



SERVICE MANUAL

Product Type: LCD TV
Chassis: KS Chassis
Manual Series:
Manual Part#: 9232KS7010
Model Line:
Product Year:

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Product Safety Servicing Guidelines

ATTENTION: This service manual is only for service personnel to take reference with. Before servicing please read the following points carefully.

CAUTION: Do not attempt to modify this product in any way.
Never perform customized installations without manufacturer's approval.
Unauthorized modifications will not only void the warranty, but may lead to property damage or user injury.

Service work should be performed only after you are thoroughly familiar with these safety checks and servicing guidelines.

GRAPHIC SYMBOLS



The exclamation point within an equilateral triangle is intended to alert the service personnel to important safety information in the service literature.



The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the service personnel to the presence of noninsulated "dangerous voltage" that may be of sufficient magnitude to constitute a risk of electric shock.

INSTRUCTIONS

Be sure to switch off the power supply before replacing or welding any components or inserting/plugging in connection wire. Anti static measures must be taken (throughout the entire production process!):

- Do not touch here and there by hand at will;
- Be sure to use anti static electric iron;
- It's necessary for the welder to wear anti static gloves.

Please refer to the part list before replacing components that have special safety requirements. Do not replace with different components with different specs and type at will.

LCD SERVICING PRECAUTIONS

- Screens are different from one model to another and therefore not interchangeable. Be sure to use the screen of the original model for replacement.
- The operation voltage of LCD screen is 700-825V. Be sure to take proper measures in protecting yourself and the machine when testing the system in the course of normal operation or right after the power is switched off. Please do not touch the circuit or the metal part of the module that is in operation mode. Relevant operation is possible only one minute after the power is switched off.
- Do not use any adapter that is not identical with the TV set. Otherwise it will cause fire or damage to the set.
- Never operate the set or do any installation work in bad environment such as wet bathroom, laundry, kitchen, or nearby fire source, heating equipment and devices or exposure to sunlight etc. Otherwise bad effect will result.
- If any foreign substance such as water, liquid, metal slices or other matters happens to fall into the module, be sure to cut the power off immediately and do not move anything on the module lest it should cause fire or electric shock due to contact with the high voltage or short circuit.

- Should there be smoke, abnormal smell or sound from the module, please shut the power off at once. Likewise, if the screen is not working after the power is on or in the course of operation, the power must be cut off immediately and no more operation is allowed under the same condition.
- Do not pull out or plug in the connection wire when the module is in operation or just after the power is off because in this case relatively high voltage still remains in the capacitor of the driving circuit. Please wait at least one minute before the pulling out or plugging in the connection wire.
- When operating or installing LCD please don't subject the LCD components to bending, twisting or extrusion, collision lest mishap should result.
- As most of the circuitry in LCD TV set is composed of CMOS integrated circuits, it's necessary to pay attention to anti statics. Before servicing LCD TV make sure to take anti static measure and ensure full grounding for all the parts that have to be grounded.
- There are lots of connection wires between parts behind the LCD screen. When servicing or moving the set please take care not to touch or scratch them. Once they are damaged the screen would be unable to work and no way to get it repaired.
- If the connection wires, connections or components fixed by the thermotropic glue need to disengage when service, please soak the thermotropic glue into the alcohol and then pull them out in case of damage.
- Special care must be taken in transporting or handling it. Exquisite shock vibration may lead to breakage of screen glass or damage to driving circuit. Therefore it must be packed in a strong case before the transportation or handling.
- For the storage make sure to put it in a place where the environment can be controlled so as to prevent the temperature and humidity from exceeding the limits as specified in the manual. For prolonged storage, it is necessary to house it in an anti-moisture bag and put them altogether in one place. The ambient conditions are tabulated as follows:

Temperature	Scope for operation	0 ~ +50 °C
	Scope for storage	-20 ~ +60 °C
Humidity	Scope for operation	20% ~ 85%
	Scope for storage	10% ~ 90%

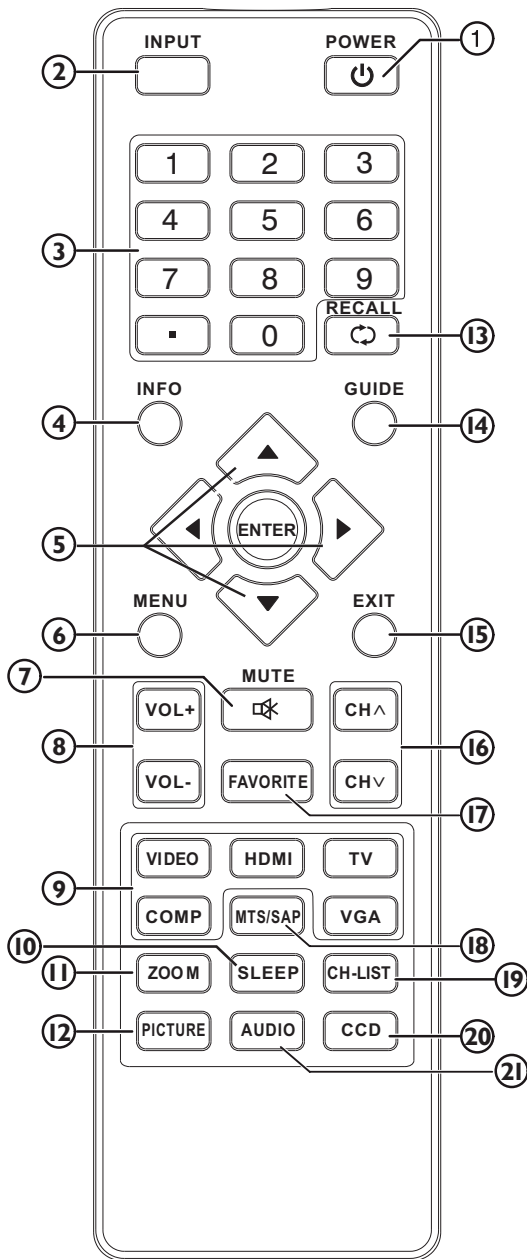
- Display of a fixed picture for a long time may result in appearance of picture residue on the screen, as commonly called "ghost shadow". The extent of the residual picture varies with the maker of LCD screen. This phenomenon doesn't represent failure. This "ghost shadow" may remain in the picture for a period of time (several minutes). But when operating it please avoid displaying still picture in high brightness for a long time.

Points for attention during installation

- The front panel of LCD screen is of glass. When installing it please make sure to put it in place.
- For service or installation it's necessary to use specified screw lest it should damage the screen.
- Be sure to take anti dust measures. Any foreign substance that happens to fall down between the screen and the glass will affect the receiving and viewing effect
- When dismantling or mounting the protective partition plate that is used for anti vibration and insulation please take care to keep it in intactness so as to avoid hidden trouble.
- Be sure to protect the cabinet from damage or scratch during service, dismantling or mounting.

Remote Control Unit

Remote control



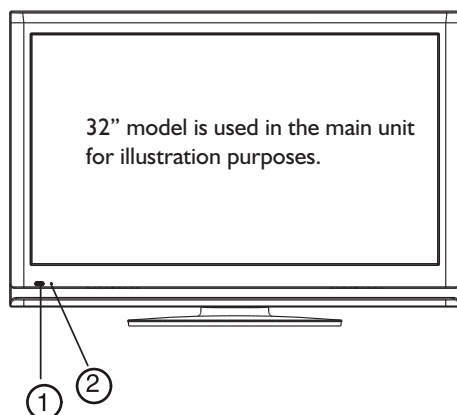
#	Button	Description
1	⏻ (Power)	Press to turn on your TV. Press again to put your TV in Standby mode.
2	INPUT	Press to open the INPUT SOURCE menu, then press ▲ or ▼ to select the video input source.
3	Numbers/Dot(.)	Press to enter channel numbers or the parental control password. Press the dot button to select a digital sub-channel.
4	INFO	Press to display the information banner.
5	▲ ▼ ► ◄ / ENTER	Press direction buttons to navigate in the on-screen menus. Press ENTER to confirm selections in an on-screen menu or to open a submenu.

#	Button	Description
6	MENU	Press to open the on-screen menu.
7	MUTE	Press to turn off the sound. Press again to turn on the sound.
8	VOL+/VOL-	Press to increase or decrease the volume.
9	VIDEO/HDMI/TV COMP/VGA	Press to select the input source. <ul style="list-style-type: none"> • Press VIDEO once to select AV1, twice to select AV2, three times to select S-Video 1, and four times to select S-Video 2. • Press HDMI once to select HDMI1, twice to select HDMI2, and three times to select HDMI3. • Press TV to select TV. • Press COMP once to select Component 1 or twice to select Component 2. • Press VGA to select VGA.
10	SLEEP	Press to set the sleep timer.
11	ZOOM	Press to select the aspect ratio.
12	PICTURE	Press to select the picture mode.
13	RECALL	Press to go to the last viewed channel.
14	GUIDE	Press to open the DTV program guide (if available).
15	EXIT	Press to close the on-screen menu.
16	CH^ /CHV	Press to go to the next or previous channel in the channel list.
17	FAVORITE	Press to display the favorite channel list.
18	MTS/SAP	Press to select the audio mode. For analog channels, you can select STEREO, SAP (secondary audio program), or MONO. For digital channels, you can select the audio track (if more than one track is available).
19	CH-LIST	Press to open the channel list.
20	CCD	Press to turn closed captioning on or off.
21	AUDIO	Press to select the sound mode.

Main Unit (Front View/Side View/Rear View)

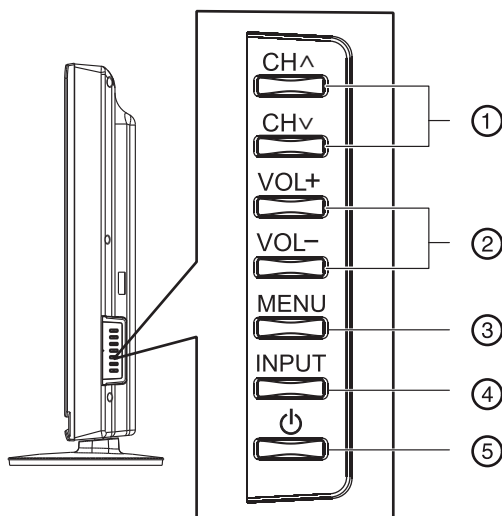
TV components

Front



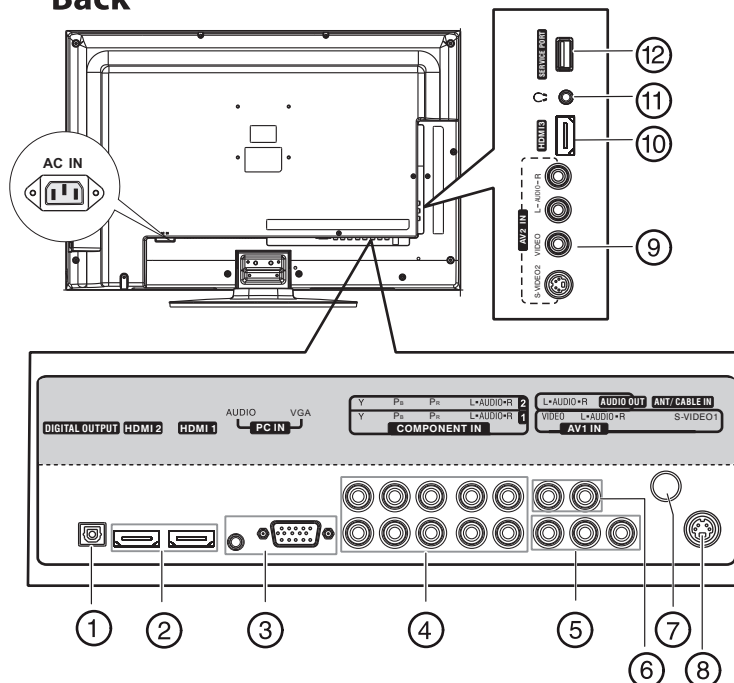
#	Component	Description
1	Remote sensor	Receives signals from the remote control. Do not block.
2	Power indicator	Lights blue when your TV is turned on. Lights red when your TV is in standby mode. No lights when power cord is unplugged.

Side



#	Component	Description
1	CH [^] / CH ^v	Press to go to the next or previous channel in the channel list.
2	VOL+ / VOL-	Press to increase or decrease the volume.
3	MENU	Press to open the on-screen menu.
4	INPUT	Press to select the video input source.
5	⏻ (Power) button	Press to turn on your TV. Press again to put your TV in standby mode.

Back



#	Component	Description
1	DIGITAL OUTPUT jack	Connect this jack to a digital sound system to play your TV's audio through the sound system.
2	HDMI2/HDMI1 jacks	Connect an HDMI device, such as a cable box or DVD player, to these jacks. An HDMI cable carries both video and audio, so you do not need to make an audio connection.
3	PC IN VGA/AUDIO jacks	Connect a computer to these jacks. For more information, see "Connecting a computer" on page 10.
4	COMPONENT IN 1 / COMPONENT IN 2 jacks	Connect a component video device to these jacks. The top row of jacks is COMPONENT 2, and the bottom row of jacks is COMPONENT 1.
5	AVI IN jack	Connect an AV device (video and audio) to these jacks. Match the color of the connectors to the color of the jacks (yellow for video, red for audio right, and white for audio left).
6	AUDIO OUT jack	Connect an audio amplifier to these jacks.
7	ANT/CABLE IN jack	Connect an antenna, cable TV, or a satellite box to this jack.
8	S-VIDEO I IN jack	Connect an S-Video device to this jack, then connect an audio cable to the AV1 IN AUDIO-L and AUDIO-R jacks.
9	AV2/S-VIDEO2 IN jack	Connect an AV or S-Video device to these jacks, then connect audio cables to the audio jacks.
10	HDMI3 jack	Connect an HDMI device, such as a cable box or DVD player, to this jack.
11	Headphone jack	Plug headphones into this jack.
12	SERVICE PORT	For software update only. Do not use.

SPECIFICATIONS

Type:		LCD TV
Panel:		32" (DX-32LI50AII) TFT LCD
TV system:		NTSC-M, ATSC
Receiving Channel:		VHF 2-13, UHF 14-69, CATV I-125, CADTV I-135, DTV 2-69
Audio multiplex:		BTSC System
Audio out:		8W × 2
Power Requirement:		AC 120 V, 60 Hz
Power Consumption:		98 W
Dimensions (W x H x D, with stand):		776 × 546 × 210 mm
Weight:		10.5 kg
Terminals:		
IN	Composite Video/Audio(L/R):	2
	S-Video:	2
	Component Video/Audio(L/R):	2
	HDMI interface:	3
	VGA/Audio:	1
	Antenna:	1
OUT	Audio(L/R):	1
	Digital output:	1
	Headphone jack:	1
CONTROL	Service Port:	1

Note:

1. Design and specifications are subject to change without notice.
2. Weight and dimensions shown are approximate.
3. Specifications and external appearance may be changed for the sake of improvement.

