complies with American National Standards Institute (ANSI) C101.1 Leakage.

Current for Appliances and Underwriters Laboratories (UL) 1270 (40.7). With the instrument's AC switch first in the ON position and then in the OFF position, measure from a known earth ground (metal water pipe, conduit, etc.) to all exposed metal parts of the instrument (antennas, handle brackets, metal cabinets, screwheads, metallic overlays, control shafts, etc.), especially and exposed metal parts that offer an electrical return path to the chassis.

Any current measured must not exceed 0.5mA.

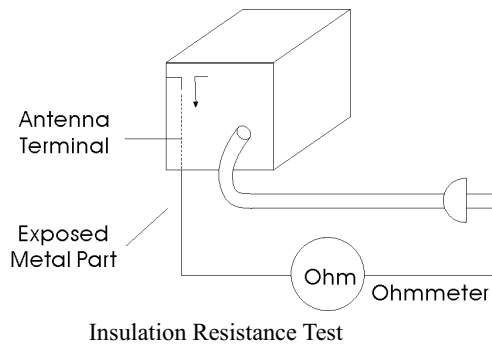
Reverse the instrument power cord plug in the outlet

and repeat the test.



Any measurements not within the limits specified herein indicate a potential shock hazard that must be eliminated before returning the instrument to the customer.

(4) Insulation Resistance Test Cold Check-(1) Unplug the power supply cord and connect a jumper wire between the two prongs of the plug. (2) Turn on the power switch of the instrument. (3) Measure the resistance with an ohmmeter between the jumpered AC plug and all exposed metallic cabinet parts on the instrument, such as screwheads, antenna, control shafts, handle brackets, etc. When an exposed metallic part has a return path to the chassis, the reading should be between 1 and 5.2 megohm. When there is no return path to the chassis, the reading must be infinite. If the reading is not within the limits specified, there is the possibility of a shock hazard, and the instrument must be re-pared and rechecked before it is returned to the customer.



- 2) Read and comply with all caution and safety related notes non or inside the cabinet, or on the chassis.
- 3) Design Alteration Warning-Do not alter or add to the mechanical or electrical design of this instrument. Design alterations and additions, including but not limited to, circuit modifications and the addition of items such as auxiliary audio output connections, might alter the safety characteristics of this instrument and create a hazard to the user. Any design alterations or additions will make you, the service, responsible for personal injury or property damage resulting there from.
- 4) Observe original lead dress. Take extra care to assure correct lead dress in the following areas:
 - (1) near sharp edges, (2) near thermally hot parts (be sure that leads and components do not touch thermally hot parts), (3) the AC supply, (4) high

1-2 Servicing Precautions

CAUTION: Before servicing Instruments covered by this service manual and its supplements, read and follow the Safety Precautions section of this manual.

Note: If unforeseen circumstance create conflict between the following servicing precautions and any of the safety precautions, always follow the safety precautions. Remember; Safety First

1-2-1 General Servicing Precautions

- (1) a. Always unplug the instrument's AC power cord from the AC power source before (1) removing or reinstalling any component, circuit board, module or any other instrument assembly. (2) disconnecting any instrument electrical plug or other electrical connection. (3) connecting a test substitute in parallel with an electrolytic capacitor in the instrument.

voltage, and (5) antenna wiring. Always inspect in all areas for pinched, out-of-place, or frayed wiring. Do not change spacing between a component and the printed-circuit board, Check the AC power cord for damage.

- 5) Components, parts, and/or wiring that appear to have overheated or that are otherwise damaged should be replaced with components, parts and/or wiring that meet original specifications. Additionally determine the cause of overheating and/or damage and, if necessary, take corrective action to remove and potential safety hazard.
- 6) Product Safety Notice-Some electrical and mechanical parts have special safety-related characteristics which are often not evident from visual inspection, nor can the protection they give necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified by shading, an (Δ) or a (∇) on schematics and parts lists. Use of a substitute replacement that does not have the same safety characteristics as the recommended replacement part might create shock, fire and/or other hazards. Product safety is under review continuously and new instructions are issued whenever appropriate.
 - b. Do not defeat any plug/socket B+ voltage interlocks with which instruments covered by this service manual might be equipped.
 - c. Do not apply AC power to this instrument and/or any of its electrical assemblies unless all solid-state device heat sinks are correctly installed.
 - d. Always connect a test instrument's ground lead to the instrument chassis ground before connecting the test instrument positive lead. Always remove the test instrument ground lead last.

Note: Refer to the Safety Precautions section ground lead last.
- (2) The service precautions are indicated or printed on the cabinet, chassis or components. When servicing, follow the printed or indicated service precautions and service materials.
- (3) The components used in the unit have a specified flame resistance and dielectric strength. When replacing components, use components which

have the same ratings, by () or by () in the circuit diagram are important for safety or for the characteristics of the unit. Always replace them with the exact replacement components.

- (4) An insulation tube or tape is sometimes used and some components are raised above the printed wiring board for safety. The internal wiring is sometimes clamped to prevent contact with heating components. Install such elements as they were.
- (5) After servicing, always check that the removed screws, components, and wiring have been installed correctly and that the portion around the serviced part has not been damaged and so on. Further, check the insulation between the blades of the attachment plug and

accessible conductive parts.

1-2-2 Insulation Checking Procedure

Disconnect the attachment plug from the AC outlet and turn the power ON. Connect the insulation resistance meter (500V) to the blades of the attachment plug. The insulation resistance between each blade of the attachment plug and accessible conductive parts (see note) should be more than 1 Megohm.

Note: Accessible conductive parts include metal panels, input terminals, earphone jacks, etc.

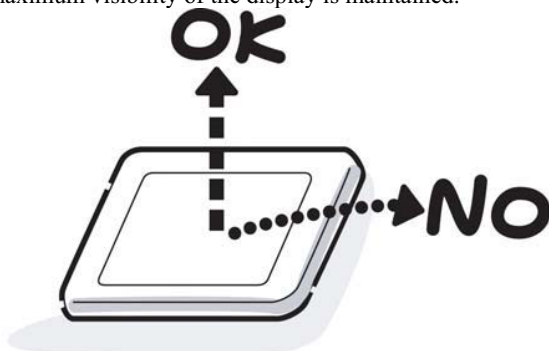
1-4. Handling the LED Module

In case the screen is damaged and the internal liquid leaks, do not suck or drink the internal fluid. Nor do you touch it either, otherwise you might be poisoned or get a rash with your skin. If the internal fluid enters your mouth, rinse with water. If it adheres to your skin or clothes, wipe it away with alcohol and then wash with water. If it enters your eyes, wash with running water immediately.

Precautions for handling the LED module

The LED module can be easily damaged during assembly or disassembly. Observe the following precautions when handling the LED module:

1. When installing the LED module in the LED cover, be sure to seat it so that it is properly aligned and maximum visibility of the display is maintained.



2. If the panel's surface gets dirty, wipe it with cotton or a soft cloth. If it is still dirty, try breathing on the surface to create a light condensate and wipe it again. If the surface is very dirty, we recommend a CRT cleaning agent. Apply the agent to a cloth and then wipe the panel's surface. Do not apply cleanser directly to the panel. Also, never scratch the surface.



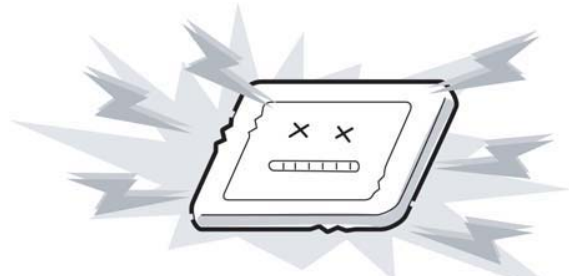
3. If water or other liquid is left on the panel's surface for a long period, it can change the screen's tint or stain it. Be sure to quickly wipe off any liquid.



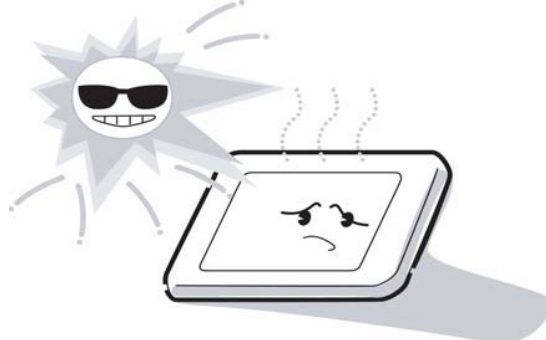
4. Glass is used in the panel, so be careful not to drop it or let it strike a hard object, which could cause breakage or cracks.



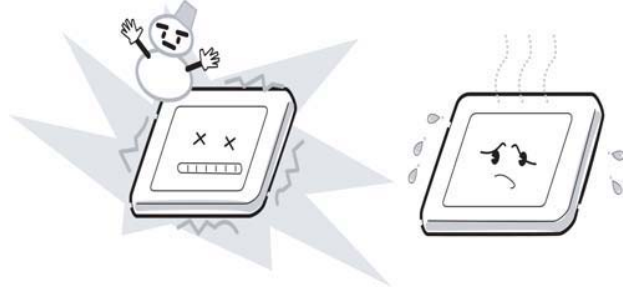
5. CMOS-LSI circuits are used in the module, so guard against damage from electrostatic discharge. Be sure to wear a wrist or ankle ground when handling the module.



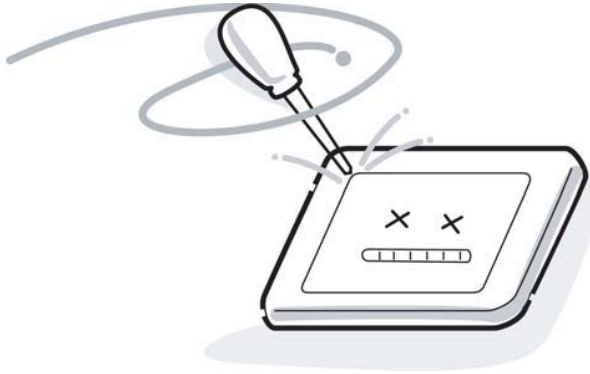
6. Do not expose the module to direct sunlight or strong ultraviolet rays for long periods.



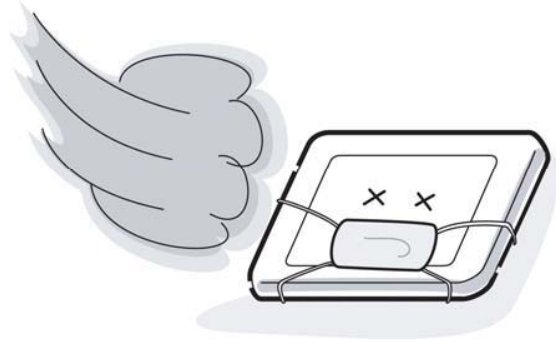
7. Do not store the module at temperatures below specifications. Cold can cause the liquid crystals to freeze, lose their elasticity, or otherwise suffer damage.



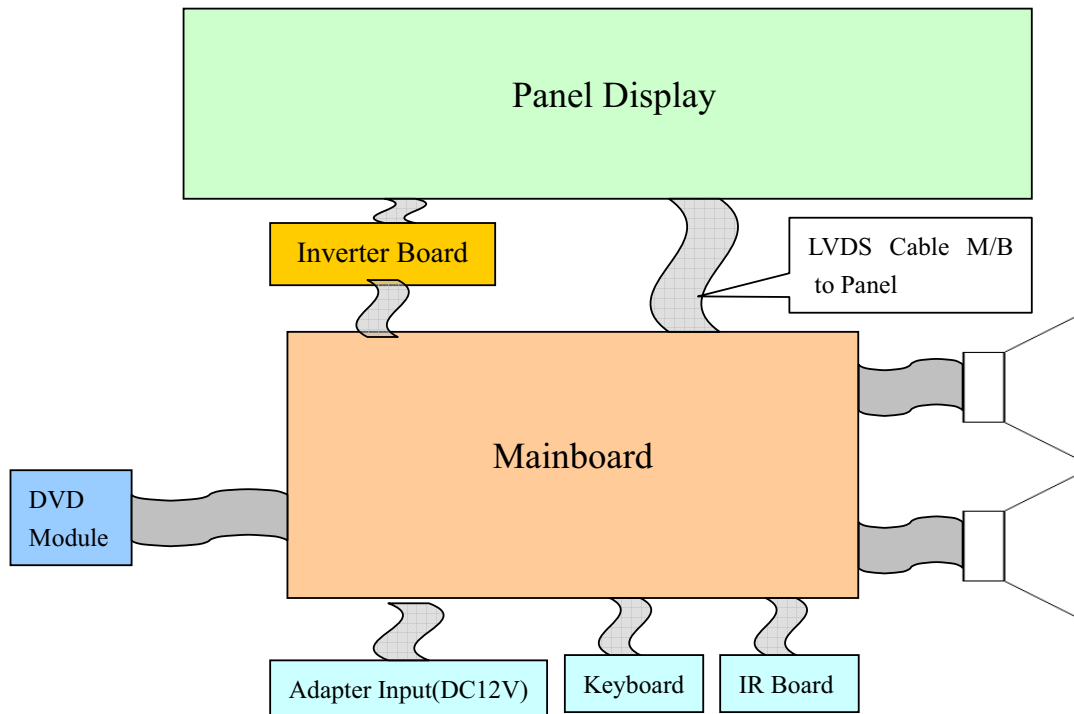
8. Do not disassemble the LED module. Disassembly can cause malfunctions.



9. If you transport the module, do not use packing material that contains epoxy resin(amine) or silicone glue(alcohol or oxime). These materials can release gas that can damage the panel's polarization.



2.Block Diagram



- 1) Mainboard: Control all input signals, Decode the video signal, De-interlace, and send digital signals (LVDS signal) to panel.
- 2) Panel: Display all image;
- 3) IR Board : Receive IR Signal;
- 4) Keyboard :POWER、SOURCE、MENU、VOL+/- ,Channel +/-;
- 5) Adapter: 110V-240V AC IN,Output 12V DC to the mainboard
- 6) Inverter Board: the power supply for backlight of panel.
- 7) DVD Module: built-in DVD player with slot-in loader.

