

TOSHIBA

FILE No. 810-201090GR

SERVICE MANUAL



15, 19, 22, 26, 32-inch class LCD TV/DVD COMBINATION

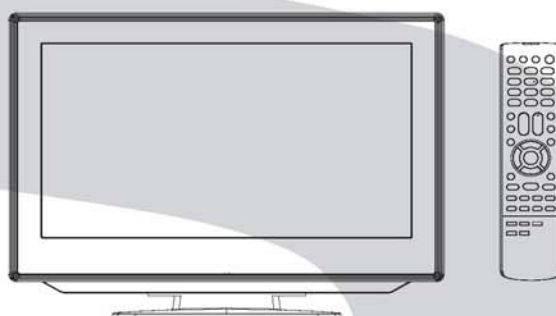
15DV703R

19DV703R/704R

22DV703R/704R

26DV703R

32DV703R



The above models are classified as green products (*1), as indicated by the underlined serial numbers. This Service Manual describes replacement parts for the green products. When repairing these green product(s), use the part(s) described in this manual and lead-free solder (*2).

For (*1) and (*2), see the next page.

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GREEN PRODUCT PROCUREMENT

(*1)

The EC is actively promoting the WEEE & RoHS Directives that define standards for recycling and reuse of Waste Electrical and Electronic Equipment and for the Restriction of the use of certain Hazardous Substances. From July 1, 2006, the RoHS Directive will prohibit any marketing of new products containing the restricted substances.

Increasing attention is given to issues related to the global environmental. Toshiba Corporation recognizes environmental protection as a key management tasks, and is doing its utmost to enhance and improve the quality and scope of its environmental activities. In line with this, Toshiba proactively promotes Green Procurement, and seeks to purchase and use products, parts and materials that have low environmental impacts.

Green procurement of parts is not only confined to manufacture. The same green parts used in manufacture must also be used as replacement parts.

LEAD-FREE SOLDER

(*2)

This product is manufactured using lead-free solder as a part of a movement within the consumer products industry at large to be environmentally responsible. Lead-free solder must be used in the servicing and repair of this product.

WARNING

This product is manufactured using lead free solder.

DO NOT USE LEAD BASED SOLDER TO REPAIR THIS PRODUCT !

The melting temperature of lead-free solder is higher than that of leaded solder by 86°F to 104°F (30°C to 40°C). Use of a soldering iron designed for lead-based solders to repair product made with lead-free solder may result in damage to the component and or PCB being soldered. Great care should be made to ensure high-quality soldering when servicing this product — especially when soldering large components, through-hole pins, and on PCBs — as the level of heat required to melt lead-free solder is high.

Table of Contents

1. Safety Notices and Precautions	5
Preparation of Servicing	6
Servicing Environment	6
2. General Specifications	7
15DV703R	7
19DV703R/19DV704R	8
22DV703R/22DV704R	9
26DV703R	10
32DV703R	11
3. Function Testing	12
Remote Control Key Codes	12
Service Mode List	13
Hotel Mode Function	14
4. System Disassembly	15
Disassembly Tools	15
Disassembly Reminders	15
Disassembly Procedures	16
15DV703R	16
19DV703R/19DV704R	21
22DV703R/22DV704R	28
26DV703R	33
32CV100U	39
5. Exploded Diagram	45
15DV703R	45
19DV703R/19DV704R	47
22DV703R/22DV704R	49
26DV703R	51
32DV703R	53
6. Packing Diagrams	55
15DV703R	55
19DV703R/19DV704R	56
22DV703R/22DV704R	57
26DV703R	58
32DV703R	59

7. Block Diagrams..... 60

8. Printed Circuit Board..... 64

9. Schematic Diagrams..... 68

10. Troubleshooting..... 80

11. Firmware 84

1. Safety Notices and Precautions

Prior to using this service guide, ensure that you have carefully followed all the procedures outlined in the 15DV703R/19DV703R/22DV703R/26DV703R/32DV703R user manual. Make sure to note and follow all warnings and instructions marked on the product. Keep these instructions for future reference.

- The LCD TV should be installed on a solid horizontal base.
- Do not use the LCD TV near water.
- Avoid exposing the LCD TV to moisture or high humidity.
- Do not install near any heat sources such as radiators, heat registers, stoves or any other equipment (including amplifiers) that produce heat.
- Avoid exposing the LCD TV to direct sunlight or high temperatures. Hot air may cause damage to the cabinet and other parts.
- Slots and openings in cabinet and the back or bottom are provided for ventilation. Adequate ventilation must be maintained to ensure reliable and continued operation and to protect the display from overheating. Observe the following,
 - Do not block ventilation slots and openings with objects or install the display in a place where ventilation may be hindered.
 - The ventilation slots should never be blocked by placing the product on a bed, sofa, rug, or other similar surface.
 - This product should not be placed in built-installation unless proper ventilation is provided.
- Do not install this display near a motor or transformer where strong magnetism is generated. Images on the display will become distorted and the color irregular.
- When cleaning, use only a neutral detergent cleaner with a soft damp cloth. Do not spray with liquid aerosol cleaners.
- Refer all servicing to qualified service personnel. Do not attempt repairs yourself. Your warranty does not cover repairs or attempted repairs by anyone not authorized by the manufacturer.

CAUTION

THIS LCD COLOR TELEVISION EMPLOYS A LASER SYSTEM.

TO ENSURE PROPER USE OF THIS PRODUCT, PLEASE READ THIS SERVICE MANUAL CAREFULLY AND RETAIN FOR FUTURE REFERENCE. SHOULD THE UNIT REQUIRE MAINTENANCE, CONTACT AN AUTHORIZED SERVICE LOCATION-SEE SERVICE PROCEDURE.

USE OF CONTROLS, ADJUSTMENTS OR THE PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

TO PREVENT DIRECT EXPOSURE TO LASER BEAM, DO NOT TRY TO OPEN THE ENCLOSURE.

VISIBLE LASER RADIATION MAY BE PRESENT WHEN THE ENCLOSURE IS OPENED. DO NOT STARE INTO BEAM.

Preparation of Servicing

The laser diode used for a pickup head may be destroyed with external static electricity.

Moreover, even if it is operating normally after repair, when static electricity discharge is received at the time of repair, the life of the product may be shortened.

Please perform the following measure against static electricity, and be careful of destruction of a laser diode at the time of repair.

- Place the unit on a workstation equipped to protect against static electricity, such as conductive mat.
- Soldering iron with ground wire or ceramic type is used.
- A worker needs to use a ground conductive wrist strap for body.

Servicing Environment

1. This LCD TV should be used only with the power source type identified on the package and on the user's guide.
2. Service the LCD TV in a room with low humidity and free of dust.
3. Place the LCD TV on a stable, level surface. Subjecting the LCD TV to a drop or sharp impact may cause severe damage to thin glass, plastic surface materials, and internal components.
4. If necessary, clean the LCD TV with a slightly damp cloth using clean water. Disconnect the LCD TV from the power source before cleaning. Do not use ammonia-based cleaning products.
5. In the event that the powered LCD TV rapidly heats, or emits unusual smells or noises, immediately disconnect the unit from the power source.
6. To avoid electrical hazard, make sure that the LCD TV is fully assembled—the casing closed and all the screws tightened completely—before plugging it in for testing.
7. The LCD TV's internal components may be damaged by electrostatic discharge (ESD). Carry out repairs in an ESD-protected workshop. If no such workshop is available, wear an antistatic wrist strap or touch a highly conductive metal object.
8. Before opening the housing, disconnect the LCD TV from all power sources and remove all peripheral cables. If the LCD TV has not been disconnected from the power outlet before being opened, there is a danger to life through electric shock. There is also a risk of damage to the components.

2. General Specifications

The product specifications listed in this section are subject to change without notice.

15DV703R

Item	Descriptions	
Panel		
Size (approximate screen size, diagonal)	15.6 inch (396.2 mm)	
Type	Color TFT LCD	
Resolution	1366 x 768	
Viewing angle	170° (H) / 160° (V)	
TV system	SECAM D/K Russia, PAL, B/G, D/K, I, L/L'	
Antenna input	VHF / UHF 75 Ω unbalanced	
DVD/CD player		
Signal system	PAL, NTSC	
Supported disc size	12 cm, 8 cm	
Audio frequency response	DVD: 4 Hz - 22 kHz CD: 4 Hz - 20 kHz	
Video/Audio Terminals		
Component	Y, Pb, Pr, audio L/R	
Composite	Video, audio L/R	
HDMI 1/HDMI 2	Type A, HDCP compliant Suggested scan rate: 480i, 480p, 720p, 1080i, 1080p	
Digital audio output	Optical type	
PC IN	15-Pin D-sub Analog RGB	
Headphone	3.5-mm stereo mini jack	
HDMI1/PC AUDIO IN	VGA and DVI audio input	
Speaker output	3W x 2	
Power source	AC 220-240V, 50 Hz	
Power consumption	Operation	32 W
	Standby	0.8 W
Operating conditions		
Temperature	5°C - 35°C (41°F - 95°F)	
Dimensions (W x D x H, with base)	15.9 x 5.6 x 12.6 inch (403.1 x 140.9 x 320.7 mm)	
Weight	7.3 lb (3.3 kg)	

19DV703R/19DV704R

Item	Descriptions	
Panel		
Size (approximate screen size, diagonal)	18.5 inch (469.9 mm)	
Type	Color TFT LCD	
Resolution	1366 x 768	
Viewing angle	170° (H) / 160° (V)	
TV system	SECAM D/K Russia, PAL, B/G, D/K, I, L/L'	
Antenna input	VHF / UHF 75 Ω unbalanced	
DVD/CD player		
Signal system	PAL, NTSC	
Supported disc size	12 cm, 8 cm	
Audio frequency response	DVD: 4 Hz - 22 kHz CD: 4 Hz - 20 kHz	
Video/Audio Terminals		
Component	Y, Pb, Pr, audio L/R	
Composite	Video, audio L/R	
HDMI 1/HDMI 2	Type A, HDCP compliant Suggested scan rate: 480i, 480p, 720p, 1080i, 1080p	
Digital audio output	Optical type	
PC IN	15-Pin D-sub Analog RGB	
Headphone	3.5-mm stereo mini jack	
HDMI1/PC AUDIO IN	VGA and DVI audio input	
Speaker output	3W x 2	
Power source	AC 220-240V, 50 Hz	
Power consumption	Operation	34 W
	Standby	0.8 W
Operating conditions		
Temperature	5°C - 35°C (41°F - 95°F)	
Dimensions (W x D x H, with base)	18.9 x 8.5 x 14.4 inch (480.9 x 215.0 x 365.8 mm)	
Weight	11.7 lb (5.3 kg)	

22DV703R/22DV704R

Item	Descriptions	
Panel		
Size (approximate screen size, diagonal)	22.0 inch (558.8 mm)	
Type	Color TFT LCD	
Resolution	1366 x 768	
Viewing angle	170° (H) / 160° (V)	
TV system	SECAM D/K Russia, PAL, B/G, D/K, I, L/L'	
Antenna input	VHF / UHF 75 Ω unbalanced	
DVD/CD player		
Signal system	PAL, NTSC	
Supported disc size	12 cm, 8 cm	
Audio frequency response	DVD: 4 Hz - 22 kHz CD: 4 Hz - 20 kHz	
Video/Audio Terminals		
Component	Y, Pb, Pr, audio L/R	
Composite	Video, audio L/R	
HDMI 1/HDMI 2	Type A, HDCP compliant Suggested scan rate: 480i, 480p, 720p, 1080i, 1080p	
Digital audio output	Optical type	
PC IN	15-Pin D-sub Analog RGB	
Headphone	3.5-mm stereo mini jack	
HDMI1/PC AUDIO IN	VGA and DVI audio input	
Speaker output	3W x 2	
Power source	AC 220-240V, 50 Hz	
Power consumption	Operation	55 W
	Standby	0.8 W
Operating conditions		
Temperature	5°C - 35°C (41°F - 95°F)	
Dimensions (W x D x H, with base)	21.7 x 8.5 x 15.9 inch (552.3 x 215.0 x 404.5 mm)	
Weight	12.8 lb (5.8 kg)	

26DV703R

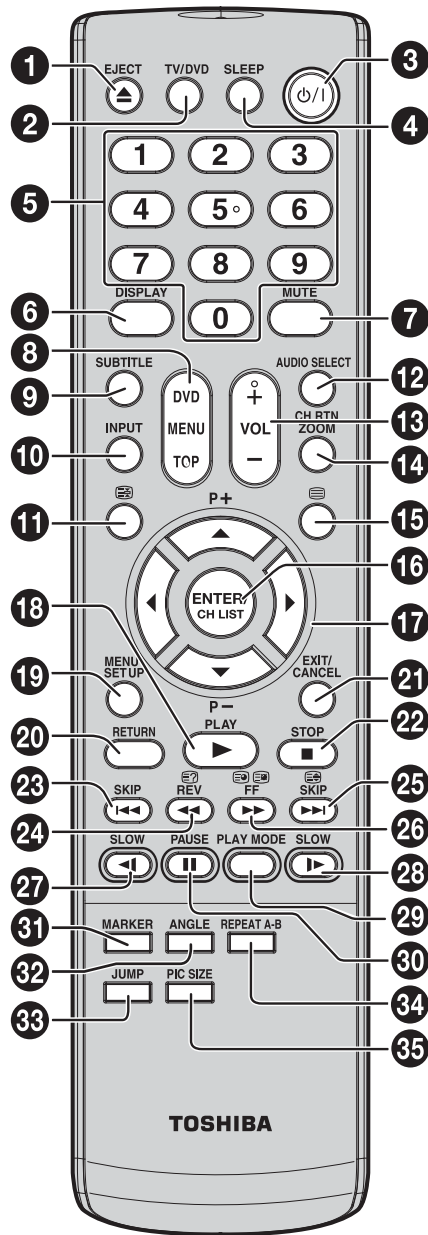
Item	Descriptions	
Panel		
Size (approximate screen size, diagonal)	26.0 inch (660.4 mm)	
Type	Color TFT LCD	
Resolution	1366 x 768	
Viewing angle	176° (H) / 176° (V)	
TV system	SECAM D/K Russia, PAL, B/G, D/K, I, L/L'	
Antenna input	VHF / UHF 75 Ω unbalanced	
DVD/CD player		
Signal system	PAL, NTSC	
Supported disc size	12 cm, 8 cm	
Audio frequency response	DVD: 4 Hz - 22 kHz CD: 4 Hz - 20 kHz	
Video/Audio Terminals		
Component	Y, Pb, Pr, audio L/R	
Composite	Video, audio L/R	
HDMI 1/HDMI 2	Type A, HDCP compliant Suggested scan rate: 480i, 480p, 720p, 1080i, 1080p	
Digital audio output	Optical type	
PC IN	15-Pin D-sub Analog RGB	
Headphone	3.5-mm stereo mini jack	
HDMI1/PC AUDIO IN	VGA and DVI audio input	
Speaker output	5W x 2	
Power source	AC 220-240V, 50 Hz	
Power consumption	Operation	75 W
	Standby	0.8 W
Operating conditions		
Temperature	5°C - 35°C (41°F - 95°F)	
Dimensions (W x D x H, with base)	26.2 x 10.2 x 19.3 inch (666.0 x 260.0 x 490.0 mm)	
Weight	19.4 lb (8.8 kg)	

32DV703R

Item	Descriptions	
Panel		
Size (approximate screen size, diagonal)	32.0 inch (812.8 mm)	
Type	Color TFT LCD	
Resolution	1366 x 768	
Viewing angle	170° (H) / 160° (V)	
TV system	SECAM D/K Russia, PAL, B/G, D/K, I, L/L'	
Antenna input	VHF / UHF 75 Ω unbalanced	
DVD/CD player		
Signal system	PAL, NTSC	
Supported disc size	12 cm, 8 cm	
Audio frequency response	DVD: 4 Hz - 22 kHz CD: 4 Hz - 20 kHz	
Video/Audio Terminals		
Component	Y, Pb, Pr, audio L/R	
Composite	Video, audio L/R	
HDMI 1/HDMI 2	Type A, HDCP compliant Suggested scan rate: 480i, 480p, 720p, 1080i, 1080p	
Digital audio output	Optical type	
PC IN	15-Pin D-sub Analog RGB	
Headphone	3.5-mm stereo mini jack	
HDMI1/PC AUDIO IN	VGA and DVI audio input	
Speaker output	10W x 2	
Power source	AC 220-240V, 50 Hz	
Power consumption	Operation	109 W
	Standby	0.8 W
Operating conditions		
Temperature	5°C - 35°C (41°F - 95°F)	
Dimensions (W x D x H, with base)	31.7 x 10.0 x 23.2 inch (804.6 x 255.0 x 590.0 mm)	
Weight	12.8 lb (5.8 kg)	

3. Function Testing

Remote Control Key Codes



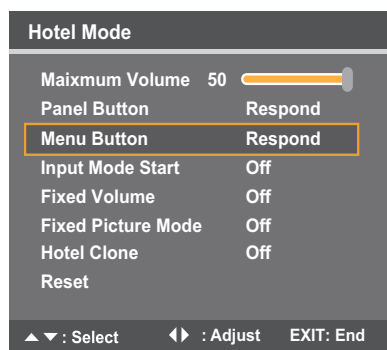
No.	Key Name	Custom Code (Hex)	Data Code (Hex)
1	EJECT	45 BA	F5
2	TV/DVD	45 BC	B3
3	POWER	40 BF	12
4	SLEEP	40 BF	15

5	1	40 BF	01
	2		02
	3		03
	4		04
	5		05
	6		06
	7		07
	8		08
	9		09
	0		00
6	DISPLAY	40 BF	1C
7	MUTE	40 BF	10
8	DVD MENU	40 BF	19
	TOP MENU	44 BB	DF
9	SUBTITLE	44 BB	87
10	INPUT	40 BF	0F
11	Hold (Teletext)	40 BF	53
12	AUDIO SELECT	44 BB	53
13	VOL+	40 BF	1A
	VOL-	40 BF	1E
14	CH RTN / ZOOM	45 BA	40
15	Teletext (On/Off)	45 BA	79
16	ENTER / CH LIST	40 BF	3D
17	P+ / ▲	40 BF	3E
	◀	44 BB	51
	▶	44 BB	4D
	P- / ▼	40 BF	3F
18	PLAY ▶	44 BB	15
19	MENU / SETUP	40 BF	0E
20	RETURN	44 BB	5D
21	EXIT / CANCEL	44 BB	EF
22	STOP ■	44 BB	14
23	SKIP ◀◀	45 BA	23
24	REV ◀◀ / [?]	45 BA	19
25	SKIP ▶▶ / [?]	45 BA	24
26	FF ▶▶ / [?]	45 BA	13
27	SLOW ◀	45 BA	0E
28	SLOW ▶	45 BA	0D
29	PLAY MODE	45 BA	E0
30	PAUSE	45 BA	15
31	MARKER	45 BA	EC
32	ANGLE	44 BB	96
33	JUMP	44 BB	9B
34	REPEAT A-B	44 BB	5C
35	PIC SIZE	40 BF	59

Service Mode List

Item	TV mode	TV key	Remote key	Time	Operations
1	TV	VOL-	1	2 sec.	Reset the TV to factory default.
2.	DVD (no disc)	VOL-	4	2 sec.	Reset the DVD to factory default.
3.	DVD (no disc)	VOL-	5	2 sec.	Enter DVD module update mode.
4.	TV/DVD	VOL-	8	2 sec.	Display the POWER ON total hours, Main board version and system firmware.
5.	TV/DVD	VOL-	9	2 sec.	Display the "Adjustment MENU".
6.	DVD (no disc)	STOP	1	2 sec.	Check the DVD module firmware version.
7.	DVD (no disc)	STOP	7	2 sec.	Release the PARENTAL LOCK.
8.	DVD (STOP)	Remote key: SETUP→SUBTITLE→3 →AUDIO SELECT→0		0 sec.	TRAY LOCK. The disc cannot be taken out.
9.	TV/DVD	VOL-	3	2 sec.	Enter hotel mode.
10.	TV	VOL-	2	2 sec.	Reset both TV and DVD module to factory default.

Hotel Mode Function



To set the Hotel Mode, please follow the steps below:

1. Set the VOLUME to minimum.
2. Press and hold the $\triangleleft$ – button on the TV.
3. Simultaneously press and hold the **3** button on the remote control for more than 2 seconds.
The Hotel Mode setting menu appears on the screen.
4. Use $\blacktriangle$ or $\blacktriangledown$ button on the remote control to select the desired item, then press **ENTER**.
5. Use $\blacktriangleleft$ or $\blacktriangleright$ button to set the item to the desired setting.
6. The Hotel Mode has now been setup.

To reset the Hotel Mode, please follow the steps below:

1. Set the VOLUME to minimum.
2. Press and hold the $\triangleleft$ – button on the TV.
3. Simultaneously press and hold the **3** button on the remote control for more than 2 seconds.
The Hotel Mode setting menu appears on the screen.
4. Use $\blacktriangle$ or $\blacktriangledown$ button on the remote control to select **Reset**, then press **ENTER**.

