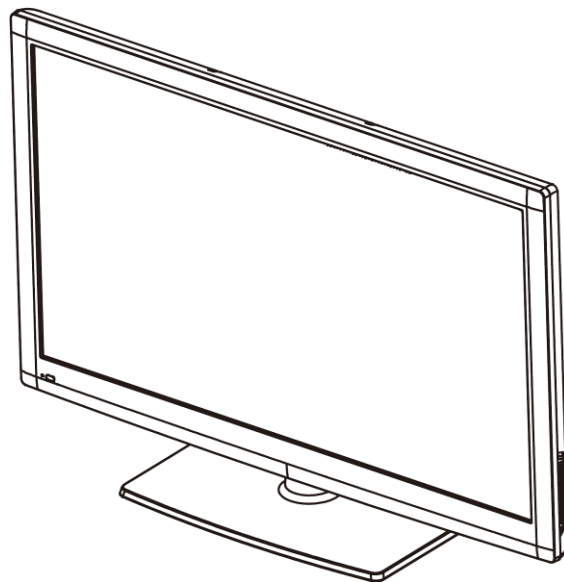


Service
Service
Service



Service Manual

Horizontal Frequency
31~75 KHz

TABLE OF CONTENTS

Description	Page	Description	Page
Table of Contents	1	6.4 Key Board	23
Important Safety Notice	2	6.5 IR Board	24
Revision List	3	7. Adjustment	25
1. General Specification	4	8. Block Diagram	26
2. Operating Instructions	6	9. Wiring Diagram	27
3. Input/Output Specification	7	10. Schematic Diagram	28
4. Mechanical Instructions	9	10.1 Main Board	28
5. Repair Flow Chart	12	10.2 Power Board	40
6. PCB Layout	17	10.3 LED Board	43
6.1 Main Board	17	10.4 Key Board	44
6.2 Power Board	19	10.5 IR Board	45
6.3 LED Board	23		

SAFETY NOTICE

ANY PERSON ATTEMPTING TO SERVICE THIS CHASSIS MUST FAMILIARIZE HIMSELF WITH THE CHASSIS AND BE AWARE OF THE NECESSARY SAFETY PRECAUTIONS TO BE USED WHEN SERVICING ELECTRONIC EQUIPMENT CONTAINING HIGH VOLTAGES.

CAUTION: USE A SEPARATE ISOLATION TRANSFORMER FOR THIS UNIT WHEN SERVICING

Important Safety Notice

Proper service and repair is important to the safe, reliable operation of all Haier Company Equipment. The service procedures recommended by Haier and described in this service manual are effective methods of performing service operations. Some of these service operations require the use of tools specially designed for the purpose. The special tools should be used when and as recommended.

It is important to note that this manual contains various CAUTIONS and NOTICES which should be carefully read in order to minimize the risk of personal injury to service personnel. The possibility exists that improper service methods may damage the equipment. It is also important to understand that these CAUTIONS and NOTICES ARE NOT EXHAUSTIVE. Haier could not possibly know, evaluate and advise the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each way. Consequently, Haier has not undertaken any such broad evaluation. Accordingly, a servicer who uses a service procedure or tool which is not recommended by Haier must first satisfy himself thoroughly that neither his safety nor the safe operation of the equipment will be jeopardized by the service method selected.

Hereafter throughout this manual, Haier Company will be referred to as Haier.

WARNING

Use of substitute replacement parts, which do not have the same, specified safety characteristics might create shock, fire, or other hazards.

Under no circumstances should the original design be modified or altered without written permission from Haier. Haier assumes no liability, express or implied, arising out of any unauthorized modification of design. Servicer assumes all liability.

FOR PRODUCTS CONTAINING LASER:

DANGER-Invisible laser radiations when open AVOID DIRECT EXPOSURE TO BEAM.

CAUTION-Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

CAUTION -The use of optical instruments with this product will increase eye hazard.

TO ENSURE THE CONTINUED RELIABILITY OF THIS PRODUCT, USE ONLY ORIGINAL MANUFACTURER'S REPLACEMENT PARTS, WHICH ARE LISTED WITH THEIR PART NUMBERS IN THE PARTS LIST SECTION OF THIS SERVICE MANUAL.

Take care during handling the LCD module with backlight unit

- Must mount the module using mounting holes arranged in four corners.
- Do not press on the panel, edge of the frame strongly or electric shock as this will result in damage to the screen.
- Do not scratch or press on the panel with any sharp objects, such as pencil or pen as this may result in damage to the panel.
- Protect the module from the ESD as it may damage the electronic circuit (C-MOS).
- Make certain that treatment person's body is grounded through wristband.
- Do not leave the module in high temperature and in areas of high humidity for a long time.
- Avoid contact with water as it may a short circuit within the module.
- If the surface of panel becomes dirty, please wipe it off with a soft material. (Cleaning with a dirty or rough cloth may damage the panel.)

1. General Specification

Note

- This model complies with the specifications listed below.
- Designs and specifications are subject to change without notice.
- This model may not be compatible with features and/or specifications that may be added in the future.

Model No.	HL32P2	HL42XP22
DISPLAY		
Viewable	31.5W"	42W"
Television System	NTSC standard, ATSC standard (8-VSB, Clear-QAM)	
Channel Coverage	VHF: 2 through 13 UHF: 14 through 69 Cable TV: Mild band (A - 8 through A - 1, A through I), Super band (J through W), Hyper band (AA through ZZ, AAA, BBB), Ultra band (65 through 94, 100 through 135)	
CONNECTIONS		
Rear Connectors	Tuner input (75Ω) AV IN: AV/S-Video and L/R audio input PC IN: D-SUB and PC Audio (Headphone mini-jack) Supported scan rate: 640x480@60/72/75Hz, 720x400@70Hz, 800x600@56/60/72/75Hz, 1024x768@60/70/75Hz, 1280x720@60Hz, 1280x768@60Hz. Note: 1360x768@60Hz: For HL32P2 only. 1280x1024@60Hz, 1440x900@60Hz, 1680x1050@60Hz, 1920x1080@60Hz: For HL42XP22 only. Recommended: For HL32P2: 1360x768@60Hz For HL42XP22: 1920x1080@60Hz Component Video and L/R Audio input Supported resolution: 480i, 480p, 720p, 1080i, 1080p HDMI input Supported scan rates: 480i, 480p, 720p, 1080i, 1080p	
		COMPONENT 1/2 AV/S-Video input SPDIF HDMI 1/2 AUDIO OUT
Side Connectors	HDMI 3/4 AV IN 2 Earphone Output USB PORT	HDMI 3/4 AV IN 2 Earphone Output USB PORT
WEIGHT & DIMENSION		
Dimensions with Stand (W x H x D)(inch)	31.07x22.30x9.06	40.13x27.48x11.87
Dimensions without Stand (W x H x D)(inch)	31.07x20.07x3.74	40.13x25.33x3.86
Weight with Stand	20.94(lbs)	39.68(lbs)
Weight without Stand and Base	17.42(lbs)	33.07(lbs)

Model No.	HL32P2	HL42XP22
WALL MOUNTING		
VESA-compatible wall bracket (W x H)	200 x 200 mm	400 x 200 mm
Screw type	Metric 6 x 10 mm	Metric 6 x 10 mm
POWER		
Power Consumption	150W	180W
Standby	<1W	
Mains Power	120V~60Hz	
Audio Power	10W + 10W	10W + 10W
Ambient Temperature	41°F~95°F	
PACKAGE CONTENTS		
Supplied Accessories	TV unit x 1 Base x 1 Remote control x 1 (with two size AAA alkaline batteries) Screws x 6 (for 32" only) User manual x 1 Registration Card x 1	

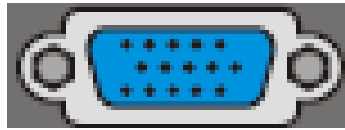
2. Operating Instructions

Please refer to user manual which is attached in this service manual.

3. Input/Output Specification

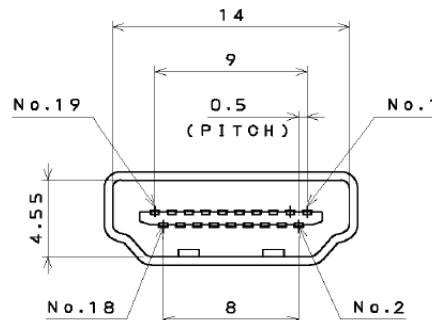
3.1 Input Signal Connector

D-SUB



Pin No.	Description	Pin No.	Description
1	Red Video	9	No Pin
2	Green Video	10	Sync Ground
3	Blue Video	11	SDA(Remote Control)
4	SCL(Remote Control)	12	Serial Data for DDC
5	Ground	13	H-Sync
6	Red Ground	14	V-Sync
7	Green Ground	15	Serial Clock for DDC
8	Blue Ground		

HDMI



Pin No.	Description	Pin No.	Description
1	TMDS Data2+	11	TMDS Clock Shield
2	TMDS Data2 Shield	12	TMDS Clock-
3	TDMS Data2-	13	CEC
4	TMDS Data1+	14	NC
5	TMDS Data1 Shield	15	SCL
6	TMDS Data1-	16	SDA
7	TMDS Data0+	17	DDC/CEC Ground
8	TMDS Data0 Shield	18	+5V Power
9	TMDS Data0-	19	Hot Plug Detect
10	TMDS Clock+		

3.2 Input Signal Timing

Analog RGB

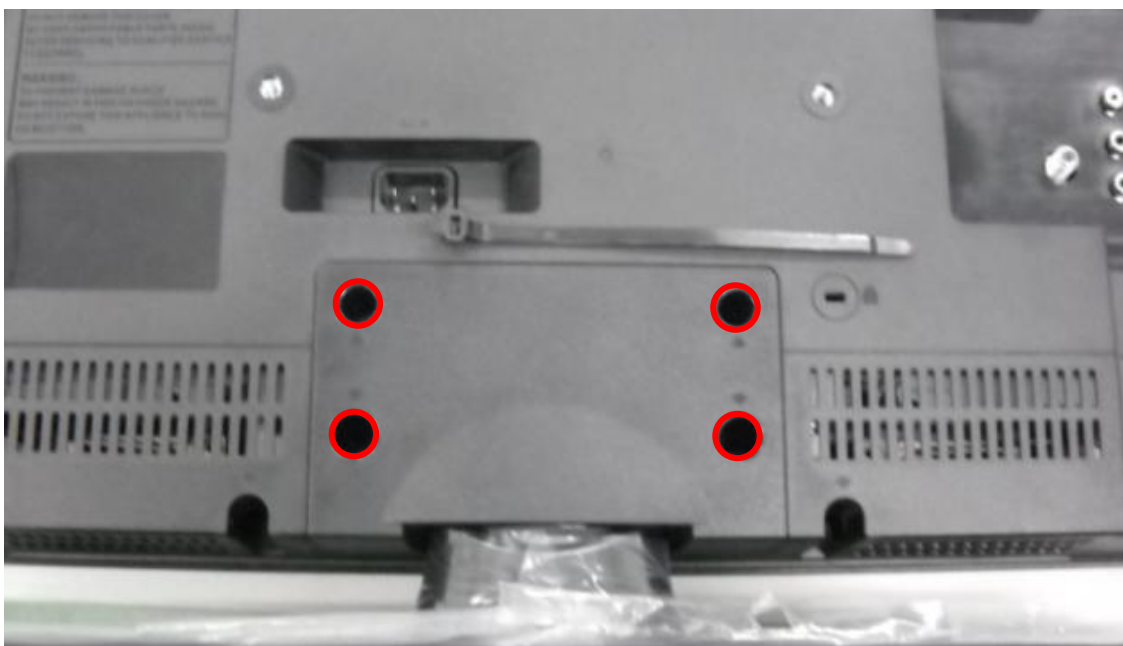
VESA MODES							
			Horizontal		Vertical		
Mode	Resolution	Total	Nominal Frequency (KHz)	Sync Polarity	Nominal Freq. (Hz)	Sync Polarity	Nominal Pixel Clock (MHz)
VGA	640x480@60Hz	800 x 525	31.469	N	59.94	N	25.175
	640x480@72Hz	832 x 520	37.861	N	72.809	N	31.5
	640x480@75Hz	840 x 500	37.5	N	75	N	31.5
DOS	720x400@70Hz	900 x 449	31.469	N	70.087	P	28.322
SVGA	800x600@56Hz	1024 x 625	35.156	P	56.25	P	36
	800x600@60Hz	1056 x 628	37.879	P	60.317	P	40
	800x600@72Hz	1040 x 666	48.077	P	72.188	P	50
	800x600@75Hz	1056 x 625	46.875	P	75	P	49.5
XGA	1024x768@60Hz	1344 x 806	48.363	N	60.004	N	65
	1024x768@70Hz	1328 x 806	56.476	N	70.069	N	75
	1024x768@75Hz	1312 x 800	60.023	P	75.029	P	78.75
CVT-0.92M9	1280x720@60Hz	1664 x 748	44.722	N	59.855	P	74.5
WXGA	1280x768@60Hz	1440 x 790	47.396	P	59.995	N	68.25
WXGA	1360x768@60Hz	1720 x 795	75	P	60.02	P	162

HDMI

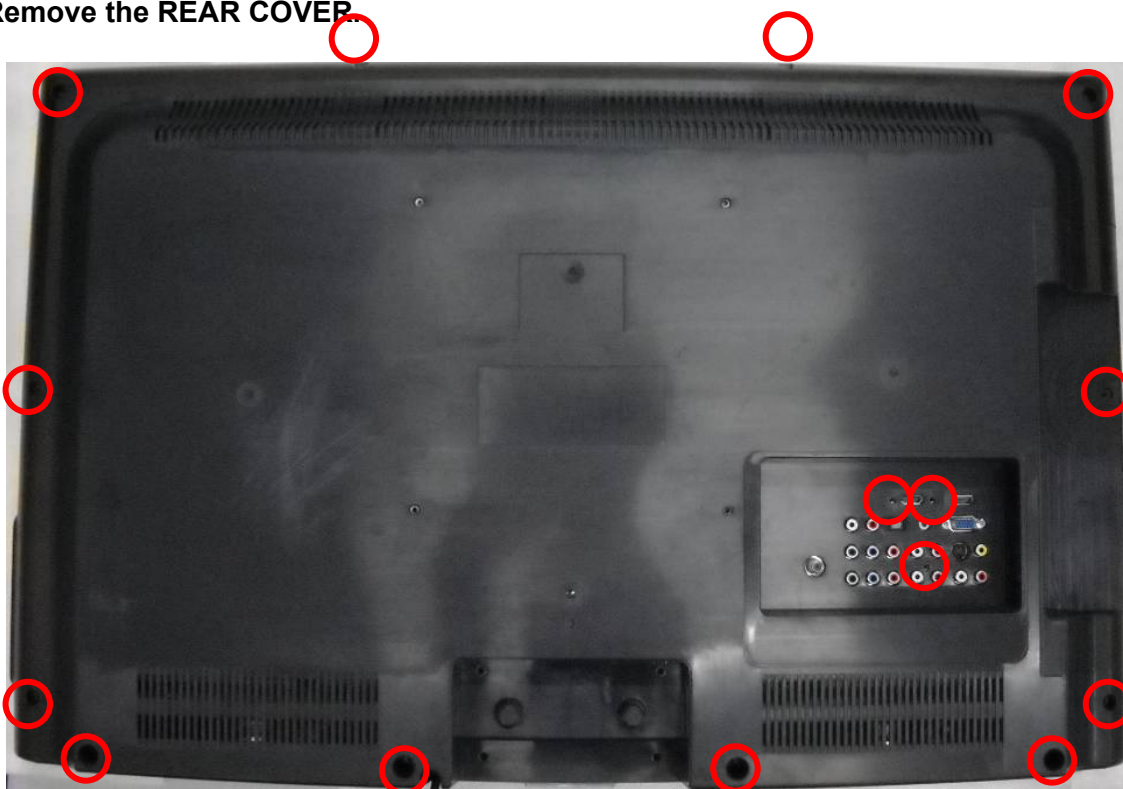
VESA MODES							
			Horizontal		Vertical		
Mode	Resolution	Total	Nominal Frequency (KHz)	Sync Polarity	Nominal Freq. (Hz)	Sync Polarity	Nominal Pixel Clock (MHz)
DOS	720 x 400	900 x 449	31.469	N	70.087	P	28.322
VGA	640 x 480	800 x 525	31.469	N	59.94	N	25.175
SVGA	800 x 600	1056 x 628	37.879	P	60.317	P	40
XGA	1024 x 768	1344 x 806	48.363	N	60.004	N	65
WXGA	1280 x 768	1664 x 798	47.396	P	59.995	N	68.25
CVT-0.92M9	1280 x 720	1664 x 748	44.722	N	59.855	P	74.5
WXGA	1360x768@60Hz	1720 x 795	75	P	60.02	P	162
1080P	1920 x 1080P	2200 x 1125	67.5		60,		148.5
720P	1280 x 720P	1650 x 750	45		60,		74.25
1080i	1920 x 1080i	2200 x 1125	33.75		60,		74.25
480P	720 x 480P	858 x 525	31.5		60,		27.03
480i	720 x 480i	1716 x 525	15.75		60,		13.51

4. Mechanical Instructions

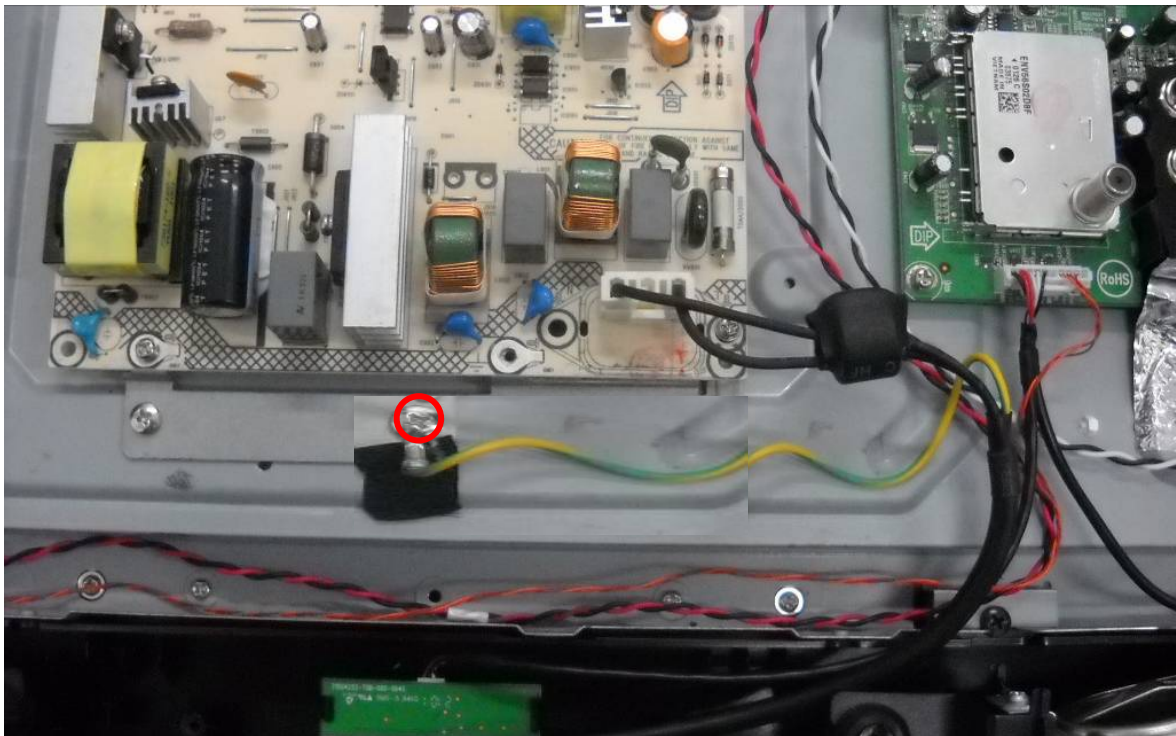
Step1. Remove the STAND HINGE and BASE.