ALIGNMENT INSTRUCTIONS

1. Test equipment

VG848 (YPbPr, VGA signal generator)

VG849 (HDMI signal generator)

CA210 (color analyzer)

2. Alignment procedure

2.1 Connect all the boards according to wiring diagram. Connect the power supply and press "standby" to turn on the TV.

2.1.1 For 32" /37" /42"/46" model

a) In turn measure X508 all pins voltage on Power Board, the value is shown below (Table 1):

Table 1 X508 all pin voltage

Pin	1	2	3	4, 5	6, 7	8	9	10	11	12	13
Min.(V)	4.85	3.25	0	11.3	0	0	4.85	0	4.85	0	2.85
Typical(V)	5.00	3.30	0	12.0	0	0	5.00	0	5.00	0	3.00
Max.(V)	5.35	3.30	0	12.6	0	0	5.35	0	5.35	0	3.15

b) In turn measure X505 all pins voltage on Power Board, the value is shown below (Table 2):

Table 2 X505 all pin voltage

Pin	1, 2	3, 4, 5
Min.(V)	23.8	0
Typical(V)	24.0	0
Max.(V)	25.2	0

c) In turn measure X503 all pins voltage on Power Board, the value is shown below (Table 3):

Table 3 X503 all pin voltage

Pin	1~5	6~10	11	12
Min.(V)	23.8	0	3.25	4.85
Typical(V)	24.0	0	3.30	5.0
Max.(V)	25.2	0	3.30	5.35

2.1.2 For 26" model

a) In turn measure X505 all pins voltage on Power Board, the value is shown below (Table 4):

Table 4 X505 all pin voltage

Pin	1	2	3	4, 5	6, 7	8	9	10	11	12	13
Min. (V)	4.85	3.25	0	11.3	0	0	4.85	0	4.85	0	2.85
Typical(V)	5.00	3.30	0	12.0	0	0	5.00	0	5.00	0	3.00
Max. (V)	5.35	3.30	0	12.6	0	0	5.35	0	5.35	0	3.15

b) In turn measure X503 all pin voltage on the Power Board, the value is shown below (Table 5):

Table 5 X503 all pin voltage

Pin	1, 2	3, 4, 5
Min. (V)	21.6	0
Typical (V)	24.0	0
Max. (V)	26.4	0

c) In turn measure X502 all pin voltage in Main Board, the value is shown below (Table 6):

Table 6 X502 all pin voltage

Pin	1~5	6~10	11	12
Min.(V)	21.6	0	3.25	4.85
Typical(V)	24.0	0	3.40	5.0
Max.(V)	26.4	0	3.60	5.35

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2.2 Alignment flow-chart

The alignment flow-chart is shown below (Fig. 1) :

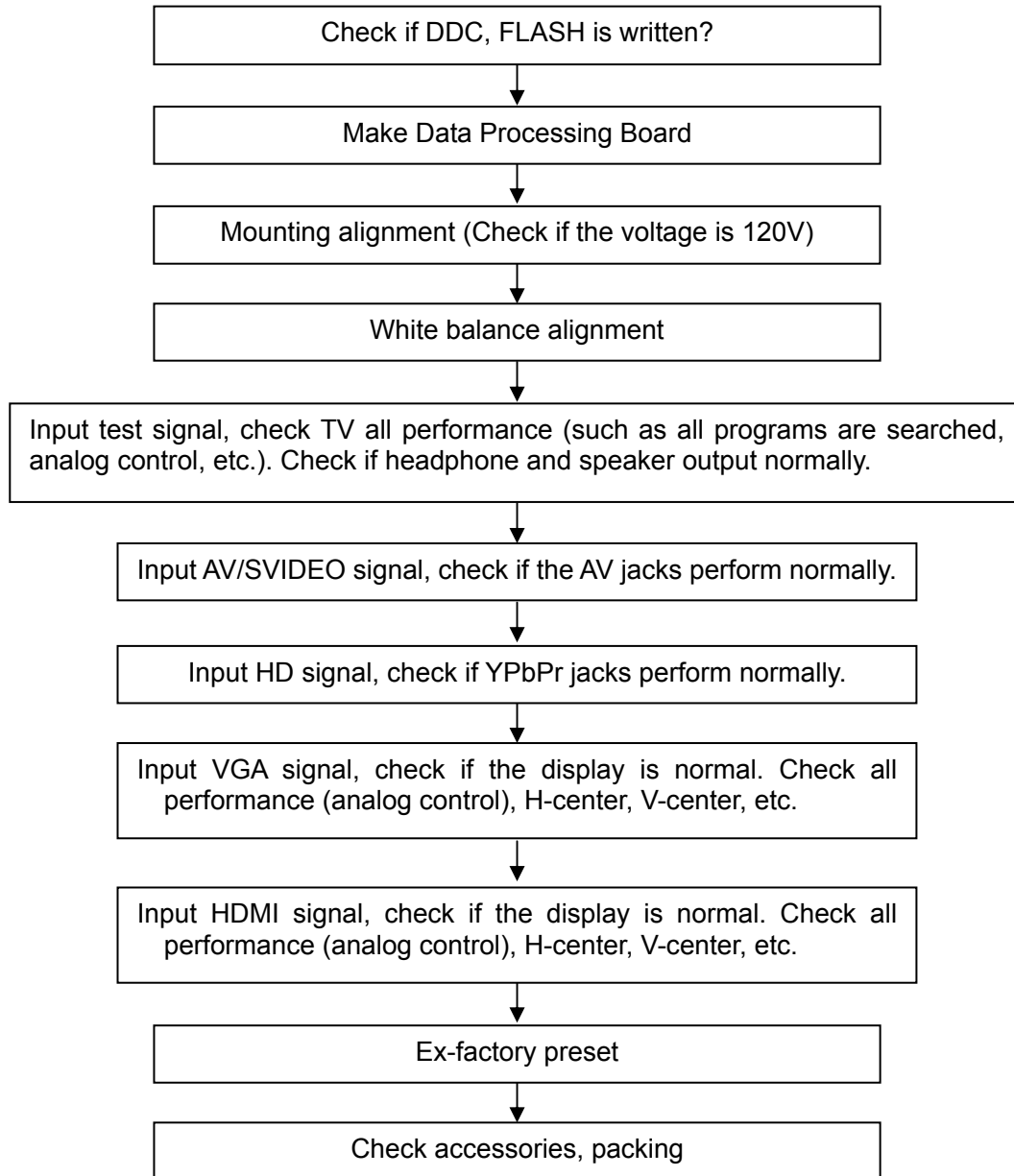


Fig.1 Alignment flow-chart

3. Alignment instructions

3.1 The whole unit alignment

3.1.1 According to the wiring diagram, connect Data Process Board, Power Board, Key board, IR Board. Connect AC 120V power and turn on the TV, check if the display is normal.

3.1.2 The way to use Factory Menu

- Press INPUT button, then in turn press “2”, “5”, “8”, “0” to enter the Factory Menu.
- Press CH+ or CH- to select items, then press OK to enter.
- Press CH+ or CH- to move the highlight up or down.
- Press VOL- or VOL+ to adjust the selected item.
- Press MENU to return to the previous menu.
- Press EXIT to close the Factory Menu.

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- g) After closing the Factory menu, you can press SLEEP to enter the Factory Menu directly if power is still on.
- h) In Factory Menu, select "On" for "Aging Mode" to turn on aging mode. Press any button on the unit to exit.
- i) "Power on mode" item of "Otherseting" has three options: "On" means power on directly; "Off" means the unit will be in "standby" state when connect the power supply, and needed to press "power" button to turn on; "Memory" means the unit will in the last power-off state after power-on.

3.2 White balance adjustment

3.2.1 Preparations

Before white balance adjustment, let the TV work for more than 30 minutes and be in stable status. Use Color Analyzer CA210 BBY channel for alignment. Only align NORMAL color temperature. To ensure both COOL and WARM color temperature to be able to meet the requirements, please make sure bright step color temperature to be $\Delta X \leq \pm 5, \Delta Y \leq \pm 5$, dark step color temperature to be $\Delta X \leq \pm 5, \Delta Y \leq \pm 5$. Below table shows the color temperature for all models:

Table 7 Color temperature for all models

Model	Cool	Normal	Warm
26"/32"/37"/42"/46"	12000K (272,278)	9300K (285,293)	6500K (313,329)

Below white balance adjustment takes 42" model as an example. For other models, use the above data as a reference for alignment.

3.2.2 White balance data alignment at four modes

a) Alignment at ATV mode (AV and S-VIDEO is the same)

In TV mode, set Air/Cable to Air. Input test signal with 11 gray steps. From Factory menu select "Color Temp" item and set "Color Mode" to "NORMAL", fix GAIN GREEN, adjust GAIN RED and GAIN BLUE to make 9th step color coordinate to be (285, 293). Fix OFFSET GREEN, adjust OFFSET RED and OFFSET BLUE to make the third step color coordinate to be (285,293). In this way repeatedly adjust GAIN RED, GAIN BLUE and OFFSET RED, OFFSET BLUE until two level gray step's color coordinate be (285,293). Then select "MENU" to return to previous menu or select "SAVE TO EEPROM" to save the white balance.

Check if COOL and WARM color temperature meet the requirement. If not, then adjust GAIN RED, GAIN BLUE, OFFSET RED, OFFSET BLUE to make them meet requirements, and then save.

b) Alignment at DTV mode (HDMI is the same)

In TV mode, set Air/Cable to Air. Input test signal with 11 gray steps. From Factory menu select "Color Temp" item and set "Color Mode" to "NORMAL", fix GAIN GREEN, adjust GAIN RED and GAIN BLUE to make 9th step color coordinate to be (285, 293). Fix OFFSET GREEN, adjust OFFSET RED and OFFSET BLUE to make the third step color coordinate to be (285,293). In this way repeatedly adjust GAIN RED, GAIN BLUE and OFFSET RED, OFFSET BLUE until two level gray step's color coordinate be (285,293). Then select "MENU" to return to previous menu or select "SAVE TO EEPROM" to save the white balance.

Check if COOL and WARM color temperature meet the requirement. If not, then adjust GAIN RED, GAIN BLUE, OFFSET RED, OFFSET BLUE to make them meet requirements, and then save.

ALIGNMENT INSTRUCTIONS

c) Alignment at YPbPr mode

First perform ADC calibration: input 75% color bar plus gray step signal in 480i/60Hz format, (VG848 Timing is 968, PAT is 918), enter Factory Menu select ADC Setting, do ADC AUTO adjustment once.

White balance adjustment: From VG848 equipment input 8 gray steps signal in 1920 x 1080i /60Hz format. Enter Factory Menu select "Color Temp", first set "Color Mode" to NORMAL, fix GAIN GREEN, adjust GAIN RED and GAIN BLUE to make the 7th color coordinate be (285, 293). Fix OFFSET GREEN, adjust OFFSET RED and OFFSET BLUE to make the second step color coordinate be (285, 293). In this way repeatedly adjust GAIN RED, GAIN BLUE and OFFSET RED, OFFSET BLUE until two level gray step color coordinate be (285, 293). Then select "MENU" to return to previous menu or select "SAVE TO EEPROM" to save the white balance.

Check if COOL and WARM color temperature meet the requirement. If not, then adjust GAIN RED, GAIN BLUE, OFFSET RED, OFFSET BLUE to make them meet requirements, and then save.

d) Alignment at VGA mode

First do ADC calibration: input VESA crosshatch signal in 800 x 600 / 60Hz format (VG848 Timing is 854, PAT is 914), check if the picture is displayed wholly. If not, perform AUTO adjustment by making use of VGA Setting sub-menu from SETUP menu (User menu) so that the picture is displayed wholly. Then enter Factory Menu select ADC Setting, do ADC AUTO adjustment once to calibrate ADC.

White balance adjustment: From VG848 equipment input 8 gray steps signal in 800 x 600 /60Hz format. Enter Factory Menu select "Color Temp", first set "Color Mode" to NORMAL, fix GAIN GREEN, adjust GAIN RED and GAIN BLUE to make the 7th color coordinate be (285, 293). Fix OFFSET GREEN, adjust OFFSET RED and OFFSET BLUE to make the second step color coordinate be (285, 293). In this way repeatedly adjust GAIN RED, GAIN BLUE and OFFSET RED, OFFSET BLUE until two level gray step color coordinate be (285, 293). Then select "MENU" to return to previous menu or select "SAVE TO EEPROM" to save the white balance.

Check if COOL and WARM color temperature meet the requirement. If not, then adjust GAIN RED, GAIN BLUE, OFFSET RED, OFFSET BLUE to make them meet requirements, and then save.

4. Performance check

4.1 TV performance

Input RF signal, first enter into CHANNEL menu, then perform Auto Scan to check if all programs can be found, the speaker output normally, picture is displayed normally. Pay special attention that both NTSC and ATSC signals are found.

4.2 Checking AV/S-Video jacks

Respectively input signal from AV/S-VIDEO jacks, check if the picture and sound are normal.

4.3 Checking YPbPr/YCbCr jacks

Input YUV signal (from VG848 signal generator), respectively input all formats of YUV signal which is shown at below (Table 8) to check if the display and sound are normal.

Table 8 YUV signal formats

#	Resolution	H-freq. (kHz)	V-freq. (Hz)	Dot-Clk Freq. (MHz)	Remarks
1	720×480i@59.94/60 Hz	15.734	59.94/60	13.5	480i(59.94/60p)
2	720×480p@59.94/60 Hz	31.469	59.94/60	27.00	480p(59.94/60p)
3	1280×720p@59.94/60 Hz	44.96	59.94	74.18	720p(59.94/60p)

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4	1920×1080i@59.94/60 Hz	33.75	59.94	74.25	1080i(59.94/60i)
5	1920×1080p@23.98/24 Hz	27.00	23.98/24	74.25	1080p(23.98/24p)
6	1920×1080p@59.94/60 Hz	67.50	60.00	148.50	1080p(59.94/60p)

4.4 Checking VGA jack

Input VGA signal (VG848 signal generator), respectively input all formats of VGA signal which is shown below (Table 9). Check if the display and sound are normal. If the picture has deflection in size and position, then enter into user menu of Setup, from VGA Setting sub-menu perform AUTO adjustment to correct the picture automatically.

Table 9 VGA signal formats

#	Resolution	H-fre. (kHz)	V-fre. (Hz)	Dot-CLK freq. (MHz)	Remarks
1	720×400@70 Hz	31.47	70.08	28.32	DOS
2	640×480@60 Hz	31.50	60.00	25.18	VESA
3	800×600@60 Hz	37.90	60.00	40.00	VESA
4	1024×768@60 Hz	48.40	60.00	65.00	VESA
5	1280×1024@60 Hz	63.98	60.02	108.00	Only for 37"/42"/46" model
6	1360×768@60 Hz	47.71	60.01	85.50	Only for 26" and 32" model
7	1920×1080@60 Hz	67.16	59.96	173.00	Only for 37"/42"/46" model

4.5 Checking HDMI jack

Input HDMI signal (VG849 signal generator), respectively input all formats of signal shown at Table 8. Check if the display and sound are normal.

5 User menu preset

Enter into Factory menu, select and do Other Setting→SHIPMENT item, then the TV will automatically preset the user menu to default. After alignment this User Menu Preset procedure must be done. SHIPMENT will do the following :

- 1) Clear all program information
- 2) Clear V-CHIP information
- 3) Analog value default setting for all sources
- 4) Power on mode set to Off
- 5) Active Setup Wizard menu

Note: after the Preset procedure is complete, it must exit the menu, power off at Standby state and then disconnect the power supply.

6. Software writing instructions are shown at below (Table 10)

Table 10 Software writing instructions

#	Part No.	Model	Software function	Method	Remarks
NS04	5272532005	MX25L3205DM2C-12G	Main software	Write with instrument like ALL11. Write-protection is needed.(See below note)	For all models
NS03	5272404002	AT24C04IV-10SU-2.7	HDCP KEY	Write with instrument like ALL11	For all models
NB01	5272402002	AT24C02BN10SU-1.8	VGA EDID	Write with instrument like ALL11	For all models
NA05	5272402002	AT24C02BN10SU-1.8	HDMI1 EDID	Write with instrument like ALL11	Only for 32"/37"/42"/46" models

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NA04	5272402002	AT24C02BN10SU-1.8	HDMI2 EDID	Write with instrument like ALL11	Only for 32"/37"/42"/46" models
NA07	5272402002	AT24C02BN10SU-1.8	HDMI3 EDID	Write with instrument like ALL11	
NA04	5272402002	AT24C02BN10SU-1.8	HDMI1 EDID	Write with instrument like ALL11	Only for 26" model
NA07	5272402002	AT24C02BN10SU-1.8	HDMI2 EDID	Write with instrument like ALL11	

Note:

To set write protection, the method is : enter into ALL-100 writing program AUTO interface, select Config item (it must be selected when writing). In AUTO interface, click Config Setting, set Protect to All Protect, SRWD to Enable. Pay attention that every time when ALL-100 writing program is reopened, write-protection must be set again.