Setting items	Setting value	Initial value	Function
Maximum Volume	0~50	50	To set the maximum volume value.
Panel Button	Respond/No Respond	Respond	To enable/disable the operation of the buttons on the TV panel. ^{*1}
Menu Button	Respond/No Respond	Respond	To enable/disable the operation of the MENU button on the TV panel and remote control. ^{*1}
Input Mode Start	1~99 ch/AV/Component/HDMI 1/HDMI 2/PC/DVD/Off	Off	To set the input source when the TV is turned on. ^{*2}
Fixed Volume	Off/0~50 ^{*3}	Off	To set the volume value when the TV is turned on. ^{*2}
Fixed Picture Mode	Off/Sports/Standard/Movie/Memory	Off	To set the picture mode when the TV is turned on. ^{*2}
Hotel Clone	Off/TV to USB/USB to TV	Off	To copy all the settings from USB to TV or from TV to USB. ^{*4}
Reset			Reset the hotel mode setting to default.

^{*1} Even if set to “No Respond”, the key operation of service mode function are effective.

^{*2} If set to “Off”, the TV starts up in the same setting when you turned off the power last time.

^{*3} The maximum Fixed Volume value is based on the Maximum Volume setting.
Ex. If the Maximum Volume is set to 30, the Fixed Volume range is 0 to 30 or off.

^{*4} All the settings mean “hotel menu settings” and “user menu settings” (Picture/Sound/Channel/Setup), including ATV channel list.

4. System Disassembly

Disassembly Tools

The following tools are required for disassembling the system.

- Wrist-grounding strap and conductive mat for preventing electrostatic discharge
- Philips screwdriver
- Hex screwdriver

Disassembly Reminders

- Electrostatic Discharge (ESD) precautions should be observed to prevent damaging the internal components.
- Follow the sequence indicated in the illustrative figures when removing the screws securing the components.
- The screws for the different components vary in size. During the disassembly process, group the screws with their corresponding components to avoid mismatches when putting back the components.
- After removing the adhesive tapes, paste them back near their original location for use during system reassembly.
- Prior to disassembly, place the LCD TV on a stable, level surface protected by a cushion.

Disassembly Procedures

15DV703R

1. Lay down the LCD TV on a flat, stable surface with the rear cover facing up. Make sure the edge of the front bezel is hanging over the edge of the surface.
2. Remove the screws holding the TV to its stand, and then remove the stand.



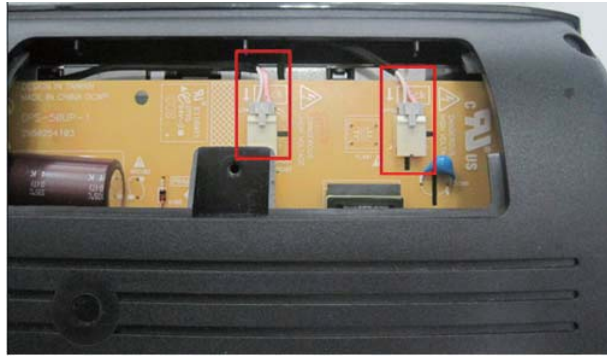
3. Remove the nine screws securing the rear panel cover.



4. Open and remove the left rear panel door.



5. Disconnect the inverter cables from the power board.



6. Remove the tape and release the LVDS cable from the panel.



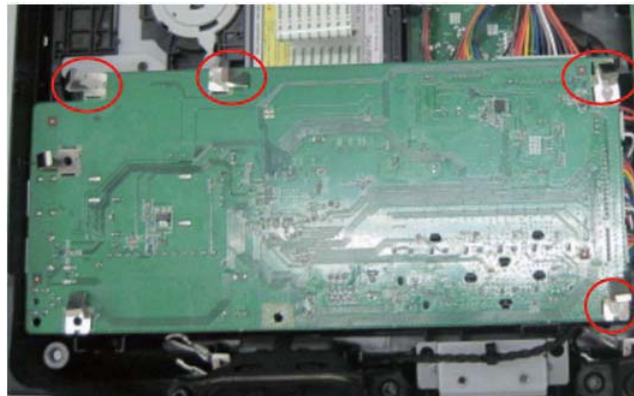
7. Detach the panel from the front cover.



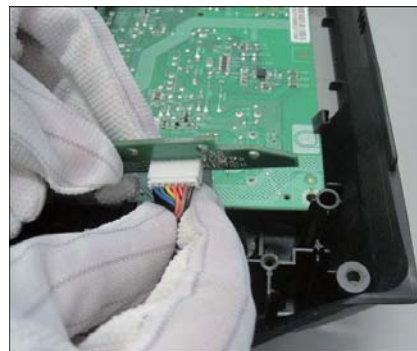
8. Remove the eight screws securing the main board (left) and power board (right).



9. Remove the four supports on the main board.



10. Remove the two screws securing the IR board, and then disconnect the IR cable from the IR board.



11. Detach the right and left speakers, and then disconnect the speaker cables.



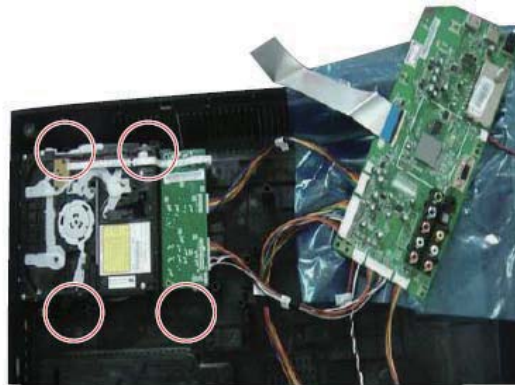
12. Turn the power board over, disconnect the AC and power cable from the power board, and then remove the power board.



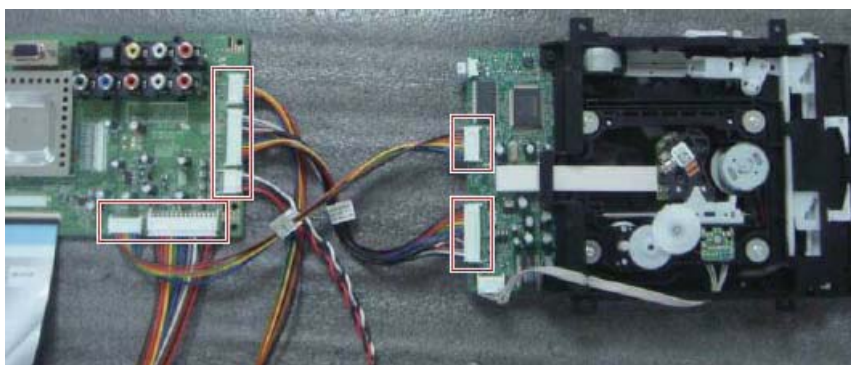
13. Remove the two screws securing the key board and disconnect the control cable from the key board, and then release the key board from the back cover.



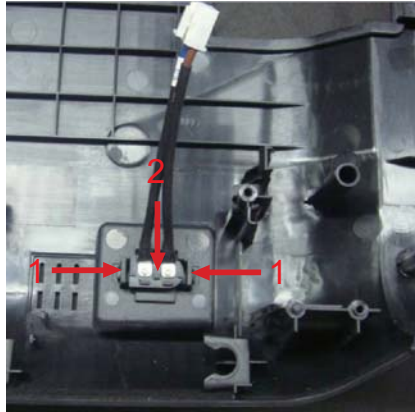
14. Remove the four screws securing the DVD module.



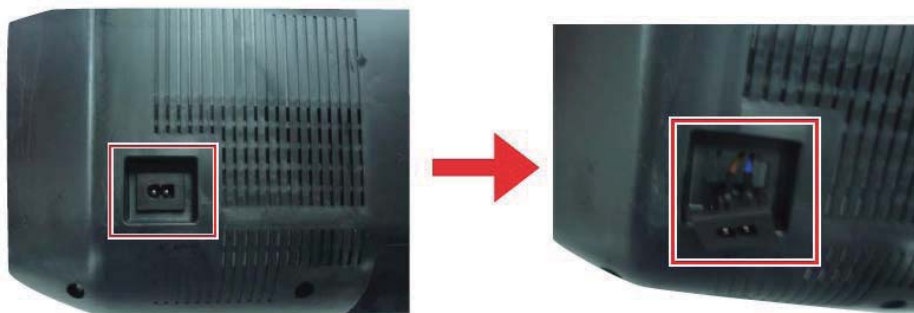
15. Disconnect the cables from the DVD module and main board.



16. Pinch the hook to release the AC cable and then push it out.



17. Pull out the AC cable from the back cover of the TV.



19DV703R/19DV704R

1. Lay down the LCD TV on a flat, stable surface with the rear cover facing up. Make sure the edge of the front bezel is hanging over the edge of the surface.
2. Remove the screws holding the TV to its stand, and then remove the stand.



3. Remove the screws securing the rear panel cover.



4. Open and remove the left rear panel door.



5. Disconnect the inverter and panel power cable from the power board.



6. Remove the tape and release the LVDS cable from the panel.



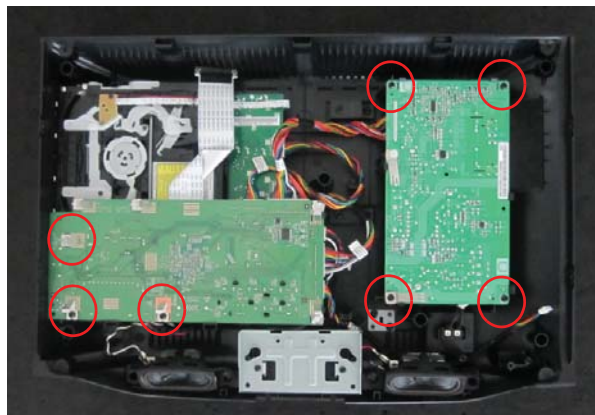
7. Detach the back cover.



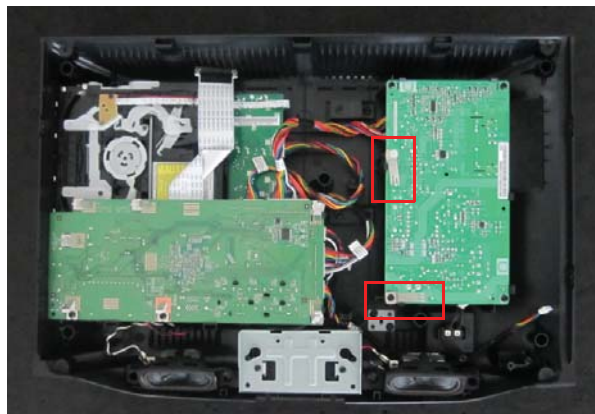
8. Remove the panel from the front cover.



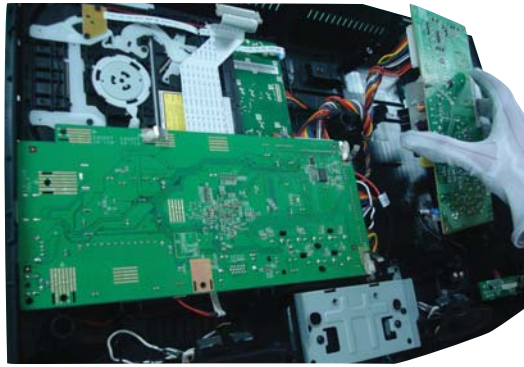
9. Remove the screws securing the power board (right) and main board (left).



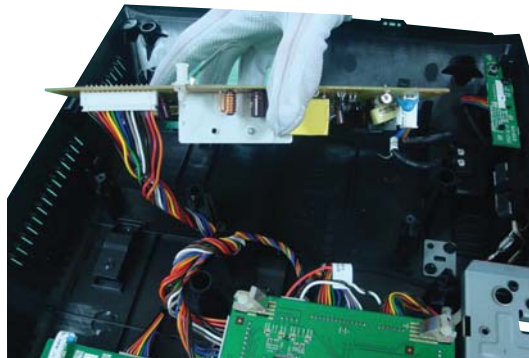
10. Remove the two springs and one support from the power board.



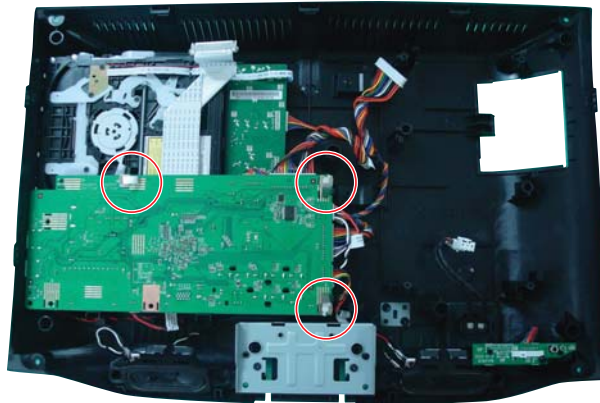
11. Release the power board. (Release the lower latch and then the upper latch).



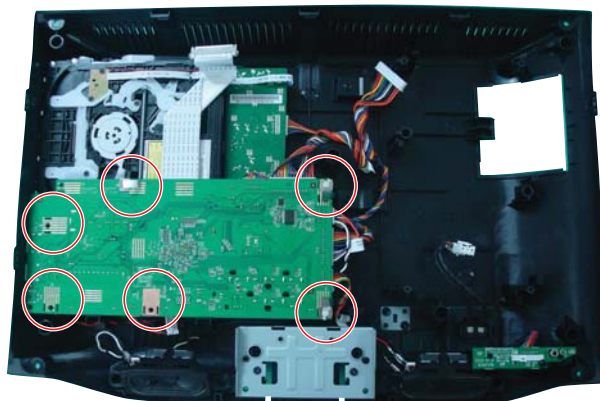
12. Disconnect the power and AC cables from the power board, and then remove the power board.



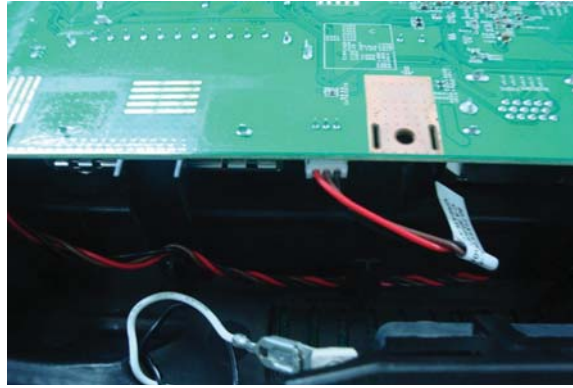
13. Remove the three supports securing the main board.



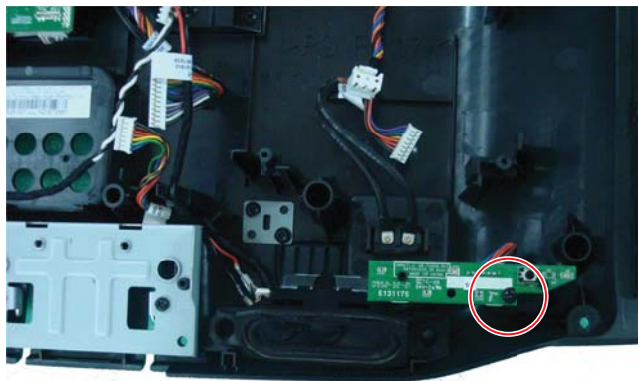
14. Remove the six springs on the main board.



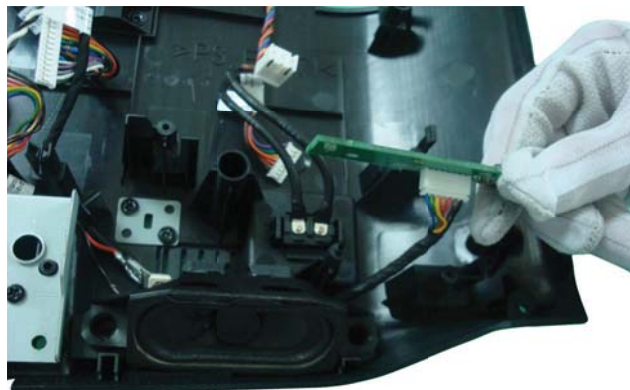
15. Disconnect the control cable from the main board.



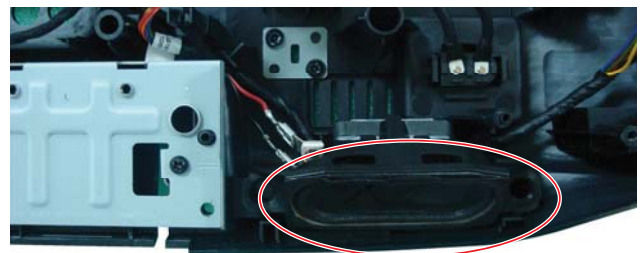
16. Remove the one screw securing the IR board.



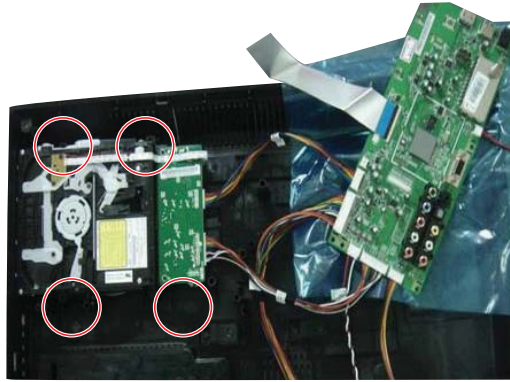
17. Disconnect the IR cable and remove the IR board.



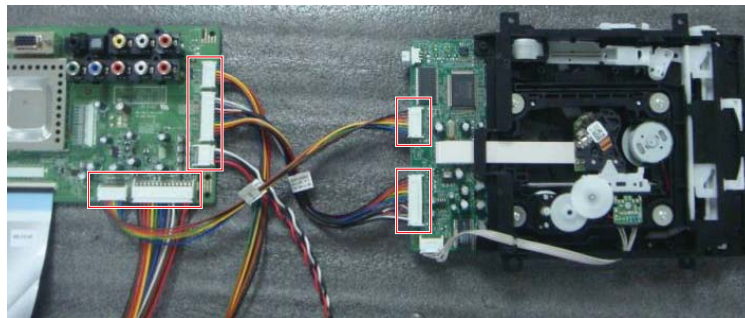
18. Detach the left and right speakers and then disconnect the speaker cables.



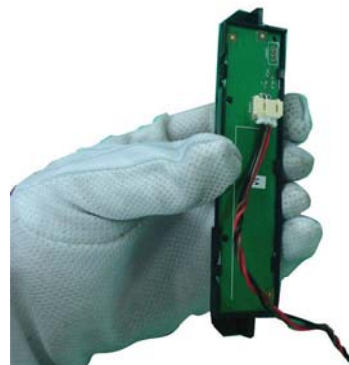
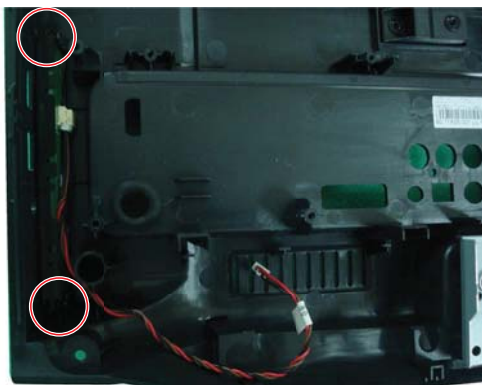
19. Remove the four screws securing the DVD module.



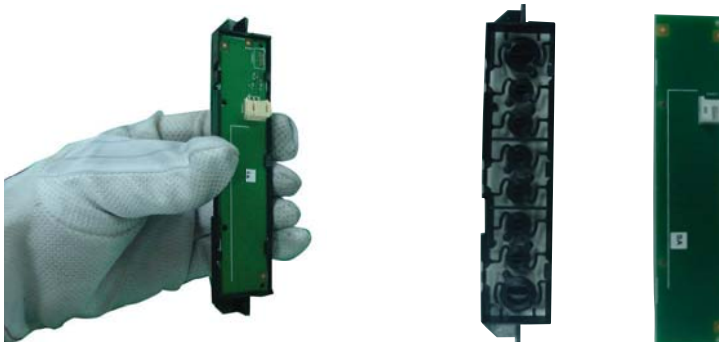
20. Disconnect the cables from the DVD module and main board.



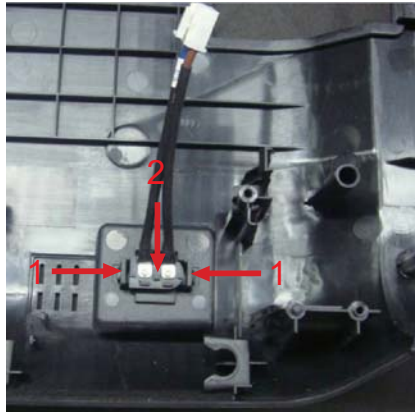
21. Remove the two screws securing the control board and then release the control board.