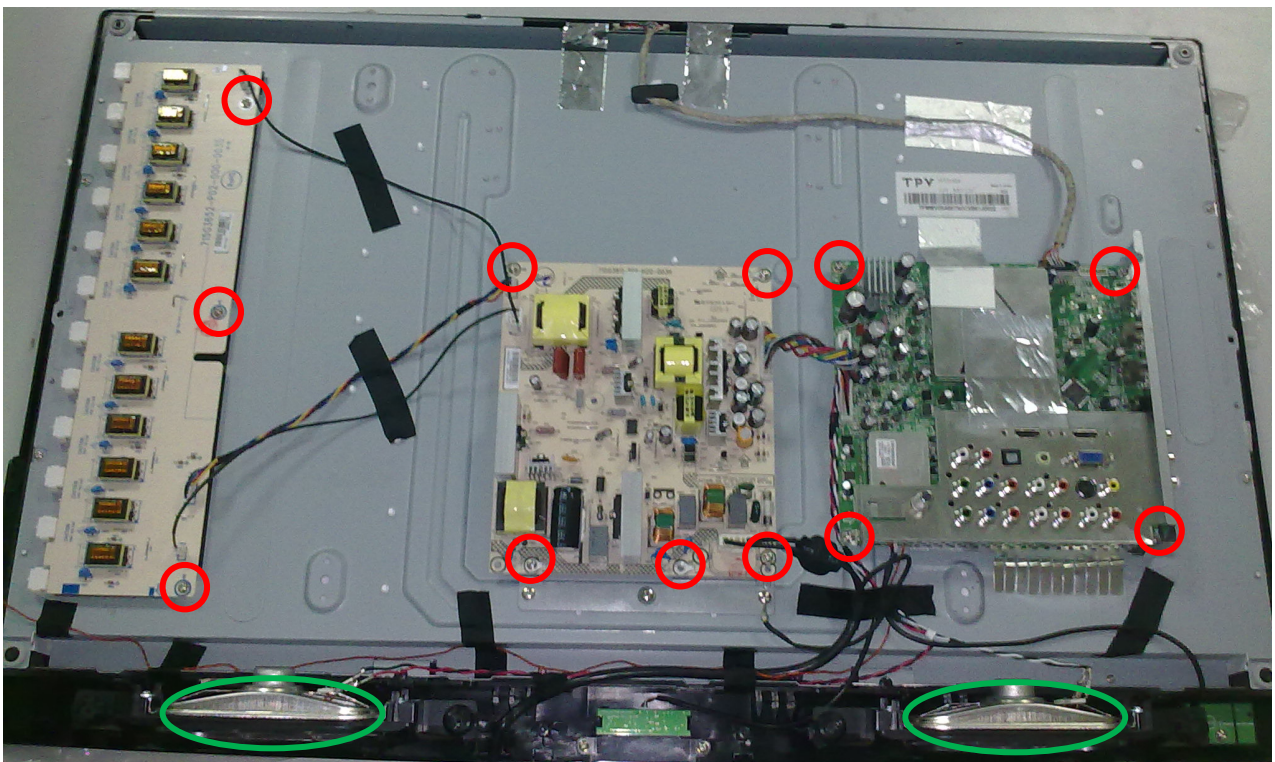
Step2. Remove the REAR COVER.



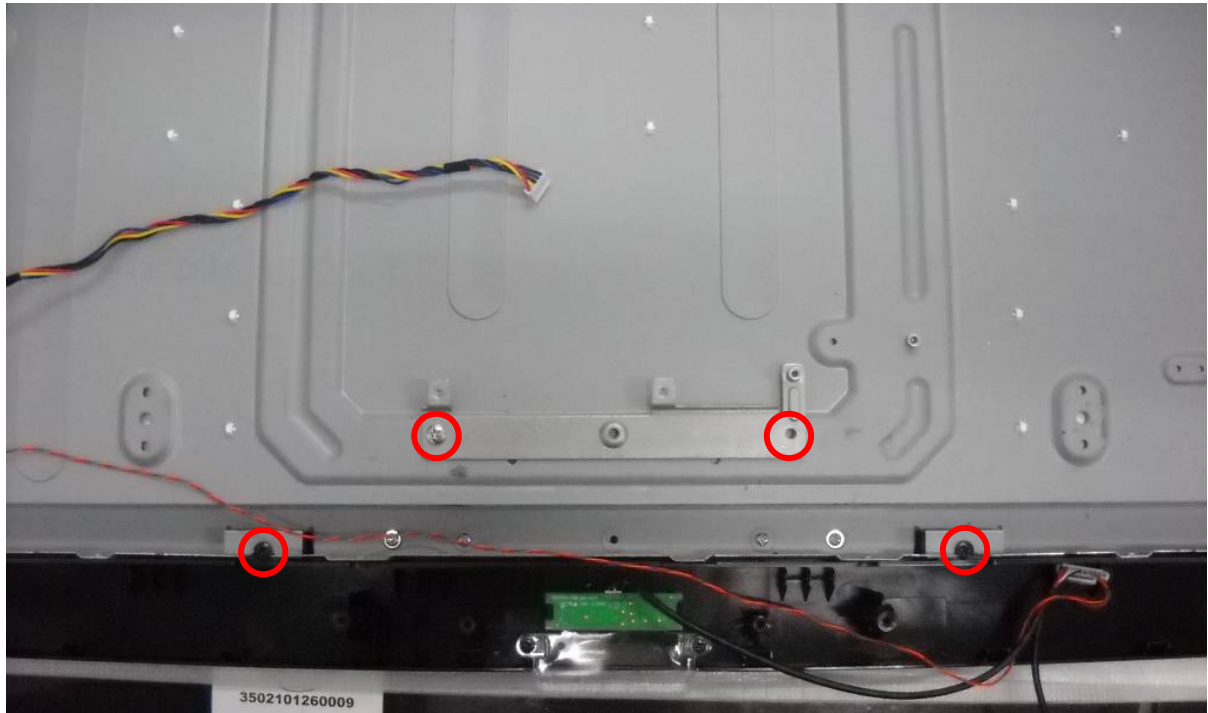
Step3. Remove the POWER CORD.



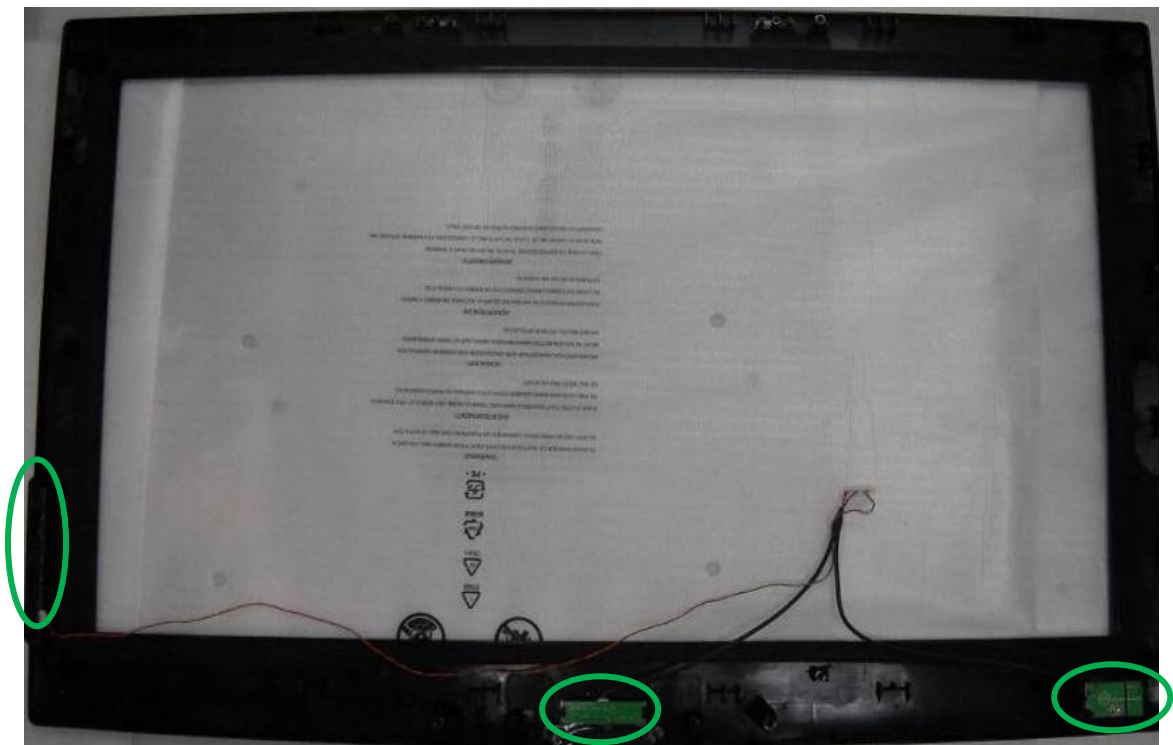
Step4. Remove the MAIN BOARD, POWER BOARD, INVERTER BOARD and SPEAKERS.



Step5. Remove the BKT and separate the BEZEL and PANEL.

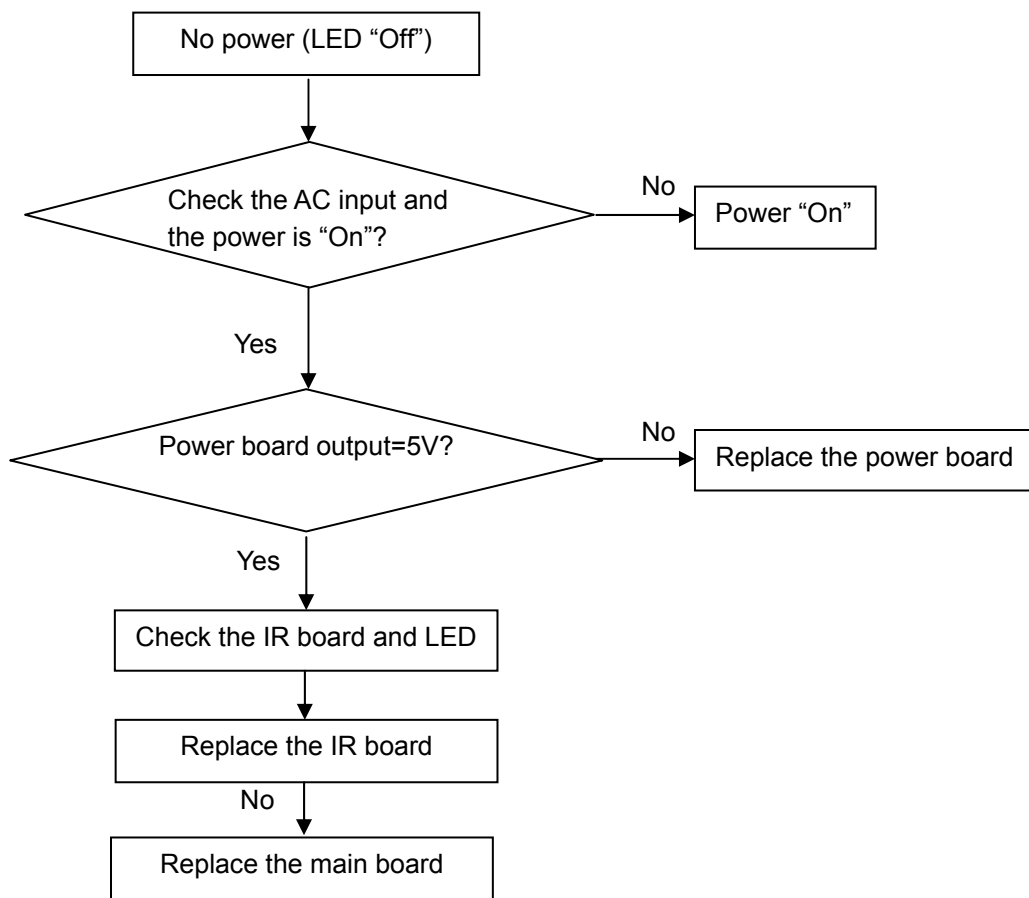


Step6. Remove the IR BOARD, KEY BOARD and LED BOARD.

