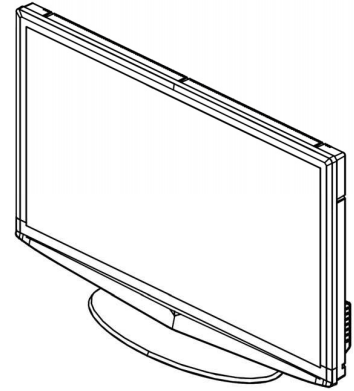


Service  
Service  
Service



# Service Manual

Horizontal Frequency  
31~68 kHz

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## 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.
- \* 42" LCD TV (42" viewable) Viewable image size: 106.7cm diagonal

### 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)

### Power Source:

AC power supply: 100-240 V ~50-60 Hz

### Power Consumption

≤ 250 W  
1 W in standby mode (power cord plugged in and power OFF)

### Audio Power

10 W + 10 W, Internal Speaker

### Video/Audio Terminals:

Rear AV x1: S-Video/Video/Audio Input  
Side AV x1: S-Video/Video/Audio Input

### S-VIDEO INPUT:

Y: 1 V(p-p), 75 ohm, negative sync.  
C: 0.286 V(p-p) (burst signal), 75 ohm

### VIDEO/AUDIO INPUT:

VIDEO: 1 V(p-p), 75 ohm, negative sync.  
AUDIO: 300mv(rms)

### Component INPUT:

Rear Component x2:  
Y: 1V(p-p), 75 ohm, including sync.  
Pr/Cr: ±0.35V(p-p), 75 ohm  
Pb/Cb: ±0.35V(p-p), 75 ohm  
AUDIO: 300mv(rms)  
Supported resolutions: 1080p, 1080i, 720p, 480p, 480i

### HDMI Terminals:

HDMI INPUT: Rear HDMI x2; Side HDMI x2  
HDCP compliant  
E-EDID compliant  
Supported scan rates: 1080p, 1080i, 720p, 480p, 480i

### VGA Terminals:

VGA INPUT:  
Rear VGA (D-SUB 15 Pin) Input x1  
E-EDID compliant  
Supported scan rates:  
640 × 480 /60Hz  
800 × 600 /60Hz  
1024 × 768 /60Hz  
1680 × 1050 /60Hz  
Recommended: 1920 × 1080 /60Hz  
Audio INPUT: Headphone Mini-jack for stereo (3.5Ø )  
Audio Out: SPDIF / RCA Jack (R/L)

### Environmental Temperature: 5°C - 35°C

### Dimensions:

Include Stand:  
101.0cm(W) × 68.8cm(H) × 26.2cm(D)  
39.8inch(W) × 27.1inch(H) × 10.3inch(D)

### Weight:(lbs/kg)

44.31/20.1 (WWith Stand)  
39.90/18.1 (w/o stand and base)

### Wall Mounting:

40.0x20.0cm  
15.75 × 7.87inch  
(Wall mount kit is not included)

### Supplied Accessories:

1 × Power cord  
1 × Remote control(with two size AAA alkaline batteries)  
1 × User manual  
1 × FCC Card  
1 × Register card

## 2. Operating Instructions

### 2.1 The Use of Remote Control

#### Power

Press to turn ON/OFF (standby) TV.(Note:1.TV is never completely powered off. unless physically unplugged. 2.Press to turn on TV after the power on status, LED had changed to the blue color and stopped flashing.)

#### Video

Press repeatedly to choose AV1/AV2 source mode.

#### Comp

Press repeatedly to choose Component 1/Component 2 source mode.

#### PC/HDMI

Press repeatedly to choose VGA or HDMI source mode (HDMI1, HDMI2,HDMI3). (Only 42" have HDMI 4.)

#### TV

Press to choose ATSC/NTSC TV source mode.

#### 0 ~ 9 /- number

Press to enter TV channel number to select channel (Press ' ' to choose the sub-channel).

#### Sleep

Press to set a time period (off/5 min /10 min /15 min /30min/45 min /60min/90min/120 min /180 min /240 min)after which the TV should switch itself to standby mode.

#### Freeze

Press to freeze the displayed picture.

#### CH-/ CH +

Press + or - to browse through the TV channels.

#### Menu

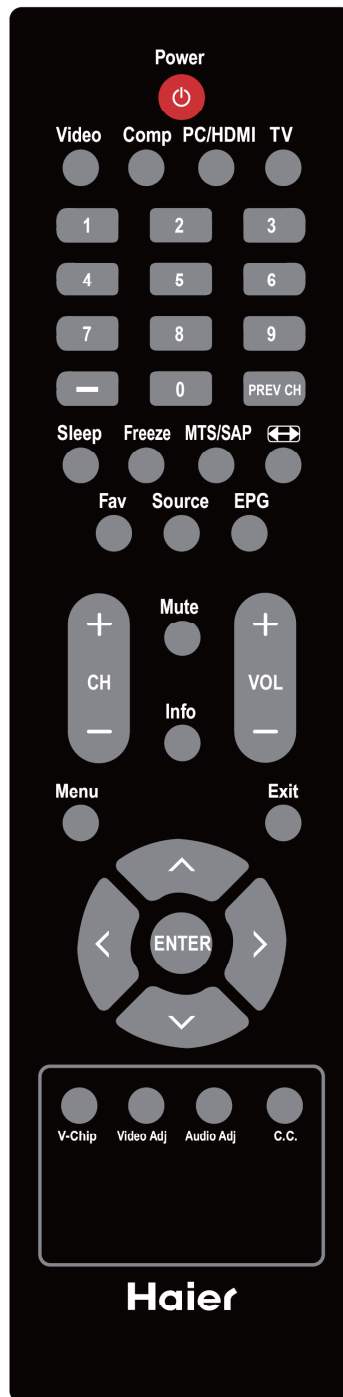
Press to open or exit menu.

"<",">","^","v","**ENTER**

Press to adjust the various function items on the menu.

#### PREV CH

Press to display the previous



channel

#### MTS/SAP

Press to activate the NTSC TV sounds, such as: Stereo, SAP or Mono tone, and languages of DTV.



Press to choose the display aspect as: Normal, Wide or Zoom.

#### Source

Press repeatedly to choose the various input sources.

#### EPG

This function is not supported.

#### Mute

Switch the sound ON/OFF

#### Info

Press to show the information about the input source, TV channel, display resolution and current time.

#### VOL- /VOL+

Press + or - to adjust the volume.

#### Exit

Press to exit menu or OSD.

#### V-Chip

Press to lock / unlock Parental Control temporarily. (After setting the restricted table of MPAA or TV Rating.)

#### Video Adj

Press to choose the Picture Mode from Vivid/Standard/PWR/Theater/Sport/Custom.

#### Audio Adj

Press to choose Standard/Movie/News/Custom.

#### C.C.

Press repeatedly to change the closed caption type as CC ON/CC OFF/CC ON WITH MUTE.

#### Favorite

Press to toggle the Favorite/Normal mode.

## 2.2 To Use the Menus

1. Press the **MENU/EXIT** button to display or close the main menu.
2. Use the **Navigation Ring** to move around to select, adjust or confirm an item in the OSD (On Screen Display) menu.

Press the **MENU/EXIT** button to enter the main OSD. Adjust the items including **Video menu**, **Audio menu**, **Feature menu**, **Channel menu** and **VGA menu**. However, some function items in the menus may only be enabled in the particular source modes.

### Channel Menu

The Channel menu in TV mode shows as below.



1. **Tuning Band:** Select TV source signal from the Air (antenna) or Cable (CATV).
2. **Channel Strength:** Show the intensity of the received DTV signal.
3. **Auto CH Search:** Automatically scan all NTSC / ATSC TV channels and then store in the channel table. In channel scan process, the OSD can display the number of channels which had been found.
4. **Add on CH search:** Add channels which are new found.
5. **Channels List:** Show the channel List. User can edit (add/delete) the channel numbers.
6. **Channel Labels:** Show the NTSC / ATSC TV channel label menu for user modifying channel labels specifically.
7. **FAV Channel Setting:** Show the Favorite Channel List. User can edit (add/delete) the favorite channels.

### Video Menu

The Video menu in most source modes shows as below. It provides several video adjustment items for user fine tuning the video display. Only in VGA source mode, the Video menu simply provides **Picture Mode**, **Color Temp**, **Backlight**, **Aspect Ratio** and **Preset** items.

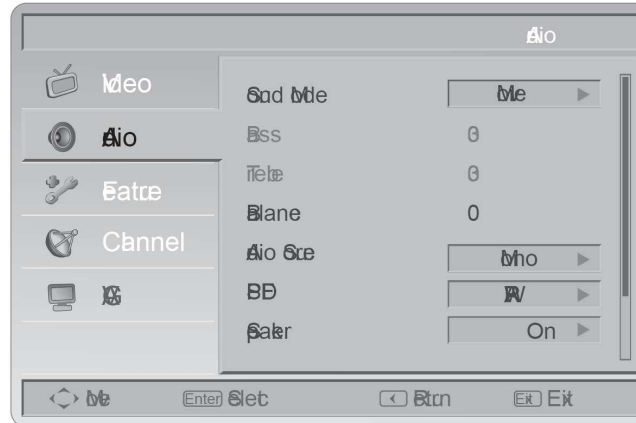


1. **Picture Mode:** Adjust the best picture appearance from selecting the preset value of Vivid, Standard, PWR, Theater, Sport, or Custom.
2. **Brightness:** Video brightness adjustment, the tuning range is 0 ~ 100.

3. **Contrast:** Video contrast adjustment, the tuning range is 0 ~ 100.
4. **Sharpness:** Video sharpness adjustment, the tuning range is 0 ~ 100.
5. **Color:** Video color chroma adjustment, the tuning range is 0 ~ 100.
6. **Tint:** Video tint adjustment, the tuning range is R50 ~ G50.
7. **Color Temp:** Three color temperature modes. (Normal / Warm / Cool)
8. **Backlight:** Backlight strength adjustment, the tuning range is 0 ~ 30.
9. **Aspect Ratio:** Choose the display aspect: Standard/Fill/Overscan.
10. **Preset:** Restore the default video settings.

### Audio Menu

The Audio menu in TV mode shows as below. It provides audio adjustment for user to modify the audio setting. Audio language setting is only available with ATSC TV source, the option is disable under other source modes.



1. **Sound Mode:** Choose the sound mode: Standard, Movie, News, or Custom.
2. **Bass:** Bass tone adjustment, the tuning range is 0 ~ 63. (The default state is enabled)
3. **Treble:** Treble tone adjustment, the tuning range is 0 ~ 63. (The default state is enabled)
4. **Balance:** Audio balance adjustment, the tuning range is L50 ~ R50.
5. **Audio Source:** Select the audio source from Mono, Stereo, or SAP. (This function works in ATV only).
6. **Audio Language:** Change the audio language setting on ATSC TV programs. The number of the supported audio languages depends on the ATSC TV programs. (English / Français / Español)
7. **SPDIF:** Digital audio output format. Select from RAW and PCM.
8. **Speaker:** Choose to turn on / off the TV internal speaker. The digital audio output signals and earphone output signals will not be turned off even though the TV speaker is off. The default setting is On.
9. **AVL:** Choose On or off to adjust volume to be consistent across programs and channels automatically.
10. **Preset:** Restore the default audio settings.

### Feature Menu

The Feature menu in TV mode shows as below. This menu gives users the most flexibilities to satisfy their generally demands. According to the various requirements in different source modes, certain features should be hidden (disable) on the menu. The details footnotes will be described clearly below.



1. **Menu Language:** Select the menu display language. (English / Français / Español)
2. **Time:** Set current time. The sub-menu includes Time Mode, Time Zone and Daylight Savings.

**[Time Mode]** – Choose from Auto or Manual.

**[Time Zone]** – Set current time zone.

**[Daylight Savings]** – Set to On or Off.



3. **Advanced Video:** Provide the Noise Reduction, Adaptive Contrast, and DCR for enhancing video quality.

**[Noise Reduction]** – Gives four NR effect degrees, such as: Low, Mid, High and Off. The default setting is Mid.

**[Adaptive Contrast]** – Choose On or off to adjust the gamma after analyzing the input signal automatically.

**[DCR]** – Dynamic Contrast Ratio (DCR) auto adjusts the backlight of the screen.

**[Preset]** – Restore the default advanced video option settings.

4. **Transparency:** Adjust the transparency of the on-screen menu from range 1 to 10.

5. **Password Setting:** Change the 4-numeral parental control password. Three steps are required for changing the password: Enter Old Password -> Enter New Password -> Confirm New Password. Note: This item is only available in TV, Composite and S-Video source modes. The default password is 『0 0 0 0』.

Enter Old Password

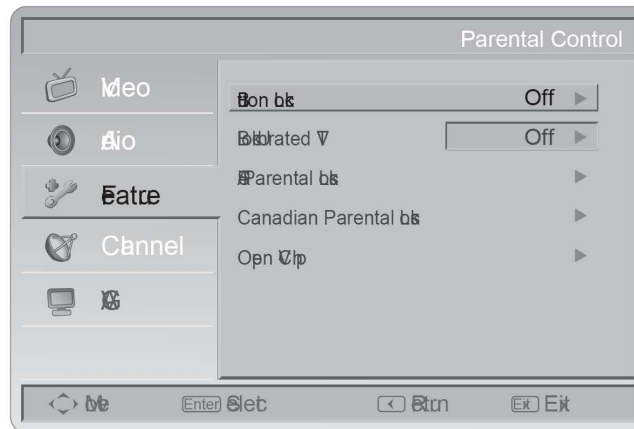
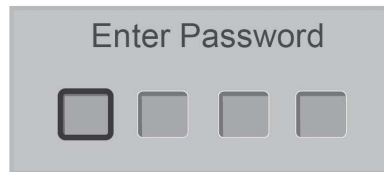
   

Enter New Password

Confirm New Password

6. **Parental Control:** provide the parental Control (V-chip) function setting. Before entering the Parental Control sub-menu, user has to key in the password first. Enter the Parental Locks item, then the user can modify the restricted table about MPAA or TV Rating respectively. While exiting the sub-menu, the parental control function is working. The inhibitive channels or source signals can be un-lock through pressing the V-CHIP key on the remote control and then key in the correct password. Note: This feature is only available in TV, Composite and S-Video source modes. (The default password is: 0 0 0 0.)



**[Button Lock]** – Select On or Off to lock or unlock the control buttons on the side panel of the TV. When this function enables, the control buttons on your TV will be locked and TV will be controlled by remote control only.

**[Block Unrated TV]** – When Block Unrated TV is set to on, your TV will block unrated program.

**[USA Parental Locks]** – Set the parental control level by MPAA or TV Rating.

**[Canadian Parental Locks]** – Set the parental control level by English Rating or French Rating.

**[Open V-Chip]** – Open V-Chip is an advanced V-Chip rating system for digital channels that are received. The rating table will be updated by downloading the RRT5 data for blocking.

7. **Closed Captions Display:** Select a closed caption options. (Off / On / With Mute)

8. **Analog Captions:** Select an analog caption options. (CC 1-4 / TEXT 1-4)

9. **Digital Captions:** Select a digital caption options. (Service 1-6)

10. **Digital Captions Setup:** Provide numerous options for setting the digital closed caption style in the sub-menu.

**[Style]** – Set to Automatic or Custom mode. If Custom mode is selected, user can modify the detail styles described below. The setting result will be shown immediately on the bottom of the sub-menu OSD. Note: This feature is only available in Digital TV (ATSC) mode.

**[Size]** – Digital closed caption font size, which can be set as Automatic, Small, Normal or Large.

**[Font]** – Digital closed caption font style, which can be chosen as Automatic, Default or Font 1 ~ 7.

**[Text Color]** – Automatic / White / Red / Green / Blue / Yellow / Magenta / Cyan / Black

**[Text Opacity]** – Automatic / Solid / Flashing / Transparent / Translucent

**[Background Color]** – Automatic / Black / White/ Red / Green / Blue/ Yellow / Magenta / Cyan

**[Background Opacity]** – Automatic / Solid / Flashing / Transparent / Translucent

**[Edge Effect]** – Automatic / None / Raised / Depressed / Uniform / Left Shadow / Right Shadow

**[Edge Color]** – Automatic / Red / Green / Blue / Yellow / Magenta / Cyan / Black / White.

11. **Input Labels:** User can edit the input labels.

12. **Component Setting:** This option only shows and is available in component mode, which provides fine tuning component display.

**[Phase]** – Adjust Picture Phase to reduce Horizontal-Line noise. The tuning range is from 0 to 100.

**[Preset]** – Restore the default component setting values.

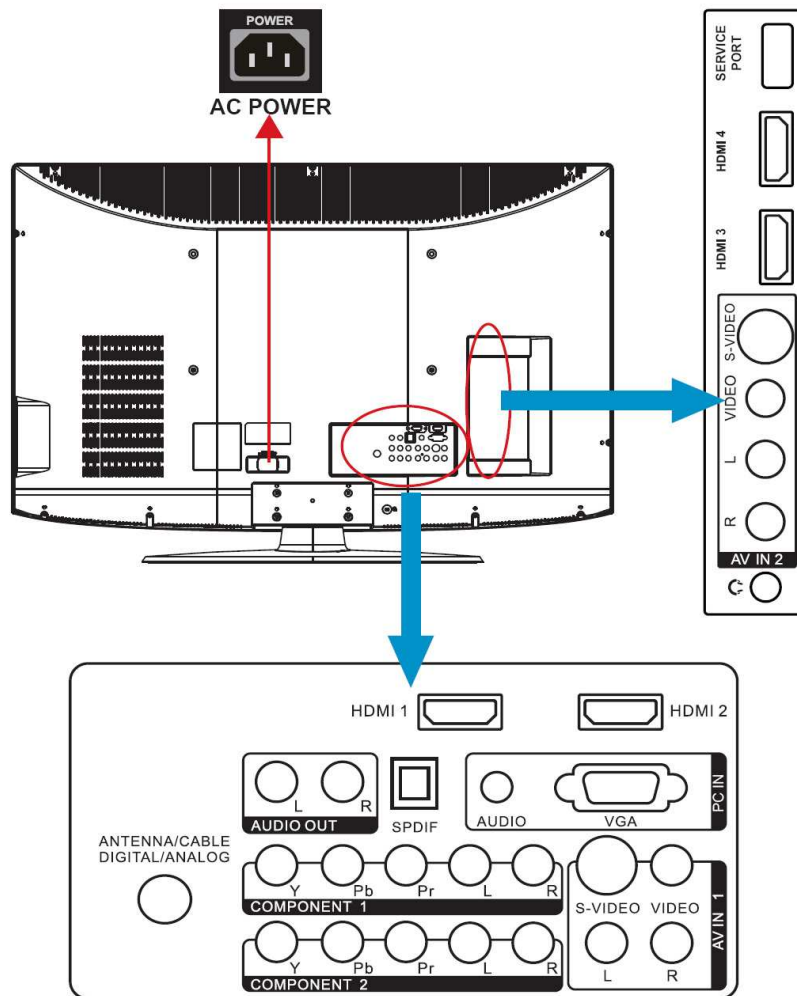
13. **Reset to Default:** Restore all the default settings.

**VGA Menu**

This option only shows and is available in VGA mode, which provides several items for the VGA display fine tuning.

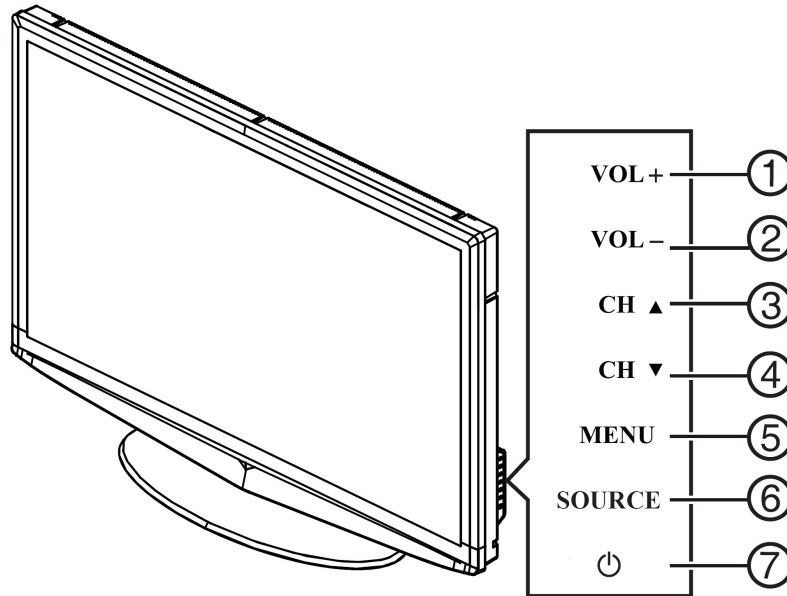
1. **H-Position:** Adjust the horizontal position of the picture. (0-100)
2. **V-Position:** Adjust the vertical position of the picture. (0-100)
3. **Clock:** Adjust picture clock to reduce Vertical-Line noise. (0-100)
4. **Phase:** Adjust Picture Phase to reduce Horizontal-Line noise. (0-100)
5. **Auto Adjust:** Adjust the settings automatically.
6. **Preset:** Restore the default VGA setting values.

## 2.3 How to Connect



1. **HDMI** – Connect the primary source for digital video such as a DVD multimedia player or set top box through this all digital connector. The white color band on the rear of the TV indicates this connection.
2. **PC IN** – Connect the video and audio cables from a computer here.
3. **AV IN (AV/S-VIDEO)** – Connect the primary source for composite video devices, such as a VCR or video game. Use the white and red connectors to connect the external audio from the same source. The signal being carried by the S-Video cable and connector, if connected, will take priority over the Video RCA connector (yellow connector).
4. **COMPONENT (Y/Pb/Pr with Audio L/R)** – Connect the primary source for component video devices such as a DVD Player or set top box here. From left to right, use red for Pr, blue for Pb, green for Y, red for right audio (R) and white for left audio (L) inputs.
5. **ANTENNA/CABLE DIGITAL/ANALOG** – Connect to an antenna or digital cable (out of- the-wall, not from Cable Box) for Digital TV.\*
6. **SPDIF (Optical Digital Audio Out)** – When a digital audio signal is associated with the input selected for viewing, the digital audio will be available on this SPDIF connection to your home theater system.
7. **AUDIO OUT** – Connect an external sound system with standard audio cable to the AUDIO OUT L and R jacks on the back of your TV and to the AUDIO IN jacks on the amplifier.