CV306L-A

Common Problem Solving

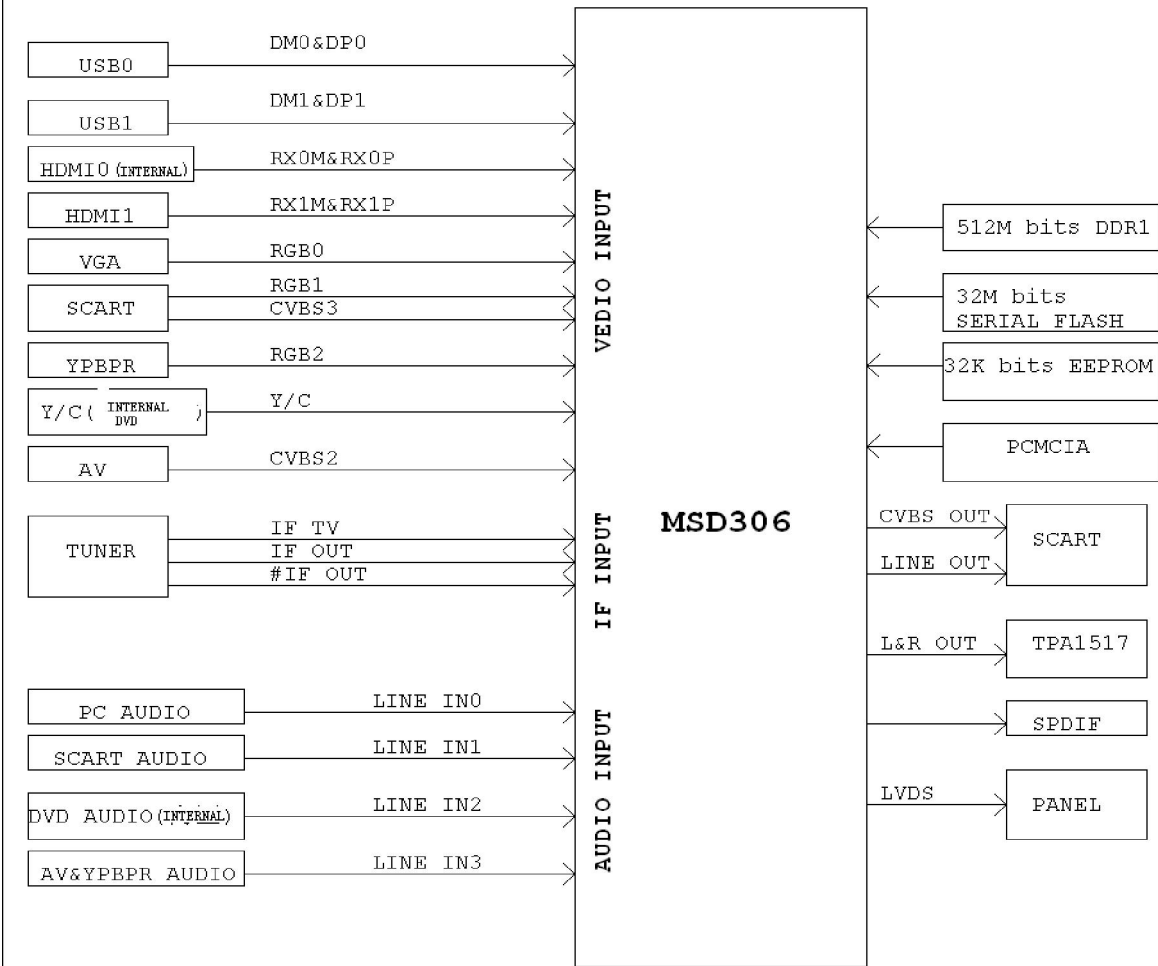
Power Units Problem Solving

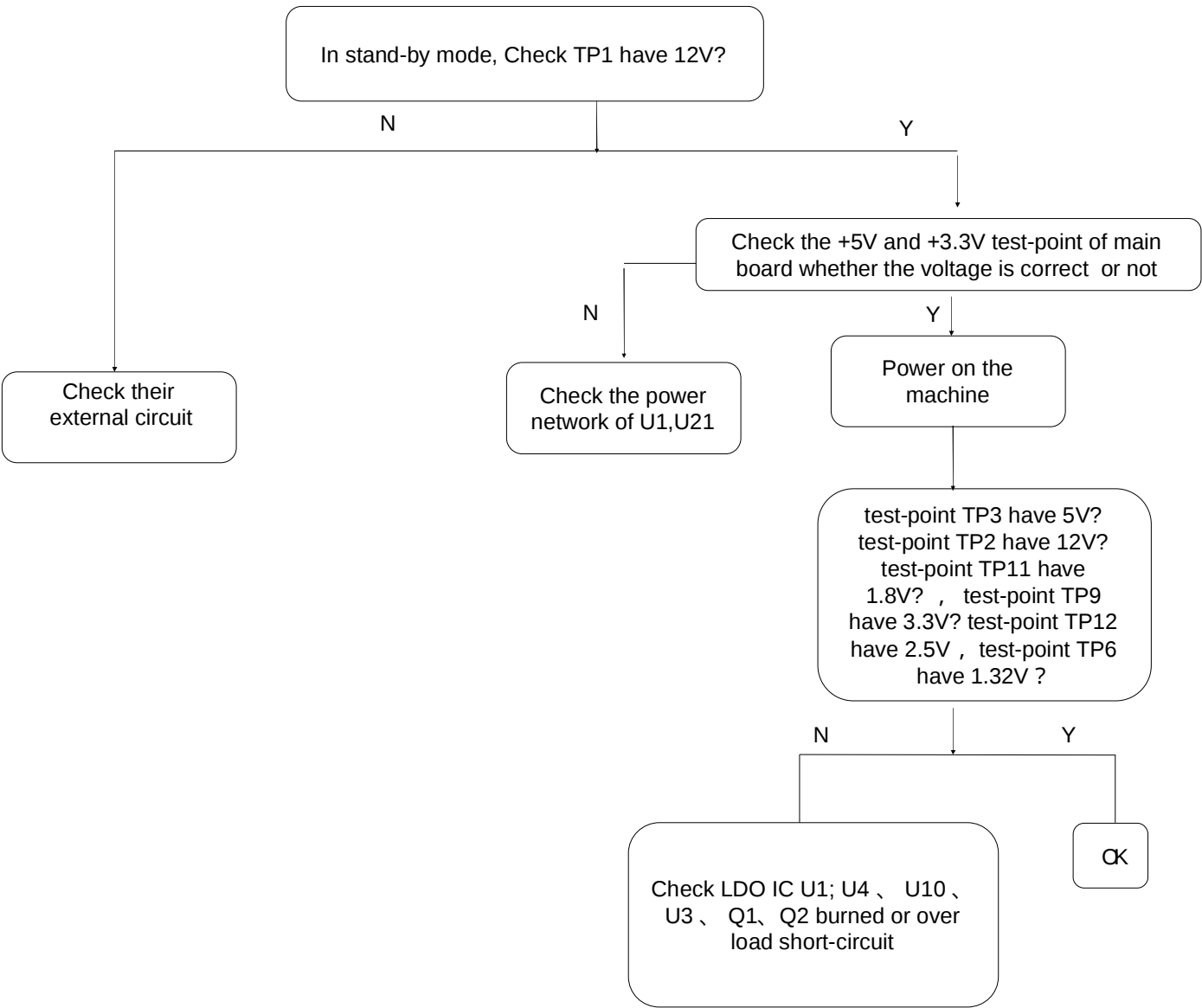
Display Units Problem Solving

Audio Units Problem Solving

Functional Units Problem Solving

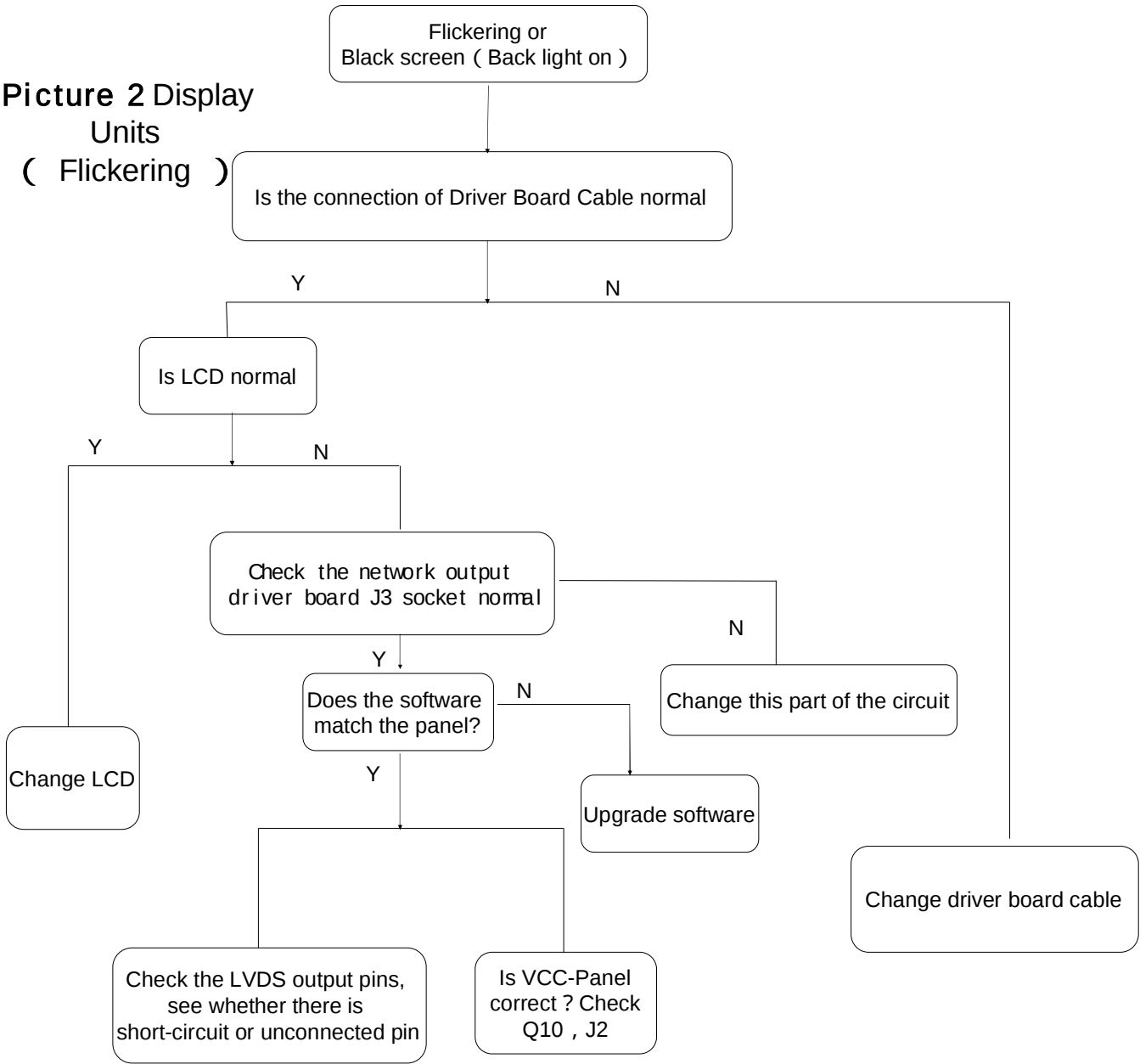
CV306L-A



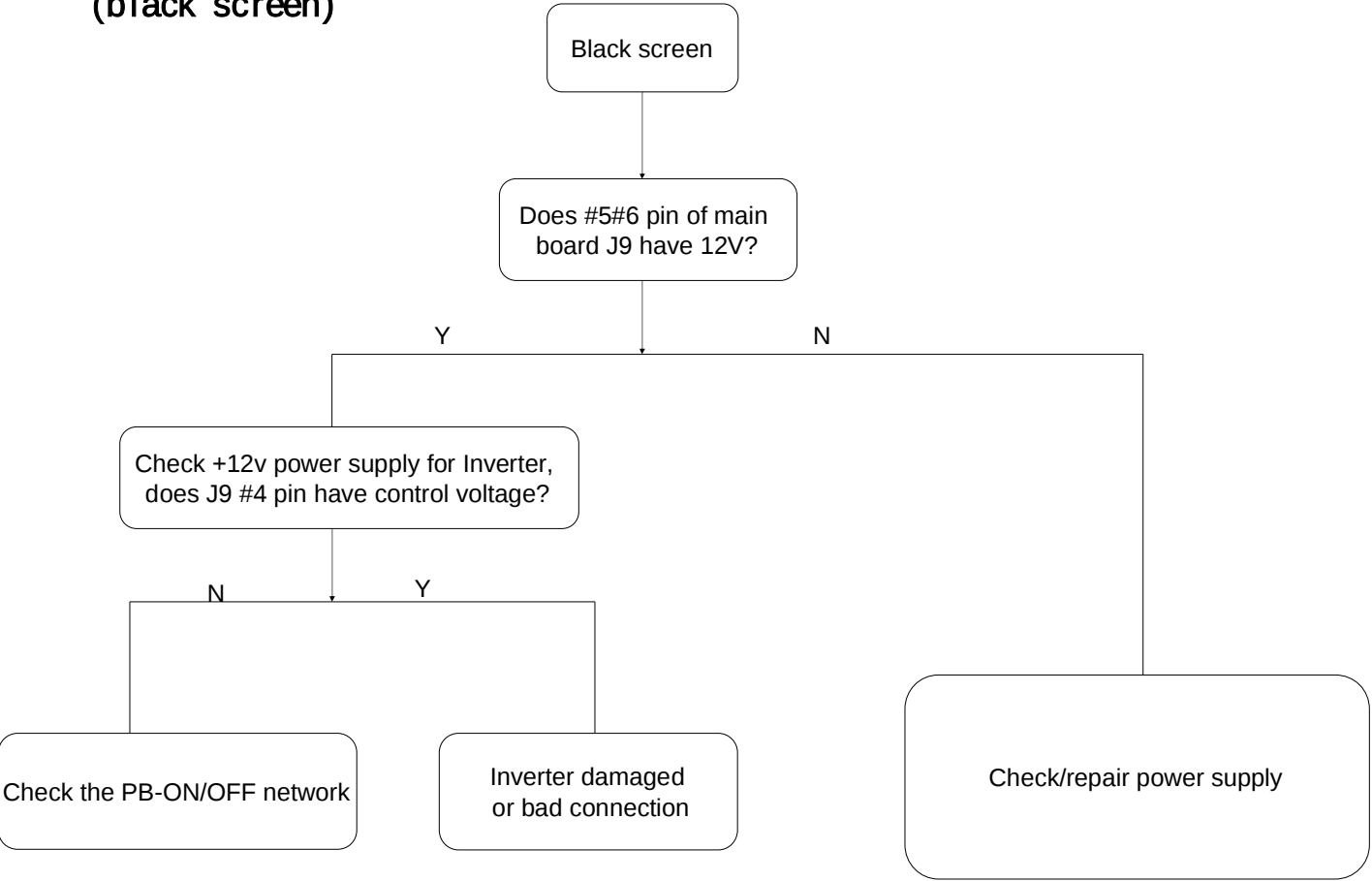


Picture 1Power Units Problem Solving

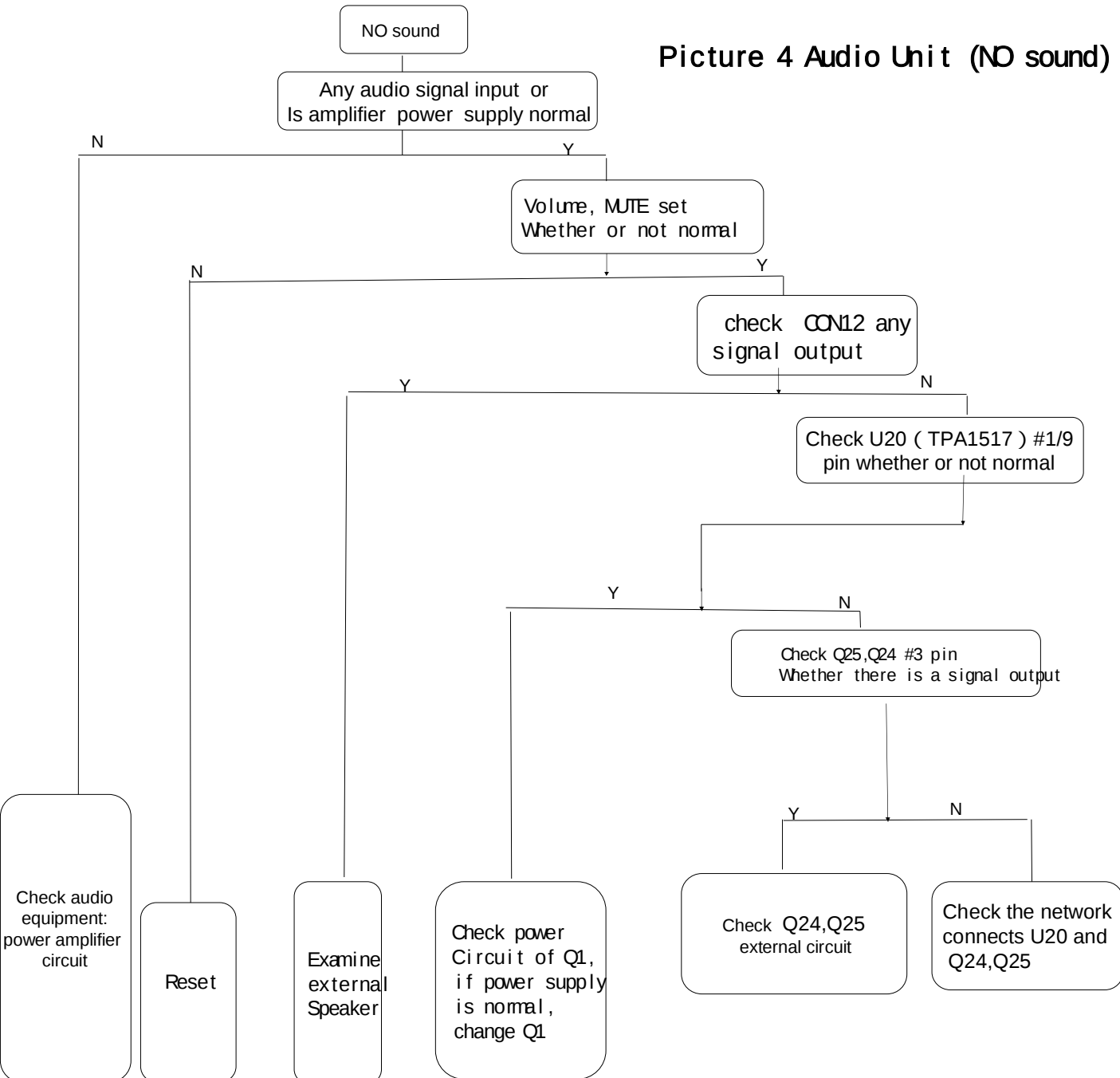
Picture 2 Display
Units
(Flickering)



