

Service
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LT19Z6
LTF22Z6
LTF24Z6



Service Manual

Horizontal Frequency
31.5~48 KHz

TABLE OF CONTENTS

Description	Page	Description	Page
Table of Contents.....	1	6.1 Main Board.....	40
Important Safety Notice.....	2	6.2 Power Board.....	42
Revision List.....	3	6.3 Key Board.....	49
1. General Specification.....	4	6.4 IR Board.....	49
2. Operating Instructions.....	5	7. Adjustment.....	50
2.1 The Use of Remote Control.....	5	8. Block Diagram.....	52
2.2 To Use the Menu.....	6	9. Wiring Diagram.....	53
2.3 How to Connect.....	22	10. Schematic Diagram.....	56
2.4 Front Panel Control Knobs.....	25	10.1 Main Board.....	56
3. Input/Output Specification.....	27	10.2 Power Board.....	69
4. Mechanical Instructions.....	31	10.3 Key Board.....	75
5. Repair Flow Chart	35	10.4 IR Board.....	76
6. PCB Layout	40		

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.)

Revision List

[illegible]

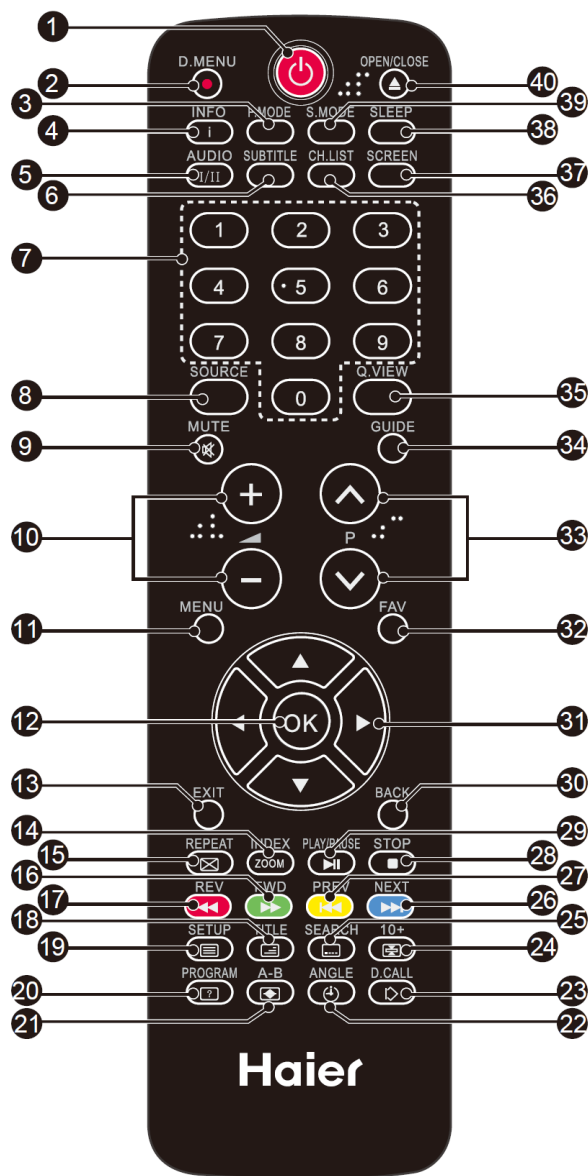
1. General Specification

Model No.	LT19Z6 LY19Z6	LTF22Z6	LTF24Z6 LYF24Z6
DISPLAY			
Aspect Ratio	16:9	16:9	16:9
Resolution	1366 x 768	1920 x 1080	1920 x 1080
ENHANCEMENT			
Sound Output (RMS Watts)	2 x 3 W	2 x 3 W	2 x 3 W
Sound Mode	Speech, Personal, Music		
Picture Formats	Auto, Normal, Wide, Zoom 1, Zoom 2, Native (only in HDMI mode)		
Picture Mode	Standard, Vivid, Movie, Eco, Personal		
CONNECTIONS			
Rear Connectors	Tuner Input (75Ω) SCART PC IN: VGA and Audio Cable Component Video and L/R Audio Input SPDIF Output (Coaxial audio Out) HDMI 1 AV OUT SERCIVE		
Side Connectors	Earphone Output AV In (Composite Audio/ Video) HDMI 2 USB CI Slot (Common Interface)		
WEIGHT & DIMENSION			
Dimension with stand (WxHxD) (mm)	LT19Z6: 469.4 x 353.5 x 150 LY19Z6: 469.4 x 353.5 x 150	536.2 x 391.2 x 160	LTF24Z6: 581.24 x 416.7 x 160 LYF24Z6: 581.24 x 416.7 x 160
Dimension without stand (WxHxD) (mm)	LT19Z6: 469.4 x 313.7 x 41.1 LY19Z6: 469.4 x 313.7 x 55.7	536.2 x 351.5 x 38.7	LTF24Z6: 581.24 x 376.94 x 38.4 LYF24Z6: 581.24 x 416.7 x 53
Weight with stand	LT19Z6: 3.5 Kg LY19Z6: 4.0 Kg	3.9 Kg	LTF24Z6: 4.3 Kg LYF24Z6: 4.8 Kg
Weight without stand	LT19Z6: 3.2 Kg LY19Z6: 3.7 Kg	3.6 Kg	LTF24Z6: 4.0 Kg LYF24Z6: 4.5 Kg
POWER			
Operation (Max.)	< 40 W	< 40 W	< 50 W
Standby	< 0.5 W		
Mains Power	AC220-240V, 50-60Hz		
Accessories	User Manual Quick Setup Guide Remote Control with Batteries Mains Cord Warranty Card		

2. Operating Instructions

2.1 The Use of Remote Control

- 1 Power
- 2 DVD Menu
- 3 Picture Mode
- 4 Display Information
- 5 DTV Audio/NICAM / DVD Audio
- 6 Display or Close Subtitle
- 7 Numerical Keys
- 8 Source
- 9 Mute
- 10 Volume Selection
- 11 Menu
- 12 OK Button
- 13 Exit
- 14 Teletext Index / DVD/USB Zoom
- 15 DVD/USB REPEAT
- 16 Teletext Green Button / DVD/USB FAST FORWARD
- 17 Teletext Red Button / DVD/USB FAST REVERSE
- 18 Teletext Mix / DVD Title
- 19 Teletext Text / DVD SETUP
- 20 Teletext Reveal / DVD PROGRAM
- 21 Teletext Size / DVD A-B Repeat
- 22 Teletext Time / DVD ANGLE
- 23 Teletext Mode / DVD CALL
- 24 Teletext Hold / DVD 10+
- 25 Teletext Subcode / DVD Search
- 26 Teletext Blue Button / DVD/USB Next Chapter
- 27 Teletext Yellow Button / DVD/USB Previous Chapter
- 28 DVD/USB STOP
- 29 DVD/USB PLAY/PAUSE
- 30 DVD/USB Back button
- 31 Cursor Mover Button
- 32 Favourite



- 33 Channel Selection
- 34 Electronic Programme Guide
- 35 Q.View
- 36 Channel List
- 37 Screen Button
- 38 Sleep Button
- 39 Sound Mode
- 40 DVD Open/Close

2.2 To Use the Menus

OSD SETTING

1. Press MENU **8** or **11** to enter the OSD setting. There are five items in the list: Picture, Sound, TV, Features and Eco.
See fig. 32, 33, 34, and 35.
2. Use the Up or Down Cursor **31** to select and press OK **12** to confirm your choice.
3. Press EXIT **13** to exit the screen.

Picture

- Shows more picture modes and functions based on your favourite channels and enables you to adjust the colour and brightness setup.
See fig. 33.

Sound

- Provides more audio selections. You can also set the audio environment of the TV.
See fig. 34.

TV

- Enables you to adjust special functions for country, audio language and the TV channels.
See fig. 35.

Features

- Enables you to adjust settings of the TV channels and language and control special functions for the TV channels.

Eco

- Enables you to automatically reduce the backlight brightness in order to decrease the power consumption and increase the backlight life span.

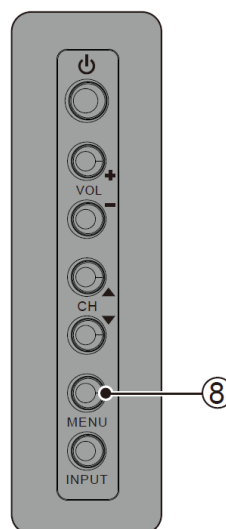


fig. 32

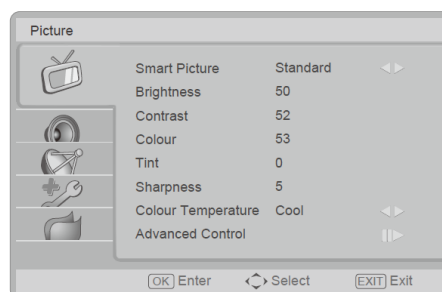


fig. 33

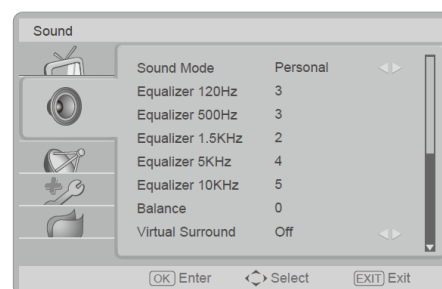


fig. 34

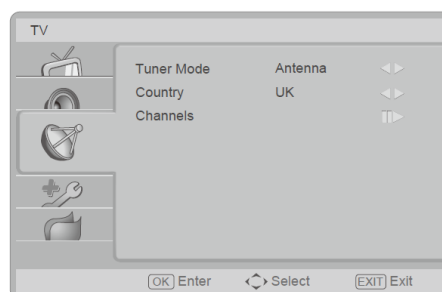


fig. 35

Picture

Smart Picture

- To set the TV to a predefined picture settings. Use the Left or Right Cursor **31** to select from Standard, Vivid, Movie, Eco, or Personal.

See fig. 36 and 37.

NOTE: Press P.MODE **3** on the remote control to select the picture mode without OSD on the screen.

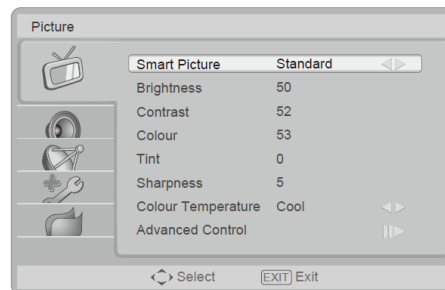


fig. 36

Brightness

- To brighten the dark parts of the picture.

Contrast

- To sharpen the picture quality.

Colour

- To add or reduce colour.

Tint

- To adjust the picture tint.

Sharpness

- To improve detail.

Colour temperature

- To choose between Normal (neutral), Warm (redder), and Cool (bluer).



fig. 37

You can select Advanced Control for more settings:

Noise reduction

- To filter out and reduce the image noise and improve the picture quality. Use the Left or Right Cursor **31** to toggle between Off, Low, Medium, High, and Auto.
See fig. 38.

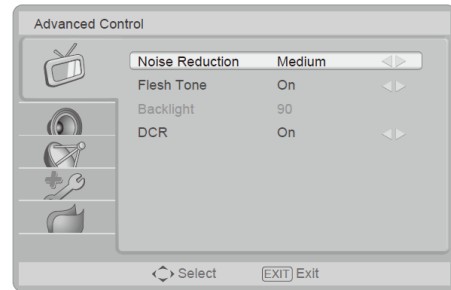


fig. 38

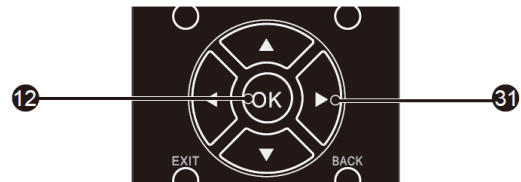


fig.39

Flash Tone

- You can adjust the skin colour to be more natural. Use the Left or Right Cursor **31** to set to On or Off.
See fig. 39 and 40.

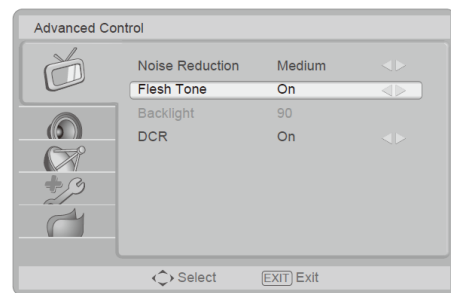


fig. 40

Backlight

- To make the background brighter or darker.

DCR

- Dynamic Contrast Ratio (DCR) auto adjusts the brightness of the screen to show more depths in the darker areas.

Sound

Sound mode

- To set the TV to a predefined sound setting. Use the Left or Right Cursor **31** to toggle between Personal, Music, Speech.

See fig. 41 and 42.

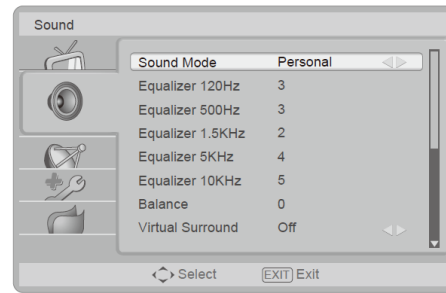


fig. 41

Equalizer 120Hz (Bass):

- Adjusts the amount of bass.

Equalizer 500Hz (tenor):

- Adjusts the amount of tenor.

Equalizer 1.5KHz (neutral):

- Adjusts the amount of neutral.

Equalizer 5KHz (treble):

- Adjusts the amount of treble.

Equalizer 10KHz (Descant):

- Adjusts the amount of descant.

Balance

- To adjust the balance between left/right channels.

Virtual surround

- To add greater depth and dimension to the TV sound. Use the Left or Right Cursor **31** to toggle between On or Off.

Digital Audio Out

- To select the Digital audio out. Use the Left or Right Cursor **31** to toggle between Off, Dolby Digital and PCM. See fig. 43.
Tip: When Dolby Digital is selected, make sure the amplifier supports digital audio.

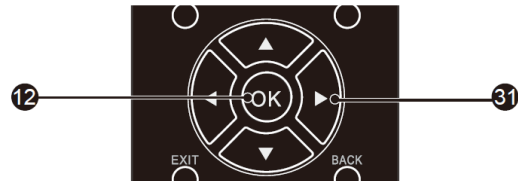


fig. 42

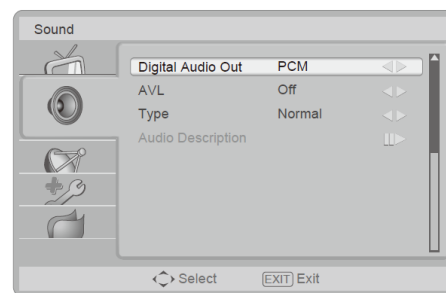


fig. 43

AVL

- To eliminate the volume differences between channels and programs and also reduce the dynamics of the sound. See fig. 44 and 45.

The following functions are only available for digital channels with audio signals.

Type

- This function enables you to choose the type of the additional narration during the TV watching. Use the Left or Right Cursor **31** to toggle between Normal, Hard of Hearing, or Audio Description. See fig. 45 and 46.
- Hard of Hearing:** This function provides narration to deaf and hard of hearing viewers.

Audio Description

- When the Type is set to “Audio Description”, you can adjust the volume of the audio description.

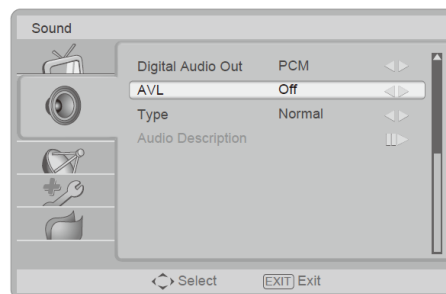


fig. 44

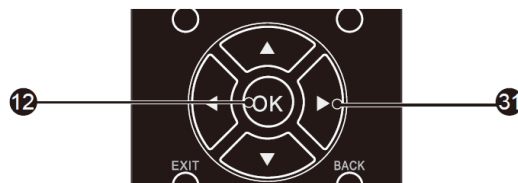


fig.45

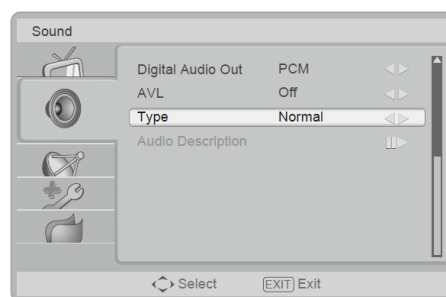


fig. 46

TV

Tuner Mode

- Select Tuner Mode from Antenna or Cable.

See fig. 47 and 48.

Country

- To select the relevant country.
This is the country you are in, or the country whose channels you want to receive if you live near its borders.

1st and 2nd Audio (Digital only)

- Use this function when two or more audio languages are broadcast.
- Use the Left or Right Cursor **31** to select audio language.

NOTE: If the 1st audio language is not available, the 2nd will be played.

Channels

- Press Right Cursor **31** to enter the channels submenu, and use Left or Right Cursor to toggle between Channel Scan, Update Scan, Single RF Scan, Analogue Manual Scan, Favourite Network Select, Channel Skip, Channel Sort, Channel Edit, Decoder, Analogue CH Fine Tune, and Clean Channel List.

Channel scan

1. Use the Up or Down Cursor **31** to select Channel Scan in the Channels submenu.
See fig. 48 and 49.
2. Press the Right Cursor **31** to start searching the local programme automatically.

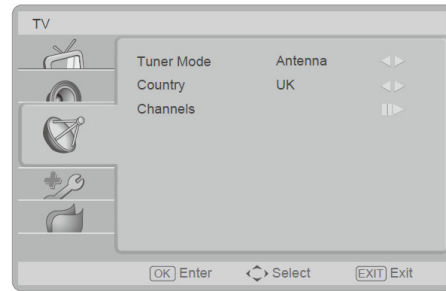


fig. 47

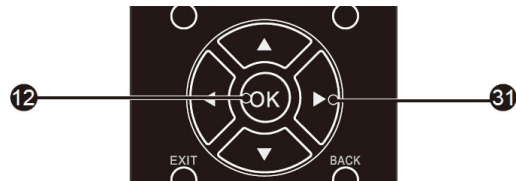


fig. 48

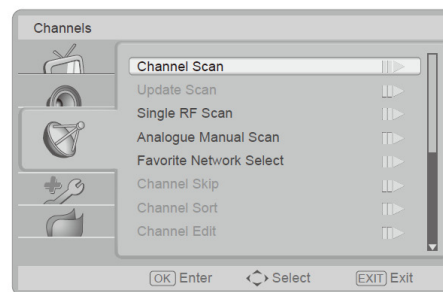


fig. 49

Update Scan (Antenna mode only)

1. Use the Up or Down Cursor **31** to select Update Scan in the Channels submenu.
See fig. 50.

2. Press the Right Cursor **31** to start searching the local programme automatically.
See fig. 51.

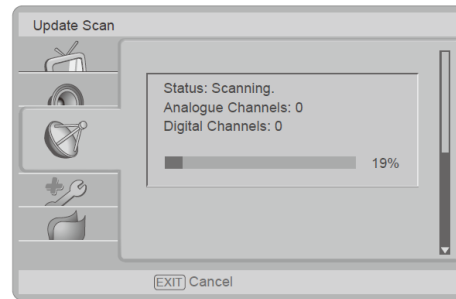


fig. 50

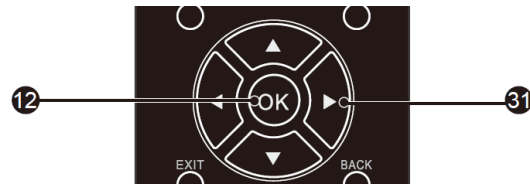


fig. 51

Single RF Scan (digital only)

1. Use the Right Cursor **31** to enter single RF Scan in the channels submenu.
2. Press OK **12** to start scan digital channel.

Analogue Manual Scan

1. Use the Up or Down Cursor **31** to select Analog Manual Scan in the Channels submenu.
See fig. 51.
2. Press Right Cursor **31** to enter. Using number buttons 0~9 to enter the Start Frequency. Use Up or Down to select Scan Up or Scan Down and press Right Cursor to start scan.

See fig. 51 and 52.

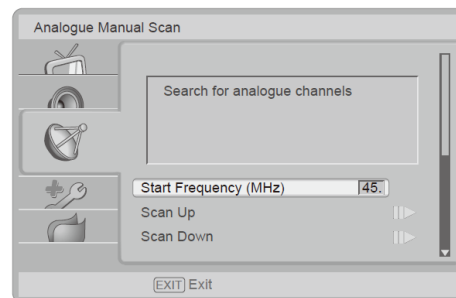


fig. 52

Favourite Network Select

1. Use the Up or Down Cursor **31** to select Favourite Network Select in the Channels submenu.
2. Press the Right Cursor **31** to enter it and press OK **12** or Right Cursor **31** to enter the channel list.

Channel Skip

1. Use the Up or Down Cursor **31** to select Channel Skip in the Channels menu. **See fig. 53.**
2. Press the Right Cursor **31** to enter it and use the Up or Down Cursor **31** to highlight the programme you want to skip and press the OK **12** to set.

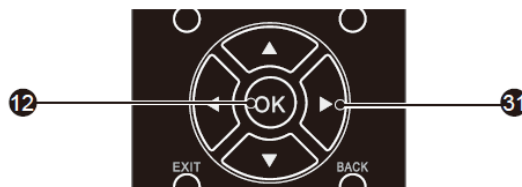


fig. 53

Tip: The skipped programme may not be found by pressing P $\wedge$ / V **33** but can be accessed by pressing number buttons directly.

Channel Sort

1. Use the Up or Down Cursor **31** to select Channel Sort in the Channels menu.
2. Press the Right Cursor **31** to enter it and use the Up or Down Cursor **31** to highlight a programme you want to sort and press the OK **12** to set.
3. Use the Up or Down Cursor **31** to highlight the second programme you want to exchange with and press the OK **12** to switch the channel position.

Channel Edit

1. Use the Up or Down Cursor **31** to select Channel Edit in the Channels menu. **See fig. 53.**
2. Press the Right Cursor **31** to enter it and press the Up or Down Cursor **31** to highlight the programme you want to edit.
3. Press the OK **12** to start editing programme name.
4. Change the Channel Number by using the number buttons 0~9. Change the Channel Name by pressing the number buttons 0~9 to enter numbers and letters.

Decoder (Analog only)

Channel Decode support the Canal+ (paid television channel); however, the channel also broadcast some un-encrypted programs. These programs without encryption can be viewed free of charge

1. Use the Up or Down Cursor **31** to select Decoder in the Channels submenu. **See fig. 54.**
2. Use Up or Down Cursor **31** to highlight the channel and press OK **12** to set.

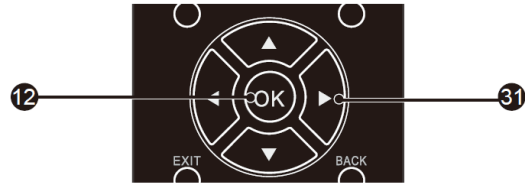


fig. 54

Analogue CH Fine Tune

1. Use the Up or Down Cursor **31** to select Analog CH Fine Tune in the Channels submenu.
2. Highlight and press OK **12** to select the channel.
3. Use Left or Right Cursor **31** to adjust the frequency. Press Left to decrease and Right to increase the frequency.

Clean Channel List

1. Use the Up or Down Cursor **31** to select Clean Channel List in the Channels submenu.
2. Highlight and press OK **12** to select the channel.
3. Use Left or Right Cursor **31** to adjust the frequency. Press Left to decrease and Right to increase the frequency.

Features

Menu Language

- To select the on-screen display menu language.
See fig. 55.