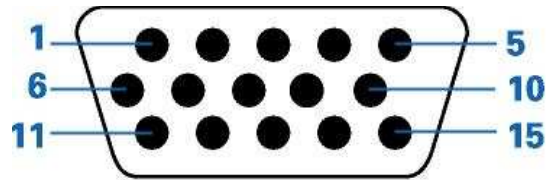
## 2.4 Front Panel Control Knobs



1	VOL +	<b>VOL +:</b> Press to increase the sound volume level.
2.	VOL -	<b>VOL - :</b> Press to decrease the sound volume level.
3.	CH ▲	<b>CH +:</b> Press to select the next higher Program number.
4.	CH ▼	<b>CH - :</b> Press to select the next lower Program number.
5.	MENU	<b>Menu key:</b> Press to open or exit the OSD (on-screen display) menu.
6.	SOURCE	<b>Source key:</b> Press to select the input source.
7.	⏻	<b>Power key:</b> Press to turn on / off (standby) the TV set. (Press to turn on TV after the power on status, LED had changed to the Blue color and stopped flashing.)

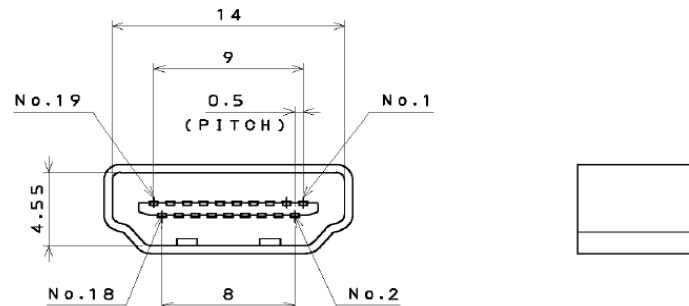
### 3. Input/Output Specification

#### 3.1 RGB Signal input



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		

#### 3.2 HDMI Digital connector



Pin No.	Description	Pin No.	Description
1	TMDS Data2+	11	TMDS Clock Shield
2	TMDS Data2 Shield	12	TMDS Clock-
3	TMDS 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+		

## 3.3 Signal type

AV (Composite Video input)		
<b>Video</b>		
	System	NTSC
	Amplitude	1.0 V(p-p), negative sync.
	Impedance	75 ohm terminated
<b>S-Video (Y / C input)</b>		
<b>S-Video</b>		
	System	NTSC
	Y signal amplitude	1.0Vpp (including sync)
	C signal amplitude	0.286Vpp
	Impedance	75 ohm terminated
<b>Component (Y, Pb/Cb, Pr/Cr input)</b>		
<b>Component</b>		
	System	1080i, 480p, 720p, 480i
	Y signal amplitude	1.0Vpp (including sync)
	Cr, (R-Y) / Cb, (B-Y) Signal amplitude	±0.35Vpp, 75 ohm
	Impedance	75 ohm terminated
$Y = 0.299R + 0.587G + 0.114B$ $(R-Y) = 0.701R + 0.587G + 0.114B$ $(B-Y) = 0.299R + 0.587G + 0.886B$		

## 3.4 PC Timings List

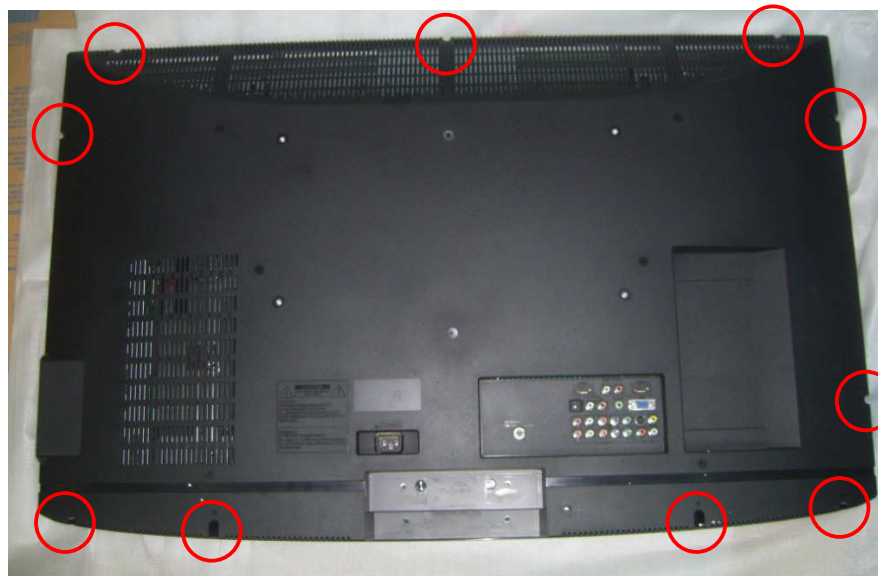
Vesa Modes							
Mode	Resolution	Total	Horizontal		Vertical		Nominal Pixel Clock (MHz)
			Nominal Freq. (KHz)	Sync Polarity	Nominal Freq. (Hz)	Sync Polarity	
VGA	640x480@60Hz	800 x 525	31.469	N	59.940	N	25.175
	640x480@72Hz	832 x 520	37.861	N	72.809	N	31.500
	640x480@75Hz	840 x 500	37.500	N	75	N	31.500
DOS	720x400@70Hz	900 x 449	31.469	N	70.087	P	28.322
SVGA	800x600@56Hz	1024 x 625	35.156	P	56.250	P	36.000
	800x600@60Hz	1056 x 628	37.879	P	60.317	P	40.000
	800x600@72Hz	1040 x 666	48.077	P	72.188	P	50.000
	800x600@75Hz	1056 x 625	46.875	P	75	P	49.500
XGA	1024x768@60Hz	1344x806	48.363	N	60.004	N	65.000
	1024x768@70Hz	1328x806	56.476	N	70.069	N	75.000
	1024x768@75Hz	1312x800	60.023	P	75.029	P	78.750
CVT-0.92M9	1280x720@60Hz	1664x748	45.000	P	60.000	P	74.250
WXGA	1280x768@60Hz	1440x790	47.396	P	59.995	N	68.250
SXGA	1280x1024@60Hz	1688x1066	63.981	P	60.020	P	108.000
WXGA+	1440x900@60Hz	1600x926	55.469	P	59.901	N	88.750
WSXGA+	1680x1050@60Hz	1840x1080	65.290	N	59.954	P	146.250
FHD	1920x1080@60Hz	2200x1125	67.500	P	60.000	P	148.500

### 4. Mechanical Instructions

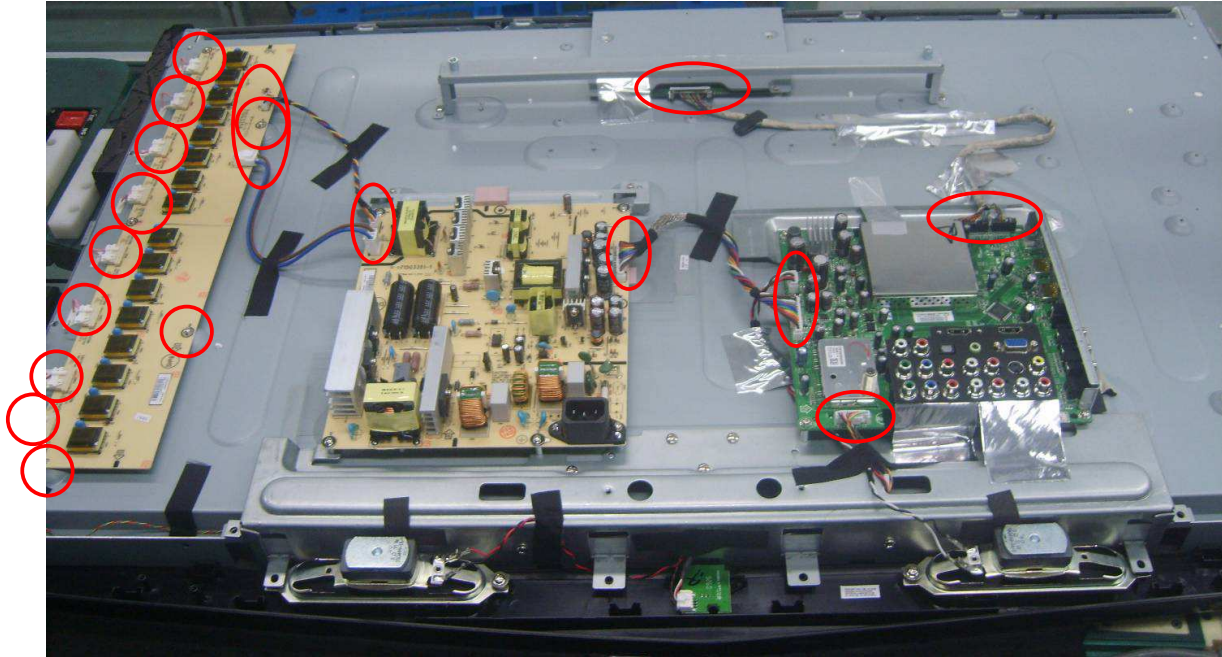
1. Remove the stand and base.



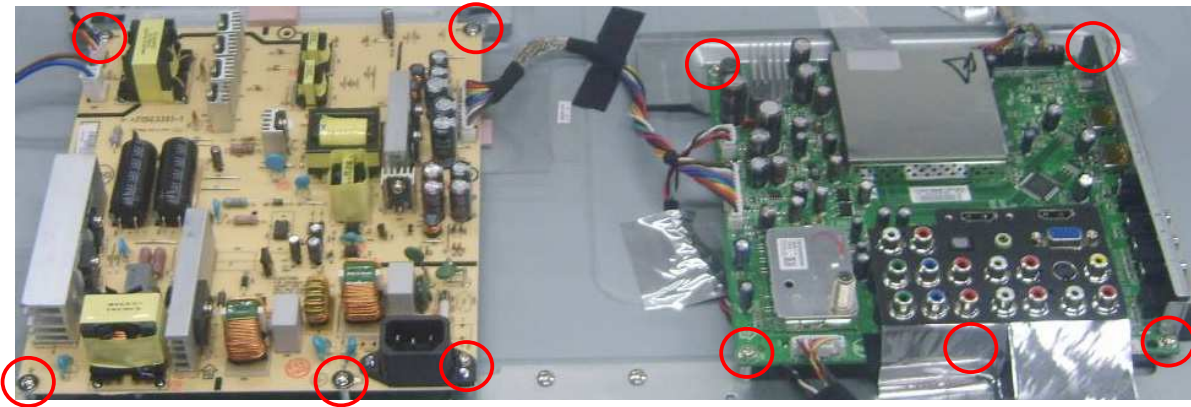
2. Remove rear cover.



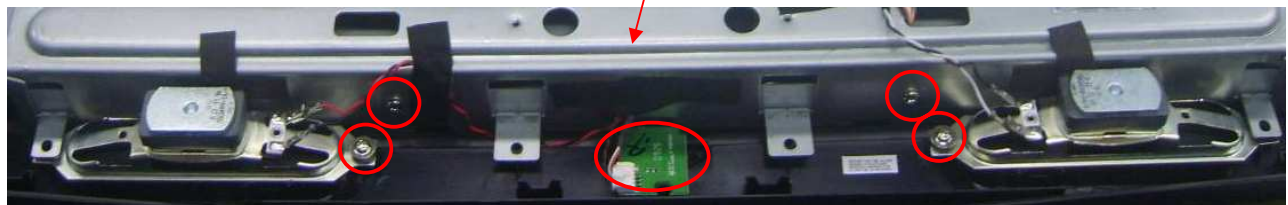
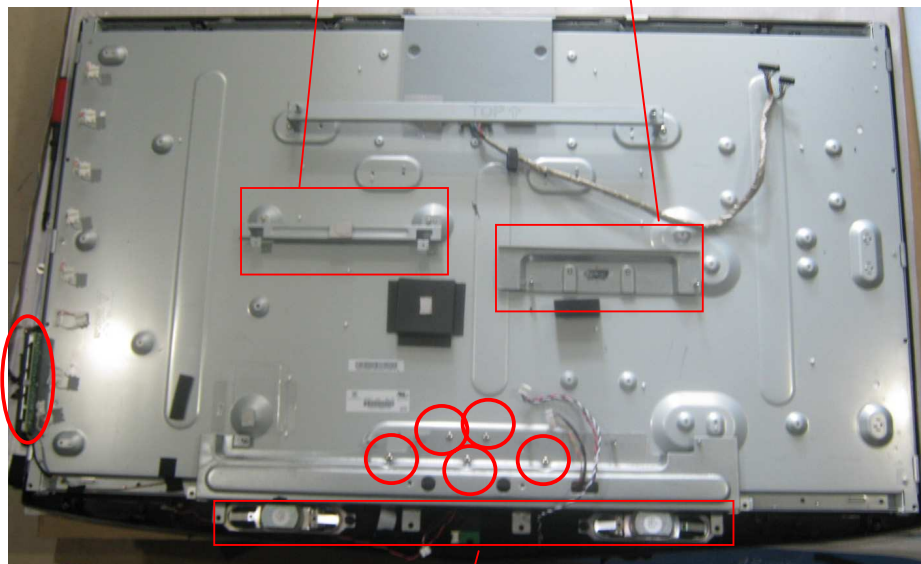
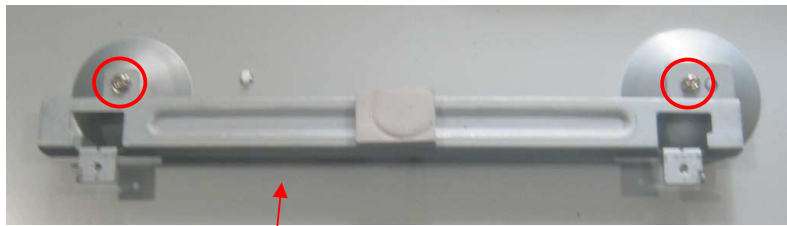
3. Release the connectors and remove inverter board.



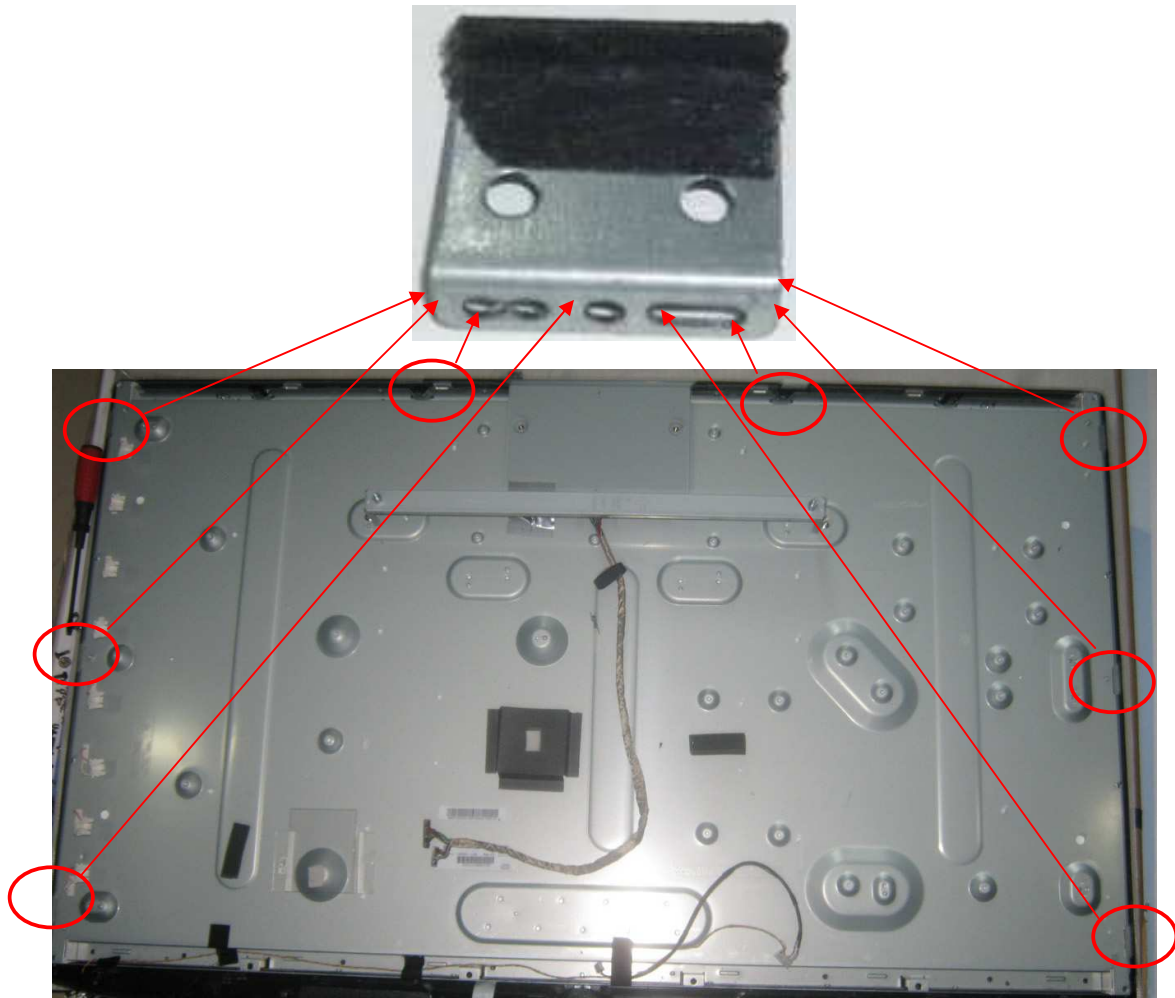
4. Remove main board and power board.



5. Remove BKT, speakers IR board and key board.

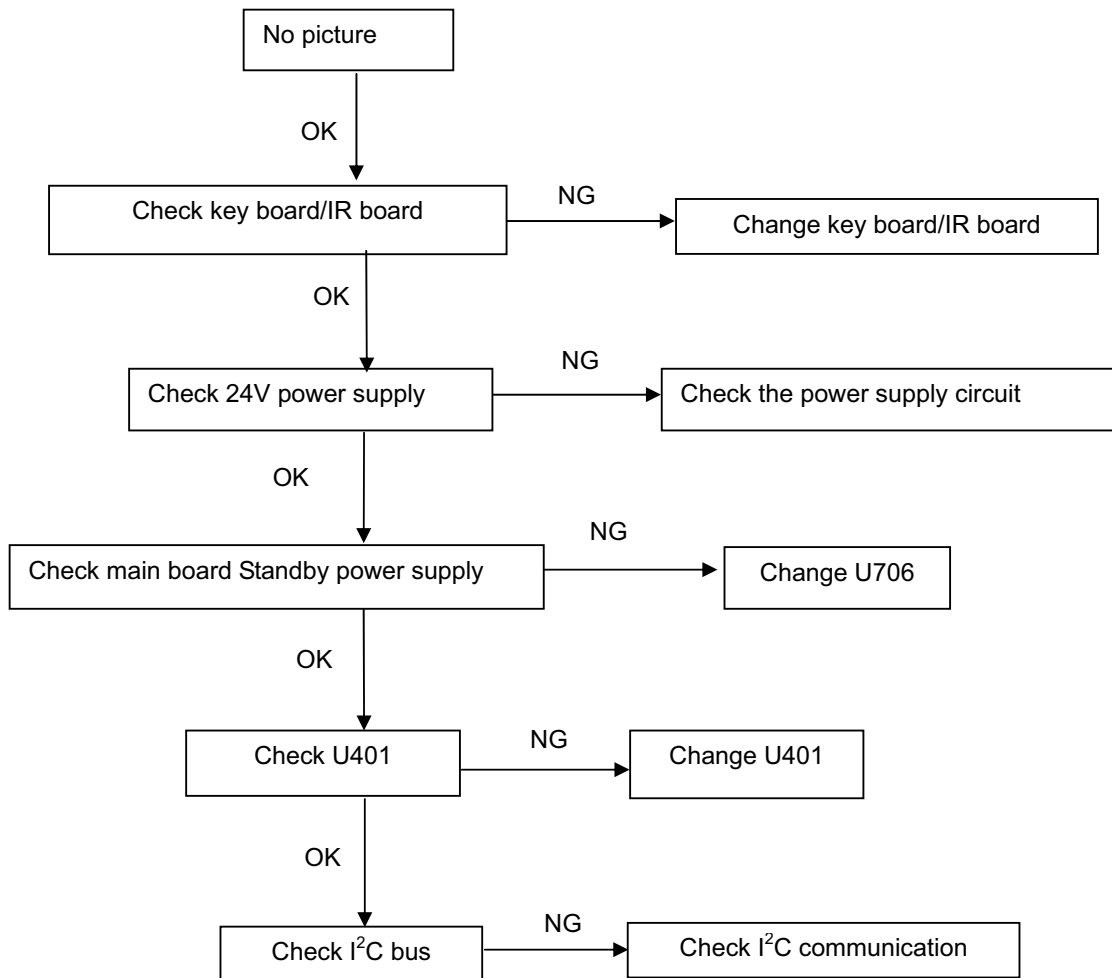


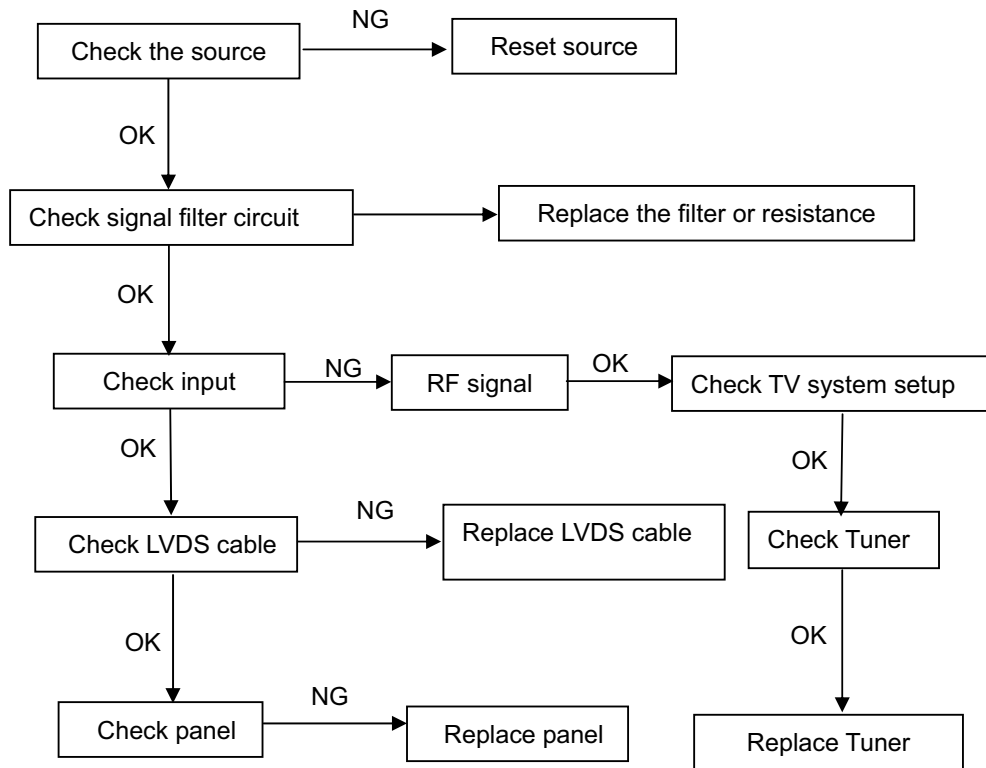
6. Remove the BKT and separate panel and bezel.