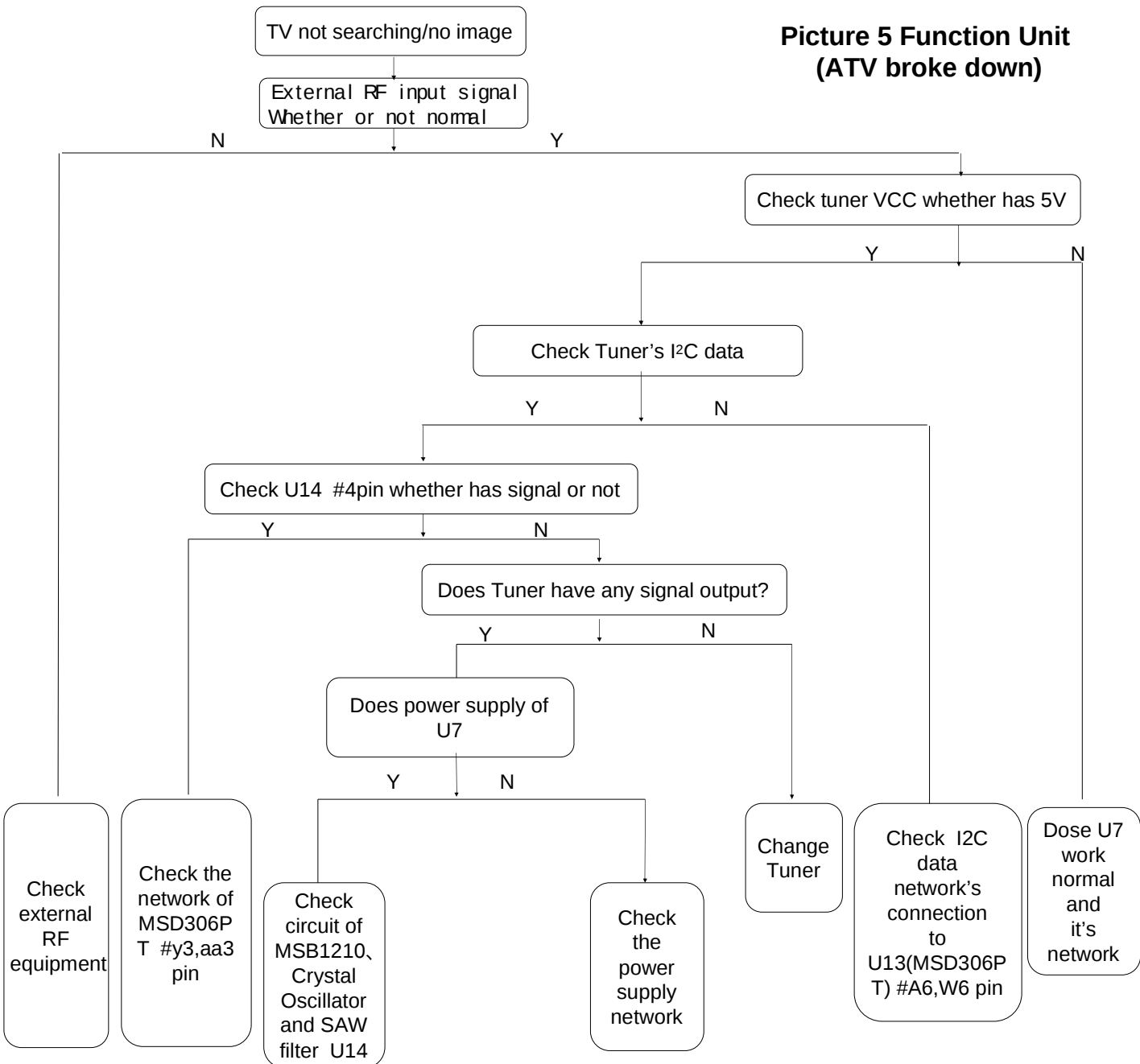
Picture 3 Display Unit
(black screen)



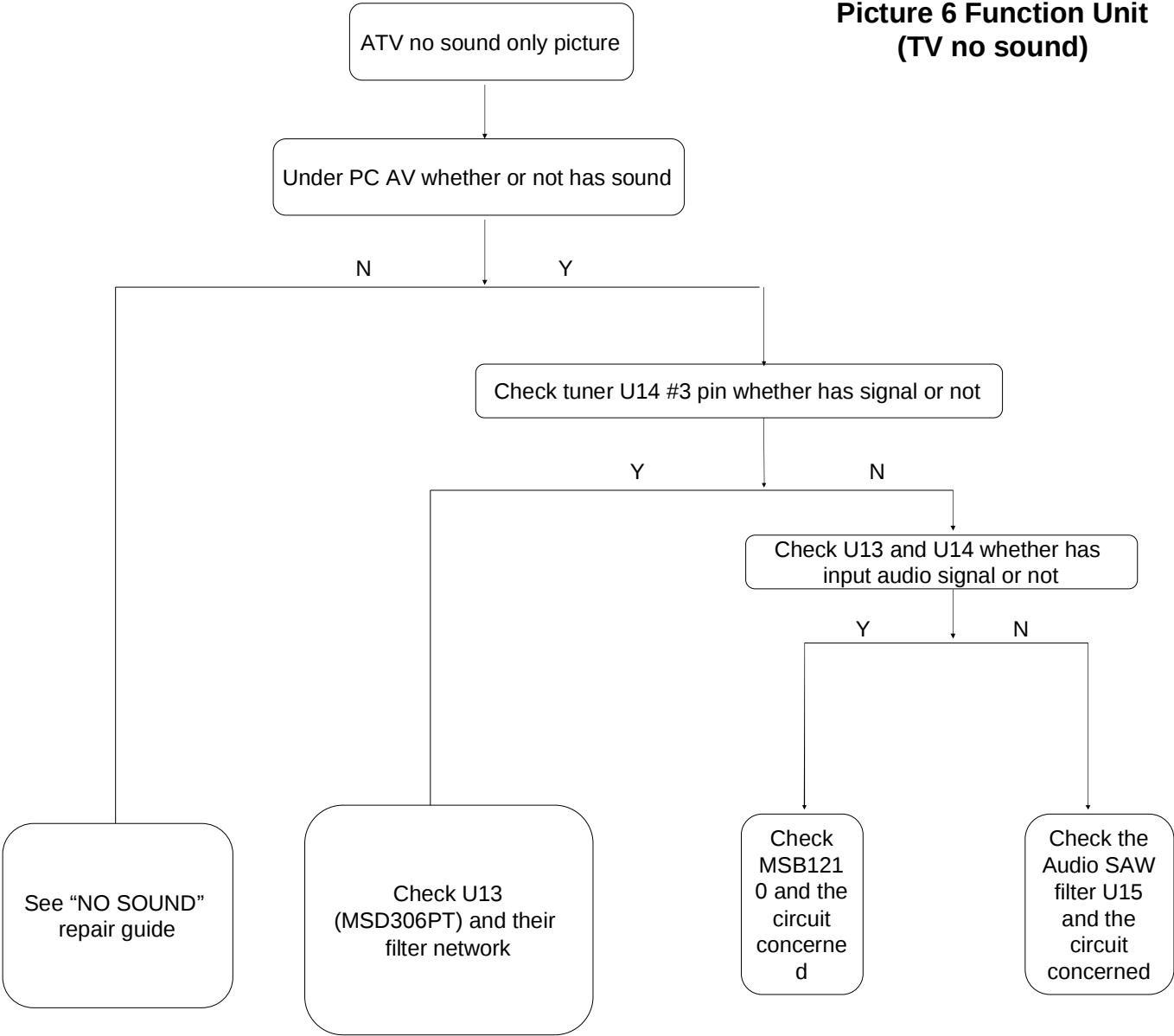
Picture 4 Audio Unit (NO sound)



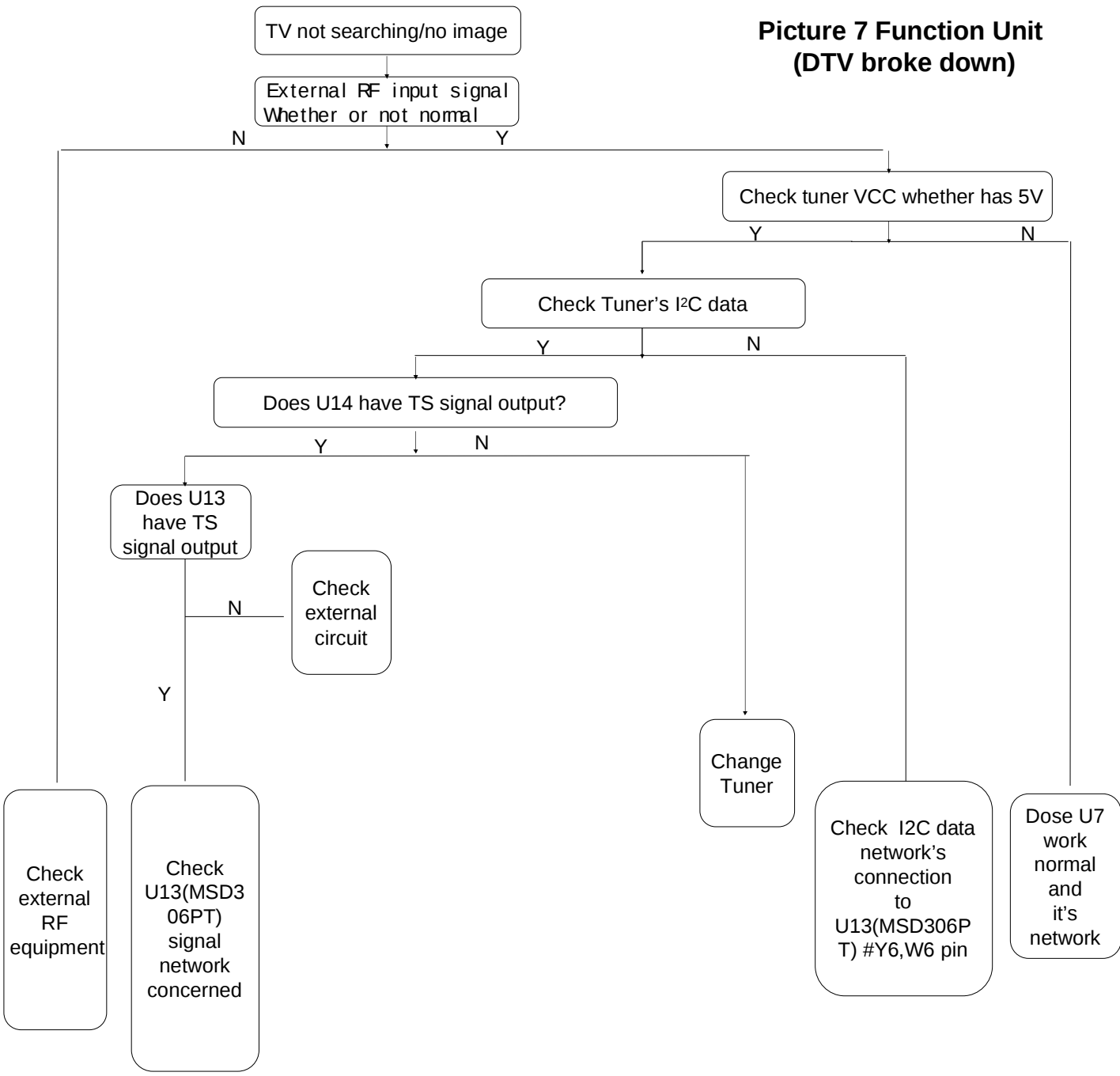
Picture 5 Function Unit (ATV broke down)



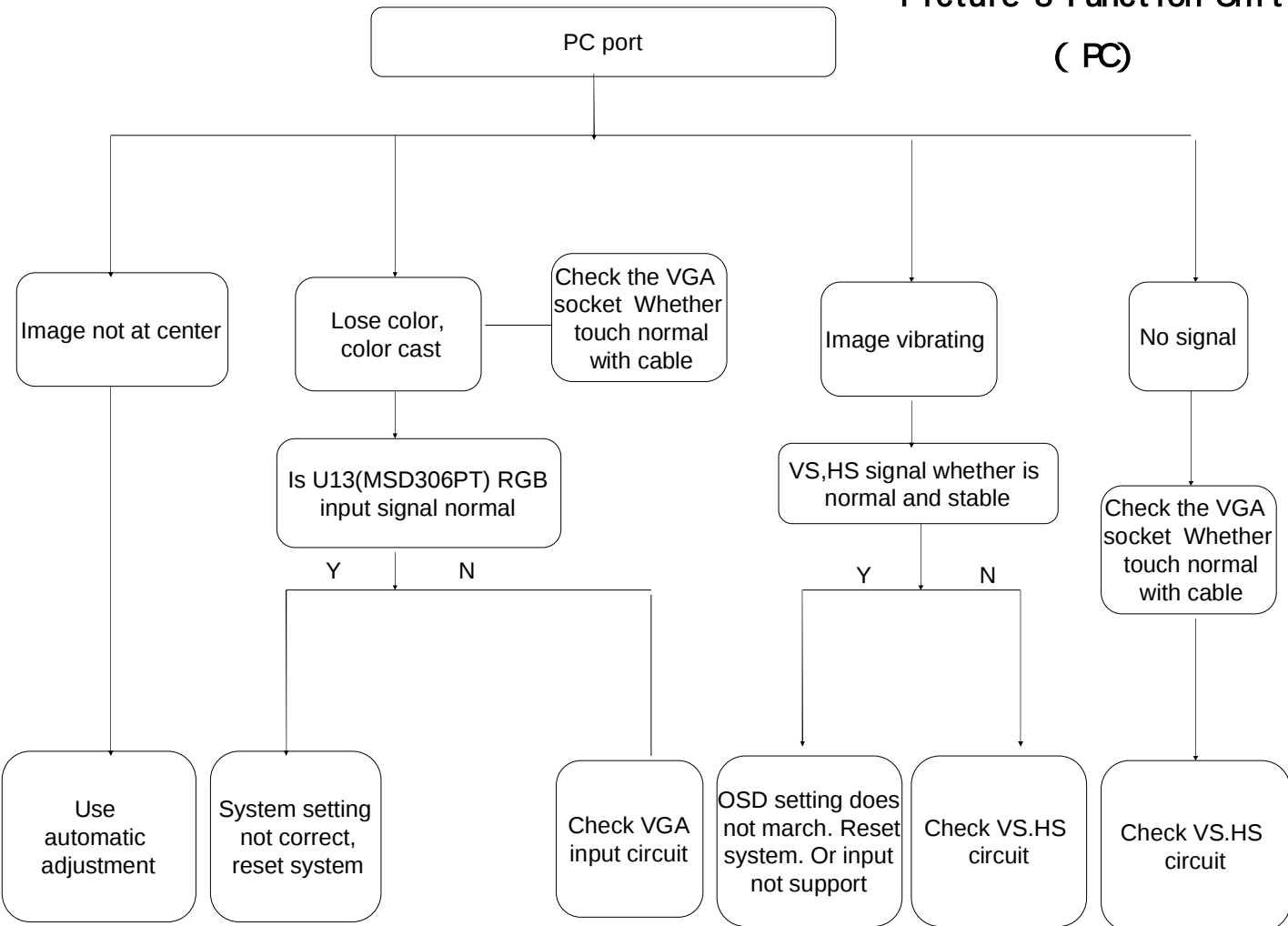
**Picture 6 Function Unit
(TV no sound)**