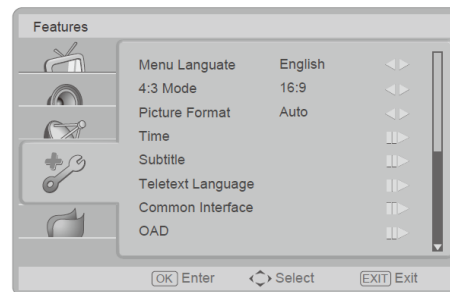


fig. 55

4:3 mode

- Select aspect ratio behavior for Auto mode. When 4:3 is selected, the picture size will follow WSS or Scart Pin8 Spec. If 16:9 is selected, the picture format will change to wide screen.

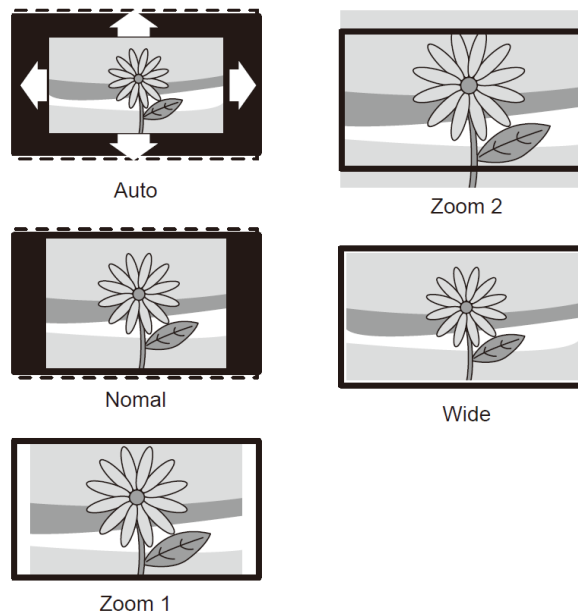


fig. 56

Picture Format

- Auto:** DTV and HDMI input will automatically display the correct format, while ATV and SCART will need to be set.
See fig. 56.
- Nomal:** Displays the classic 4:3 format.
- ZOOM 2:** Scales the classic 4:3 format to 16:9.
- Wide screen:** Stretches the classic 4:3 format to 16:9.
- ZOOM 1:** Scales the classic 4:3 format to 14:9.
- Native (only in HDMI mode):** Performed all content without underscan.

Time

- Time zone:** To select the time zone you are in.
See fig. 57.
- Time:** To set the time and date or select auto synchronisation.
Tip: Before setting the time and date manually, make sure Auto synchronisation is Off.

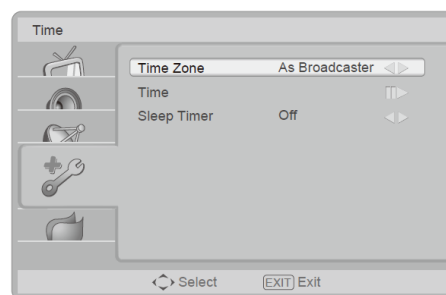


fig. 57

- **Sleep timer:** To set the TV to turn itself off after a set period of time.

NOTE: Press SLEEP **38** to set the timer without OSD on the screen.

SCART

- The specific type of signal going into SCART on the back of the television. Please refer to the manufacturers instructions for the connected equipment. Check the signal output of the DVD or compatible device, please select the correct setting for “SCART” input.

NOTE: This option will not display when the video source is not SCART.

Subtitle

- Use the Up or Down Cursor **31** to toggle between:
See fig. 58 and 59.
 1. **Analogue subtitle:** To display the transmitted subtitle on the screen. This text can either be permanently displayed (assuming that the service is available with the broadcast) or only when mute is active.
 2. **1st and 2nd subtitle:** Use the Digital Subtitle function when two or more subtitle languages are broadcast. If subtitle data in a selected language is not broadcast, the default language subtitle will be displayed.
 3. **Subtitle type:** To choose the normal type or hearing impaired type of subtitle.

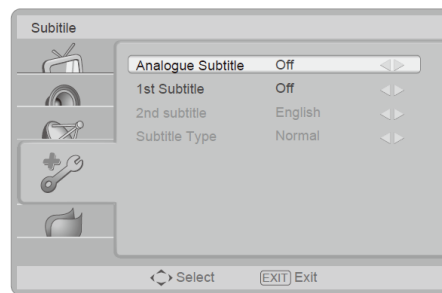


fig. 58



fig. 59

Teletext Language

- **Digital teletext language:** To select the teletext language.
See fig. 60 and 61.
- **Decoding page language:** To set the teletext language to the regional location.

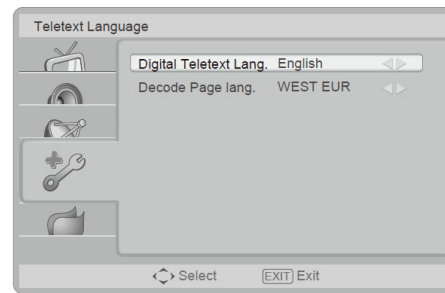


fig. 60

Common Interface

- The common interface is for a Conditional Access Module (CAM). This function displays your CAM information.
See page 46.

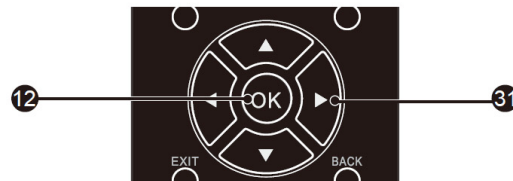


fig. 61

HDMI Scan Info (HDMI only):

When you use HDMI mode, you can choose the following mode.

- **Automatic:** Set to underscan or overscan automatically when the video signal is detected.
- **Underscan:** When the video signal is detected, all active pixels and lines are displayed with or without border.
- **Overscan:** When the video signal is detected, some active pixels and lines at the edges are not displayed.

OAD

- When you get the software updating news from the retailer or internet, you can update the operation software using the OAD (Over Air Download) Download. The updated software data will be transferred through the TV signal.
See page 47 for details.

Parental

Lock TV channels or connected devices with a four digit code to prevent children from watching unauthorized content.

A password is required to gain access to this function. The factory default password is "5351".

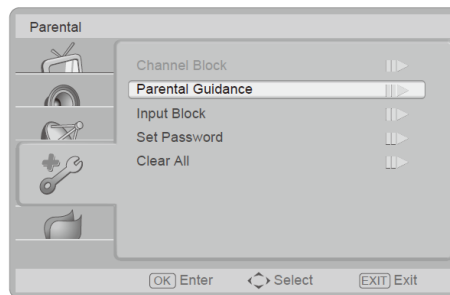


fig. 62

Channel Block

- To block certain channels to prevent children from watching.

Parental Guidance

- To control access to programmes based on their age ratings. All settings apply to digital channels.

See fig. 62.

NOTE: This operates according to information from the broadcasting station. If the signal has no information, it does not operate.

Input Block

- To disable the specific external input signals. **See fig. 63.**

Set Password

- To set or change your password. All number combinations from 0000 to 9999 are valid.

Tip: The 5351 is the default code. If you forgot your access code, you can always enter the default code.

Clear All

- To clear all the settings in the parental submenu.

Reset Default

- To reset all TV settings to their original factory values.

SW Ver

- Display the Software version.

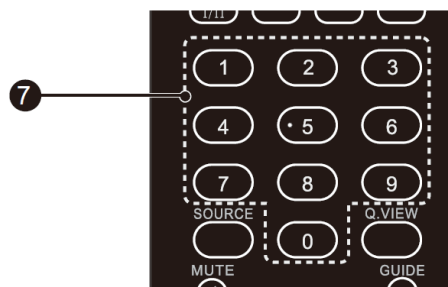


fig. 63

Hotel Mode(Optional)

©Starting and Existing

1. Starting the Hotel Menu

Press the "menu" key and the number key "XXXXXX" to enter hotel mode.

"XXXXXX" is the password request by Customer (6 numbers).

***** HAIER password is Menu + 100108 *****

2. Starting the hotel mode

If you want to turn on the hotel mode, please press the ">" key or the "<" key on the remote control to set the hotel mode on!

3. Exiting "Hotel Menu"

Select the "EXECUTE" item in Hotel Menu to execute and exit the hotel menu. If both of the remote control and touch key pad button are locked, please press "Menu" key on the TV for 5 seconds to unlock.

©Setting items

1) Power ON fixed [POWER ON FIXED]

Option	"VARIABLE", "FIXED_ALL", "FIXED_BODYKEY" or "RC RESPOND"
Default	"VARIABLE"
Function	• "VARIABLE" is enable the "POWER" key on the touch keypad and the remote control. • "FIXED_ALL" is disable the "POWER" key on the touch keypad and the remote control when you want to use keypad to power off. • "FIXED_BODYKEY" is only disable the "POWER" key on the touch keypad when you want to use keypad to power off. • "RC RESPOND" is same as the "VARIABLE".
Remarks	

2) Volume maximum level [MAXIMUM VOLUME]

Option	0~60
Default	VARIABLE
Function	The volume cannot be increased more than the value which you set.
Remarks	• If you set a maximum volume value, the volume bar will not display when you press the VOL +/- key on the remote control until the value reach the maximum value. • The volume of the headphones or monitor output is limited. • This item will be disabled when the "VOLUME FIXED" item is set to FIXED.

3) Volume fixed [VOLUME FIXED]

Option	"VARIABLE", "FIXED", "ACCTRL" or "AC/RCCTRL"
Default	"VARIABLE"
Function	• VARIABLE: The volume is not fixed. • FIXED: The volume is fixed to the value which you set. • AC CTRL: In the case of AC ON only, the TV starts at the volume specified in the volume fixed level. • AC/RC CTRL: The TV starts at the volume specified in the volume fixed level.
Disabled key	VOL +/- and mute key will be disabled when set the "VOLUME FIXED" item to FIXED state.
Remarks	• "FIXED", the volume bar OSD will not display.

4) Volume fixed level [VOLUME FIXED LEVEL]

Option	0~60
Default	0
Function	The volume value will fixed to the value which you set.
Remarks	• If the [VOLUME FIXED] item is "VARIABLE" state, this item will be disabled.

5) Remote control operation [RC BUTTON]

Option	"RESPOND", "NORESPOND" or "LIMITED"
Default	RESPOND
Function	- RESPOND: The remote control is enabled. - NO RESPOND: The remote control is disabled. The POWER key is also disabled. - LIMITED: only (POWER, VOLUME (▲/▼), CHANNEL (▲/▼), ATV, DTV) key is enabled.
Remarks	

6) Touch keypad Operation [PANEL BUTTON]

Option	"RESPOND" or "NORESPOND"
Default	RESPOND
Function	RESPOND: The touch keypad is enabled. NO RESPOND: The touch keypad is disabled except the POWER key
Remarks	

7) Menu operation [MENU BUTTON]

Option	"RESPOND" or "NORESPOND"
Default	RESPOND
Function	RESPOND: The "MENU" key is enabled. NO RESPOND: The "MENU" key is disabled.
Remarks	

8) OSD display [ON SCREEN DISPLAY]

Option	"YES", "NO" or "LIMITED"
Default	YES
Function	"YES", all of the OSD will display. "NO", all of the OSD will not display. "LIMITED", only a little of OSD will display.
Disabled key	"NO": (aspect, Sleep Timer, Menu, EPG, Freeze) OSD will be disabled to display. "LIMITED": only the (POWER, VOLUME (▲/▼), CHANNEL (▲/▼), Mute, ATV, DTV, Text) OSD are enabled to display. (In Text, text, subtitle, subpage, Reveal hidden Teletext, Top/Bottom/Full, hold, Mute, color is also enable.)
Remarks	

9) Start mode [INPUT MODE START]

Option	"NORMAL" or "Input source"
Default	NORMAL
Function	Select the input source when power on.
Remarks	For Example: "TVA(2)", "TVD(002TV)", "AV", "YPBPR", "SCART2", "PC", "HDMI1", "HDMI2", "HDMI3", "YPBPR" TV channel will auto detect the current channel as the input power on source. If you want to power on at DTV channel 001, you must change the channel to 001 first, then enter hotel mode and set the "INPUT MODE START" item to TVD (1TV).

10) Input fixed [INPUT MODE FIXED]

Option	"VARIABLE""FIXED", "AC CTRL" or "AC/RC CTRL"
Default	VARIABLE
Function	1. "VARIABLE": The input source can be changed when power on. 2. "FIXED": The input source will be changed to the "INPUT MODE START" setting value when power on. 3. "AC CTRL": The input source will be changed to the "INPUT MODE START" setting value when AC-ON. 4. "AC/RC CTRL": Same as "FIXED" function.
Remarks	

11) Hotel mode setting [HOTEL MODE]

Option	RESET
Default	
Function	Reset to the default value in hotel menu.
Remarks	Press "OK" key on the remote control to do reset function.

11) Hotel mode setting [HOTEL MODE]

Option	"OFF" or "ON" (loop enabled)
Default	OFF
Function	OFF: HOTEL MODE is disabled ON: HOTEL MODE is enabled.
Remarks	To active hotel mode.

12) TV TO USB

Option	Press
Default	
Function	Press the ">" key to do TV TO USB function, it will clone this TV set is setting and channel data to USB disk. When finish clone, it will display Done.
Remarks	USB flash disk will have two files like "eepdata.bin" and "chdata.bin" when finish clone.

13) USB TO TV

Option	Press
Default	
Function	Press the ">" key to do USB TO TV function, it will clone USB disk is setting and channel data to TV set. When finish clone, it will display Done.
Remarks	USB flash disk must have two files like "eepdata.bin" and "chdata.bin" in root directory.

2.3 How to Connect



WARNING:

- Switch off the TV before connecting any external device.

SCART INPUT

- To connect external devices such as DVD players, set top boxes or game consoles.
- Plug the scart lead from the external device into TV SCART socket ⑩.
See fig. 22.
 - SCART - Analogue video and audio input from other devices, such as DVD players or game consoles. Full SCART, which transmits RGB, S-Video and CVBS in and CVBS tuner out.
 - Press SOURCE ⑧ to select SCART.
See fig. 23.

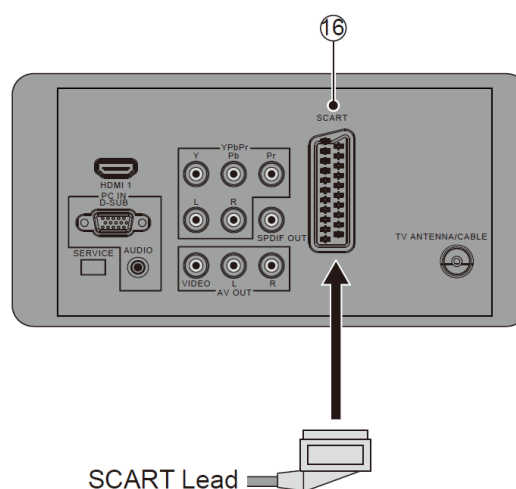


fig. 22

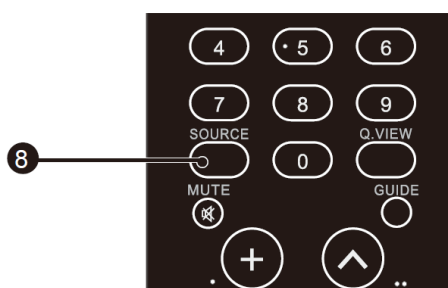


fig. 23

YPbPr INPUT

- For connecting devices such as video cameras.
- Make sure that the power of the TV and the AV device are off.
 - Connect the (Y, Pb, Pr) cables and audio cables to the Component and Audio Input ⑭ on the TV. **See fig. 24.**
 - Turn on the power of the TV first and then turn on the power of the AV device.
 - Press SOURCE ⑧ to select the YPbPr input. **See fig. 23.**

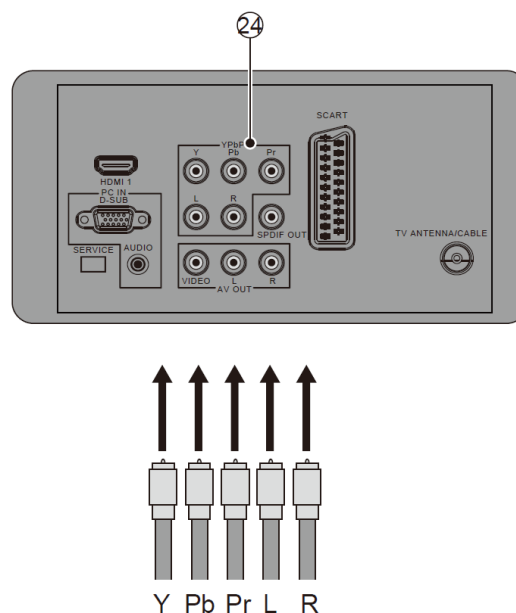


fig. 24

VGA INPUT

- You can use your TV as a monitor for your personal computer.
1. Connect the D type 15-pin VGA interface cable (not supplied) to VGA Input ②. **See fig. 25.**
 2. Connect the audio cable (not supplied) to Audio Input ②⑩ on the back of the TV (if necessary). **See fig. 25.**
 3. Press SOURCE ⑧ to select the PC input. **See fig. 26.**

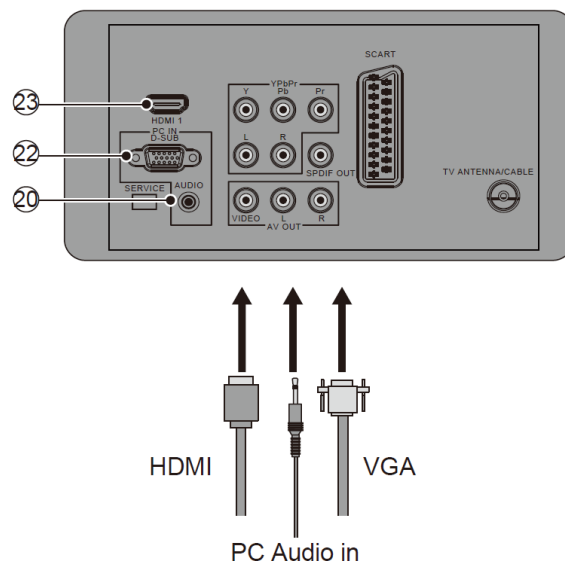


fig. 25

HDMI INPUT

CAUTION: You must ensure both devices are switched off before connection.

1. Connect the cable from the HDMI devices to the TV HDMI Input ②③. **See fig. 25.**
2. Press SOURCE ⑧ to select the HDMI input. **See fig. 26.**
3. Operate the corresponding external equipment. (Refer to external equipment operating guide.)

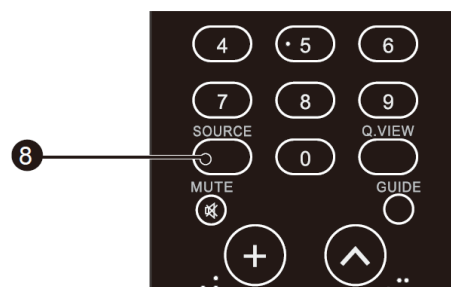


fig. 26

AV INPUT

- For connecting an AV device.
1. Make sure that the power of the TV and the AV device are off.
 2. Connect the audio cables from the AV device's output jacks to the Audio Input ①①. **See fig. 27.**
 3. Connect the video cables from the AV device's output jacks to the Video Input ①②. **See fig. 27.**
 4. Turn on the TV first, and then turn on the AV device.
 5. Press SOURCE ⑧ to select the AV input. **See fig. 26.**

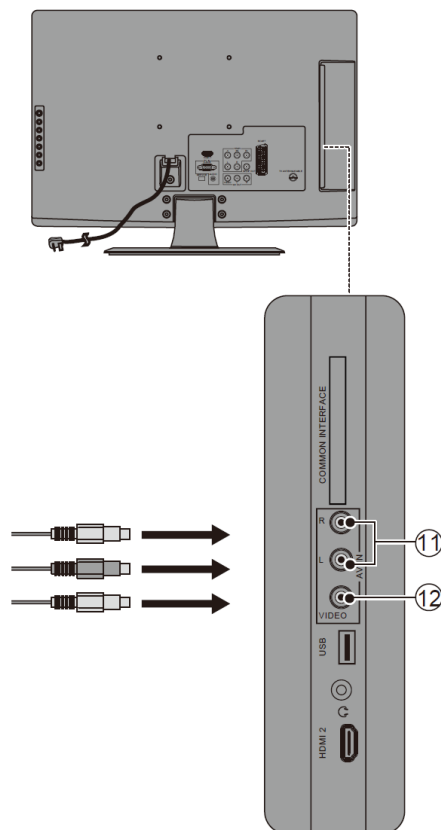


fig. 27

COMMON INTERFACE SLOT

- You can use a Conditional Access Module (CAM) card to view a Pay TV.
1. Insert the CAM card (not included) in Common Interface Slot ⑩.
See fig. 28.
 2. Please refer to the COMMON INTERFACE section for more detailed information.

HEADPHONE OUTPUT

1. Connect a set of stereo headphones (not included) to the Headphone Output ⑭ for private listening. When headphones are in use, the speakers will be automatically muted.
See fig. 28.

IMPORTANT: When using headphones, always set the volume control to a low level before you put the headphones on; then put the headphones on and gradually increase the volume to a comfortable listening level.