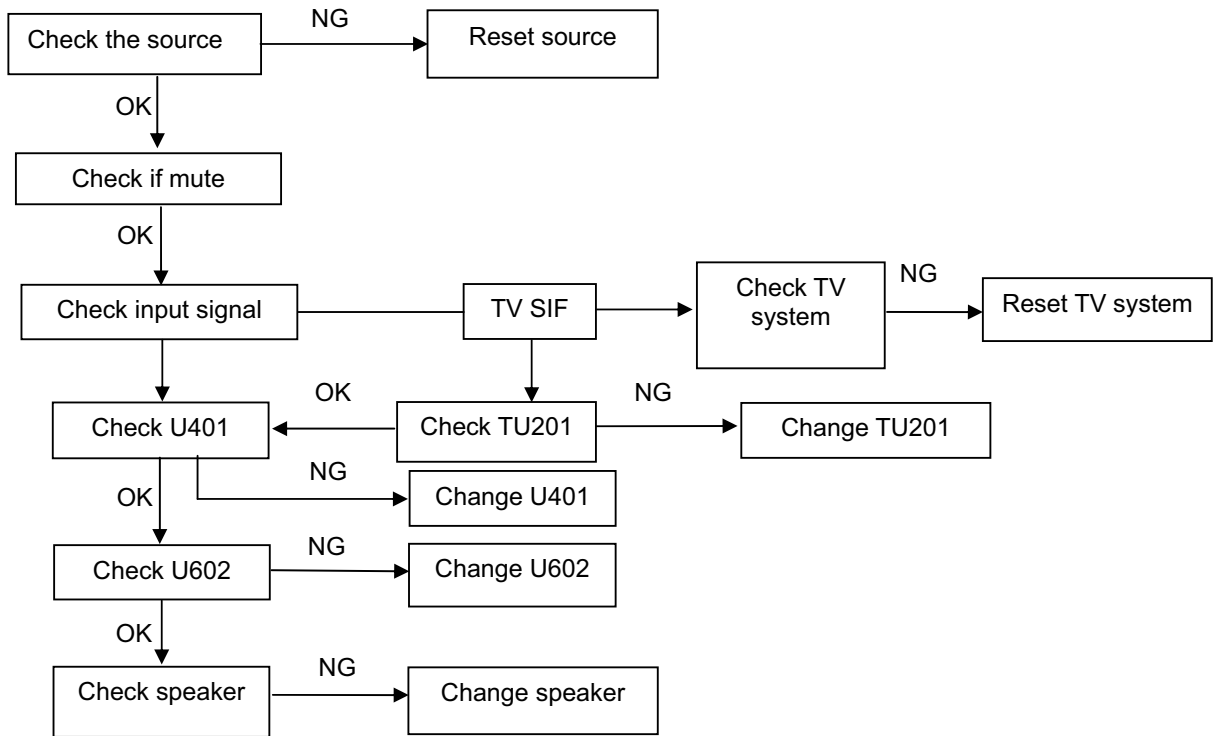
### 5. Repair Flow Chart

No Picture (LED Orange)