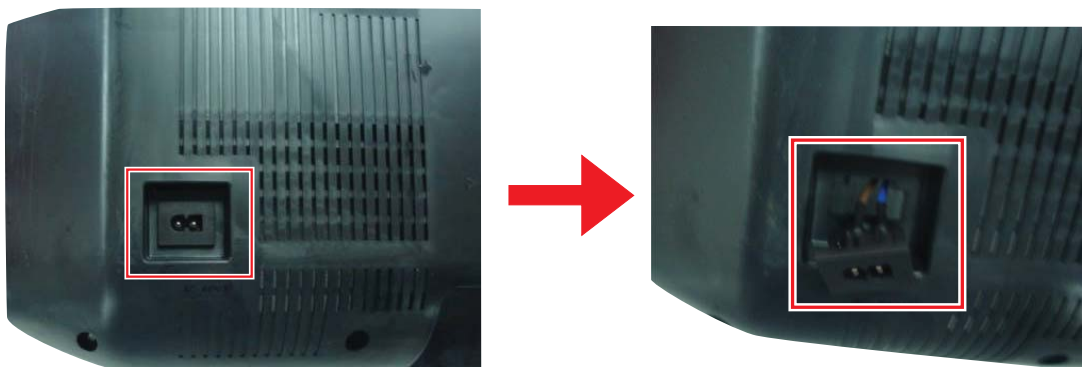
22. Remove the control cable and then separate the control board from its plastic bracket.



23. Pinch the hook to release the AC cable and then push it out.

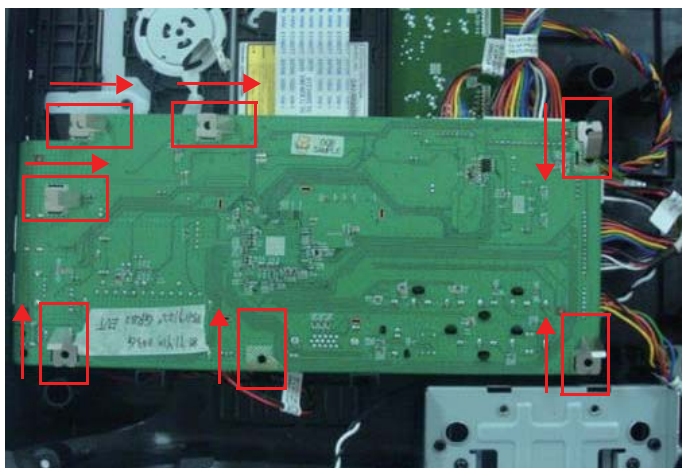


24. Pull out the AC cable from the back cover of the TV.



Important: Take note of the spring orientation when reassembling the TV.

Main board



Power board



22DV703R/22DV704R

1. Lay down the LCD TV on a flat, stable surface with the rear cover facing up. Make sure the edge of the front bezel is hanging over the edge of the surface.
2. Remove the two screws holding the TV to its stand, and then remove the stand.



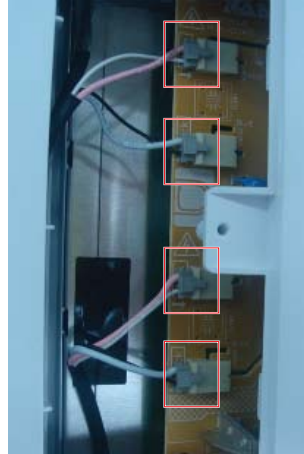
3. Remove the screws securing the rear panel cover.



4. Open and remove the left rear panel door.



5. Disconnect the inverter cables from the power board.



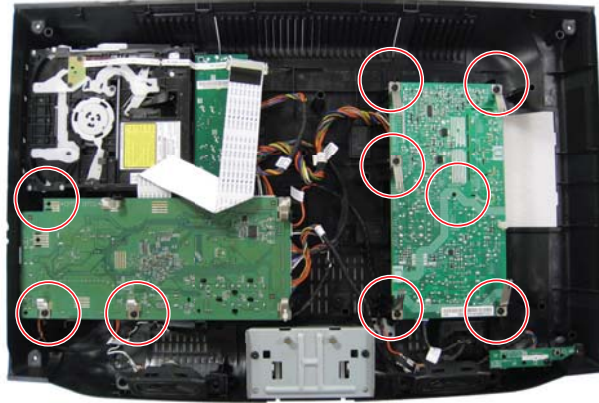
6. Remove the tape and release the LVDS cable from the panel.



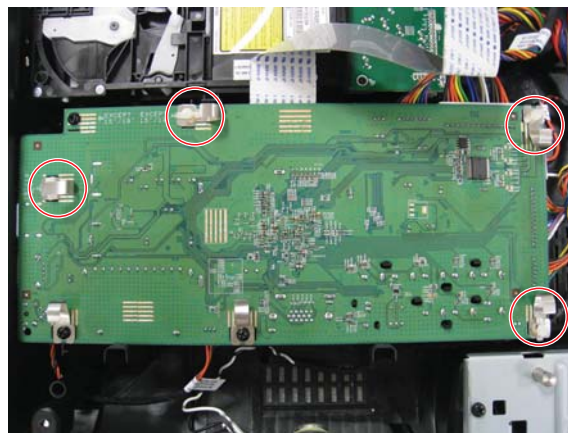
7. Detach the panel from the front cover.



8. Remove the screws securing the main board (left) and power board (right).



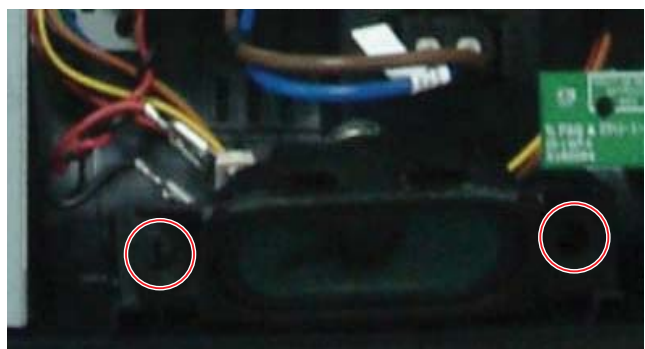
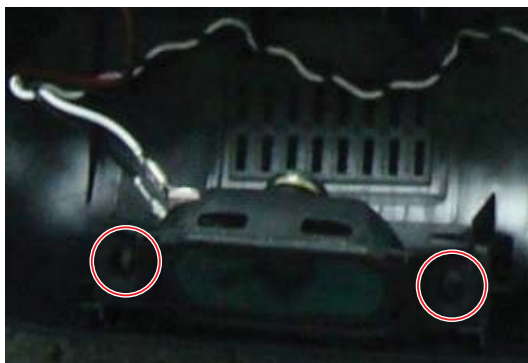
9. Remove the four supports on the main board.



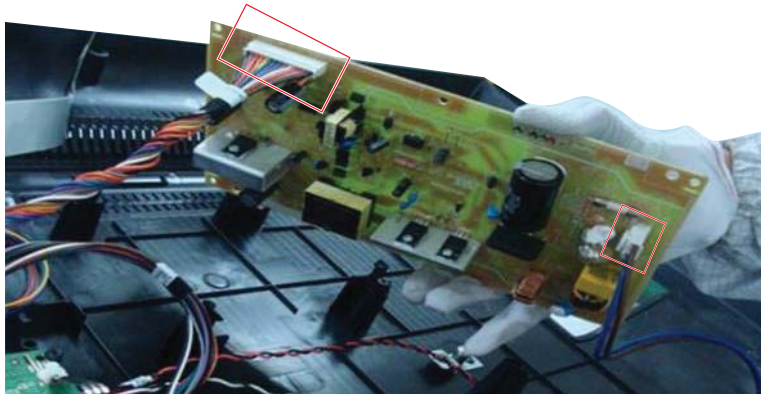
10. Remove the one screw securing the IR board, and then disconnect the IR cable from the IR board.



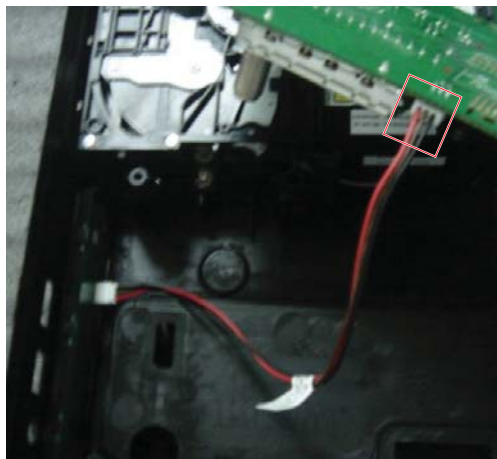
11. Detach the right and left speakers, and then disconnect the speaker cables.



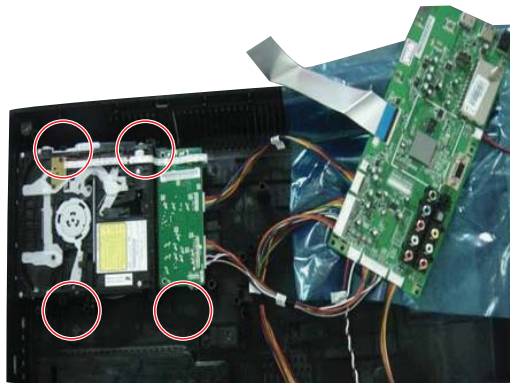
12. Turn the power board over, disconnect the AC and power cable from the power board, and then remove the power board.



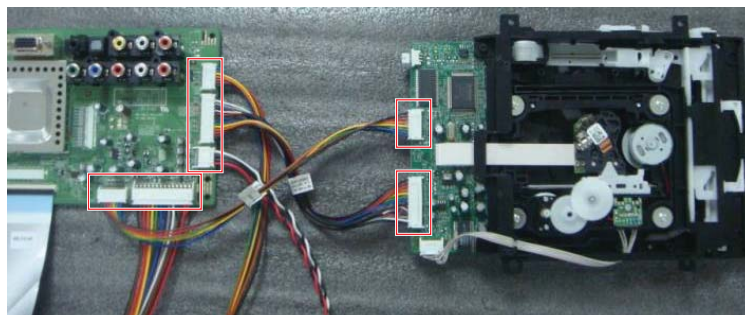
13. Disconnect the control cable from the main board, and then release the main board from back cover.



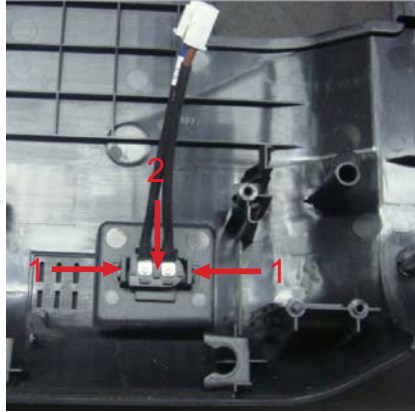
14. Remove the four screws securing the DVD module.



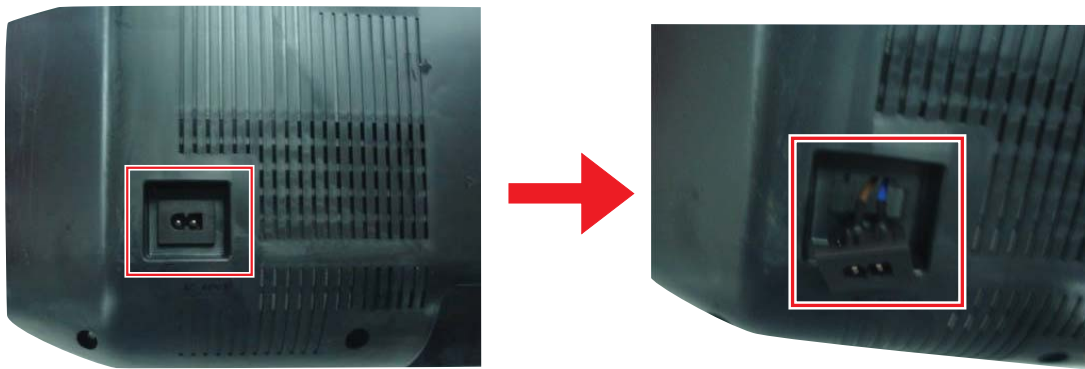
15. Disconnect the cables from the DVD module and main board.



16. Pinch the hook to release the AC cable and then push it out.

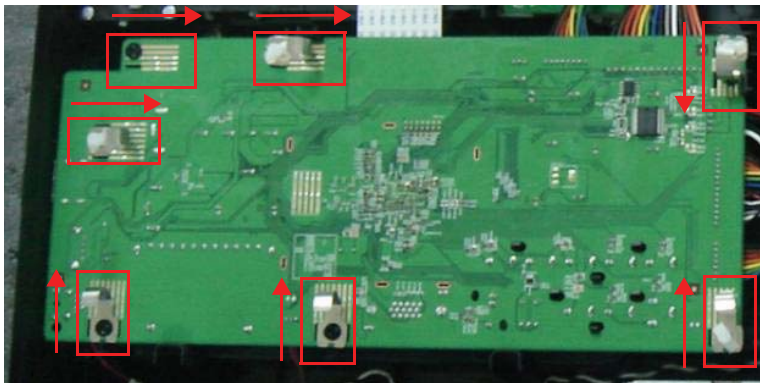


17. Pull out the AC cable from the back cover of the TV.

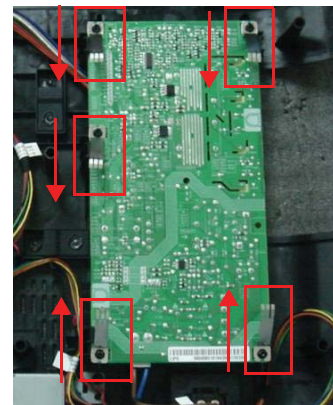


Important: Take note of the spring orientation when reassembling the TV.

Main board



Power board



26DV703R

1. Lay down the LCD TV on a flat, stable surface with the rear cover facing up. Make sure the edge of the front bezel is hanging over the edge of the surface.
2. Remove the screws holding the TV to its stand, and then remove the stand.



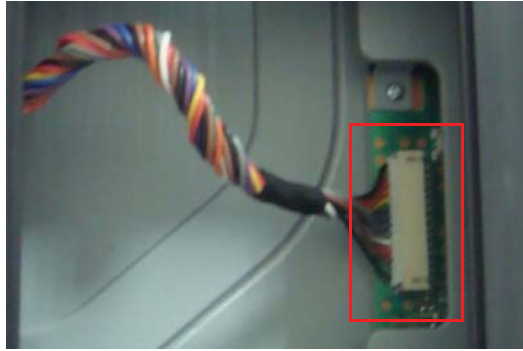
3. Remove the screws securing the back cover.



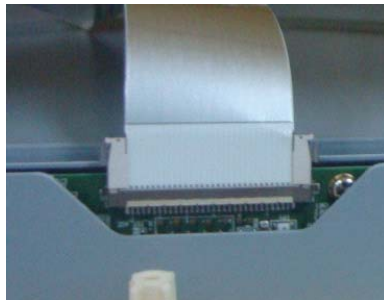
4. Open and remove the left rear panel door.



5. Disconnect the inverter cables from the power board.



6. Remove the tape and release the LVDS cable from the panel.



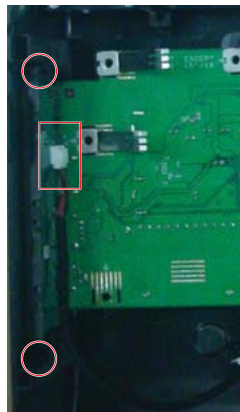
7. Remove the eight screws securing the panel.



8. Detach the panel from the front cover.



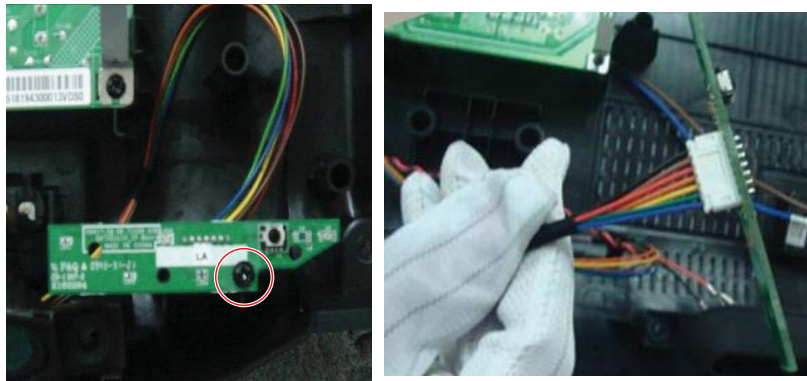
9. Remove the screws securing the control board, detach the control board and then release the control cable.



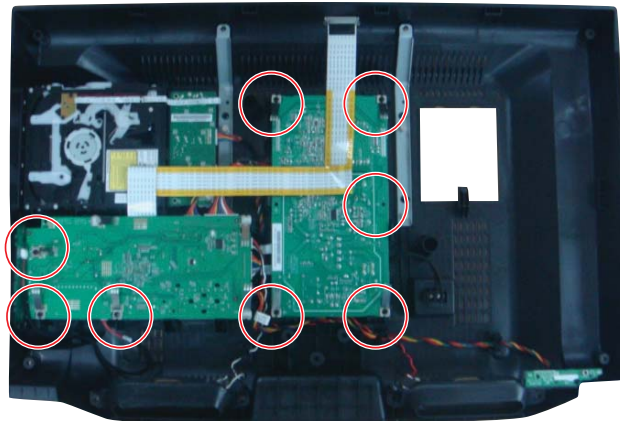
10. Separate the control board from its plastic bracket.



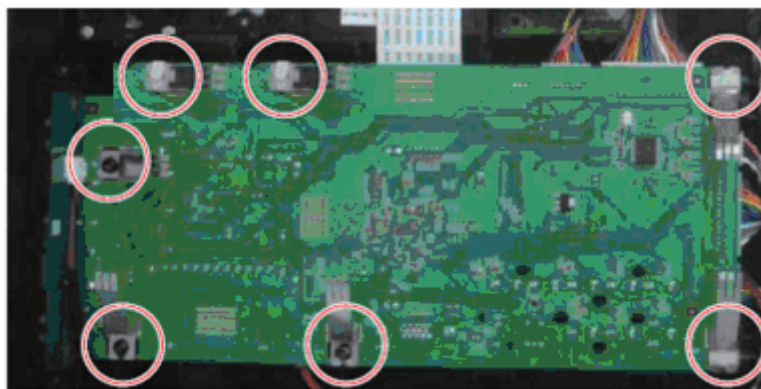
11. Remove the one screw securing the IR board, and then disconnect the IR cable from the IR board.



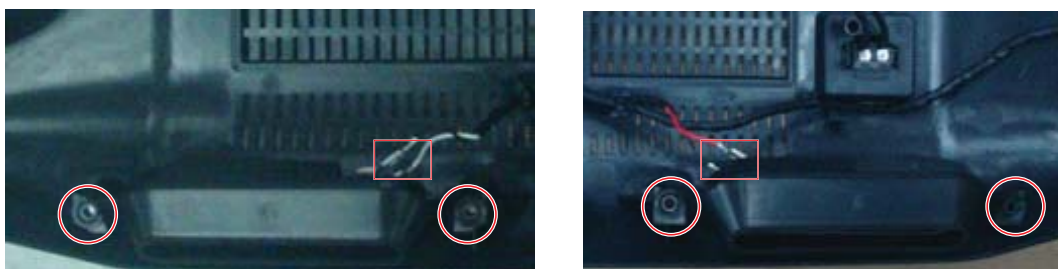
12. Remove the three screws on the main board (left), and remove the four screws and one support on the power board (right).



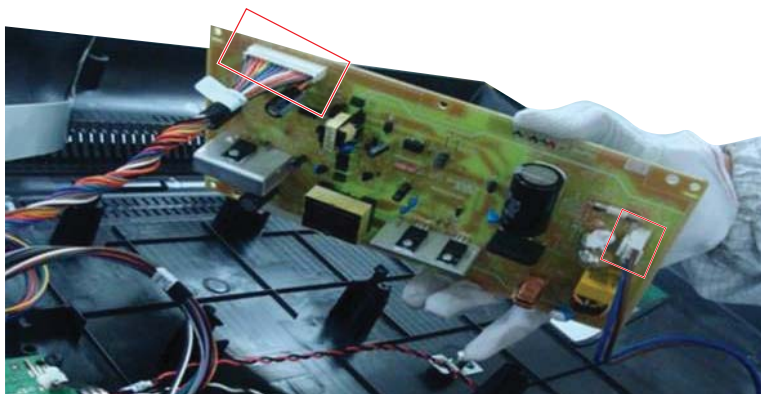
13. Remove the seven springs and four supports on the main board.



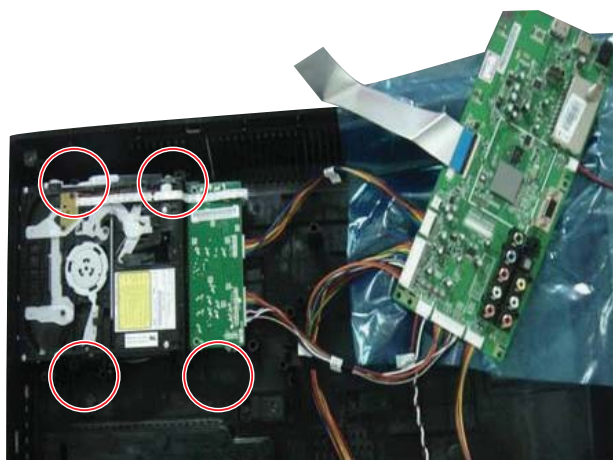
14. Detach the right and left speakers, and then disconnect the speaker cables.