7. EEPROM initialization (not be used unless needed)

The method is: press IR POWER/KEYPAD POWER to turn on the TV, before showing LOGO press INPUT SOURCE incessantly until the indicator lights red, then in turn press MENU, VOL+, CH+ (the interval between two press is below 2 seconds), the indicator light will turn blue, after a while the unit will be in STANDBY, that means RESET EEPROM succeeds. If error key order or key number or the interval is over 2 seconds, the unit will keep on the previous setting and perform the order, then EEPROM will not be cleared

Software Update Instructions

This series' TV chassis provides two software upgrade ports, one is SERVICE PORT, the other is RS232 jack. To use SERVICE PORT, only a USB device is required and the speed is faster, so it is recommended to use the SERVICE PORT. To use RS232 jack, the speed is slower, and more devices are required such as a PC, a set of fixture for upgrade and upgrade software. It is recommended that only SERVICE PORT fails in upgrade, then use RS232 jack.

A. Making use of SERVICE PORT for upgrade

Copy file with extension name of BIN (*.BIN) for upgrade to the USB device, save it at root catalog. To upgrade different TV model, the adopted files are different. It is required to correctly name the *.BIN files, and below table lists the TV models and file names for your reference.

Model	Panel type	Part No.	Software name
DX-19L150A11	CPT	9219KS7001	LC19KS70CPT.BIN
DX-22L150A11	CPT	9222KS7001	LC22KS70CPT.BIN
DX-24L150A11	CMO	9224KS7001	LC24KS70CMO.BIN
DX-26L150A11	AUO	9226KS7001	LC26KS70AUO.BIN
DX-32L150A11	AUO	9232KS7001	LC32KS70AUO.BIN
DX-37L150A11	AUO	9237KS7001	LC37KS70AUO.BIN
DX-40L130A11	SHARP	9240KS7001	LC40KS70SHARP.BIN
DX-46L150A11	AUO	9246KS7001	LC46KS70AUO.BIN

Method 1:

1. Disconnect the AC power, insert USB device into the SERVICE PORT.
2. Reconnect the power, the TV will automatically upgrade the software. It will take some minutes. During the process, the power indicator will flicker in red and blue. After completion, the TV will auto power on and the power indicator lights blue. If the process takes more than 5 minutes, that means the upgrade fails. Please check the BIN format file and USB device again.
3. When upgrade completed, remove the USB device, disconnect the AC power and then reconnect the power. The SERVICE PORT upgrade is finished completely.

Method 2:

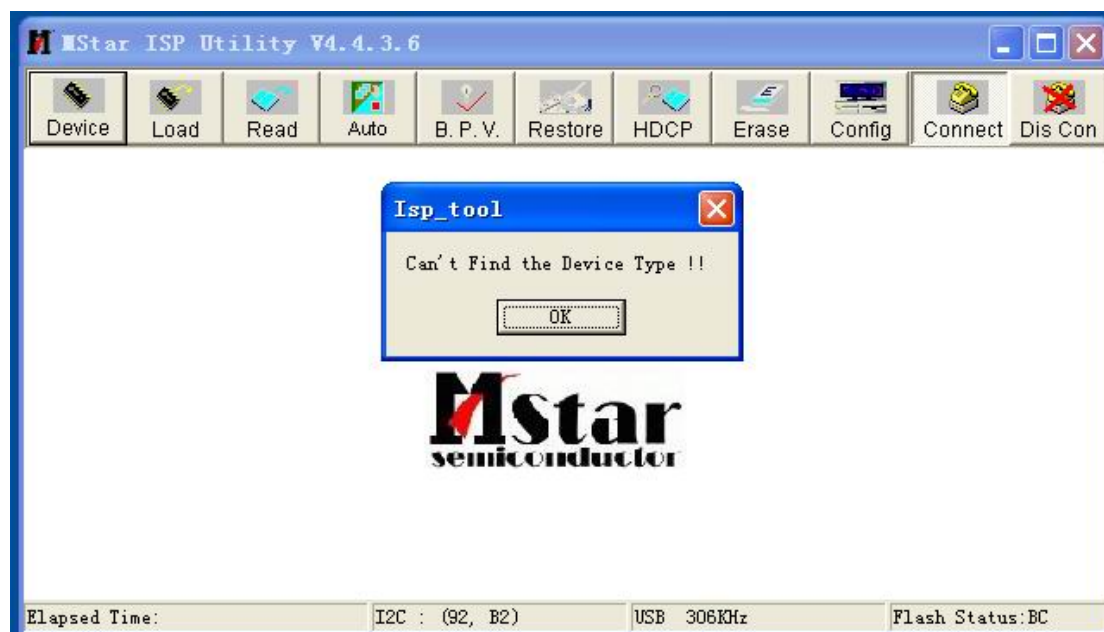
1. Connect the power. Insert the USB device into the SERVICE PORT.
2. Enter into Factory menu, access SW Upgrade option. The TV will automatically scan the USB device and files in BIN format. If USB device is normal and BIN file is correct, the TV will upgrade by itself. If fails, then check BIN file and USB device again.
3. When upgrade completed, remove the USB device, disconnect the AC power and then reconnect the power. The SERVICE PORT upgrade is finished completely.

Software Update Instructions

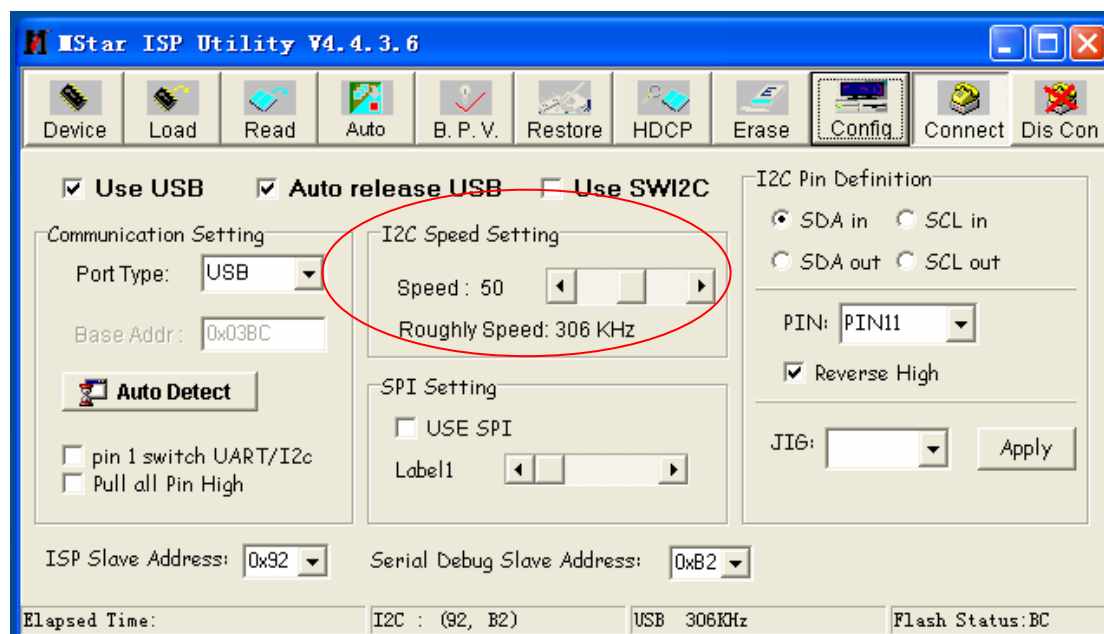
B. Making use of RS232 for upgrade

Tips: A PC and the upgrade fixture designed for this KS# chassis are required. Use Mstar on-line writing tool – Mstar ISP Utility, the needed time is longer.

1. Power on the TV, connect the upgrade fixture correctly, open the upgrade software, click “Connect” icon. If the connection fails, the following screen will appear.

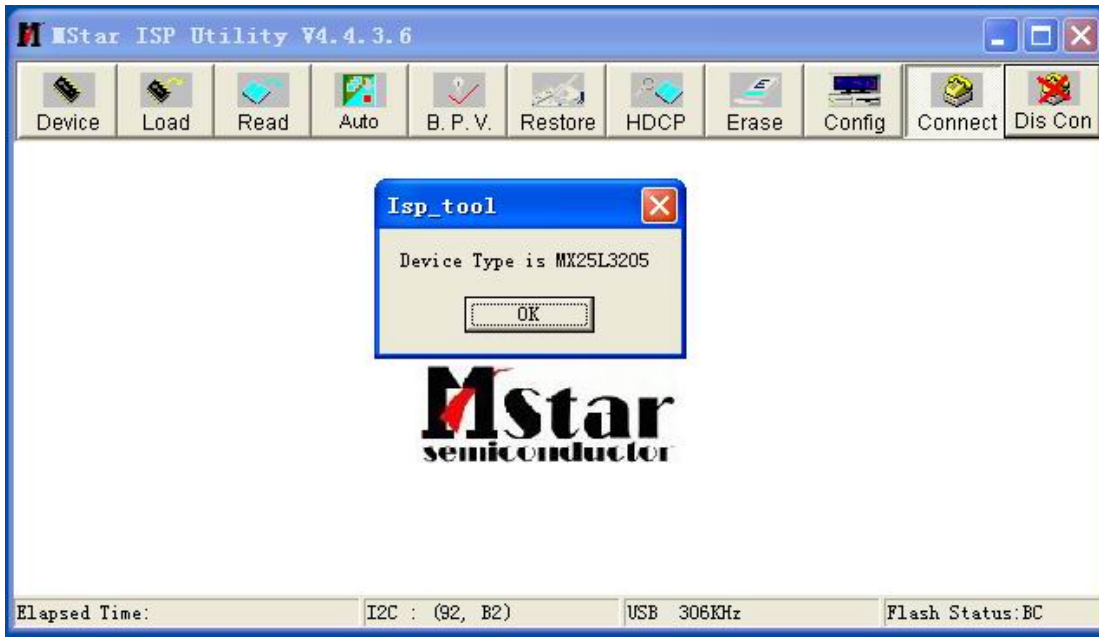


2. Click “Config” icon (see below figure). Adjust “ I2C Speed Setting” option, lower the setting of “Speed”. Then click “Connect” icon again.

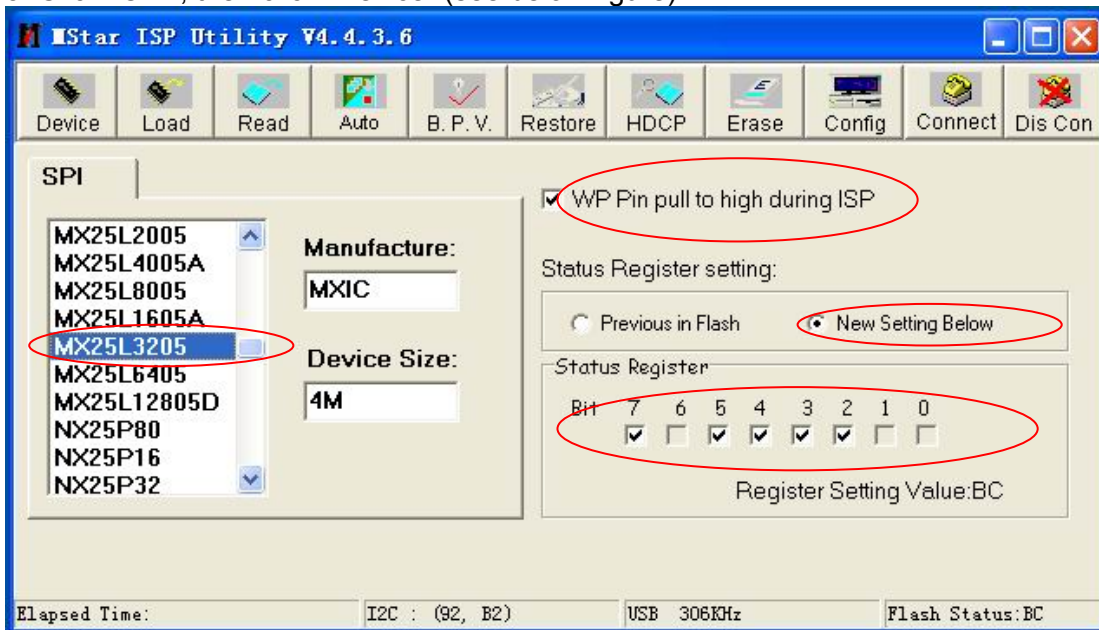


Wait until right connection information appears which is shown below.

Software Update Instructions



3. Click "OK", then click "Device" (see below figure).



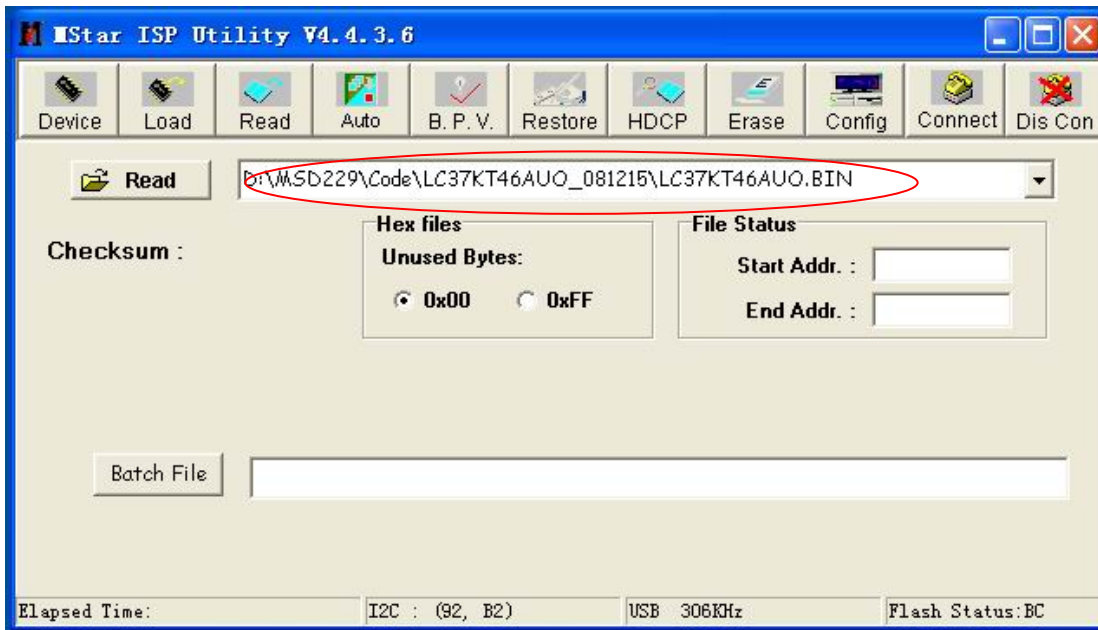
Mark "WP Pin pull to high during ISP" option.

Mark "New Setting Below" option.

Mark Bit7, Bit5, Bit4, Bit3, Bit2 from "Status Register" option. That is, the value of "Register Setting Value" should be "BC".