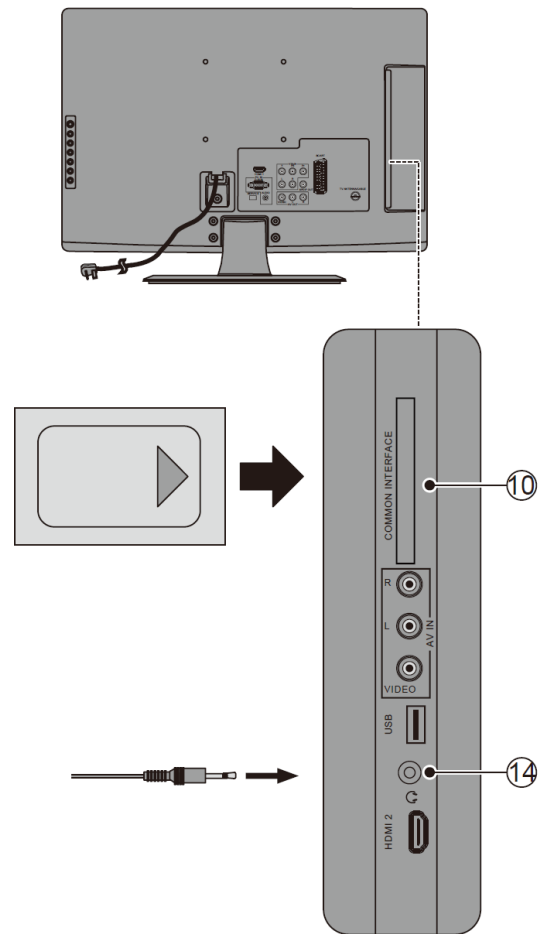
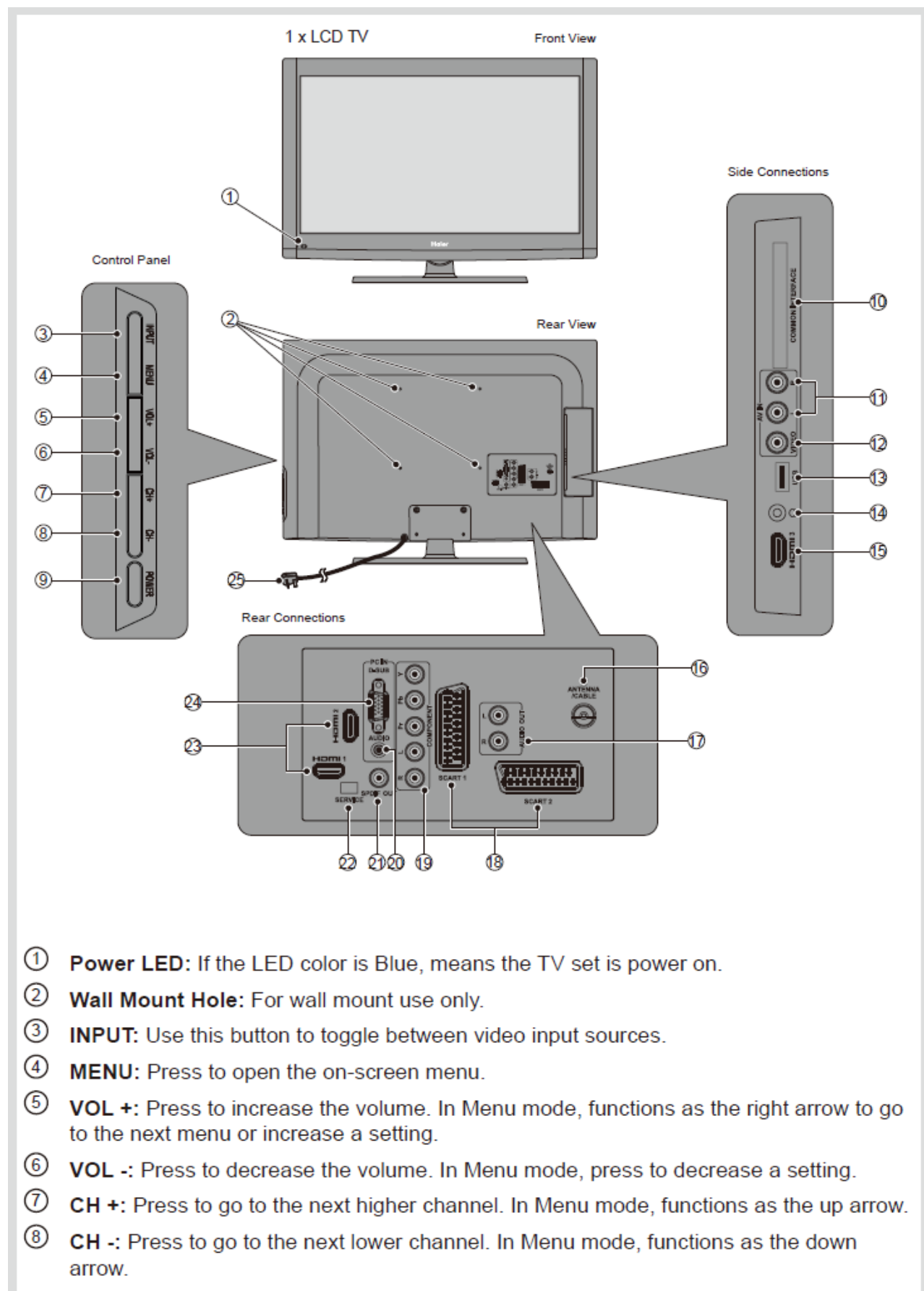


fig. 28

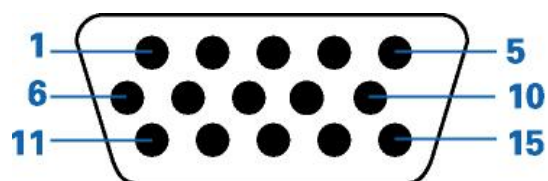
2.4 Front Panel Control Knobs



- ⑨ **Power Button:** Use this button to switch your LCD TV on/off.
- ⑩ **Common Interface Slot:** Function when PC Card or ExpressCard is in COMMON INTERFACE slot of the set. Please refer to your plug-in card manual for detail information.
- ⑪ **Audio Input:** For use when PC, Component or DVI device with standard audio output.
- ⑫ **Video Input:** For use when connecting an ATV/DTV video recorder with standard video and standard audio input.
- ⑬ **USB Input:** Data input from USB device. Insert USB storage device to view JPEG photos, listen to MP3 music, or to run the [Time Shift] function. (Please refer to pages 36~37 for more information.)
- ⑭ **Earphone Output:** Connect to earphones (16Ω or 32Ω).
- ⑮ **HDMI Input:** High Definition Multimedia Interface. Connect to devices with digital signals and can be used with PC or HDTV video signals.
- ⑯ **Antenna Input:** Connects to TV RF signals (antenna/CATV).
- ⑰ **Audio Output:** Connect to external analogue sound system.
- ⑱ **SCART:**
SCART 1: Full SCART, which transmits RGB, S-Video and CVBS in, and CVBS tuner out (Analogue only).
SCART 2: Half SCART, which transmits S-Video or CVBS in and CVBS monitor out.
- ⑲ **Component Input:** The YPbPr video signal can be used if connecting through the component video port. For example Progressive Scan DVD players, Hi-scale HDTV Decoders, and satellite receivers, obtain video with maximum resolution using YPbPr and L/R audio signals.
- ⑳ **PC Audio Input:** PC audio supports 3.5mm Jack.
- ㉑ **SPDIF Output:** SPDIF is highly recommended for high quality digital sound output.
- ㉒ **SERVICE:** For service use only.
- ㉓ **HDMI Input:** High Definition Multimedia Interface. Connect to devices with digital signals and can be used with PC or HDTV video signals.
- ㉔ **VGA Input:** Connect to VGA analogue signals sources. PC audio supports 3.5mm Jack.
- ㉕ **AC Power Cord:** Connect the power cord into the power outlet.

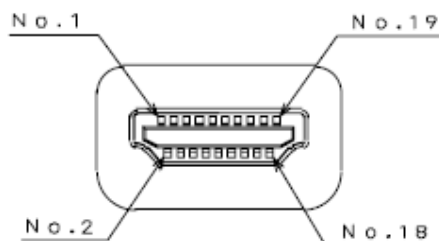
3. Input/Output Specification

3.1 RGB Signal Input



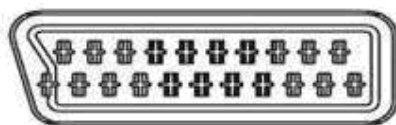
Pin No.	Description	Pin No.	Description
1	Red	9	+5V (Supply From PC)
2	Green	10	Sync GND
3	Blue	11	GND
4	GND	12	Bi-Directional Data(SDA)
5	Self Test	13	H. Sync
6	Red Ground	14	V. Sync
7	Green Ground	15	Data Clock(SCL)
8	Blue Ground		

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	TDMS Data2-	13	CEC
4	TMDS Data1+	14	Reserved (N.C. on device)
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 Full Scart Connector



Pin No.	Description	Pin No.	Description
1	Audio Output Right	12	N.C.
2	Audio Input Right	13	GND(Red)
3	Audio Output Left	14	GND(Blanking)
4	GND(Audio)	15	Red Input
5	GND(Blue)	16	RGB Switching Control
6	Audio Input Left	17	GND(Video Input & Output)
7	Blue Input	18	GND(RGB Switching Control)
8	Switch Signal Input (Fast Blanking)	19	Video Output(Composite)
9	GND(Green)	20	Video Input(Composite)
10	N.C.	21	Common Ground
11	Green Input		

3.4 Half Scart Connector



Pin No.	Description	Pin No.	Description
1	Audio Output Right	12	N.C.
2	Audio Input Right	13	GND
3	Audio Output Left	14	GND(Blanking)
4	GND(Audio)	15	Chrominance Input
5	GND	16	N.C.
6	Audio Input Left	17	GND(Video Input & Output)
7	N.C.	18	GND
8	Switch Signal Input (Fast Blanking)	19	Video Output(Composite)
9	GND	20	Video Input(Composite)
10	N.C.	21	Common Ground
11	N.C.		

3.5 Signal Type

3.5.1 TV Signal Input:

RF Signal: Aerial input / 10mV(80dBuV)

Video signal: Composite (CVBS input) / 1Vpp (300mV-sync, 700mV-video.)

S video input / 1VppY-signal, 700mVpp C-signal.

*[S-Video signal is attached to SCART connector, no separate I/O connector]

Component Video (YPbPr input)/ 1Vpp Y signal, 700mVpp Pb, Pr signal

SCART input .

*(Full scart has CVBS/RGB/S-video. Half scart has CBVS/S-video signal [Half SCART is not equipped for 19", 22"and 26"])

Audio signal: R/L input

Level:- Nominal: 0.5 V rms.

- Maximum : 2.0 V rms.

- Impedance > 10 k Ω

R/L output Level:

- Nominal : 0.5 V rms.

- Maximum : 2.0 V rms.

HDMI signal : Digital interface with 4 channels TMDS signal

HDMI support both AV type and PC DVI.

3.5.2 TV signal output:

Video: SCART CVBS output (RF out) / 1Vpp (300mV-sync, 700mV-video.)

SCART CVBS output (Monitor out) / 1Vpp (300mV-sync, 700mV-video.)

<< Only for 32"/37"/42" >>

AV CVBS output (Monitor out) / 1Vpp (300mV-sync, 700mV-video.)

<<Only for 19"/22"/26">>

Audio: R/L output

Level: - Nominal: 0.5 V rms.

-Maximum: 2.0 V rms.

SCART/AV content output(CVBS type) condition table

3.6 VGA Support Format

					19"	22"	24"
Item	H.Freq. (KHz)	Mode	Resolution	V.Freq. (Hz)			
1	31.469	IBM VGA	640x350	70.086			
2	31.469	IBM VGA	720x400	70.087			
3	31.469	IBM VGA	640x480	59.94			
4	35	MACINTOSH	640x480	67			
5	37.861	VESA	640x480	72.809			
6	37.5	VESA	640x480	75			
7	35.156	VESA	800x600	56.25			
8	37.879	VESA	800x600	60.317			
9	48.077	VESA	800x600	72.188			
10	46.875	VESA	800x600	75			
11	49.7	MACINTOSH	832x624	75			
12	48.363	VESA	1024x768	60.004			
13	56.476	VESA	1024x768	70.069			
14	60.023	VESA	1024x768	75.029			
15	61.08	IBM XGA-2	1024x768	75.781			
16	44.772	VESA CVT	1280x720	59.855			
17	47.776	VESA	1280 x768	59.87			
18	60.289	VESA	1280 x768	75			
	49.702	VESA	1280x800	59.81			
19	47.72	VESA CVT	1360x768	59.799			
20	63.981	VESA	1280x1024	60.02			
21	79.976	VESA	1280x1024	75.025			
	55.935	VESA	1440x900	59.887			
	70.635	VESA	1440x900	74.984			
22	65.29	CVT1.76MW	1680x1050	59.954			
23	64.674	CVT1.76MW-R	1680x1050	59.883			
24	66.587	CVT 2.3MA-R	1920x1080	60			

4. Mechanical Instructions

Front view



Back view



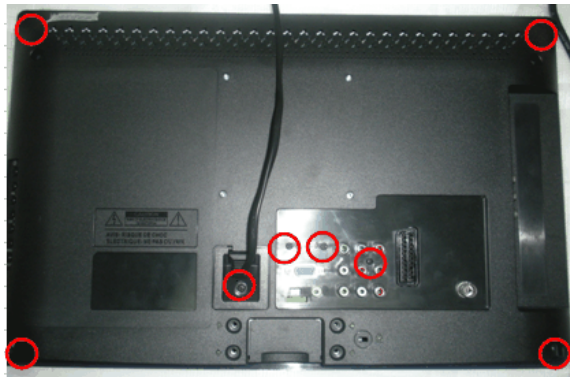
1. Unplug and remove the base.



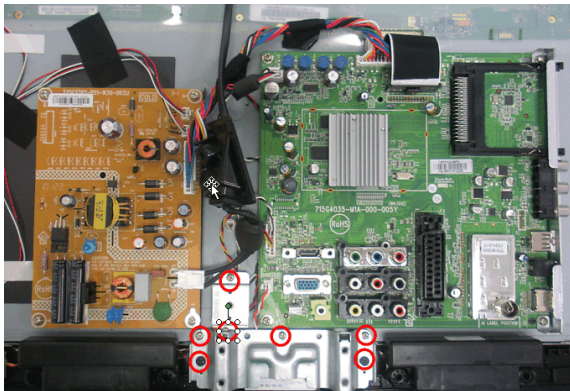
2. Remove 4 screws to take the neck away.



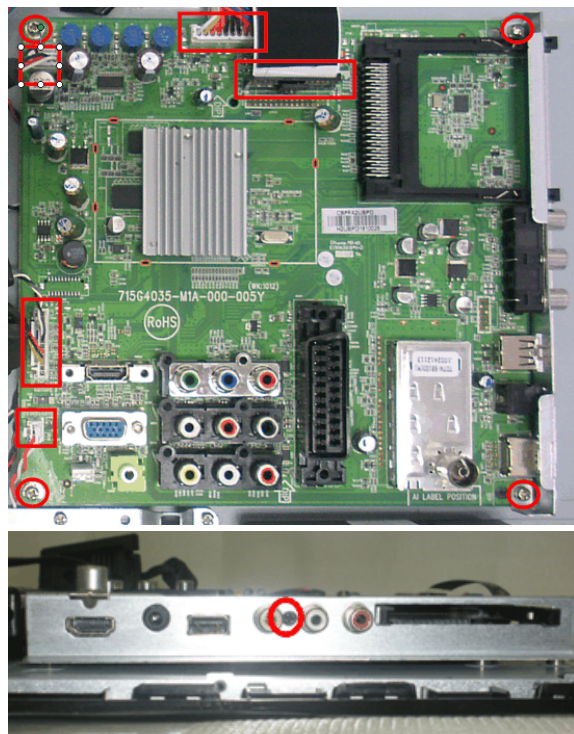
3. Remove 8 screws on the back cover and take it away.



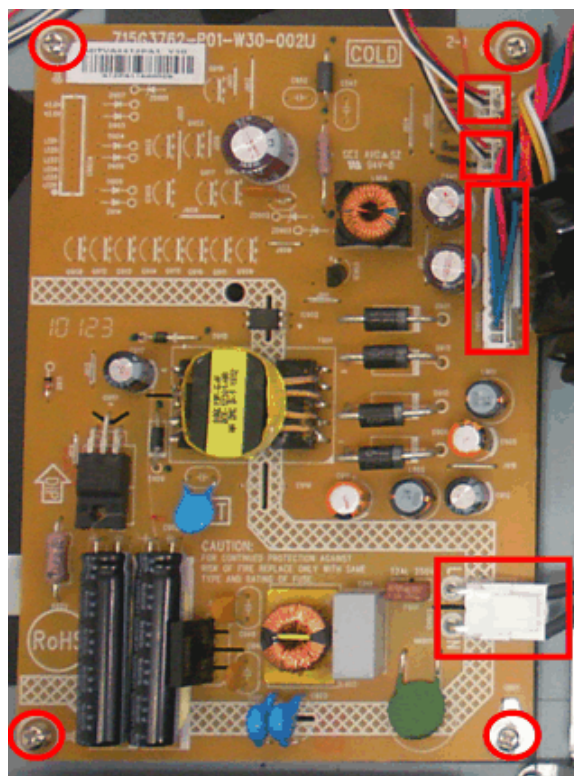
4. Remove 7 screws to remove the BKT



5. Remove 5 screws and 5 cables to remove the main board.



6. Remove 4 screws and 4 cables to remove the power board.



7. Unplug the speakers



8. Unplug and remove the IR board.



9. Remove 2 screws to remove the key board.

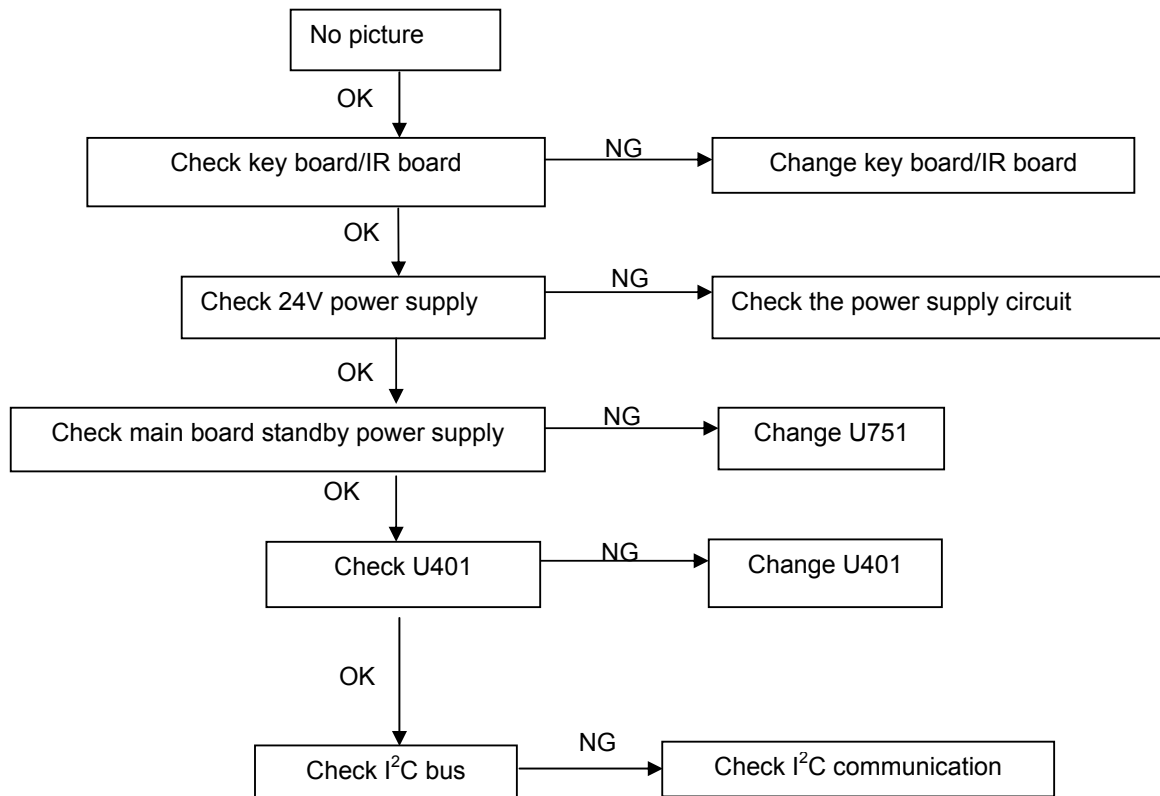


10. Separate the panel and the bezel

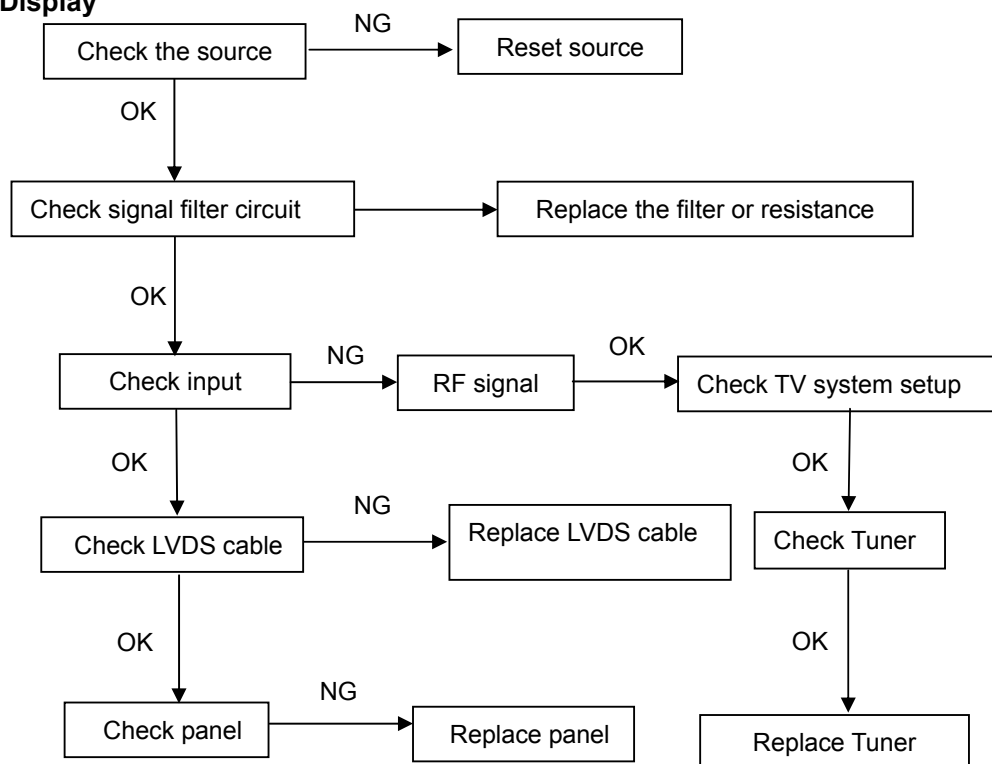


5. Repair Flow Chart

No Picture (LED Orange)