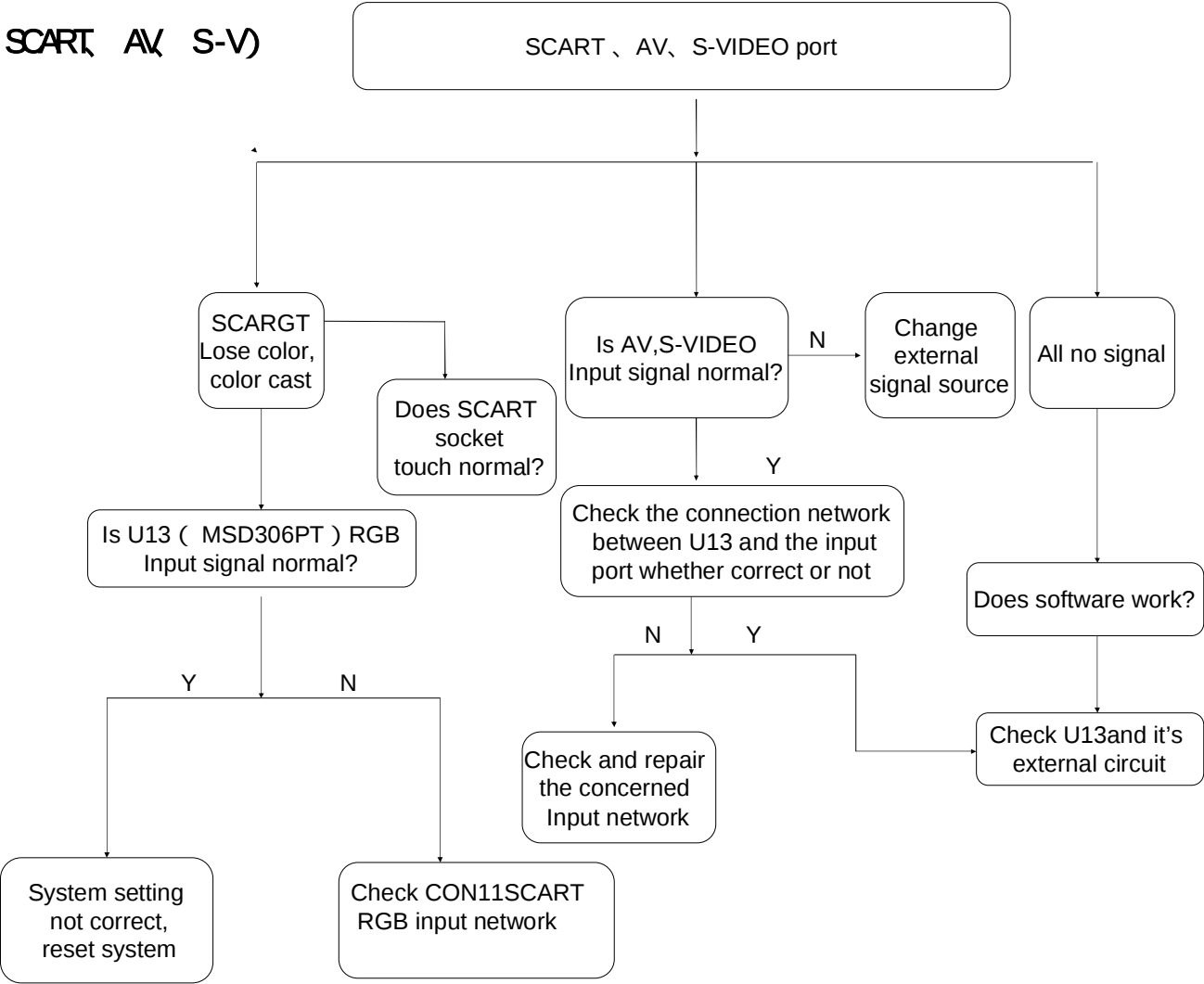
**Picture 7 Function Unit
(DTV broke down)**



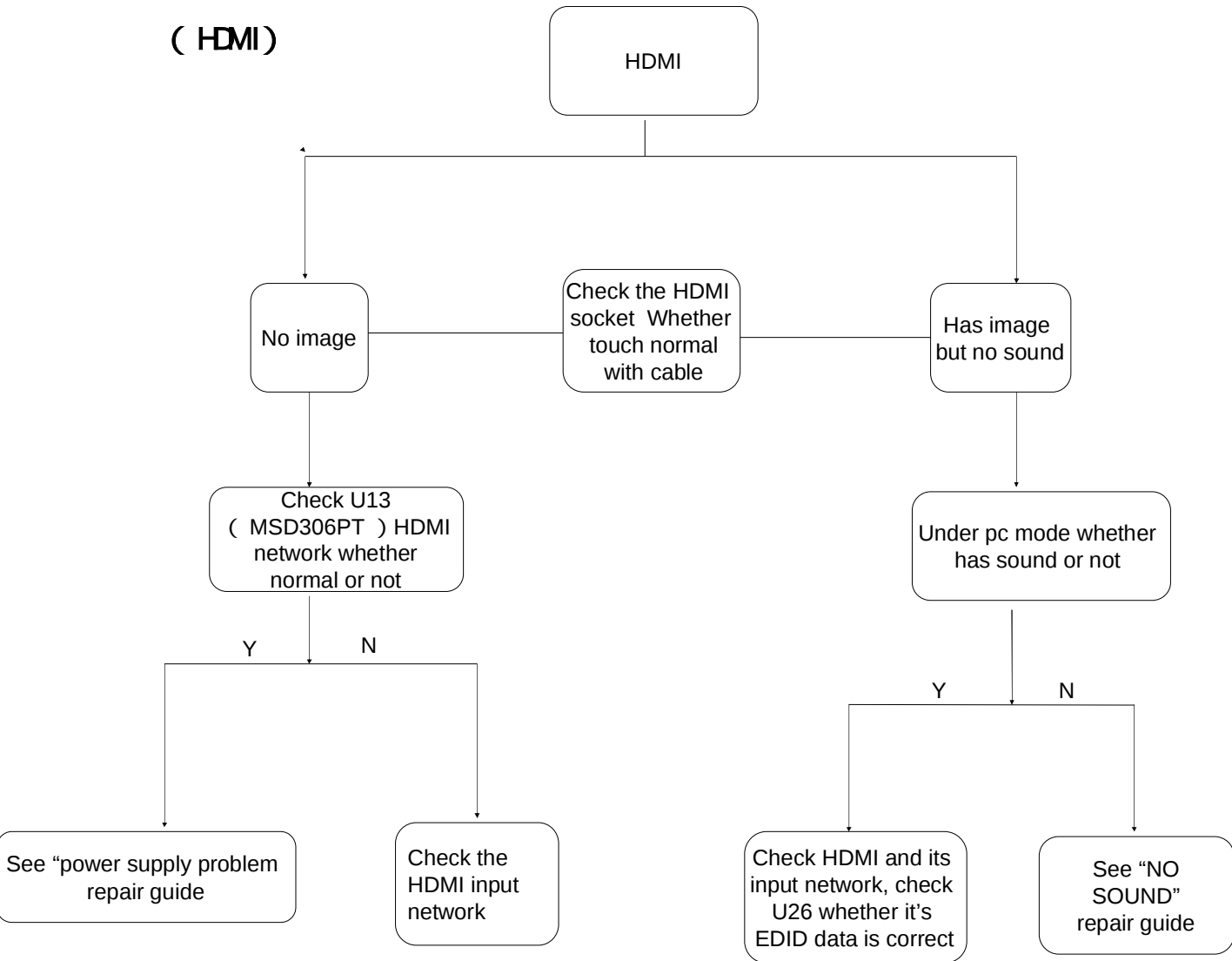
Picture 8 Function Unit (PC)



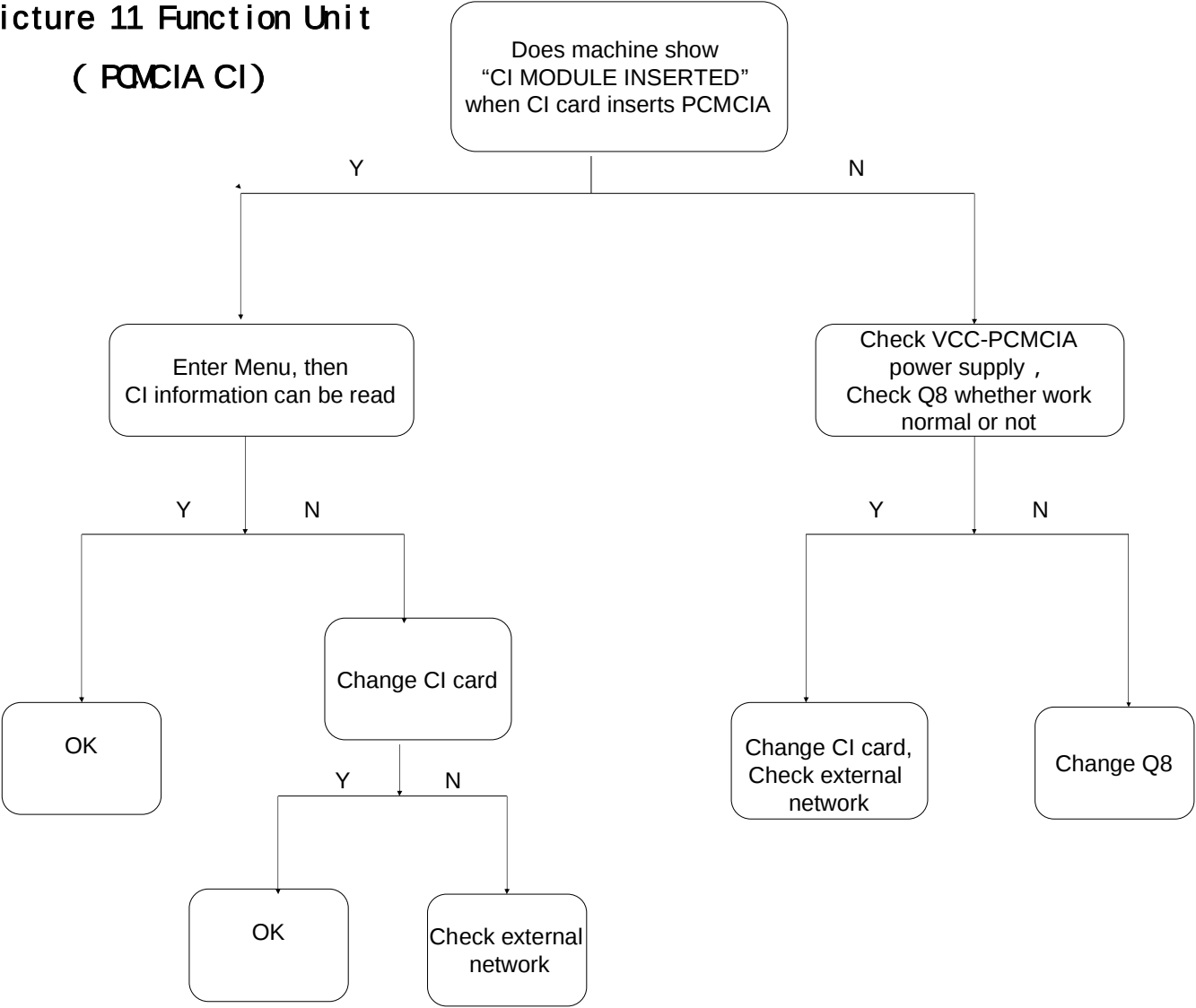
Picture 9 Function Unit
(SCART , AV , S-V)



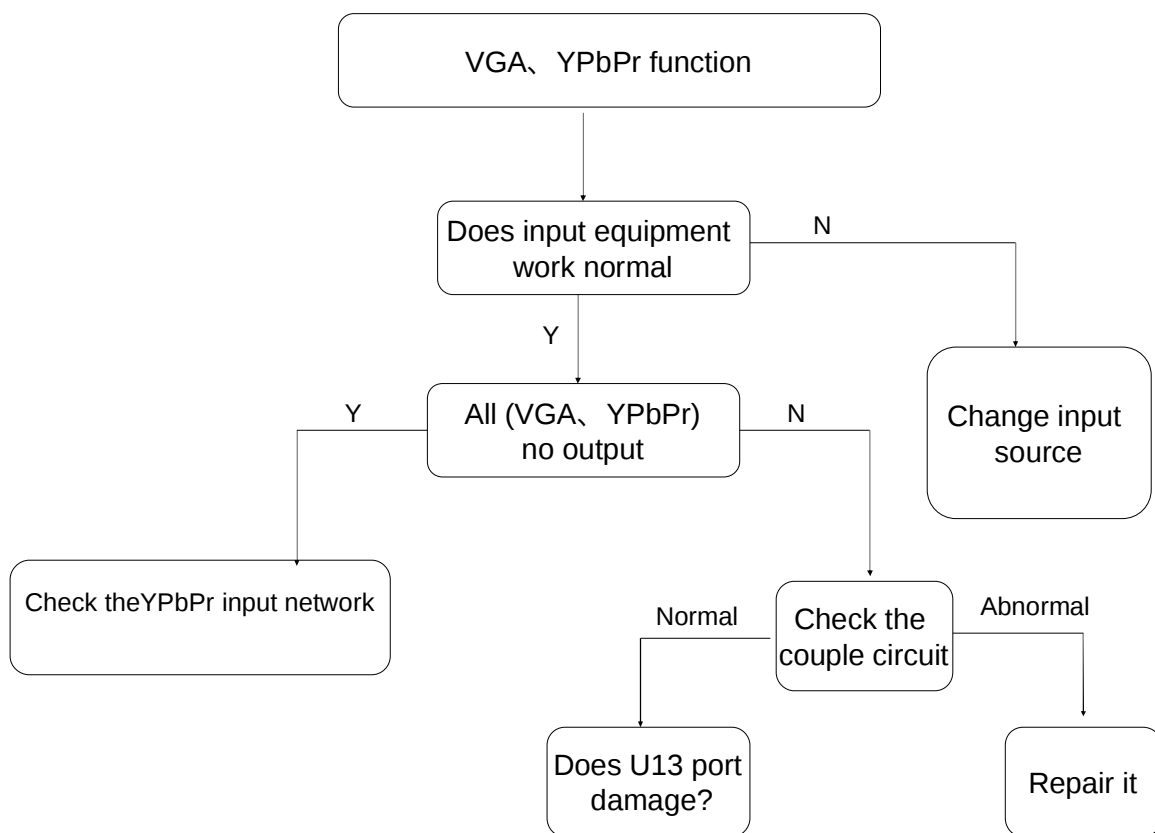
Picture 10 Function Unit (HDMI)