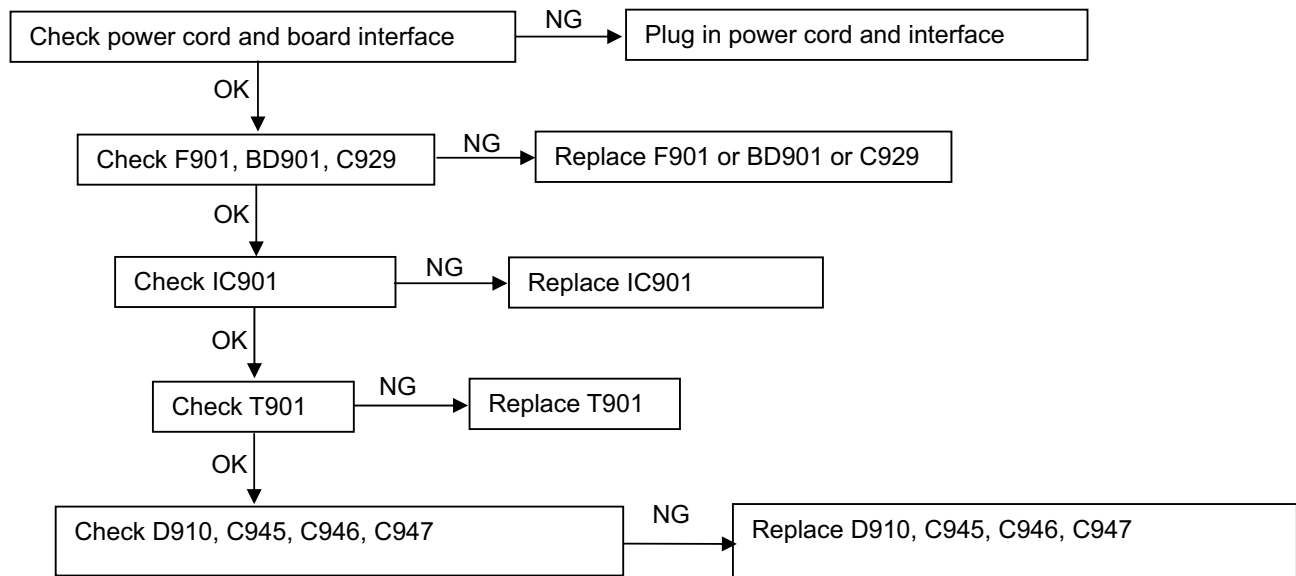




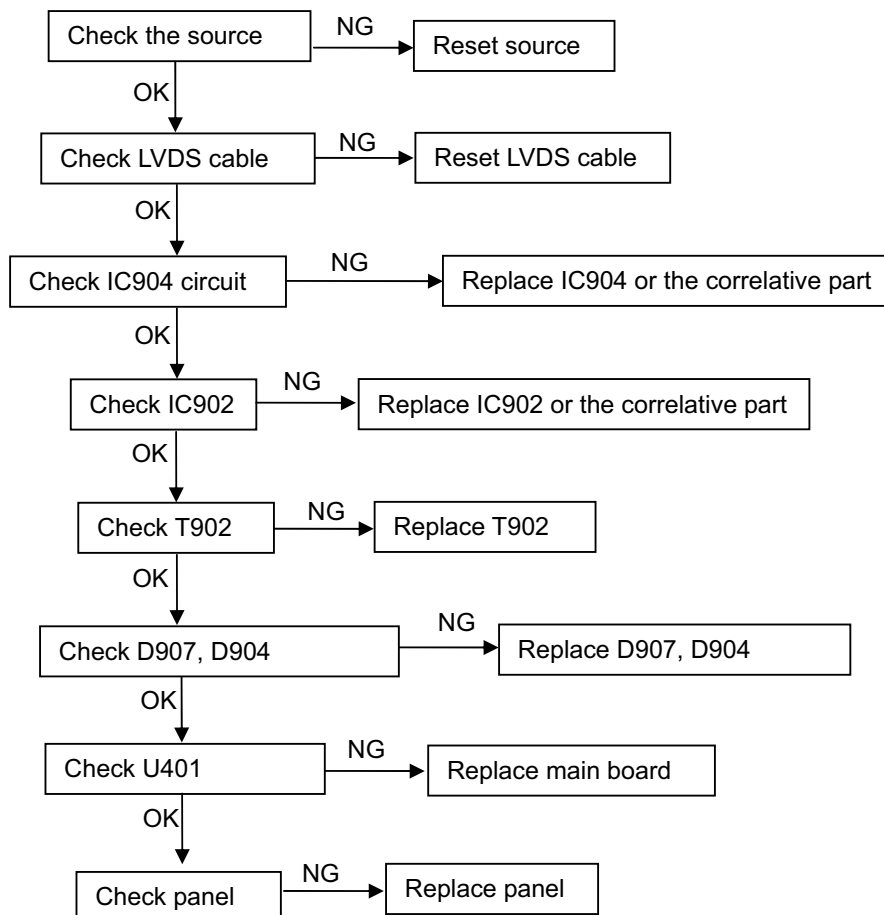
No Sound

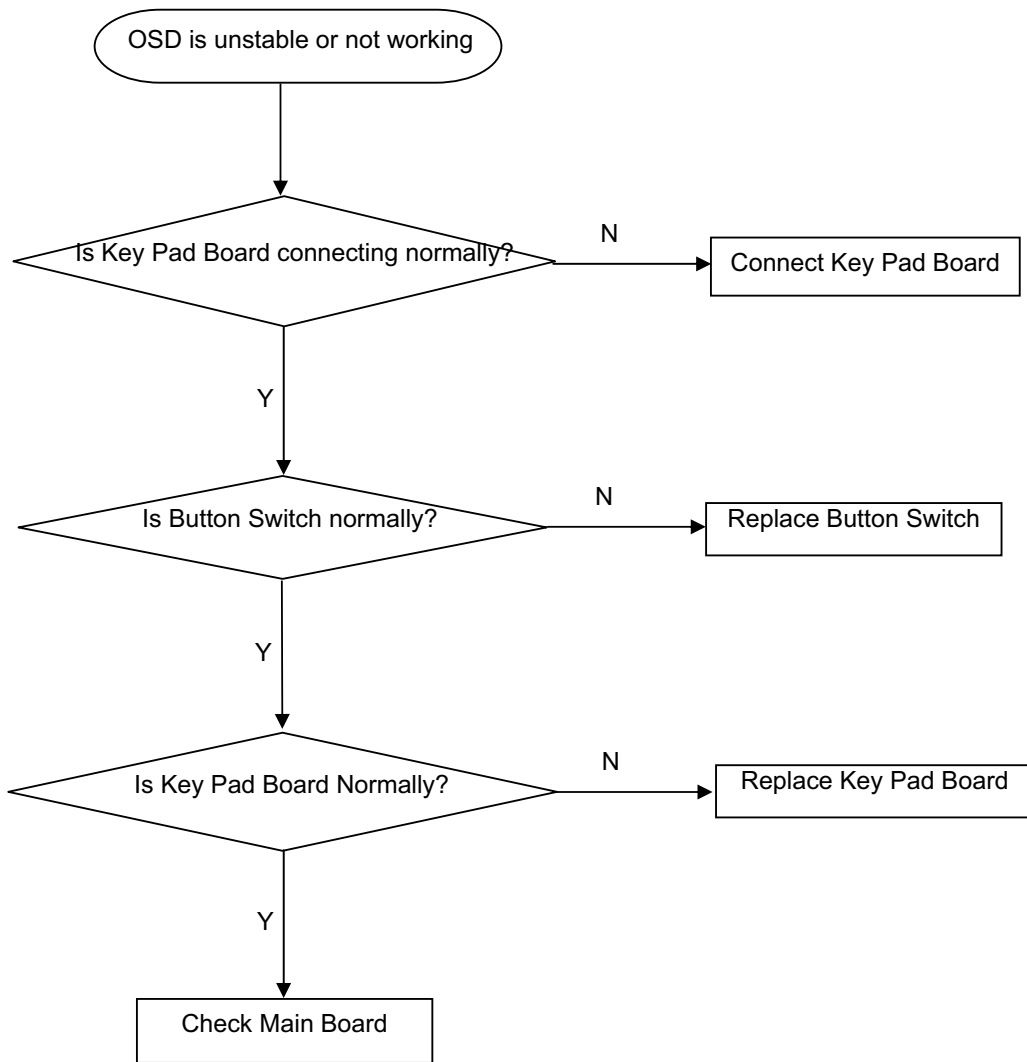


**No Power (No LED Indicator)**



**No Display (LED Indicator Green)**

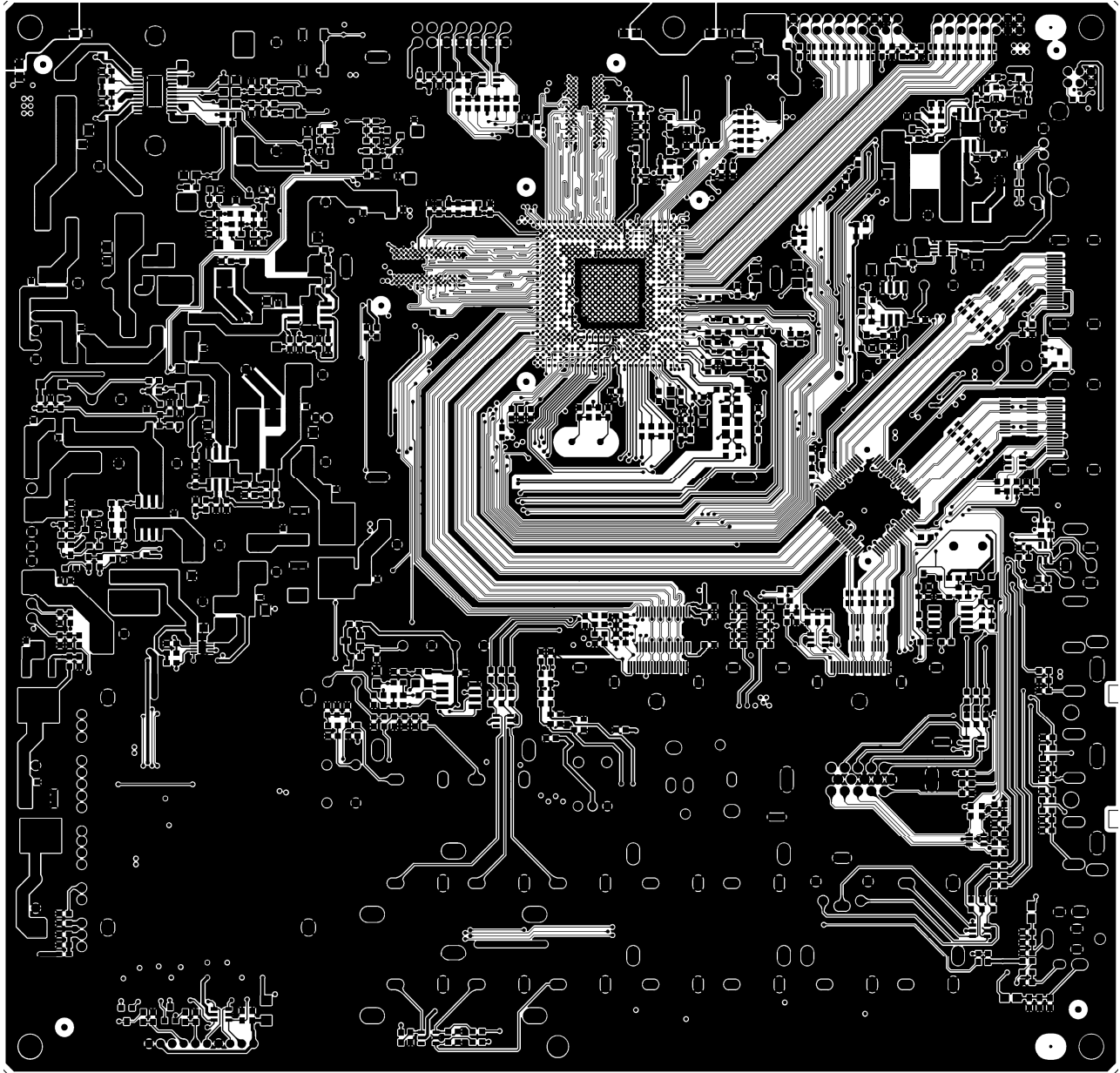


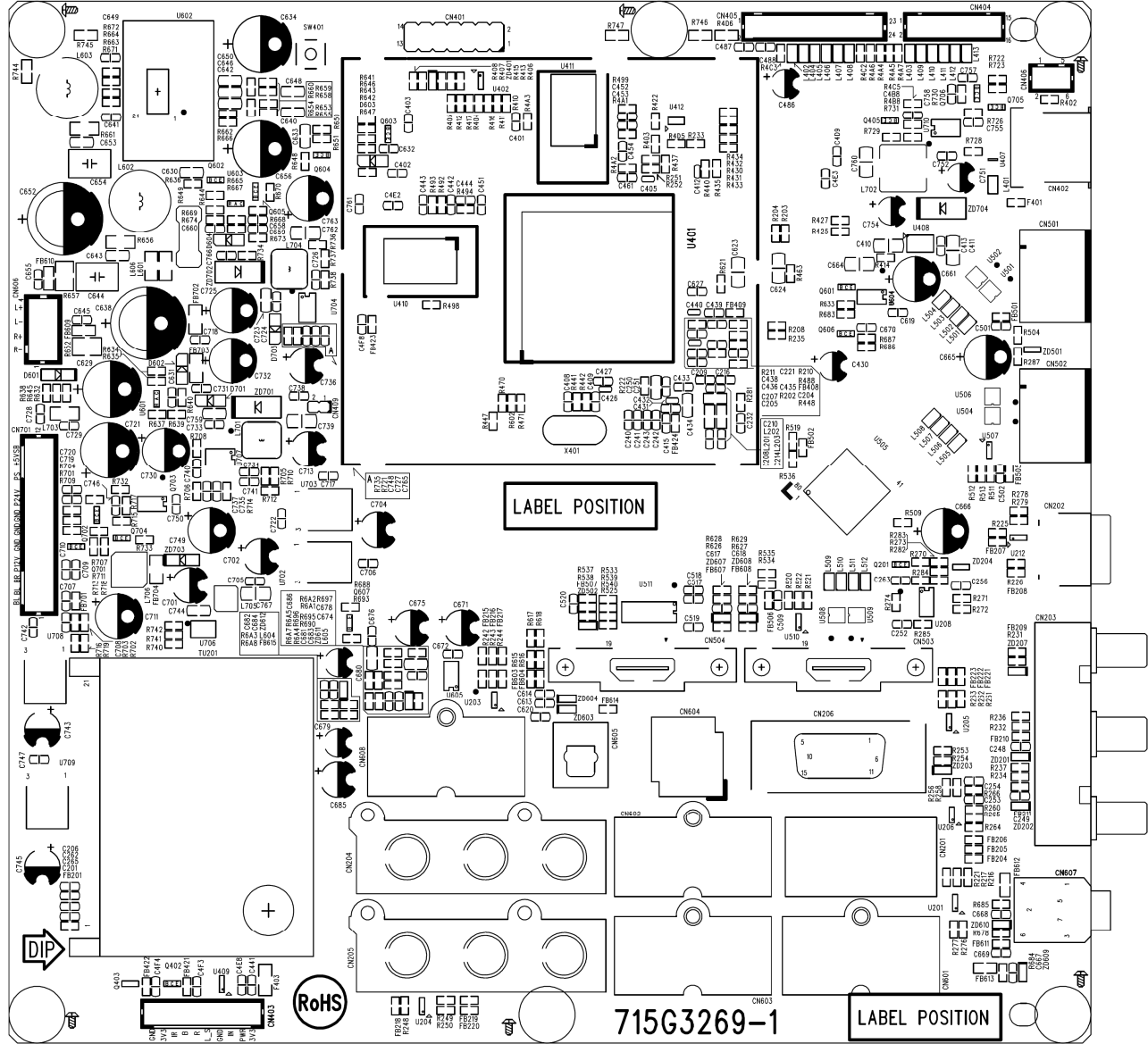


## 6. PCB Layout

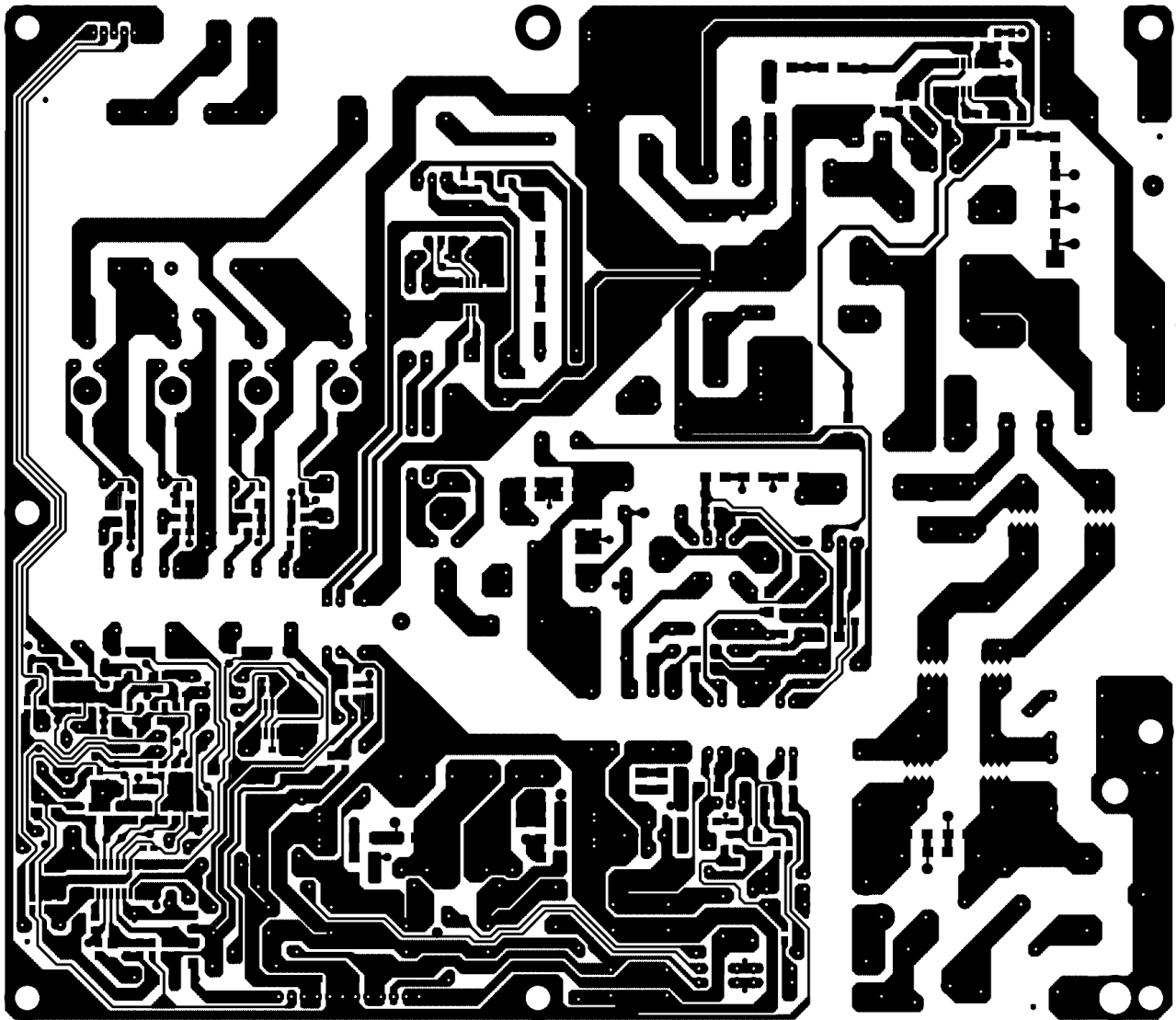
### 6.1 Main Board

715G3269 1

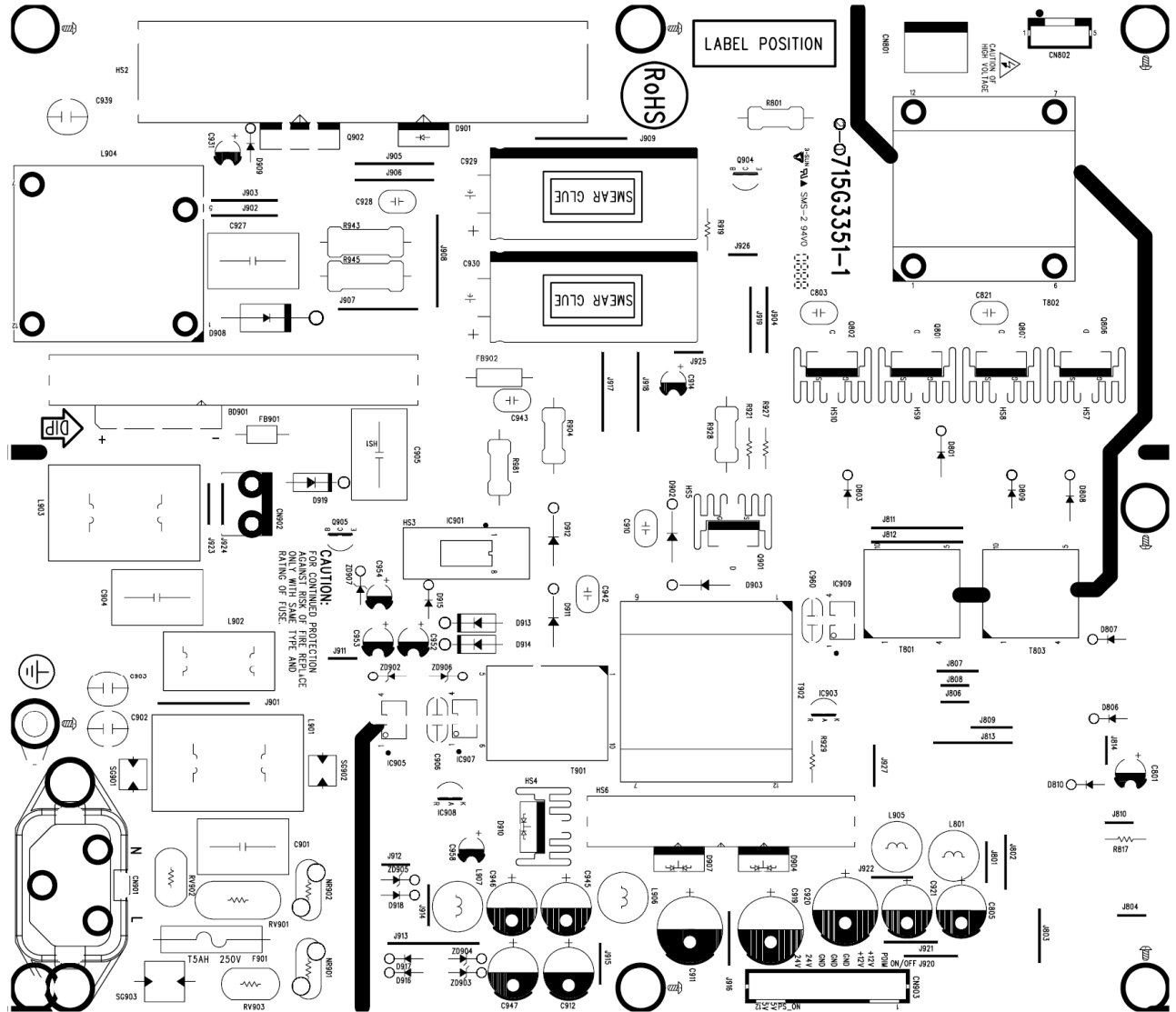




6.2 Power Board  
715G3351 1

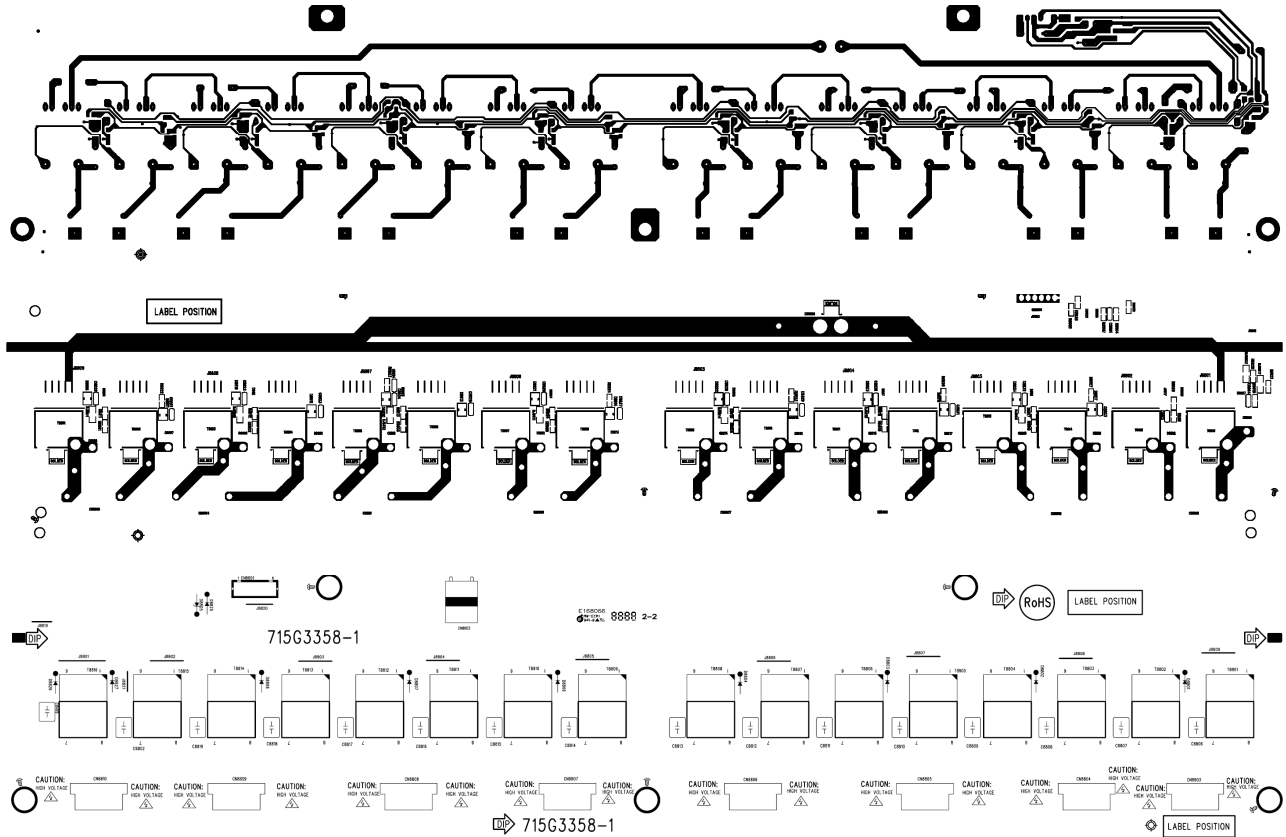






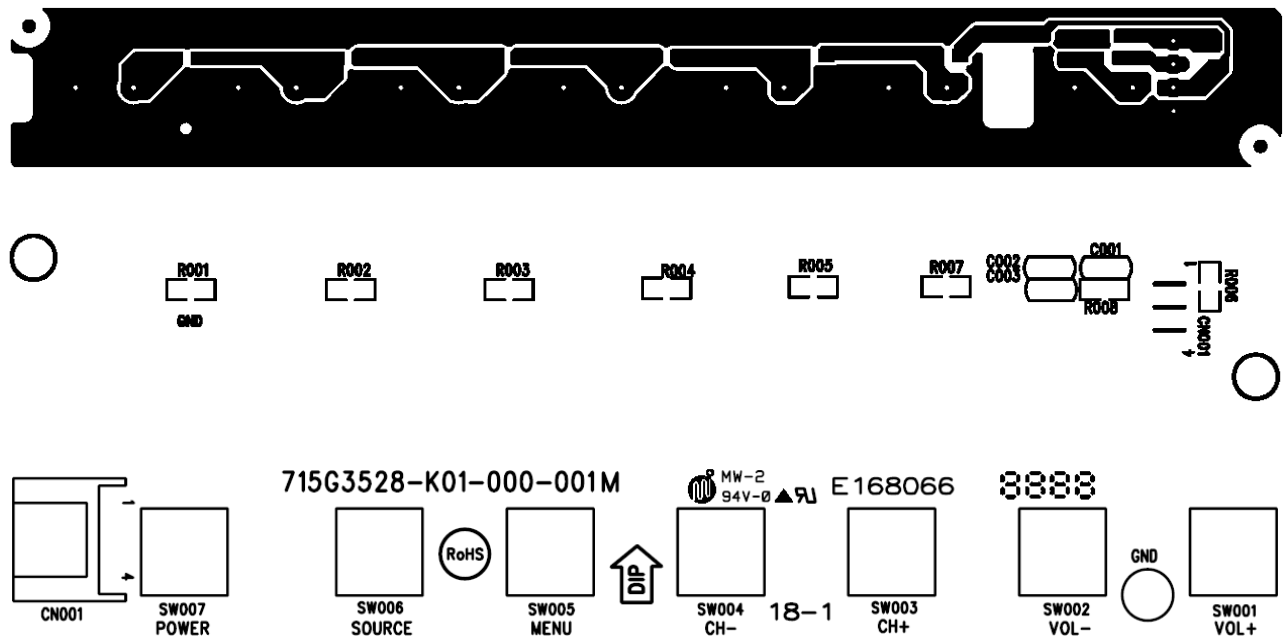
6.3 Inverter Board

715G3358 1

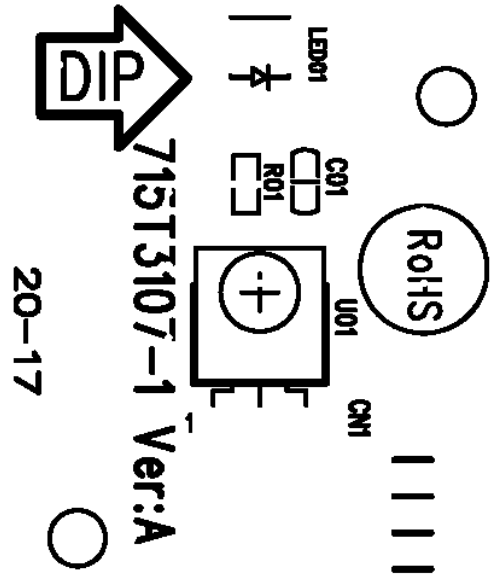
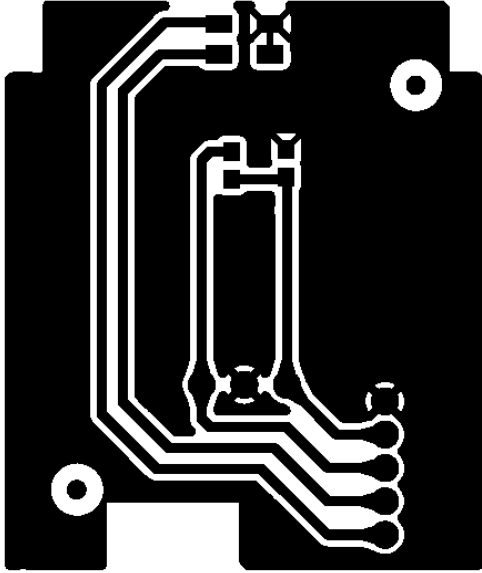


6.4 Key Board

715G3528K0100001M



6.5 IR Board  
715T3107 1

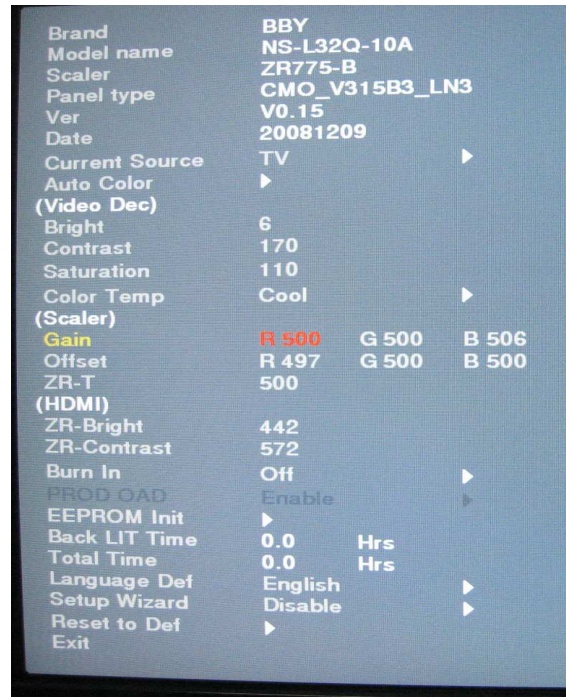


## 7. Adjustment

### 7.1 ADC Adjustment

I . In the TV mode adjust volume to zero, press menu key and then press number key 1 → 9 → 9 → 9. It will achieve the factory mode. Select the item of White Balance and press right key to enter it.

Take BBY factory menu for example:



Change TV, press the item “Current Source” to Component mode and change signal to 1080i mode, press the item “Auto Color”; Change TV, press the item “Current Source” to PC mode and change signal to PC TIMING 137(1024X768) Pattern 147 (16 Grays), press the item “Auto Color”.

### 7.2 White Balance, Luminance Adjustment

**Approximately 30 minutes should be allowed for warm up before proceeding white balance adjustment.**

Before started adjust white balance, please set the Ca210 Channel to 05 Channel and set it's mode to xyLv mode.

Color Temp.		Cold	Normal	Warm
HDMI Mode	x	266	285	313
	y	277	293	329
	Y	Panel Max Luminance		

**Note: The tolerance of the Cold color coordinates should be less than  $\pm 15$ ; The tolerance of the Normal color coordinates should be less than  $\pm 30$ ; The tolerance of the Warm color coordinates should be less than  $\pm 30$ ;**

How to setting the Ca210 channel, you can reference to Ca210 user guide or simple use the “Memory CH” up or down to set the channel to 05 channel, and use the “Mode” key to set the mode to xyLv.

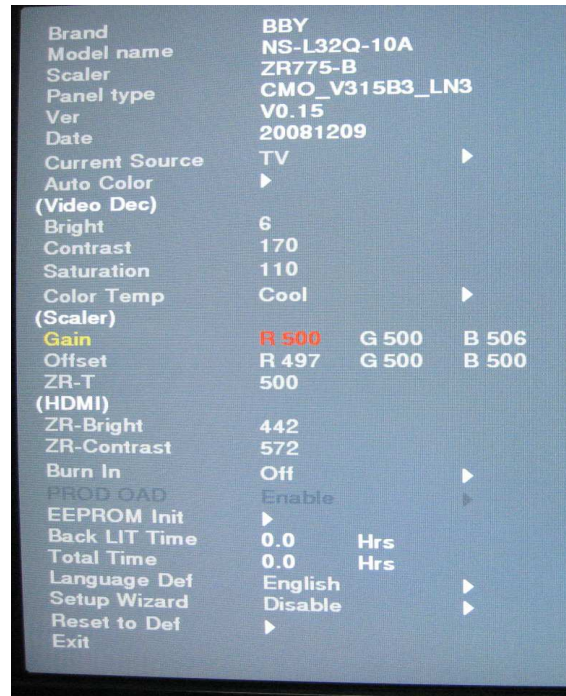
Following is the procedure to do white-balance adjust

**Note: We do the HDMI white balance to cover the white balance of all source modes, this method is meeting to the Zoran 775 software.**

#### HDMI mode:

I . In the TV mode adjust volume to zero, press menu key and then press number key 1 → 9 → 9 → 9. It will achieve the factory mode. Select the item of White Balance and press right key to enter it.

Take BBY factory menu for example:



II .before to adjust the white balance, please press the factory mode OSD of “Reset” to reset all white balance factory setting.

In the White Balance you can adjust 8 items.

- 1> R Offset, G Offset, B Offset → R, G, B Offset adjust.
- 2> R Gain, G Gain, B Gain → R, G, B Gain adjust.
- 3> ZR-Bright adjust;
- 4>ZR-Contrast adjust;
- 5>ZR-T →Color Temp adjust;

#### III. Gain adjustment:

##### A. Adjust Cool color-temperature:

1. Set the pattern generator to pattern 104 or 0 IRE pattern. And adjust the Item “ZR-Bright” to min luminance.
2. Switch the Ca210 to xyLv-mode (with press “MODE” button)
3. Switch the Ca210 channel to Channel 05 (with up or down “MEMORY CH” button)
4. The LCD-indicator on Ca210 will show x =266, y =277, Lv can adjust to max luminance.
5. Use the item R Offset and B Offset adjust to Adjust black balance: use 20 IRE(Pattern 190) signal, and adjust the

black balance, until the Ca210 show  $x = 266$ ,  $y = 277$ .

6. Use the item R Gain and B Gain to adjust white balance: use 100 IRE (Pattern 105) signal, and adjust the white balance, until the Ca210 show  $x = 266$ ,  $y = 277$ .

7. Adjust item "ZR-Contrast" to check color temperature is saturation or not: Add by 7 steps and then to adjust the item R Gain and item B Gain to check the color temperature is saturation or not, until is saturation.