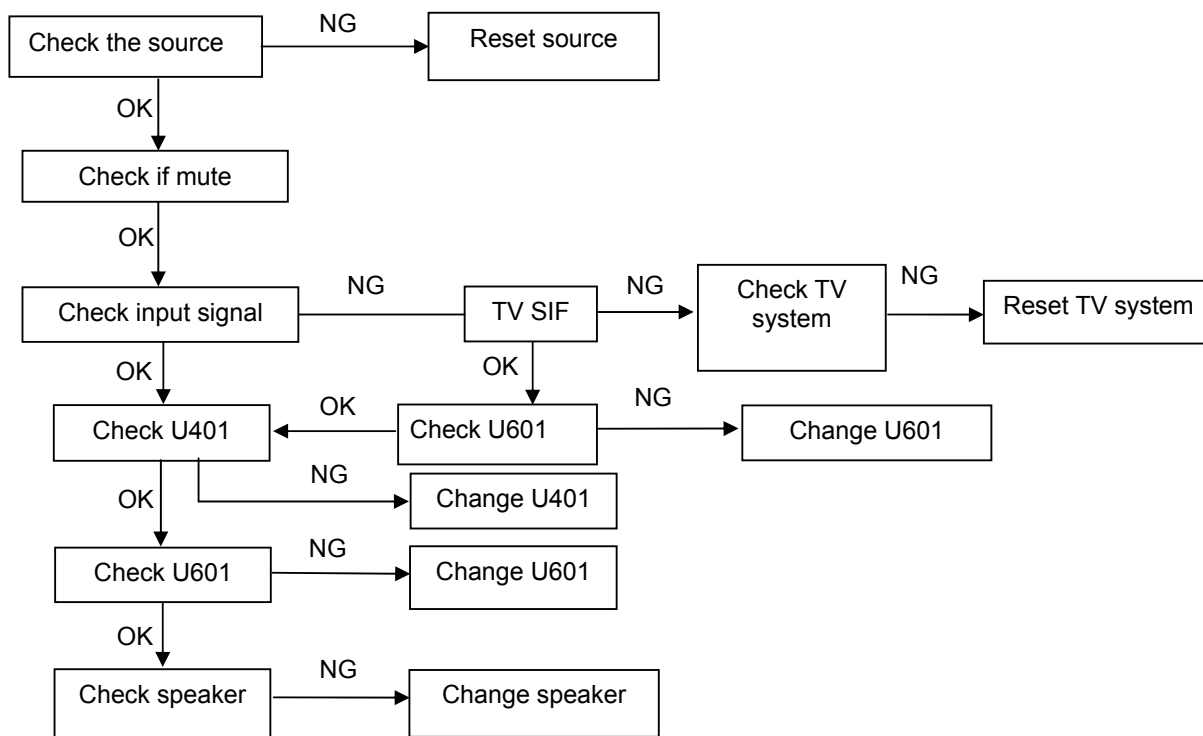


Abnormal Display



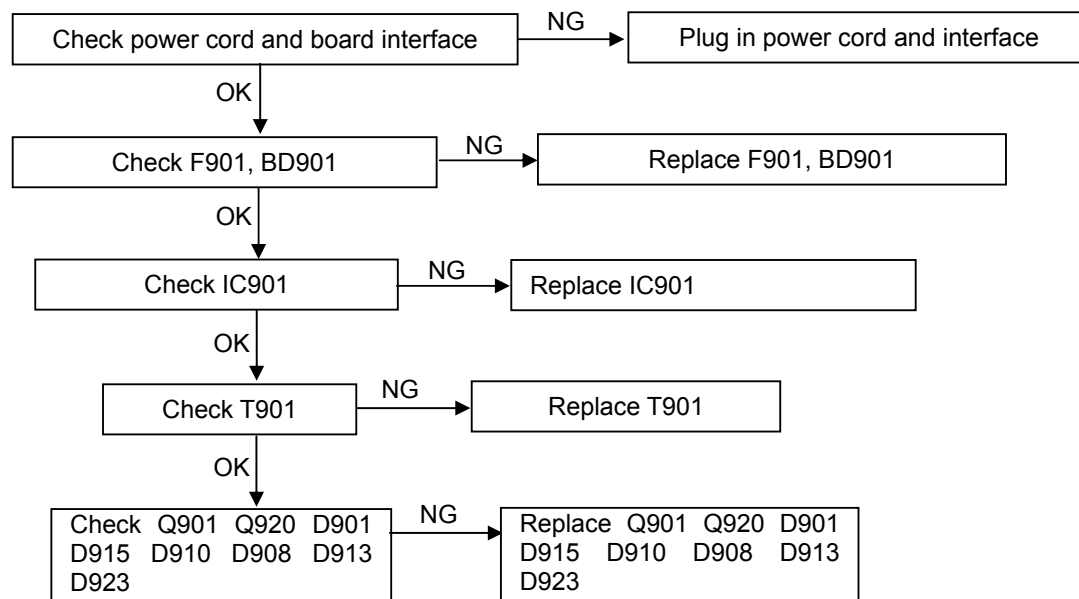
No Sound

NG

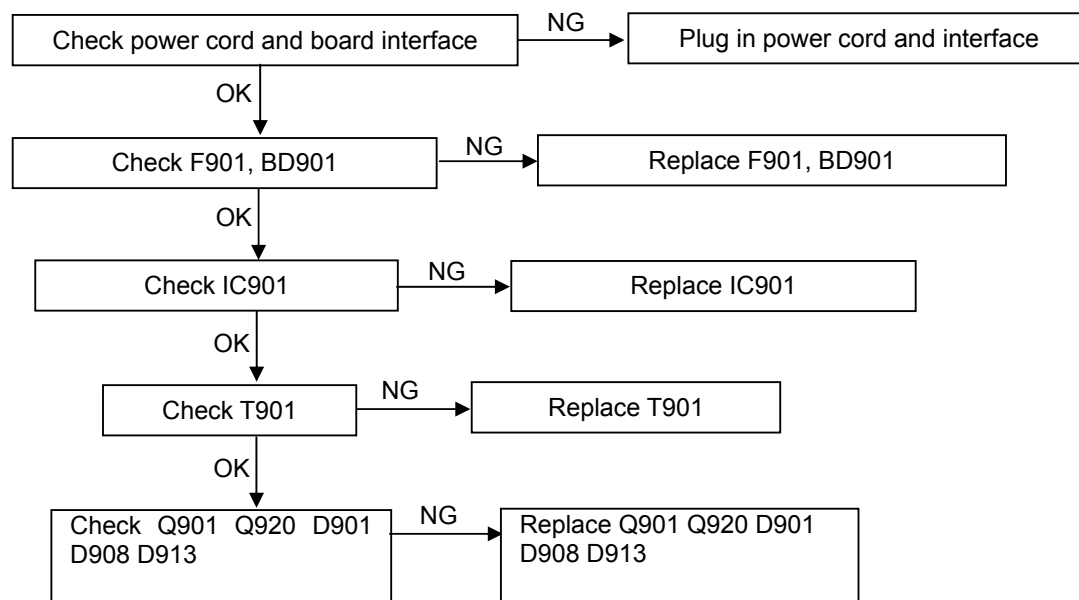


No Power (No LED Indicator)

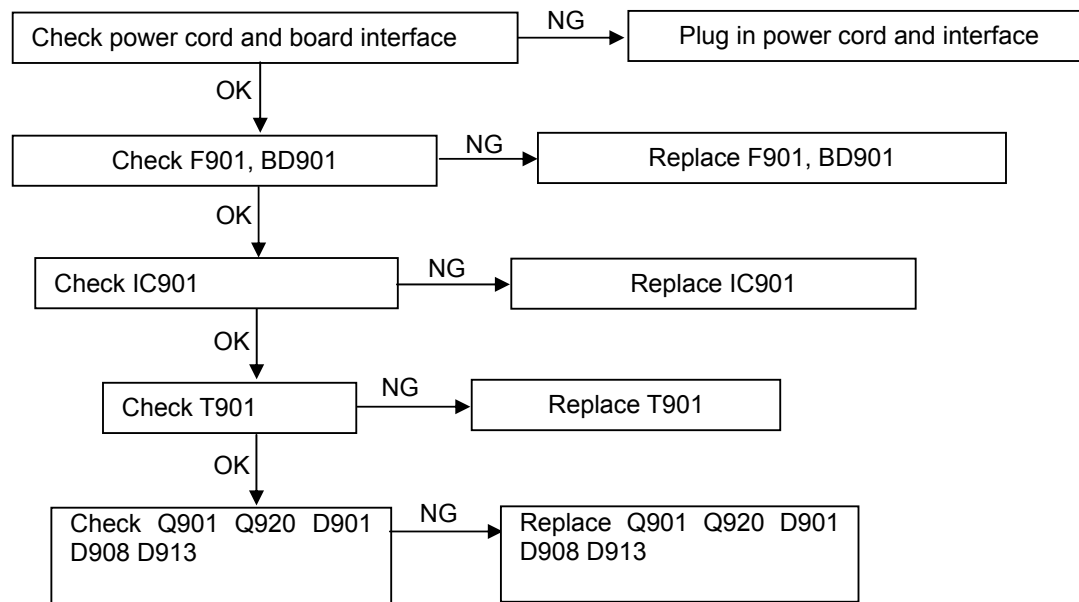
For LT19Z6



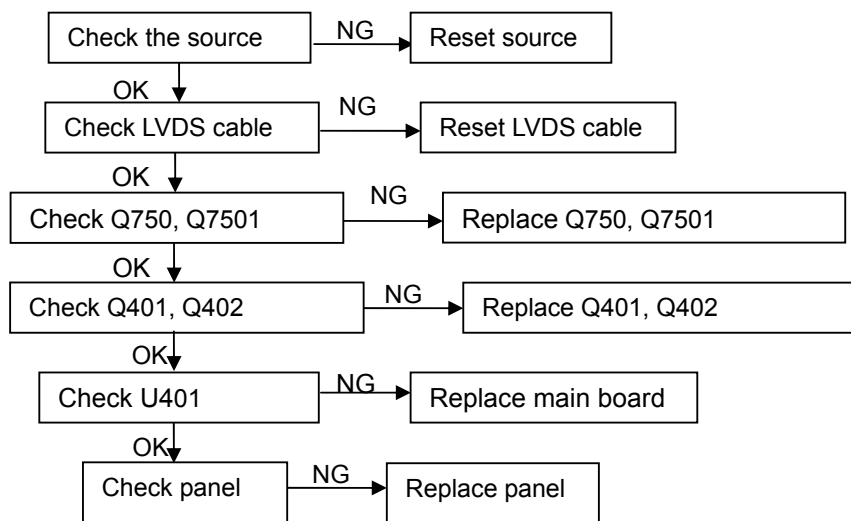
For LTF22Z6



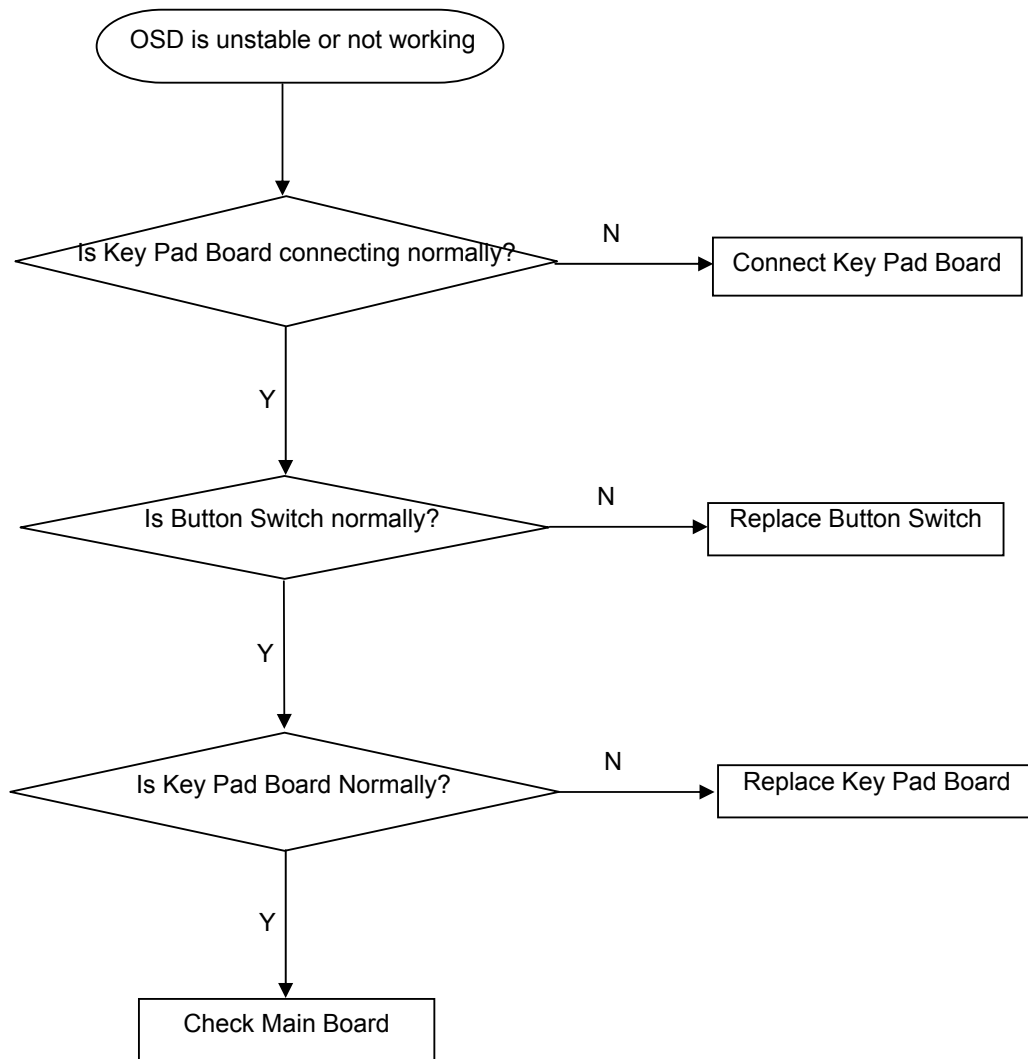
For LTF24Z6



No Display (LED Indicator Green)