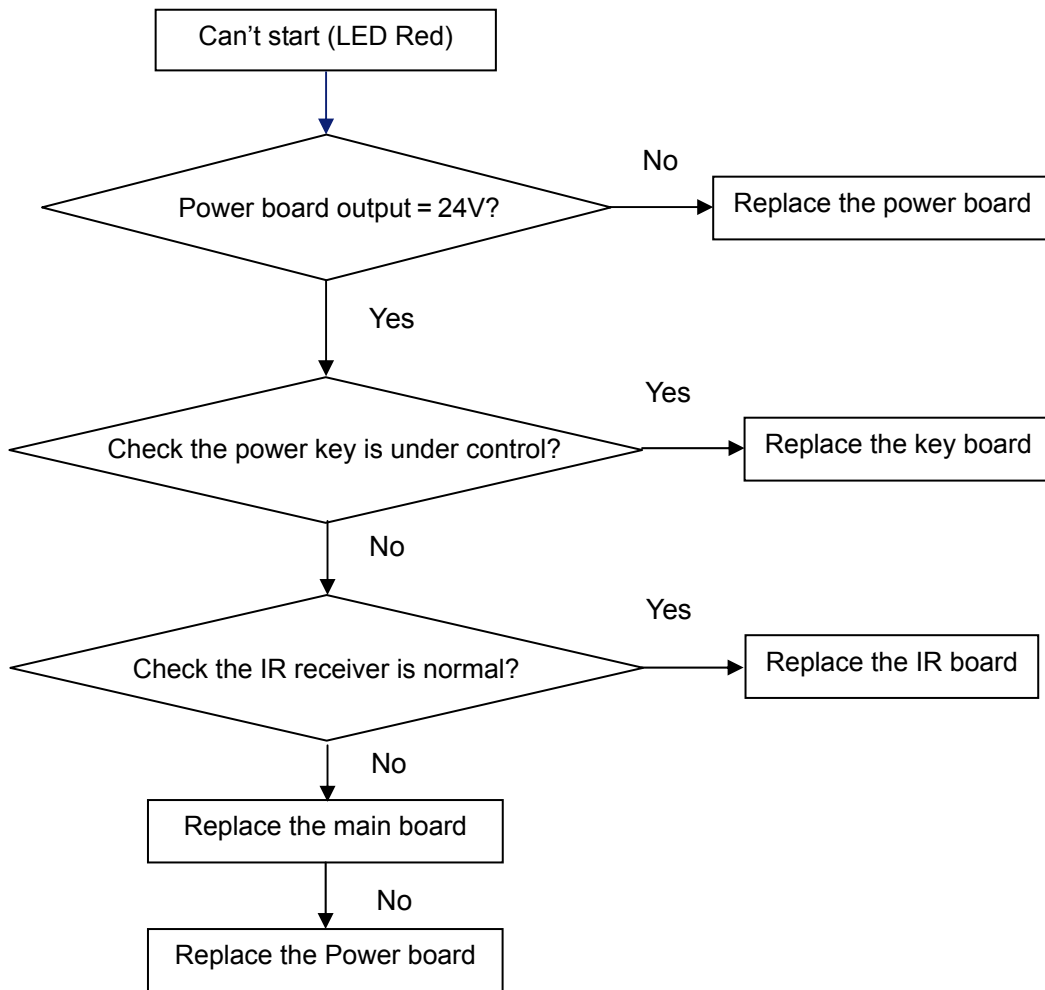


5. Repair Flow Chart

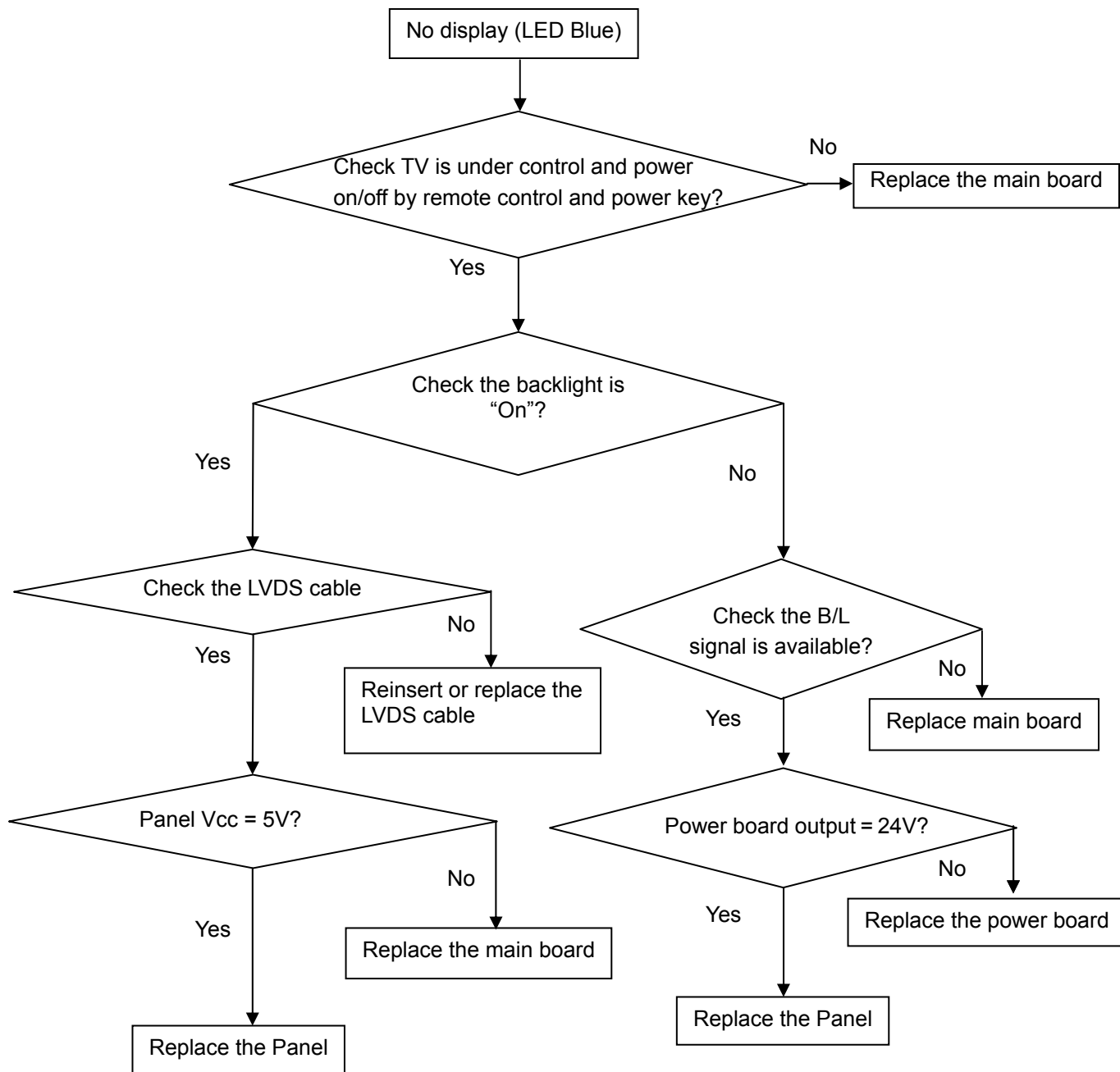
1. No power



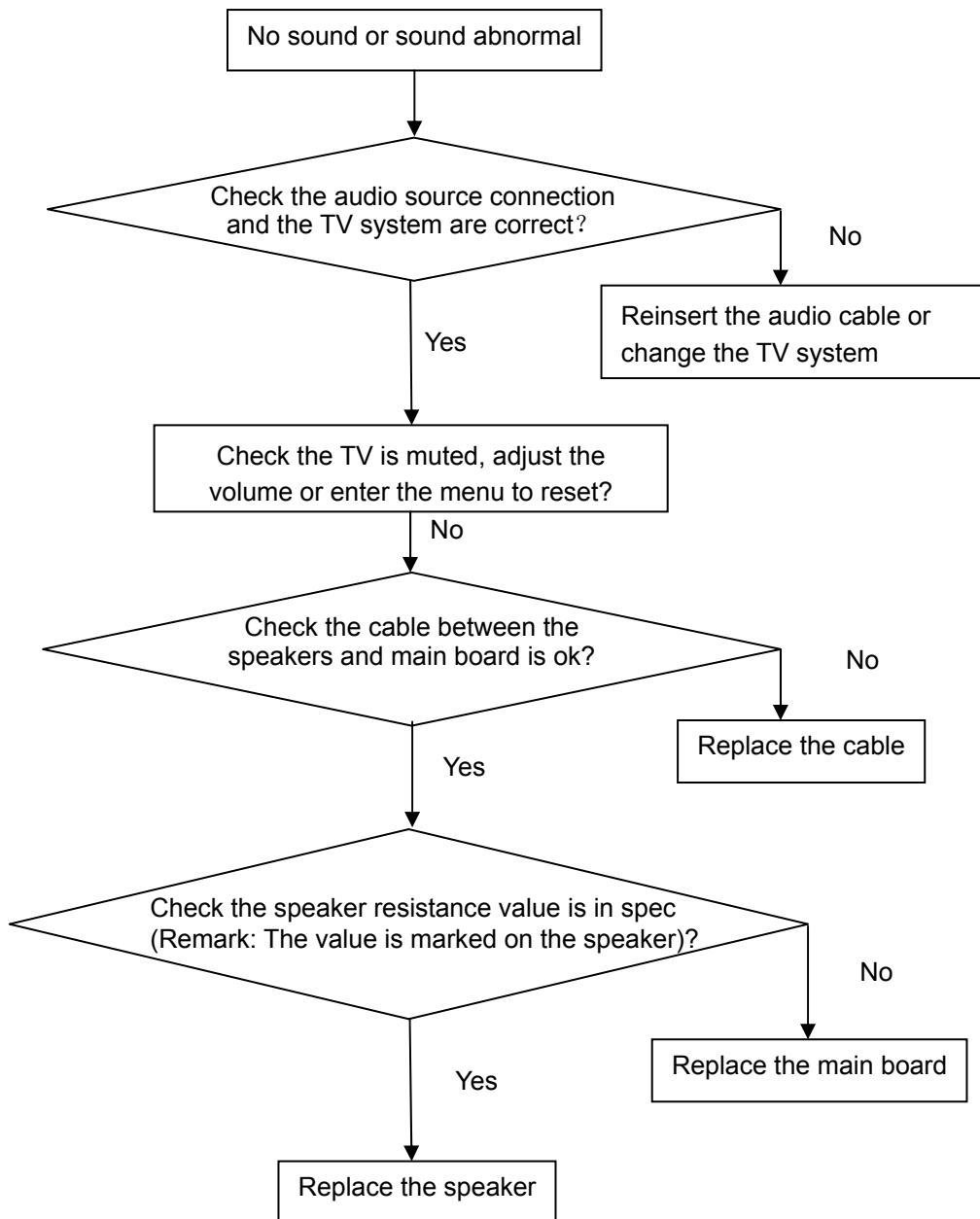
2. Can't start



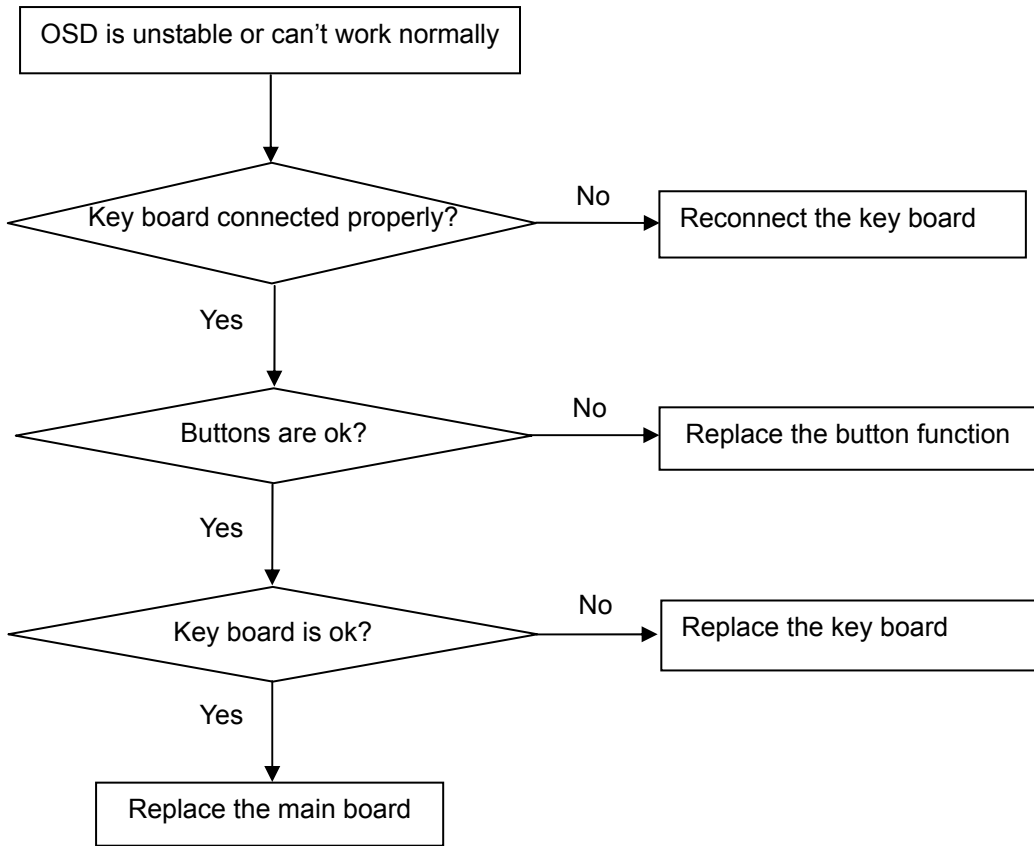
3. No display



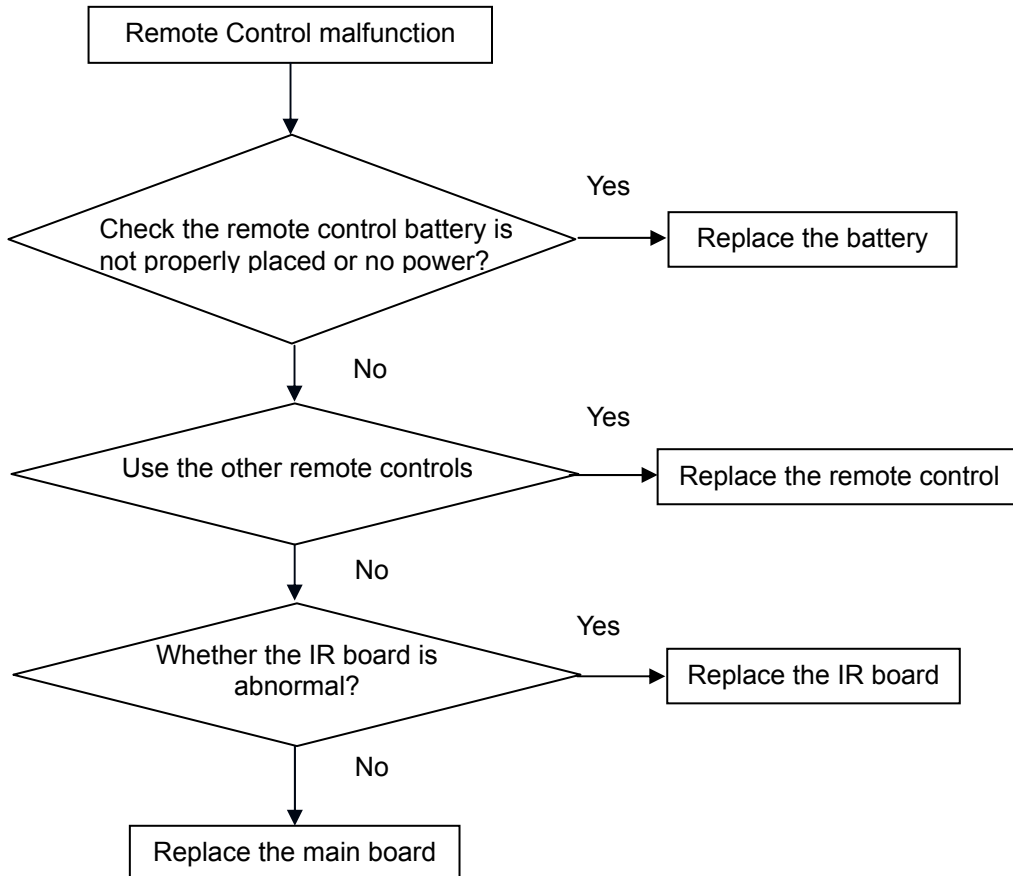
4. Sound problem



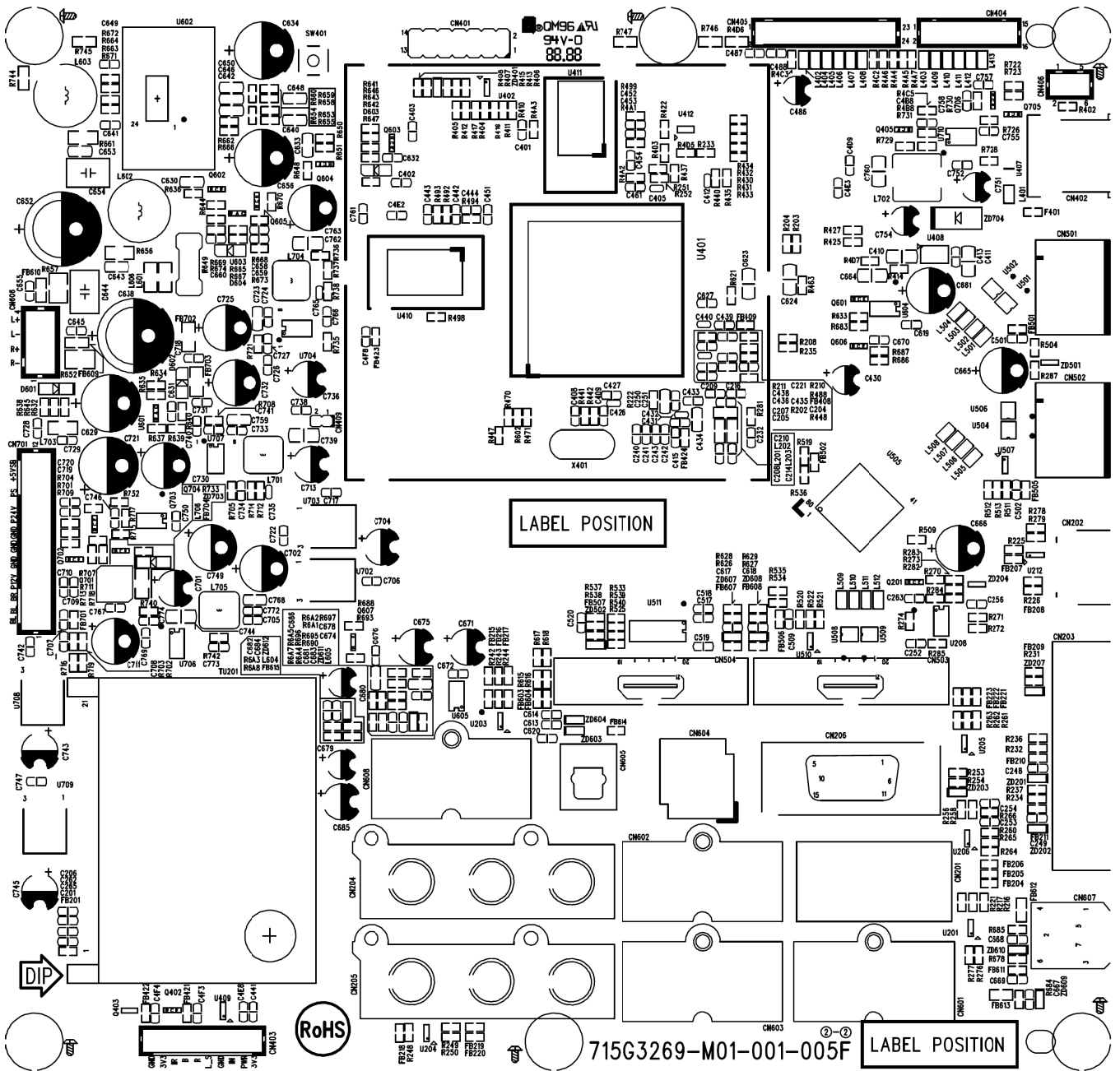
5. Remote Control malfunction

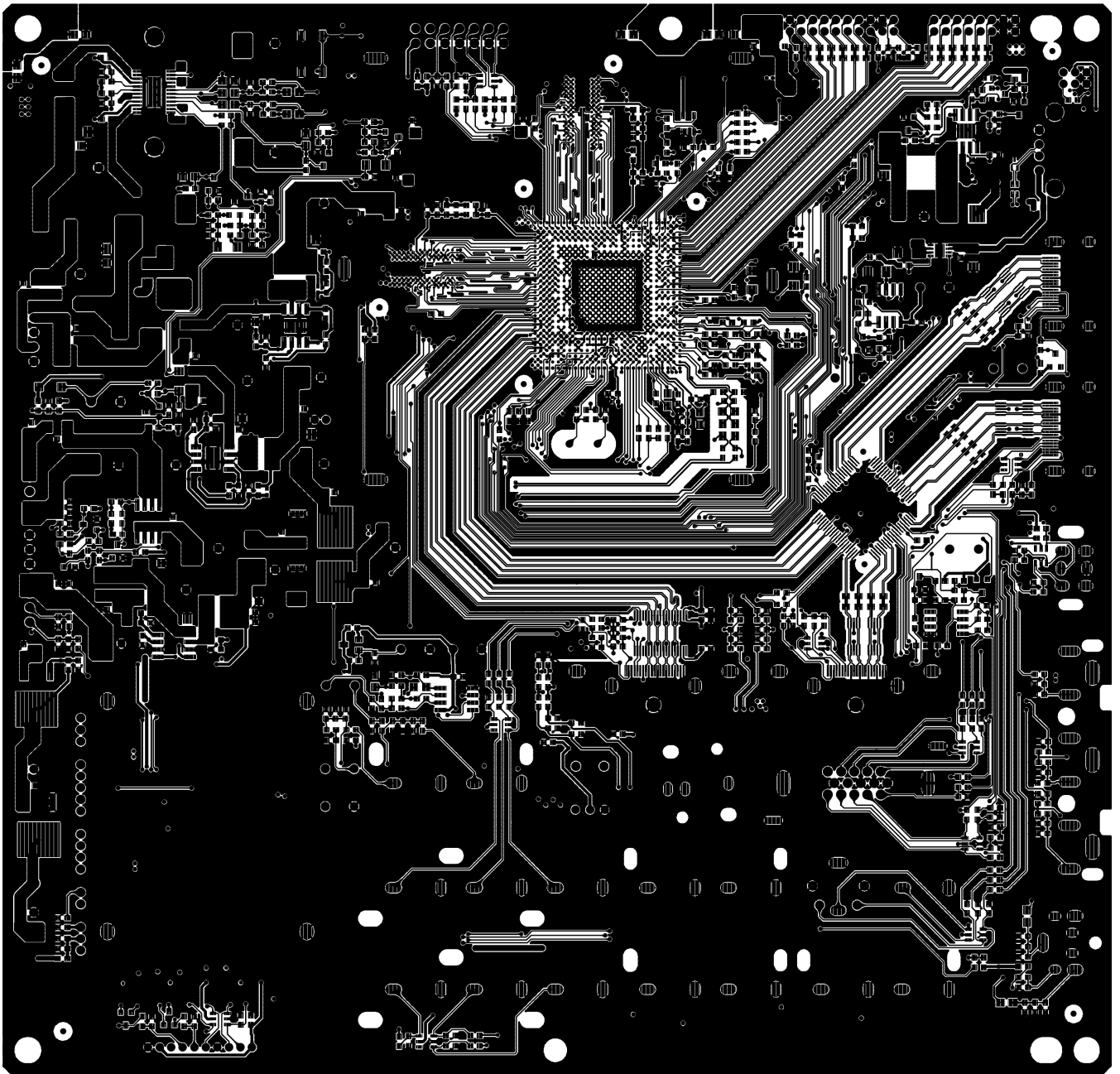


6. OSD is unstable or can't work normally

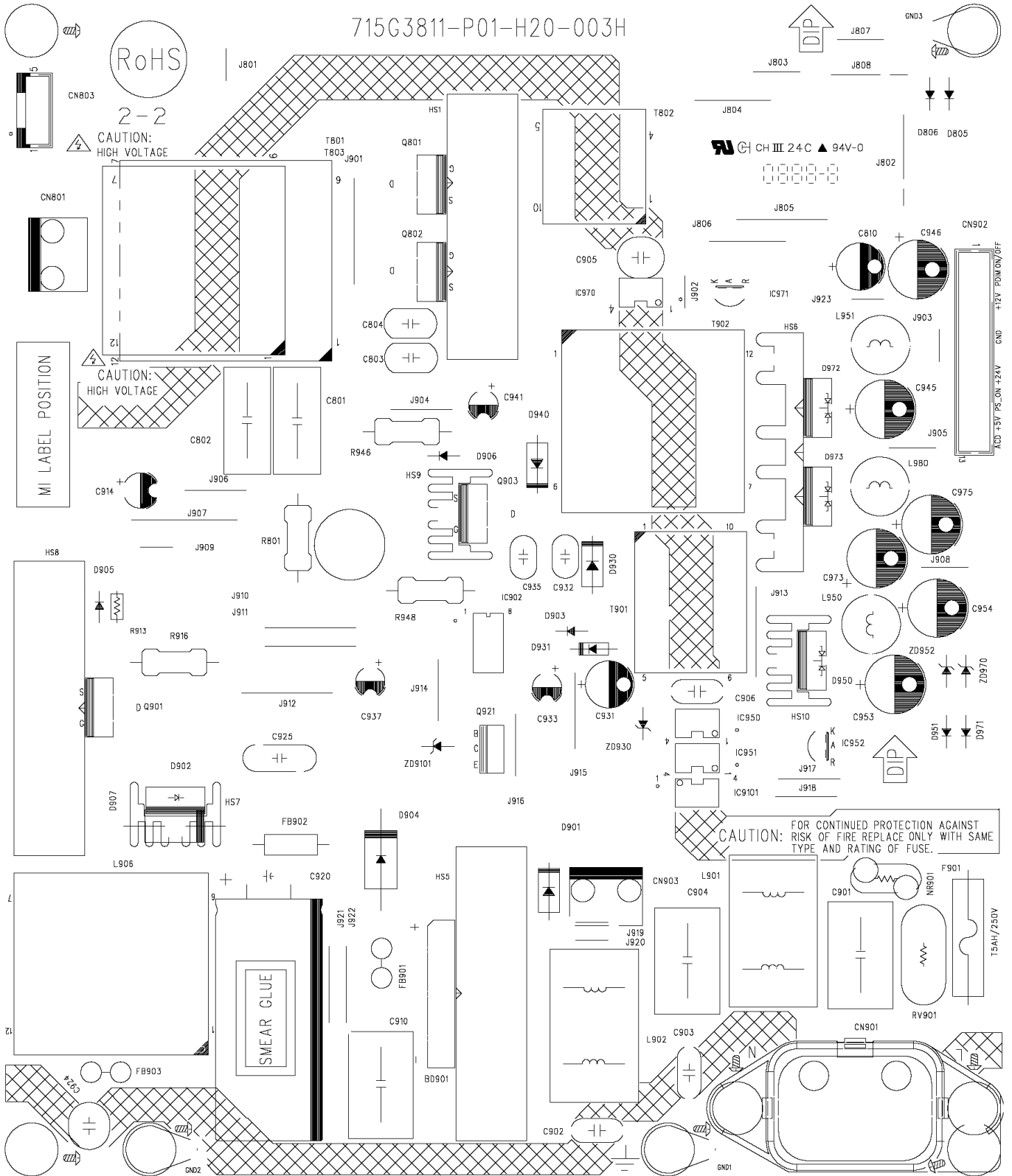


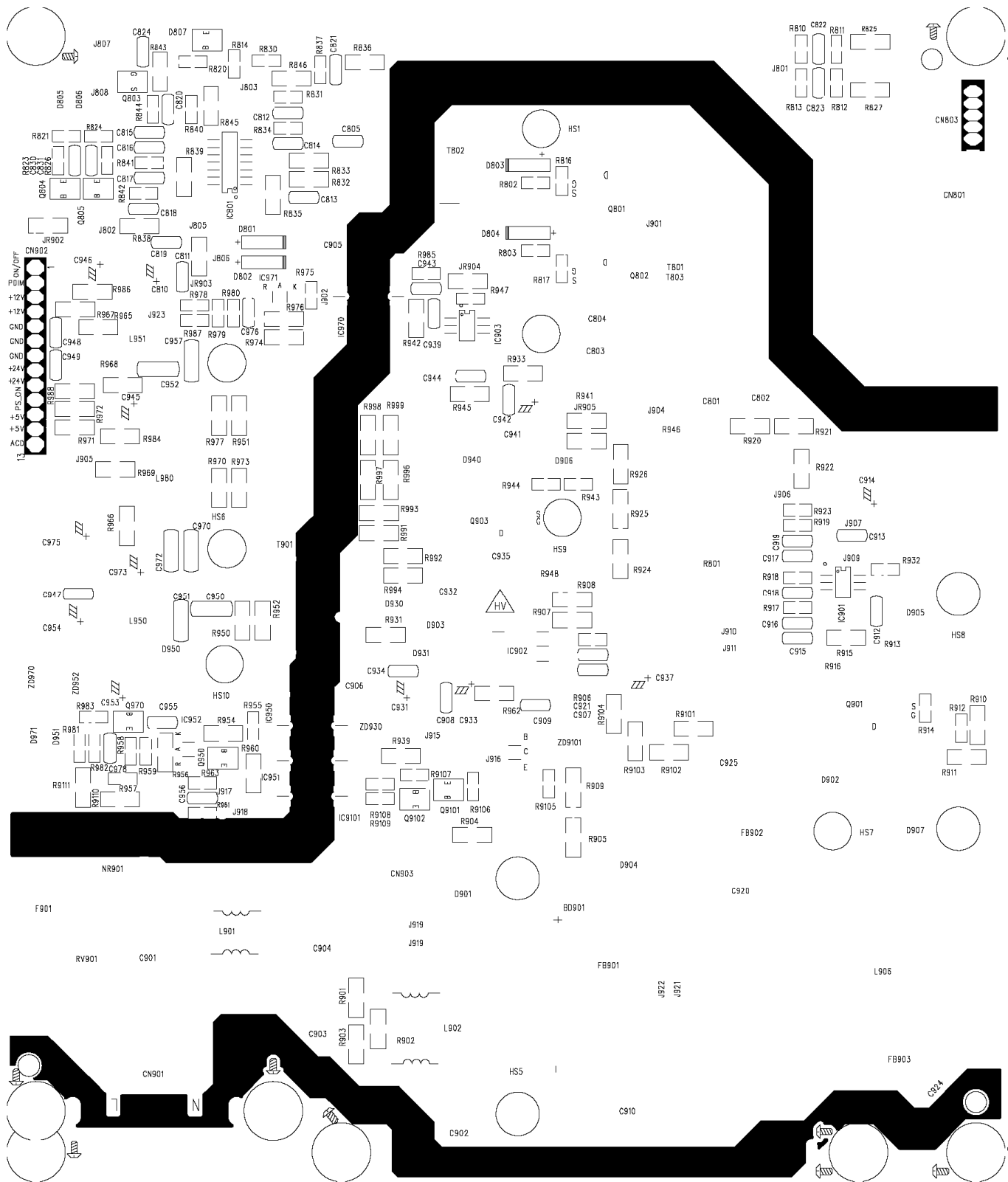
6. PCB Layout
6.1 Main Board
715G3269M01001005K

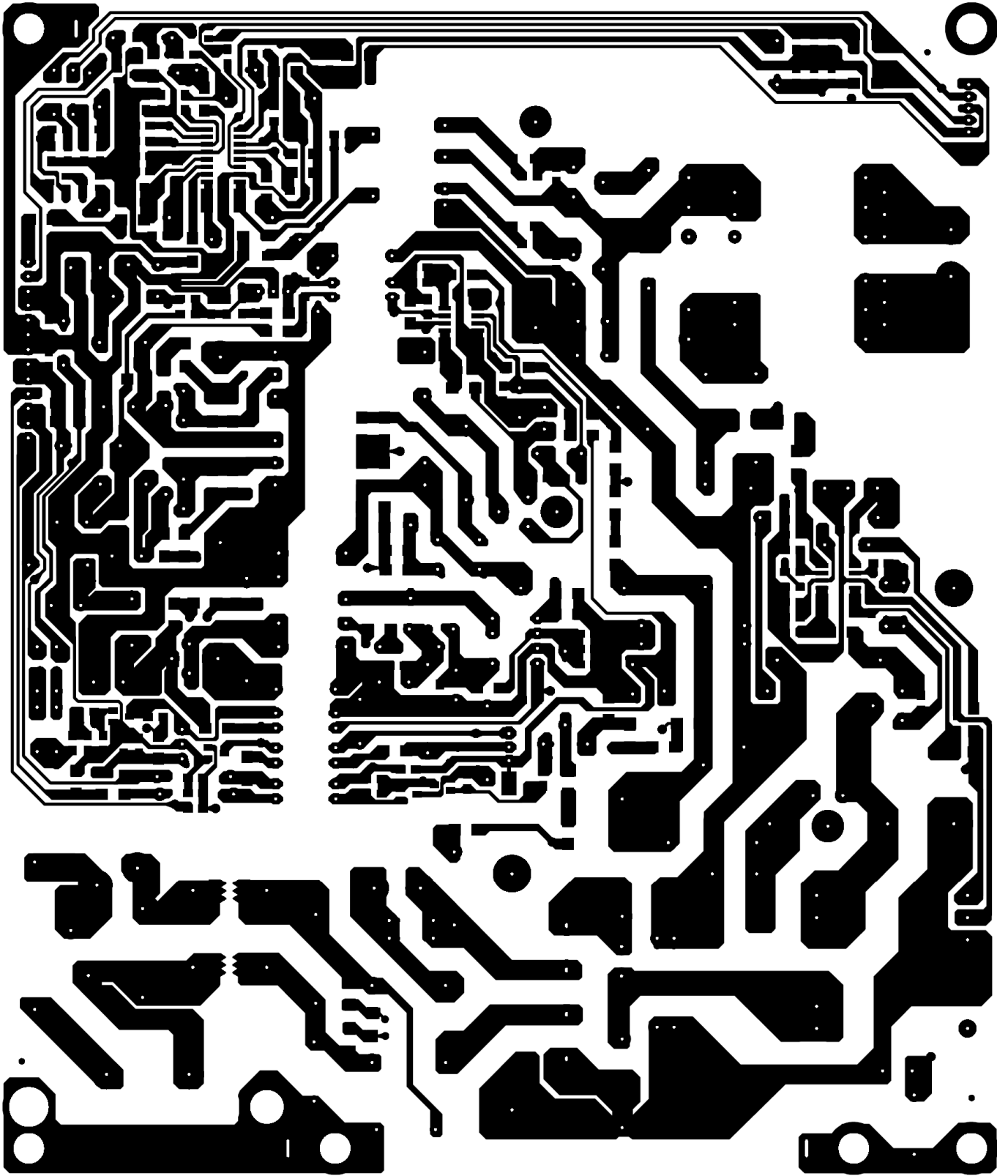