8. Enter the item "Color Temp" to select another color temperature to adjust.

**B. Adjust Normal temperature:**

1. Set the pattern generator to pattern 104 or 0 IRE pattern. Adjust the Item "ZR-Bright" value and can adjust to min luminance

2. Switch the Ca210 to T $\Delta$ uvLv-mode (with press "MODE" button)

3. Switch the Ca210 channel to Channel 05 (with up or down "MEMORY CH" button)

4. The LCD-indicator on Ca210 will show T=9300K.

5. Adjust the Color Temp item: Normal, until Ca210 indicator reached the value T=9300k.

**C. Adjust Warm color-temperature:**

1. Set the pattern generator to pattern 104 or 0 IRE pattern. Adjust the Item "ZR-Bright" value and can adjust to min luminance

2. Switch the Ca210 to T $\Delta$ uvLv-mode (with press "MODE" button)

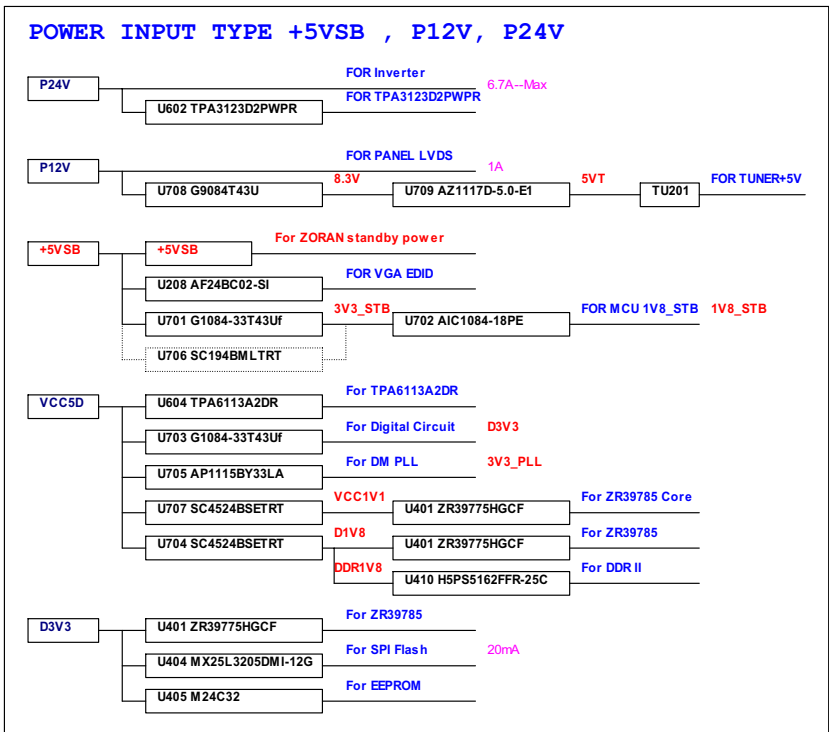
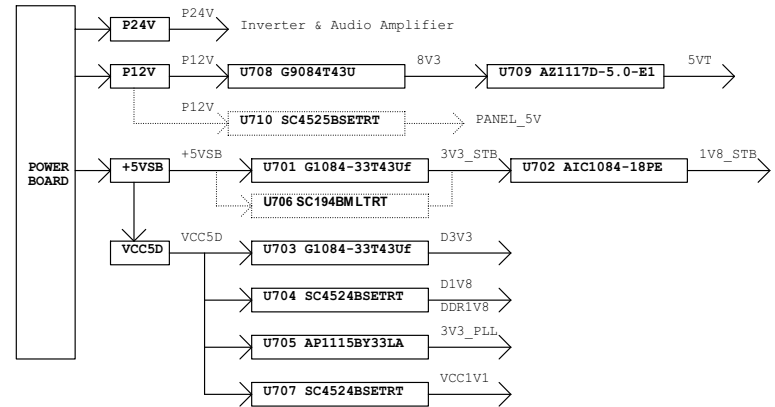
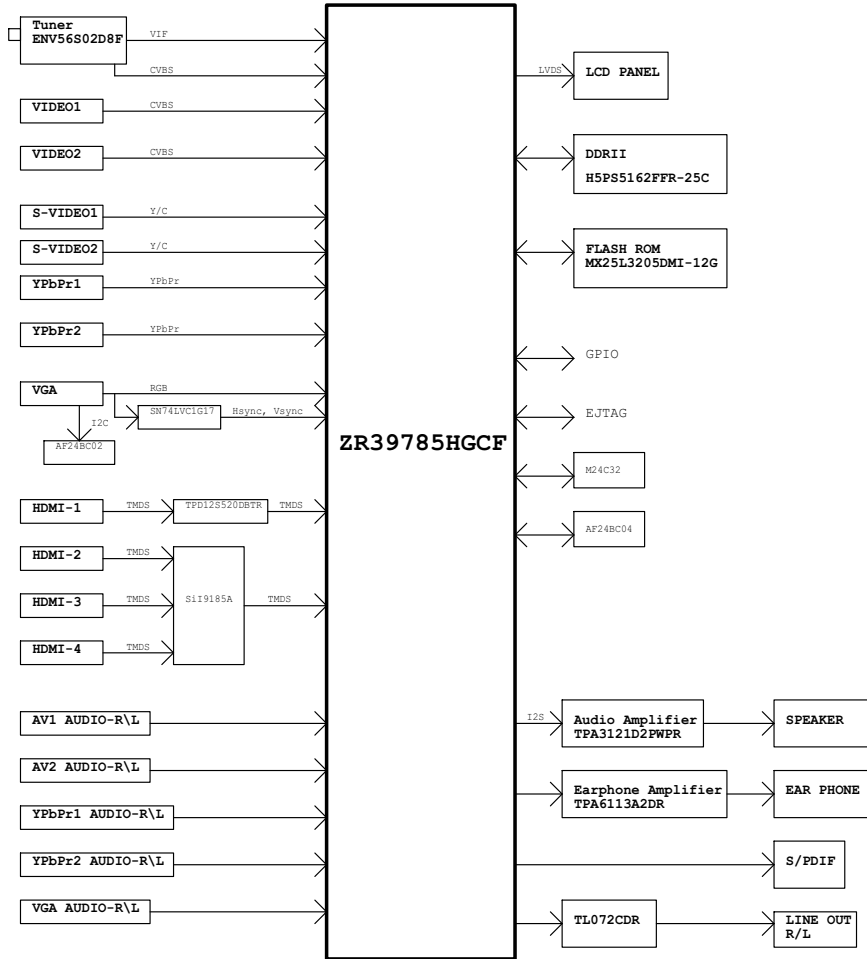
3. Switch the Ca210 channel to Channel 05 (with up or down "MEMORY CH" button)

4. The LCD-indicator on Ca210 will show T=6500K.

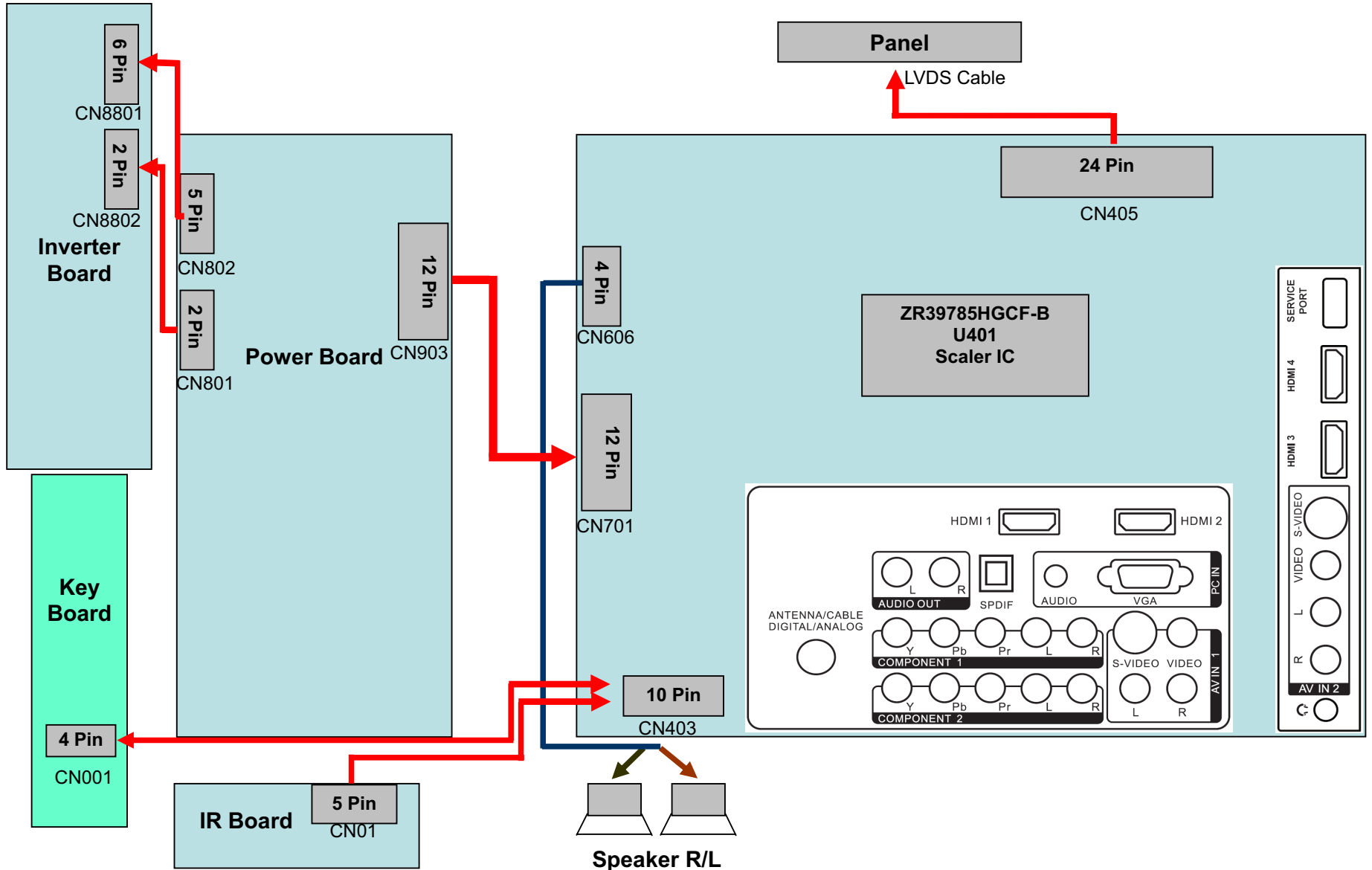
5. Adjust the Color Temp item: Warm, until Ca210 indicator reached the value T=6500k.

Press "Exit" button on remote control to quit from factory mode.

8. Block Diagram



### 9. Wiring Diagram

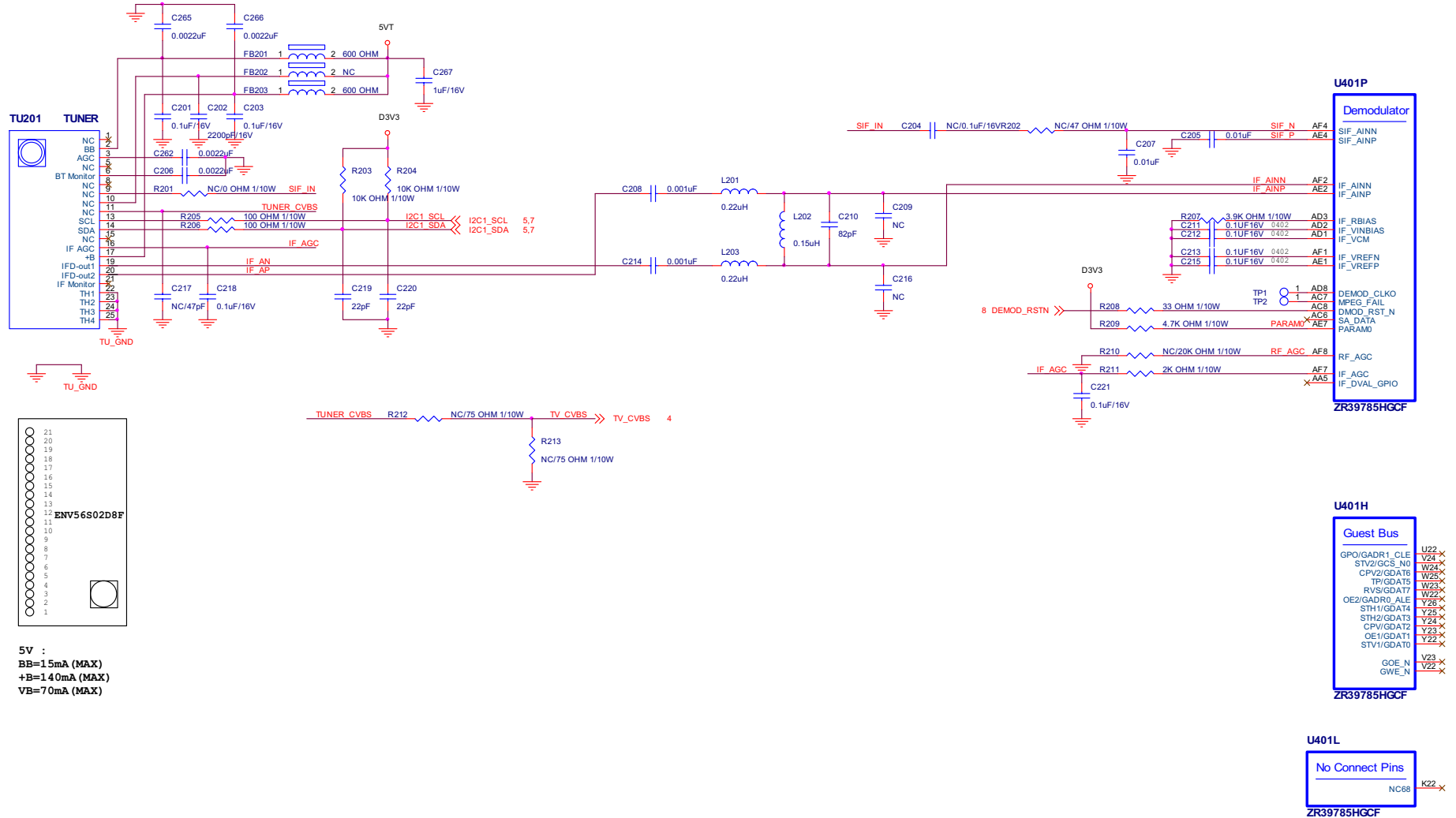


# 10. Schematic Diagram

## 10.1 Main Board

### 715G3269 1

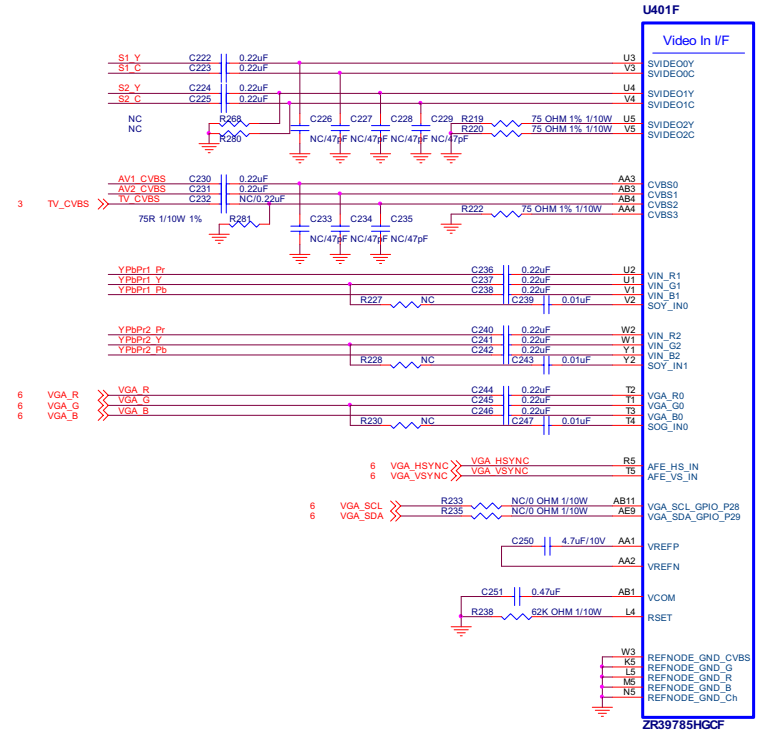
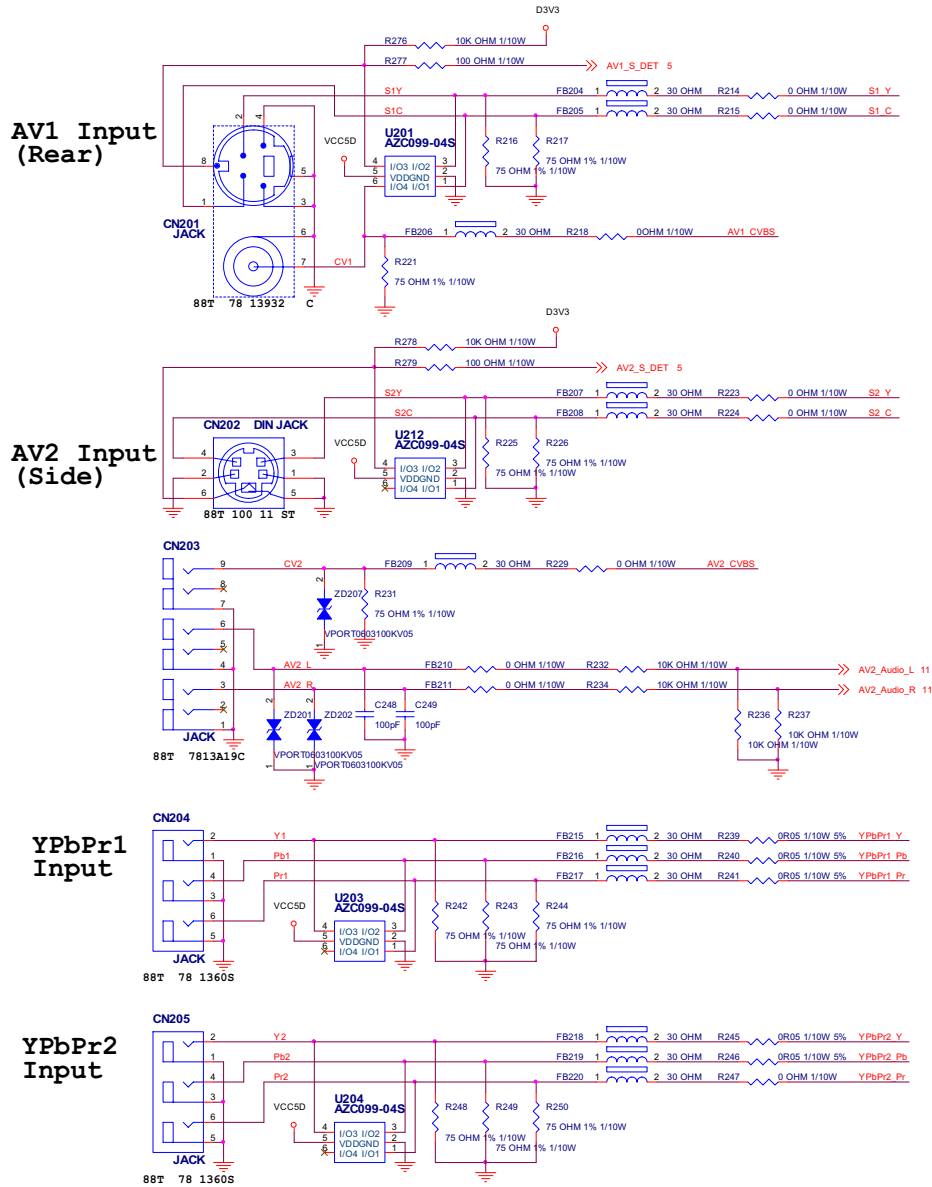
#### 3) Tuner



# 42"LCD TV

# Haier HL42XD1

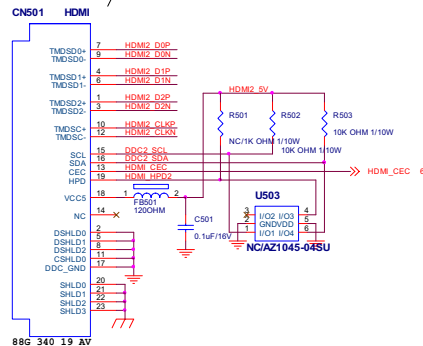
## 4) AV/YPbPr Inputs



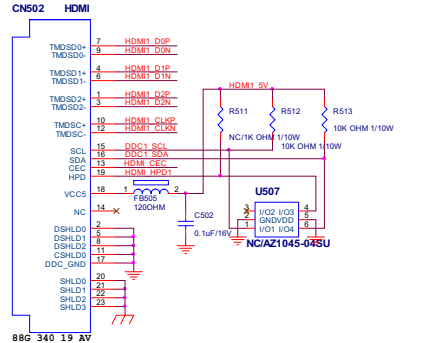
5) HDMI Inputs

Run As 100 Ohm Differential Pairs

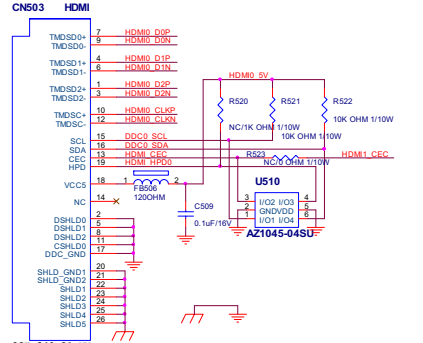
Run As 100 Ohm Differential Pairs



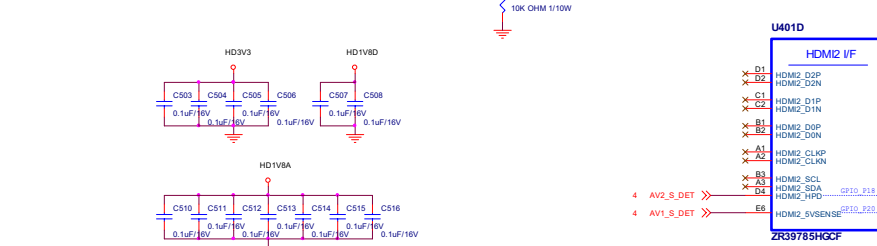
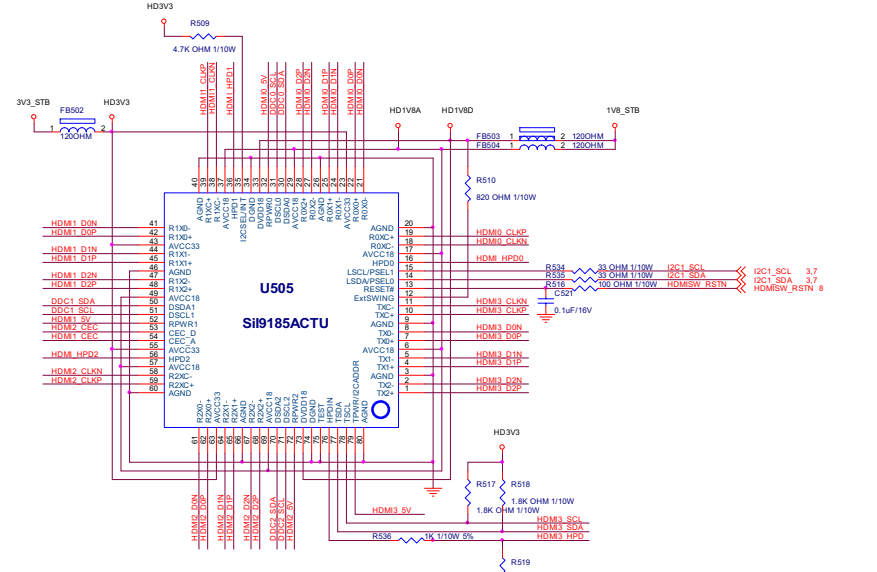
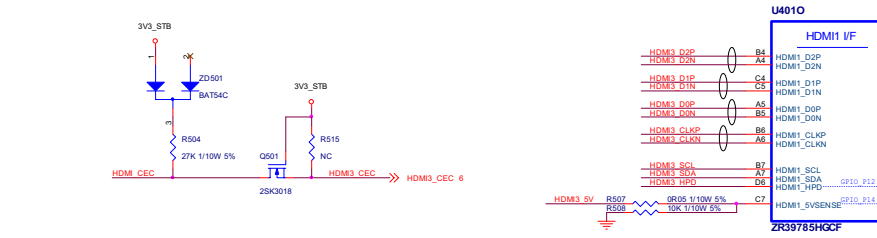
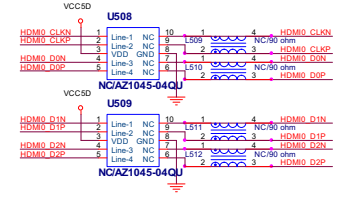
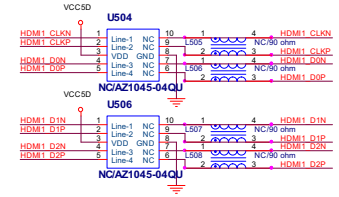
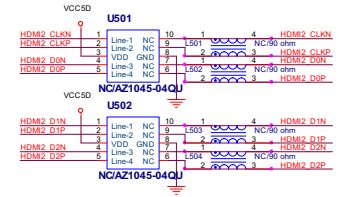
Side HDMI1