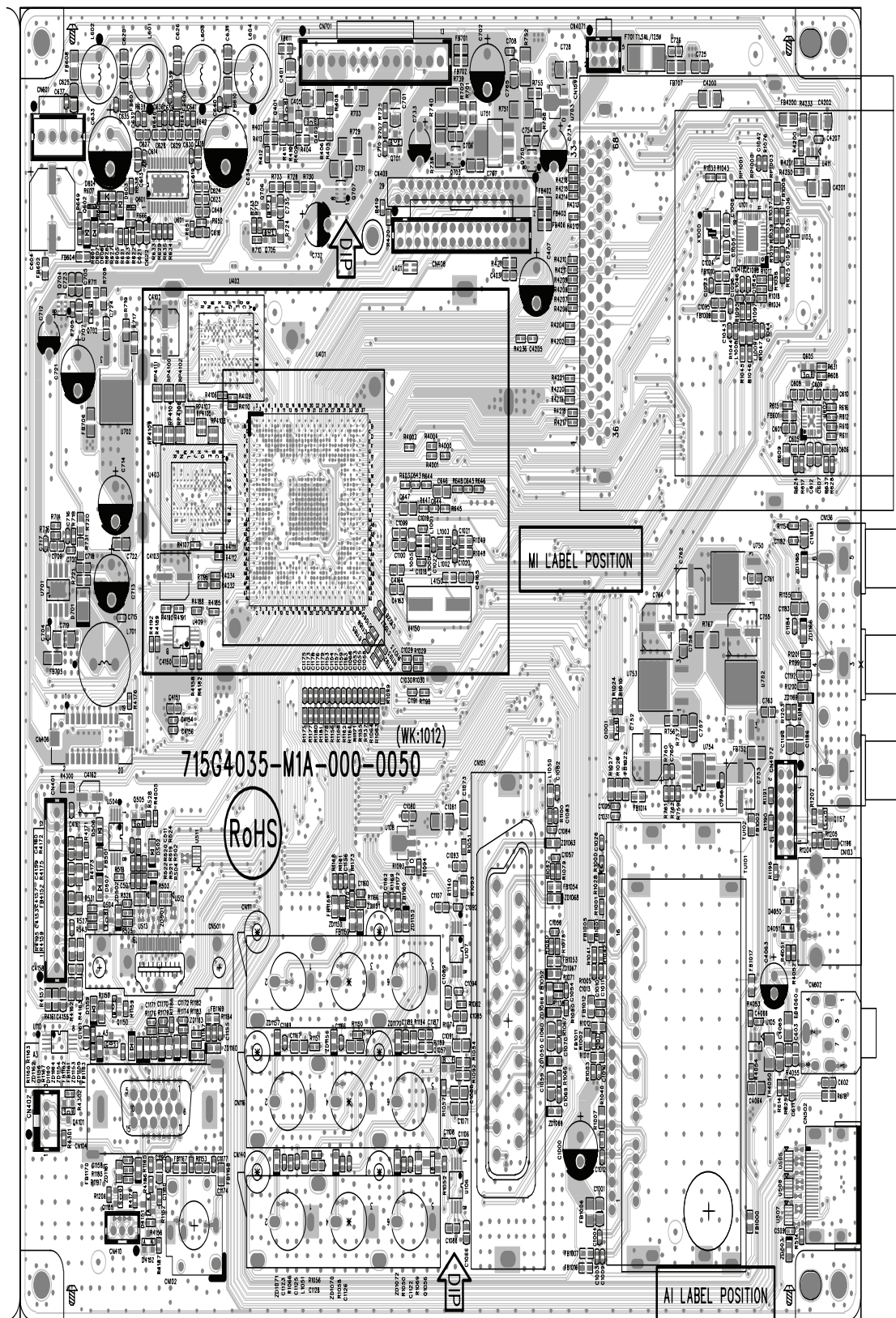
Key Board

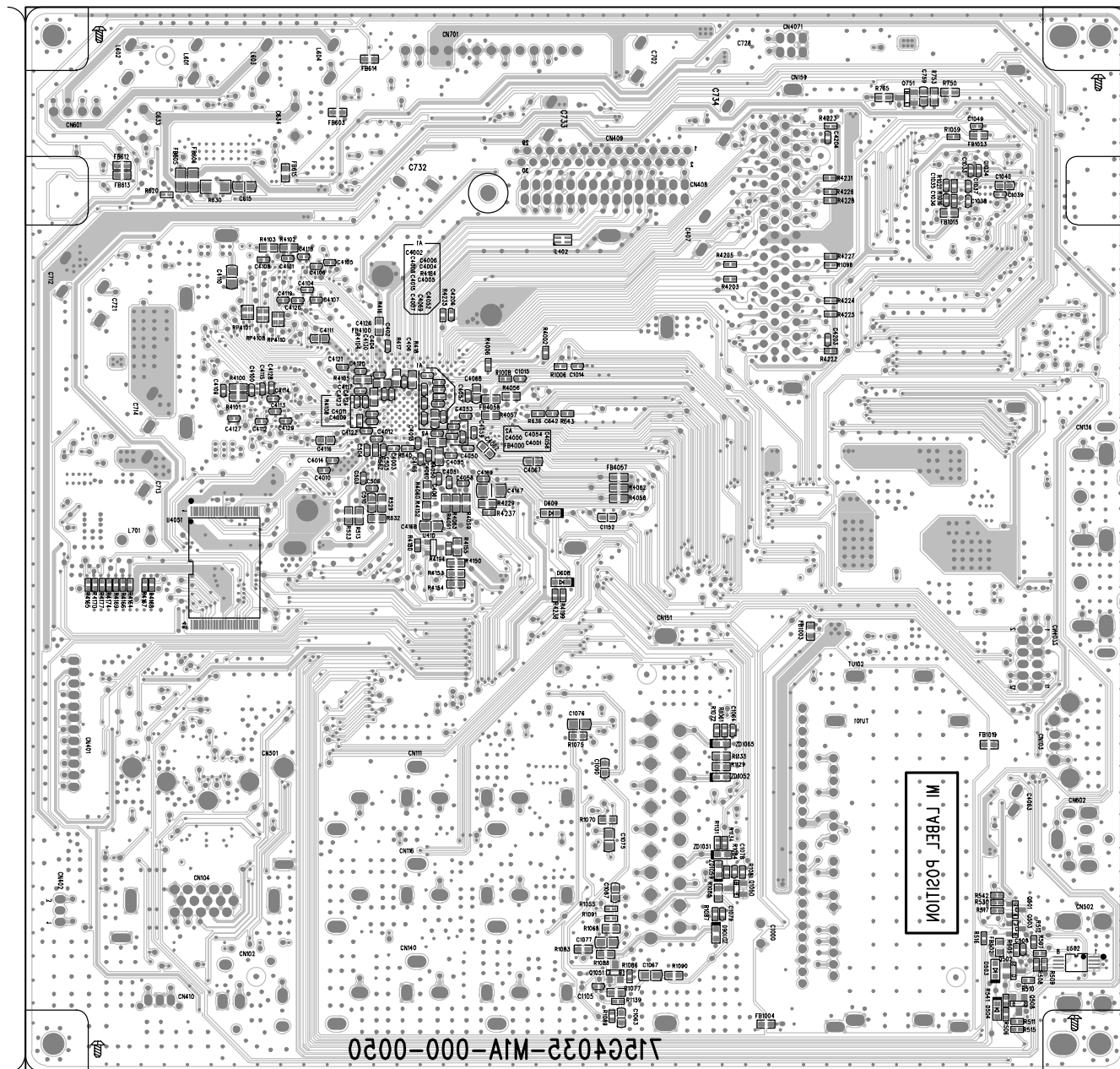


6. PCB Layout

6.1 Main Board

715G4035

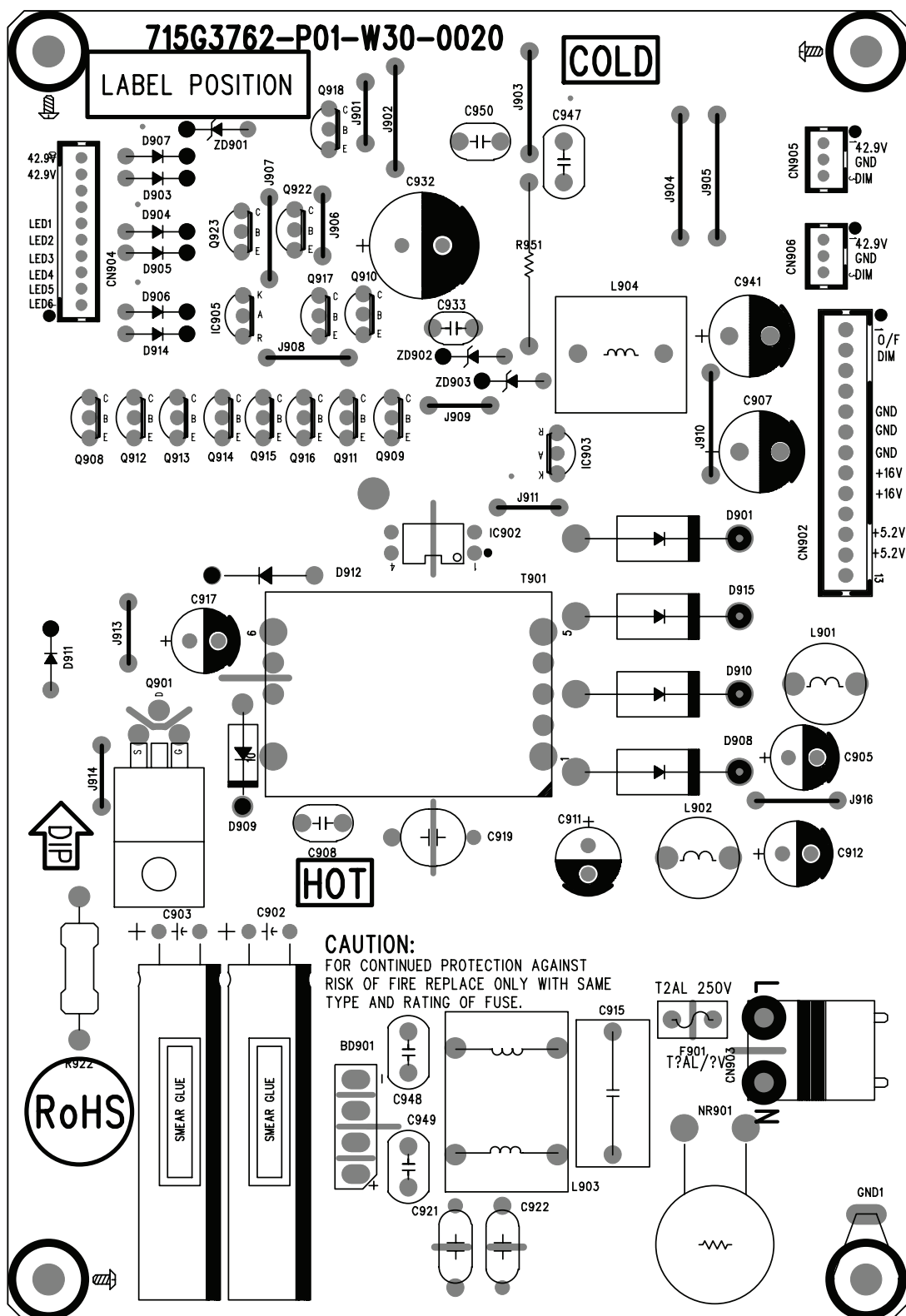


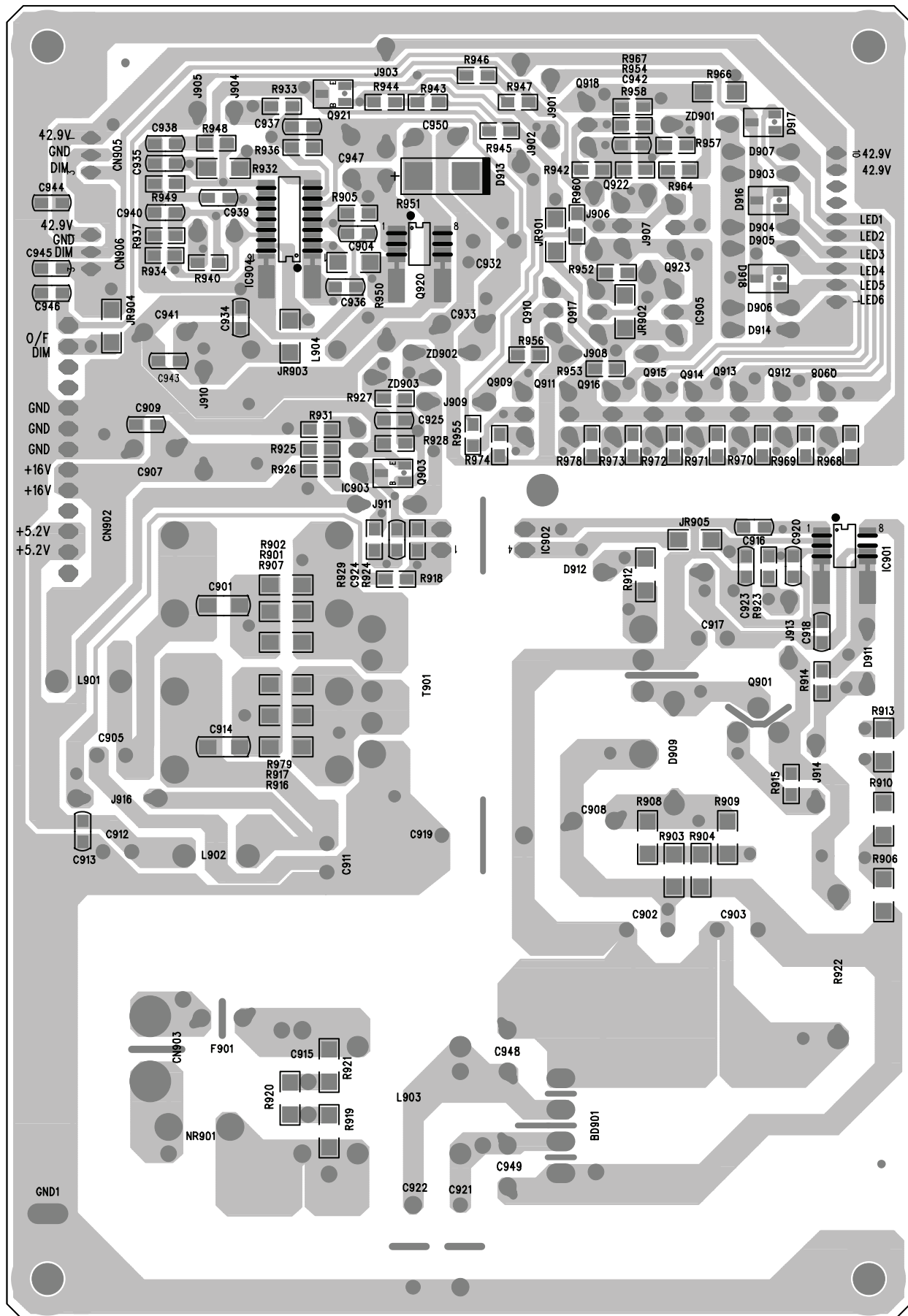


6.2 Power Board

6.2.1 For LT19Z6715

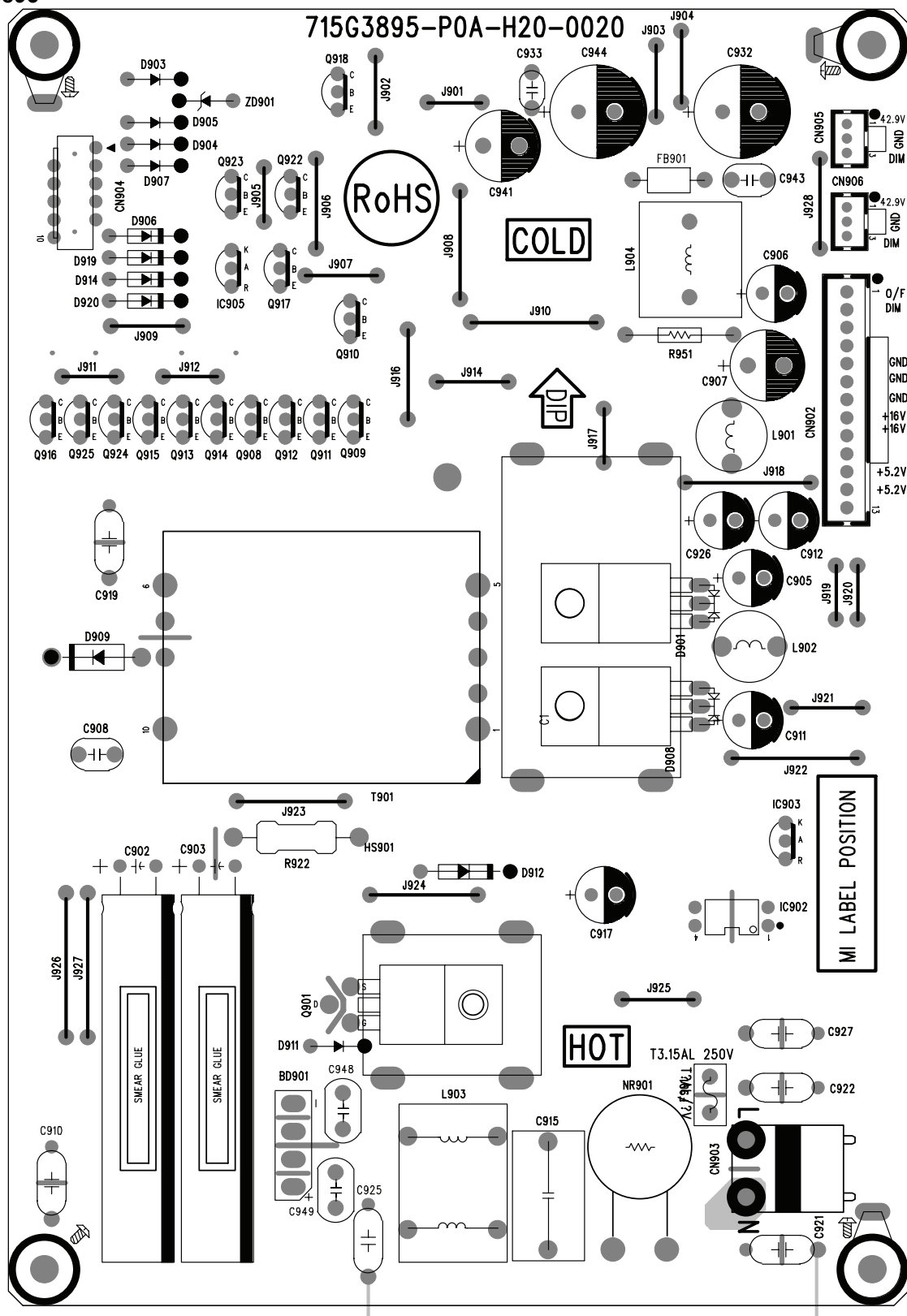
715G3762

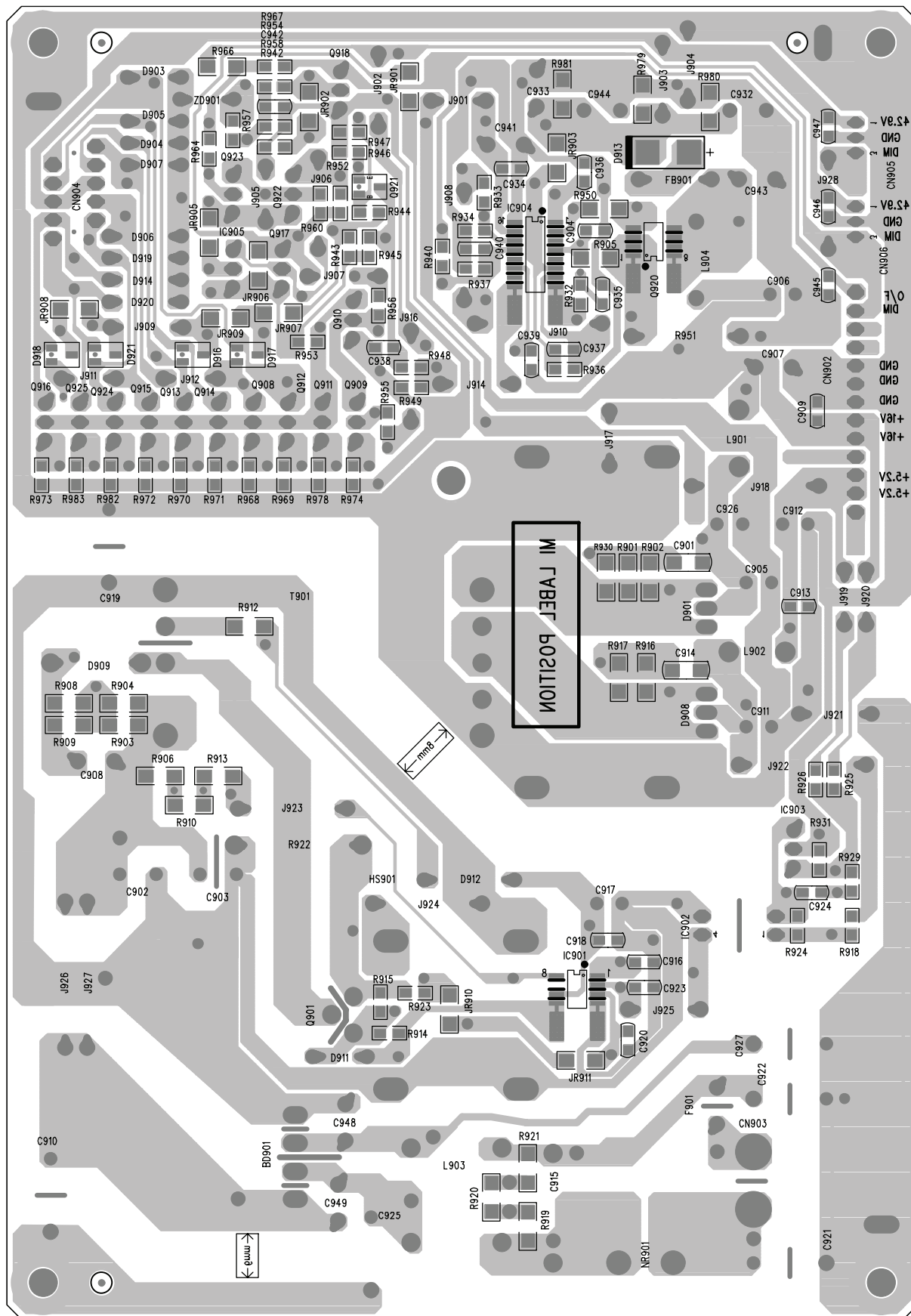


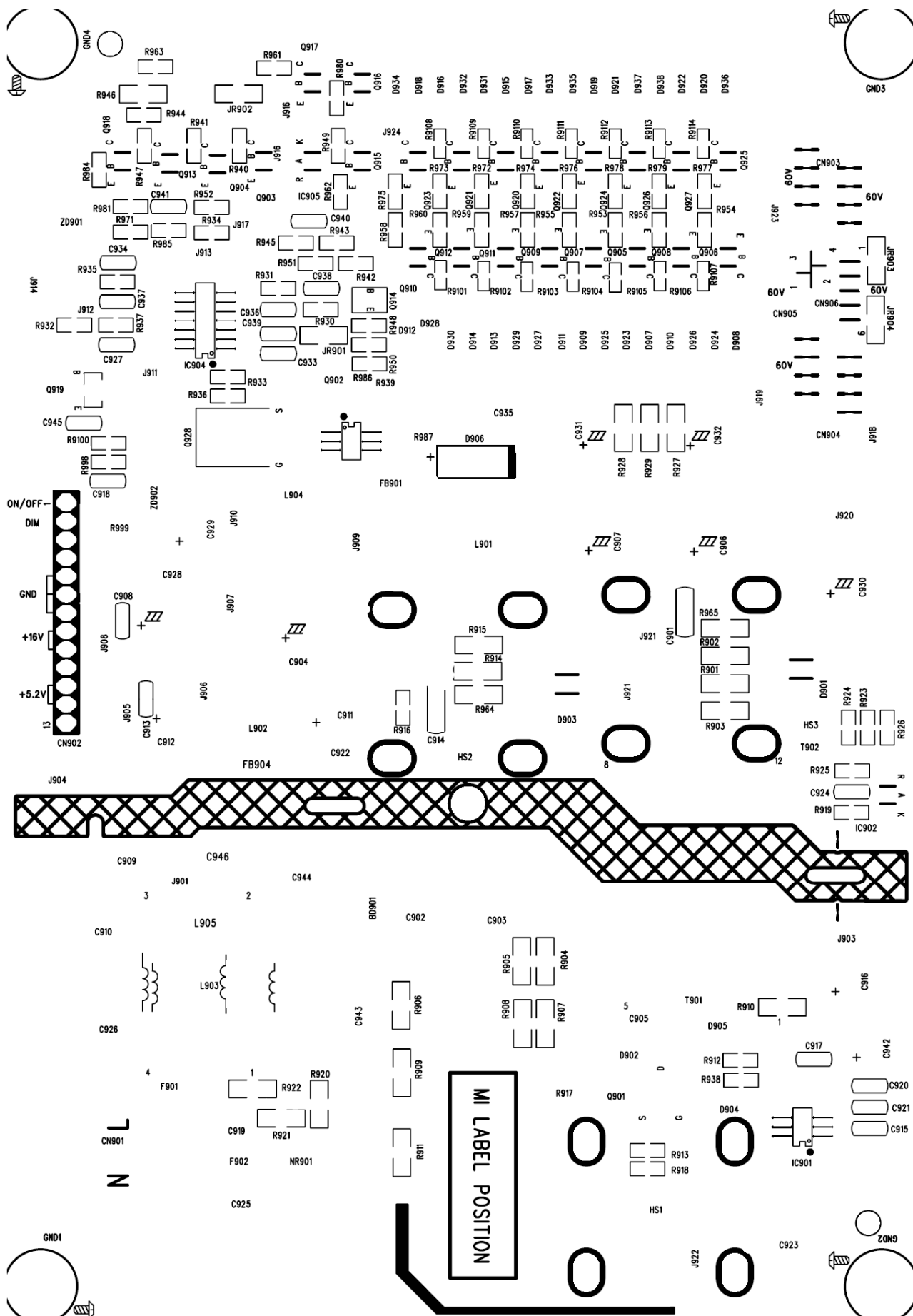


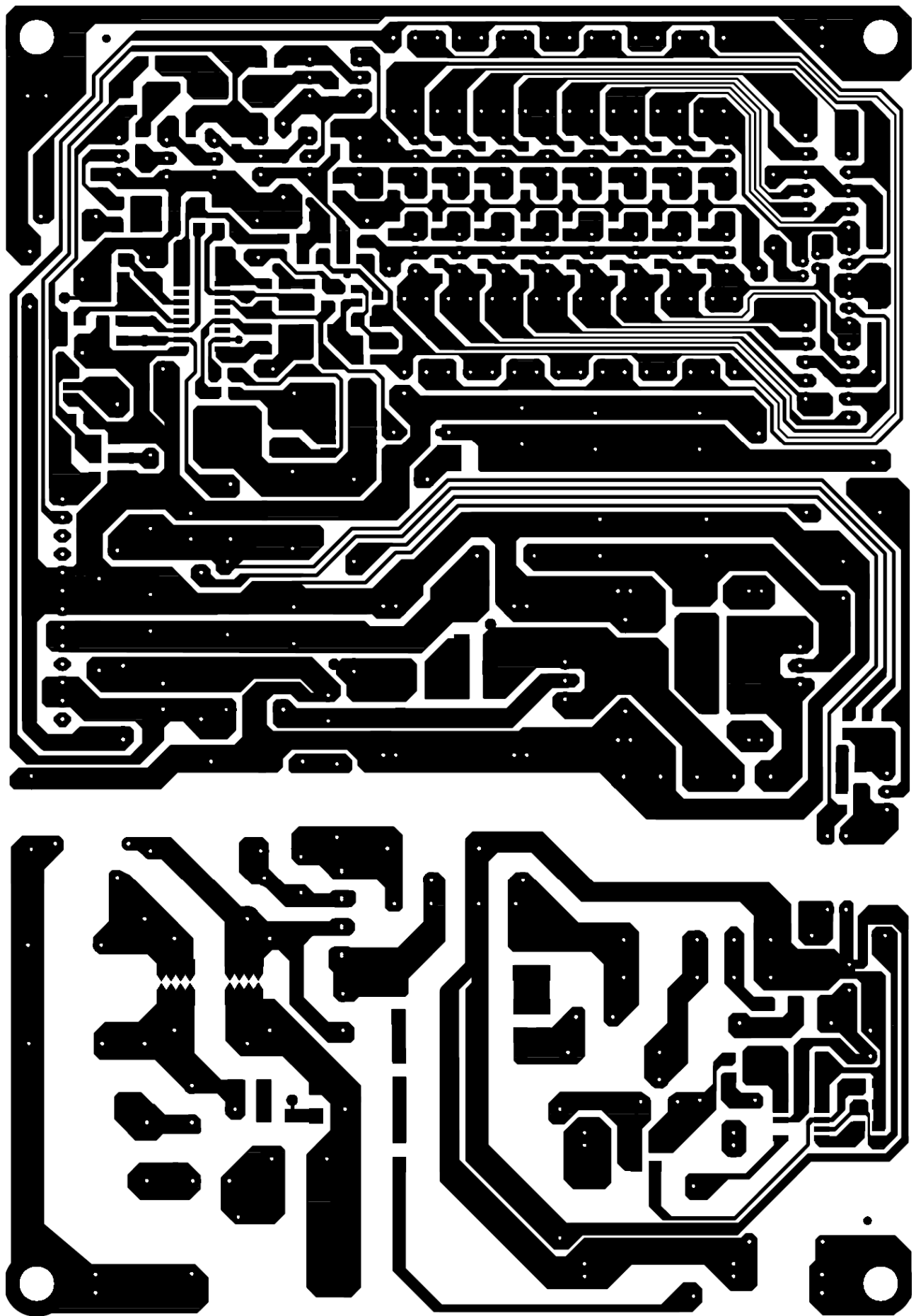
6.2.2 Power Board For LTF22Z6, LTF24Z6

715G3895

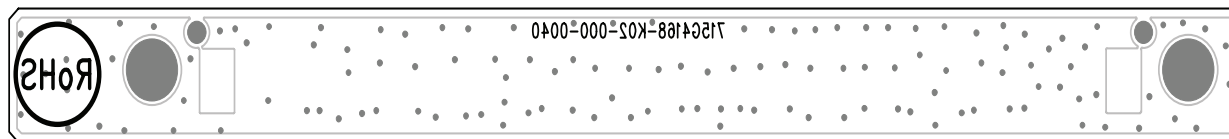
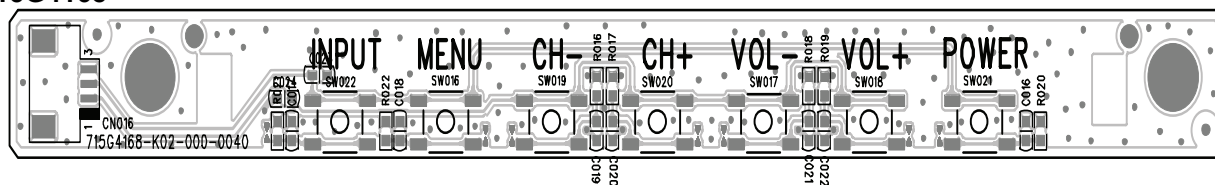




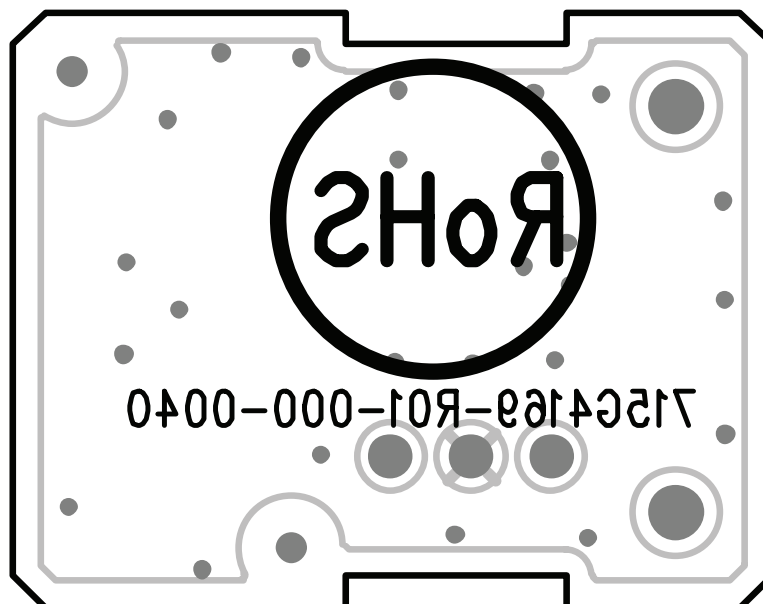
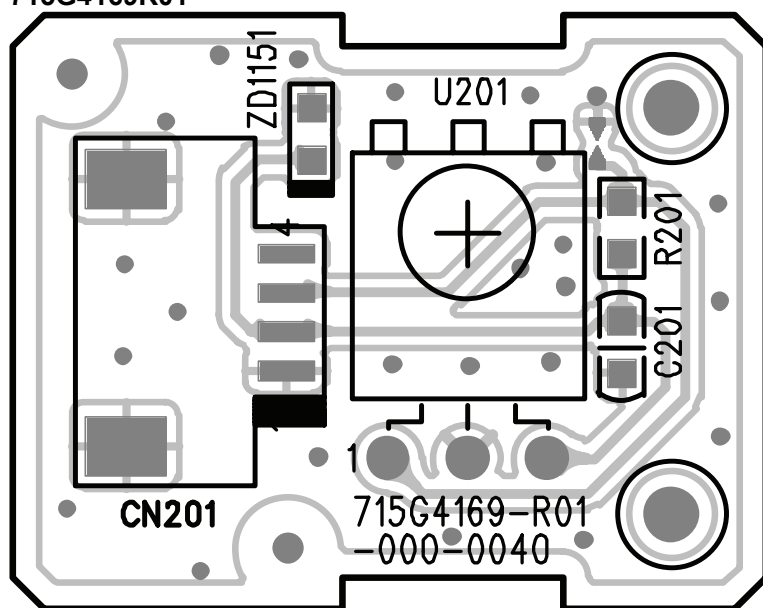




6.3 Key Board 715G4168



6.4 IR Board 715G4169R01



7. Adjustment

7.1 White balance adjustment

Alignment method:

Initial Set-up:

1. Select source as "YPbPr".
2. Set Contrast = 58 and Brightness=48, Color=58, at normal menu mode.
3. Apply "80% white pattern or Flat80 pattern by Component video generator.
4. Enter factory mode menu: press MENU + Numeric keys 1999".

Alignment:

1. Apply Flat pattern (80% white pattern).
2. Set color temperature to "NORMAL".
3. At factory mode menu, adjust the Scaler R Gain, Scaler G Gain, Scaler B Gain values to meet "NORMAL" color coordinates specification below. Then store those values to NVM
4. Set color temperature to "COOL".
5. At factory mode menu, adjust the Scaler R Gain, Scaler G Gain, Scaler B Gain values to meet "COOL" color coordinates specification below. Then store those values to NVM
6. Set color temperature to "WARM".
7. At factory mode menu, adjust the Scaler R Gain, Scaler G Gain, Scaler B Gain values to meet "WARM" color coordinates specification below. Then store those values to NVM

Color temperature Normal/Warm/Cool (x, y) co-ordinates specification:

Picture Mode	x	y
Normal (9000oK)	0.289±0.003	0.291±0.003
Cool (12000oK)	0.272±0.003	0.277±0.003
Warm (6500oK)	0.314±0.003	0.319±0.003

Table 5: Reading with Knoica Minolta CS-200.