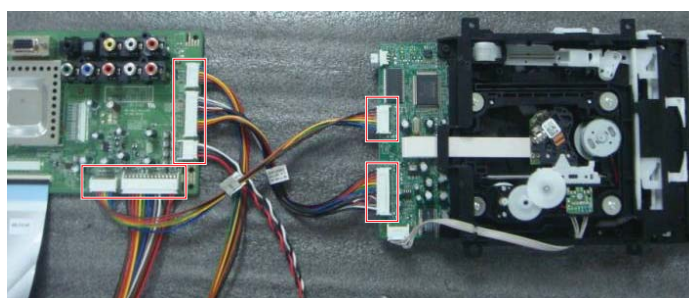
15. Turn the power board over, disconnect the AC and power cable from the power board, and then remove the power board.



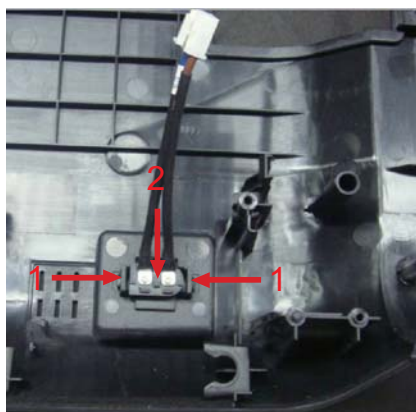
16. Remove the four screws securing the DVD module.



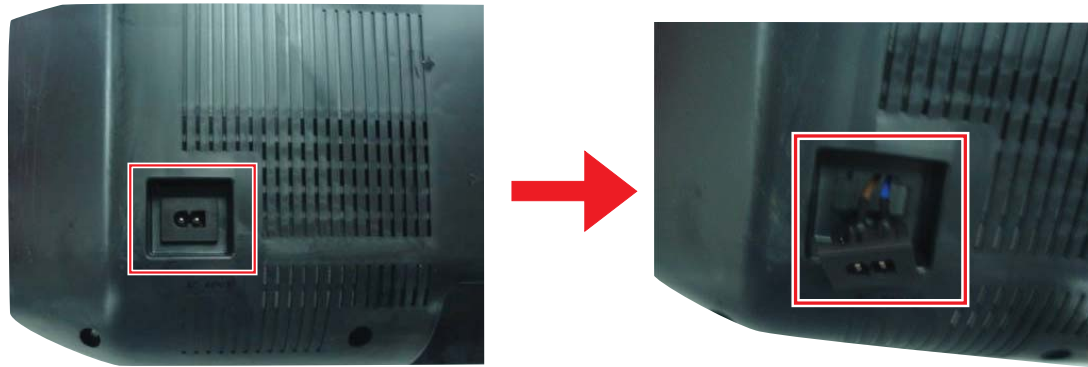
17. Disconnect all the cables from the DVD module and main board.



18. Pinch the hook to release the AC cable and then push it out.

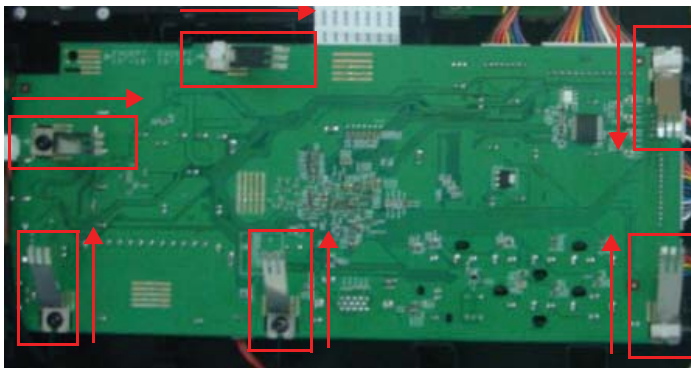


19. Pull out the AC cable from the back cover of the TV.

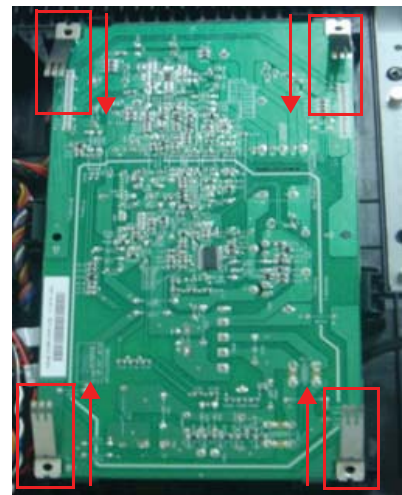


Important: Take note of the spring orientation when reassembling the TV.

Main board



Power board

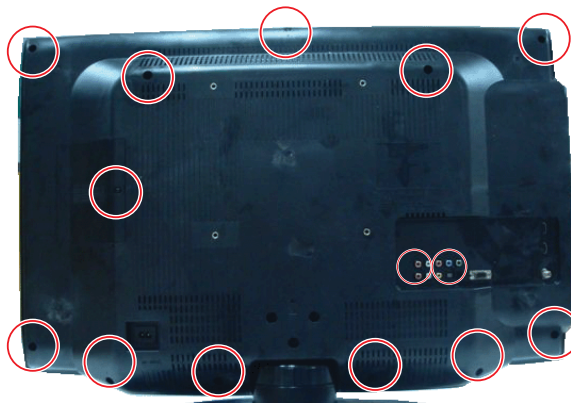


32CV100U

1. Lay down the LCD TV on a flat, stable surface with the rear cover facing up. Make sure the edge of the front bezel is hanging over the edge of the surface.
2. Remove the screws holding the TV to its stand, and then remove the stand.



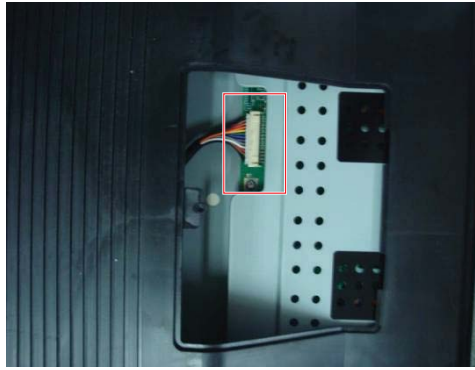
3. Remove the fourteen screws securing the rear panel cover.



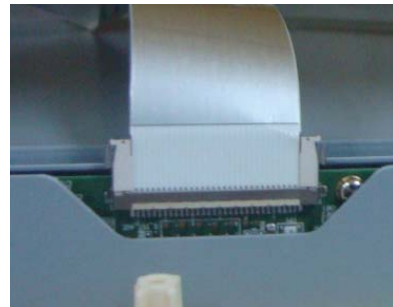
4. Open and remove the left rear panel door.



5. Disconnect the inverter cable from the power board.



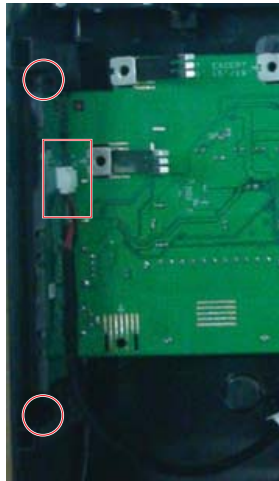
6. Remove the tape and release the LVDS cable from the panel.



7. Detach the panel from the front cover.



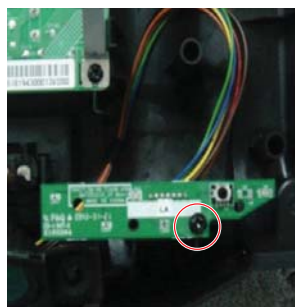
8. Remove the screws securing the control board, detach the control board and then release the control cable.



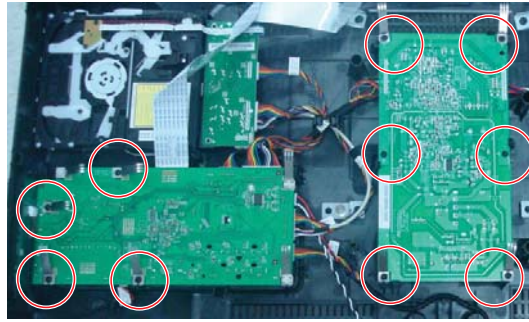
9. Separate the control board from its plastic bracket.



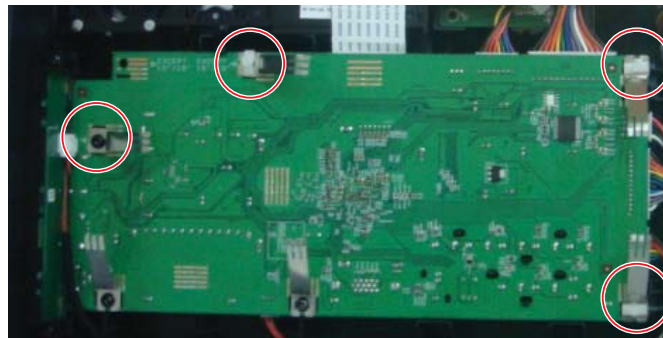
10. Remove the one screw securing the IR board, and then disconnect the IR cable from the IR board.



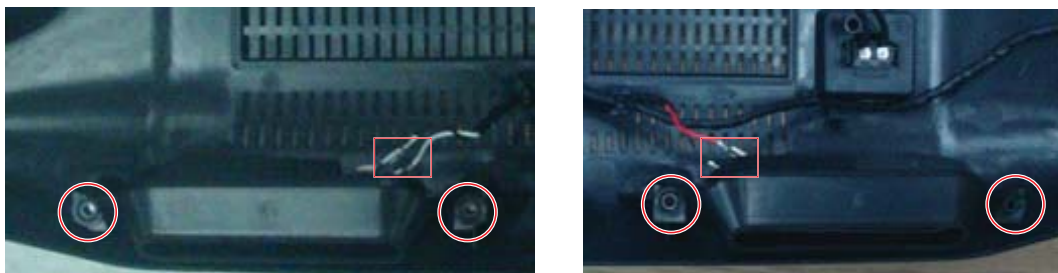
11. Remove the four screws on the main board (left), the six screws on the power board (right), and remove the eight springs on them.



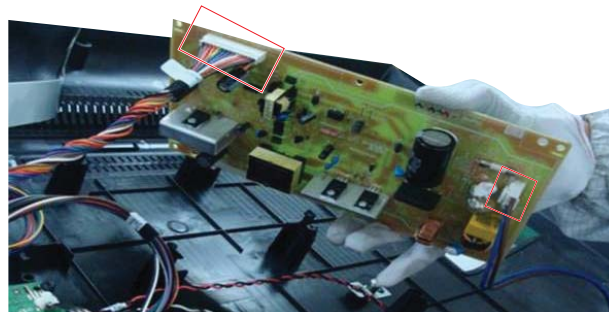
12. Remove the four supports on the main board.



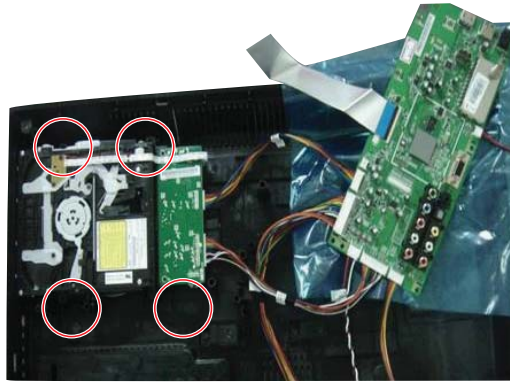
13. Detach the right and left speakers, and then disconnect the speaker cables.



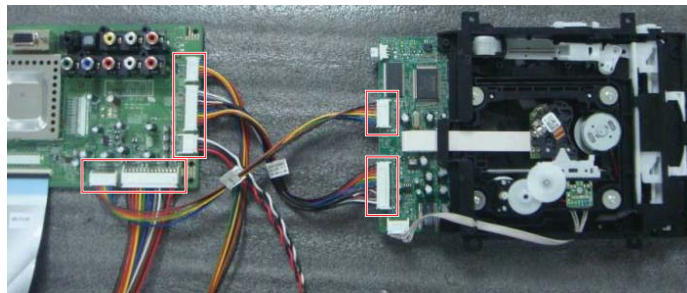
14. Turn the power board over, disconnect the AC and power cable from the power board, and then remove the power board.



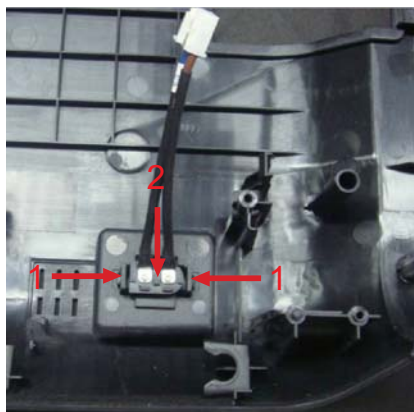
15. Remove the four screws securing the DVD module.



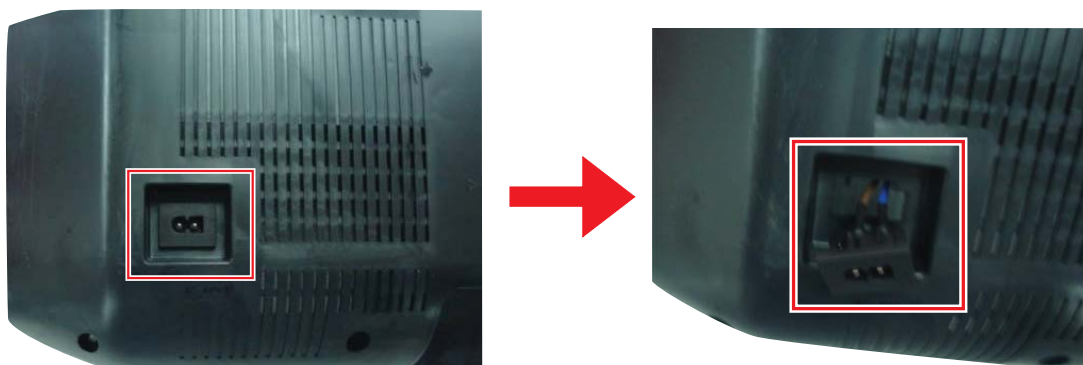
16. Disconnect all the cables from the DVD module and main board.



17. Pinch the hook to release the AC cable and then push it out.

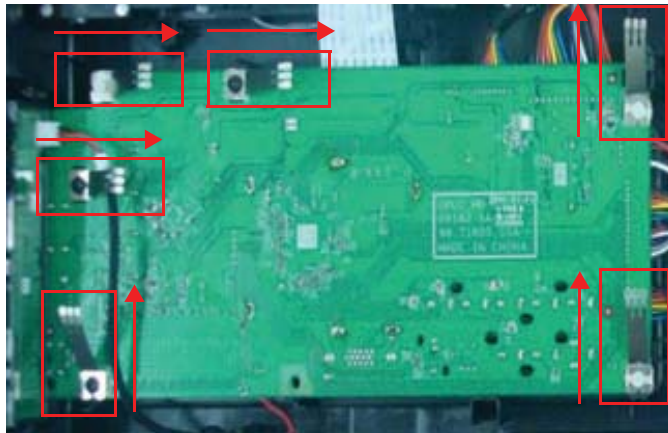


18. Pull out the AC cable from the back cover of the TV.



Important: Take note of the spring orientation when reassembling the TV.