Picture 11 Function Unit
(PCMCIA CI)

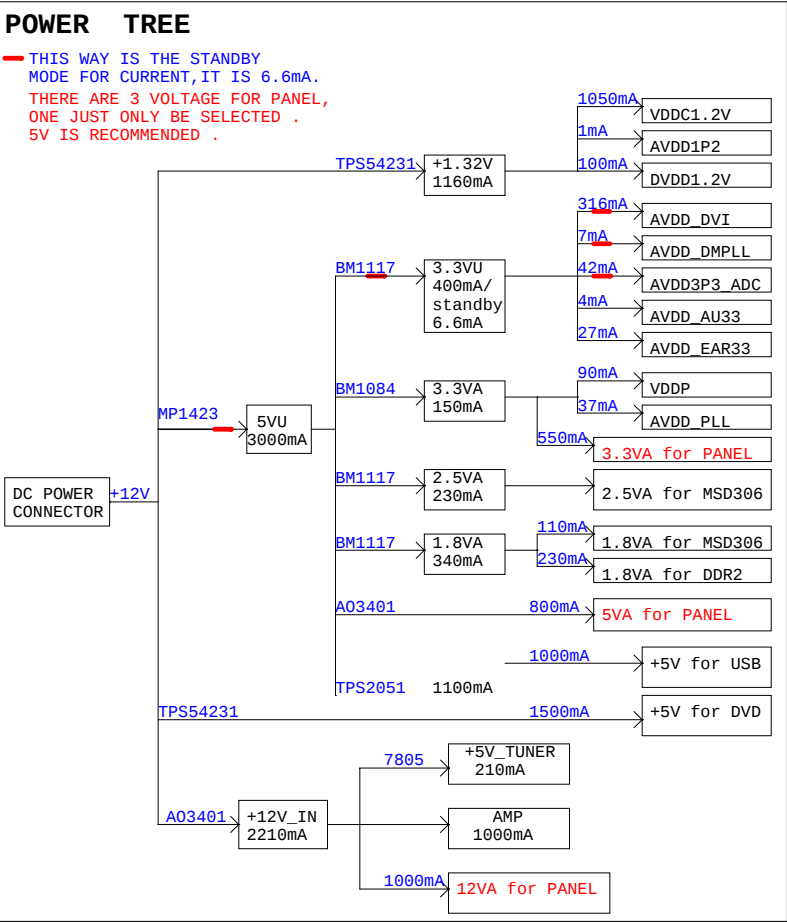
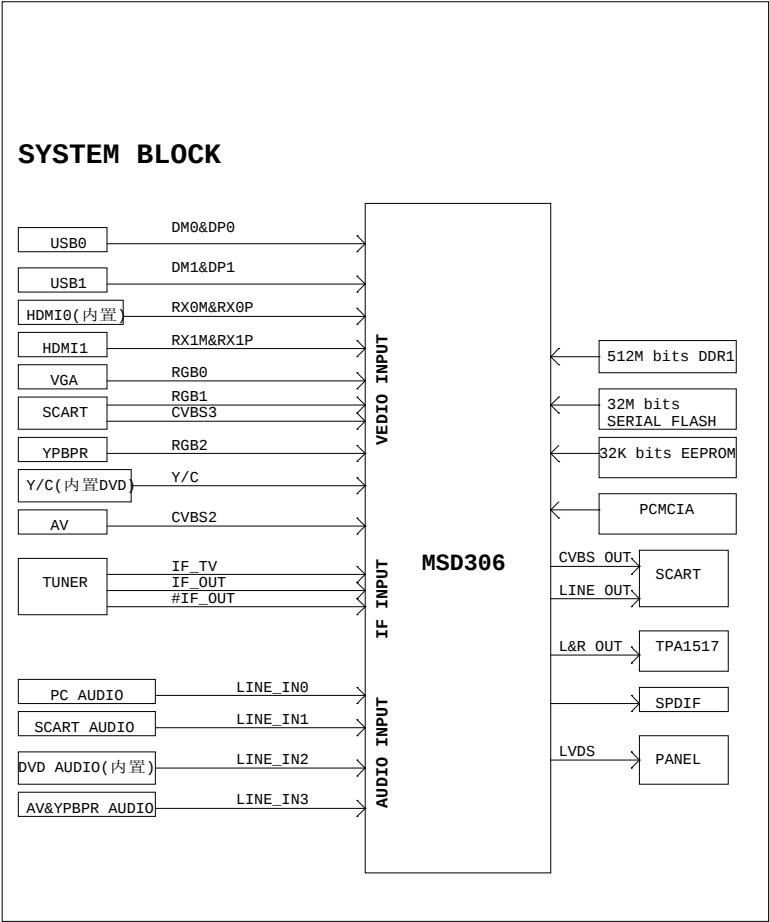


Picture 12 Function Unit (VGA YPbPr)

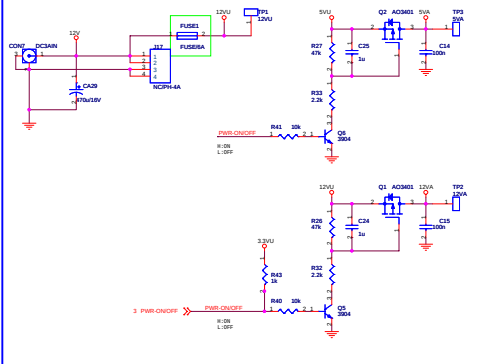


4.Schematic Diagrams

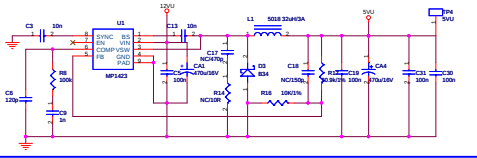
4-1 Mainboard Schematic Diagram



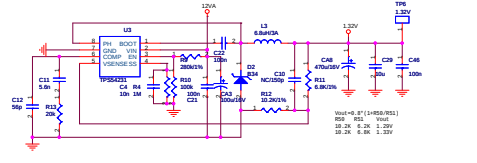
Power Input



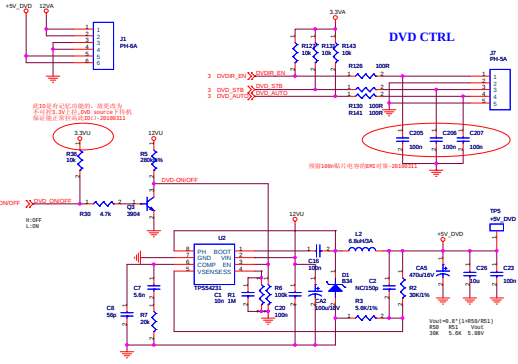
5V DC-DC



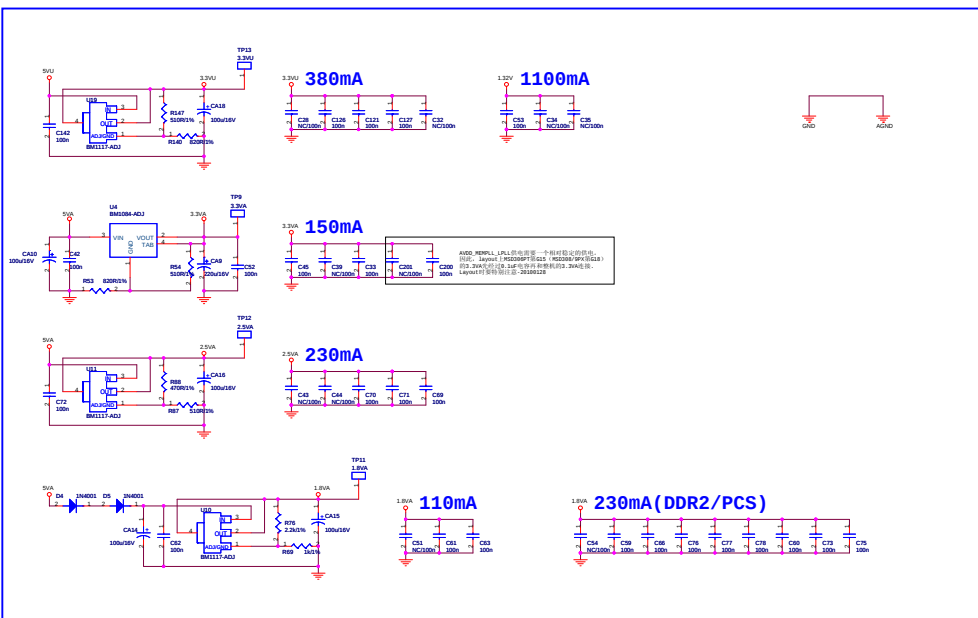
1.32V DC-DC



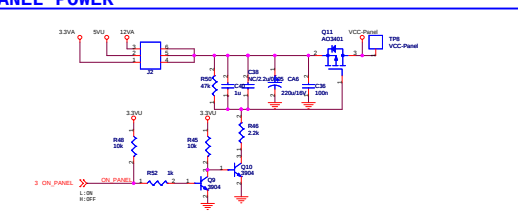
DVD Power Interface



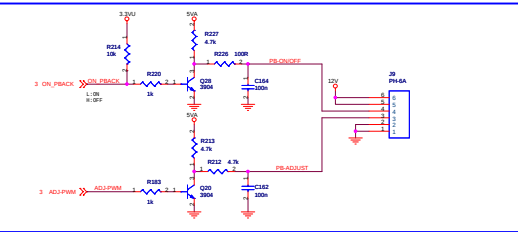
MST Power supply

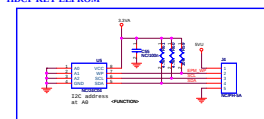


PANEL POWER

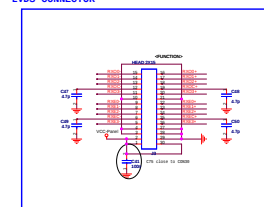


Inverter Interface

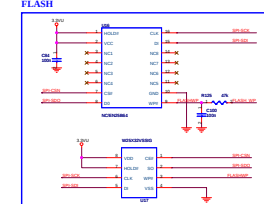




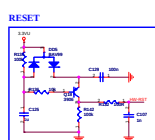
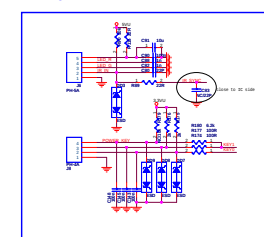
LVDS CONNECTOR



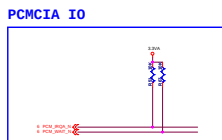
FLASH



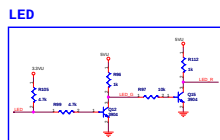
KEYBOARD



RESET



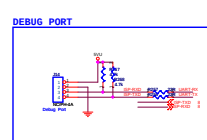
PCMCIA IO



LED



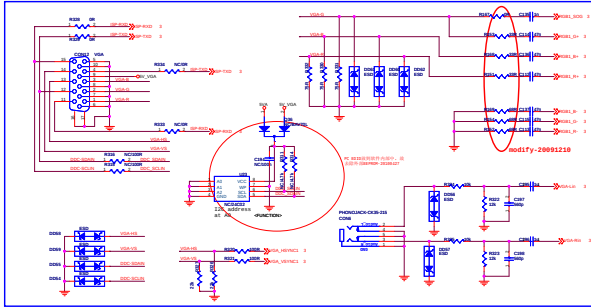
Mode Selection



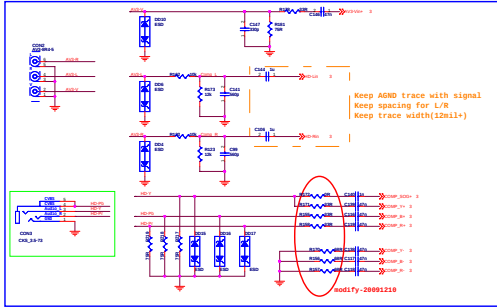
DEBUG PORT

[illegible]