Note:

1. Use Knoica Minolta CS-200 for color coordinates and luminance check.
2. For suitable mass production at factory, colour analyzers CA-210 can be applied. But, before measuring, all CA-210 should be coordinates and proofread with a Chroma Meter (CS-200) or equivalent instrument and a reference TV set.
3. Check the luminance at the center of the screen with 100% White. And to set Brightness control at 100; Contrast control at 100.
Luminance > 200cd/m² (Typ.) [For LE19K097/LT19Z6 only at color temp.- *warm mode]
> 200 cd/m² (Typ.) [For LE22K097/LT22Z6 only at color temp.- *warm mode]
> 250 cd/m² (Typ.) [For LE24K097/LT24Z6 only at color temp.- *warm mode]
4. The default values of Scaler R Gain, Scaler G Gain, Scaler B Gain are all 128. When panel WD is made adjustment, the three values could not be over 128. That is preventing color saturation after adjusting Contrast and Brightness setting at main menu.

1. Enter into the factory mode:

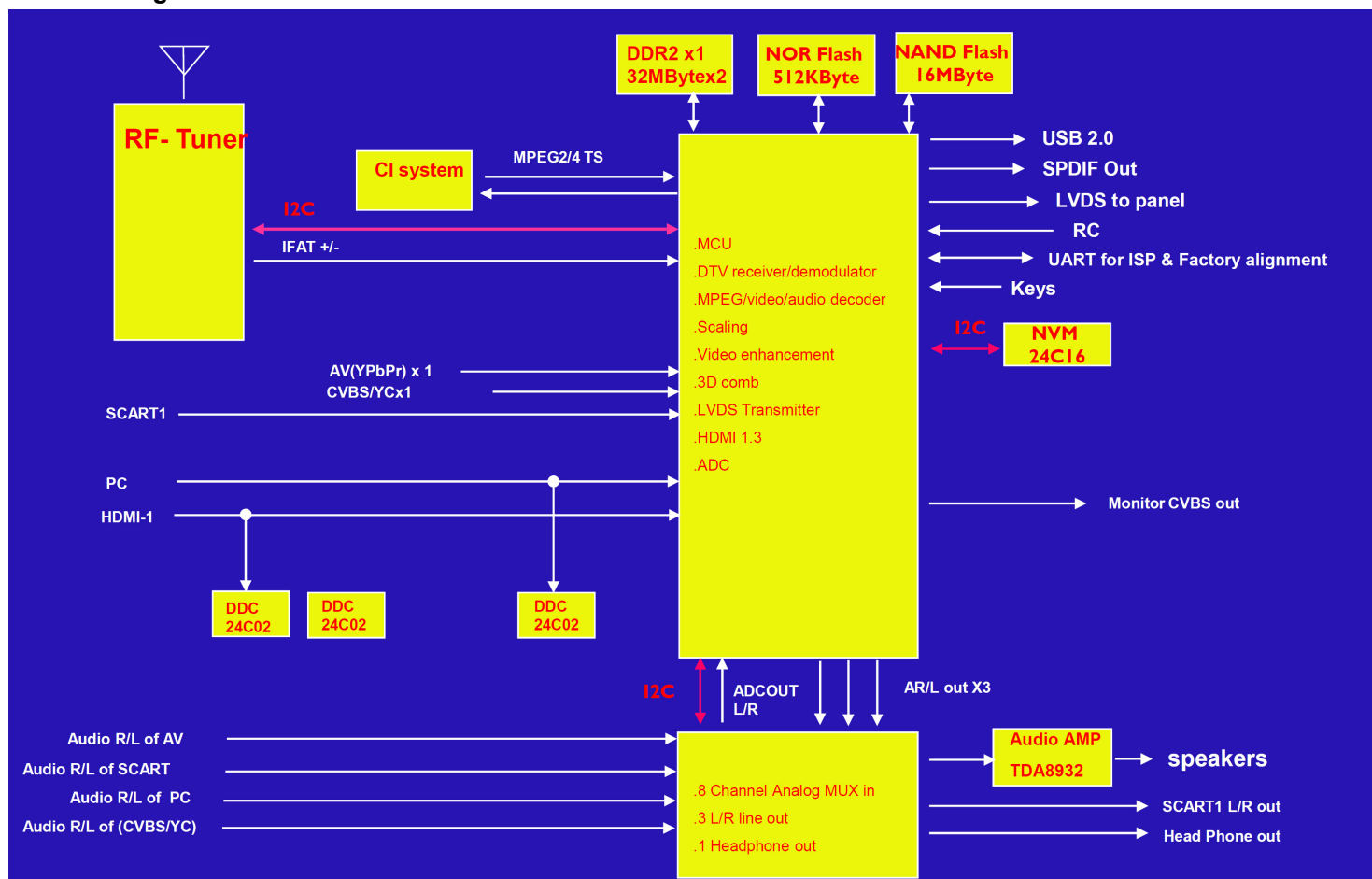
Turn on the TV, press MENU key with remote control, then press number key 1 → 9 → 9 → 9. It will achieve the factory mode.

2. Click on "Auto Color" in the PC and COMPONENT models:

PC mode: TIM = 137; PAT = 42

COMPONENT mode: TIM = 316; PAT = 185

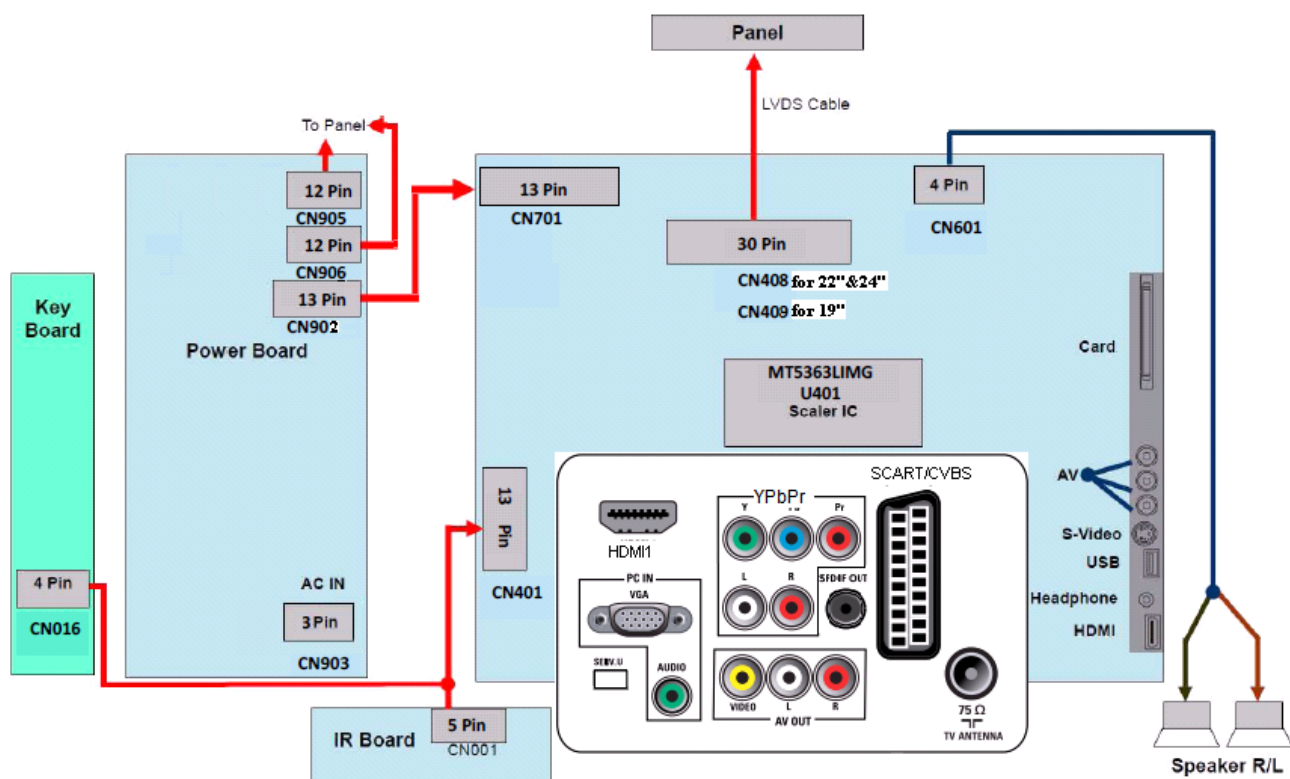
8. Block Diagram



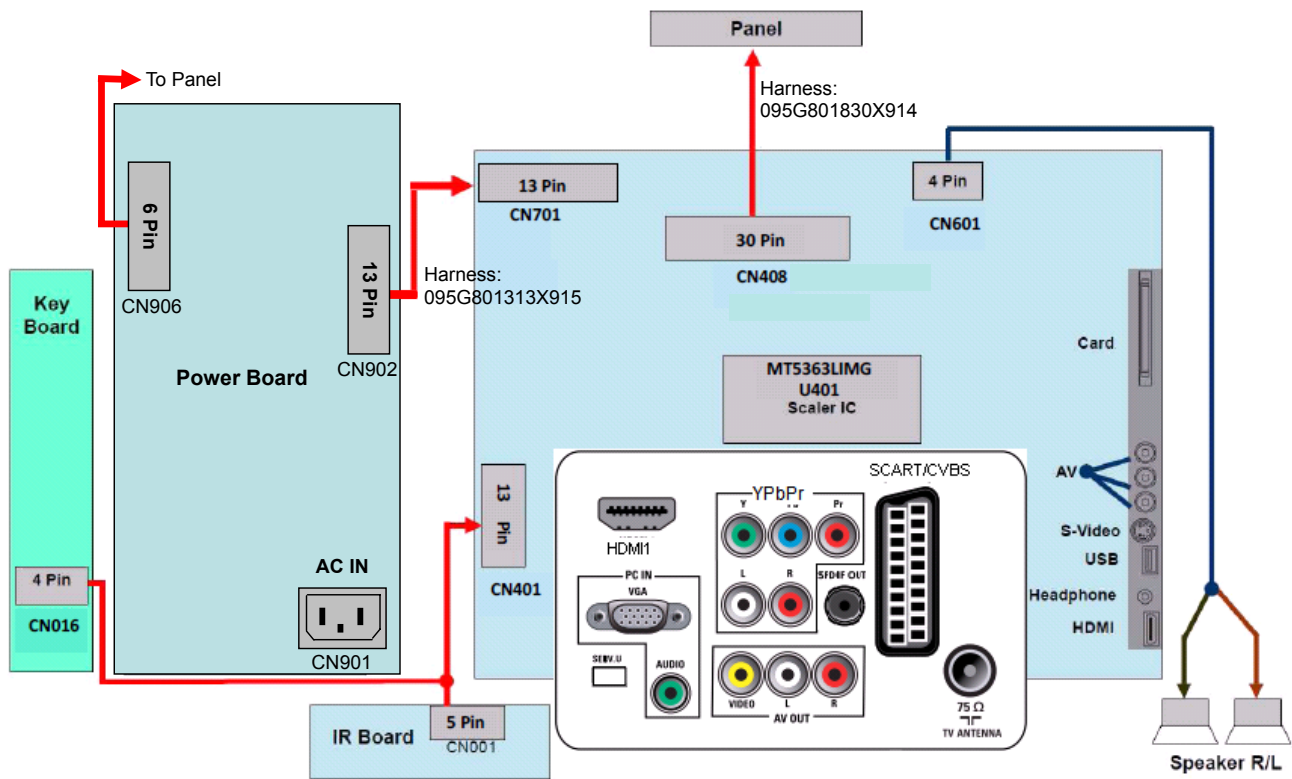
9. Wiring Diagram

Wiring Diagram

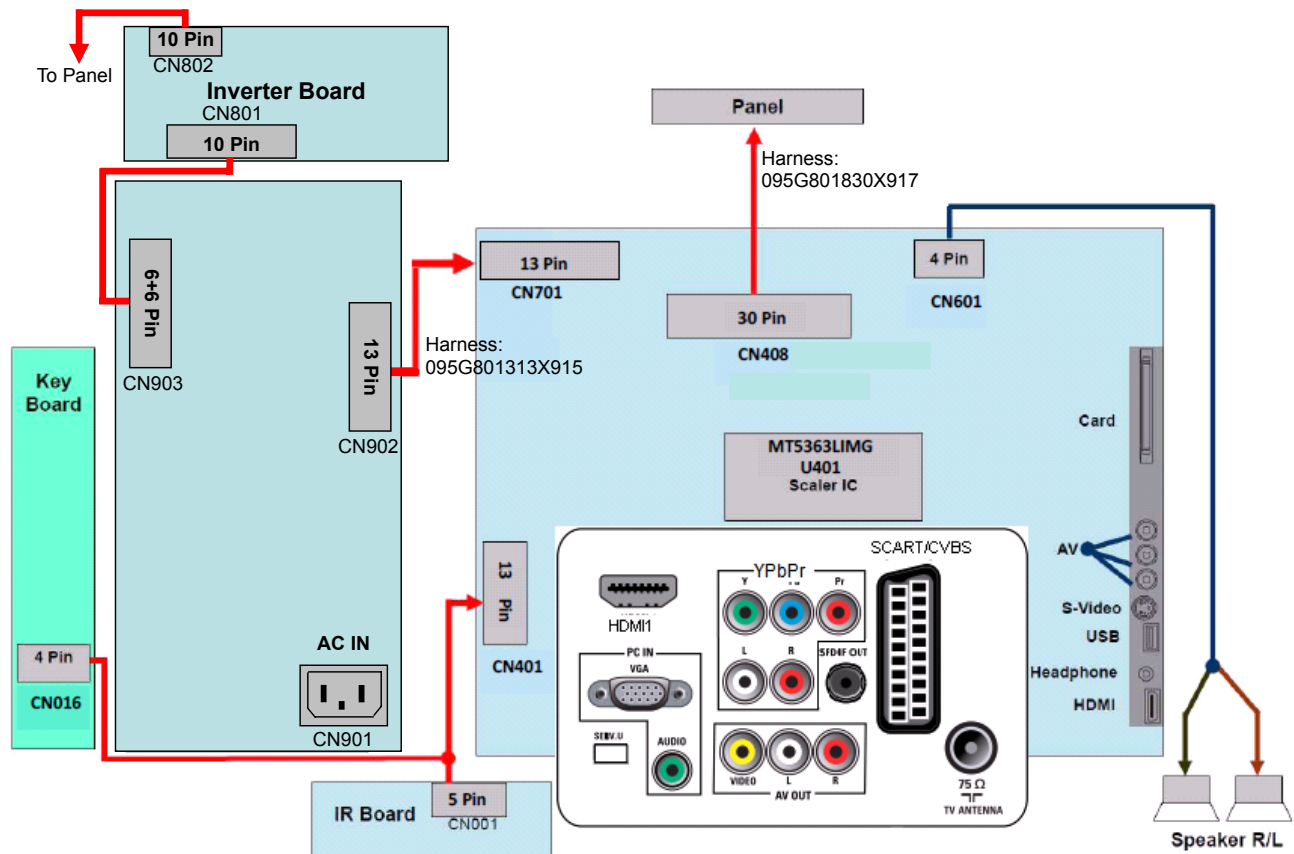
Haier 19" 22" 24"



LTF22Z6 Power Board: 715G4313



LTF24Z6 Power Board: 715G4313/715G3798

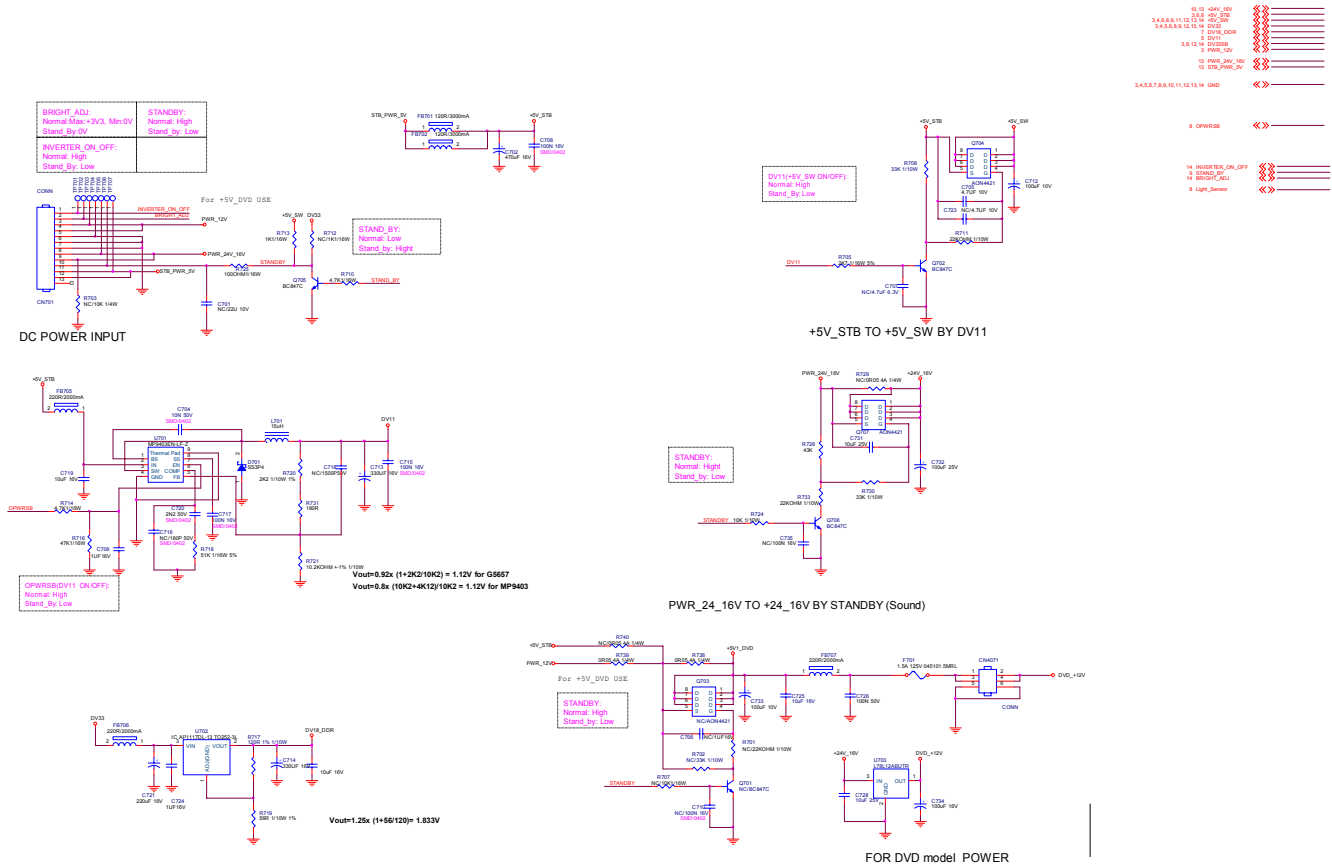


10. Schematic Diagram

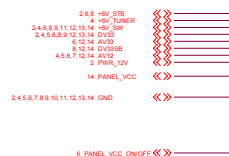
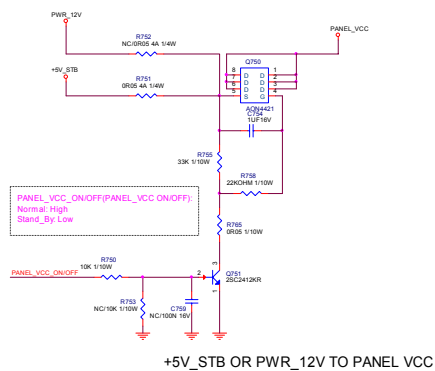
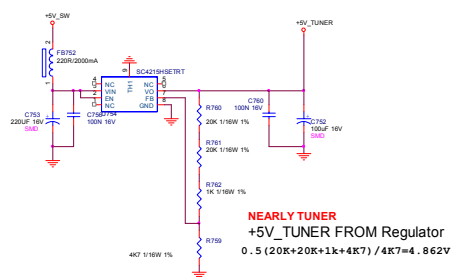
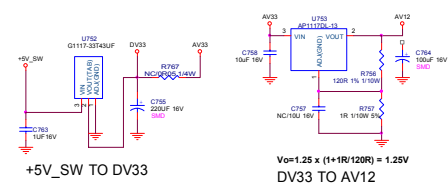
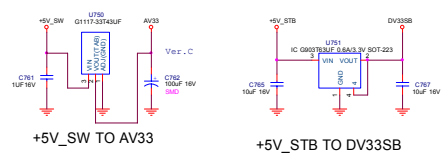
10.1 Main Board