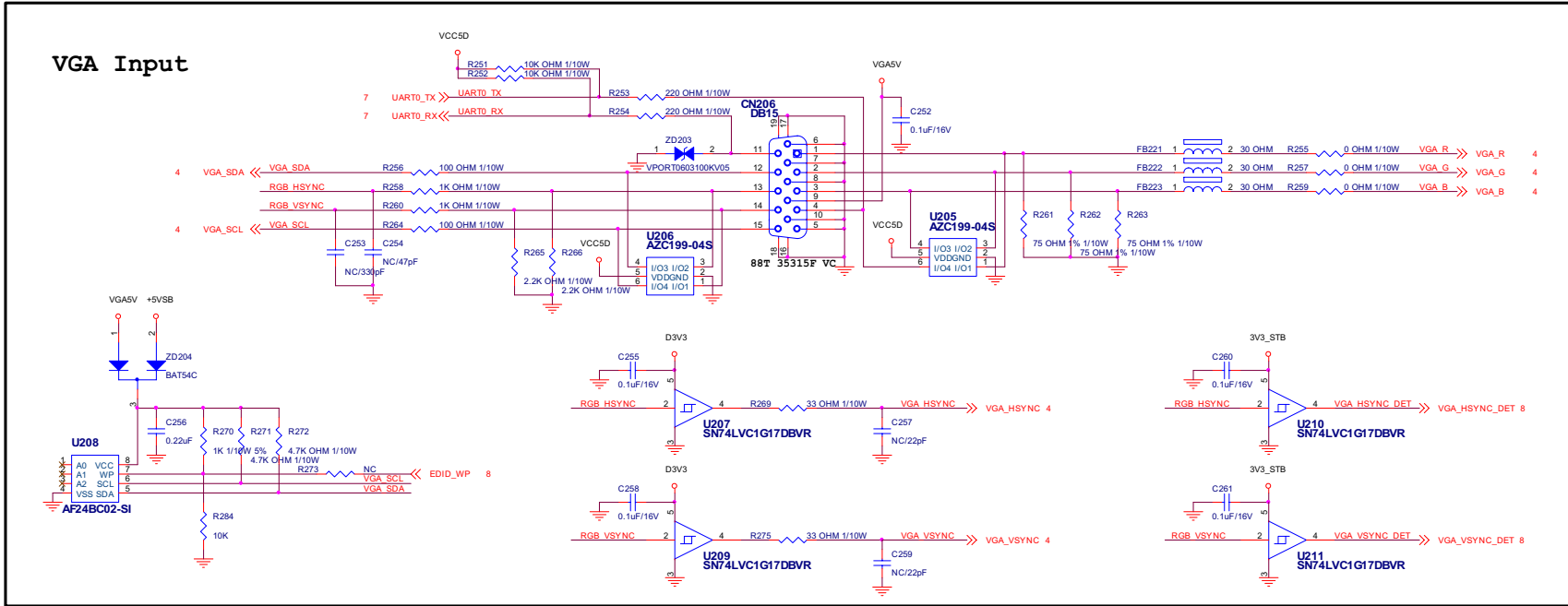
Side HDMI2



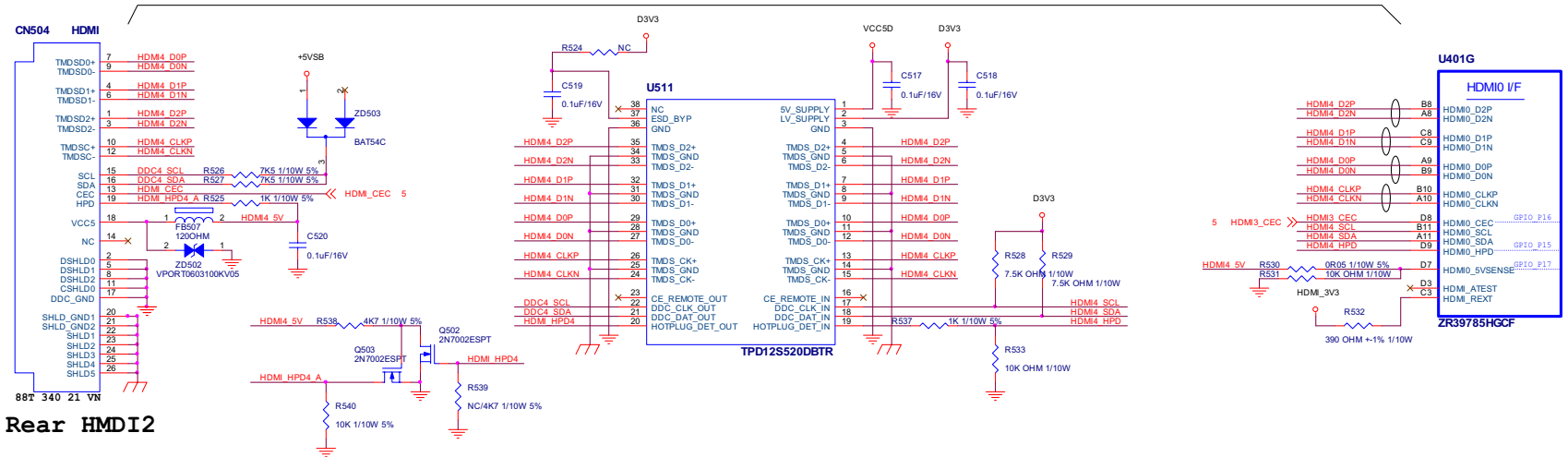
Rear HDMI1

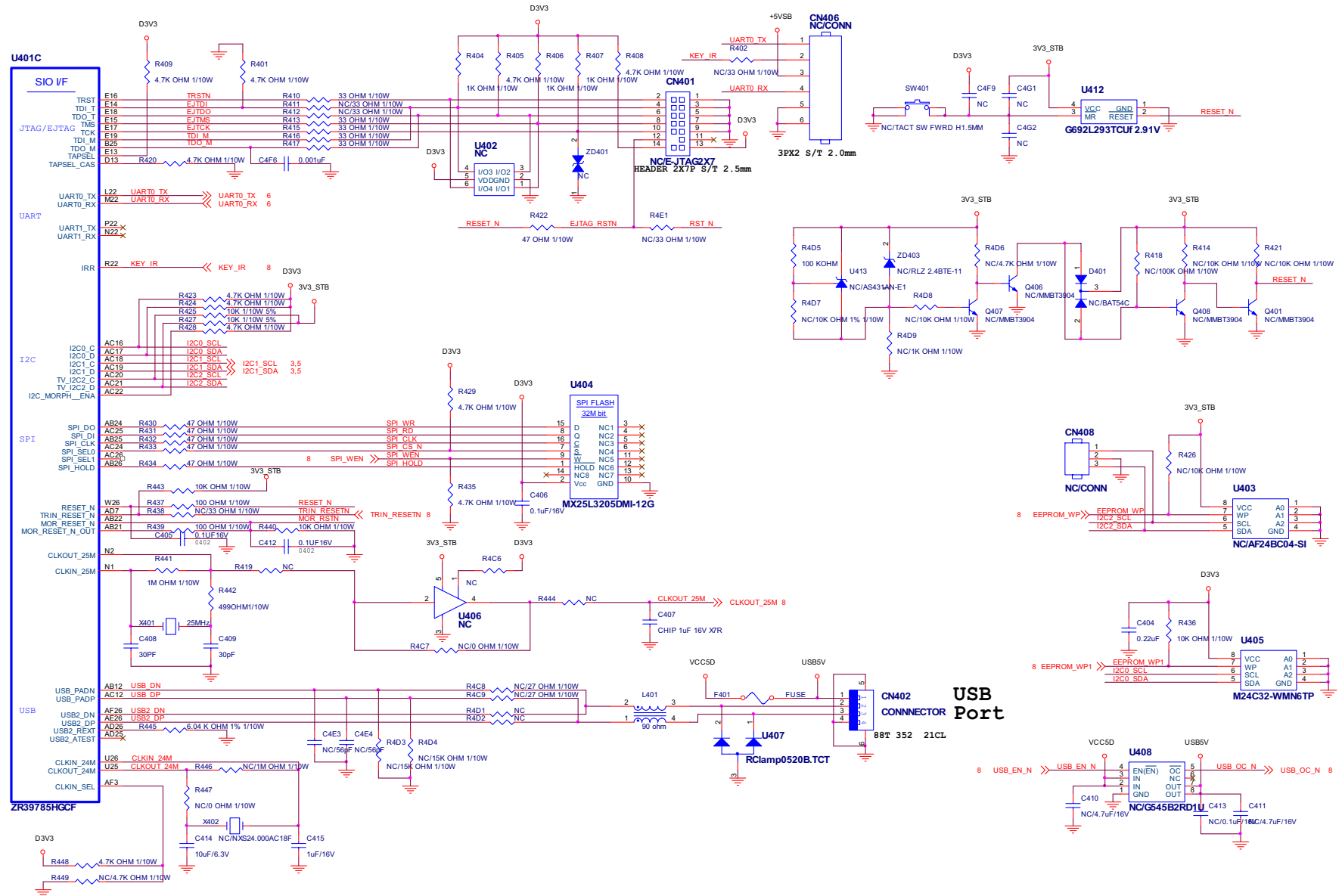


6) VGA/HDMI Inputs

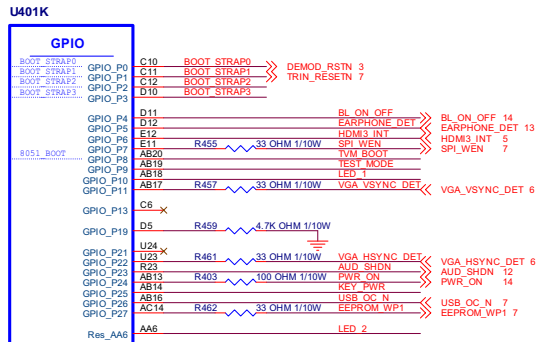


Run As 100 Ohm Differential Pairs



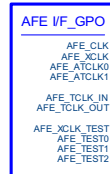


8) GPIO Block



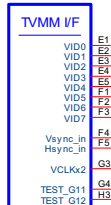
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U401S

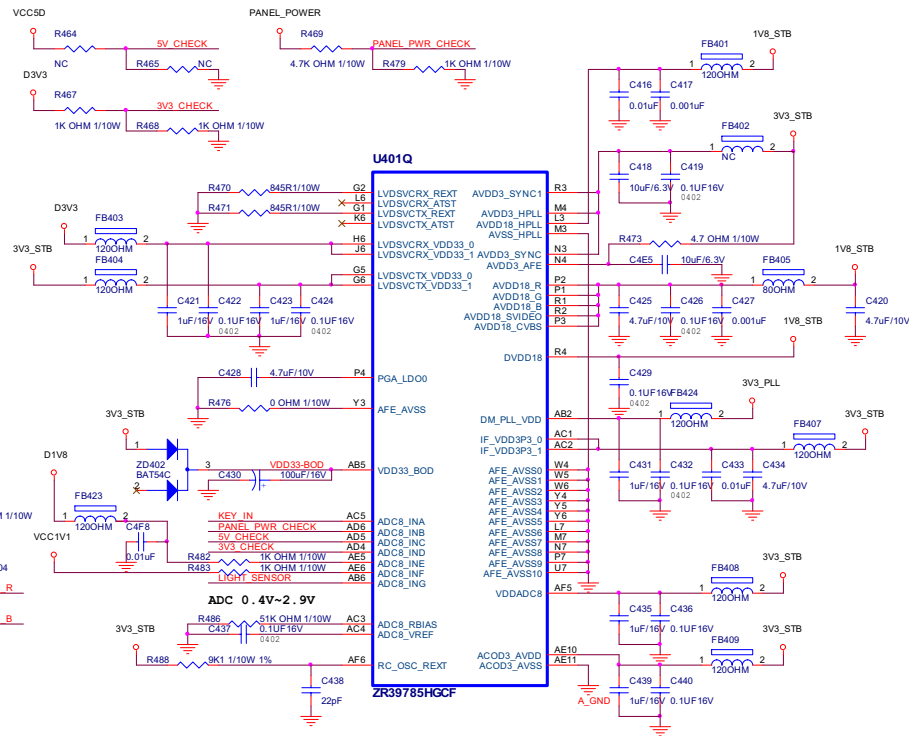
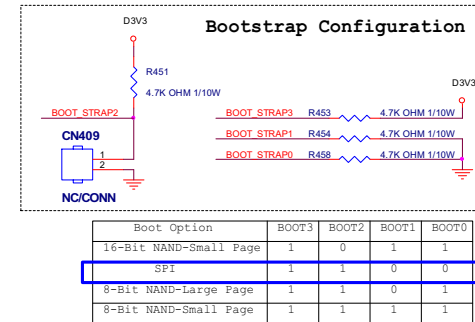
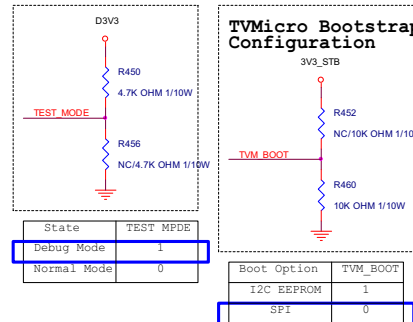
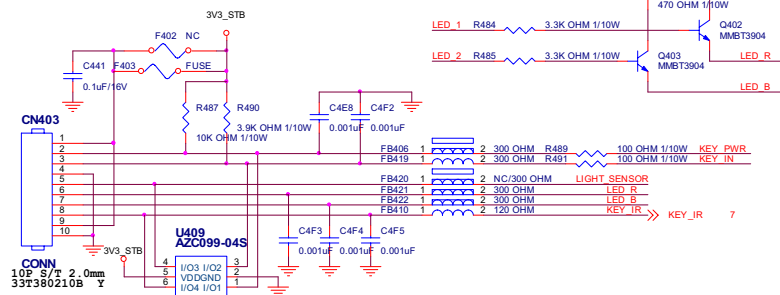


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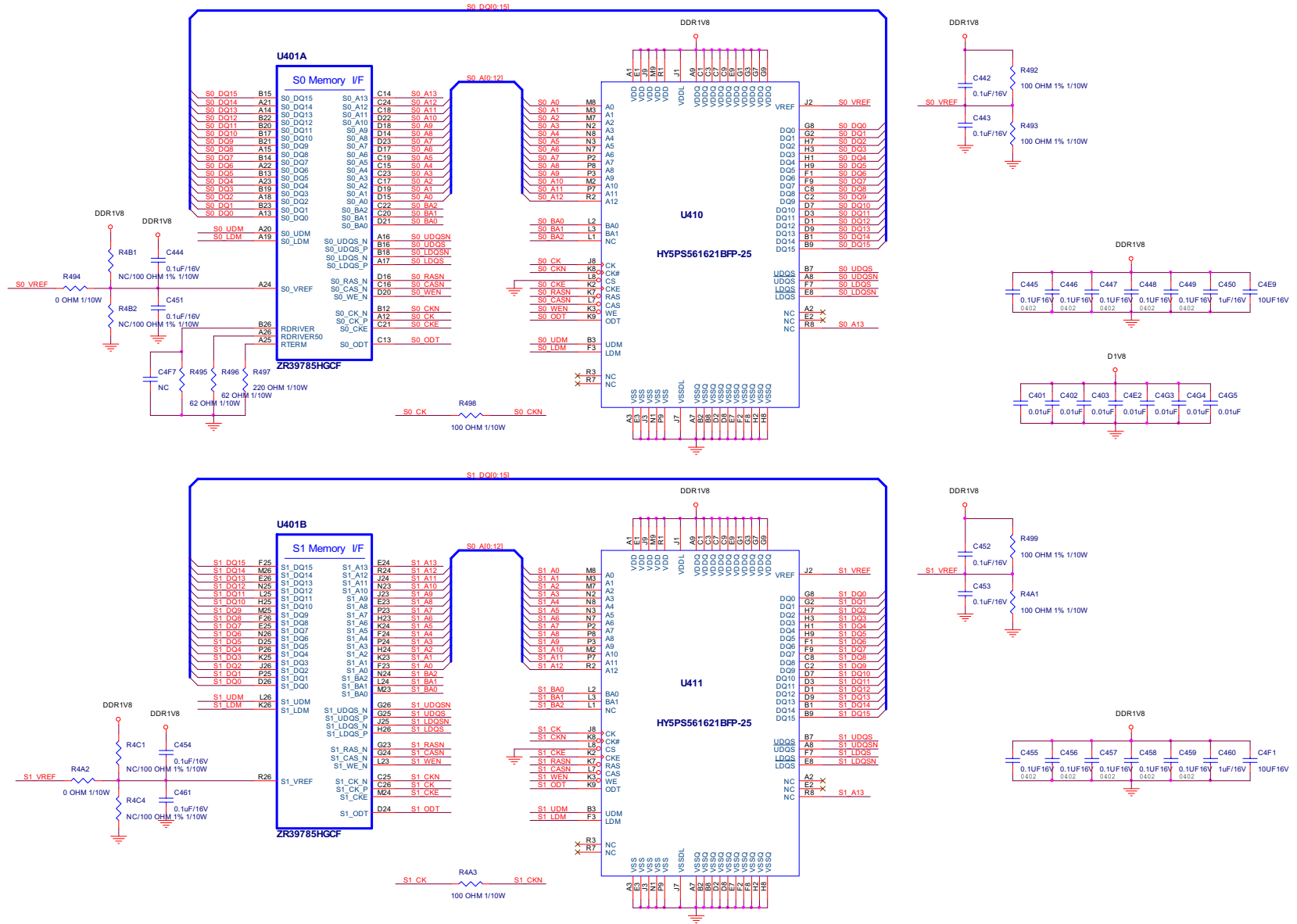
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ZR39785HGCF