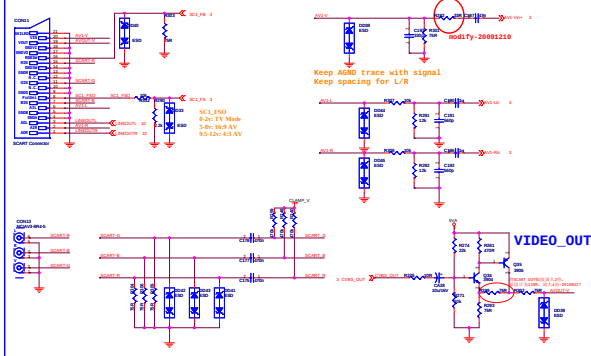
VGA INPUT



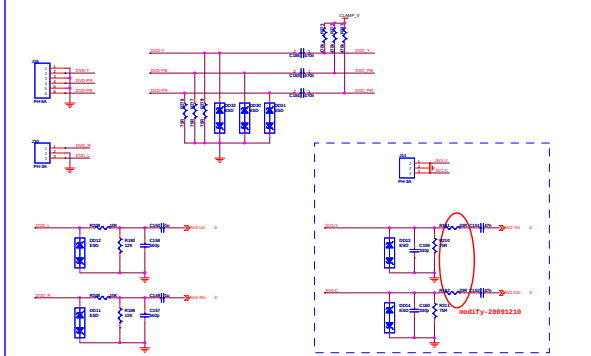
AV&YPBPR Input



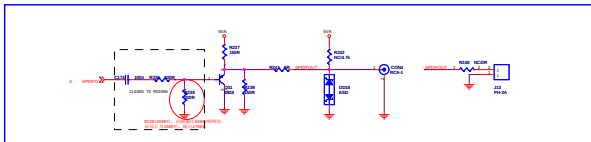
SCART



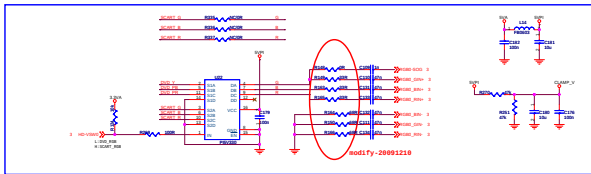
Comb DVD



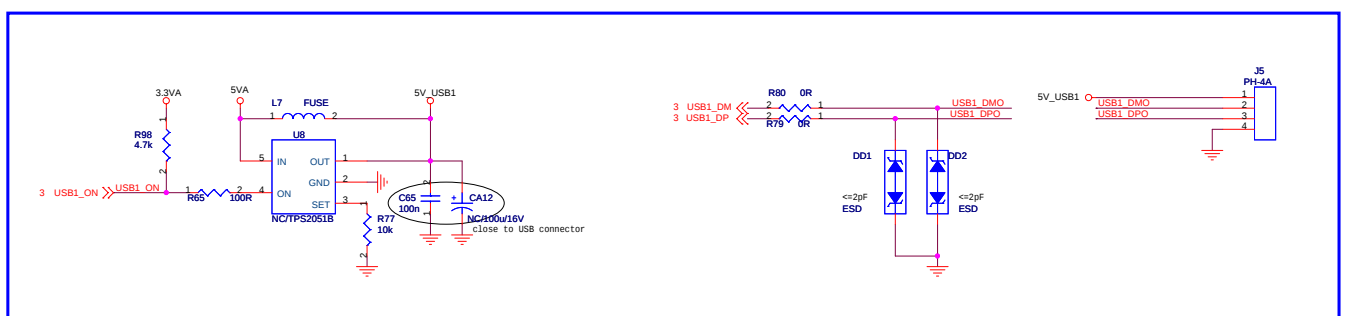
SPDIF Output



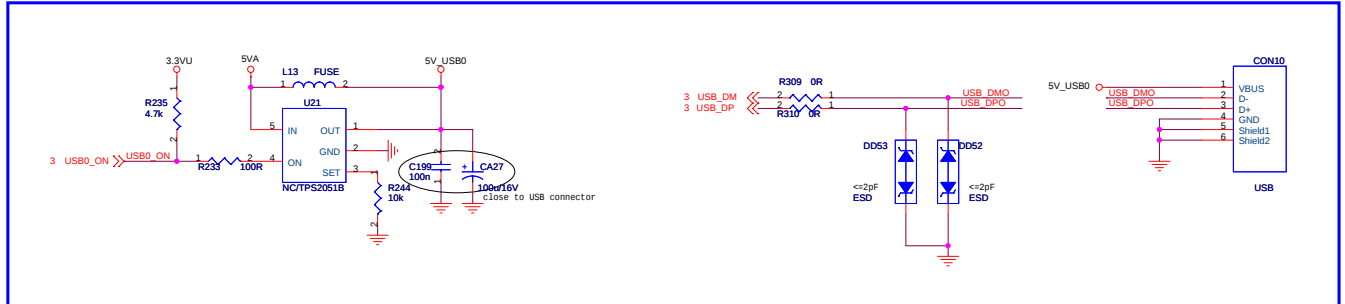
Video switch



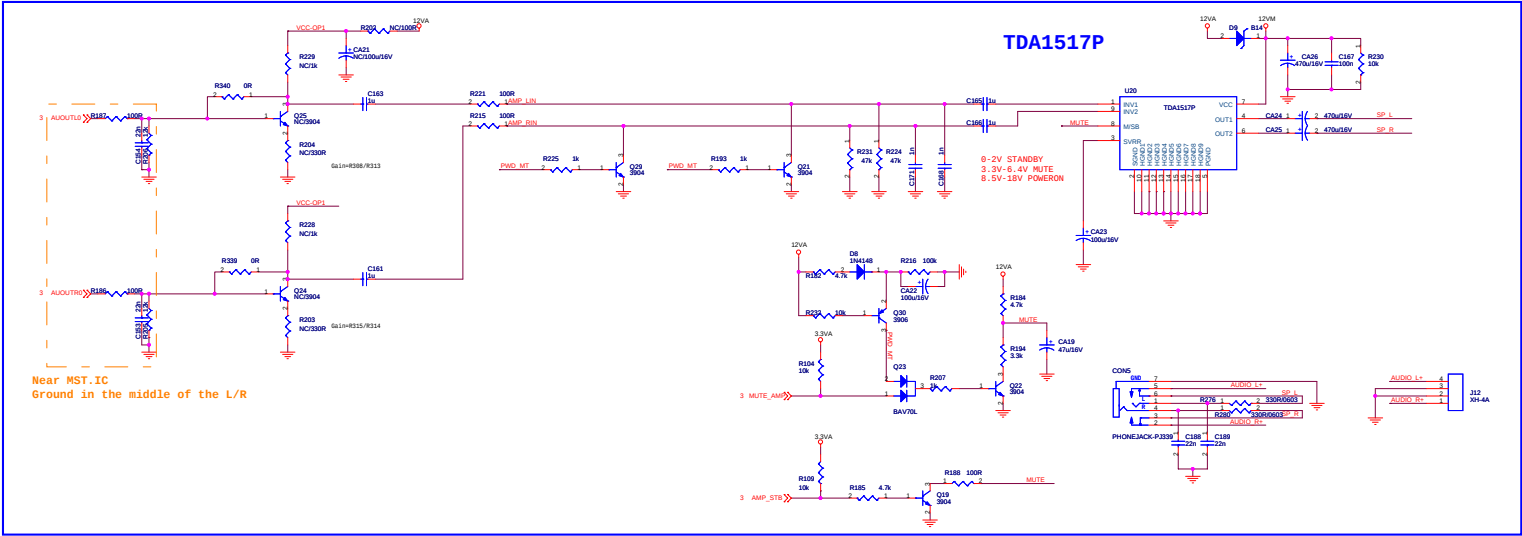
USB1



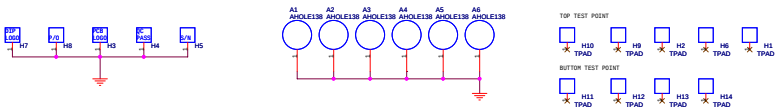
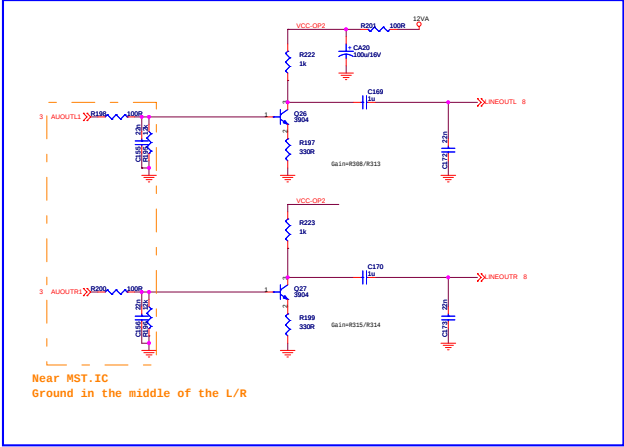
USB0



TDA1517P



AUDIO pre-ap



5. Troubleshooting and Schematic Diagrams for DVD Module

AL09 Trouble Shooting

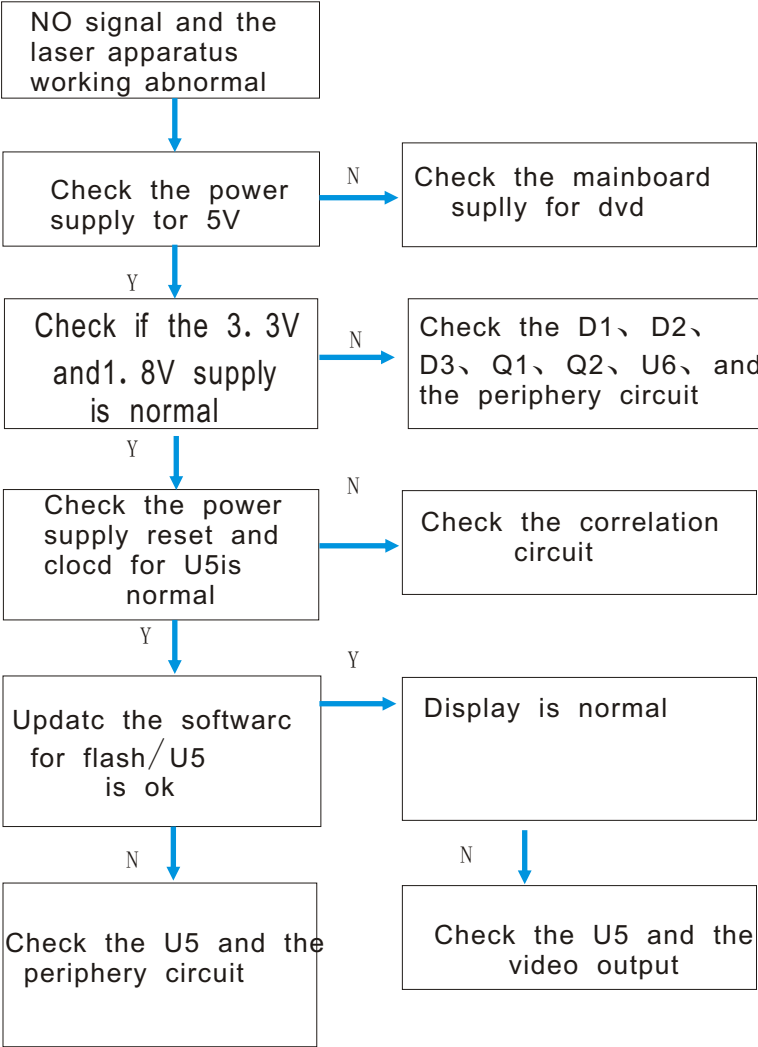
1、 Power supply trouble

2、 Display trouble

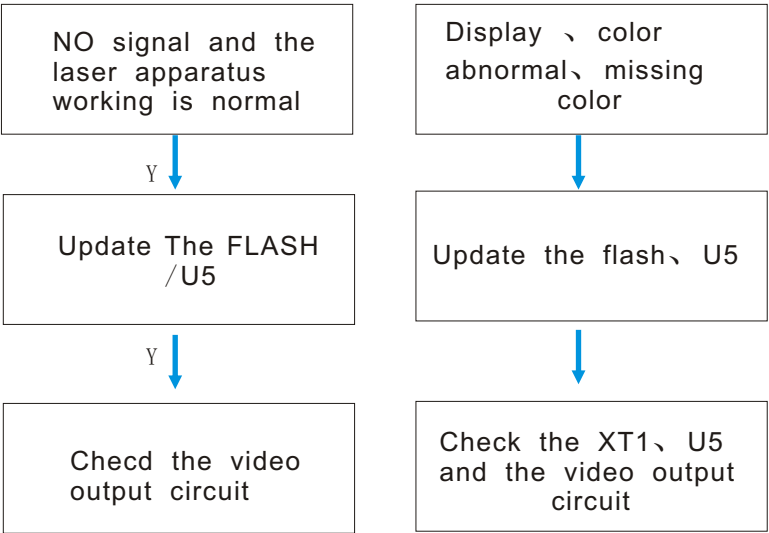
3、 Audio trouble

4、 Function trouble

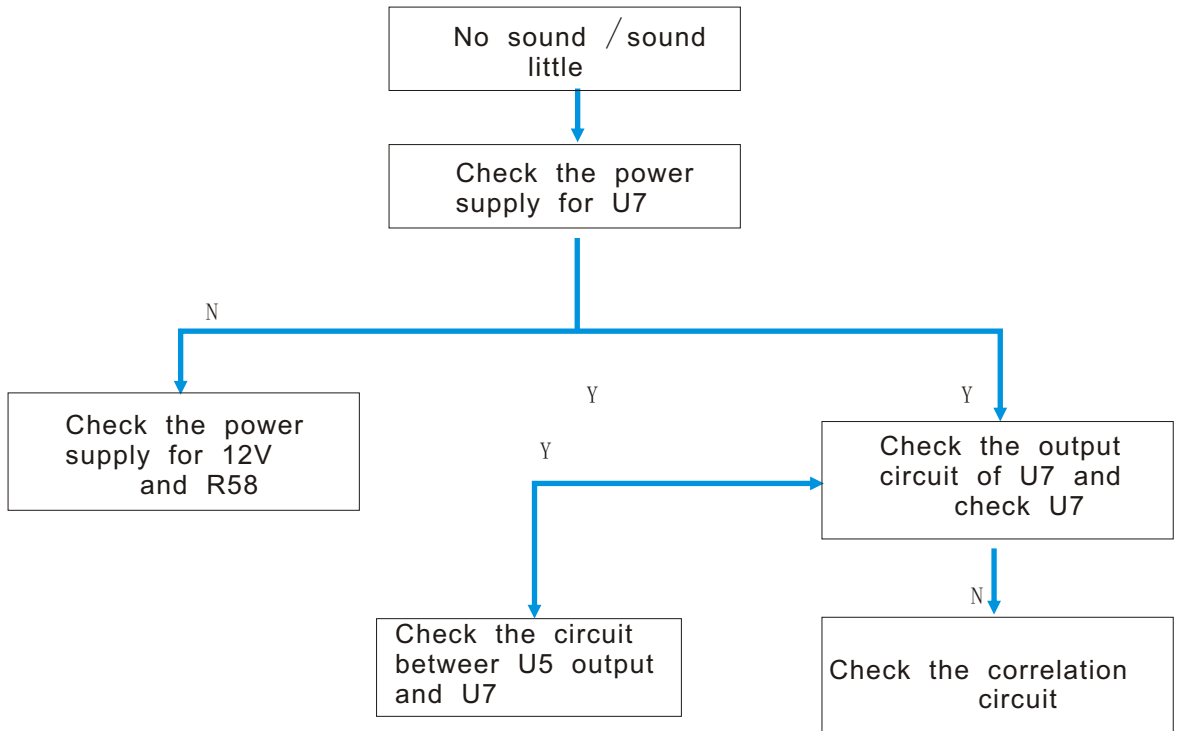
5.1 Power supply
trouble(NO signal)