Main board

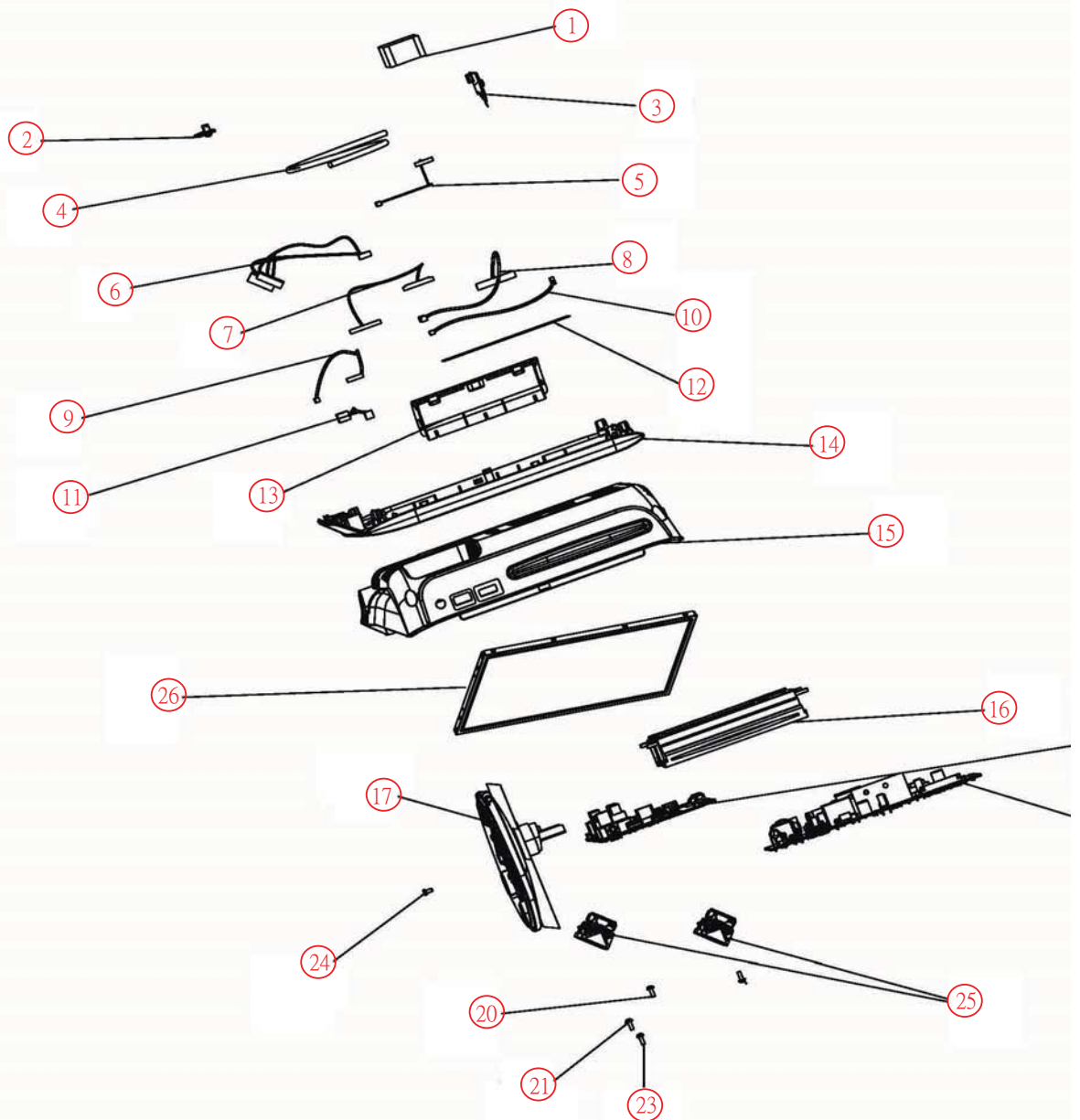


Power board



5. Exploded Diagram

15DV703R



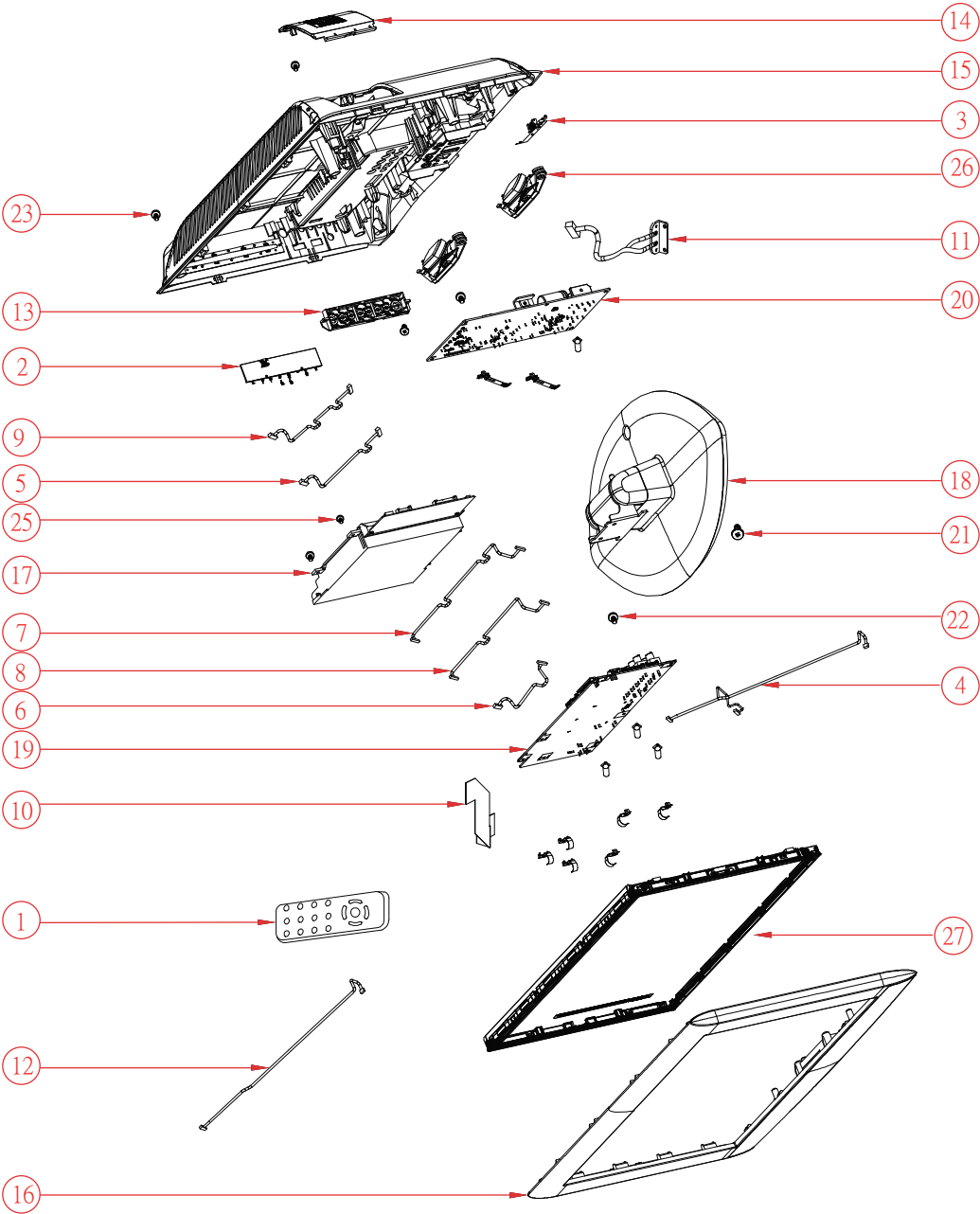
PARTS LIST: 15DV703R

	Location	TSB P/N	Reference No.	Description
	1	75019535	90.70G11.001	REMOTE CONTROL HAND UNIT, SE-R0319
	2	75019666	91.71X10.002G	PC BOARD ASSY, IR TV GAT2 15 PACKAGE MP
	3	75019593	91.71X10.E02G	PC BOARD ASSY, KEY PAD
	4	75019514	27.01518.G51	CORD ASSY, POWER
	5	75019656	50.71X05.001	CABLE ASSY, 8P-DVD-POWER-GL-G1510
	6	75019658	50.71X07.011	CABLE ASSY, 4P-SPEAKER-HT-G1510
	7	75019657	50.71X06.001	CABLE ASSY, 14P-DVD-SIGNAL-GL-G1510
	8	75019653	50.71X02.001	CABLE ASSY, 14P-PSU-GL-G1510
	9	75019655	50.71X04.011	CABLE ASSY, 7P-IR-HT-G1510
	10	75019654	50.71X03.001	CABLE ASSY, 3P-KEY-GL-G1510
	11	75019659	50.71Y06.001	SOCKET, AC INLET, WITH CABLE, GRU1510
	12	75019660	50.71Y14.001	CABLE ASSY, 30P-LVDS-TL-G1510
	13	75019646	42.71X02.001	COVER, LIPS
	14	75019663	60.71Y03.001	BEZEL ASSY, FRONT
	15	75019662	60.71Y02.001	COVER ASSY, BACK, GRU-G1510
	16	75019668	G8CD0000021C	DVD-RW DRIVE UNIT, HH SLOT, DAV-RR953WR, RUSS
	17	75019664	60.77A15.002	STAND ASSY
	18	75019667	91.71Y10.001G	PC BOARD ASSY, MAIN, GRU2 15 19 22
	19	75019661	56.04050.201	PC BOARD ASSY, POWER, 50W DPS-50UP-1A REV:00 (
	20	75019403	86.1B326.100	SCREW, M4X10L, M PAN, PM+SP, B
	21	75018210	86.CA214.8R0	SCREW, T3X0.5 8L BLACK ZN 2LEAD, 86.CA214.8R0
	22	75018194	86.VA314.6R0	SCREW, M3, 6L, P T, BLACK, ZN, 86.VA314.6R0
	23	75019508	86.WAX83.8R0	SCREW, T2.5X0.5, 8L, BLACK, ZN
	24	75019665	86.YA214.180	SCREW, T3X0.5, 18L, BLACK, ZN, 2LEAD
	25	75019615	23.40706.001	SPEAKER
		79104859	M156B1-L02	LCD PANEL, M156B1-L02

SAFETY PRECAUTION

The parts identified by  mark are critical for safety. Replace only with part number specified.
The mounting position of replacement is to be identical with originals.
The substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create shock, fire or other hazards.

19DV703R



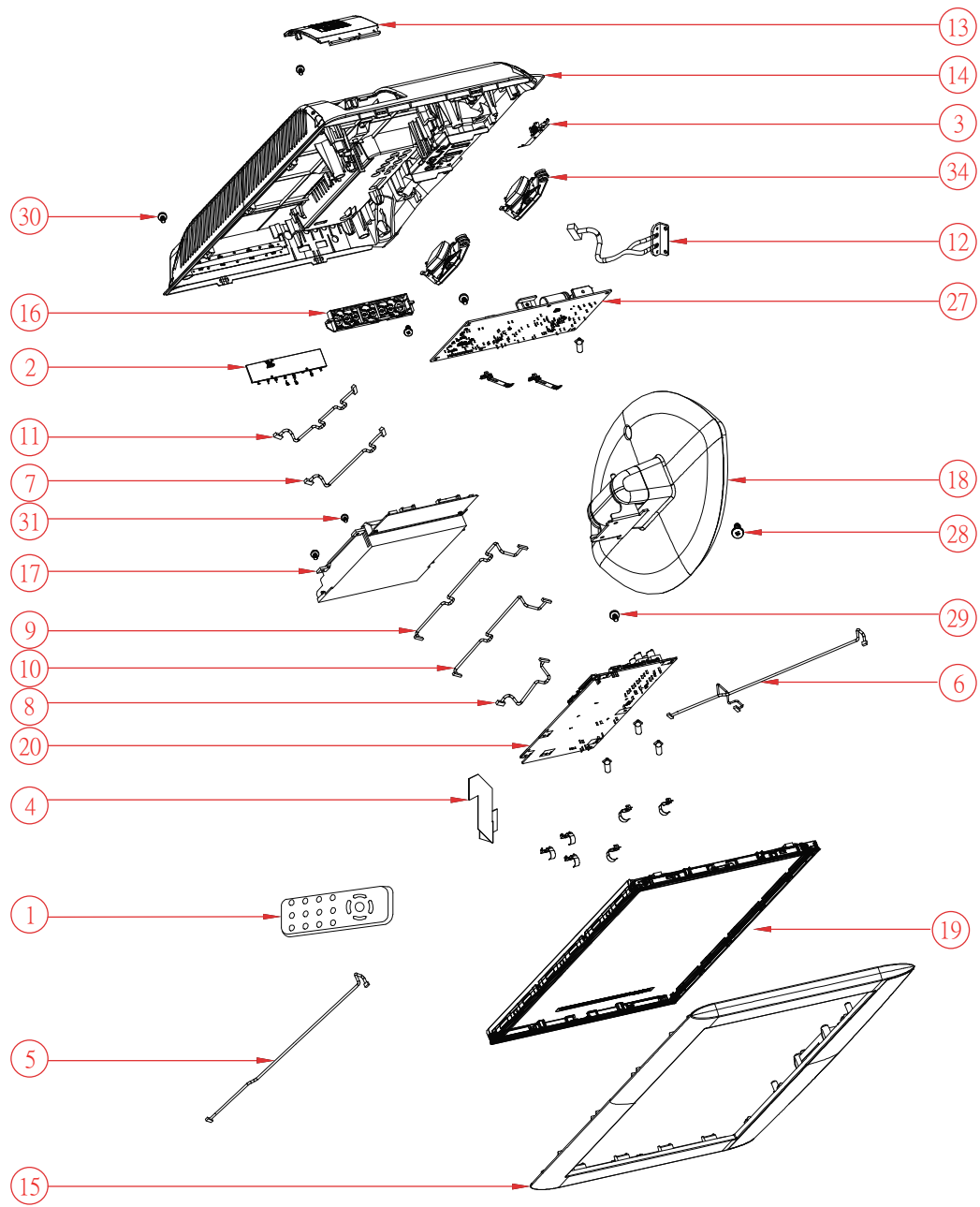
PARTS LIST: 19DV703R

	Location	TSB P/N (OLD)	TSB P/N (NEW)	Reference No.	Description
	1	AJ000129	75019535	90.70G11.001	REMOTE CONTROL HAND UNIT, SE-R0319
	2	AJ000349	75019645	91.71X10.A01G	PC BOARD ASSY, KEY PAD
	3	AJ000219	75019592	91.71X10.E01G	PC BOARD ASSY, IR
	4	AJ000346	75019640	50.71X15.011	CABLE ASSY, 4P-SPEAKER-HT-G1910
	5	AJ000345	75019639	50.71X14.001	CABLE ASSY, 14P-DVD-SIGNAL-GL-G1910
	6	AJ000342	75019636	50.71X11.001	CABLE ASSY, 3P-KEY-GL-G1910
	7	AJ000343	75019637	50.71X12.001	CABLE ASSY, 7P-IR-GL-G1910
	8	AJ000341	75019635	50.71X10.001	CABLE ASSY, 14P-PSU-GL-G1910
	9	AJ000344	75019638	50.71X13.001	CABLE ASSY, 8P-DVD-POWER-GL-G1910
	10	AJ000369	75019674	50.71Y16.021	CABLE ASSY, LVDS, 30P-LVDS-TR-GRU1910
	11	AJ000370	75019675	50.72K34.011	SOCKET, AC INLET, WITH CABLE, GEU1910
	12	AJ000132	75019514	27.01518.G51	CORD ASSY, POWER
	13	AJ000281	75019576	42.71X29.001	COVER, KEY
	14	AJ000339	75019633	42.71X05.001	COVER, LIPS
	15	AJ000378	75019677	60.71Y05.002	COVER ASSY, BACK
	16	AJ000385	75019678	60.72K07.001	BEZEL ASSY, FRONT
	17	AJ000338	75019668	G8CD00000210	DVD-RW DRIVE UNIT, HH SLOT, DAV-RR953WR, RUSSIA
	18	AJ000288	75019626	60.71X06.001	STAND ASSY
	19	AJ000333	75019667	91.71Y10.001G	PC BOARD ASSY, MAIN, GRU2 15 19 22
	20	AJ000372	75019676	56.04050.G51	PC BOARD ASSY, POWER, 50W, FSP050-2PI06A PP
	21	AJ000030	75019403	86.1B326.100	SCREW, M4X10L, M PAN, PM + SP, BLK, ZN
	22	AJ000031	75018210	86.CA214.8R0	SCREW, T3X0.5, 8L, BLACK, ZN, 2LEAD
	23	AJ000075	75019471	86.CA234.100	SCREW, T3X0.5, 10L, BLACK, ZN, 2LEAD
	24	AJ000309	75019629	86.LA534.6R0	SCREW, TAP, FLT, 3XT24X6TP-NI
	25	AJ000136	75019508	86.WAX83.8R0	SCREW, T2.5X0.5, 8L, BLACK, ZN
	26	AJ000318	75019615	23.40706.001	SPEAKER
	27	79105168	79105168	M185XW01 V2	LCD PANEL, M185XW01 V2

SAFETY PRECAUTION

The parts identified by  mark are critical for safety. Replace only with part number specified.
The mounting position of replacement is to be identical with originals.
The substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create shock, fire or other hazards.

19DV704R



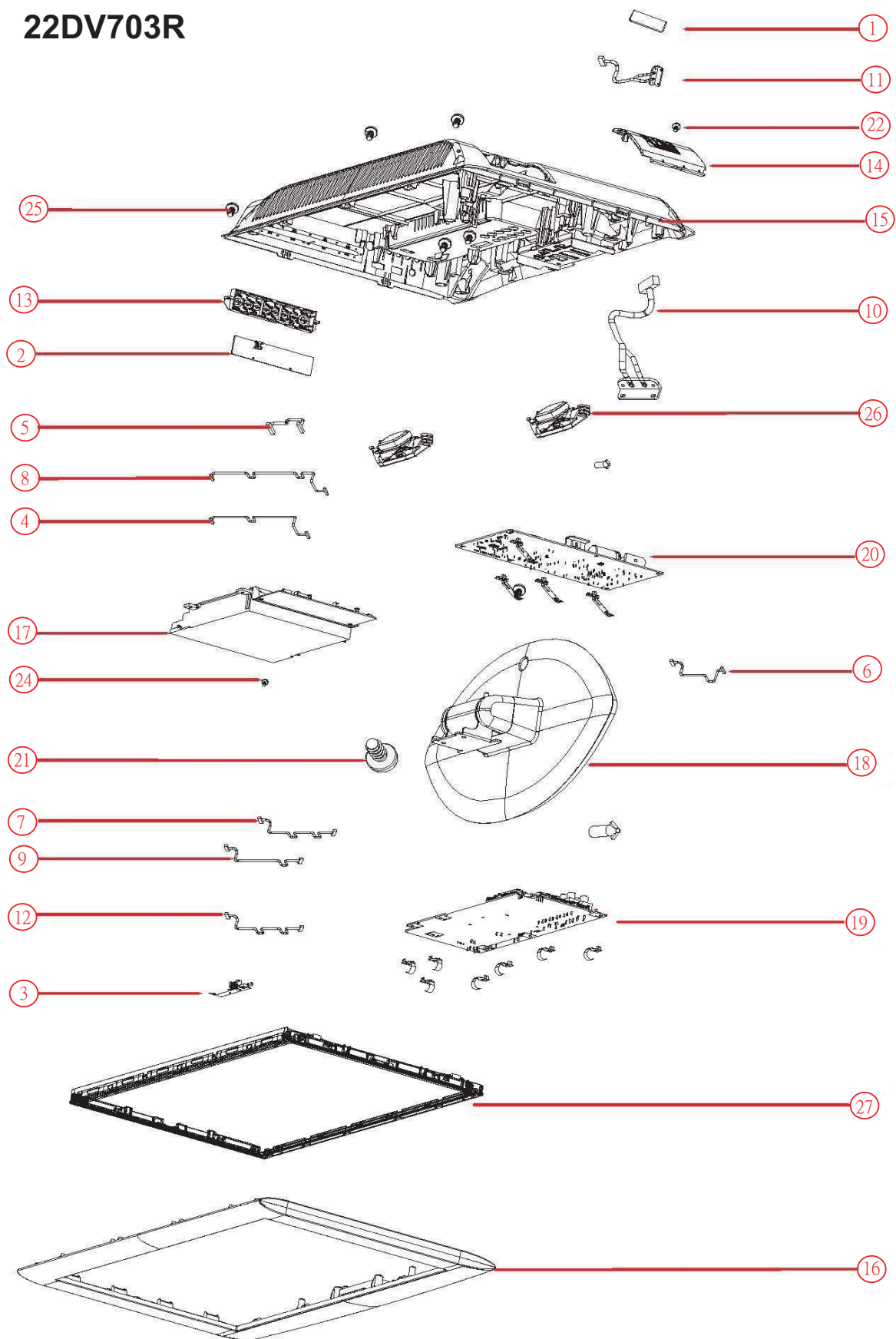
PARTS LIST: 19DV704R

	Location	TSB P/N	Reference No.	Description
	1	75019553	90.70G11.002	REMOTE CONTROL HAND UNIT, SE-R0337
	2	75019645	91.71X10.A01G	PC BOARD ASSY, KEY PAD
	3	75019592	91.71X10.E01G	PC BOARD ASSY, IR
	4	75019674	50.71Y16.021	CABLE ASSY, LVDS, 30P-LVDS-TR-GRU1910
	5	75019514	27.01518.G51	CORD ASSY, POWER
	6	75020154	50.71X15.001	CABLE ASSY, 4P-SPEAKER-GL-G1910
	7	75019639	50.71X14.001	CABLE ASSY, 14P-DVD-SIGNAL-GL-G1910
	8	75019636	50.71X11.001	CABLE ASSY, 3P-KEY-GL-G1910
	9	75019637	50.71X12.001	CABLE ASSY, 7P-IR-GL-G1910
	10	75019635	50.71X10.001	CABLE ASSY, 14P-PSU-GL-G1910
	11	75019638	50.71X13.001	CABLE ASSY, 8P-DVD-POWER-GL-G1910
	12	75019675	50.72K34.011	SOCKET, AC INLET, WITH CABLE, GEU1910
	13	75020152	42.71X05.011	COVER, LIPS, G1910-W
	14	75020155	60.71Y13.002	COVER ASSY, BACK, BACK-W-GRU1910
	15	75020080	60.72K16.001	BEZEL ASSY, FRONT, FRONT-W-GEU1910
	16	75020070	42.71X29.011	COVER, KEY
	17	75019668	G8CD00000210	DVD-RW DRIVE UNIT, HH SLOT, DAV-RR953WR, RUSS
	18	75020079	60.71X29.001	STAND ASSY, BASE, G2210-W
	19	79105168	M185XW01 V2	LCD PANEL, M185XW01 V2
	20	75019667	91.71Y10.001G	PC BOARD ASSY, MAIN, GRU2 15 19 22
	26	75020156	90.71Y28.002G	DOCUMENTS KIT, FOR GRU2 V1
	27	75019676	56.04050.G51	PC BOARD ASSY, POWER, 50W, FSP050-2PI06A PP
	28	75019403	86.1B326.100	SCREW, M4X10L, M PAN, PM+SP, B
	29	75018210	86.CA214.8R0	SCREW, T3X0.5 8L BLACK ZN 2LEAD, 86.CA214.8R0
	30	75019471	86.CA234.100	SCREW, T3X0.5, 10L, BLACK, ZN, 2LEAD
	31	75019508	86.WAX83.8R0	SCREW, T2.5X0.5, 8L, BLACK, ZN
	32	75019479	86.CA514.100	SCREW, T3X0.5, 8L, SILV, NI, 2LEAD
	33	75019416	86.19536.100	SCREW, M4X0.7, 10L, SILV, NI, PAN
	34	75019615	23.40706.001	SPEAKER