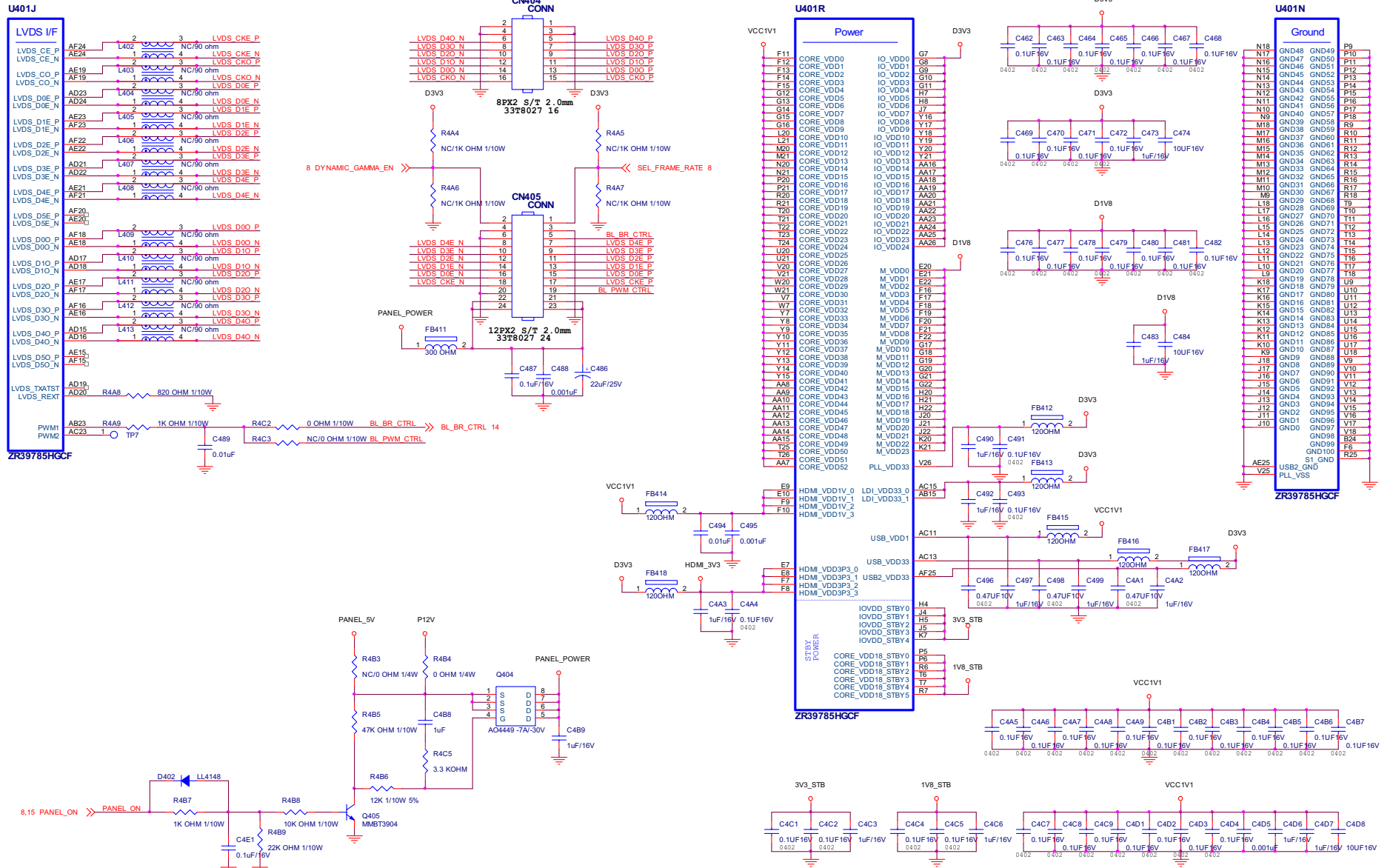
9) DDRII SDRAM I/F



# 42"LCD TV

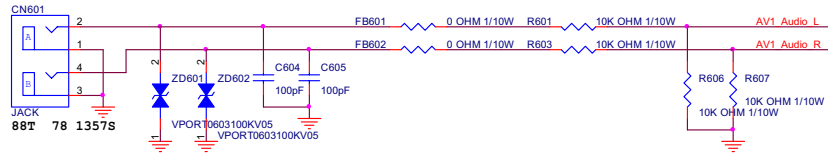
# Haier HL42XD1

## 10) LVDS I/F

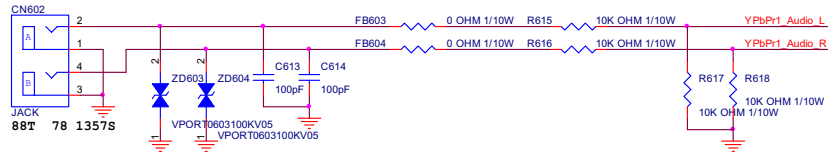


11) Audio Inputs

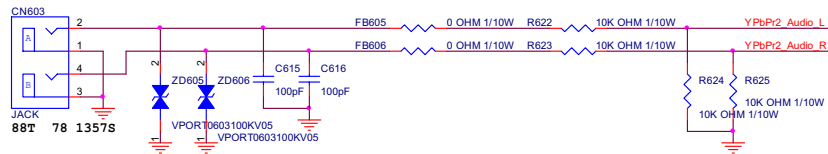
AV1 Audio Input



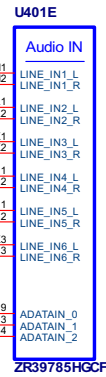
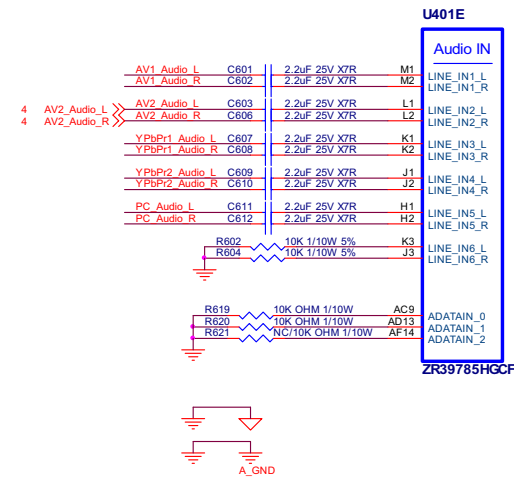
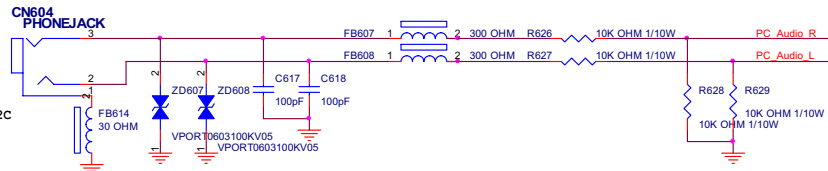
YPbPr1 Audio Input