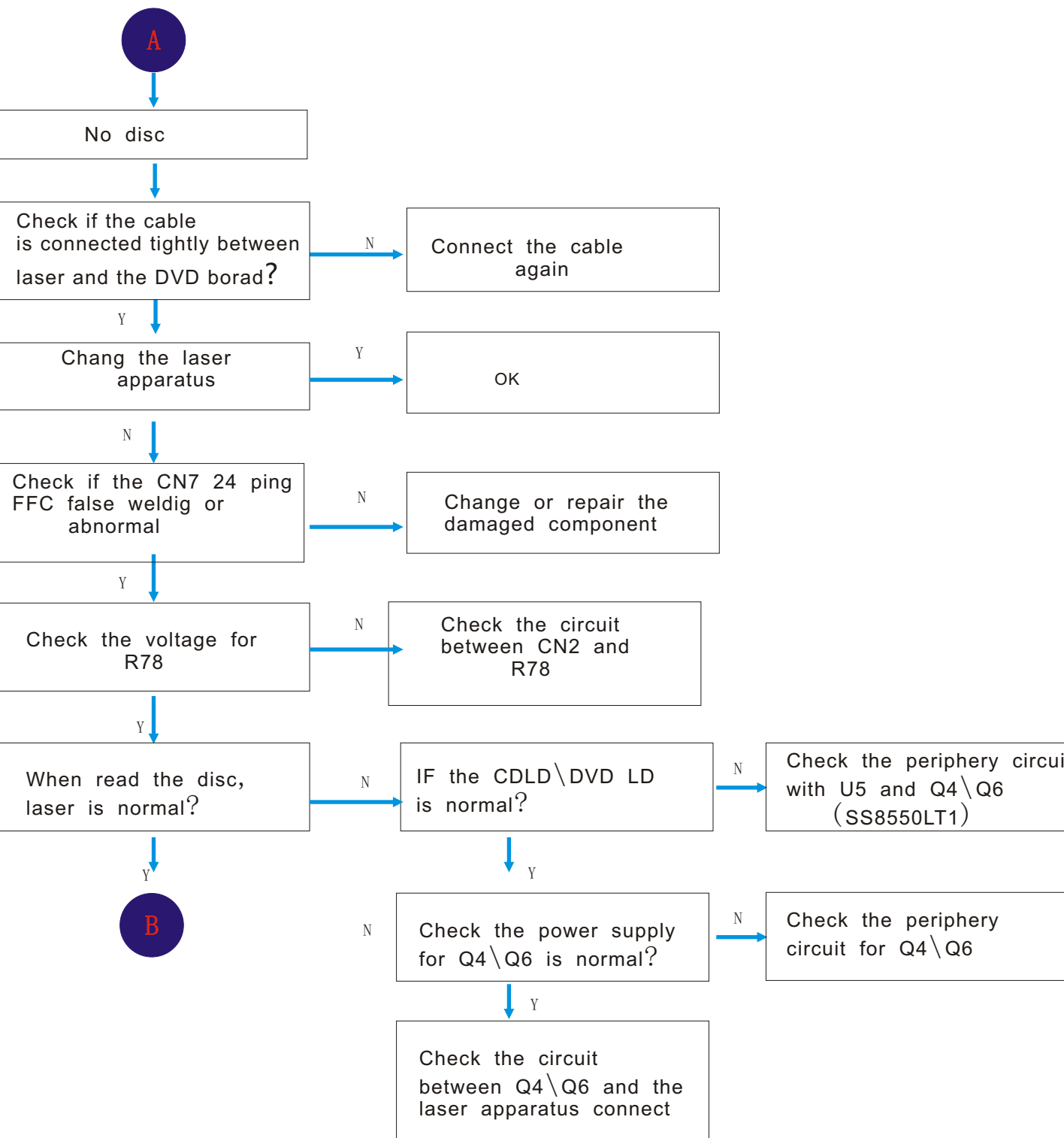
5.2. Display trouble



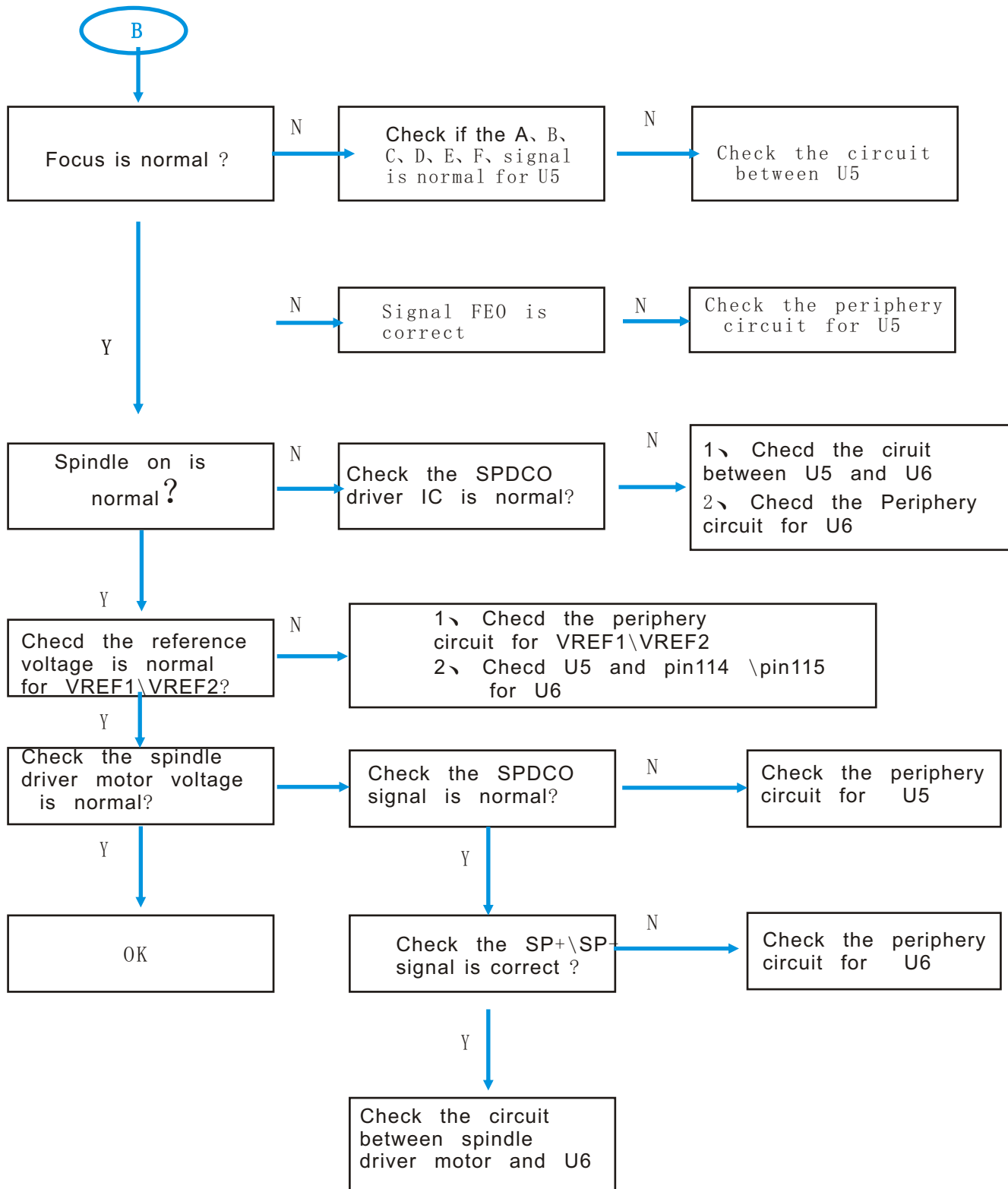
5.3. Audio (NO sound)



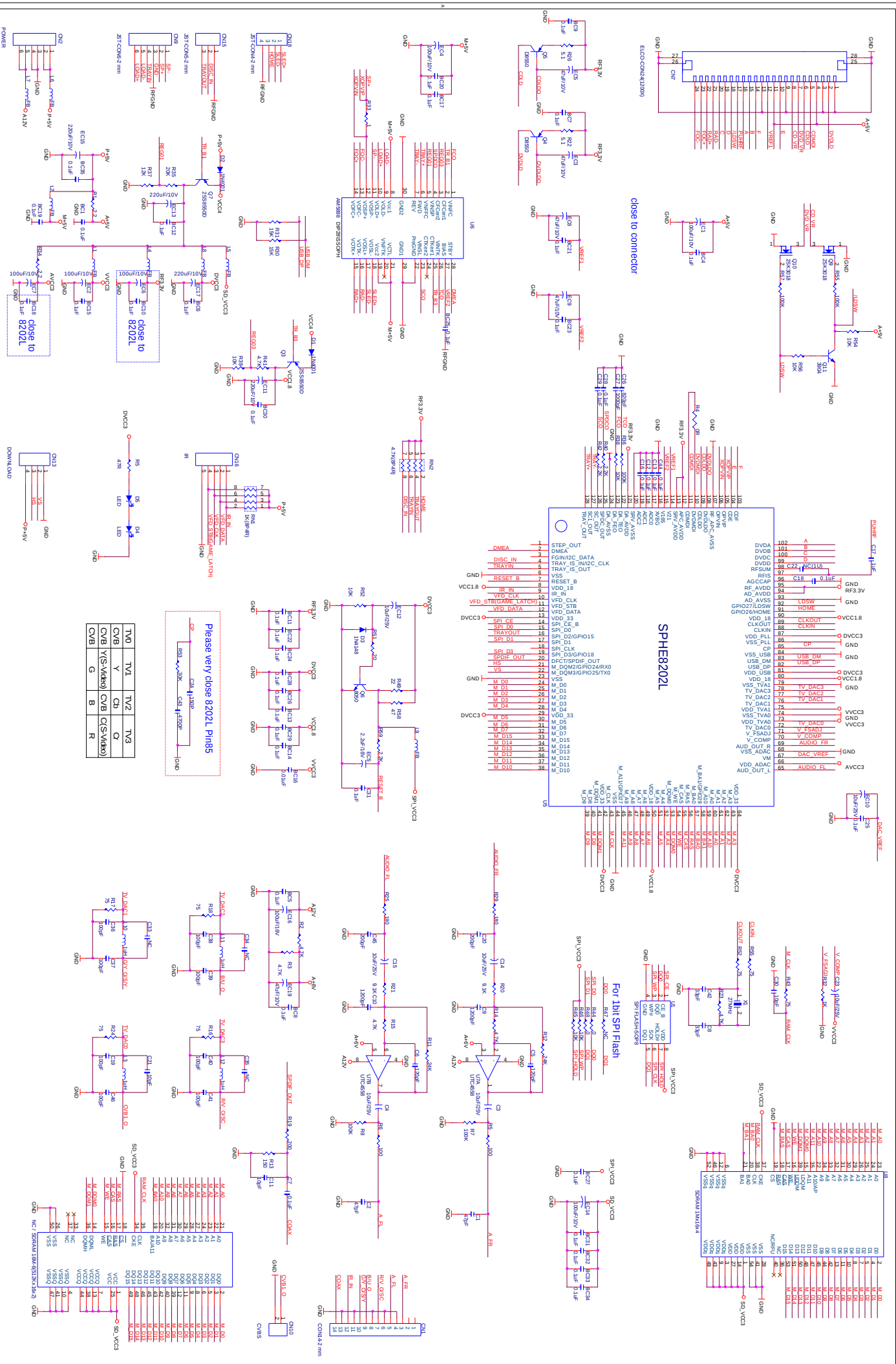
5.4.Function trouble (No disc 1)



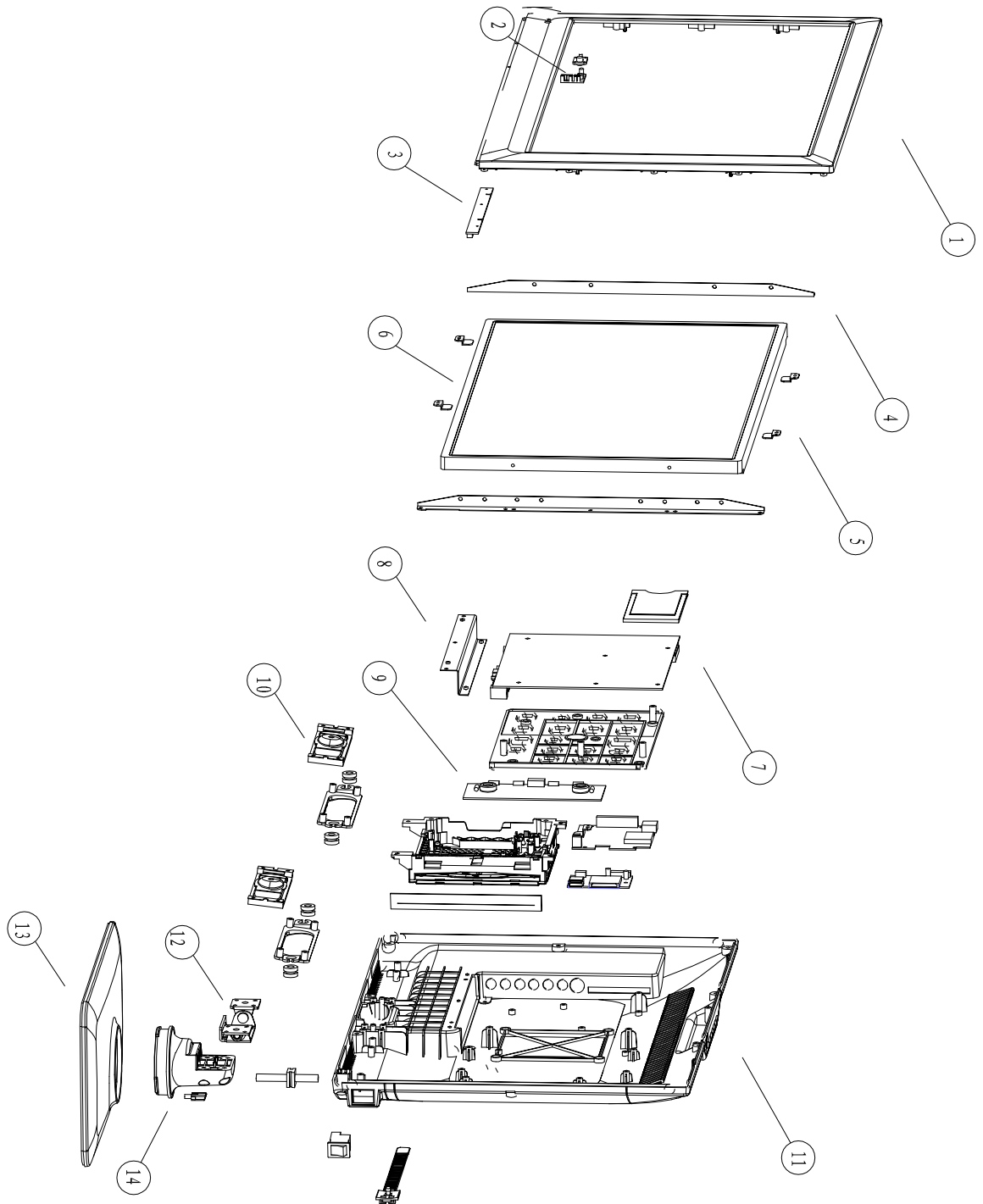
5.4. Function trouble (No disc 2)



5.5 Schematic Diagrams for DVD Module



6.Exploded Views

[illegible]

7.Adjustment

Instruction manual for 306 factory menu

1、 Entering method of factory menu: Press INPUT key on remote control to open Input Source menu, then press 2,5,8,0 in correct order on remote control to enter factory menu (INPUT+2580).

Factory Setting	
Version	
ADC ADJUST	
W/B ADJUST	
PICTURE MODE	
SOUND MODE	
Over scan	
Curve Setting	
Function	
USB UPDATE	
6M20 UPDATE	
Burning Mode	
Shipping Mode	
UART DEBUG	
--	B1.31

2、 PC ADC adjust: enter ADC ADJUST in factory menu, you can use “Checker Board pattern” signal or “Gray Scale pattern” from you PC, use remote control, select AUTO ADC, then use right key to execute ADJUST function.

ADC ADJUST	
Mode	PC-RGB
R-GAIN	4096
G-GAIN	4096
B-GAIN	4096
R-OFFSET	0
G-OFFSET	0
B-OFFSET	0
Auto ADC	FALL

PC ADC ADJUST

3、 White Balance Adjust: enter W/B ADJUST in factory menu, you can change current mode's picture quality by adjusting the values of R/G/B GAIN and R/G/B OFFSET.

W/B ADJUST	
Mode	DTV
TEMPERATURE	Medium
R-GAIN	125
G-GAIN	128
B-GAIN	133
R-OFFSET	128
G-OFFSET	128
B-OFFSET	128
COPY ALL	

4、Curve Setting: Enter Curve Setting in factory menu, you can select Contrast, Brightness, Color, Sharpness to adjust in "Curve Type" menu. Usual, we only change the value of "Curve Point 50", the picture quality will present in the standard mode of Picture Mode in Picture menu.

Curve Setting	
Source	DTV
Curve Type	Contrast
Curve Point 0	78
Curve Point 25	103
Curve Point 50	128
Curve Point 75	166
Curve Point 100	204

306 Software upgrade

306 software upgrade can be divided into ISP upgrade and USB upgrades .And there are two USB software upgrade :

POWER key to upgrade and the USB upgrade of the Factory menu

USB software upgrade

Before Upgrading, make sure the .BIN file putted into the U disk's root directory, and U disk into the USB port.