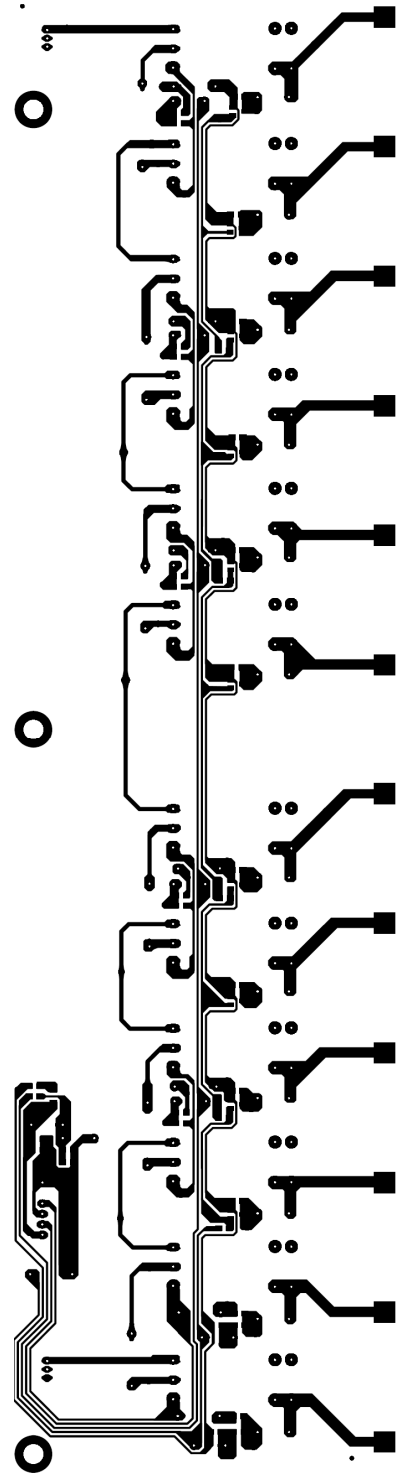
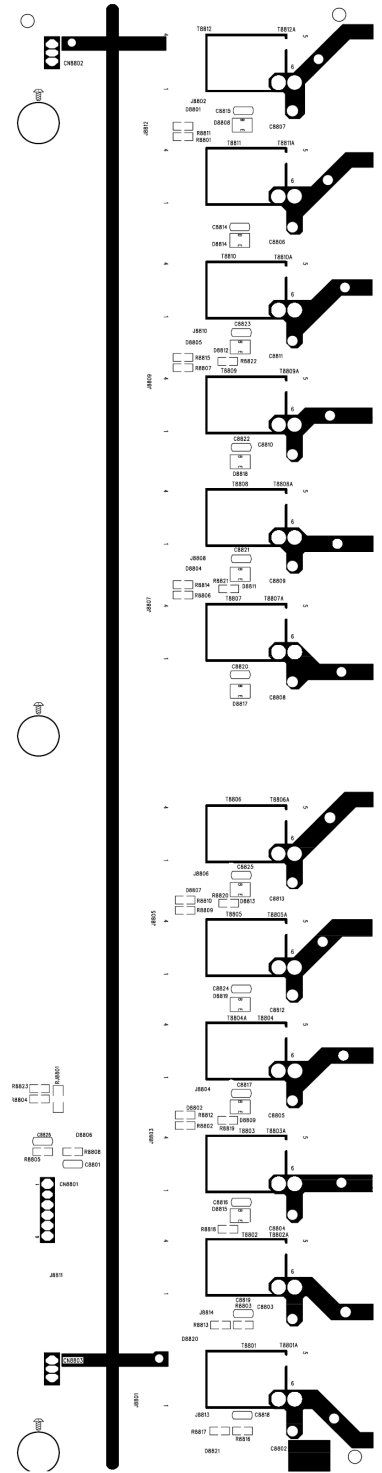
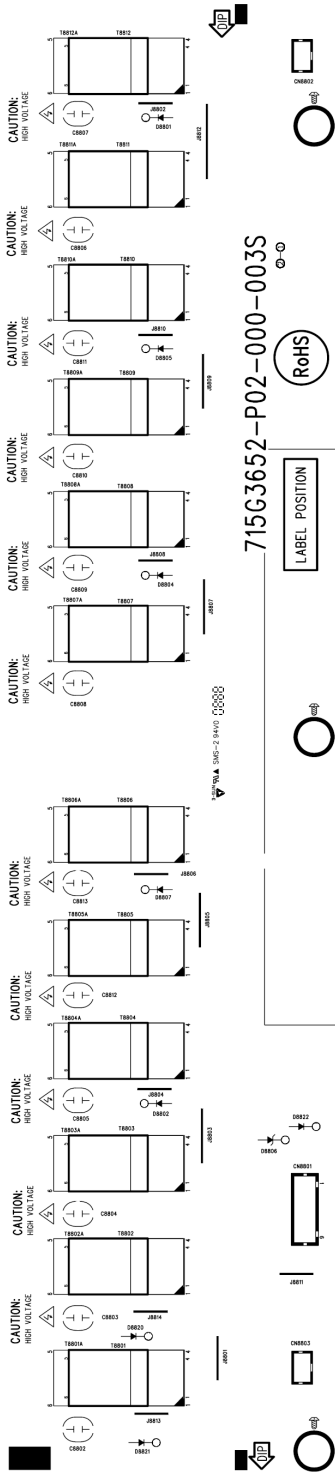


6.2 Power Board 715G3811P01H20003H

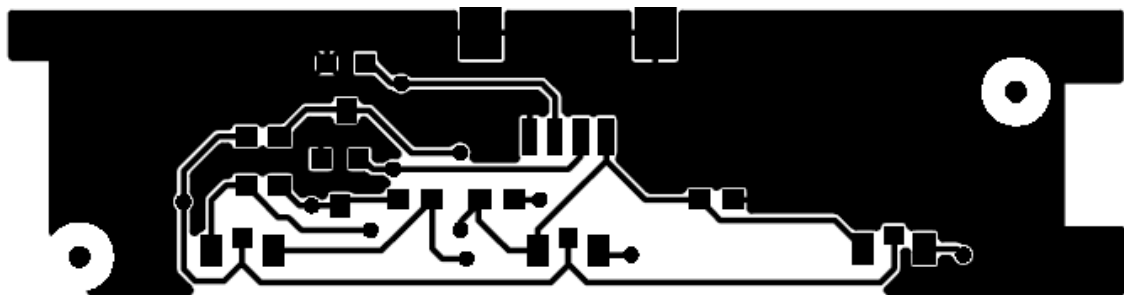
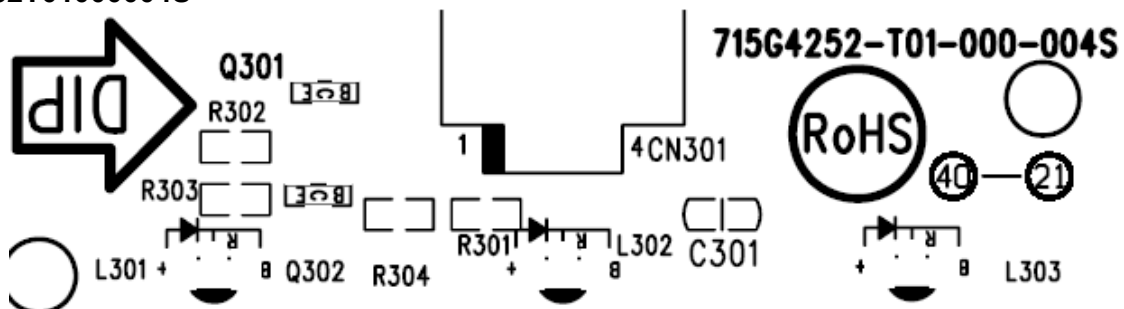




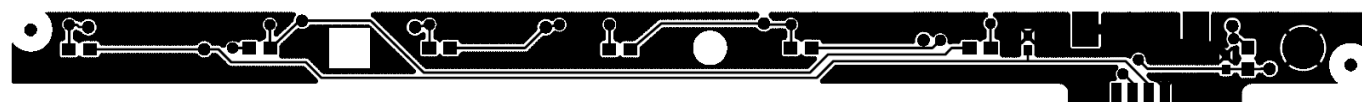




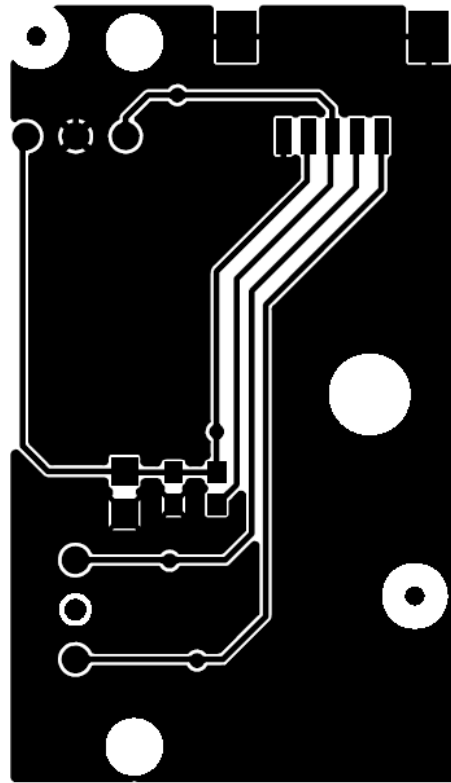
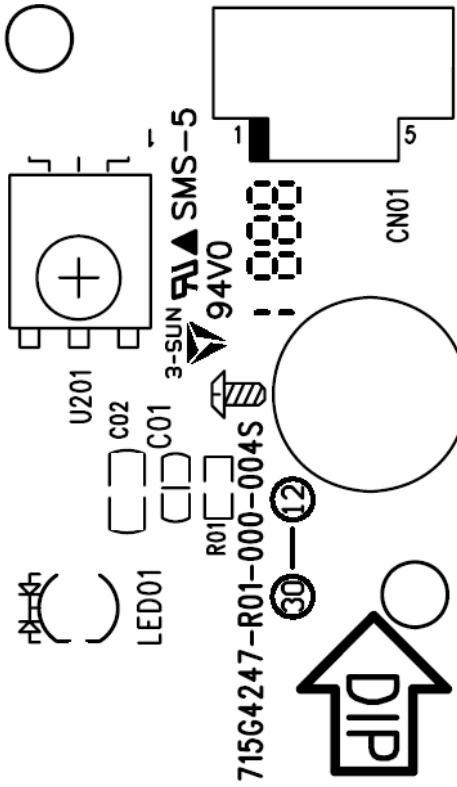
6.3 LED Board
715G4252T01000004S



6.4 Key Board
715G4234K01000004S



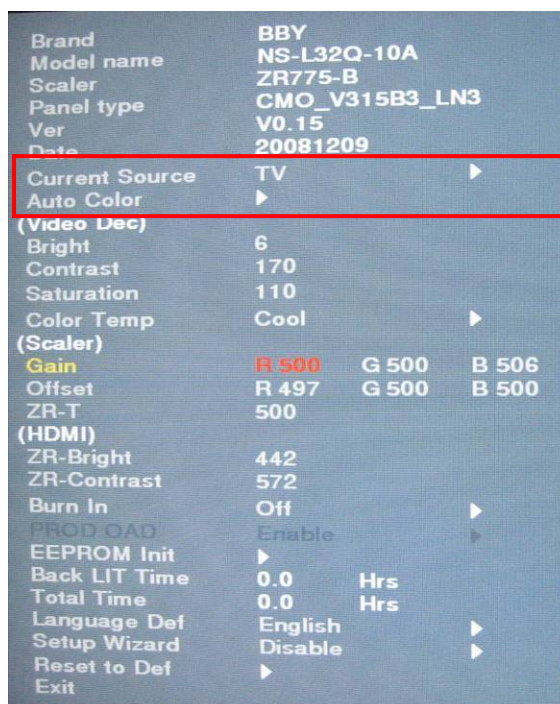
6.5 IR Board
715G4247R01000004S



7. Adjustment

It's no need to adjust the white balance for this model, do ADC only.