715G4035

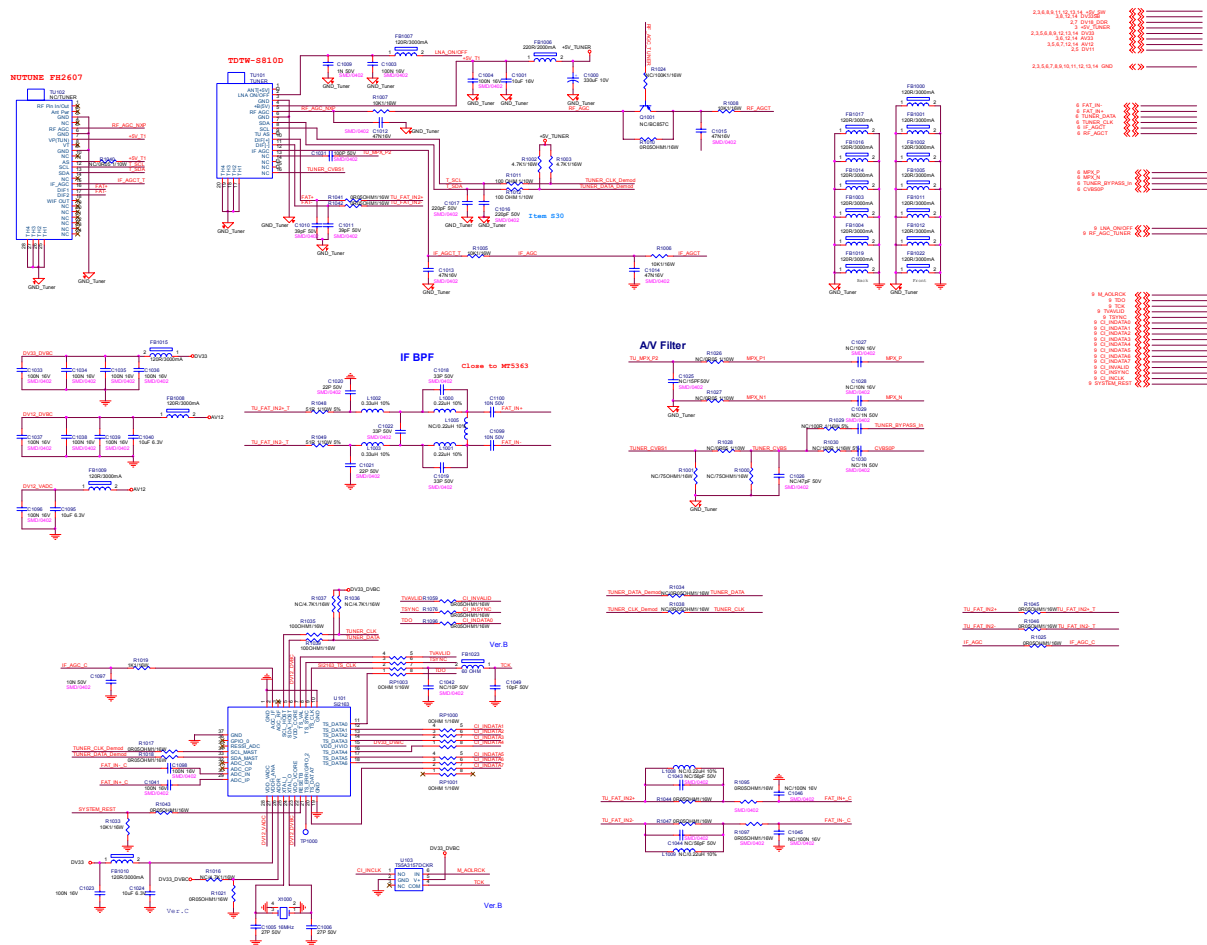
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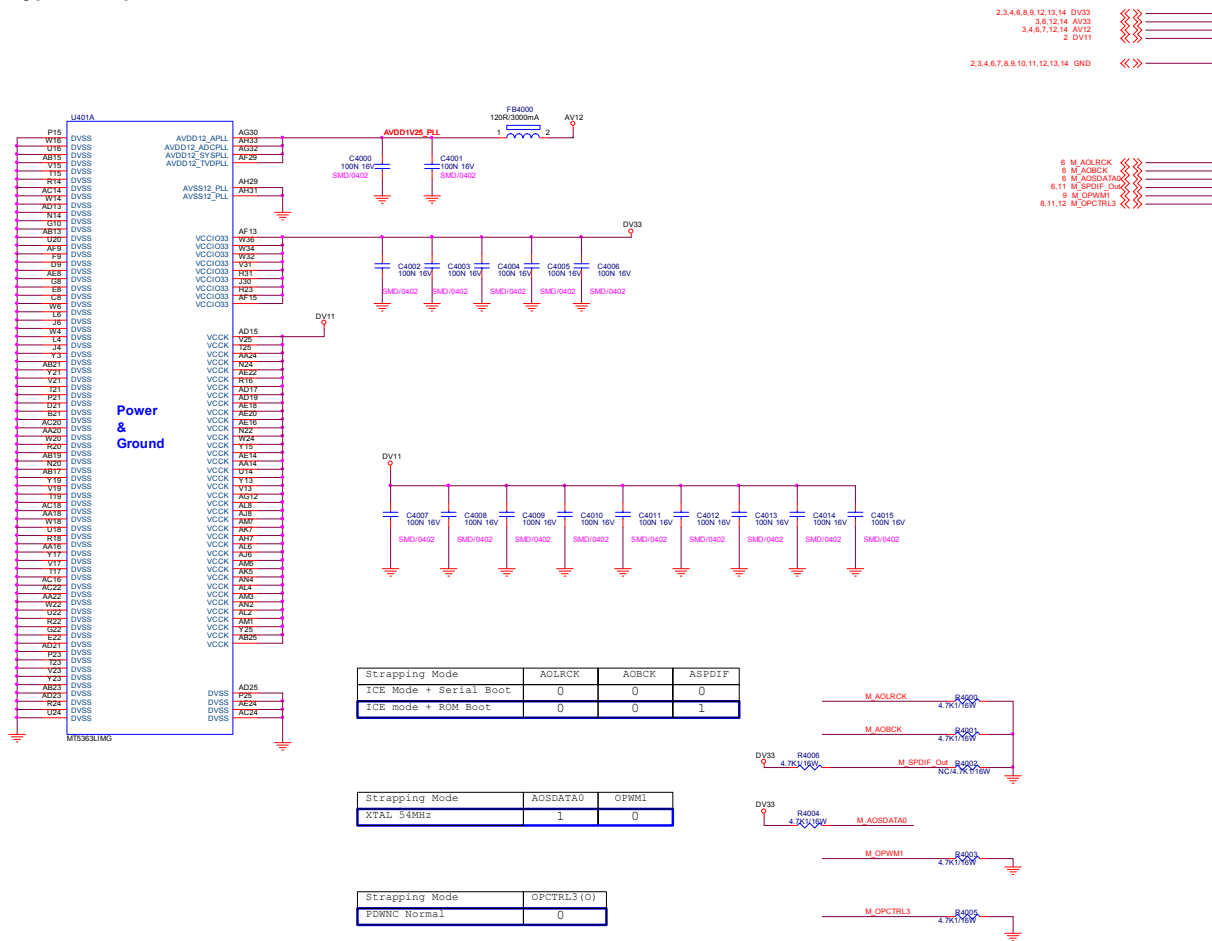
2. Power-2



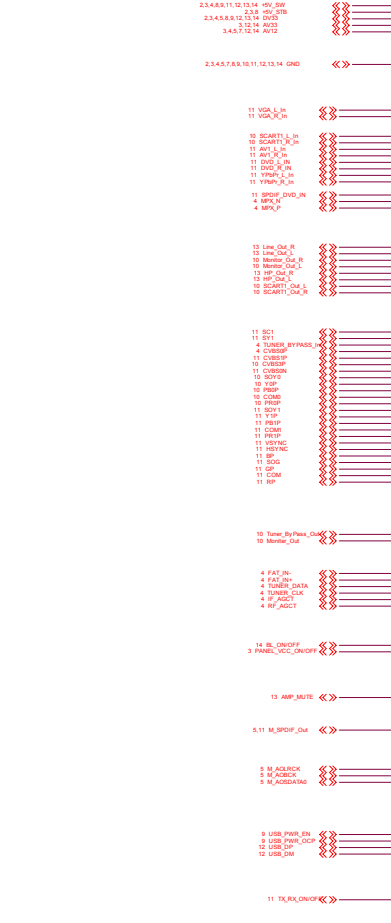
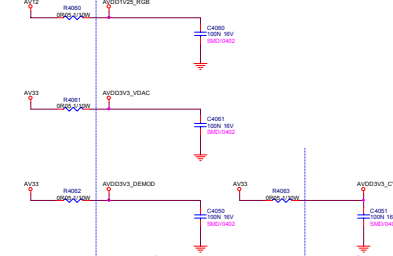
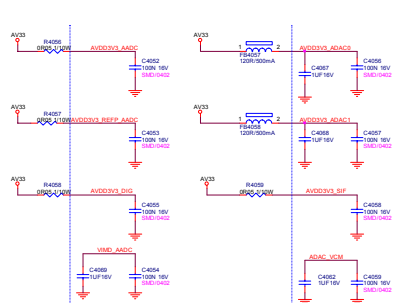
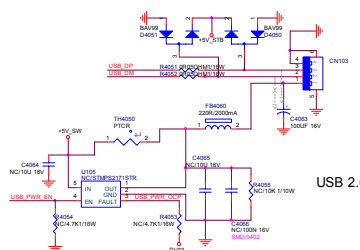
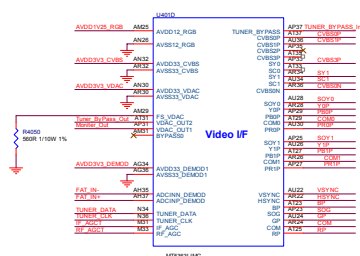
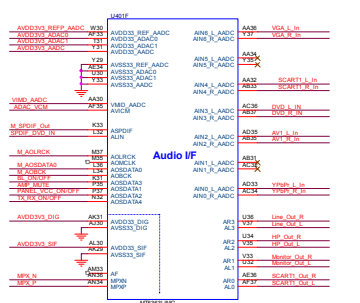
3. Tuner



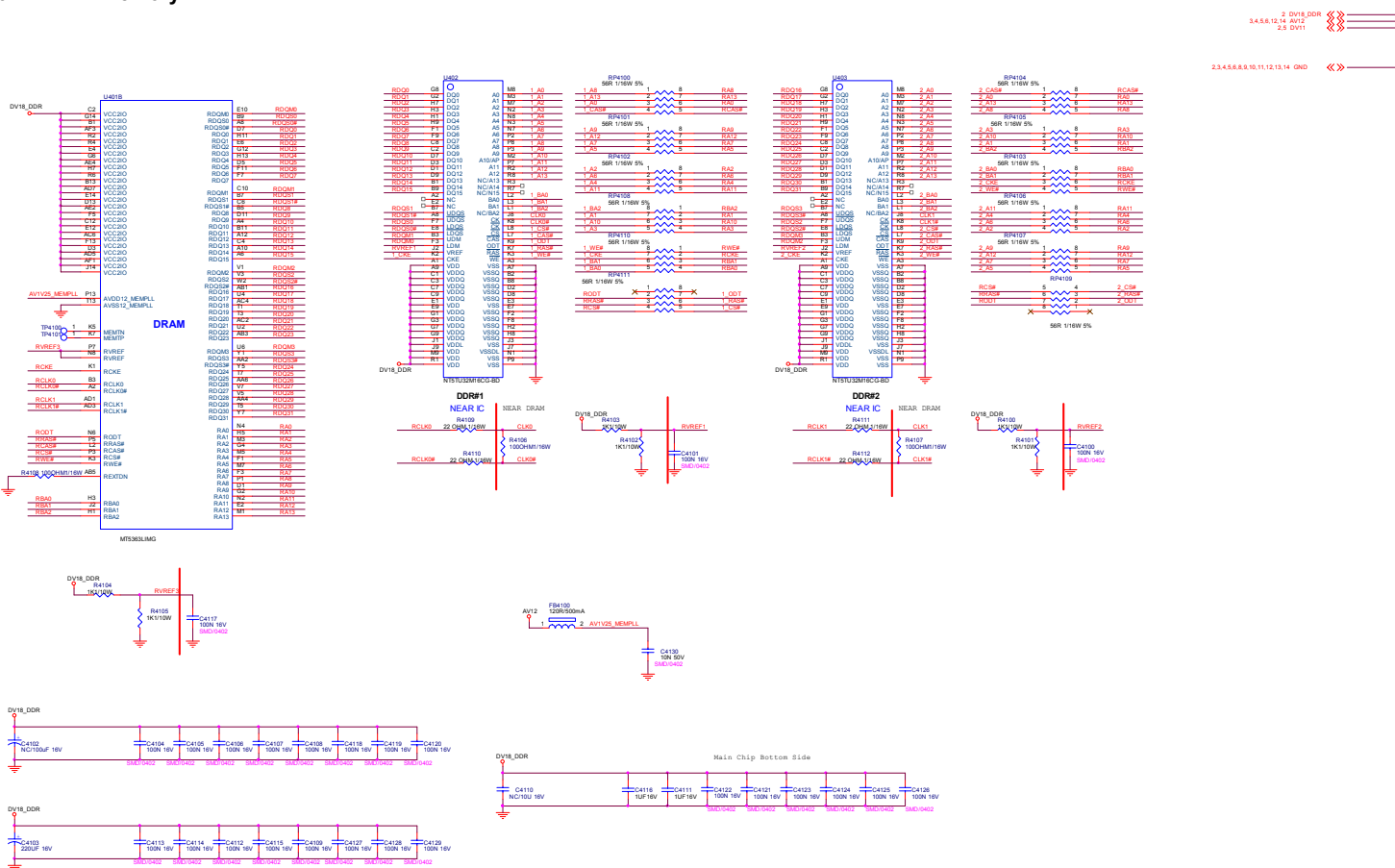
4. MT5363 Bypass/Trap



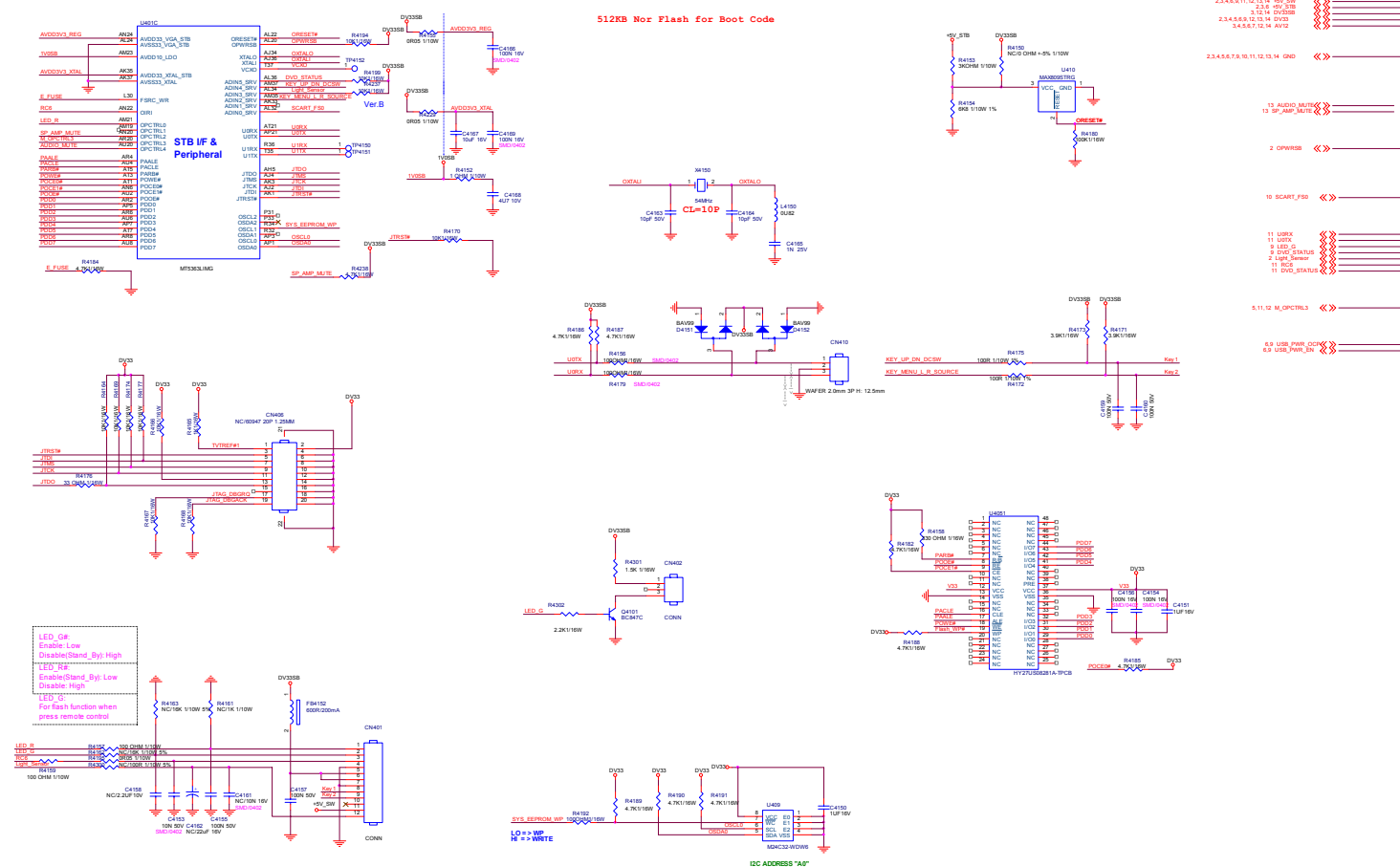
5. MT5363 Peripheral /USB2.0



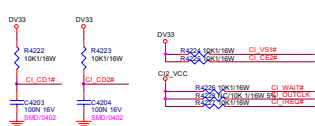
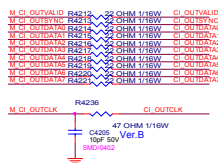
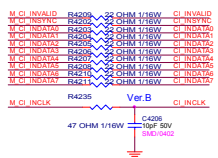
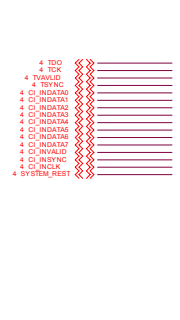
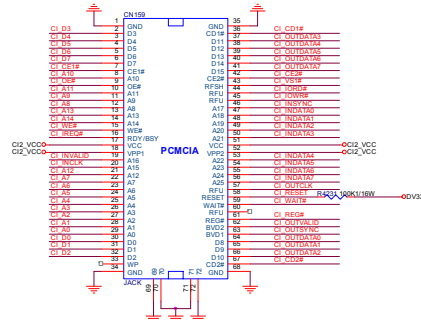
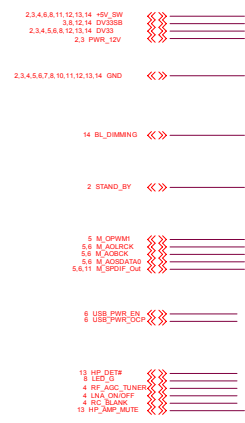
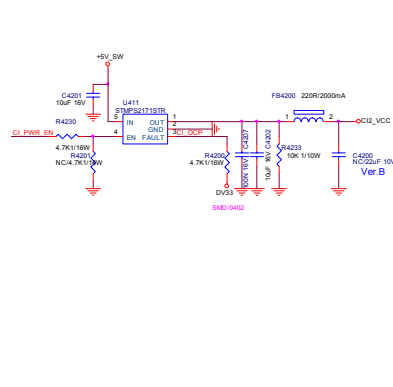
6. DDR2 Memory



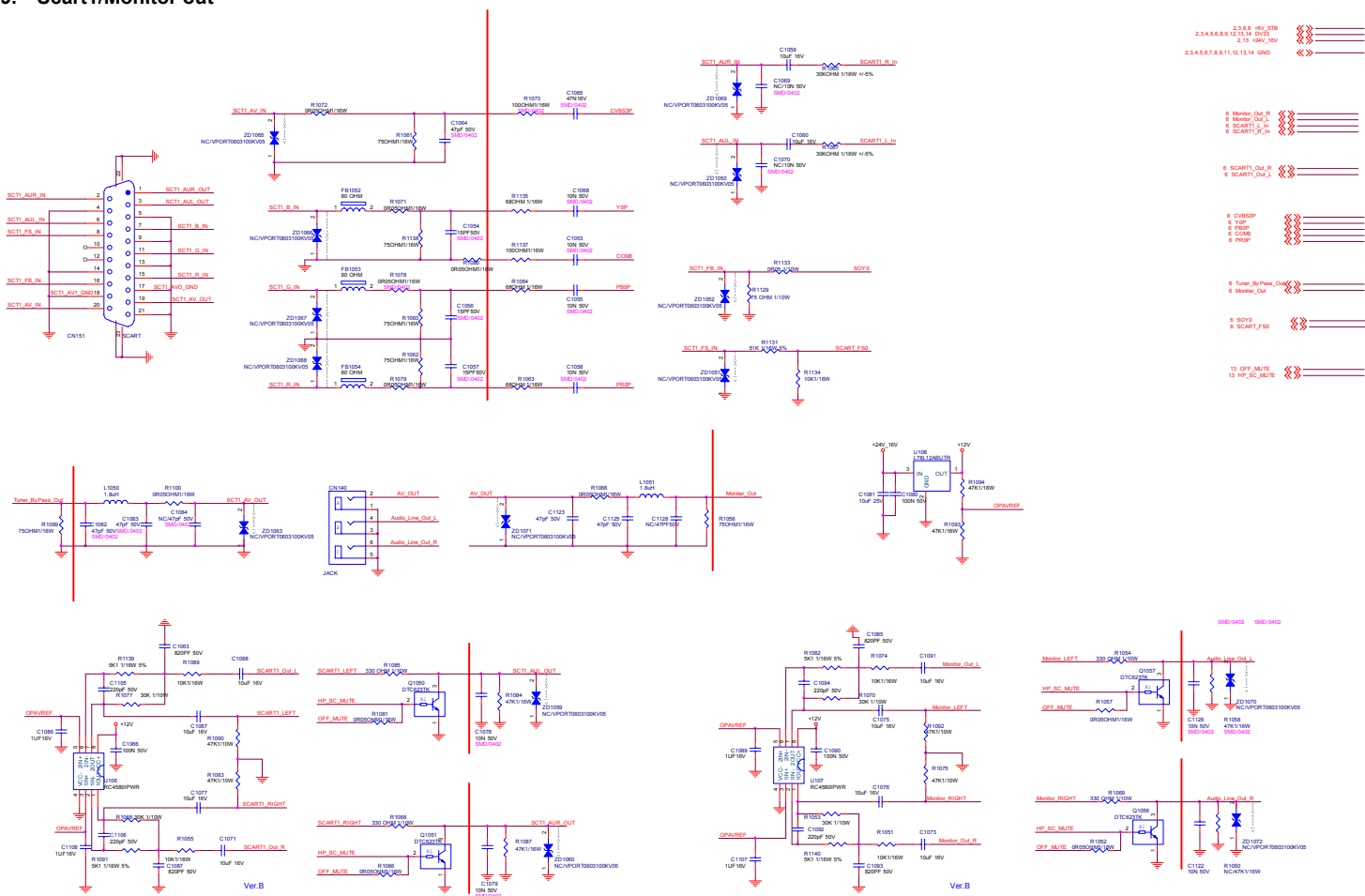
7. Flash/Jtag/Uart/IR



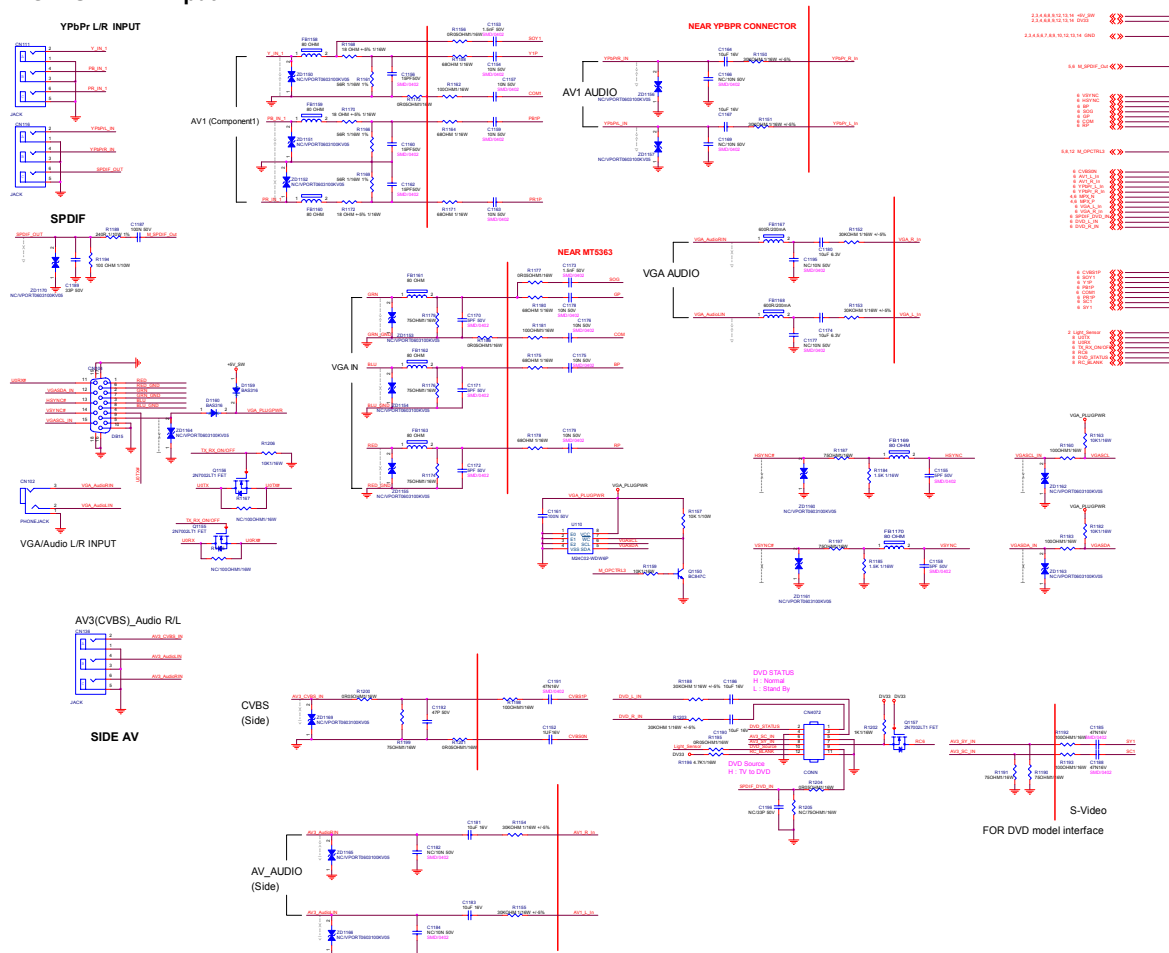
L4010					
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M. CH2	113	CPH2M	GR103	R237	CI TUNER
				R238	CI AT
				R239	CI AT
				R240	CI VREF
				R241	CI VREF
				R242	CI VREF
				R243	CI VREF
				R244	CI VREF
				R245	CI VREF
				R246	CI VREF
				R247	CI VREF
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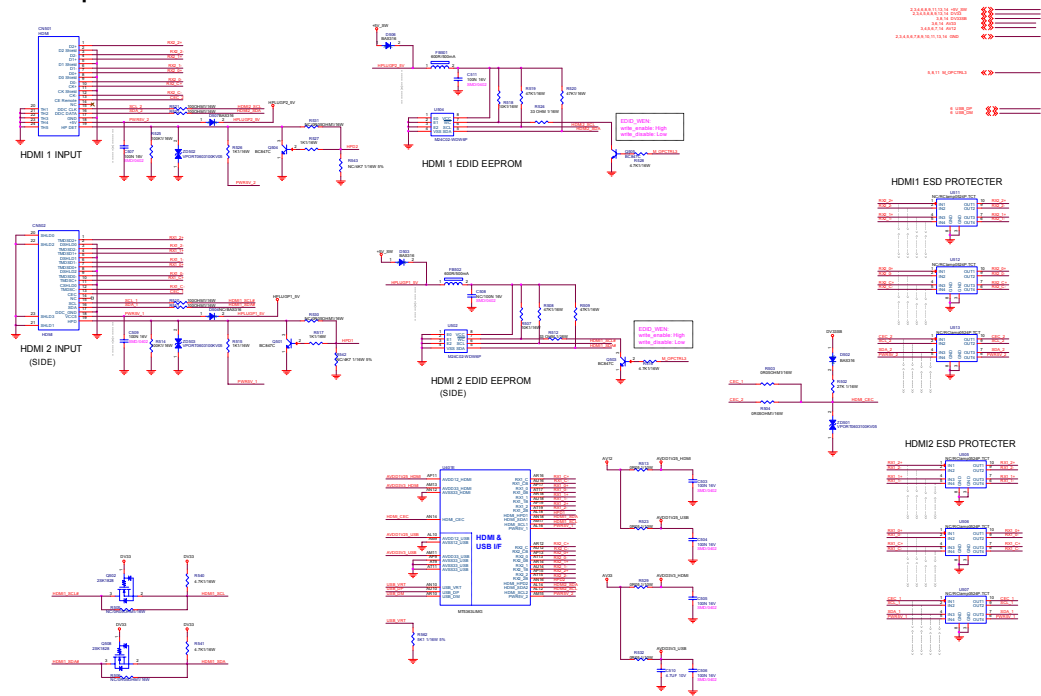
9. Scart1/Monitor out