SAFETY PRECAUTION

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22DV703R



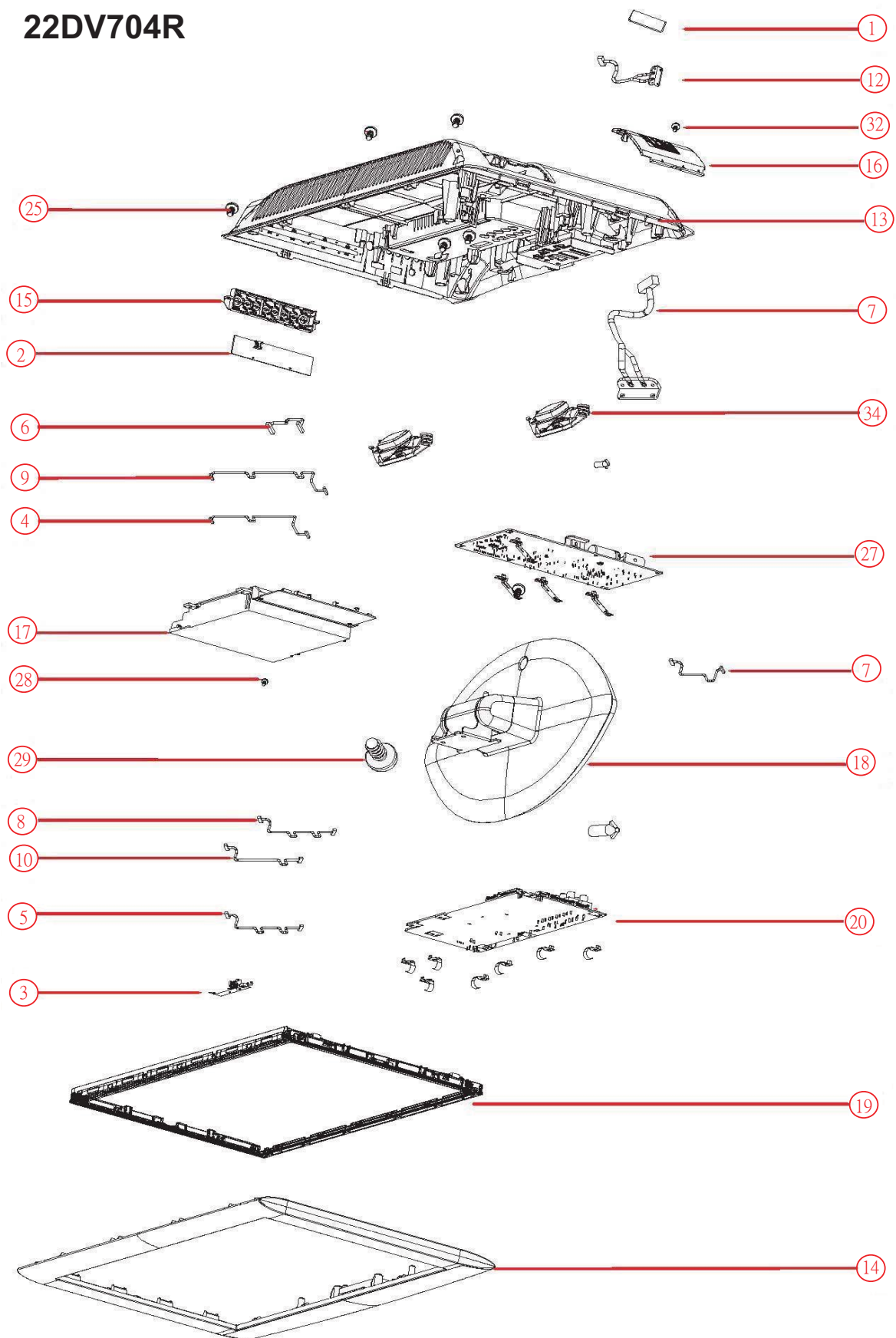
PARTS LIST: 22DV703R

	Location	TSB P/N (OLD)	TSB P/N (NEW)	Reference No.	Description
	1	AJ000129	75019535	90.70G11.001	REMOTE CONTROL HAND UNIT, SE-R0319
	2	AJ000220	75019593	91.71X10.E02G	PC BOARD ASSY, KEY PAD
	3	AJ000219	75019592	91.71X10.E01G	PC BOARD ASSY, IR
	4	AJ000132	75019514	27.01518.G51	CORD ASSY, POWER
	5	AJ000243	75019620	50.71X20.001	CABLE ASSY, 8P-DVD-POWER-GL-G2210
	6	AJ000226	75019617	50.71X17.001	CABLE ASSY, 14P-PSU-GL-G2210
	7	AJ000237	75019622	50.71X22.001	CABLE ASSY, SPEAKER
	8	AJ000223	75019621	50.71X21.001	CABLE ASSY, 14P-DVD-SIGNAL-GL-G2210
	9	AJ000235	75019618	50.71X18.001	CABLE ASSY, 3P-KEY-GL-G2210
	10	AJ000240	75019619	50.71X19.001	CABLE ASSY, 7P-IR-GL-G2210
	11	AJ000364	75019685	50.71Y08.001	SOCKET, AC INLET, WITH CABLE, GRU2210
	12	AJ000360	75019684	50.71X24.021	CABLE ASSY, LVDS, 30PIN
	13	AJ000281	75019576	42.71X29.001	COVER, KEY
	14	AJ000282	75019616	42.71X09.001	COVER, LIPS
	15	AJ000381	75019687	60.71Y09.001	COVER ASSY, BACK
	16	AJ000379	75019686	60.71Y06.001	BEZEL ASSY, FRONT
	17	AJ000338	75019668	G8CD00000210	DVD-RW DRIVE UNIT, HH SLOT, DAV-RR953WR, RUSSIA
	18	AJ000288	75019626	60.71X06.001	STAND ASSY
	19	AJ000333	75019667	91.71Y10.001G	PC BOARD ASSY, MAIN, GRU2 15 19 22
	20	AJ000296	75019625	56.04065.1F1	PC BOARD ASSY, POWER, 65W, DPS-65TP-3A, REV:00, GAT
	21	AJ000030	75019403	86.1B326.100	SCREW, M4X10L, M PAN, PM + SP, BLK, ZN
	22	AJ000075	75019471	86.CA234.100	SCREW, T3X0.5, 10L, BLACK, ZN, 2LEAD
	23	AJ000309	75019629	86.LA534.6R0	SCREW, TAP, FLT, 3XT24X6TP-NI
	24	AJ000311	75019630	86.VA326.100	SCREW, M4, 10L, P T, A, BLACK, ZN, W32
	25	AJ000136	75019508	86.WAX83.8R0	SCREW, T2.5X0.5, 8L, BLACK, ZN
	26	AJ000318	75019615	23.40706.001	SPEAKER
	27	79105088	79105088	V216B1-L04	LCD PANEL, V216B1-L04

SAFETY PRECAUTION

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22DV704R



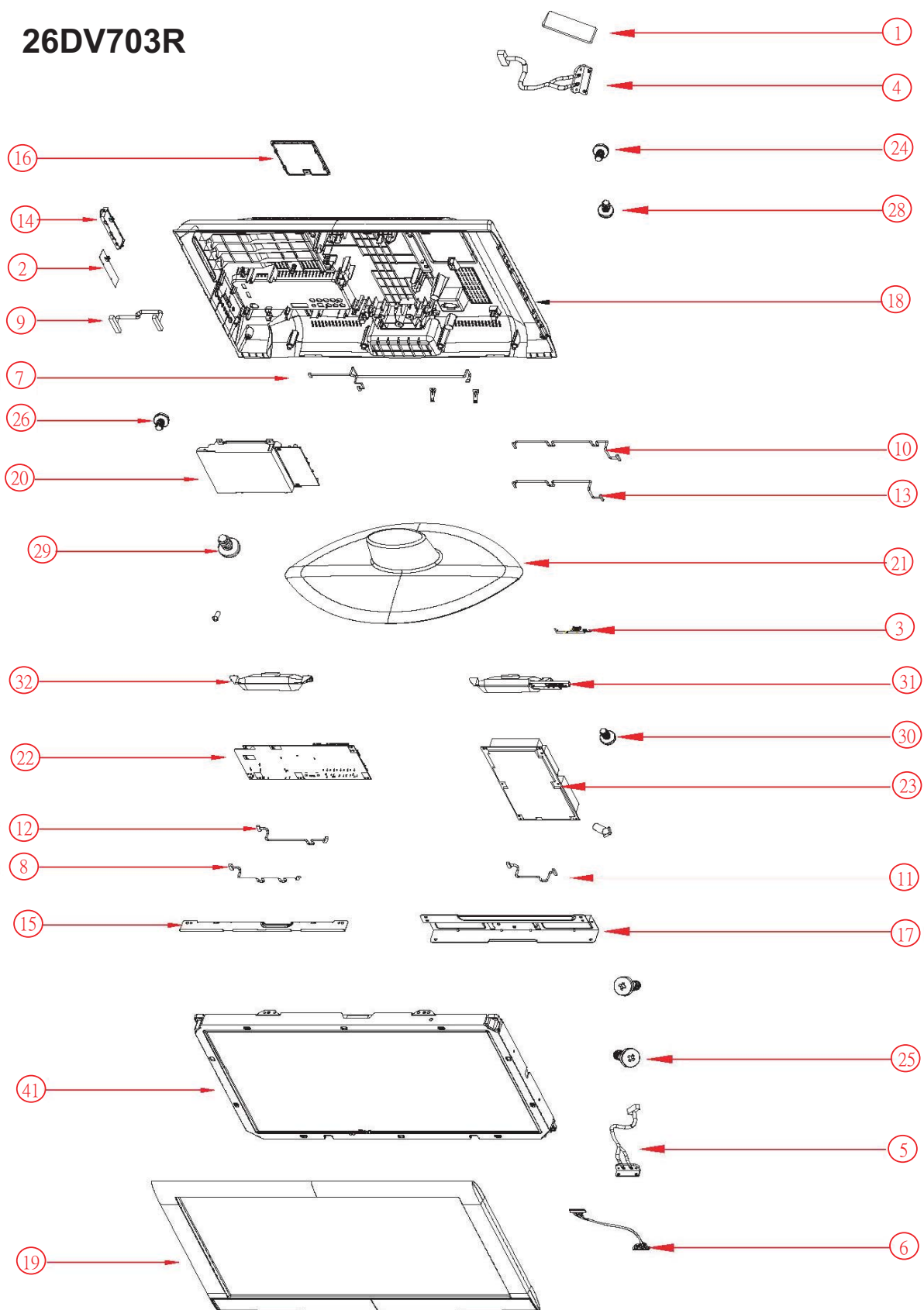
PARTS LIST: 22DV704R

	Location	TSB P/N	Reference No.	Description
	1	75019553	90.70G11.002	REMOTE CONTROL HAND UNIT, SE-R0337
	2	75019593	91.71X10.E02G	PC BOARD ASSY, KEY PAD
	3	75019592	91.71X10.E01G	PC BOARD ASSY, IR
	4	75019514	27.01518.G51	CORD ASSY, POWER
	5	75019684	50.71X24.021	CABLE ASSY, LVDS, 30PIN
	6	75019620	50.71X20.001	CABLE ASSY, 8P-DVD-POWER-GL-G2210
	7	75019617	50.71X17.001	CABLE ASSY, 14P-PSU-GL-G2210
	8	75019622	50.71X22.001	CABLE ASSY, SPEAKER
	9	75019621	50.71X21.001	CABLE ASSY, 14P-DVD-SIGNAL-GL-G2210
	10	75019618	50.71X18.001	CABLE ASSY, 3P-KEY-GL-G2210
	11	75019619	50.71X19.001	CABLE ASSY, 7P-IR-GL-G2210
	12	75020096	50.71Y03.001	SOCKET, AC INLET, WITH CABLE, GL-GRU2210
	13	75020158	60.71Y15.001	COVER ASSY, BACK, BACK-W-GRU2210
	14	75020102	60.71Y14.001	BEZEL ASSY, FRONT, FRONT-W-GEU2210
	15	75020070	42.71X29.011	COVER, KEY
	16	75020094	42.71X09.011	COVER, DOOR-LIPS-G2210-W
	17	75019668	G8CD00000210	DVD-RW DRIVE UNIT, HH SLOT, DAV-RR953WR, RUSS
	18	75020079	60.71X29.001	STAND ASSY, BASE, G2210-W
	19	79105088	V216B1-L04	LCD PANEL, V216B1-L04
	20	75019667	91.71Y10.001G	PC BOARD ASSY, MAIN, GRU2 15 19 22
	26	75020156	90.71Y28.002G	DOCUMENTS KIT, FOR GRU2 V1
	27	75019625	56.04065.1F1	PC BOARD ASSY, POWER, 65W, DPS-65TP-3A, REV:00
	28	75019630	86.VA326.100	SCREW, M4, 10L, P T, A, BLACK, ZN, W32
	29	75019403	86.1B326.100	SCREW, M4X10L, M PAN, PM+SP, B
	30	75019508	86.WAX83.8R0	SCREW, T2.5X0.5, 8L, BLACK, ZN
	31	75020104	86.00G77.26A	SCREW, PAN, T4, L10, NI
	32	75019479	86.CA514.100	SCREW, T3X0.5, 8L, SILV, NI, 2LEAD
	33	75019416	86.19536.100	SCREW, M4X0.7, 10L, SILV, NI, PAN
	34	75019615	23.40706.001	SPEAKER

SAFETY PRECAUTION

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26DV703R



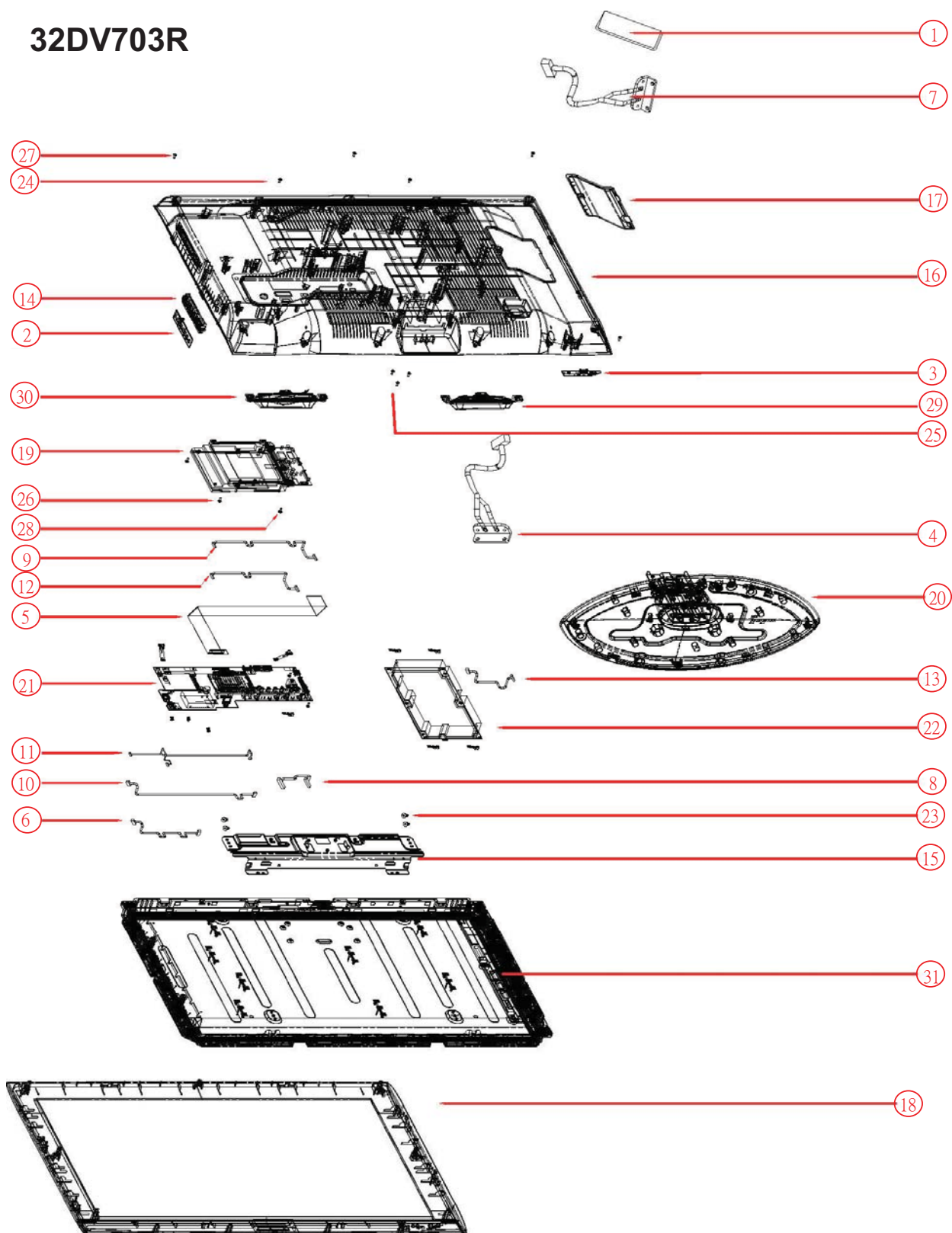
PARTS LIST: 26DV703R

	Location	TSB P/N (OLD)	TSB P/N (NEW)	Reference No.	Description
	1	AJ000129	75019535	90.70G11.001	REMOTE CONTROL HAND UNIT, SE-R0319
	2	AJ000220	75019593	91.71X10.E02G	PC BOARD ASSY, KEY PAD
	3	AJ000219	75019592	91.71X10.E01G	PC BOARD ASSY, IR
	4	AJ000132	75019514	27.01518.G51	CORD ASSY, POWER
	5	AJ000365	75019692	50.71Y09.001	SOCKET, AC INLET, WITH CABLE, GRU2610
	6	AJ000367	75019693	50.71Y13.001	CABLE ASSY, 30P-LVDS-TL-GRU2610
	7	AJ000238	75019605	50.71X38.001	CABLE ASSY, SPEAKER
	8	AJ000363	75019691	50.71X49.011	CABLE ASSY, 7P-IR-HT-G2610
	9	AJ000236	75019577	50.71X28.001	CABLE ASSY, 3P-KEY-GL-G2610
	10	AJ000244	75019603	50.71X30.001	CABLE ASSY, 8P-DVD-POWER-GL-G2610
	11	AJ000227	75019602	50.71X27.001	CABLE ASSY, 14P-PSU-GL-G2610
	12	AJ000250	75019604	50.71X36.001	CABLE ASSY, 14P-INVERTER-GL-G2610
	13	AJ000224	75019607	50.71X48.001	CABLE ASSY, 14P-DVD-SIGNAL-GL-G2610
	14	AJ000281	75019576	42.71X29.001	COVER, KEY
	15	AJ000374	75019695	60.71X22.002	COVER ASSY, BRACKET, TOP
	16	AJ000283	75019600	42.71X15.001	COVER, LIPS
	17	AJ000375	75019696	60.71X27.001	COVER ASSY, BRACKET, BACK
	18	AJ000384	75019699	60.71Y12.001	COVER ASSY, BACK
	19	AJ000377	75019697	60.71Y01.001	BEZEL ASSY, FRONT
	20	AJ000338	75019668	G8CD00000210	DVD-RW DRIVE UNIT, HH SLOT, DAV-RR953WR, RUSSIA
	21	AJ000383	75019698	60.71Y11.002	STAND ASSY
	22	AJ000371	75019700	91.71Y10.C01G	PC BOARD ASSY, MAIN, GRU2 26 32
	23	AJ000373	75019694	56.04129.G21	PC BOARD ASSY, POWER, 128W, PFC, FSP128-3F01A PP G
	24	AJ000136	75019508	86.WAX83.8R0	SCREW, T2.5X0.5, 8L, BLACK, ZN
	25	AJ000034	75018194	86.VA314.6R0	SCREW, M3X6L, P T, BLACK, ZN
	26	AJ000308	75019613	86.AA324.5R5	SCREW, M3, L5.5, G2610
	27	79105089	V260B3-L04		LCD PANEL, V260B3-L04
	27	AJ000309	75019629	86.LA534.6R0	SCREW, TAP, FLT, 3XT24X6TP-NI
	28	AJ000301	75019612	86.1A336.6R0	SCREW, M4, 6L, M, BLACK, ZN, W32A
	29	AJ000058	75019442	86.CA216.140	SCREW, T4X0.7, 14L, BLACK, ZN, 2LEAD
	30	AJ000031	75018210	86.CA214.8R0	SCREW, T3X0.5, 8L, BLACK, ZN, 2LEAD
	31	AJ000358	75019689	23.40810.001	SPEAKER
	32	AJ000357	75019688	23.40809.001	SPEAKER

SAFETY PRECAUTION

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32DV703R



PARTS LIST: 32DV703R

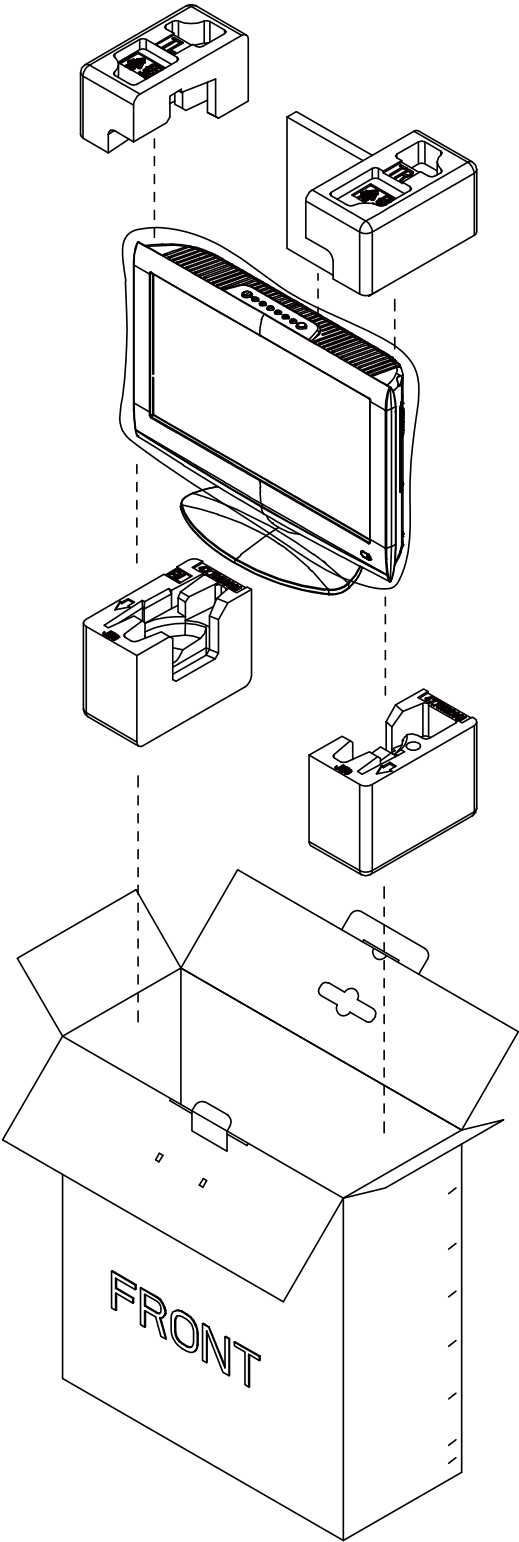
	Location	TSB P/N (OLD)	TSB P/N (NEW)	Reference No.	Description
	1	AJ000129	75019535	90.70G11.001	REMOTE CONTROL HAND UNIT, SE-R0319
	2	AJ000220	75019593	91.71X10.E02G	PC BOARD ASSY, KEY PAD
	3	AJ000219	75019592	91.71X10.E01G	PC BOARD ASSY, IR
	4	AJ000132	75019514	27.01518.G51	CORD ASSY, POWER
	5	AJ000368	75019708	50.71Y15.001	CABLE ASSY, 30P-LVDS-TL-3210 RU
	6	AJ000236	75019577	50.71X28.001	CABLE ASSY, 3P-KEY-GL-G2610
	7	AJ000366	75019707	50.71Y10.001	GRU3210
	8	AJ000228	75019580	50.71X40.001	CABLE ASSY, 14P-PSU-GL-G3210
	9	AJ000222	75019585	50.71X52.001	CABLE ASSY, 14P-DVD-SIGNAL-GL-G3210
	10	AJ000242	75019581	50.71X41.001	CABLE ASSY, 7P-IR-GL-G3210
	11	AJ000362	75019706	50.71X42.011	CABLE ASSY, 4P-SPEAKER-HT-G3210
	12	AJ000245	75019584	50.71X51.001	CABLE ASSY, 8P-DVD-POWER-GL-G3210
	13	AJ000361	75019705	50.71X32.011	CABLE ASSY, 3P-KEY-GL-G2610
	14	AJ000281	75019576	42.71X29.001	COVER, KEY
	15	AJ000359	75019702	33.71X12.002	BRACKET, BOTTOM
	16	AJ000380	75019710	60.71Y07.001	COVER ASSY, BACK
	17	AJ000376	75019709	60.71X28.001	COVER ASSY, LIPS
	18	AJ000386	75019712	60.72K08.001	BEZEL ASSY, FRONT
	19	AJ000338	75019668	G8CD00000210	RR953WR, RUSSIA
	20	AJ000382	75019711	60.71Y10.002	STAND ASSY
	21	AJ000371	75019700	91.71Y10.C01G	PC BOARD ASSY, MAIN, GRU2 26 32
	22	AJ000373	75019694	56.04129.G21	FSP128-3F01A PP G
	23	AJ000304	75018193	86.1F556.6R0	SCREW, M, M4, L6, S P, NI
	24	AJ000305	75019590	86.1HR36.140	SCREW, M, SP + PL, M4, L14, NI, BLK
	25	AJ000307	75019713	86.6B536.140	SCREW, ME ROUND, M4 X P0.7 X L14
	26	AJ000031	75018210	86.CA214.8R0	SCREW, T3X0.5, 8L, BLACK, ZN, 2LEAD
	27	AJ000058	75019442	86.CA216.140	SCREW, T4X0.7, 14L, BLACK, ZN, 2LEAD
	28	AJ000136	75019508	86.WAX83.8R0	SCREW, T2.5X0.5, 8L, BLACK, ZN
	29	AJ000357	75019688	23.40809.001	SPEAKER
	30	AJ000356	75019701	23.40808.001	SPEAKER
	31	79105169	79105169	T315XW04 V1	LCD PANEL, T315XW04 V1