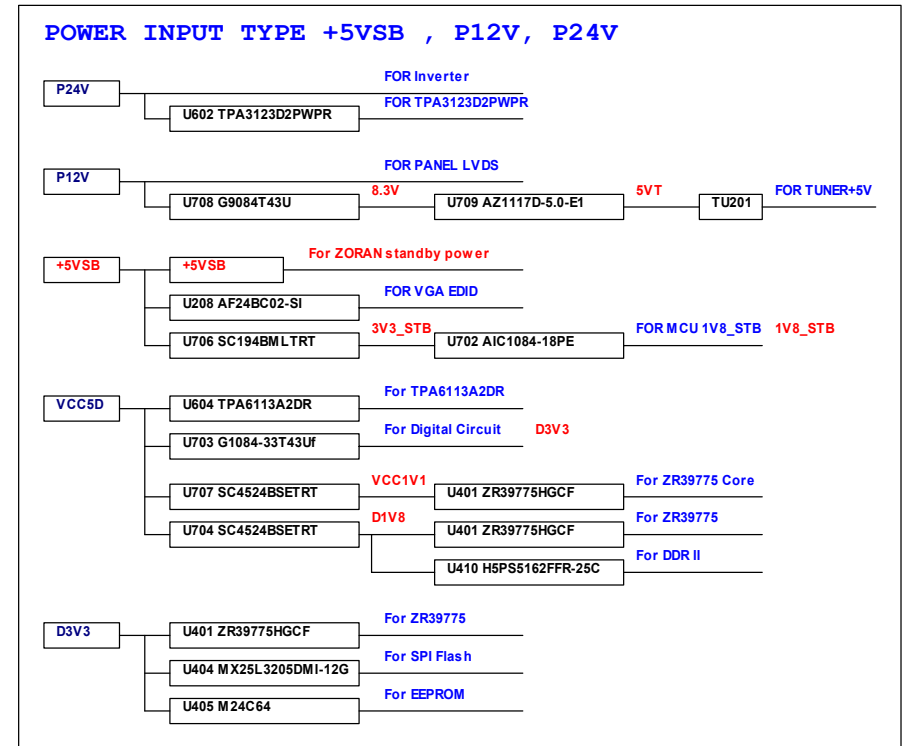
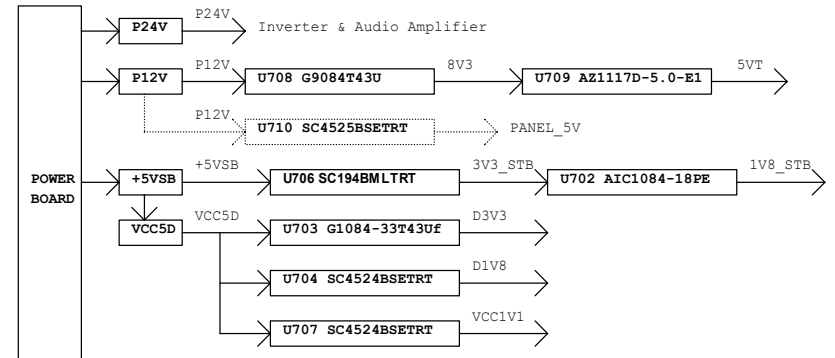
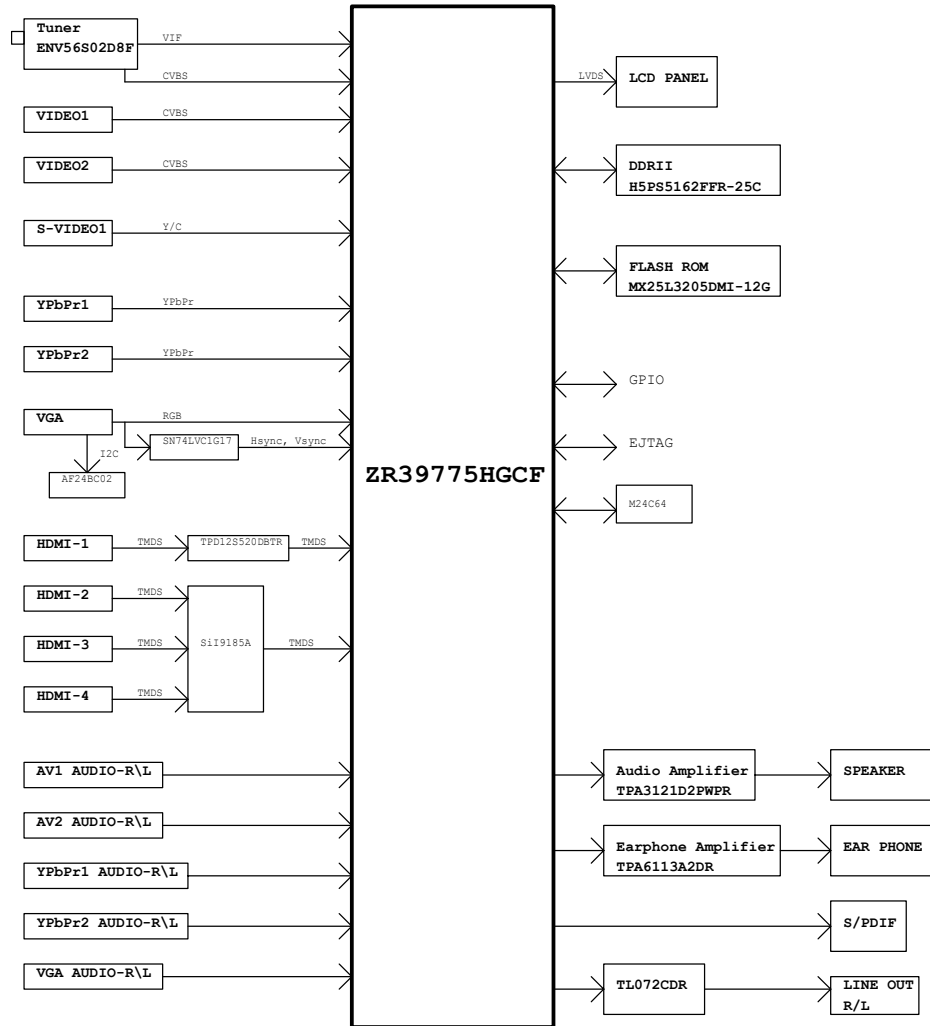
Step1: Turn on the TV, press "Menu", then press number key 1 → 9 → 9 → 9 and "ENTER", it will achieve the factory mode. **Take the following picture for example:**



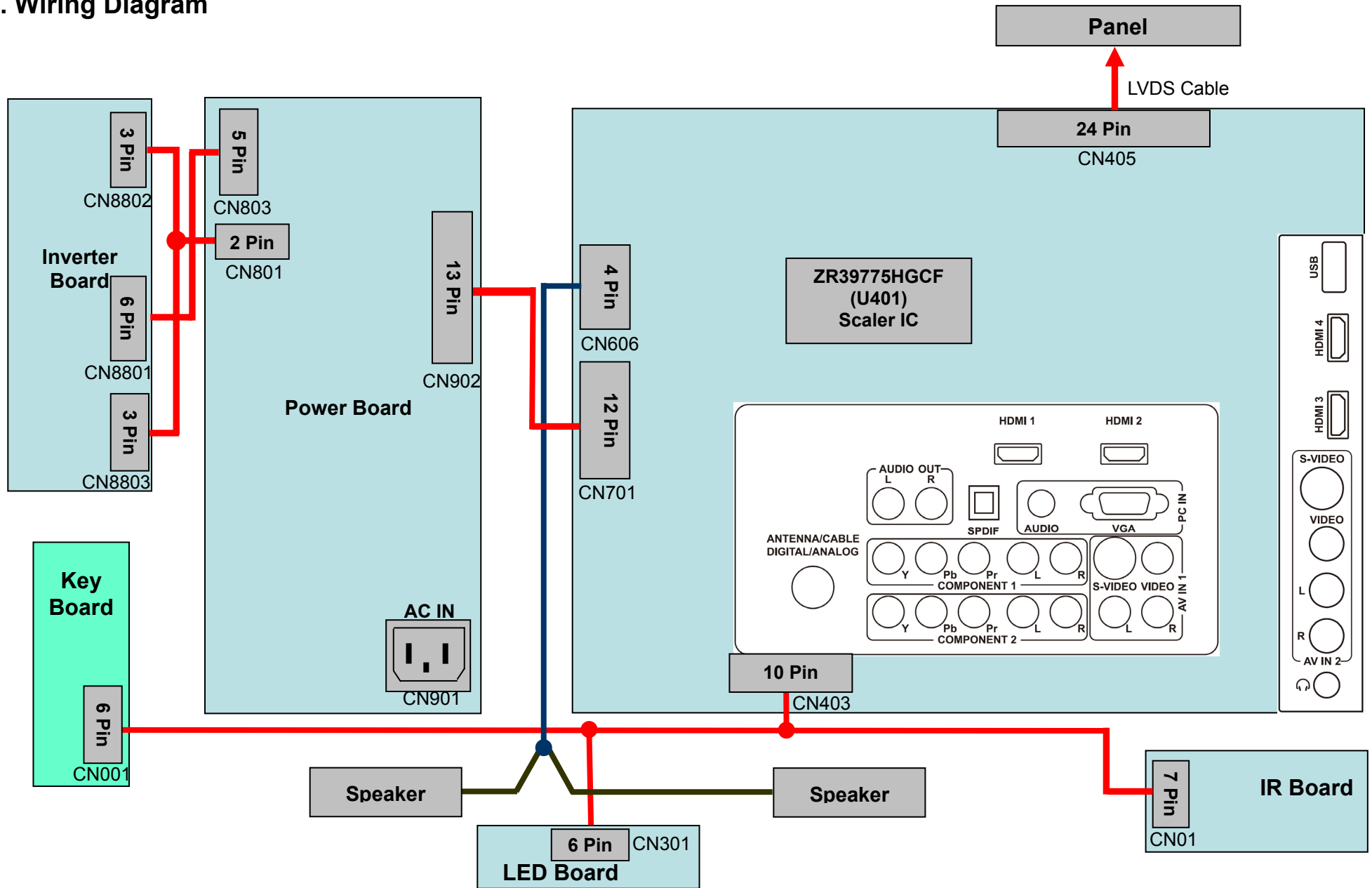
Step2: Change TV, press the "Current Source" to Component mode and change signal to 1080i mode, Pattern 122 (SMPTE), press the "Auto Color";

Step3: Change TV, press the "Current Source" to PC mode and change signal to PC TIMING 137(1024X768); Pattern 147 (16 Grays), press the "Auto Color".

8. Block Diagram



9. Wiring Diagram

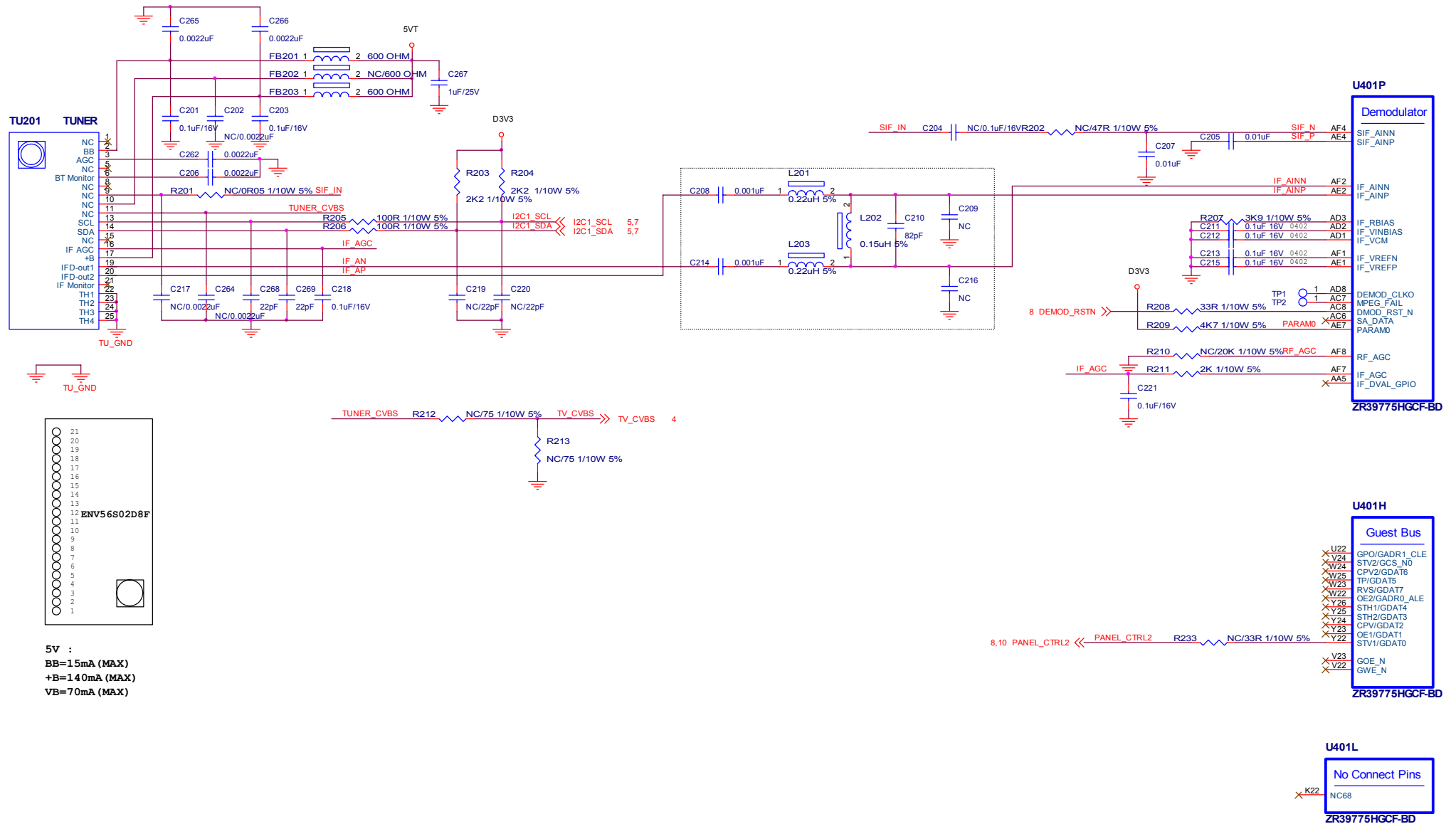


10. Schematic Diagram

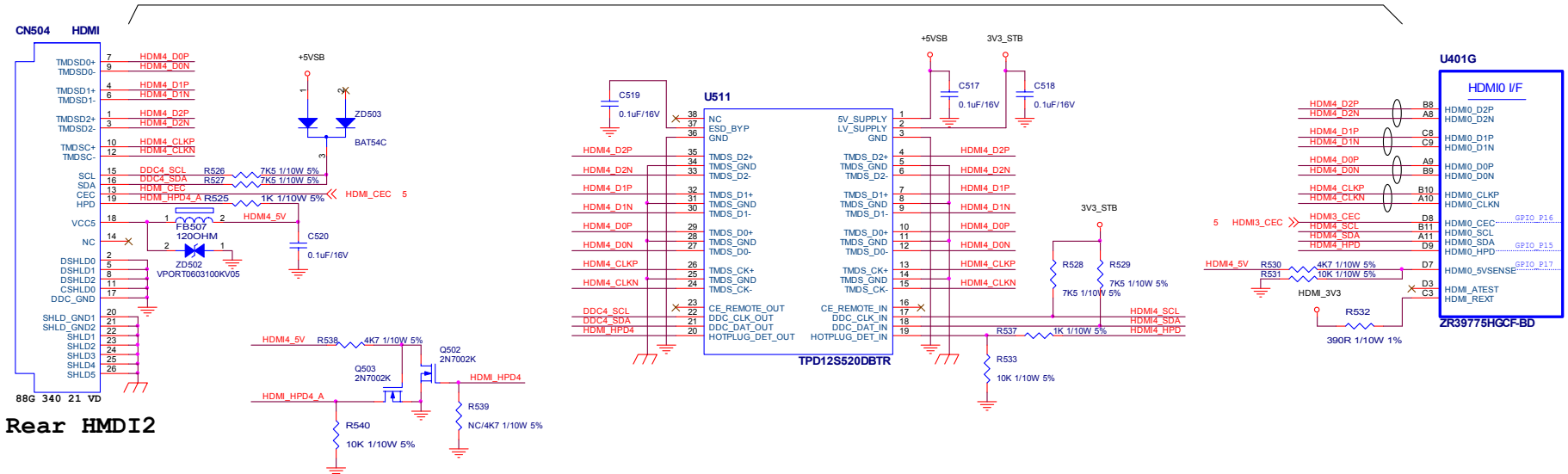
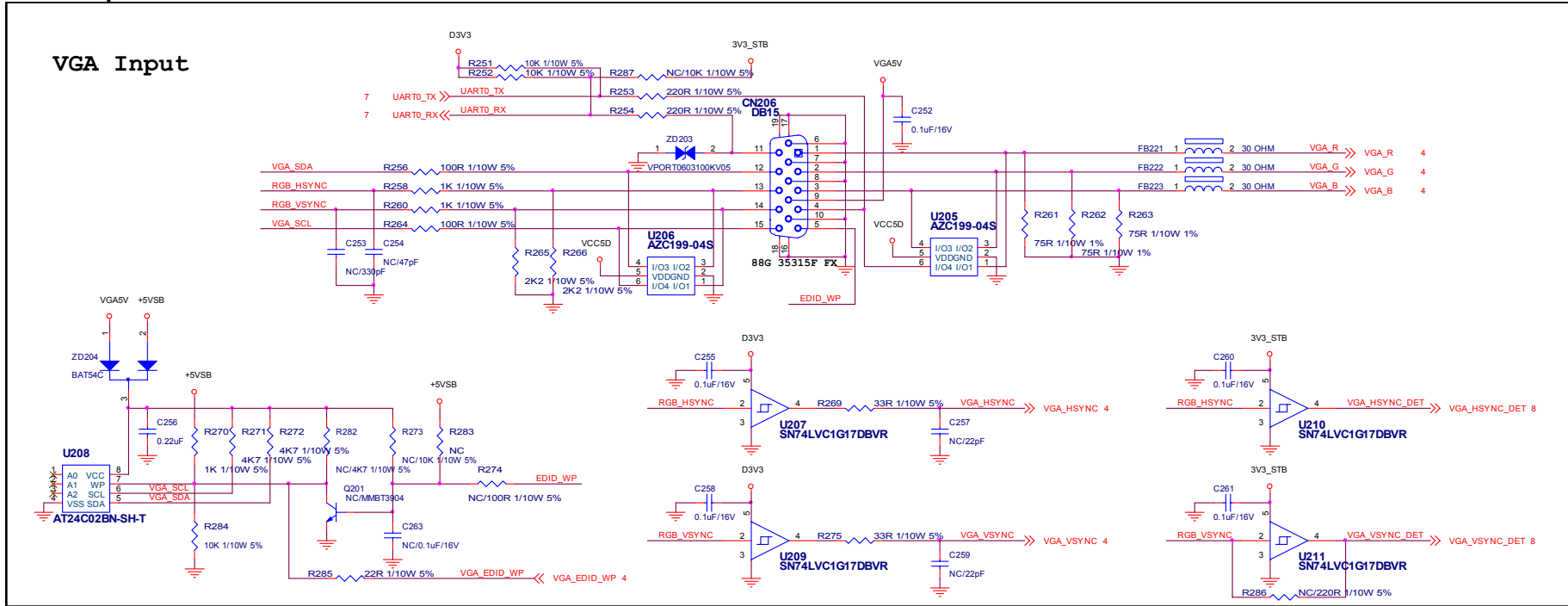
10.1 Main Board