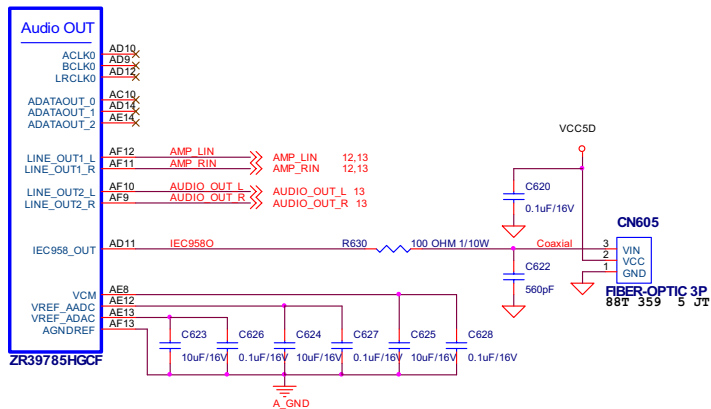
YPbPr2 Audio Input



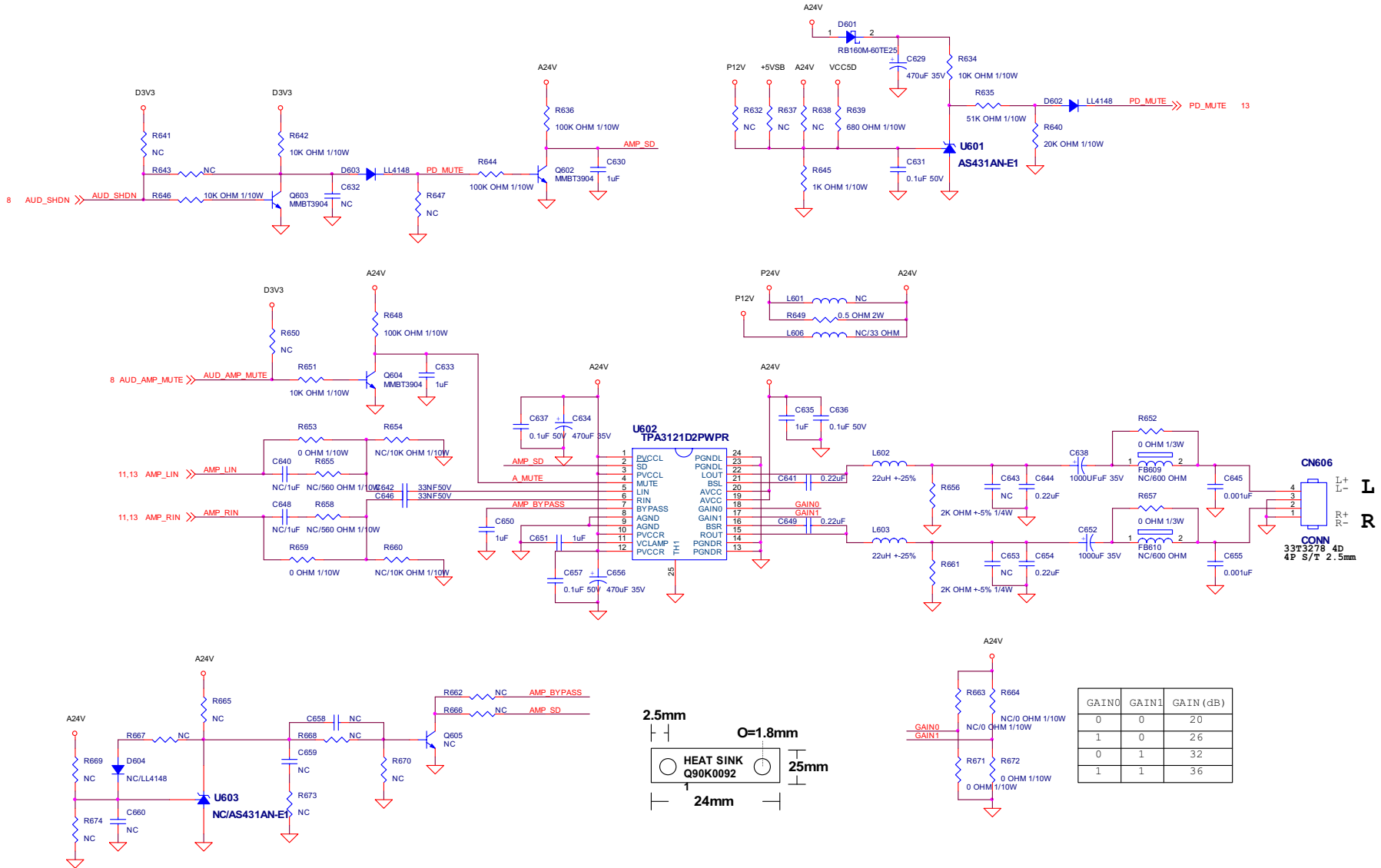
VGA Audio Input



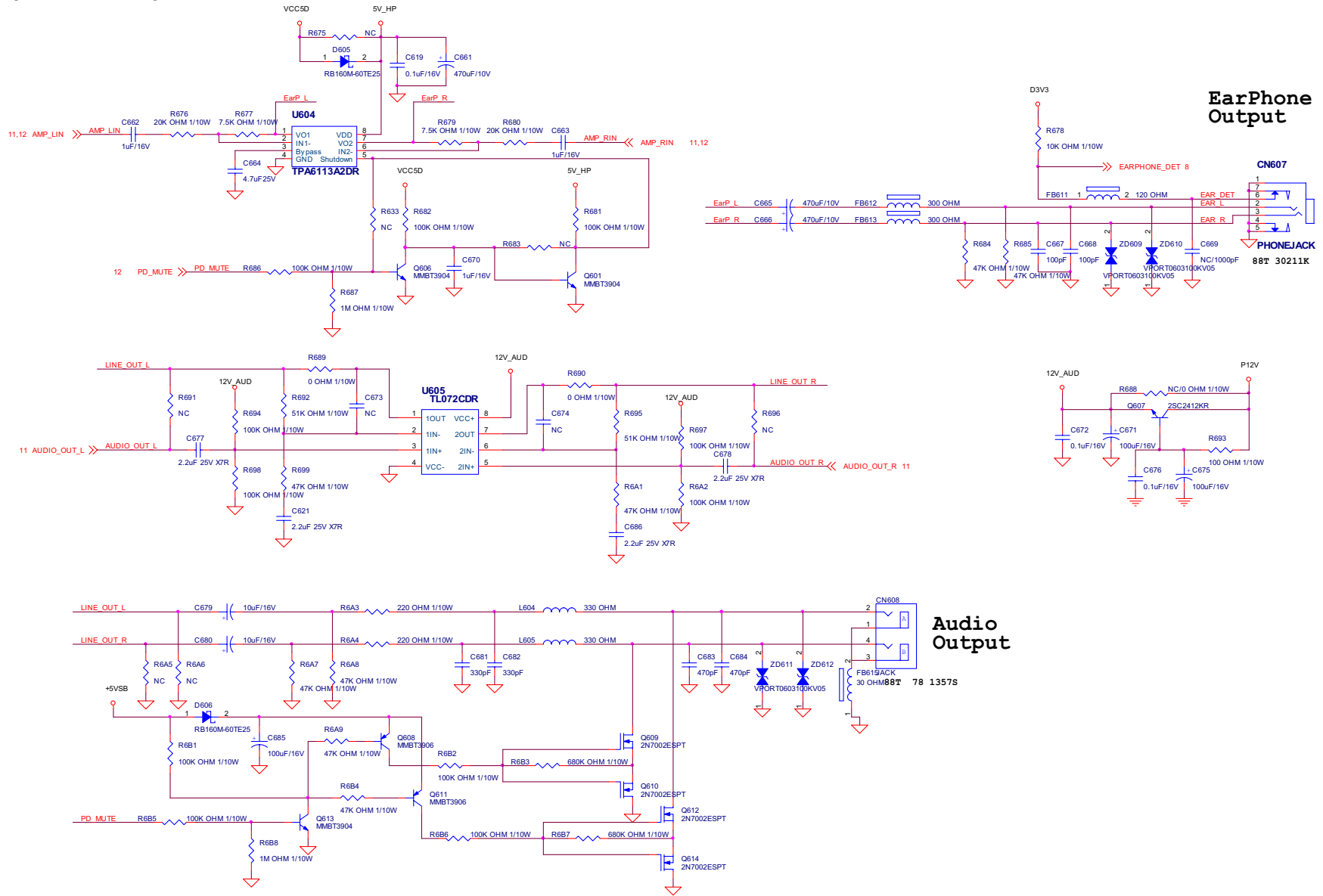
U401I



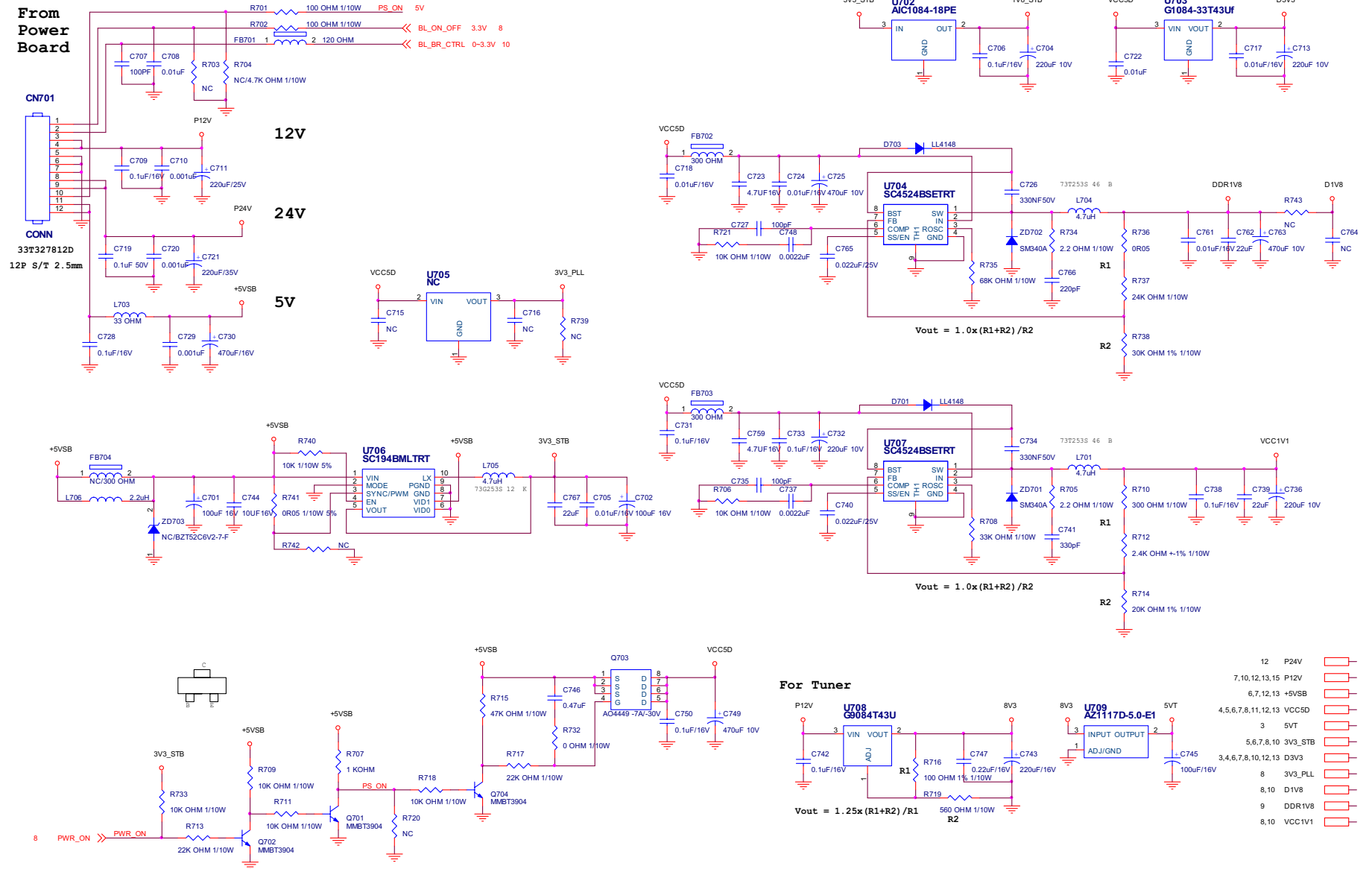
SPDIF Output



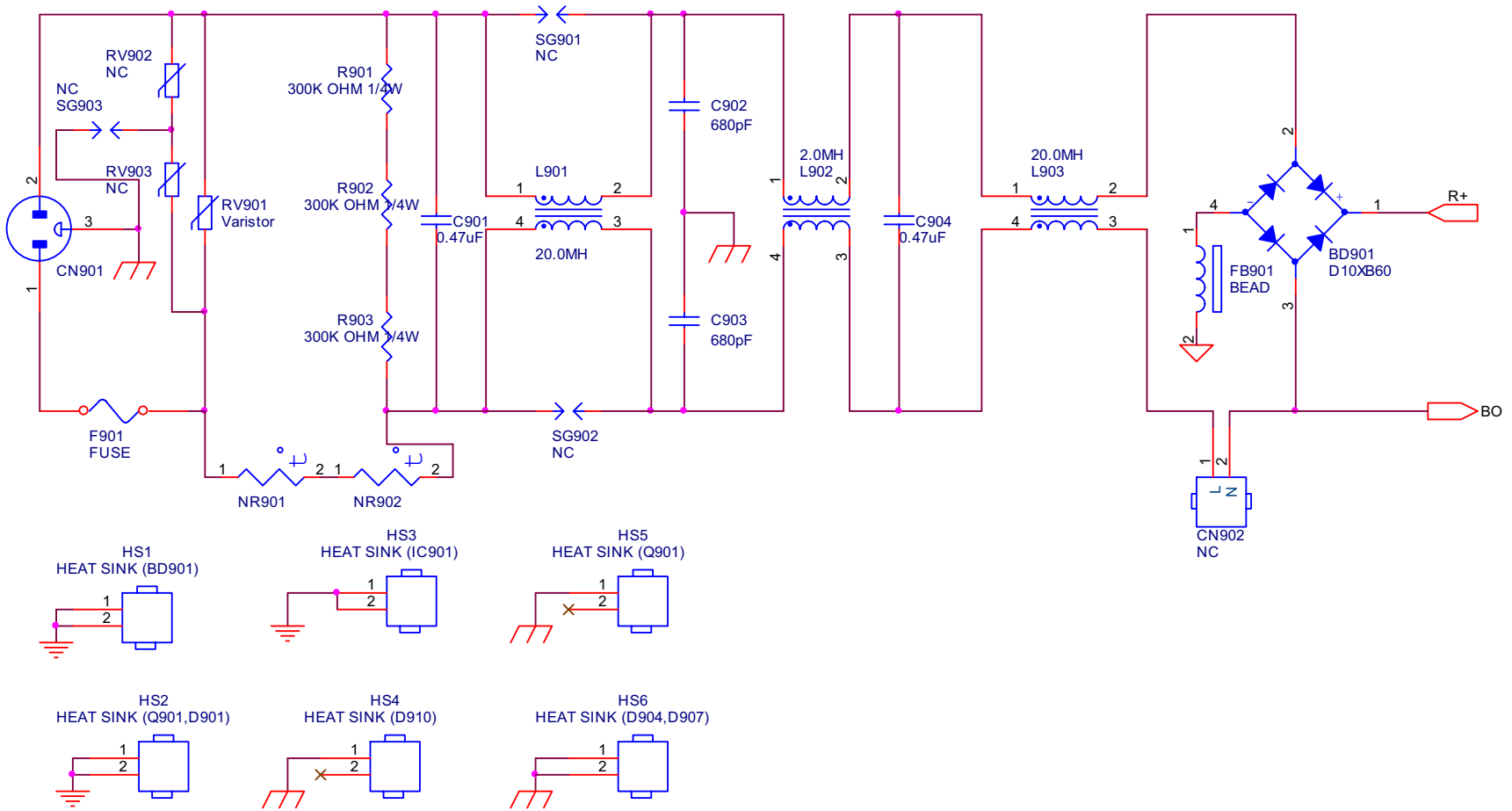
13) Earphone/AV Outputs

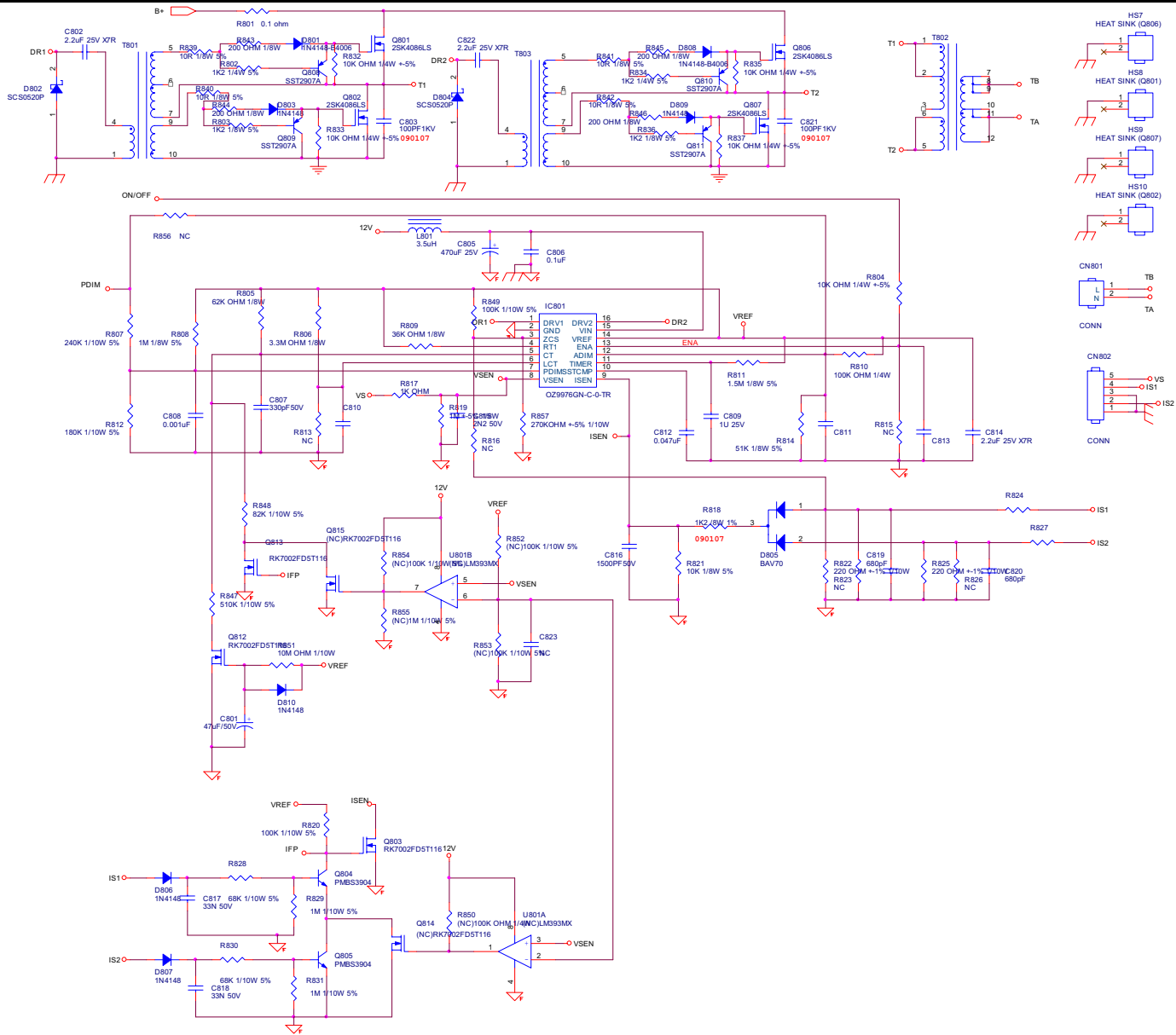


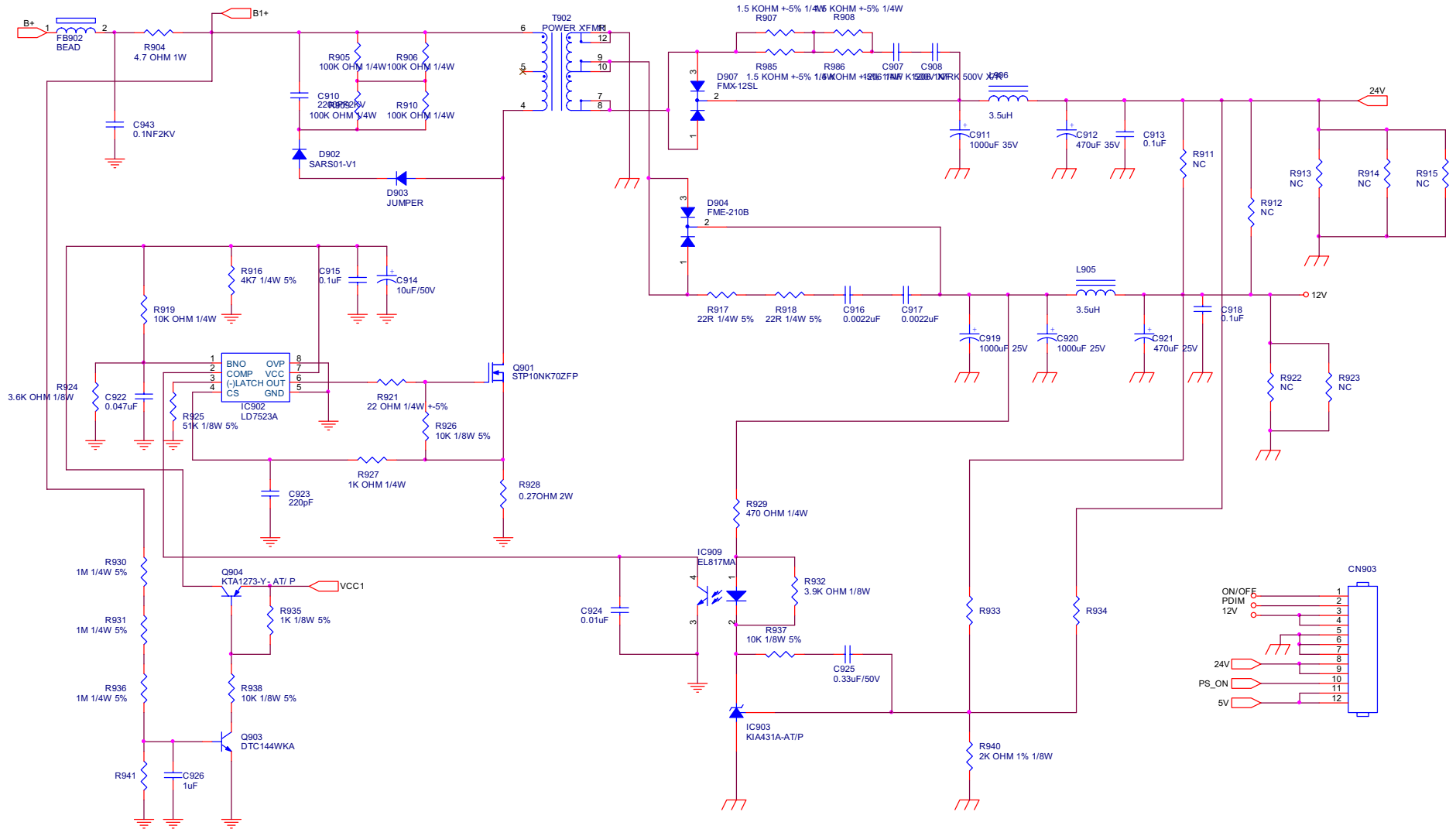
14) Power

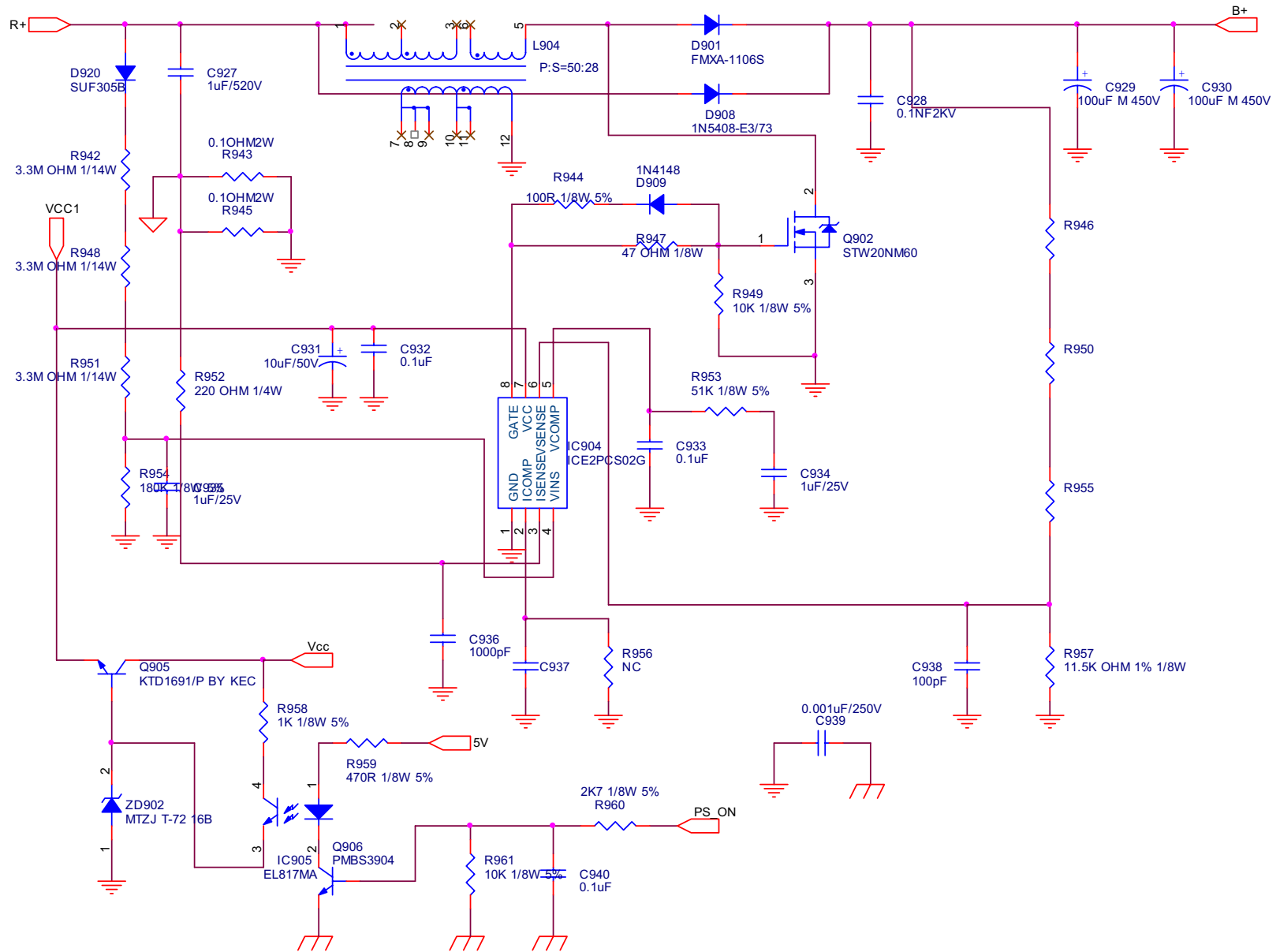


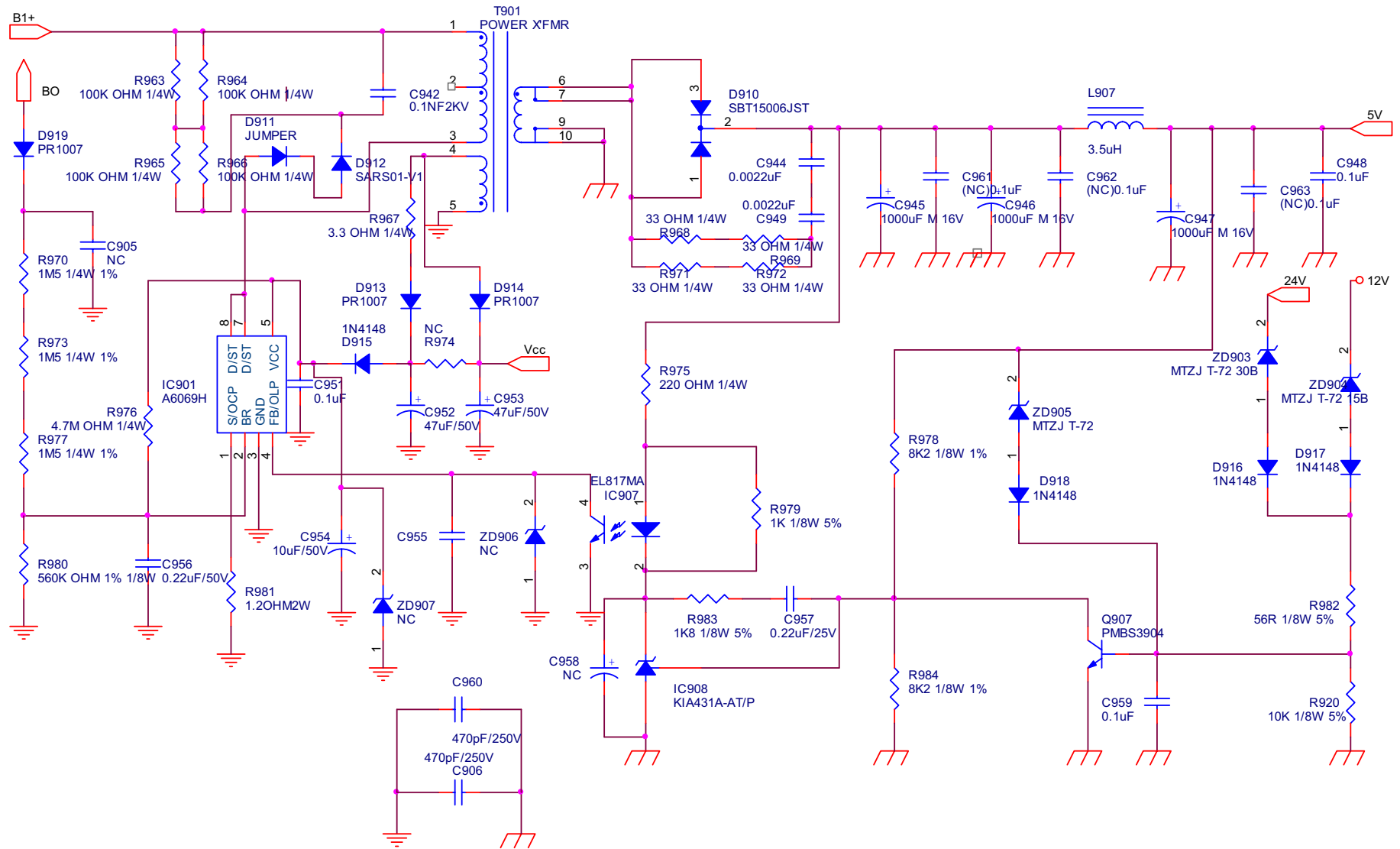
10.2 Power Board  
715G3351 1



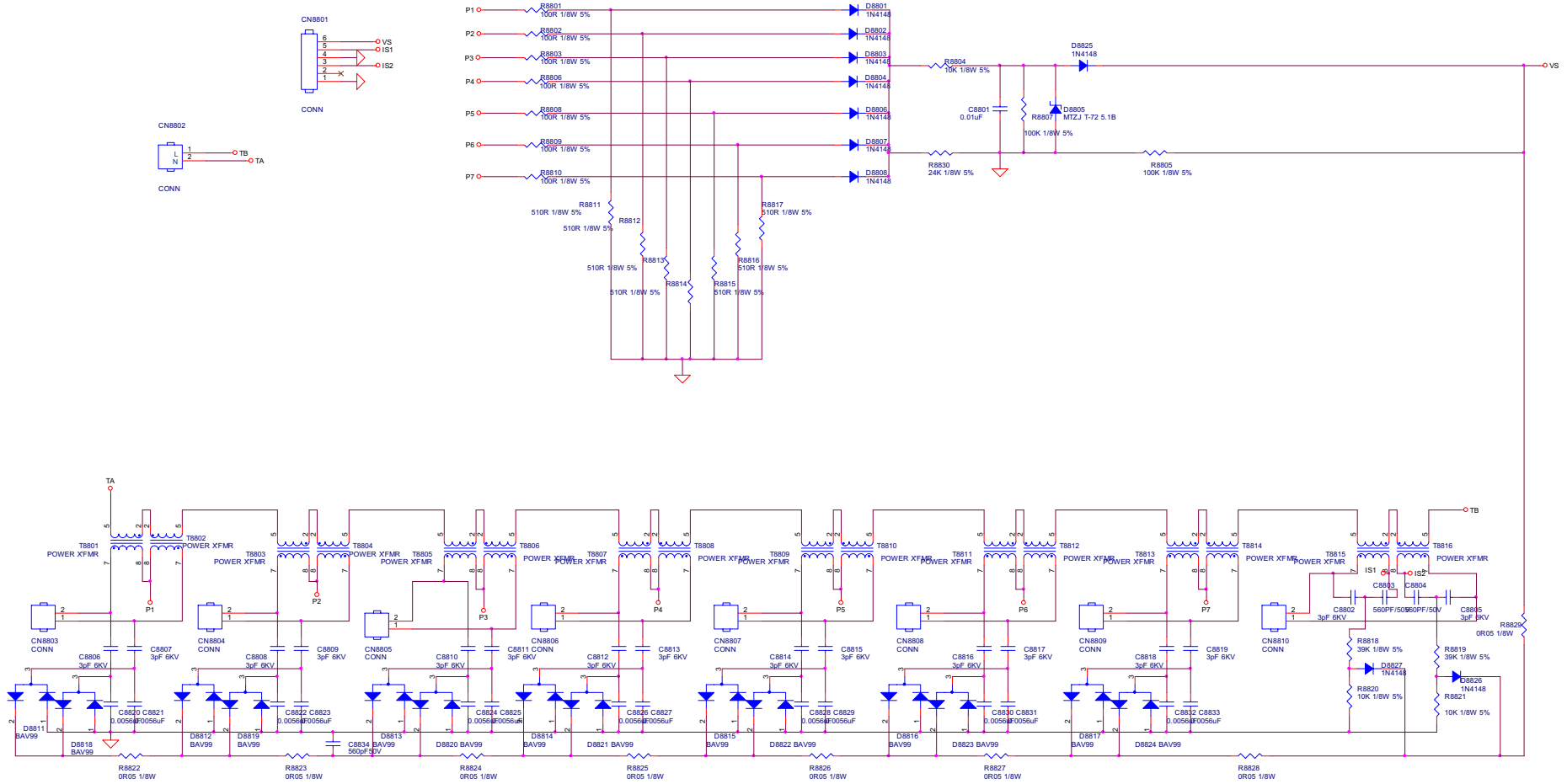




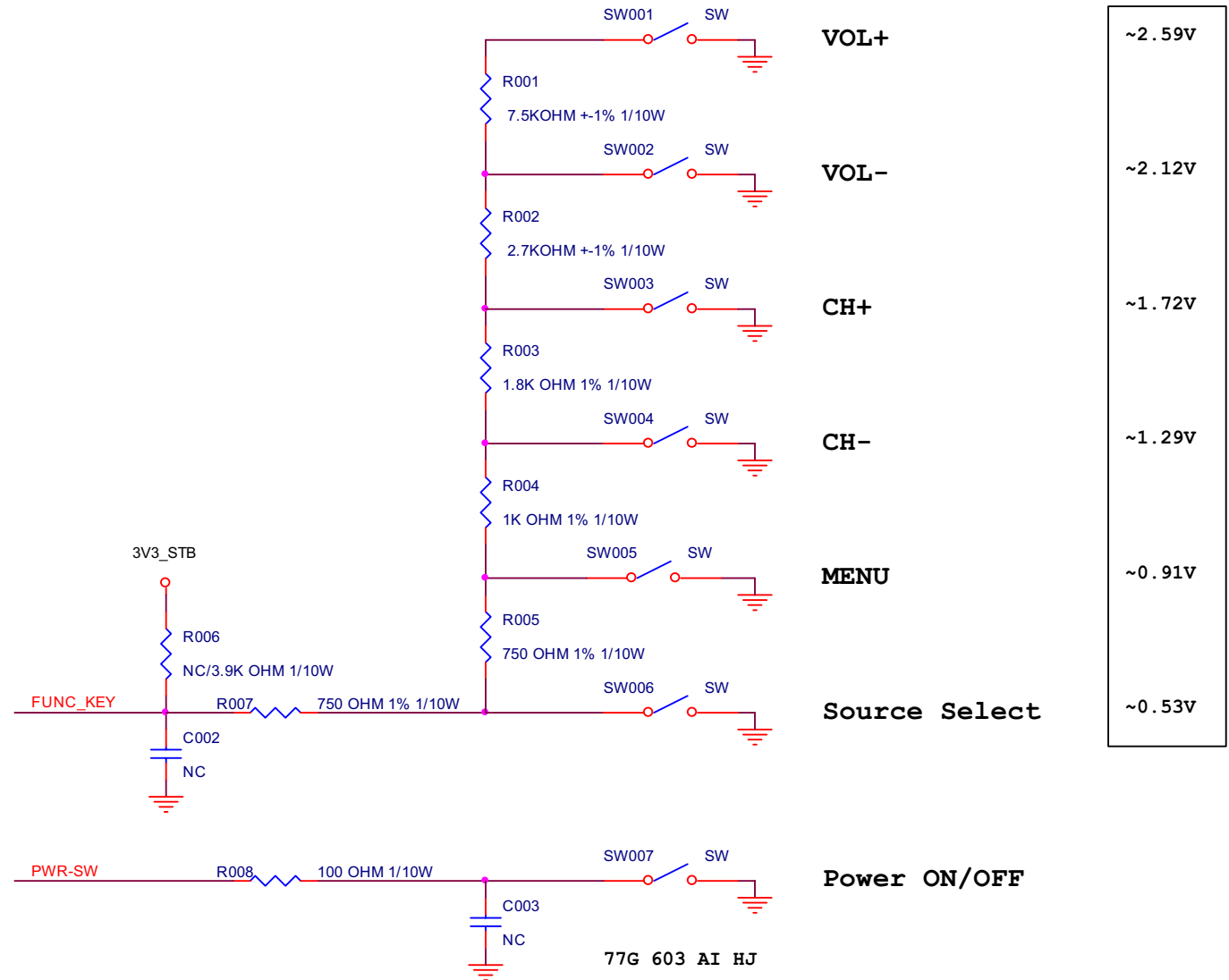
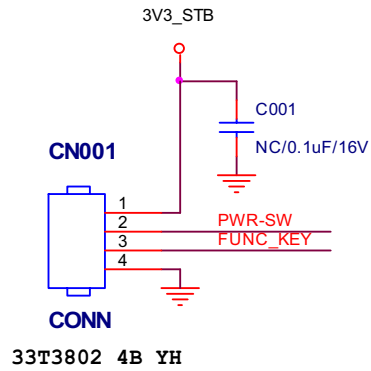




10.3 Inverter Board  
715G3358 1



10.4 Key Board  
715G3528K01000001M



10.5 IR Board  
715T3107 1