10. YPbPr/VGA /SIDE AV Input

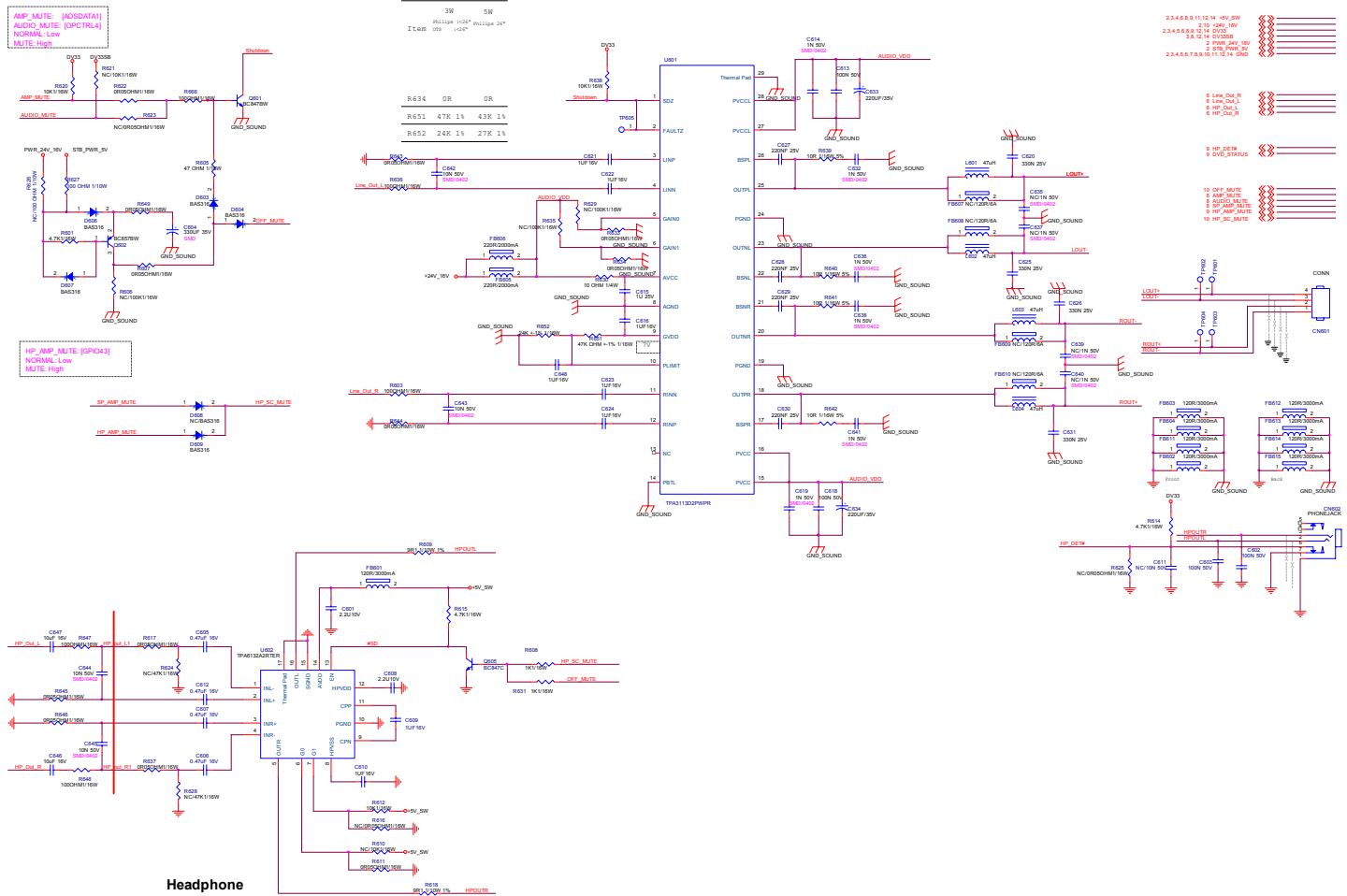


11. HDMI1/HDMI2/ Input

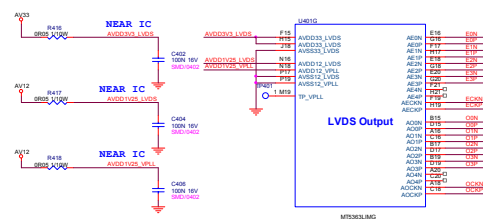
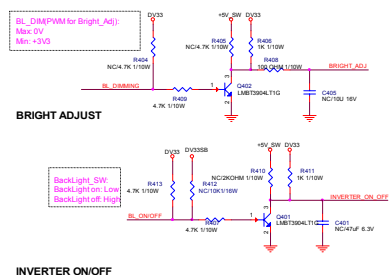
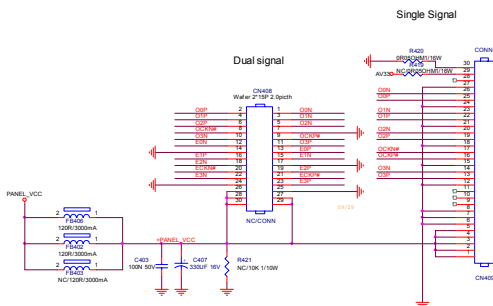
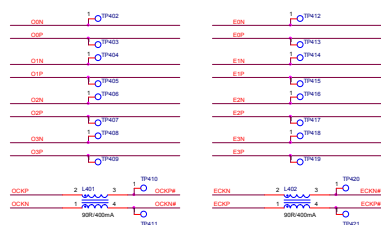


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12. Audio Amp/Headphone Out



13. LVDS Output

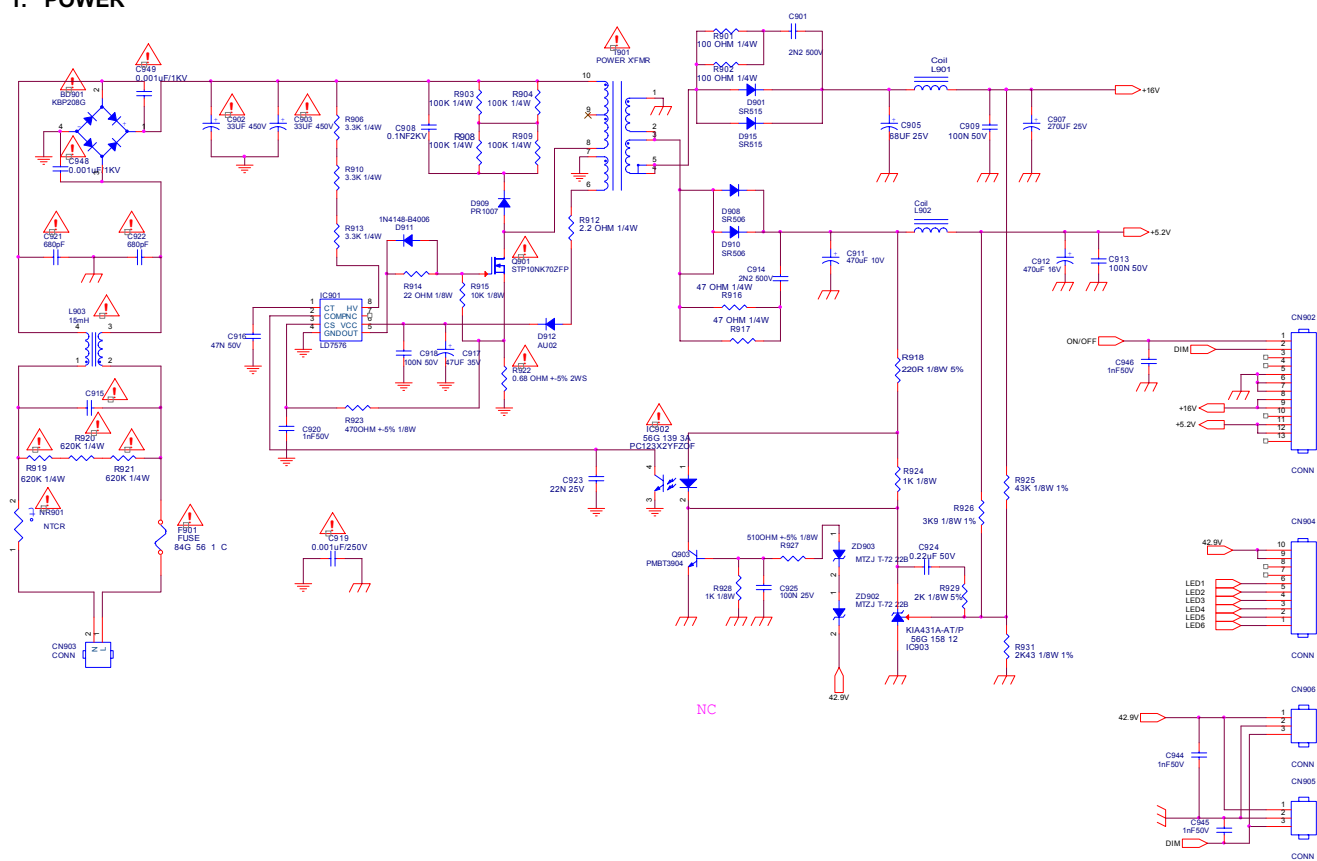


10.2 Power Board

For LT19Z6

715G3762

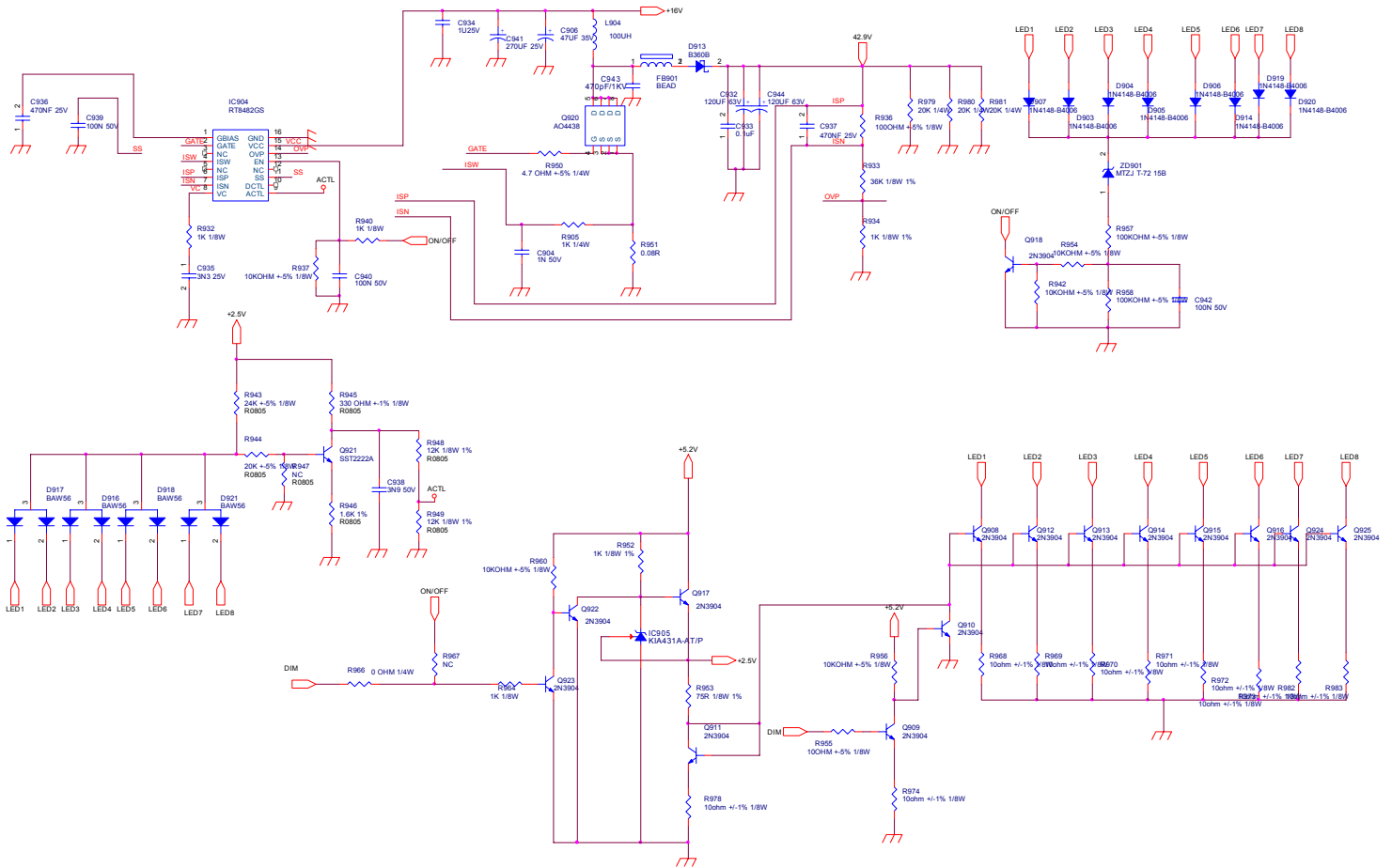
1. POWER



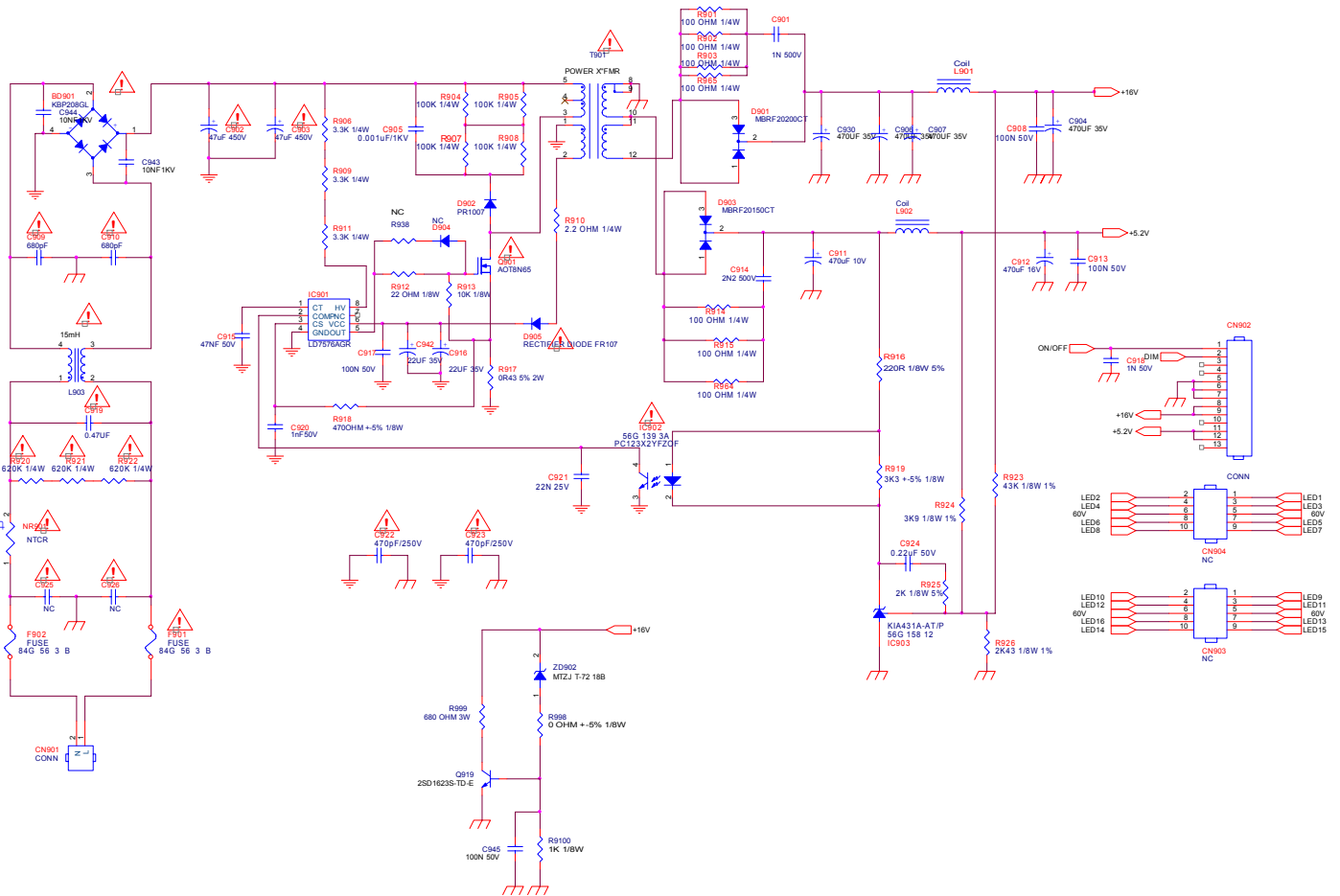
715G3895



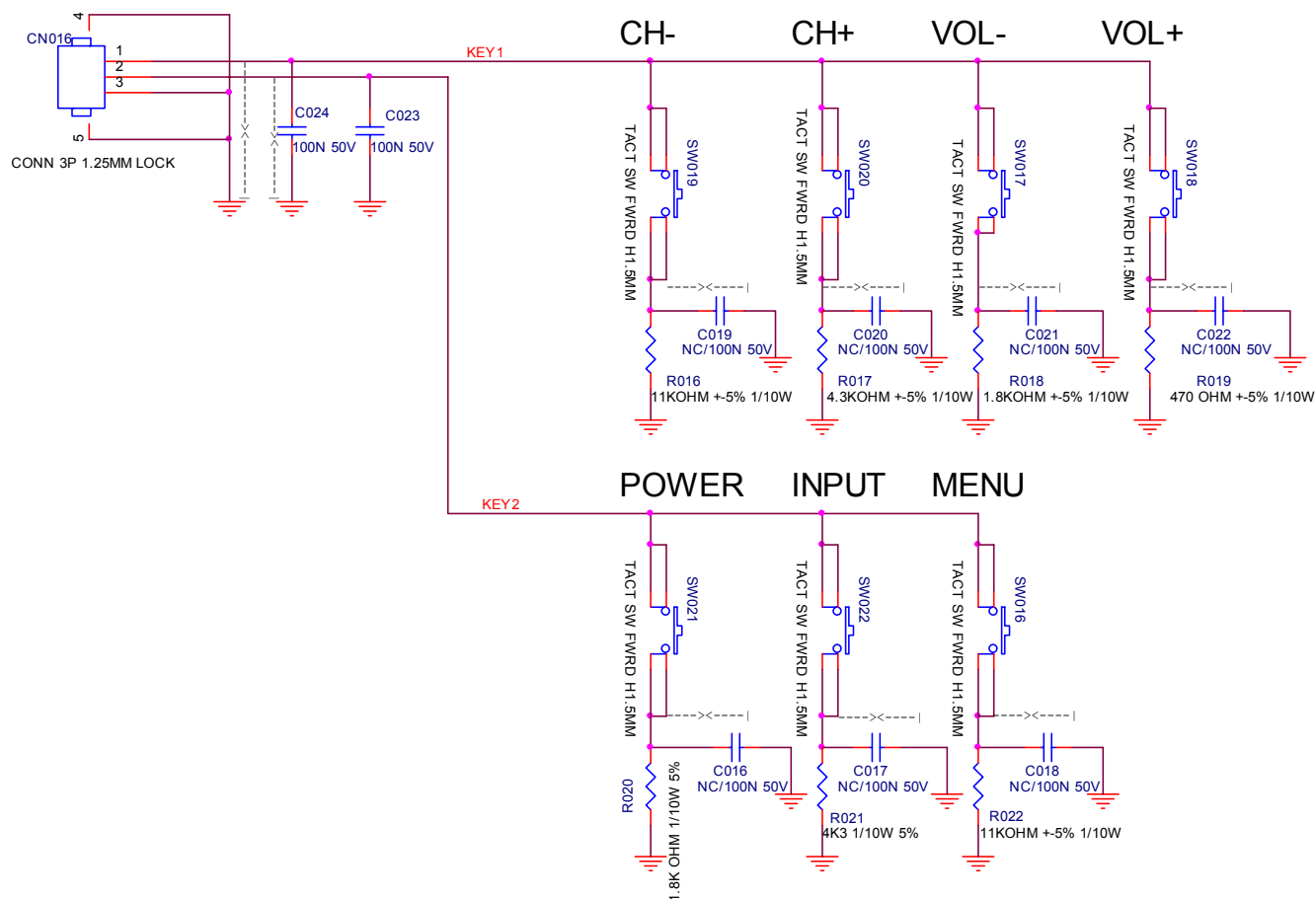
2. LED DRIVER



715G4313



10.3 Key Board 715G4168



10.4 IR Board
715G4169