715G3269M01001005K

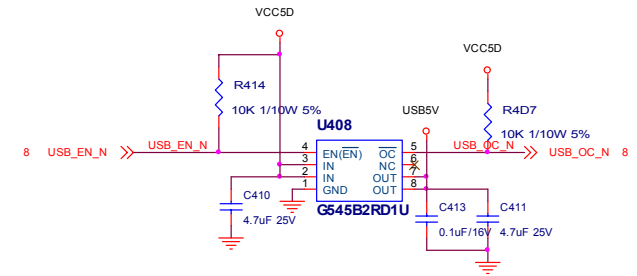
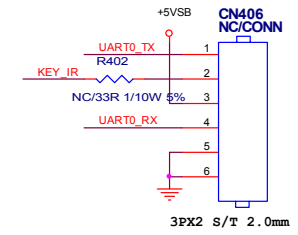
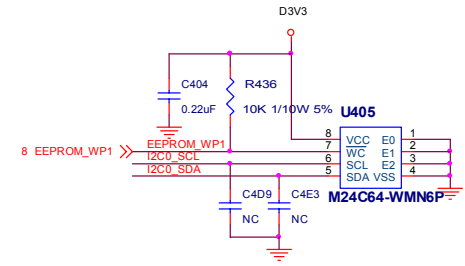
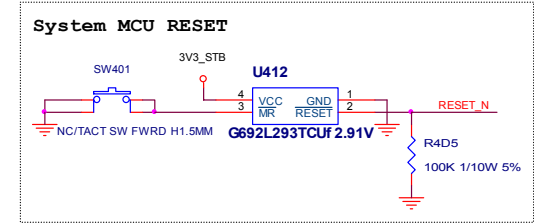
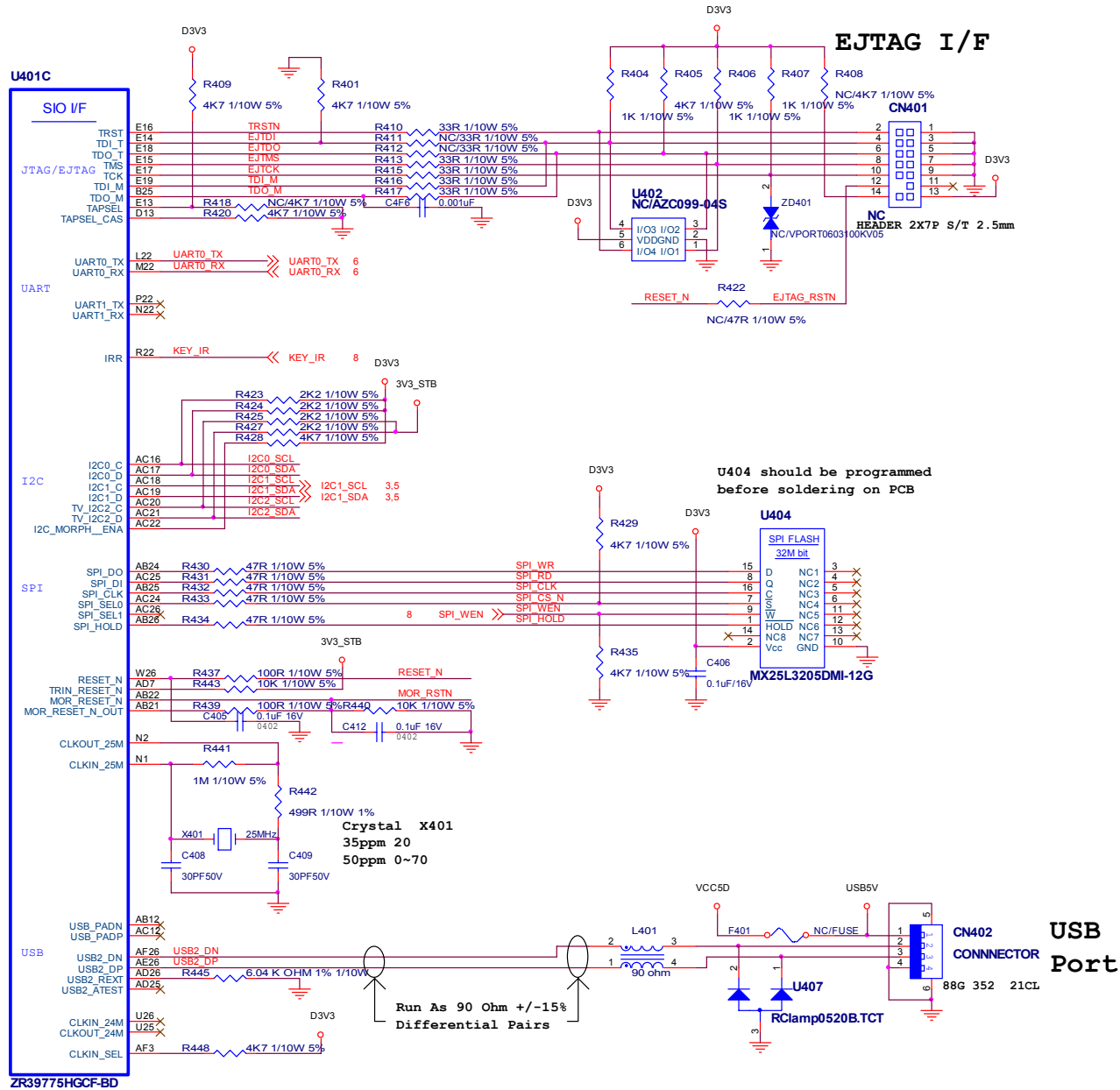
3) Tuner



6) VGA/HDMI Inputs

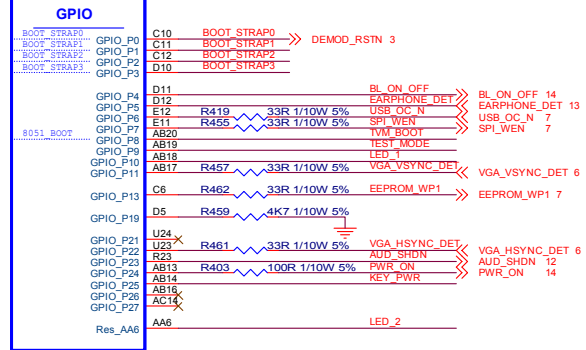


7) SIO I/F



8) GPIO Block

U401K



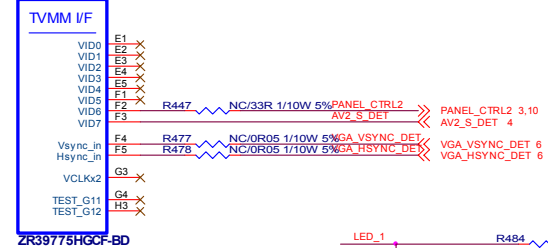
ZR39775HGCF-BD

U401S



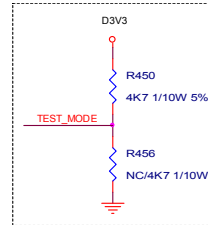
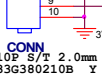
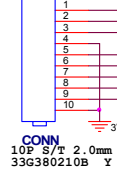
ZR39775HGCF-BD

U401M

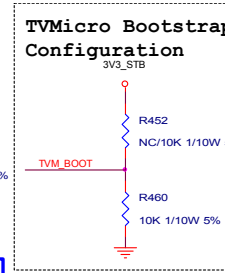


ZR39775HGCF-BD

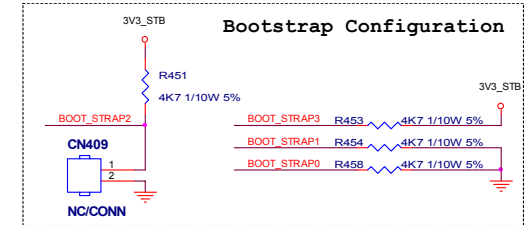
CM403



State	TEST MPDE
Debug Mode	1
Normal Mode	0

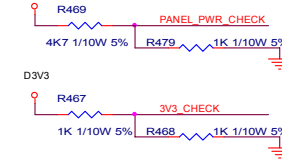


Boot Option	TVM_BOOT
I2C EEPROM	1
SPI	0

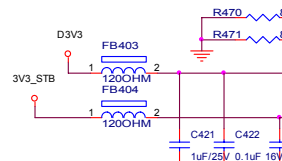


Boot Option	BOOT3	BOOT2	BOOT1	BOOT0
16-Bit NAND-Small Page	1	0	1	1
SPI	1	1	0	0
8-Bit NAND-Large Page	1	1	0	1
8-Bit NAND-Small Page	1	1	1	1

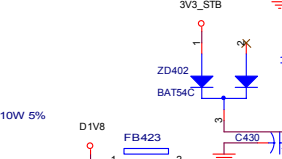
PANEL_POWER



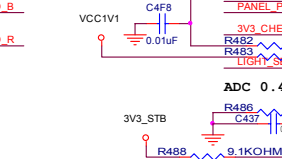
D3V3



3V3_STB



D1V8

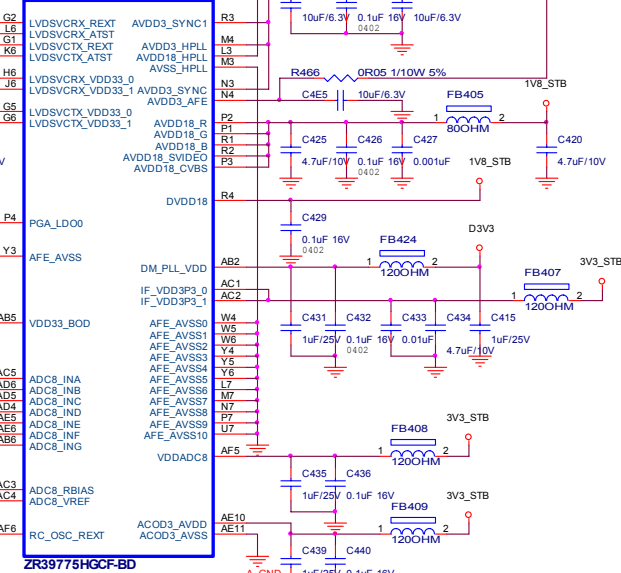


3V3_STB



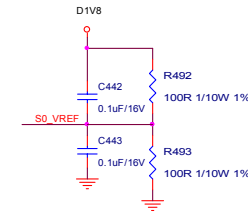
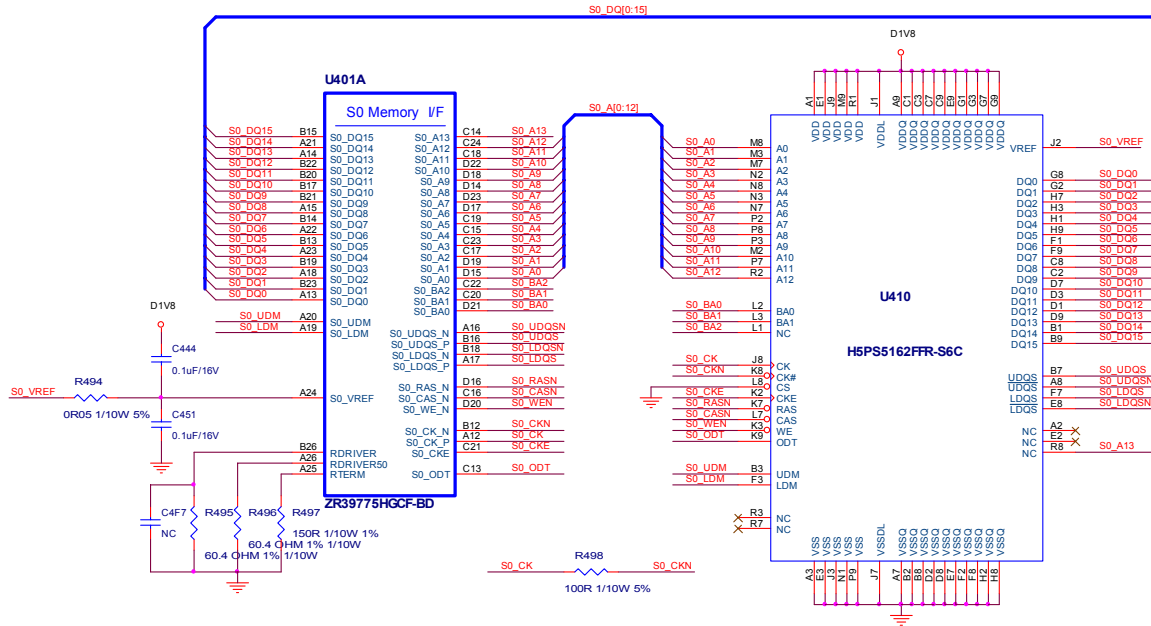
7

U401Q



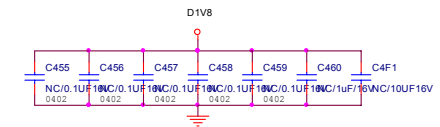
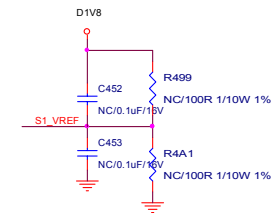
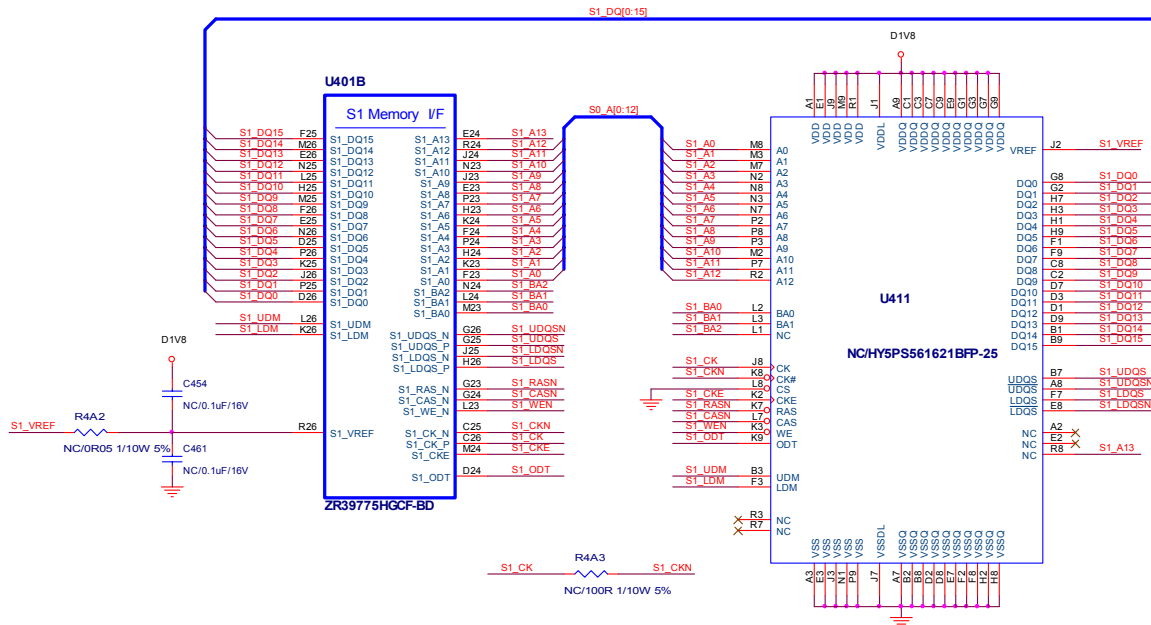
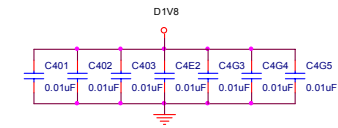
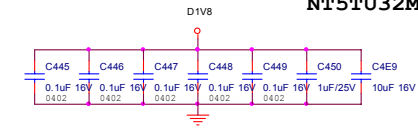
ZR39775HGCF-BD