The first: The POWER key to Upgrade:

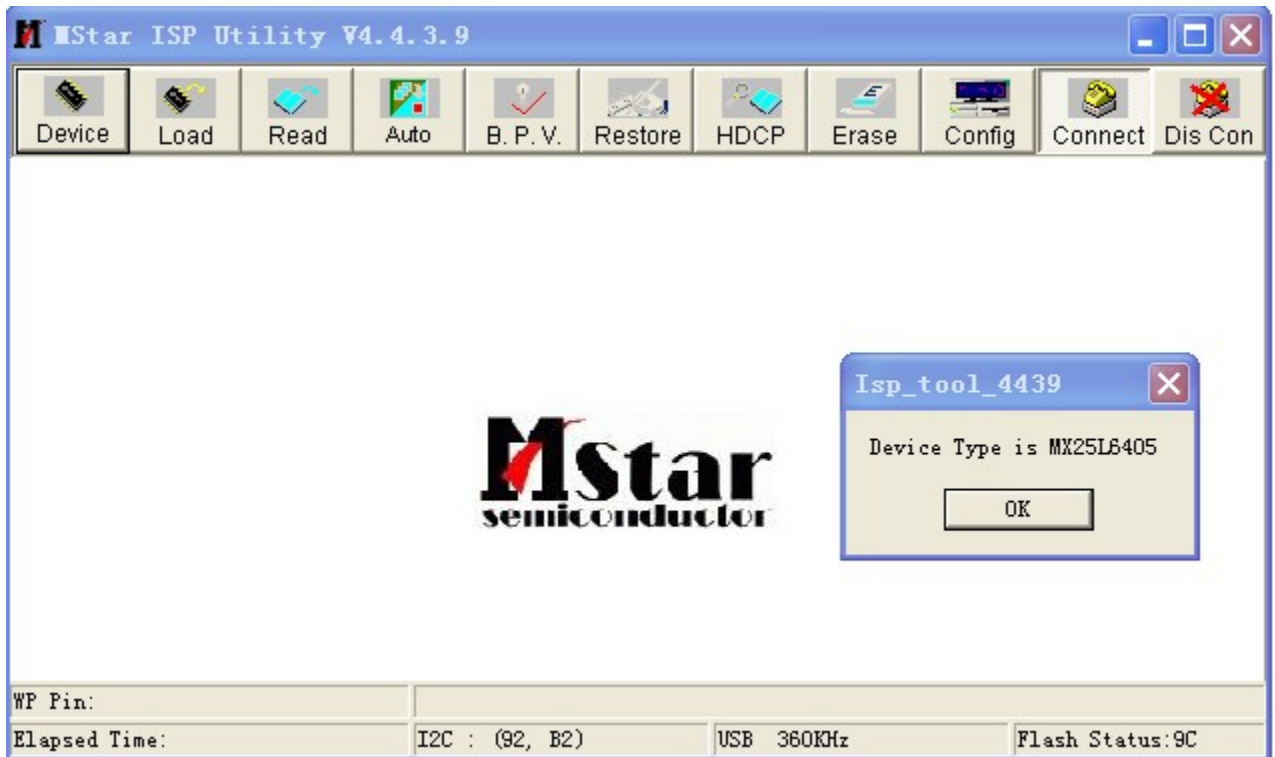
In the standby state, keep on pressing the button POWER, the process started if the red indicator light into green. It has access to USB upgrade condition while the indicator light turns green to red again, and now you can release the POWER key .Please do not power off during the upgrading, The whole upgrading last about 30s, it will automatically restart after the success of upgrading.

The second : upgrade in the Factory menu

Press the INPUT SOURCE key first, before the disappear of the TNPUT SOURCE menu, press the number : “2580” to enter the Factory menu, move the cursor to “USB UPDATE” by pressing the key UP and DOWN, then press the OK key to enter the upgrade, Please do not power off during the upgrading, The whole upgrading last about 30s, it will automatically restart after the success of upgrading.

ISP upgrade

Step 1: open the ISP TOO tool , choose “Connect”, If connected successfully, there will be the following dialog:

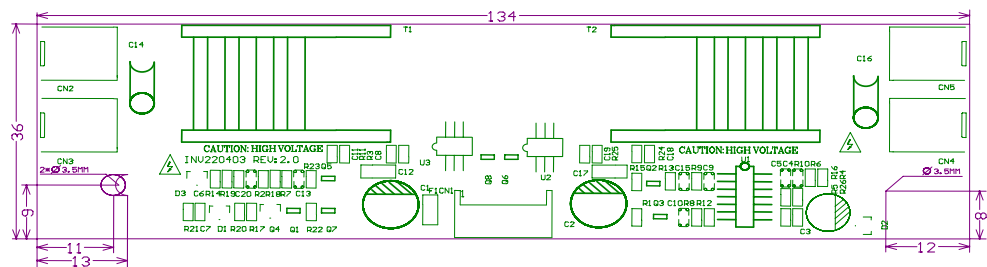


If the connection is not successful, then will be: , and now you need to check the tool connection.

Step 2: Choose “Read”, make the .BIN file will be burning into the tool, the burning files after compiling has been saved in the \CV306 folder.

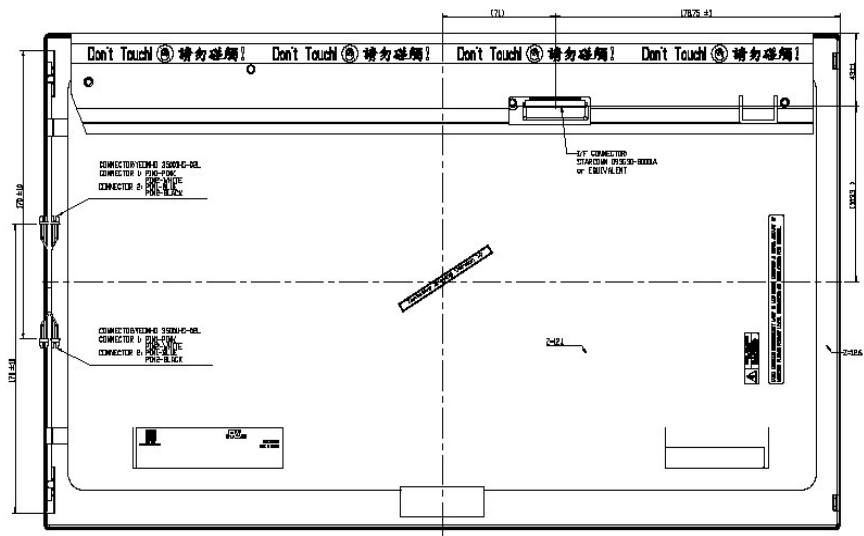
8.Key Parts

8-1.Inverter Board



Pin No.	Symbol	Description
1,2	VCC	12V
3	Von/off	On/off Control
4	Brightness	0~5V
5,6	GND	Ground

8-2.Panel



TFT LCD MODULE

Pin	Name	Description
1	RXO0-	Negative LVDS differential data input. Channel O0 (odd)
2	RXO0+	Positive LVDS differential data input. Channel O0 (odd)
3	RXO1-	Negative LVDS differential data input. Channel O1 (odd)
4	RXO1+	Positive LVDS differential data input. Channel O1 (odd)
5	RXO2-	Negative LVDS differential data input. Channel O2 (odd)
6	RXO2+	Positive LVDS differential data input. Channel O2 (odd)
7	GND	Ground
8	RXOC-	Negative LVDS differential clock input. (odd)
9	RXOC+	Positive LVDS differential clock input. (odd)
10	RXO3-	Negative LVDS differential data input. Channel O3(odd)
11	RXO3+	Positive LVDS differential data input. Channel O3 (odd)
12	RXE0-	Negative LVDS differential data input. Channel E0 (even)
13	RXE0+	Positive LVDS differential data input. Channel E0 (even)
14	GND	Ground
15	RXE1-	Negative LVDS differential data input. Channel E1 (even)
16	RXE1+	Positive LVDS differential data input. Channel E1 (even)
17	GND	Ground
18	RXE2-	Negative LVDS differential data input. Channel E2 (even)
19	RXE2+	Positive LVDS differential data input. Channel E2 (even)
20	RXEC-	Negative LVDS differential clock input. (even)
21	RXEC+	Positive LVDS differential clock input. (even)
22	RXE3-	Negative LVDS differential data input. Channel E3 (even)
23	RXE3+	Positive LVDS differential data input. Channel E3 (even)
24	GND	Ground
25	NC	Not connection, this pin should be open.
26	AGMODE	AGMODE should be tied to ground or open.
27	VCC	+5.0V power supply
28	VCC	+5.0V power supply
29	VCC	+5.0V power supply
30	VCC	+5.0V power supply

Note (1) Connector Part No.: 093G30-B0001A(STARCONN) or FI-X30SSL-HF(JAE) or EQUIVALENT.

Note (2) The first pixel is odd.

Note (3) Input signal of even and odd clock should be the same timing.

9. Product Specifications

DESCRIPTION	Items	FEATURES
	Panel	M216H1-L01 R116 L0350
	Screen Size	21.6" (16:9)
	Resolution	1920(*3)*1080
	Contrast ratio	1000:1
	Brightness	250 cd/m ²
	Viewing angle	85/85/80/80
TV function	Antenna Impedance	VHF/UHF 75 Ohm (Coaxial)
	Tuner	Integrated and frequency synthesis
	TV system	PAL+SECAM
	PAL	B/G, D/K, I
	SECAM	L, B/G, D/K
Video	Input	CVBS,YPbPr,VGA,HDMI
	Output	no
	PC Resolutions	up to 1920*1080@60HZ
	HDMI Resolutions	480i/p;576i/p;720p;1080i/p
Audio	Input	Left, Right, PC AUDIO
	Output	Earphone , SPDIF
	Speaker	2*3 watt (RMS)
	Impedance	4 Ohm
DVD	Supported Formats: Supported Medias	DVD, CD, MP3, JPEG bild, MPEG4 DVD, DVD±R/RW, CD-R/RW
Other Function	Remote Control	Yes
	Teletext	1000Pages
	Nicam & A2	Yes
OSD Languages	Multi-Language	English French German Italian spanish portuguese
Power	Power Input	DC 12V/5A
	Power Consumption	36W
	Power consumption stand-by	≦ 1W
ACCESSORIES	Remote, User manual, Power adapter, Power cord	
STANDARD	CE	

10. BOM List

part no.	description		Qty	units	REMARKS
104130002	glass stand 185L8/216L8/	structure	1	set	
104080198	rear cabinet 216L8/216L9 (with DVD)	structure	1	set	
104040044	speaker set YDT2090-02	structure	1	pair	
104030189	stand 216L8/216L9	structure	1	set	
104010189	front cabinet 216L8	structure	1	set	
101050224	led light window 19L8/216L8/236L8	structure	1	pcs	Transparent , fixing on the front cabinet
101030470	stand column 216L8/216L9	structure	1	pcs	
101020387	rear cabinet 216L8/216L9 (with DVD)	structure	1	pcs	
101010320	front cabinet 216L8	structure	1	pcs	
102070141	panel bracket 216L8/216L9	structure	4	pcs	
102030345	rear socket iron board 216L8/216L9	structure	1	pcs	
102020223	stand axis of rotation 216L8/216L9	structure	1	pcs	
102010777	iron panel connecting board 216L8	structure	2	pcs	
103030013	screw 6561/M3*6 black	structure	4	pcs	fixing rear socket iron board
103020141	screw B3*8F white	structure	1	pcs	fixing remote board
103020138	screw 2821/2*8C black	structure	3	pcs	fixing mpeg board
103020075	screw B3*8F black	structure	4	pcs	fixing panel bracket
103020075	screw B3*8F black	structure	3	pcs	fixing main PCB board
103020075	screw B3*8F black	structure	2	pcs	fixing inverter board
103020071	screw B4*10F black	structure	3	pcs	fixing glass stand;put in screw plastic
103020067	screw B3*12F black	structure	4	pcs	fixing DVD
103020064	screw B3*10F black	structure	10	pcs	fixing front and rear cabinet
103020064	screw B3*10F black	structure	8	pcs	fixing axis of rotation
103020064	screw B3*10F black	structure	4	pcs	fixing speaker
103020064	screw B3*10F black	structure	4	pcs	fixing iron panel connecting board
103010135	screw MB3*5 white	structure	4	pcs	fixing panel
103010046	screw MB4*10 black	structure	6	pcs	fixing stand
103010046	screw MB4*10 black	structure	4	pcs	fixing wall mount
120020161	bar code	structure	4	pcs	
120020143	pos label	structure	1	pcs	
120020045	Digital Switchover Label & MEPS Star Rating Label	structure	1	pcs	
120020019	foil logo	structure	1	pcs	
120020018	serial no	structure	1	pcs	
120020008	rating label	structure	1	pcs	
120010062	stand fixing instrction	structure	1	pcs	

120010001	user manual	structure	1	pcs	
119060001	antistatic cleaner	structure	0.3	ml	
119050001	handle 1049	structure	1	set	
119040298	EPE polyform 216L8(w/o stand)	structure	1	set	
119030097	BLACK ACID TAPE 11*80mm	structure	480	mm	6pcs/set
119030096	non-woven fabrics 250*8*0.3mm	structure	2	m	
119030086	3M Double Faced Adhesive Tape 4920 12mm*33m	structure	8	pcs	stick on the touching key board
119030007	DVD dustcloth	structure	1	pcs	
119030006	ribbon	structure	2	pcs	
119030005	NORMAL TAPE width 16mm	structure	200	mm	
119020104	EPE plastic 250*350 opening: 250	structure	1	pcs	use to put into stand
119020004	unit plastic (PE)	structure	1	PCS	
119020002	accessory plastic A5 270*200mm opening 200mm	structure	1	pcs	
119010473	gift box 216L8(w/o stand)	structure	1	pcs	
101080271	EVA mat Φ16*6	structure	2	pcs	stick on the mpeg board
101080028	EVA mat Φ16*12	structure	3	pcs	stick on the main PCB board
119020013	screw plastic	structure	1	pcs	use to put screw to fixing stand
120010004	warranty card	structure	1	pcs	
114060943	DVD Music video cable XF031-pC	circuit	1	pcs	
114060744	DVD button control cable XG002-040	circuit	1	pcs	
114040214	speaker cable XC001-060/050	circuit	1	pcs	
114030632	button control cable XB013-050	circuit	1	pcs	
114030617	button control cable XB012-055	circuit	1	pcs	
114020141	inverter board cable XA001-055	circuit	1	pcs	DVD power cable
114020132	inverter board cable XA001-010	circuit	1	pcs	
114010374	LVDS cable 19&MST&300	circuit	1	pcs	
114010322	FFC cable A-24P-0.5-115MM	circuit	1	pcs	same facing
113010368	touch key board KY.TL10A 9buttons CVT	circuit	1	pcs	9000 series
113010323	control board RMT056-4	circuit	1	pcs	
111070007	connecting parts PH-5A	circuit	1	pcs	
111030026	remote sensor HBM38BNS	circuit	1	pcs	
111030006	two-electrode valve Φ3	circuit	1	pcs	
111020002	aluminum electrolytic capacitor CD110-16V-47μF±20%	circuit	1	pcs	
111010024	plug-in unit resistance 100Ω/0.25W	circuit	1	pcs	
118030008	battery 7#/1.5V	circuit	2	pcs	
118020282	remote control BD-11R-07	circuit	1	pcs	

118010029	ac adaptor KPA060F black	circuit	1	pcs	
117010080	power cord	circuit	1	pcs	
115110014	21.6"panel M216H1-L01 Rev.116 L0350	circuit	1	pcs	
115210029	DVD loader DL-08HA-00-044	circuit	1	pcs	1200X
113080062	mpeg board AL09 VER2.2 (1200X)	circuit	1	pcs	
113070495	main PCB board CV306L-A-20	circuit	1	pcs	with DVD circuit
113050193	LED inverter board AYD210350	circuit	1	pcs	
104040044	speaker YDT2090-02	circuit	1	pcs	4 Ω 3W