4. Click "Read" icon, download upgrade software which is shown below.

Software Update Instructions



5. Click "Auto".



Mark "Erase Device" option, select "File Area".

Mark "Blank", "Program", "Verify", "Exit ISP" options.

Click "Run" button, on the right will appear information of upgrade hints. When "Pass" appears, that means the upgrade is successful.

6. After completion, disconnect the power then reconnect it. The upgrade is finished now.

Working Principle Analysis of The Unit

The analog and digital RF signal received by antenna will be sent to integrative tuner TUNER2(DA58GT-13-E, contains HF and IF amplifier circuits), which selects appropriate channel and sends the selected IF signal to the next level by the control of SDA, SCL.

The analog RF signal sent to tuner, via high amplify and mixed frequency to get IF signal VIF, then it will be divided into two ways, one way will be sent to acoustic surface-wave ZF3 to IF filter and get better IF characteristics, then it will be sent to NF1(M61111FP) through pin20, 21 to do intermediate amplification, phase-locked loop VCO and synchronous wave detection and output VIDEO-TV(ATV) from pin1; another way will be sent to acoustic surface-wave ZF4 to IF filter and get better IF characteristics, then it will be sent to NF1(M61111FP) to do intermediate amplification and wave detection and output SIF from pin10.

The digital RF via high amplify and mixed frequency in the tuner, output differential digital IF signal from pin10、11, the signal will be sent to the main IC NS01(MSD319EL) to do intermediate amplification and demodulation, then demodulate the transform stream TS which contains video/audio and other information.

ATV, SIF, TS, audio/video signal of AV, S-VIDEO, VGA and HDMI. Component video signal selected by switch NB09(PI5V330W) from Component 1 and Component 2, Then one of video signal selected by switch NB10(PI5V330W) from Component and VGA . AV, S-VIDEO ,Component audio signal selected by switch NB11 (HEF4052BT), HDMI audio/video signal selected by internal switch from HDMI1, HDMI2, HDMI3; all of the signals will be sent to the main IC NS01(MSD319EL) switch select, video decode and process.

In MSD319EL, TS of DTV via TS demultiplex, distinguish the different programs and pick-up the corresponding audio/video stream and data stream, after MPEG-2 uncompress, video coder and audio D/A transform, recover the analog video signal YCbCr and audio signal L/R.

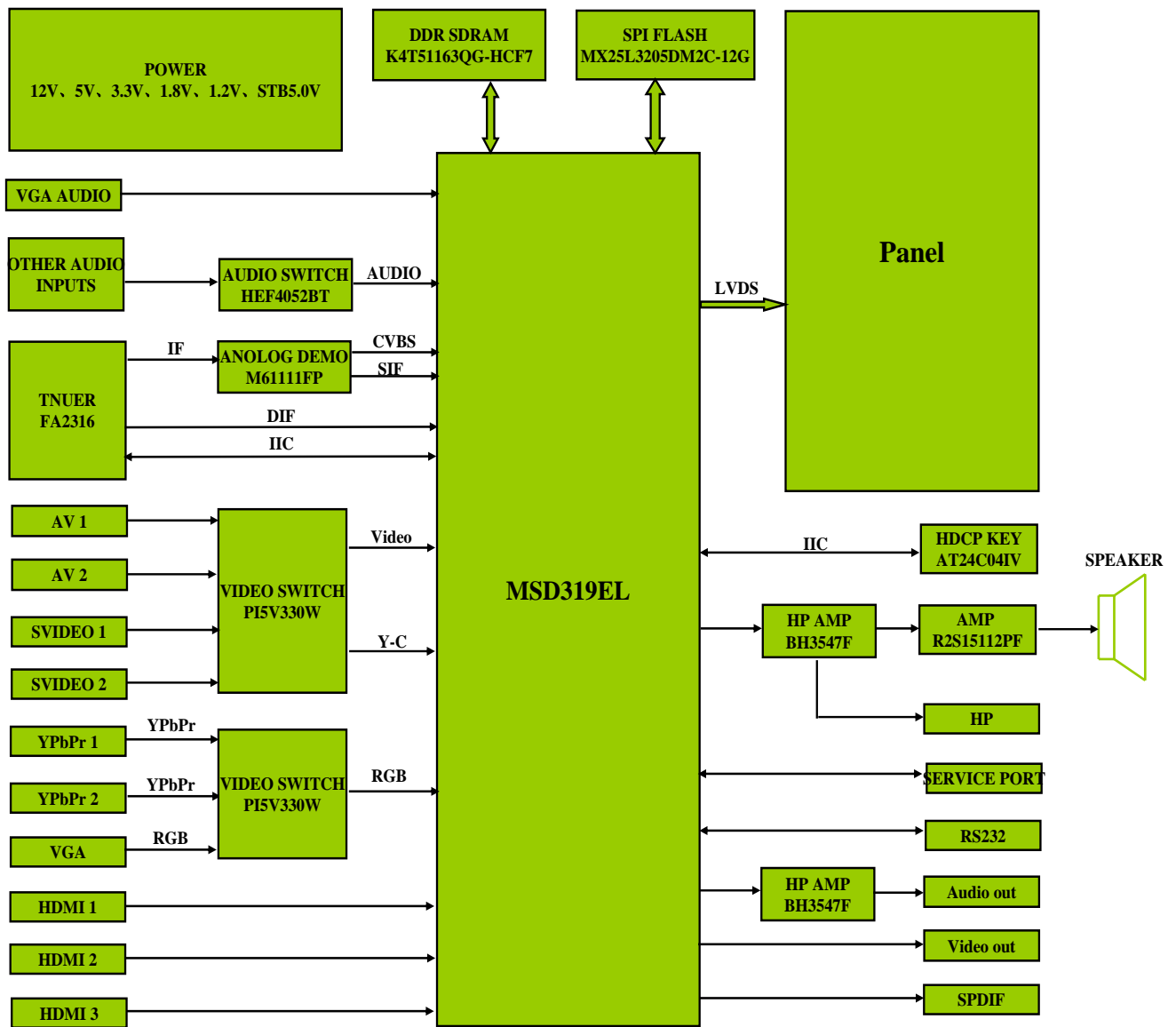
ATV output from M61111FP will be sent to MSD319EL video switch, A/D convert and digital decode. The video selected by switch embed in MSD319EL will be sent out in two ways: one is sent to decode and process; the other is Video OUT.

All of the video data (include DTV video) via switch select, video decode and process will be sent to MSD319EL to do D/A transition, image scale, OSD superposition, then LVDS conversion to signal acceptable for LCD panel, namely four pairs of low differential signal and one pair of clock signal, then it will be sent to LCD panel for picture display.

All of the audio signals will be sent to MSD319EL to do audio switch selection and sound effect processing, then output L/R to sound amplifier NV03 (R2S15112FP) amplifying to speaker. The audio L/R also sends to Audio OUT.

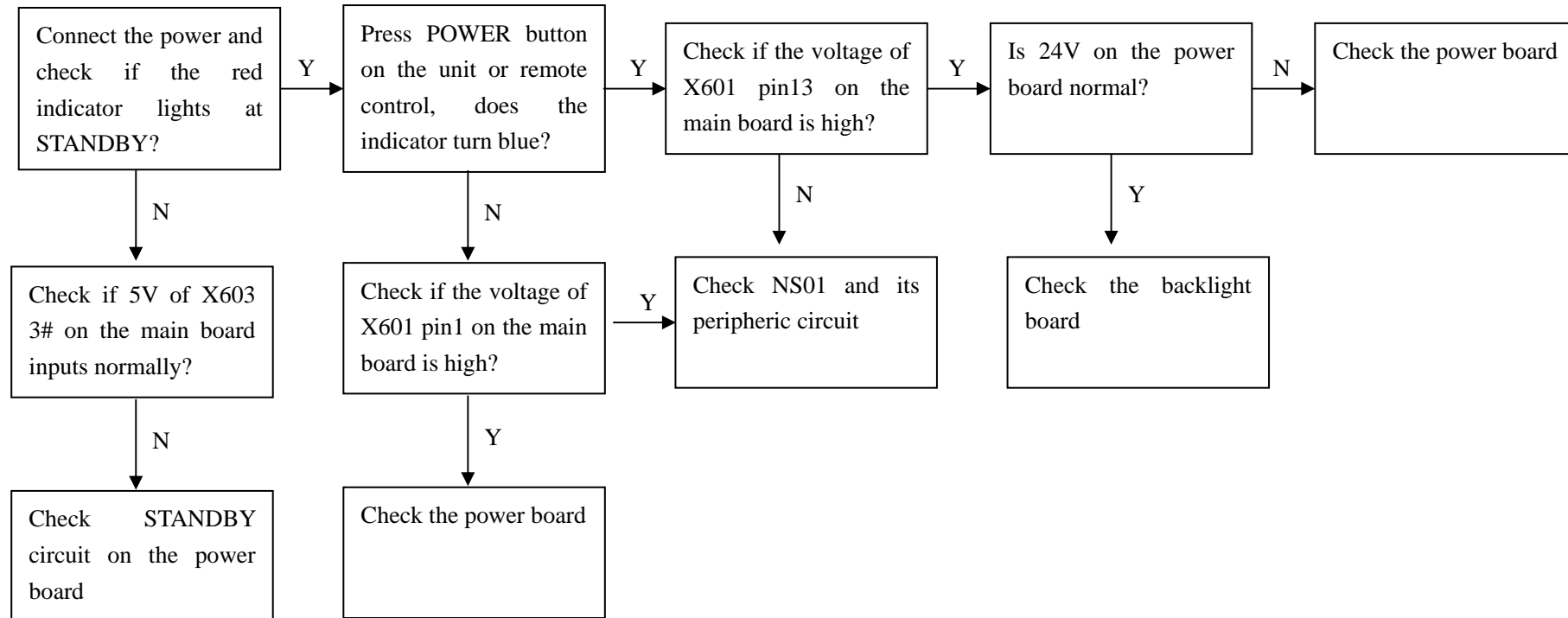
The unit is control by the MCU built in MSD319EL, it connects TUNER and E2PROM through IIC bus line and controls the whole unit working.