SAFETY PRECAUTION

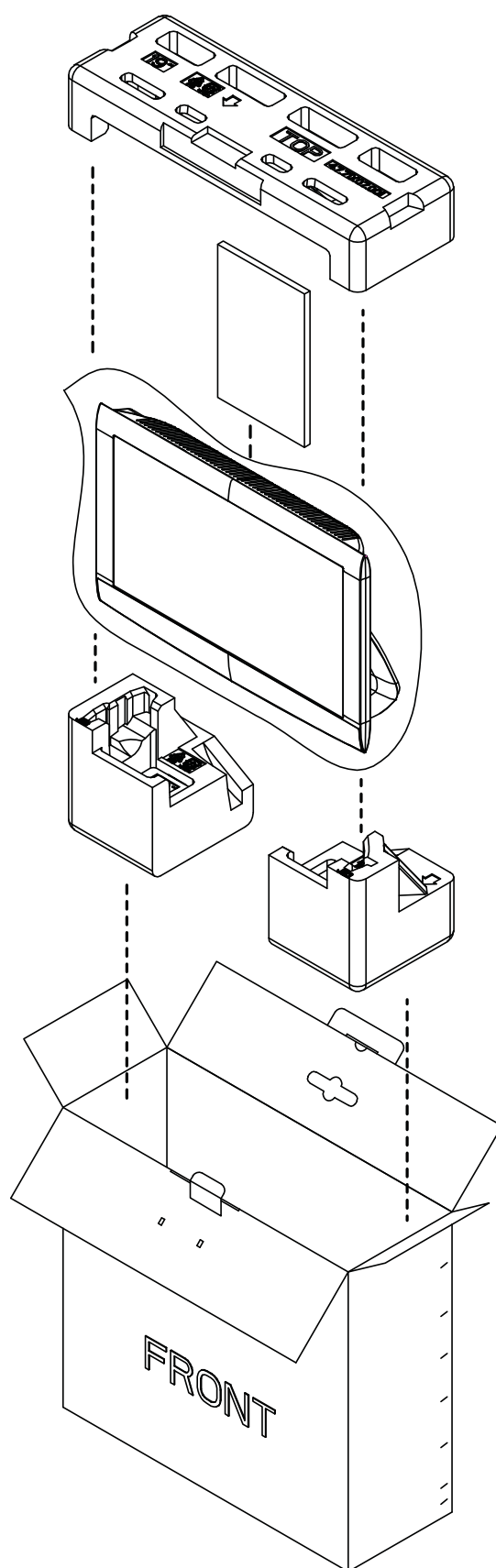
The parts identified by  mark are critical for safety. Replace only with part number specified.
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6. Packing Diagrams