9) DDRII SDRAM I/F

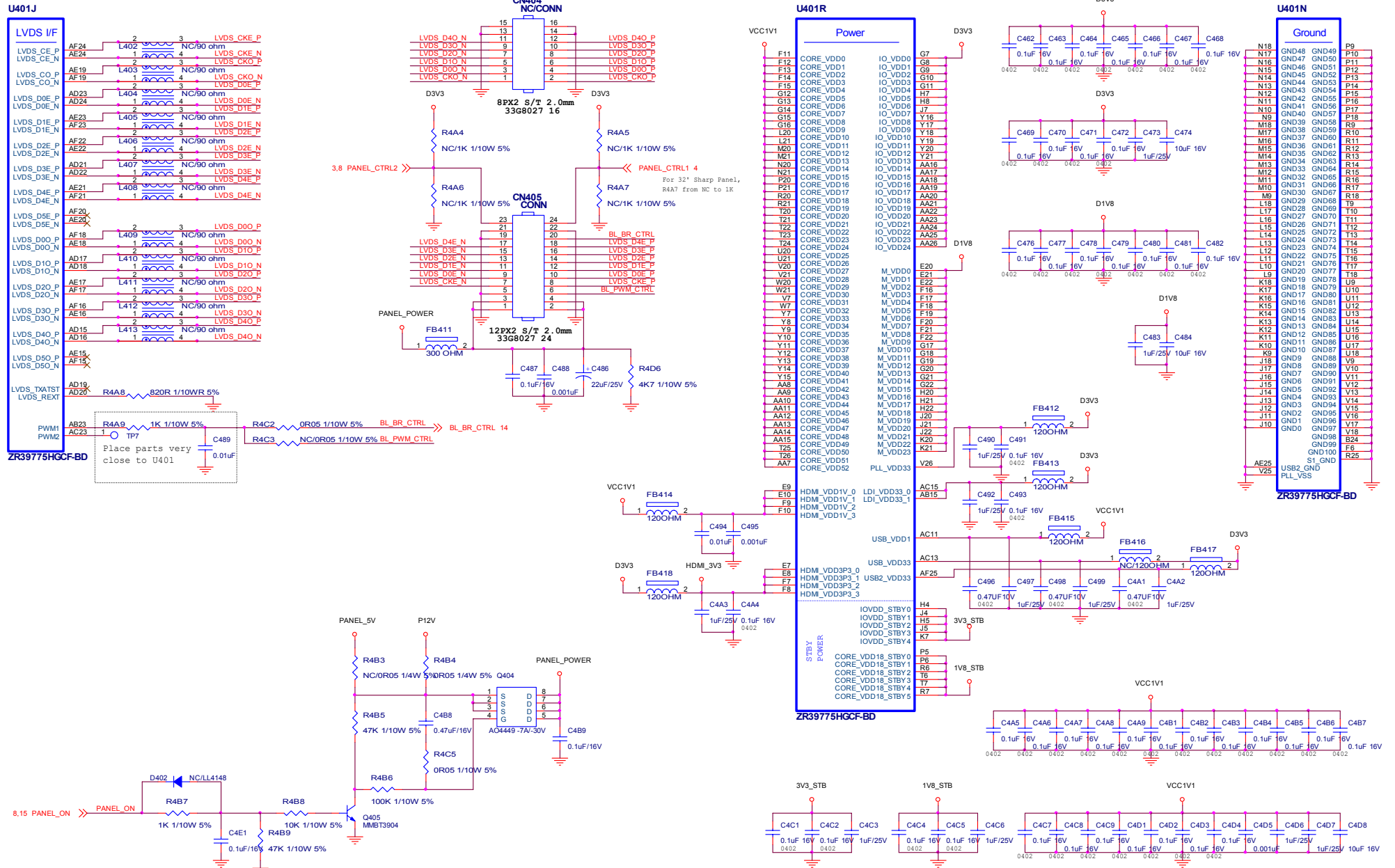


256Mb (16Mx16) DDRII
56G 615 75
HY5PS561621BFP-25
56G 615 66
NANYA
NT5TU16M16AG-25D

512Mb (32Mx16) DDRII
56G 615 76
H5PS5162FFR-25C
56G 615 67
NANYA
NT5TU32M16CG-25C

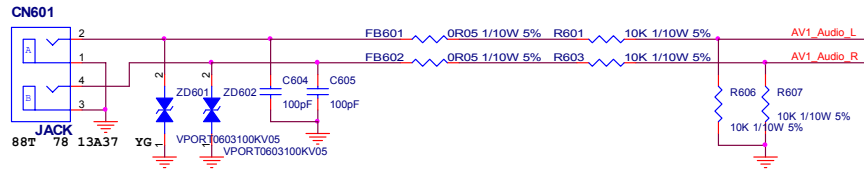


10) LVDS I/F

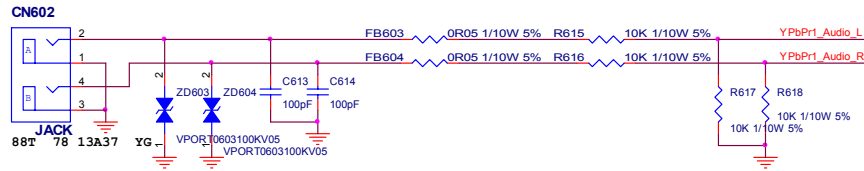


11) Audio Inputs

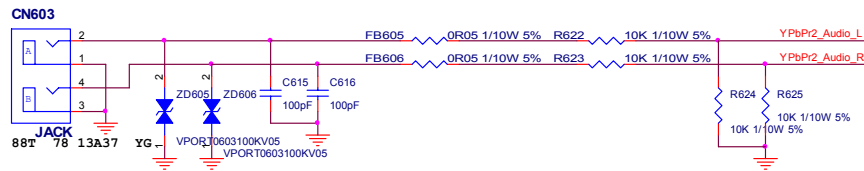
AV1 Audio Input



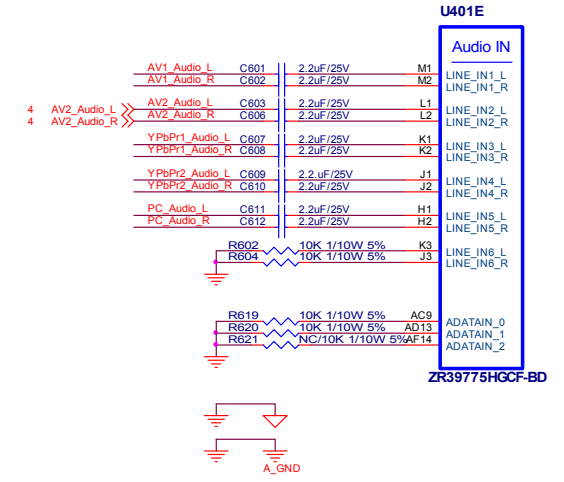
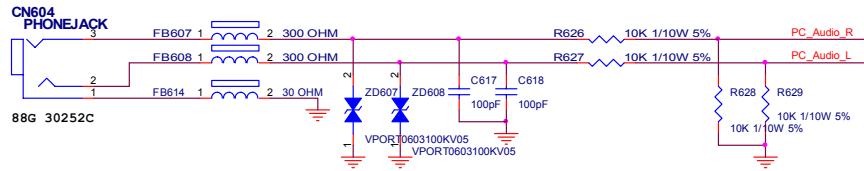
YPbPr1 Audio Input



YPbPr2 Audio Input

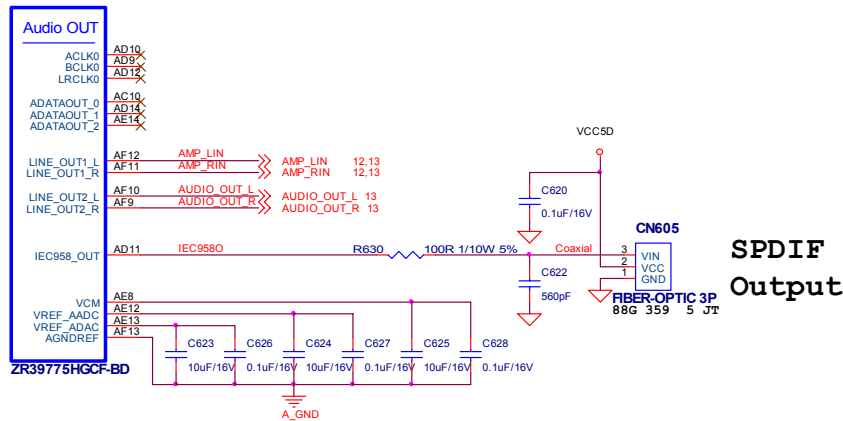


VGA Audio Input



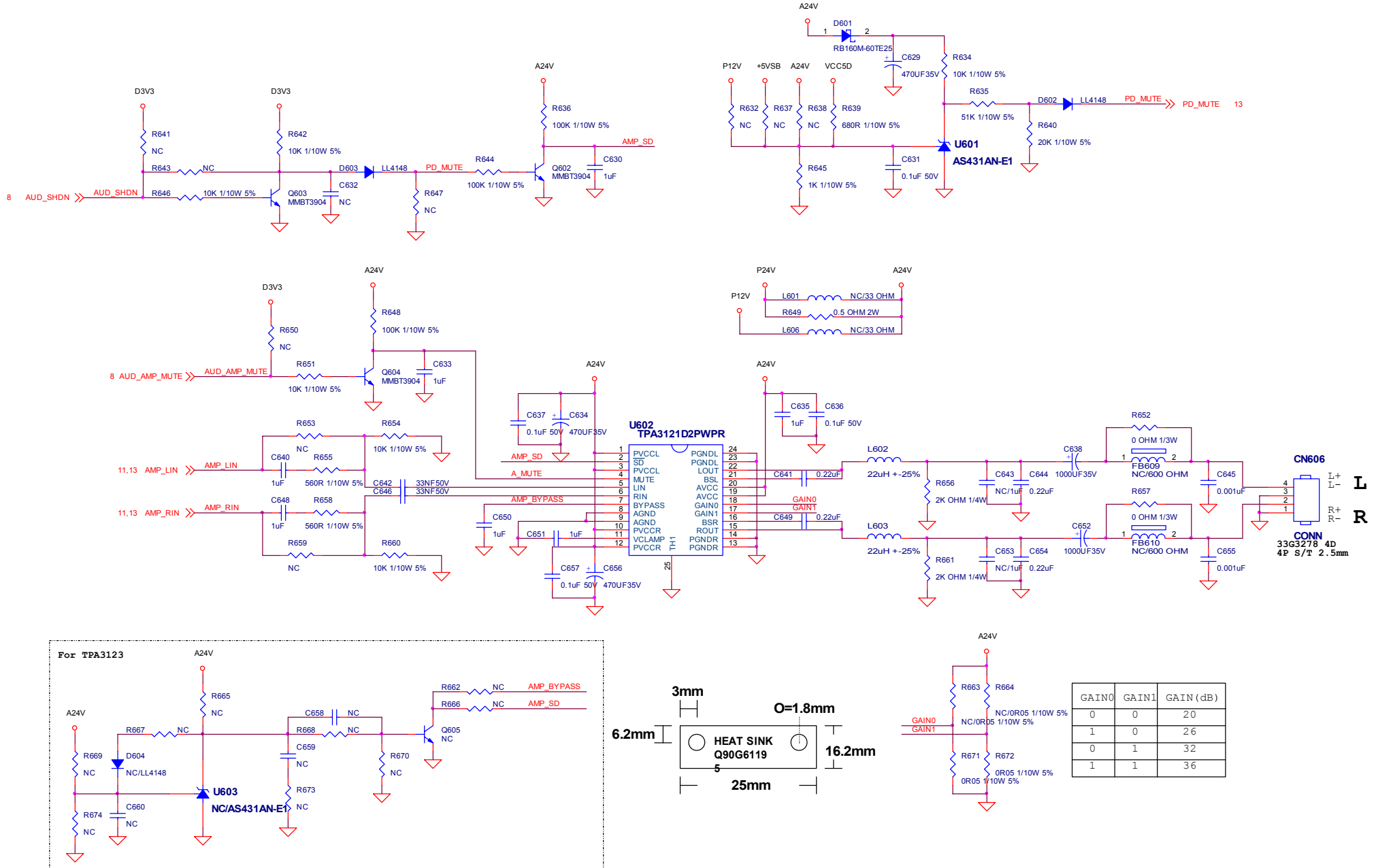
ZR39775HGCF-BD

U4011

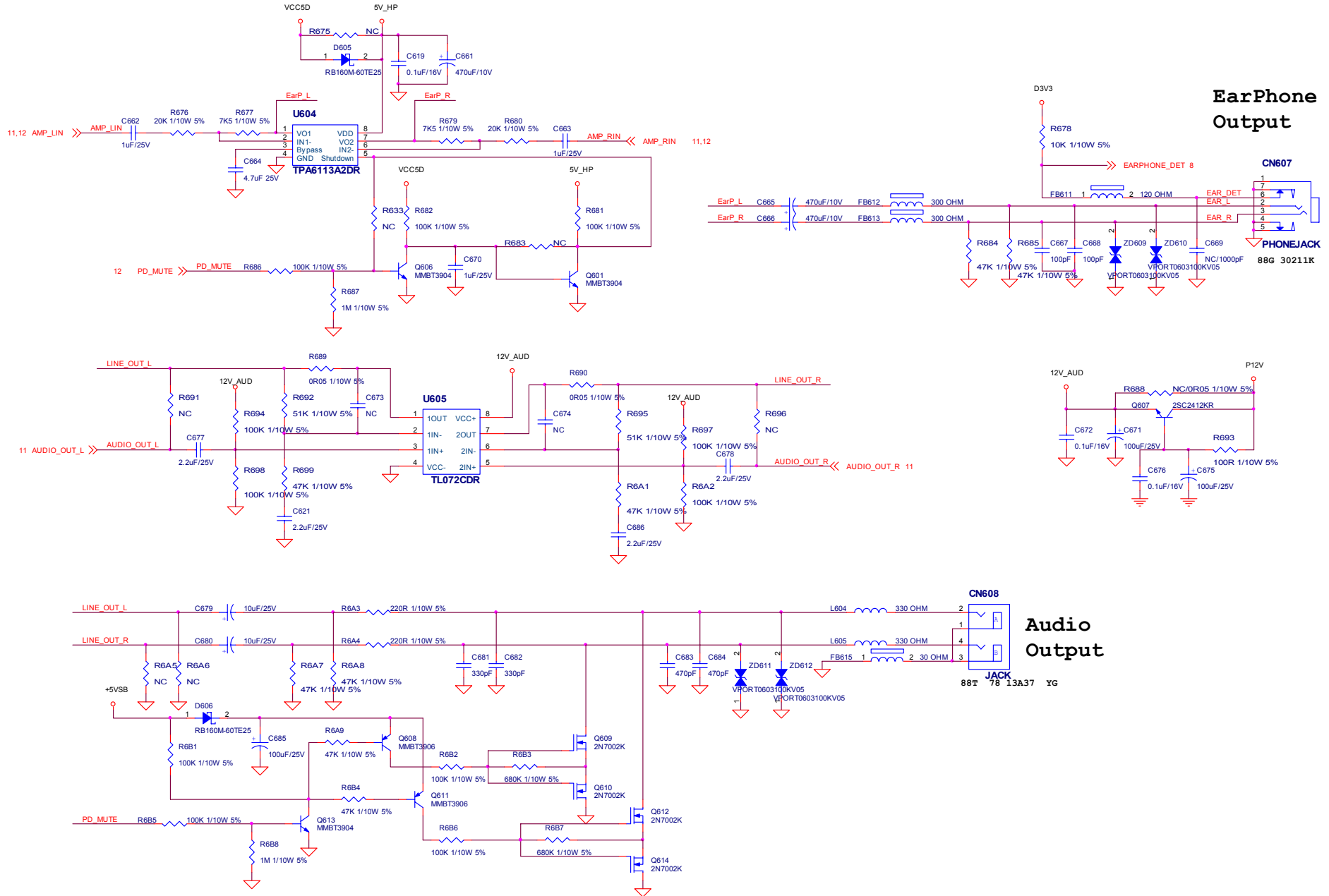


ZR39775HGCF-BD

12) Audio Amplifier

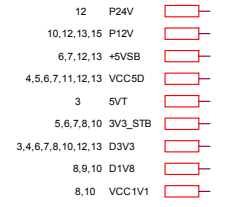
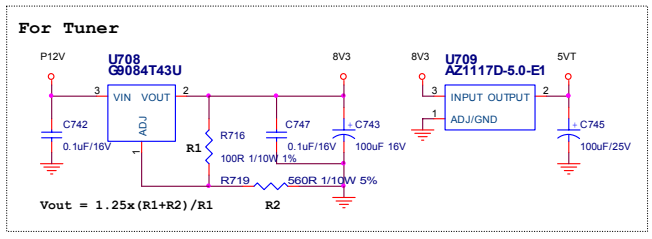
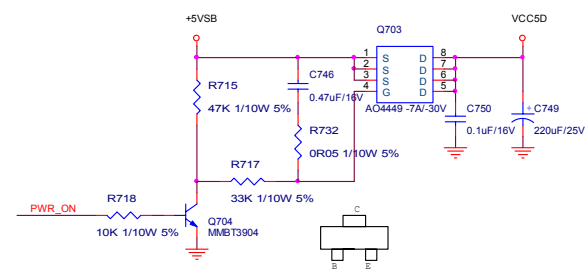
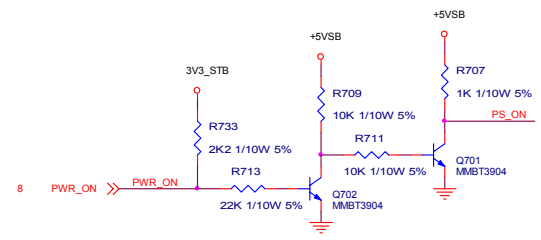
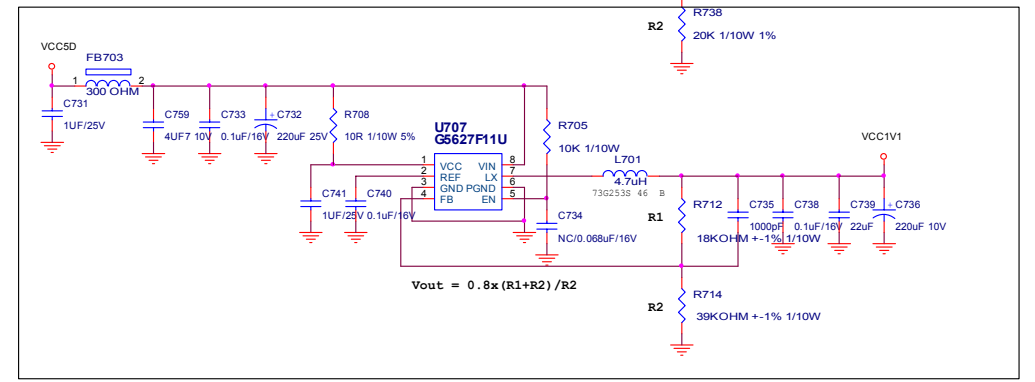
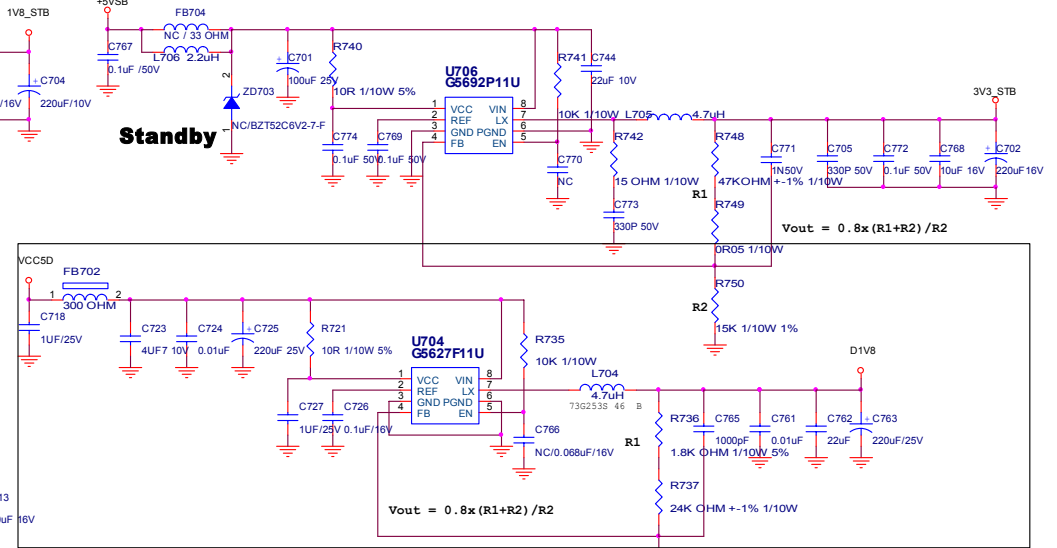
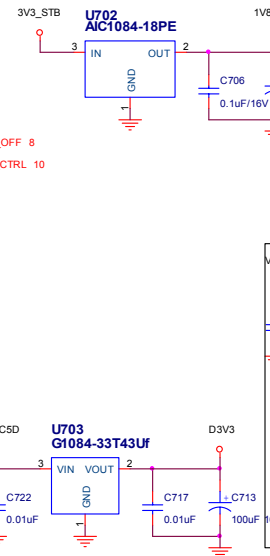
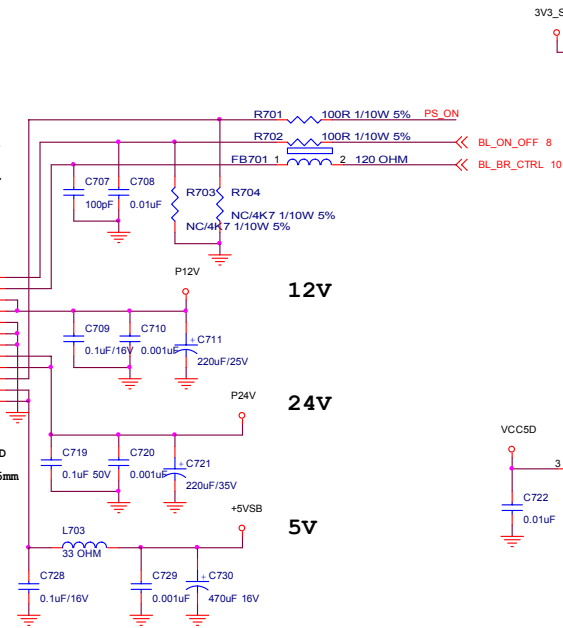