Block Diagram



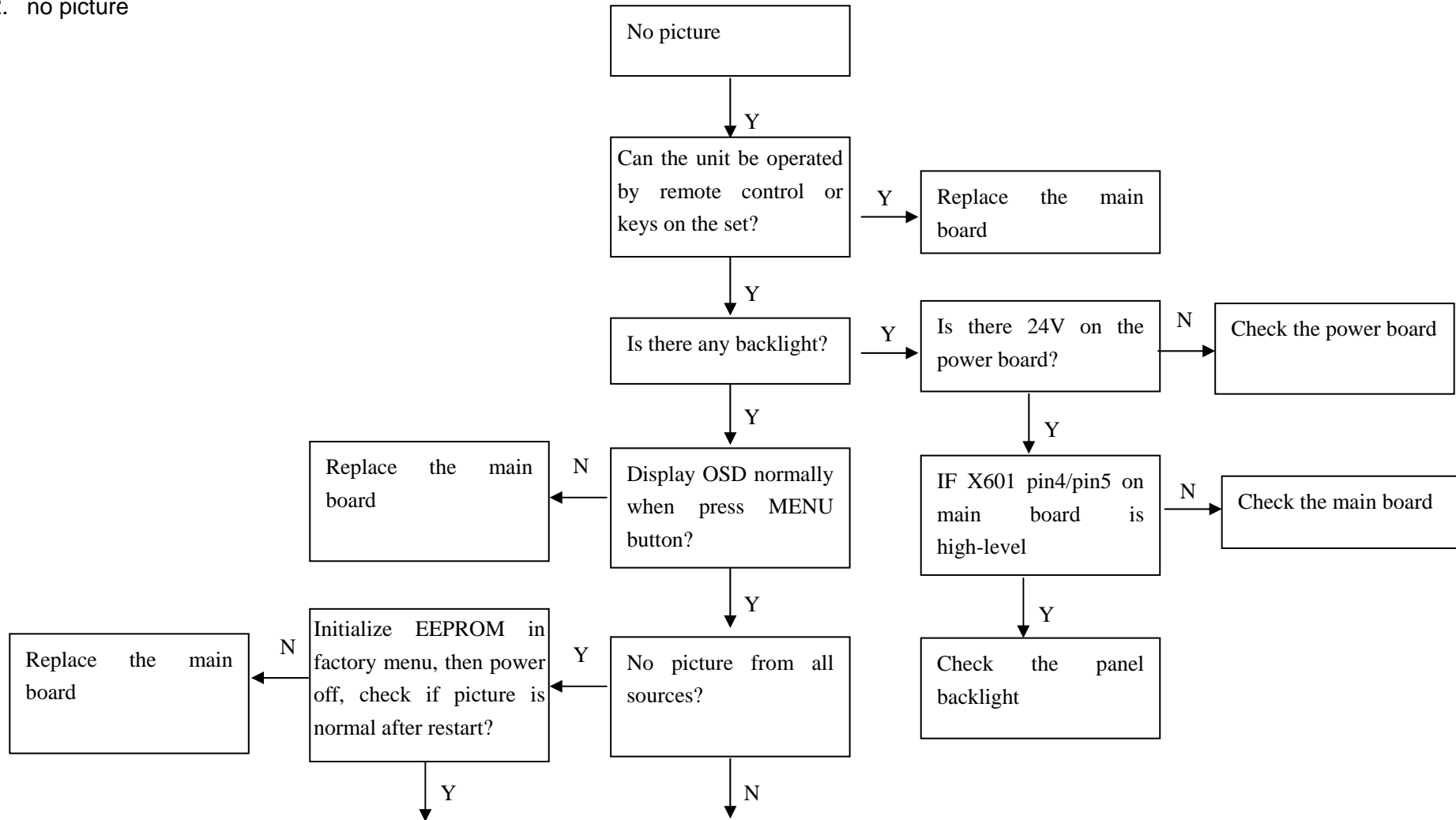
TROUBLESHOOTING GUIDES

1. no picture and no sound

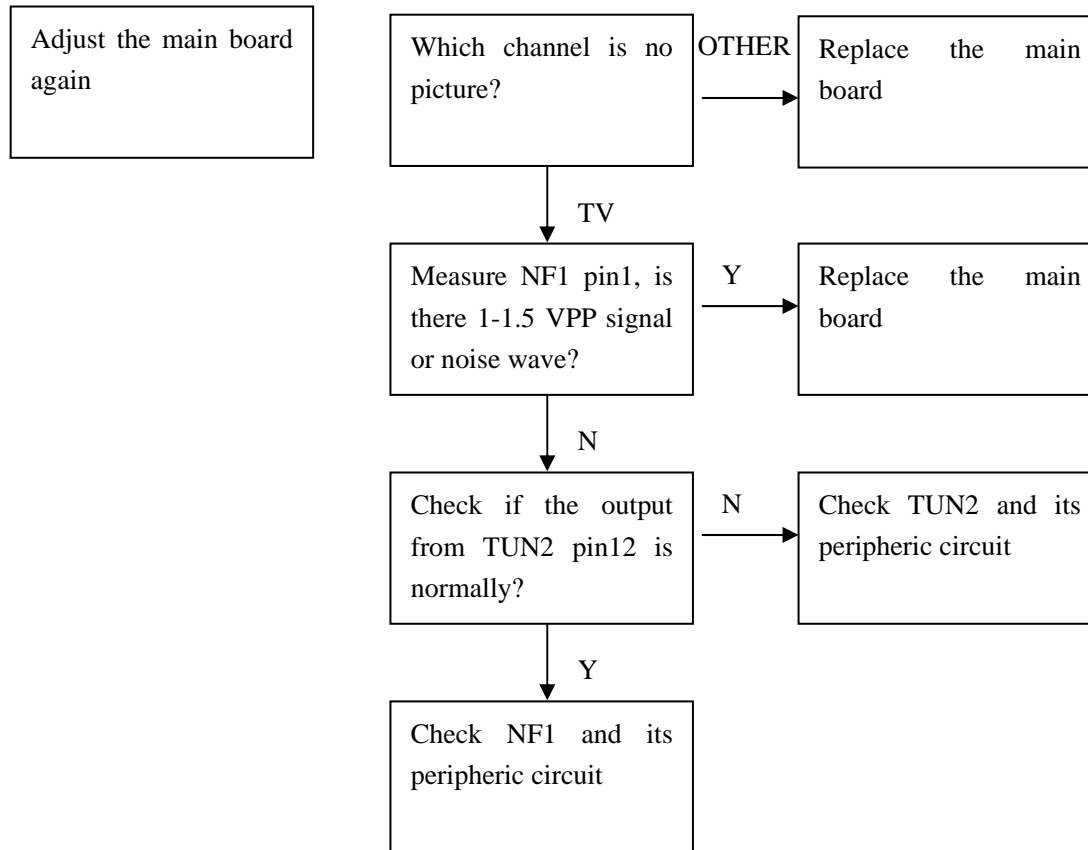


TROUBLESHOOTING GUIDES

2. no picture

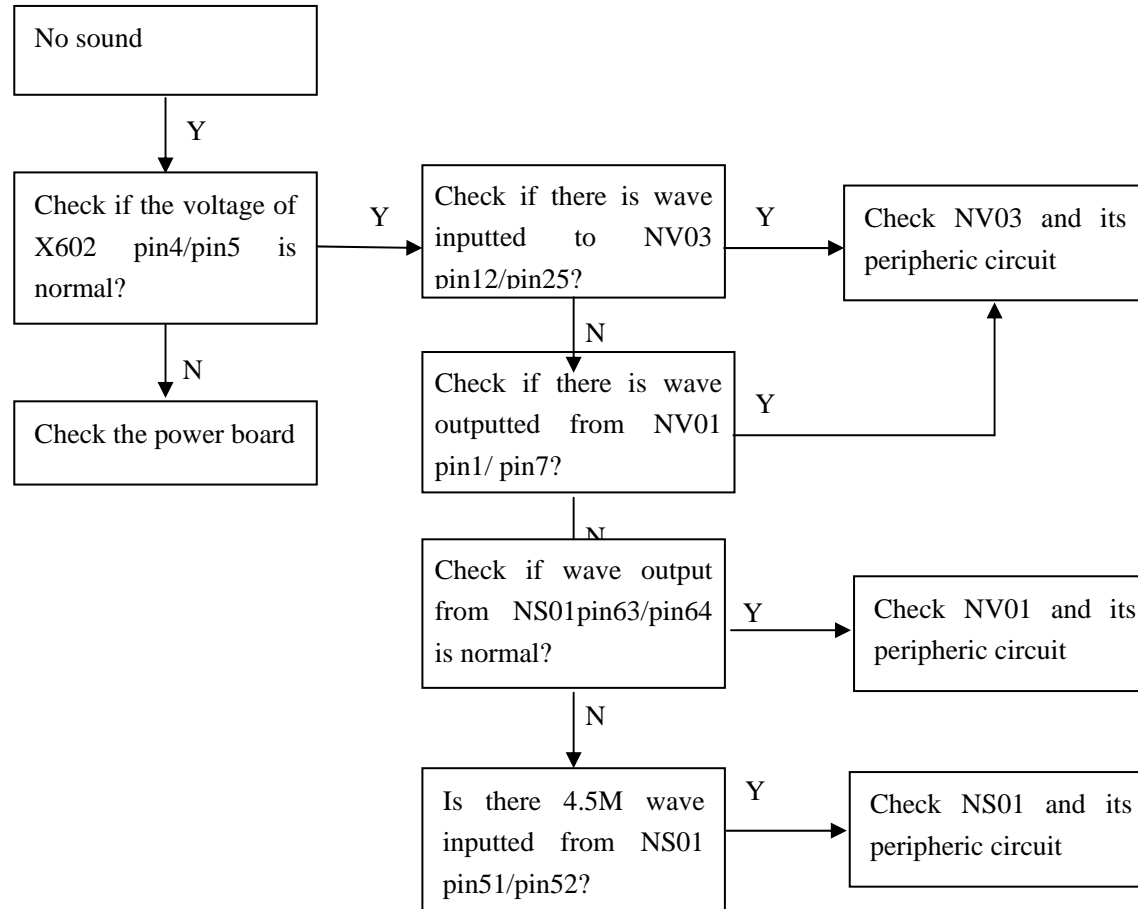


TROUBLESHOOTING GUIDES

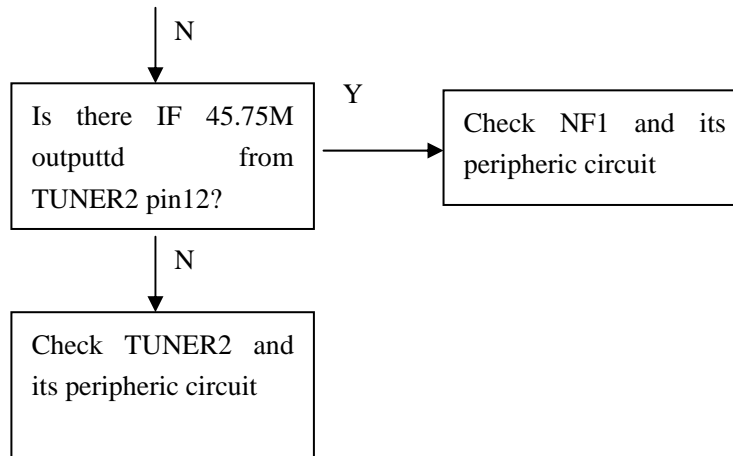


TROUBLESHOOTING GUIDES

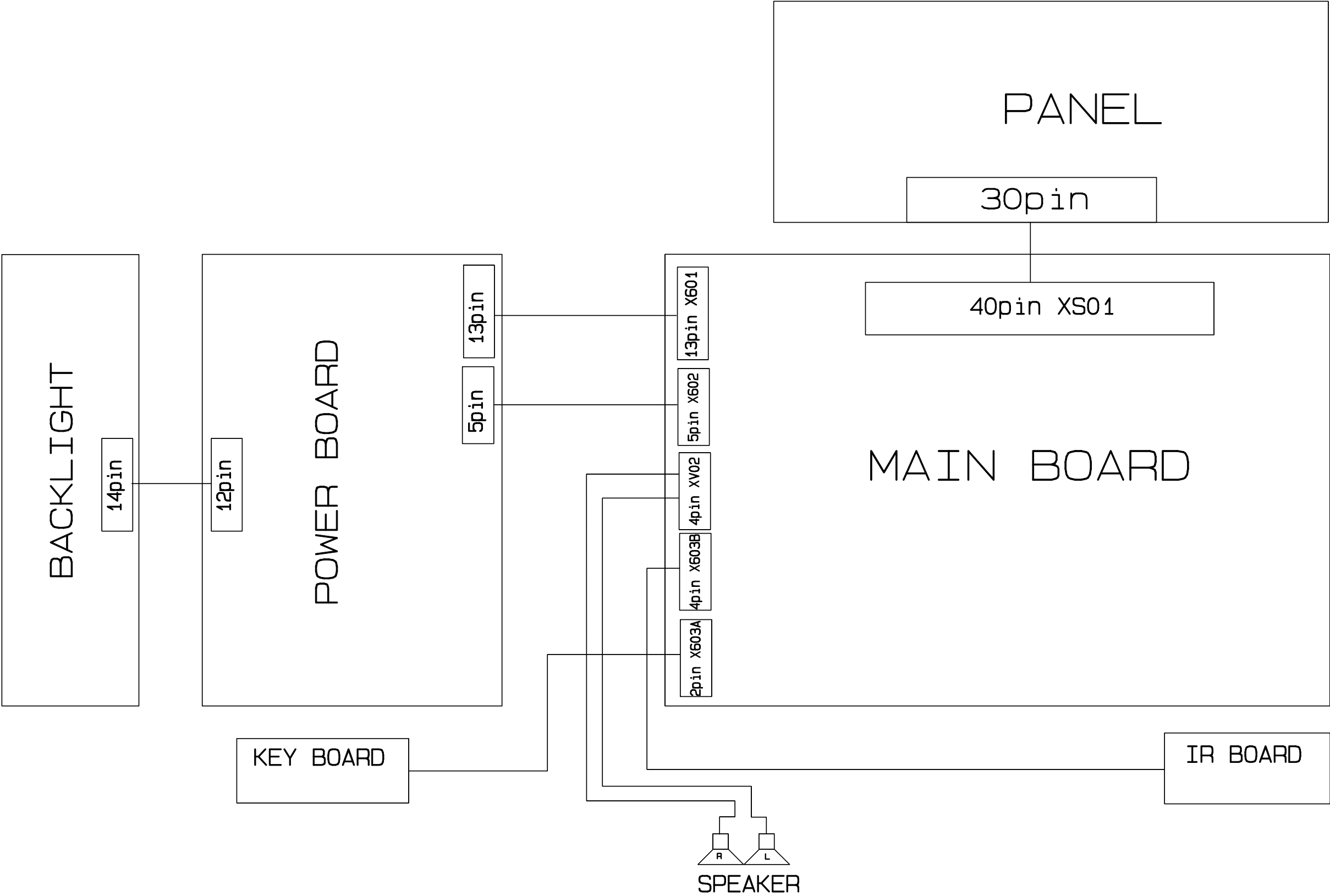
3. no sound (take TV as an example)



TROUBLESHOOTING GUIDES

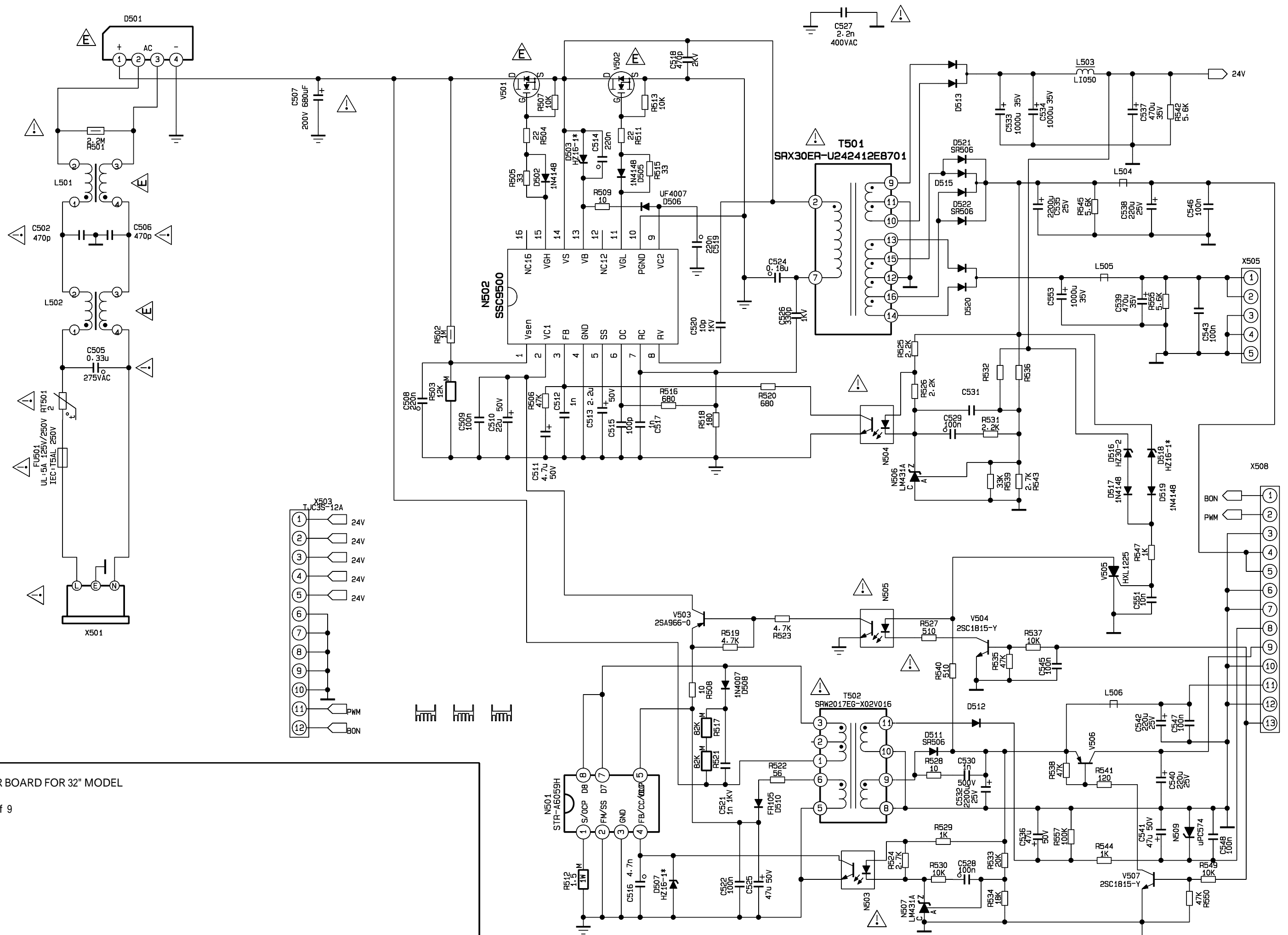


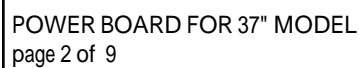
Wiring Diagram

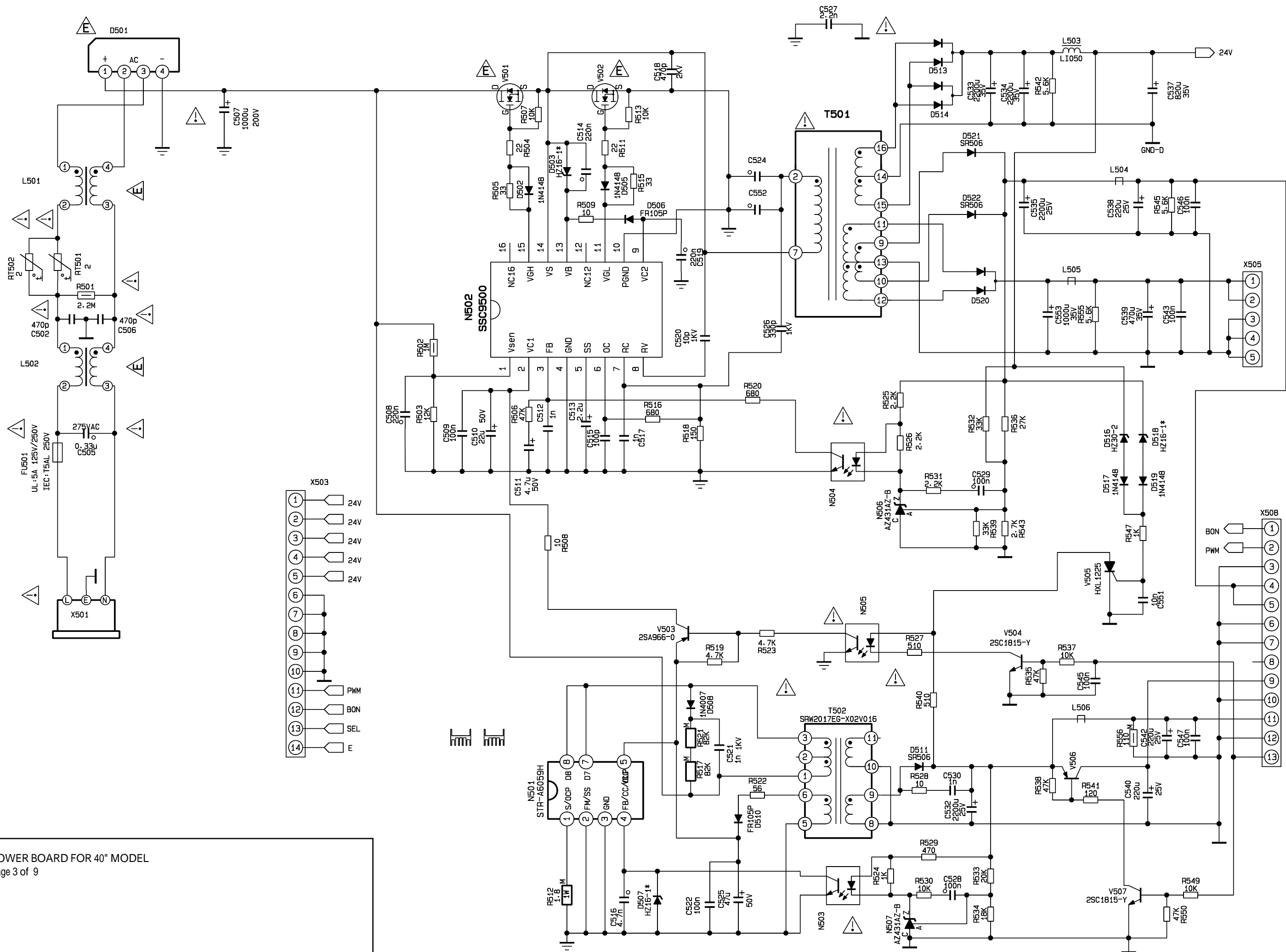


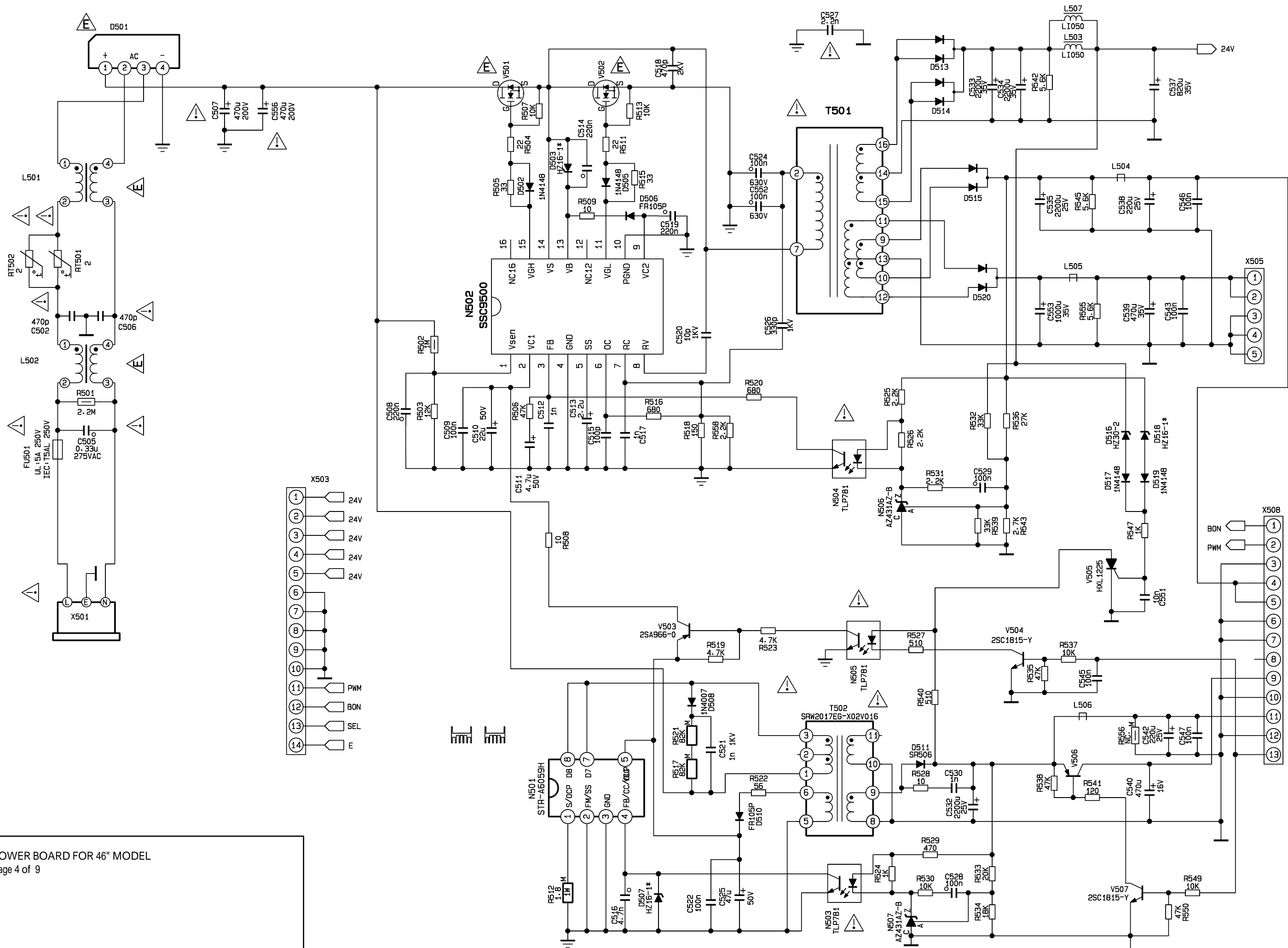
POWER BOARD FOR 32" MODEL

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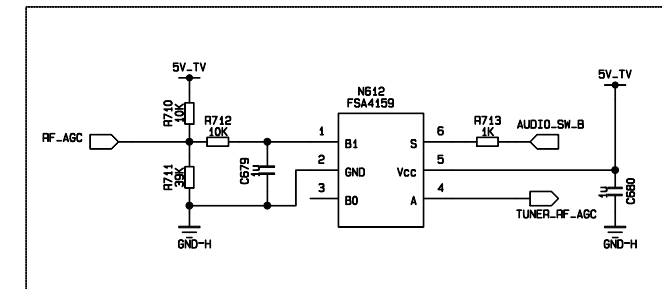
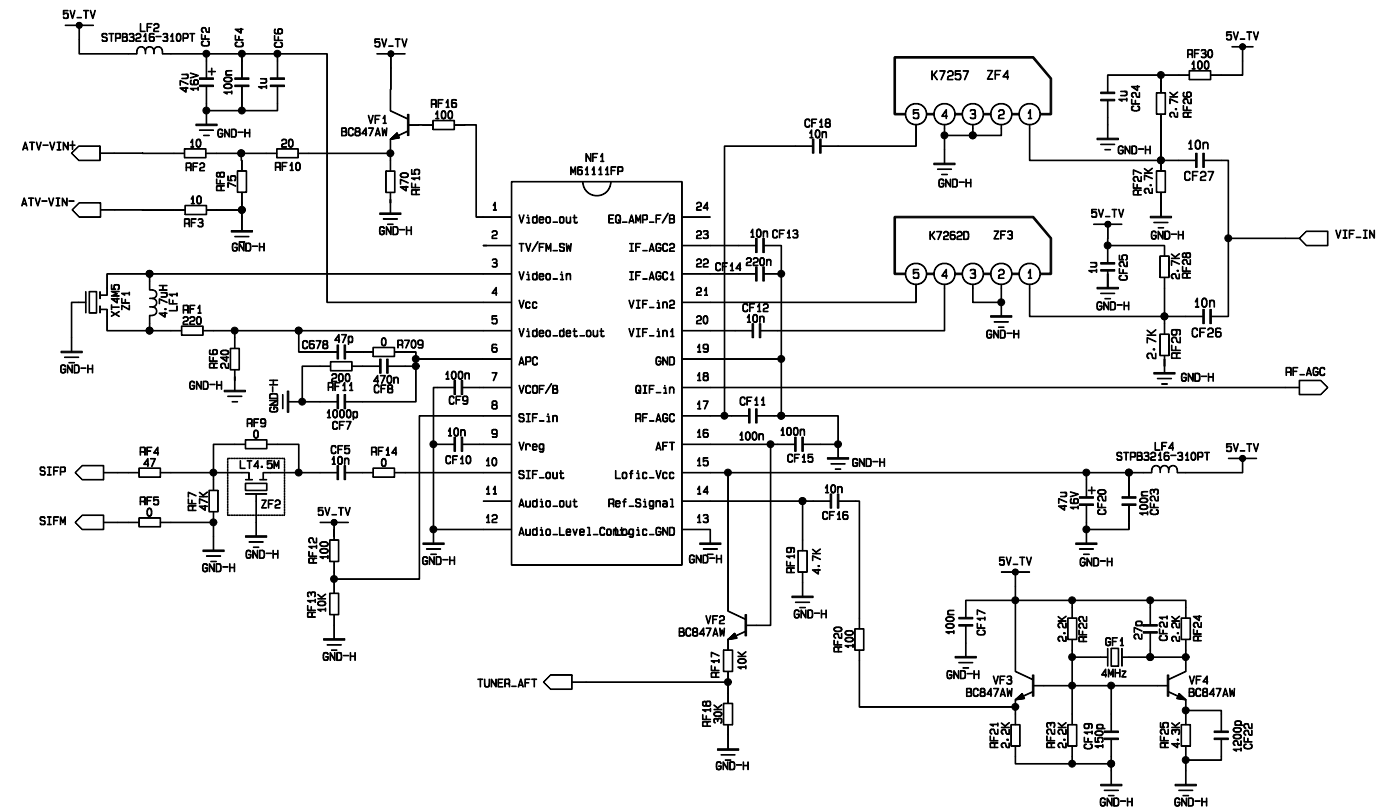
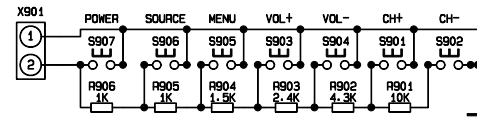
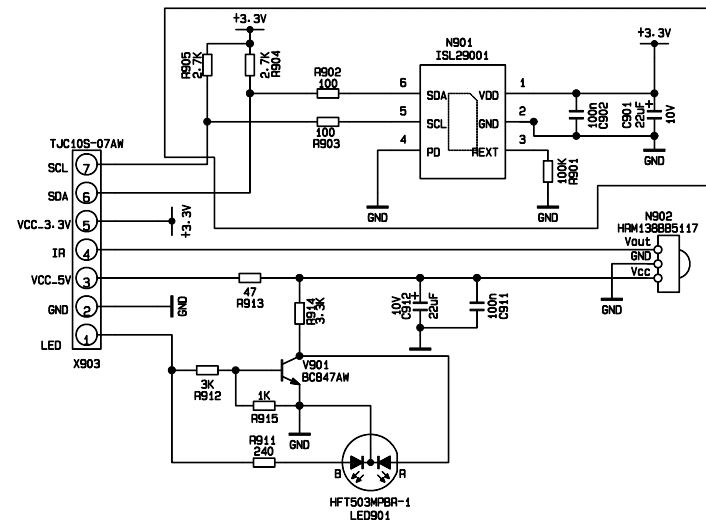




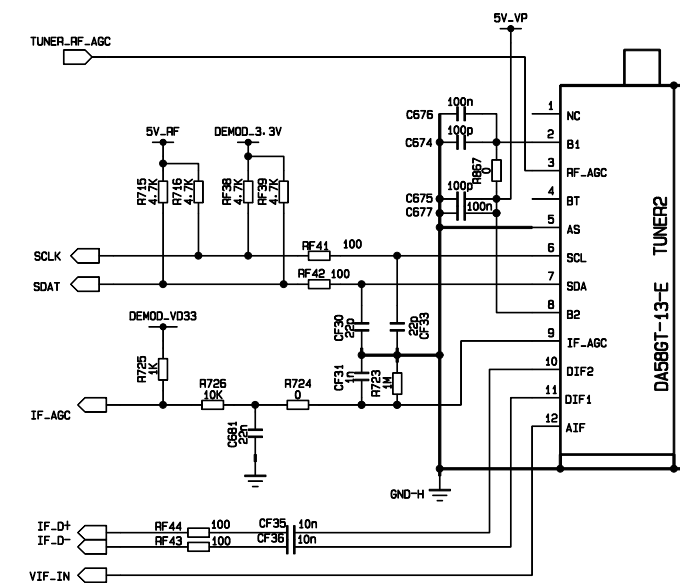
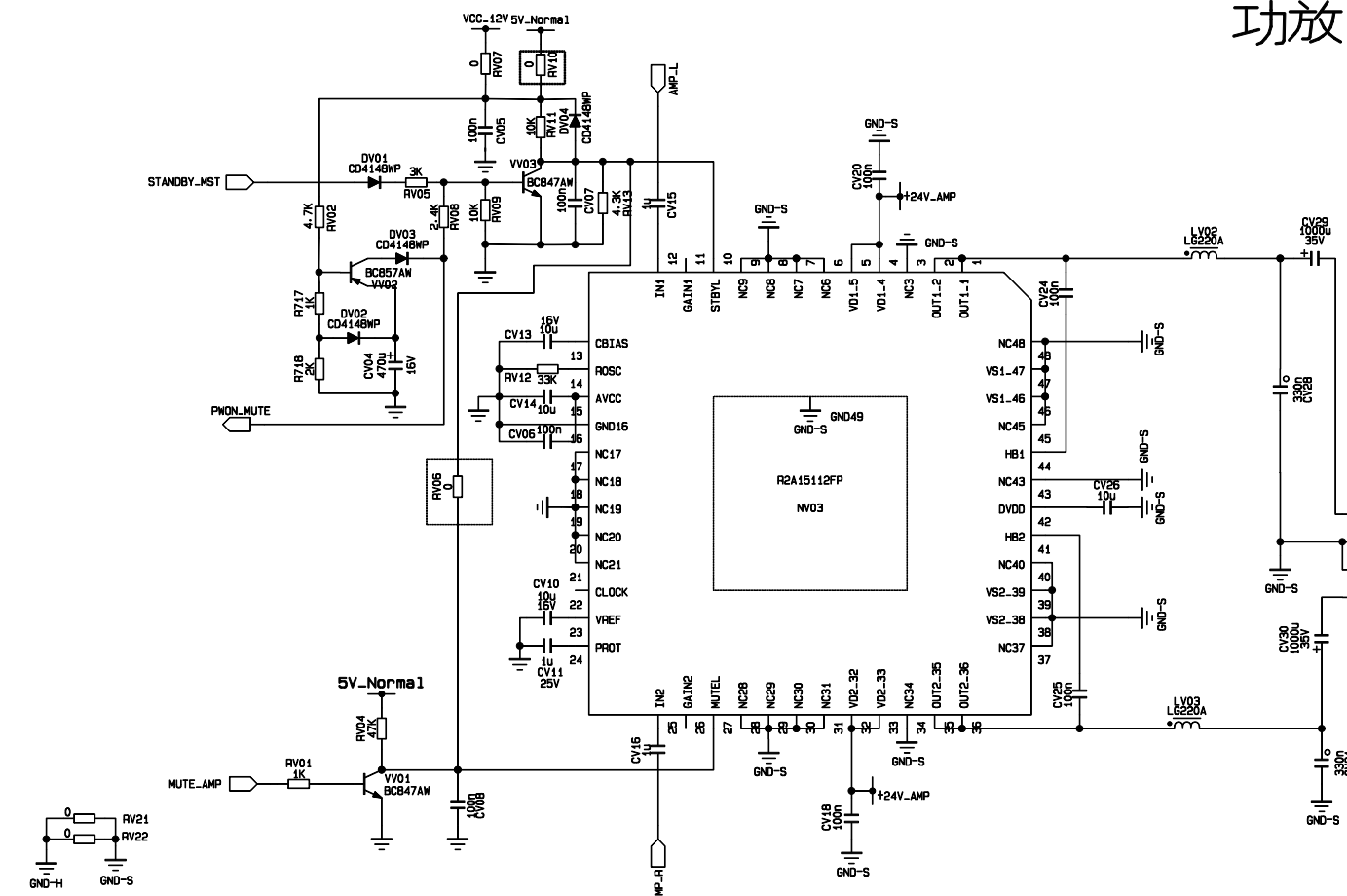