13) Earphone/AV Outputs

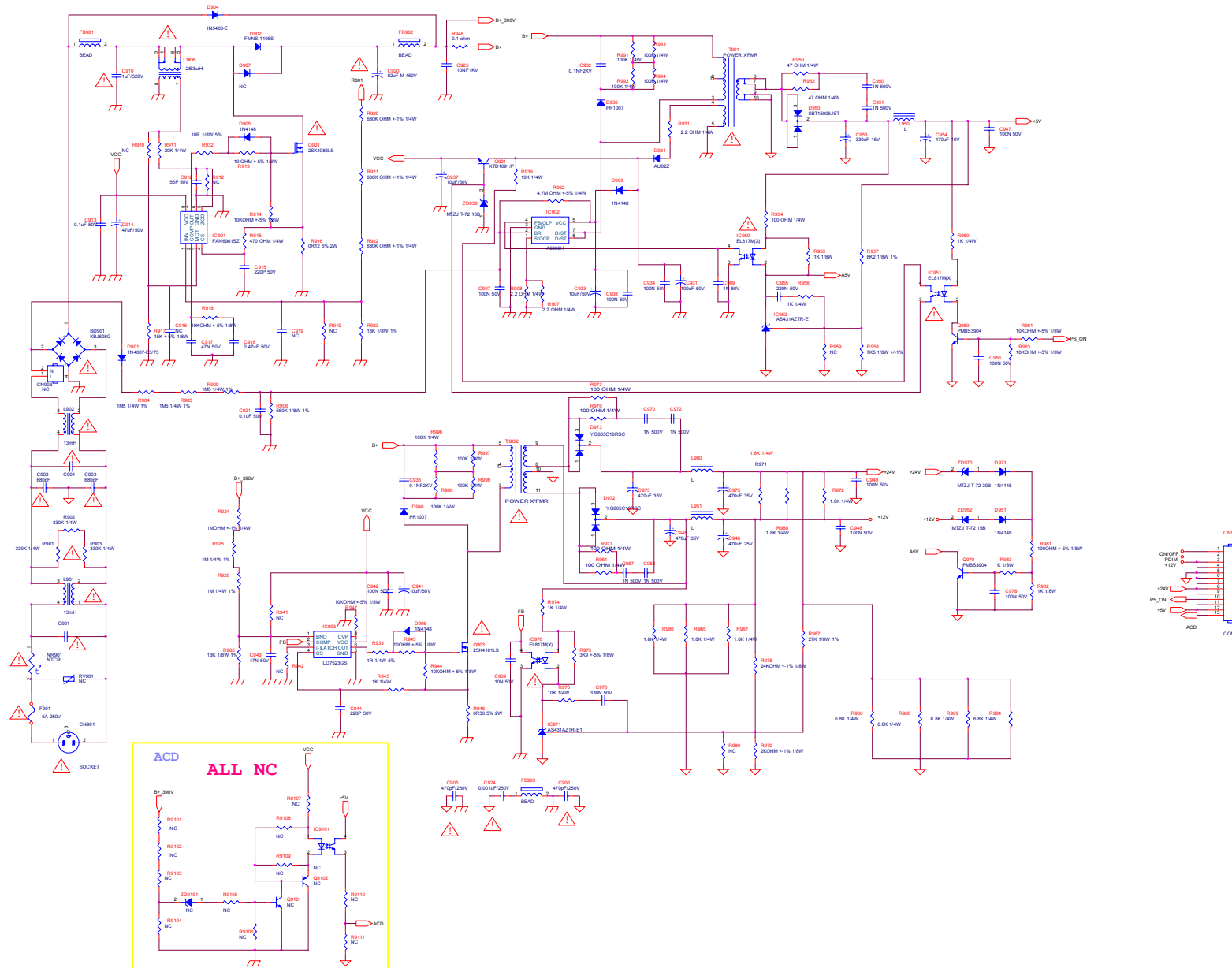


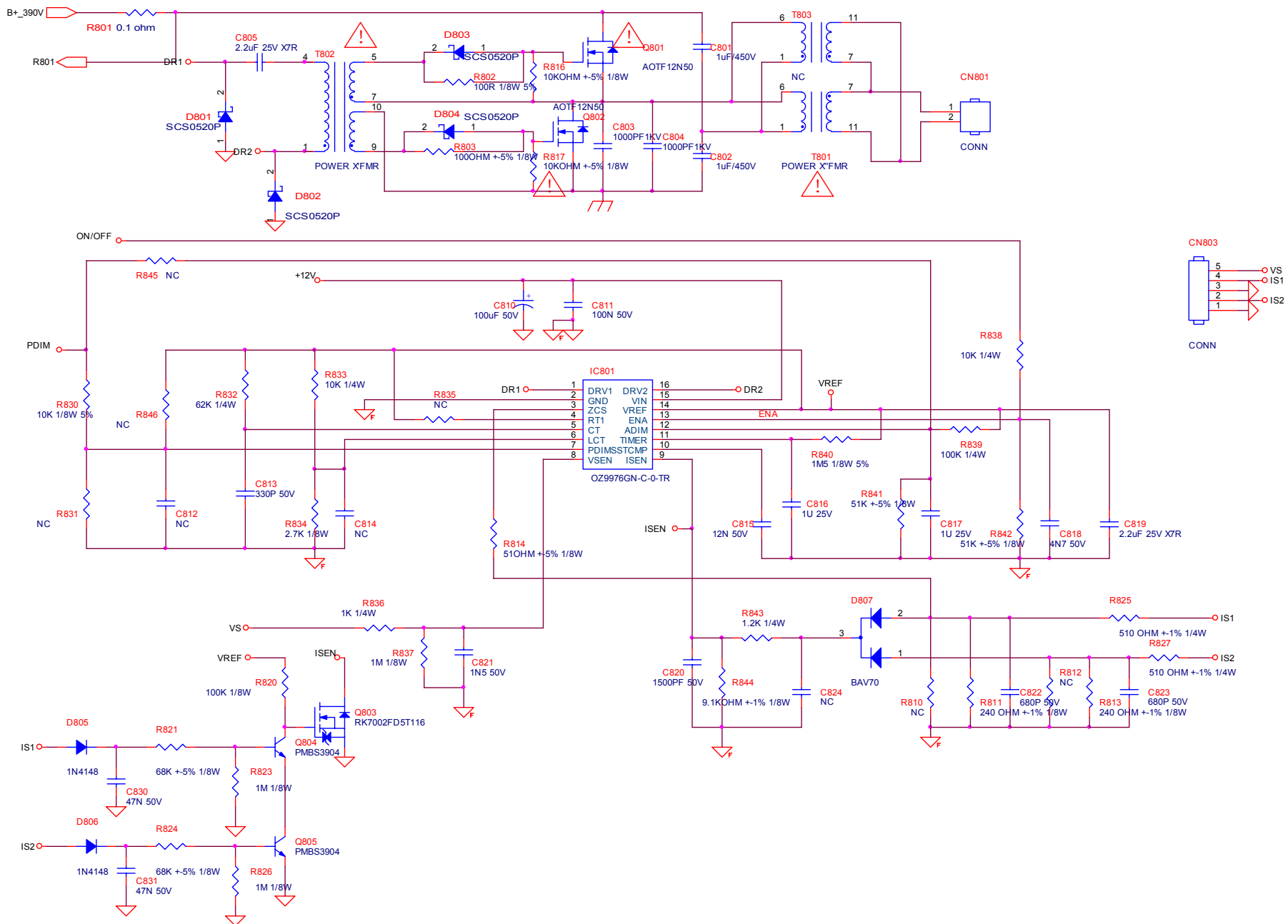
14) Power

From Power Board

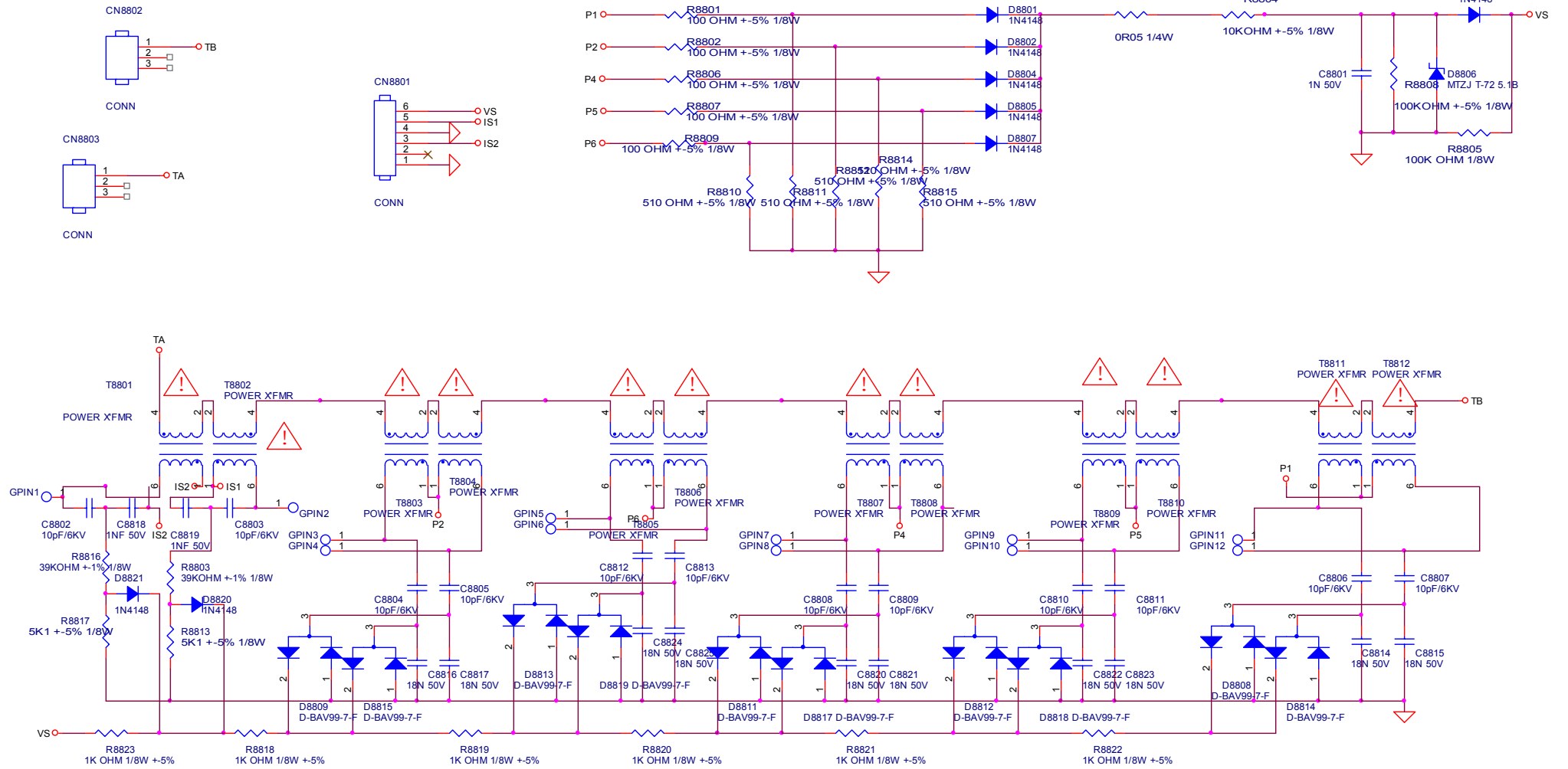


10.2 Power Board 715G3811P01H20003H

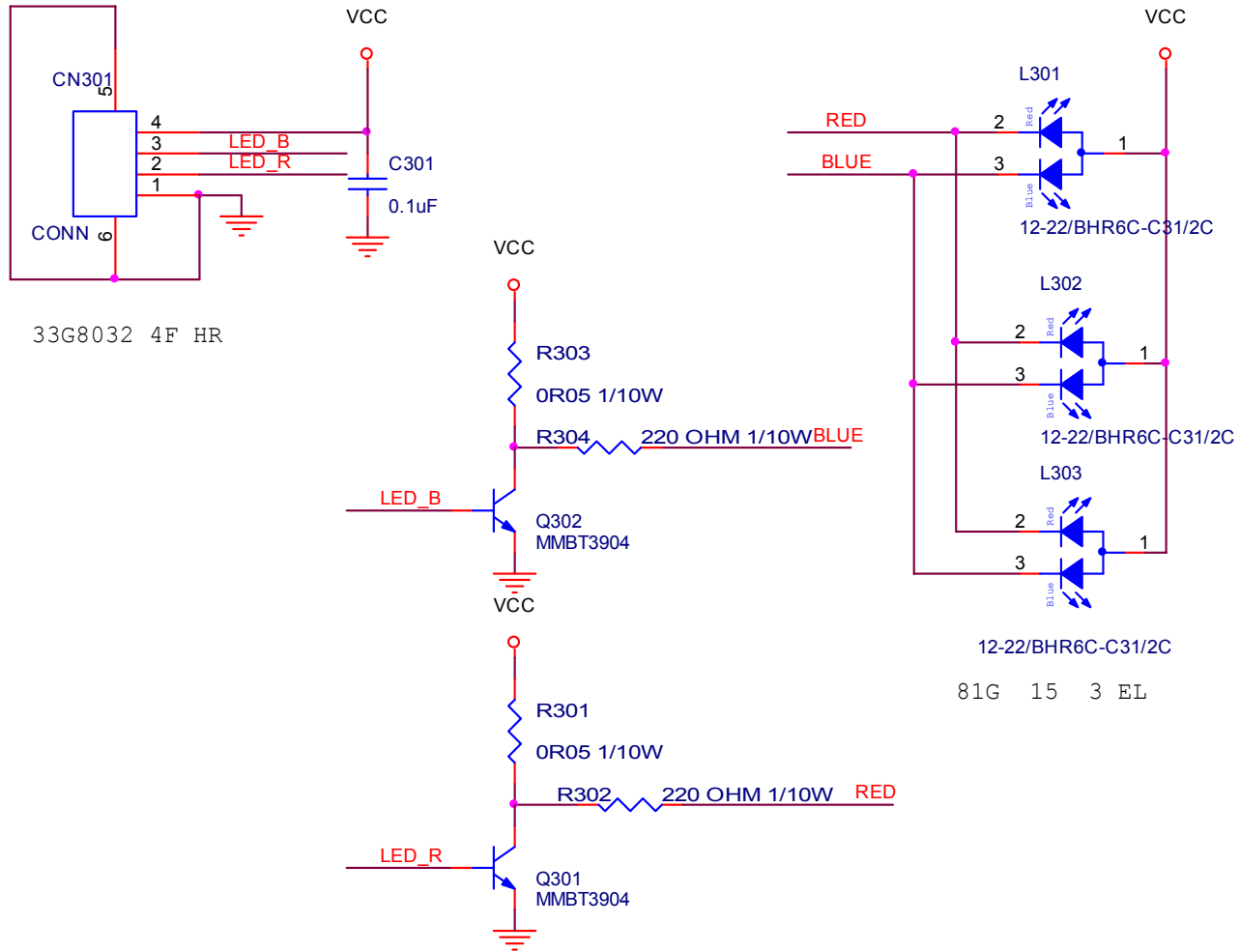




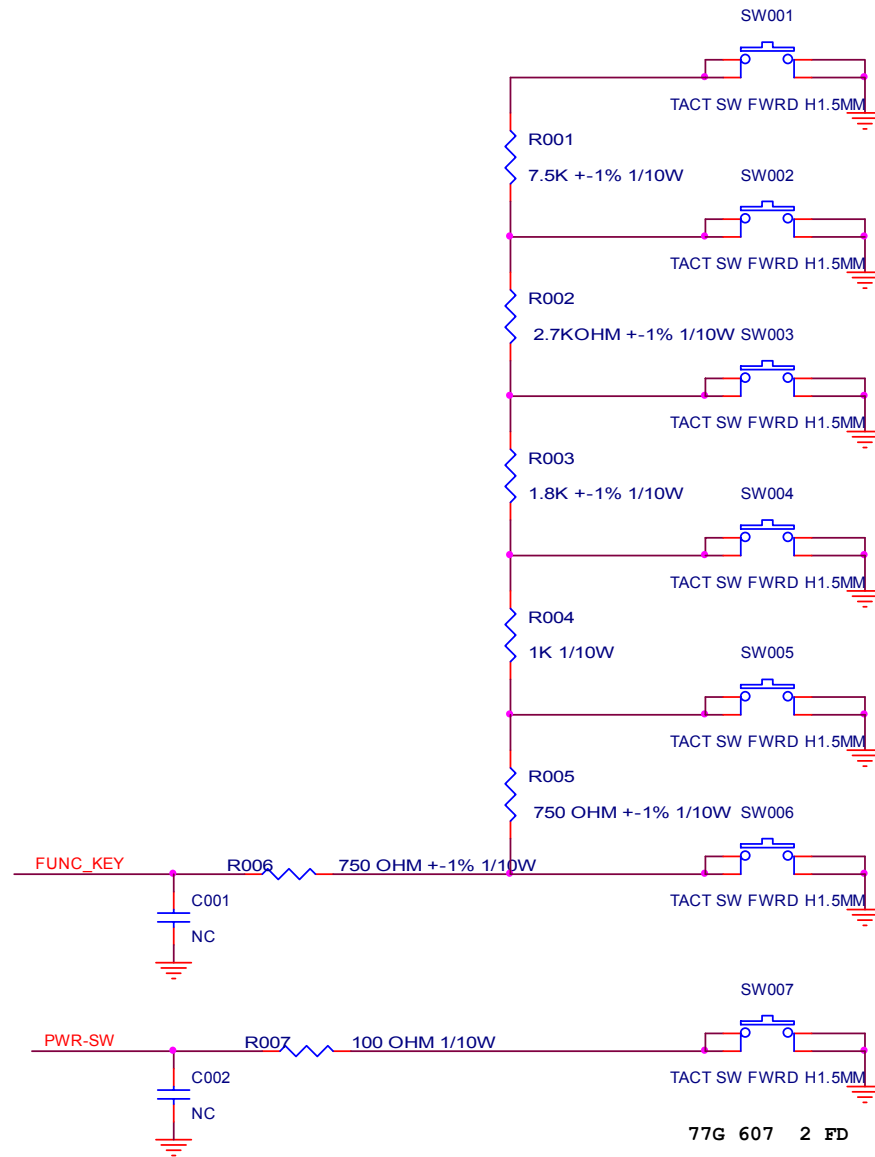
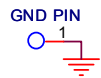
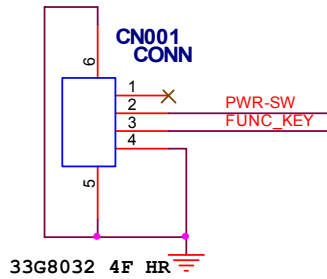
715G3652P0200003S



10.3 LED Board 715G4252T0100004S



10.4 Key Board 715G4234K0100004S



VOL+

2.48V ~ 2.72V

VOL-

2.04V ~ 2.22V

CH+

1.58V ~ 1.79V

CH-

1.24V ~ 1.45V

MENU

0.85V ~ 1.02V

Source Select

0.47V ~ 0.63V

Power ON/OFF

10.5 IR Board
715G4247R01000004S