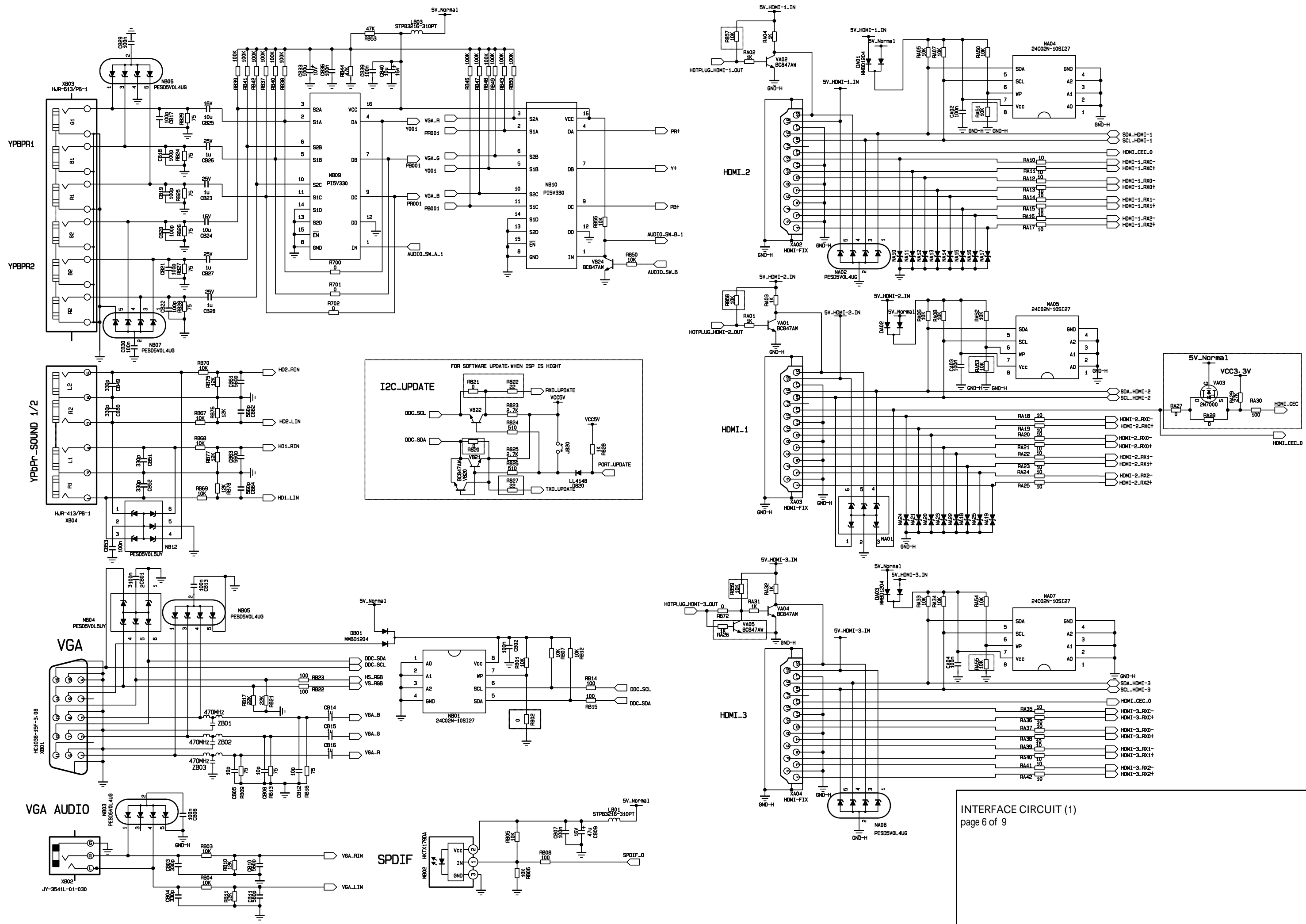


IR&KEY



功放





INTERFACE CIRCUIT (1)
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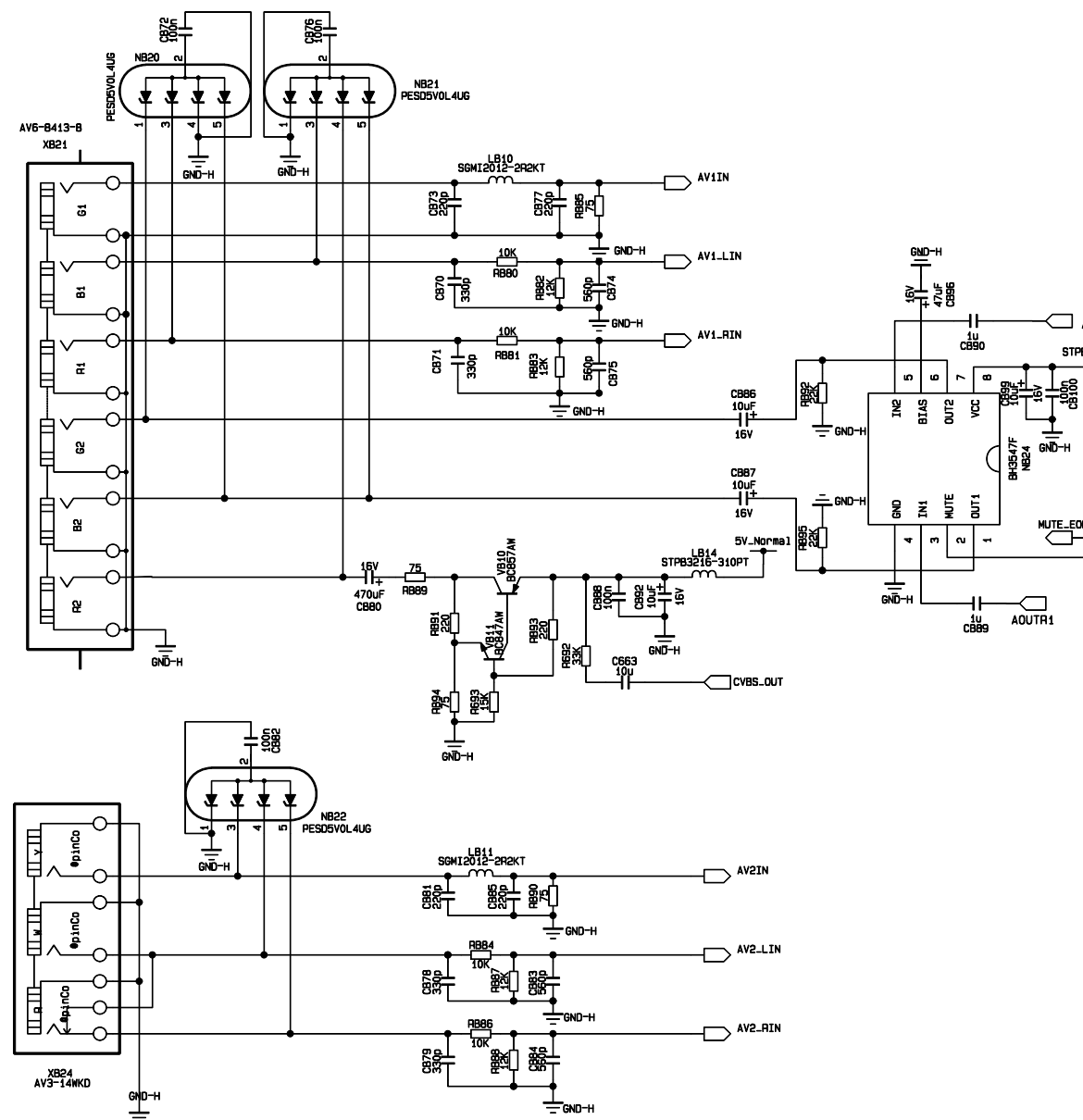
AV IN

AV OUT

AV-2

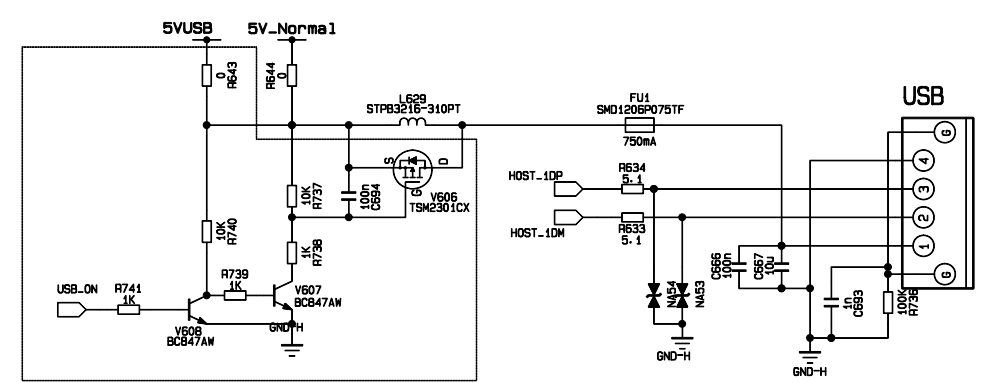
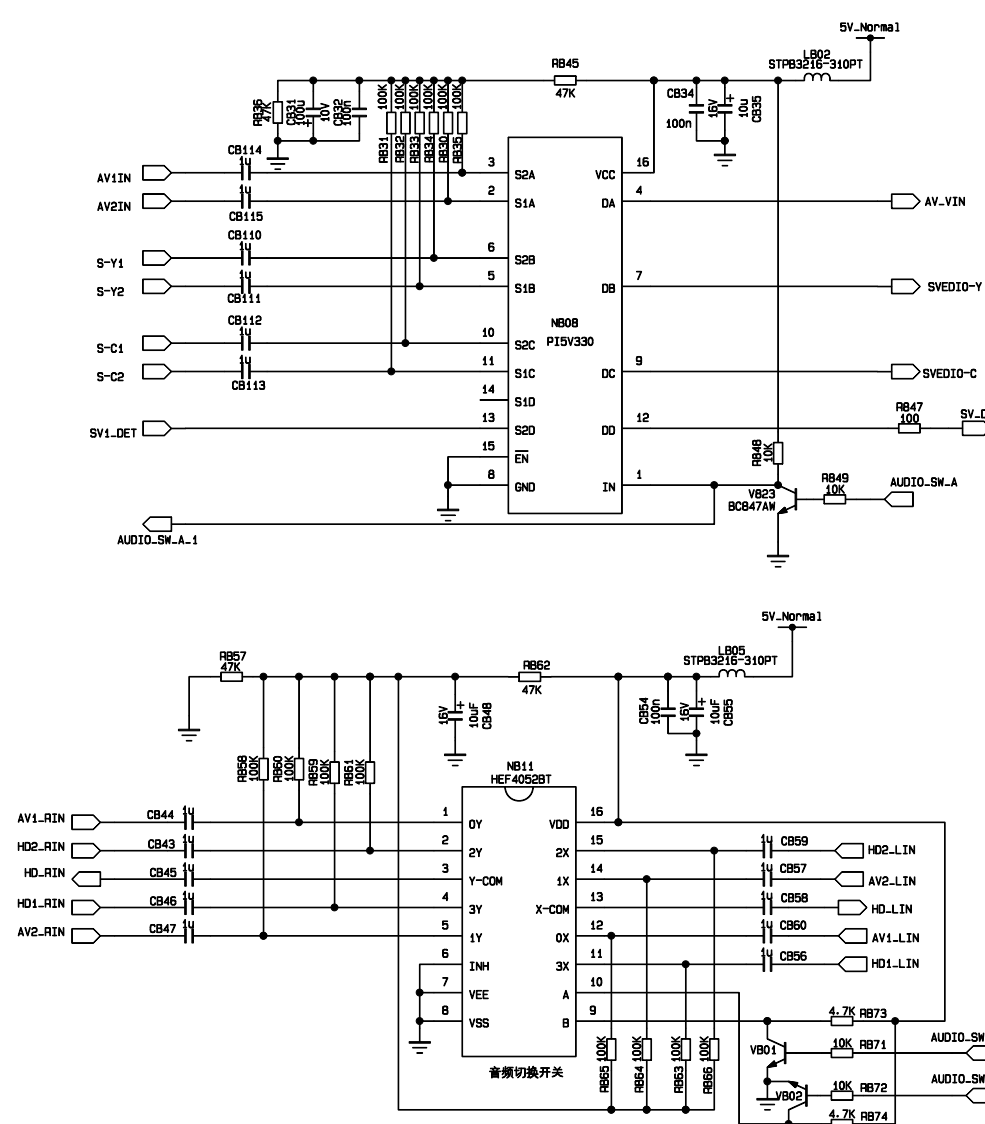
S-VIDEO-1

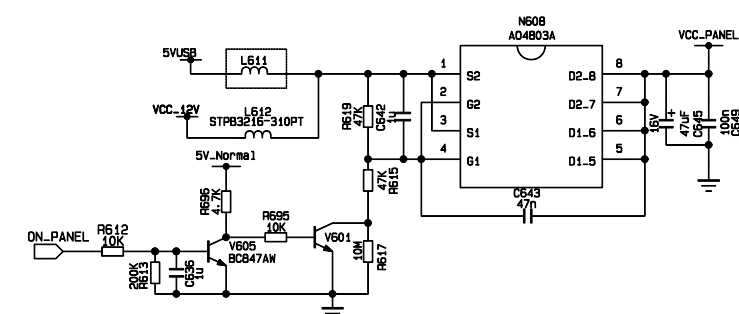
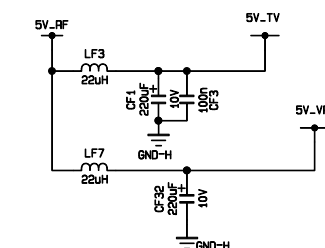
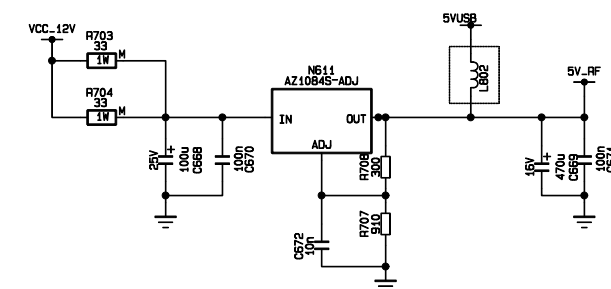
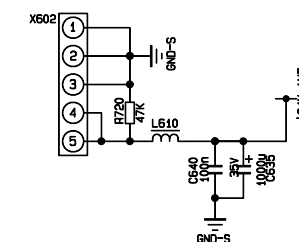
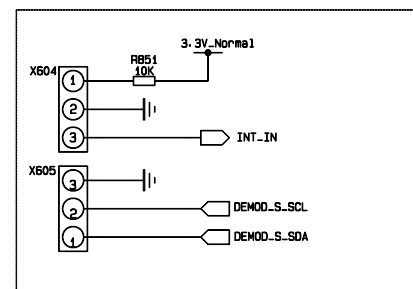
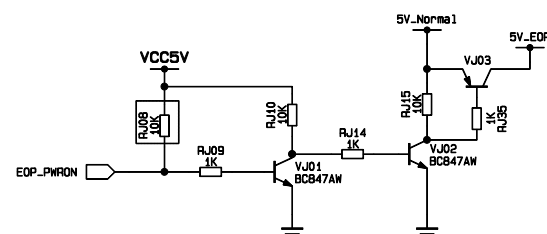
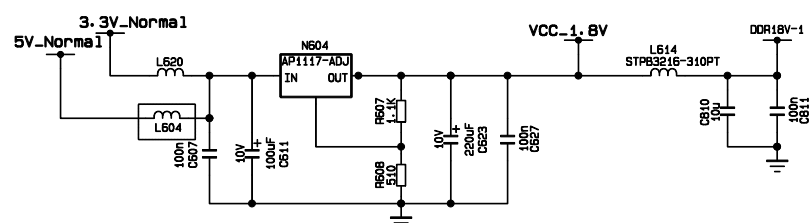
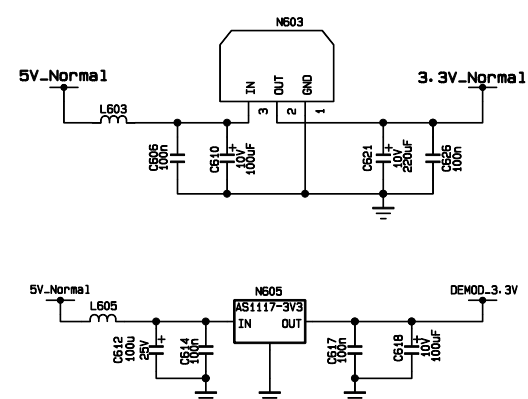
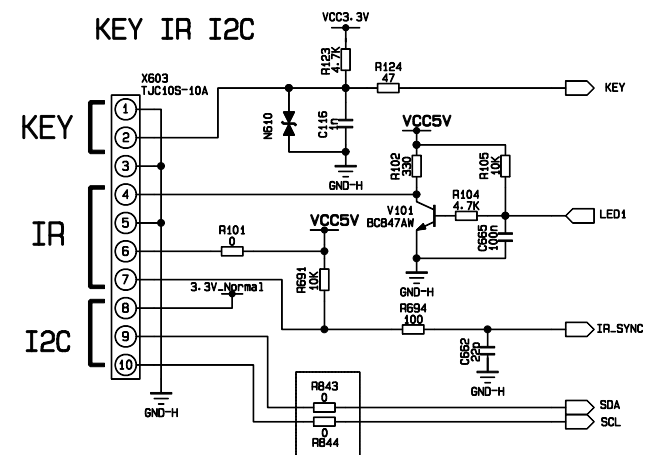
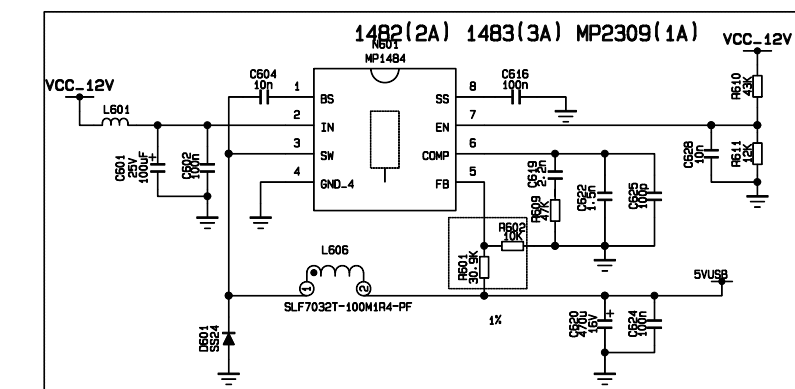
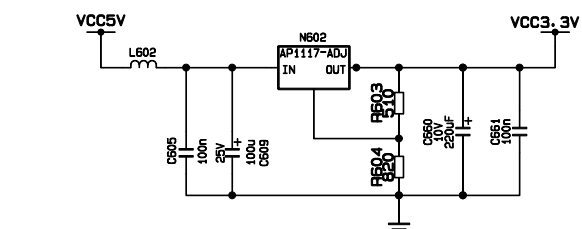
SV-2

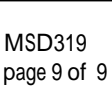


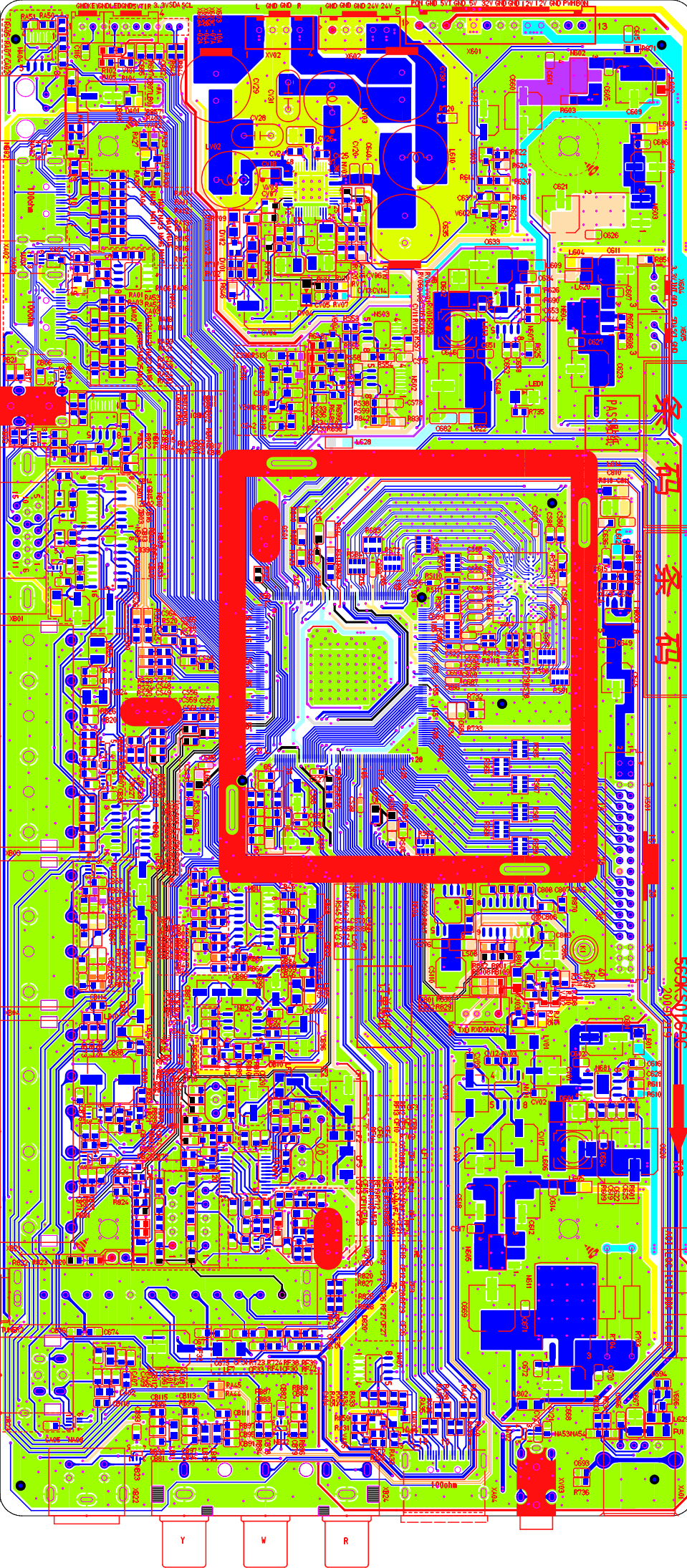
SOURCE	AUDIO_SW_B	AUDIO_SW_A
AV1/SV1	0	0
AV2/SV2	0	1
HD2	1	0
HD1	1	1
PC	0	*

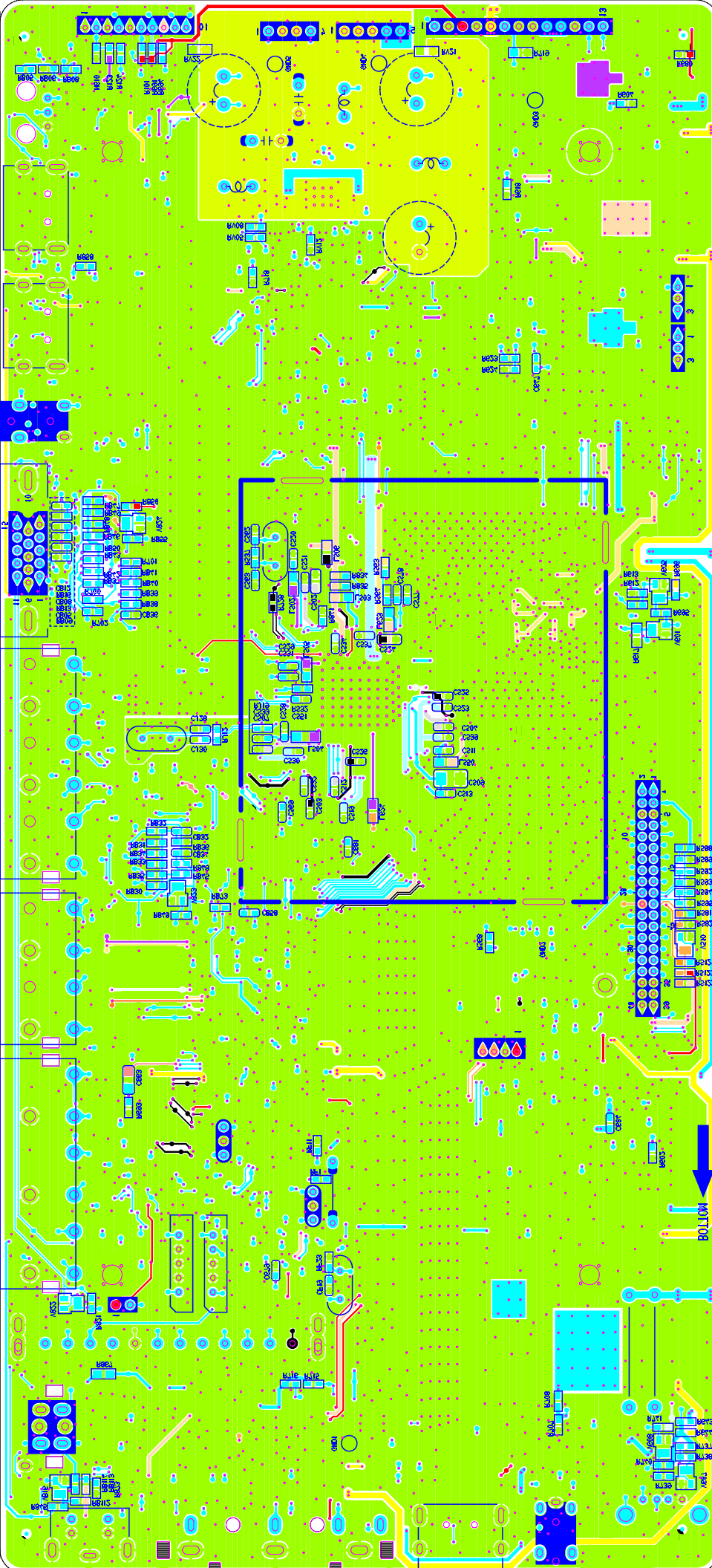
AUDIO_SW_B	AUDIO_SW_A	YUV	AV/SV	AUDIO
0	0	PC	AV1/SV1	AV1
0	1	PC	AV2/SV2	AV2
1	0	HD2	AV1/SV1	HD2
1	1	HD1	AV2/SV2	HD1

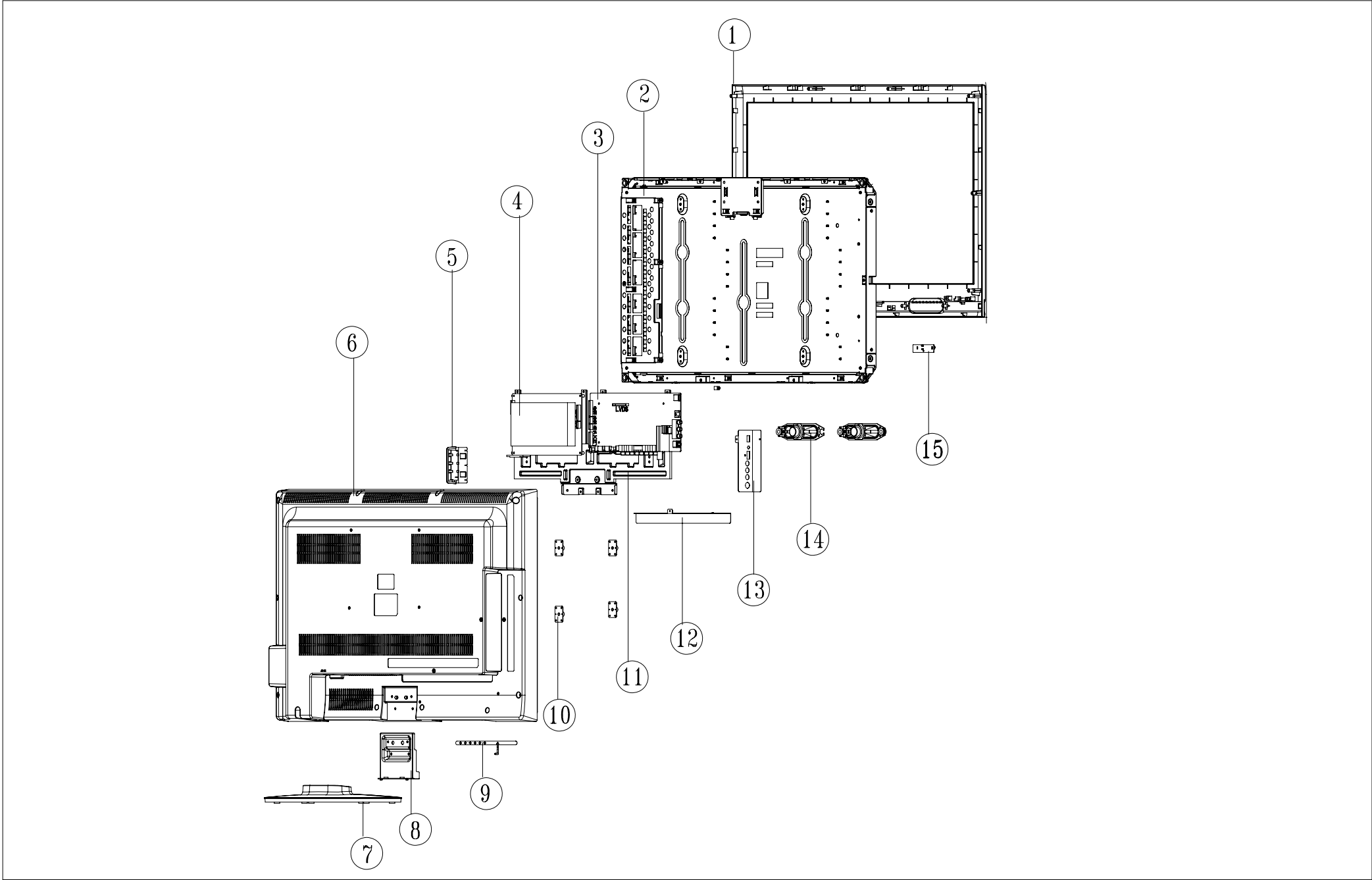










[illegible]