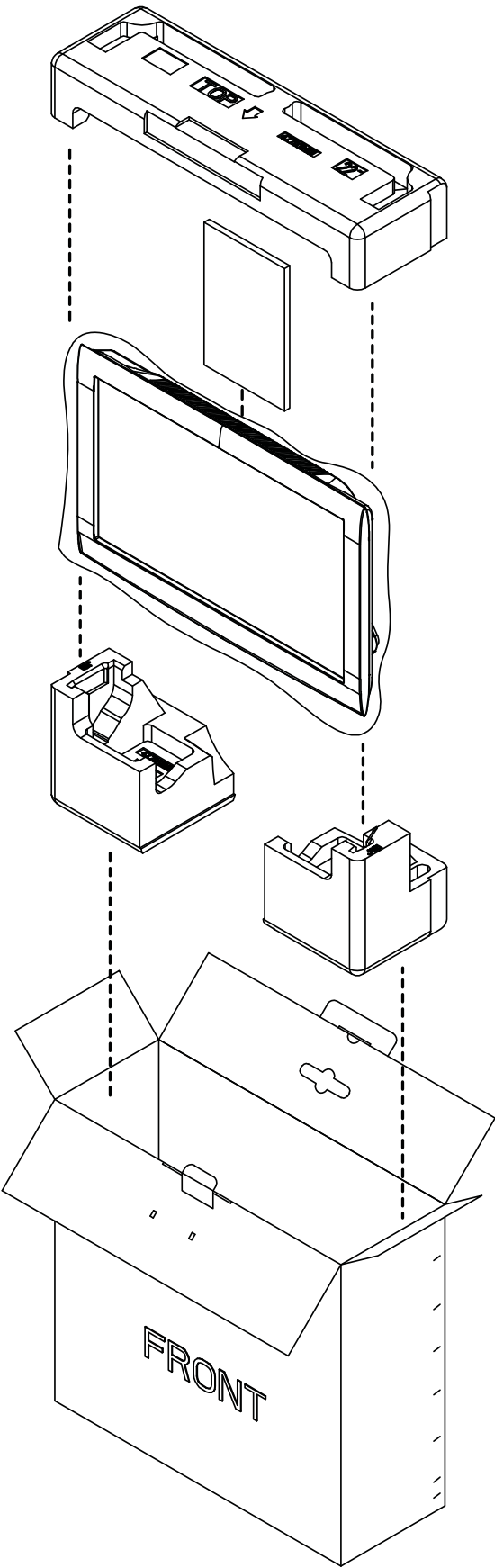
15DV703R

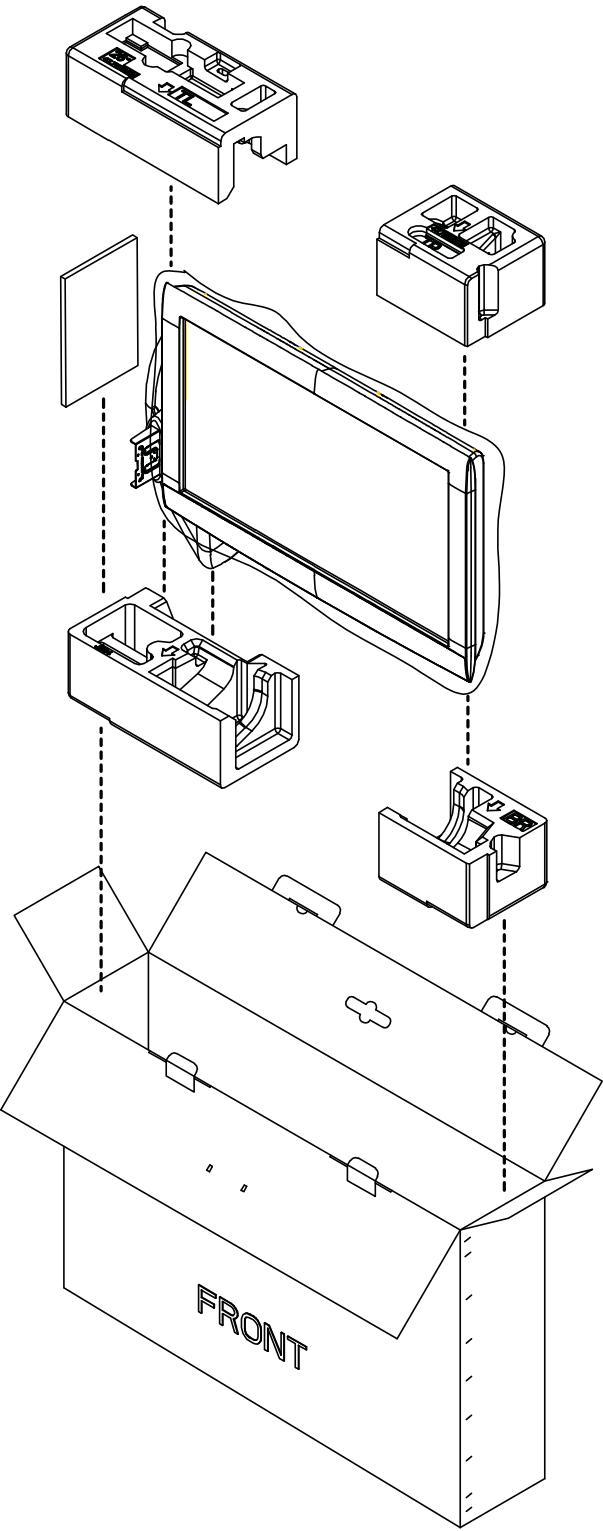


19DV703R/19DV704R

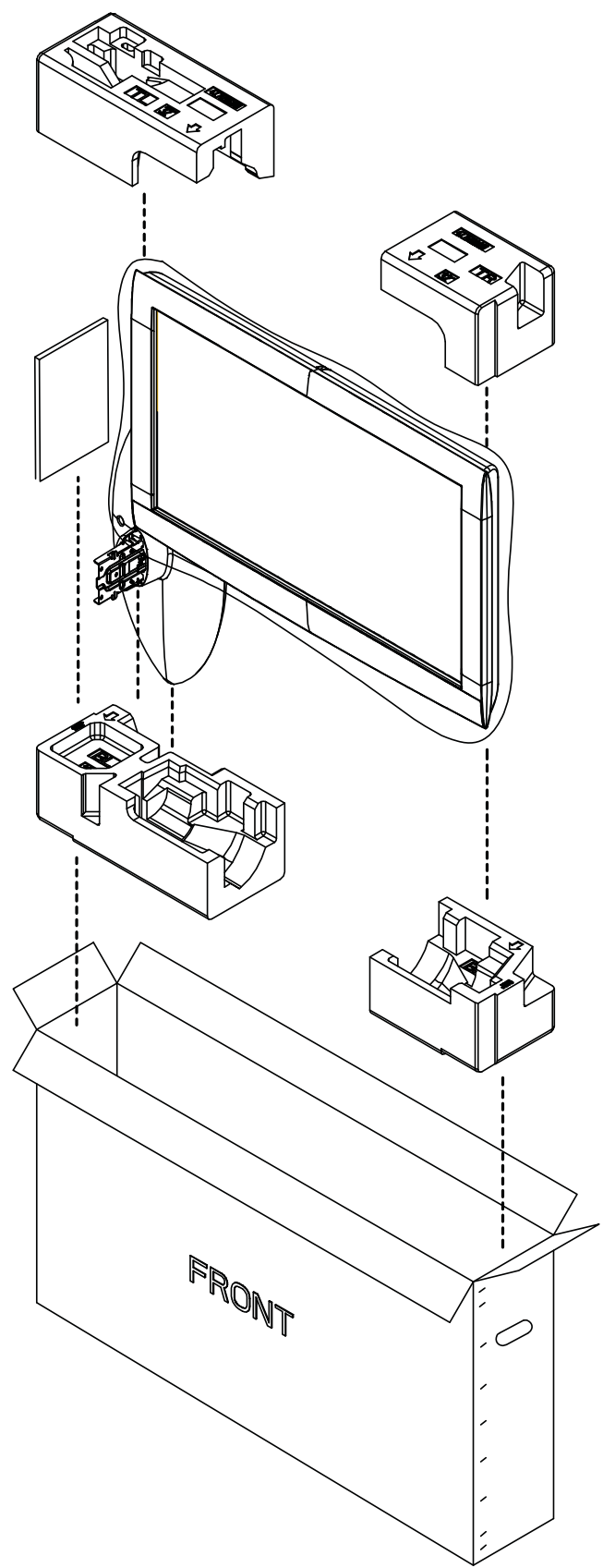


22DV703R/22DV704R



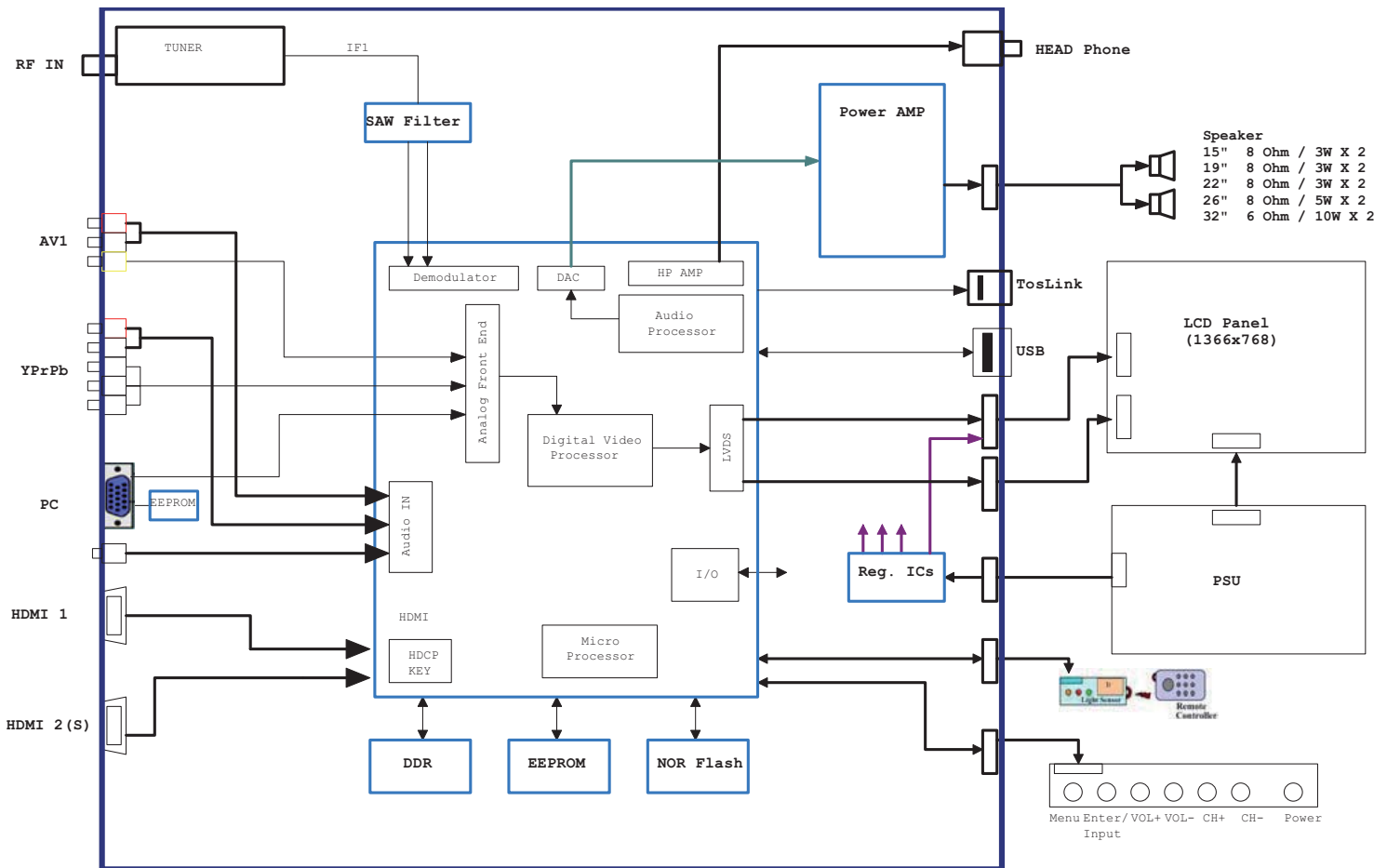


32DV703R

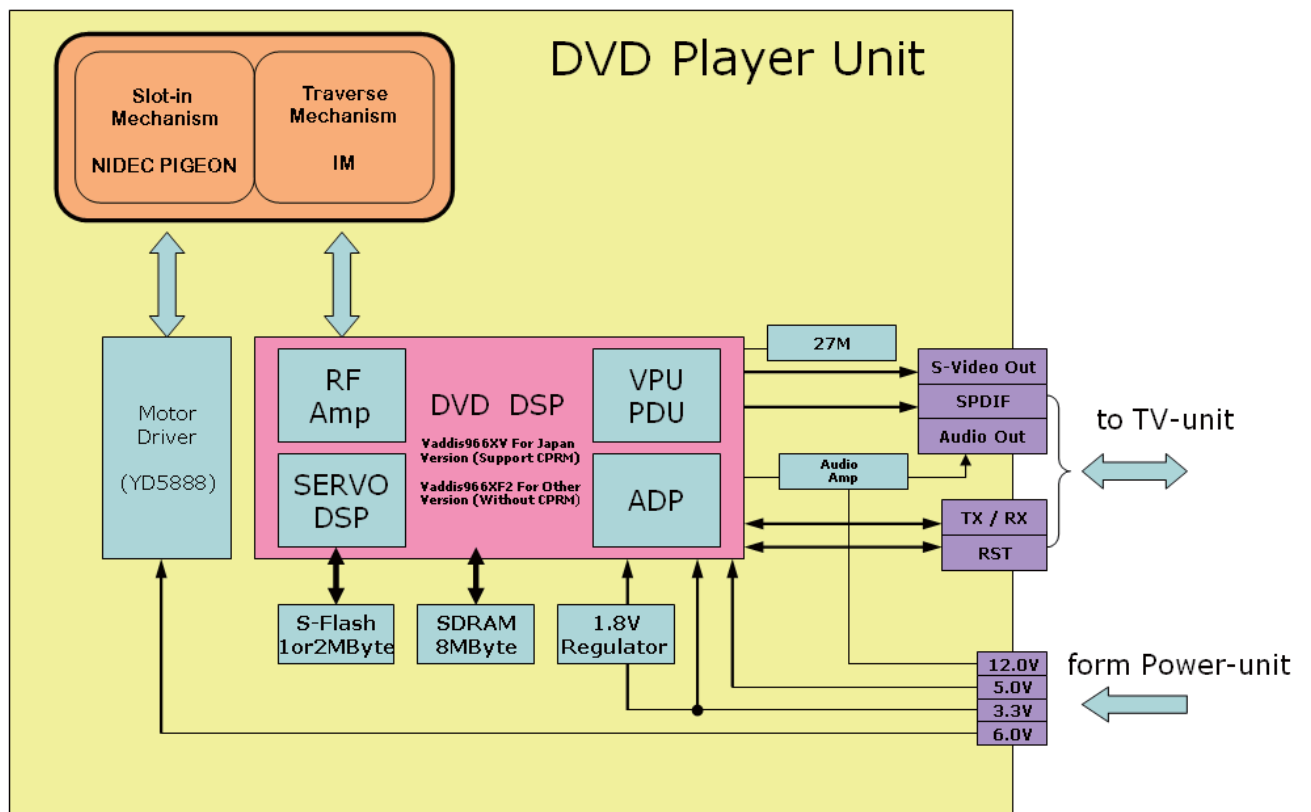


7. Block Diagrams

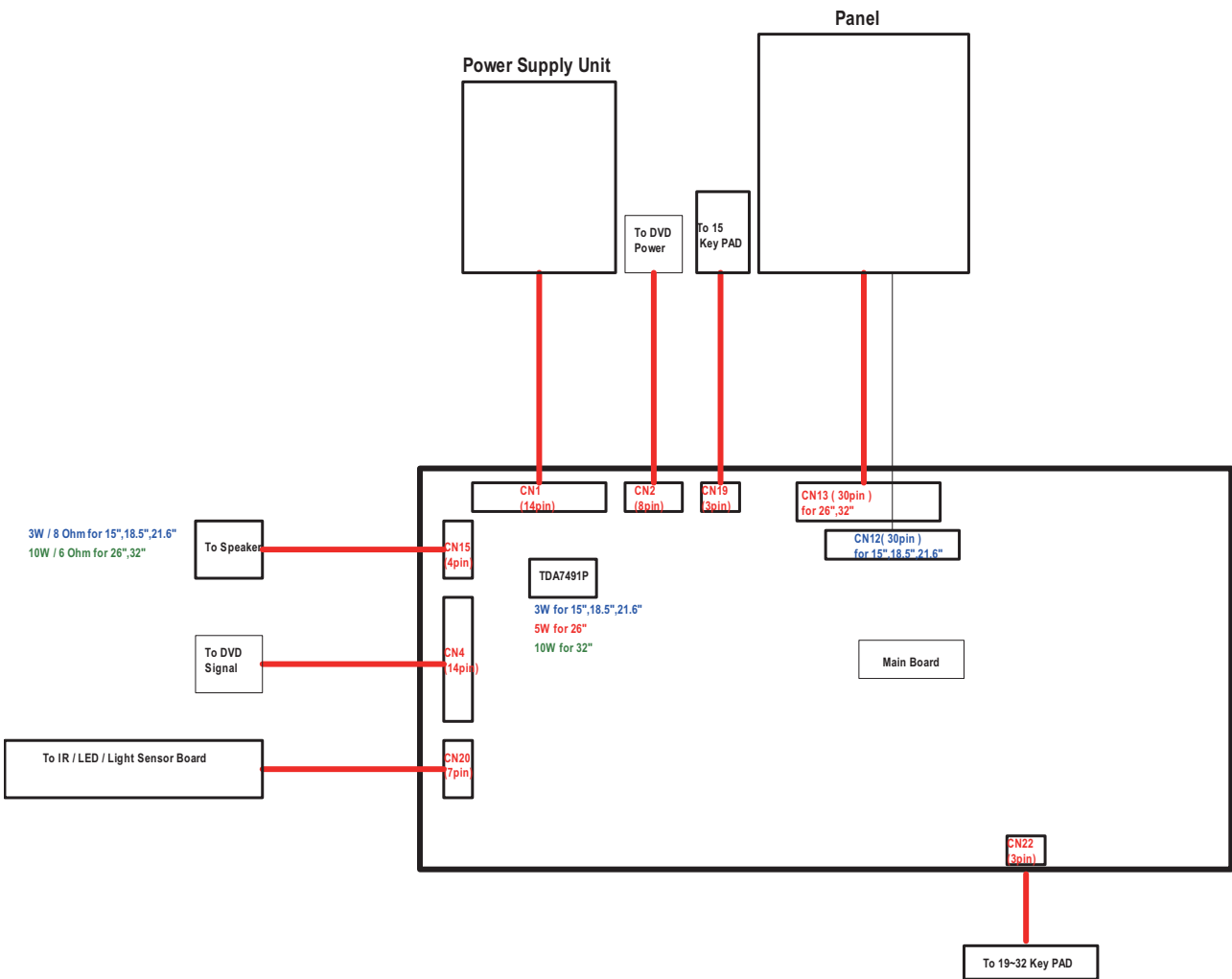
Main



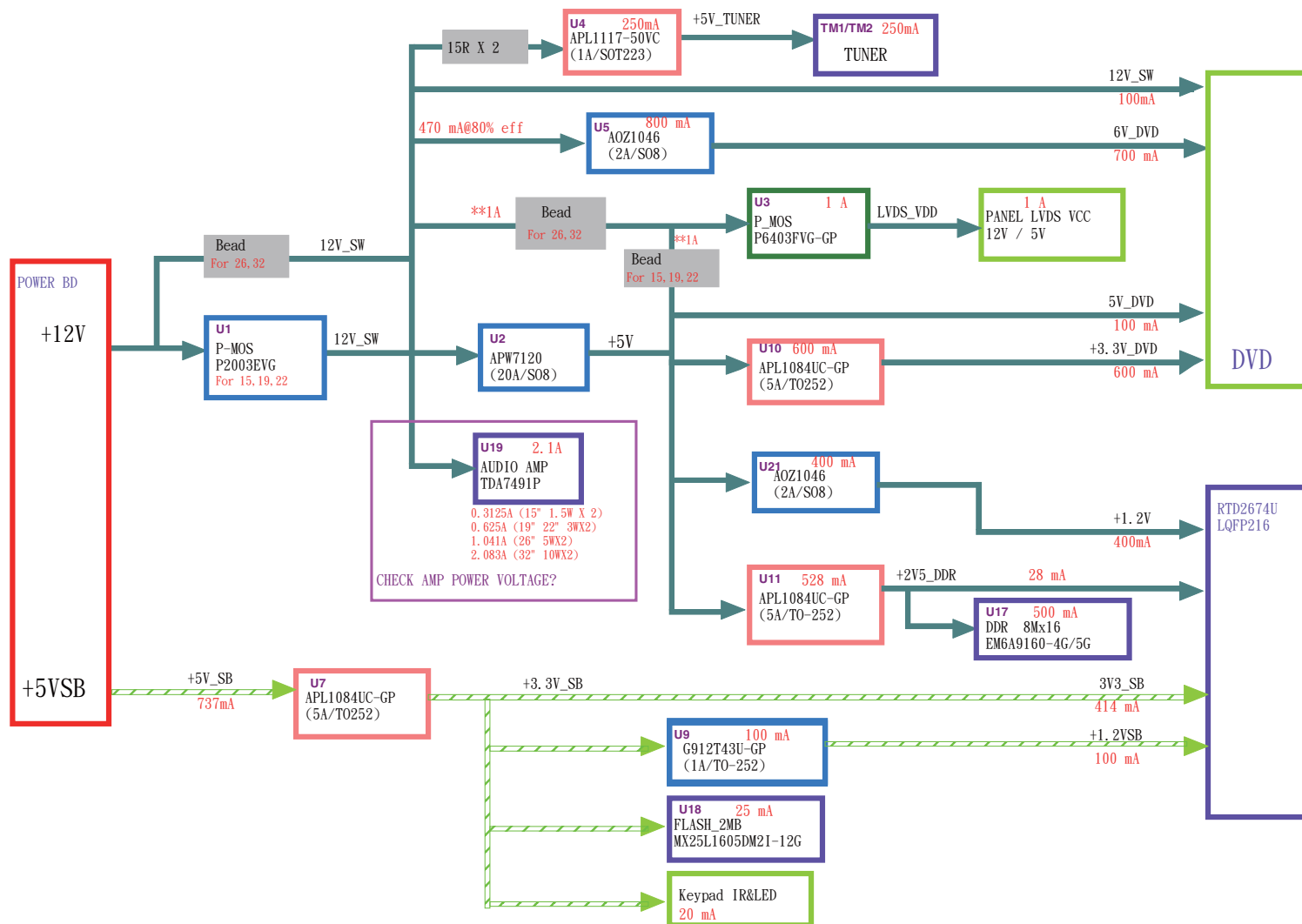
DVD Module



Wire connection

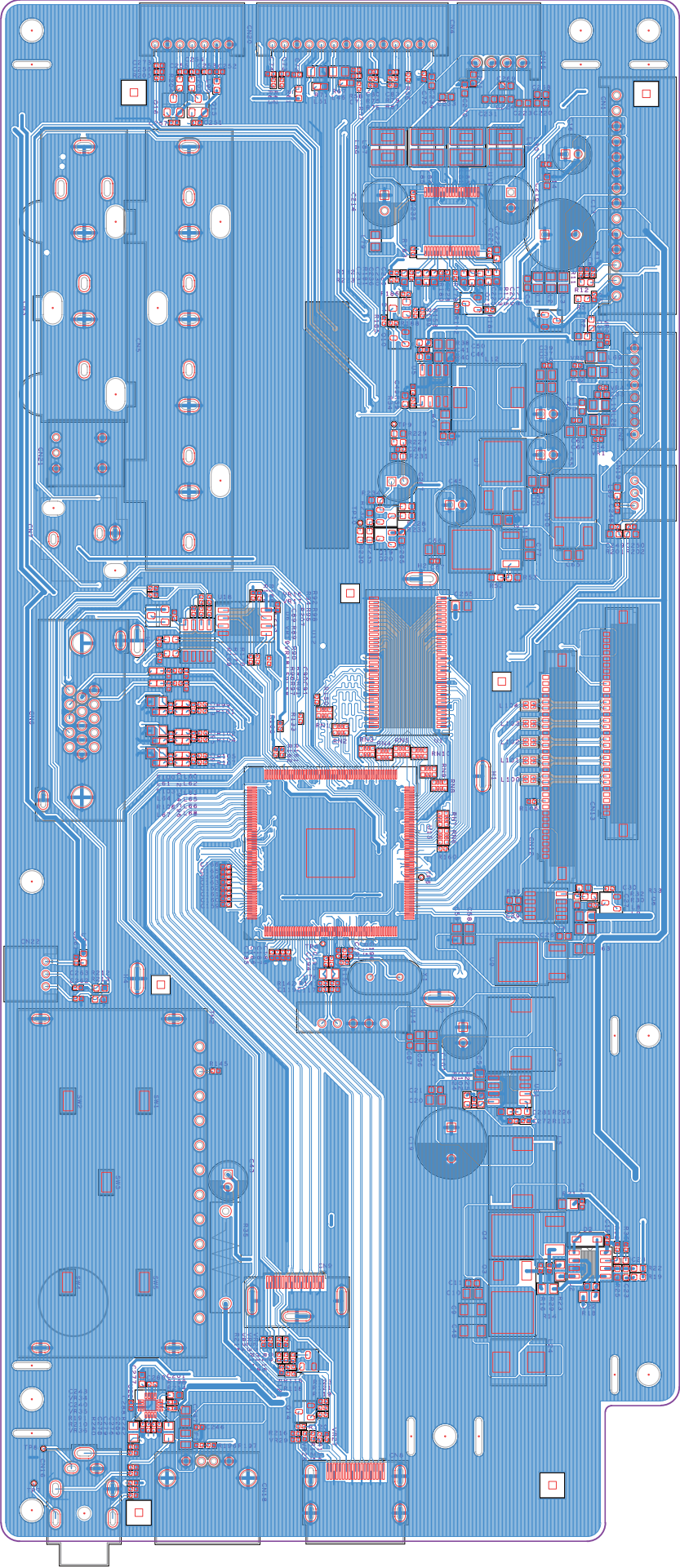


Power supply

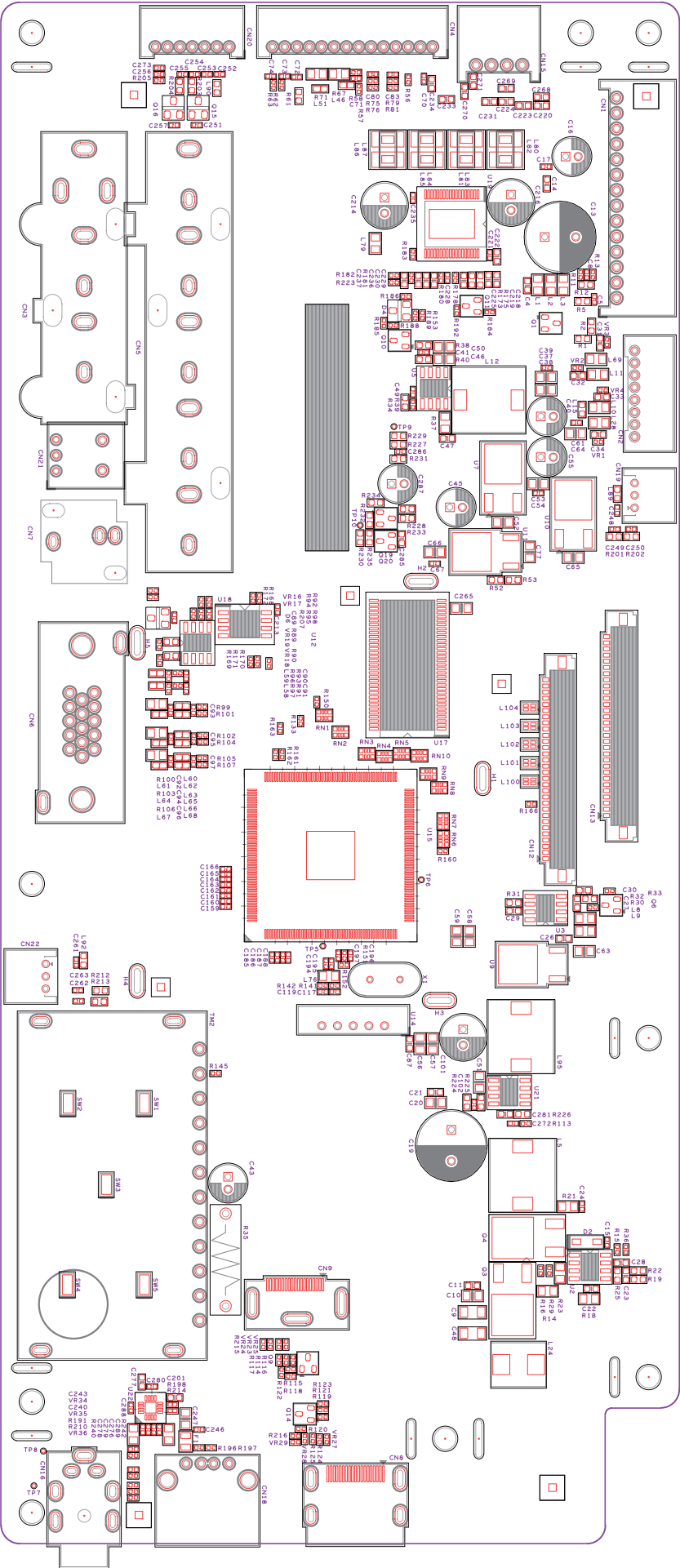


8. Printed Circuit Board

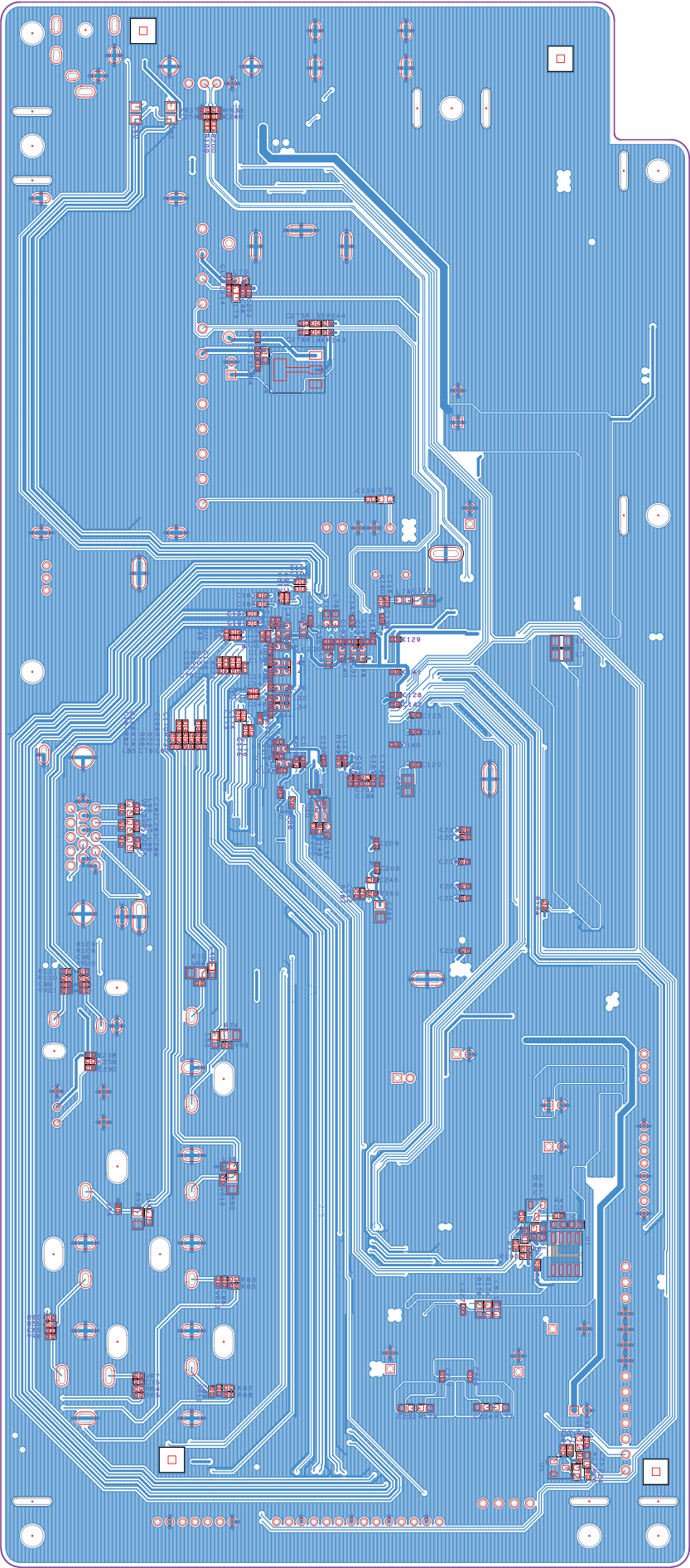
Top (Trace)



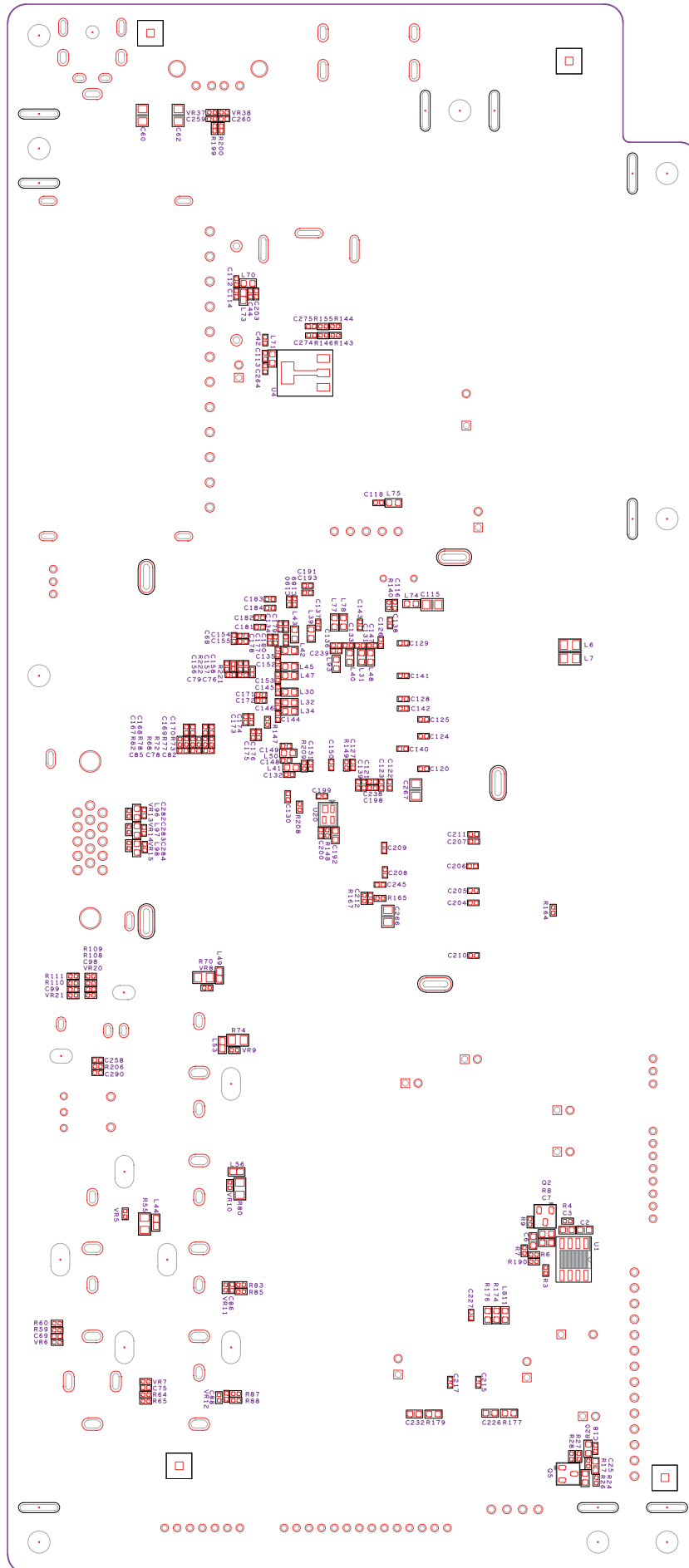
Top (Component)



Bottom (Trace)

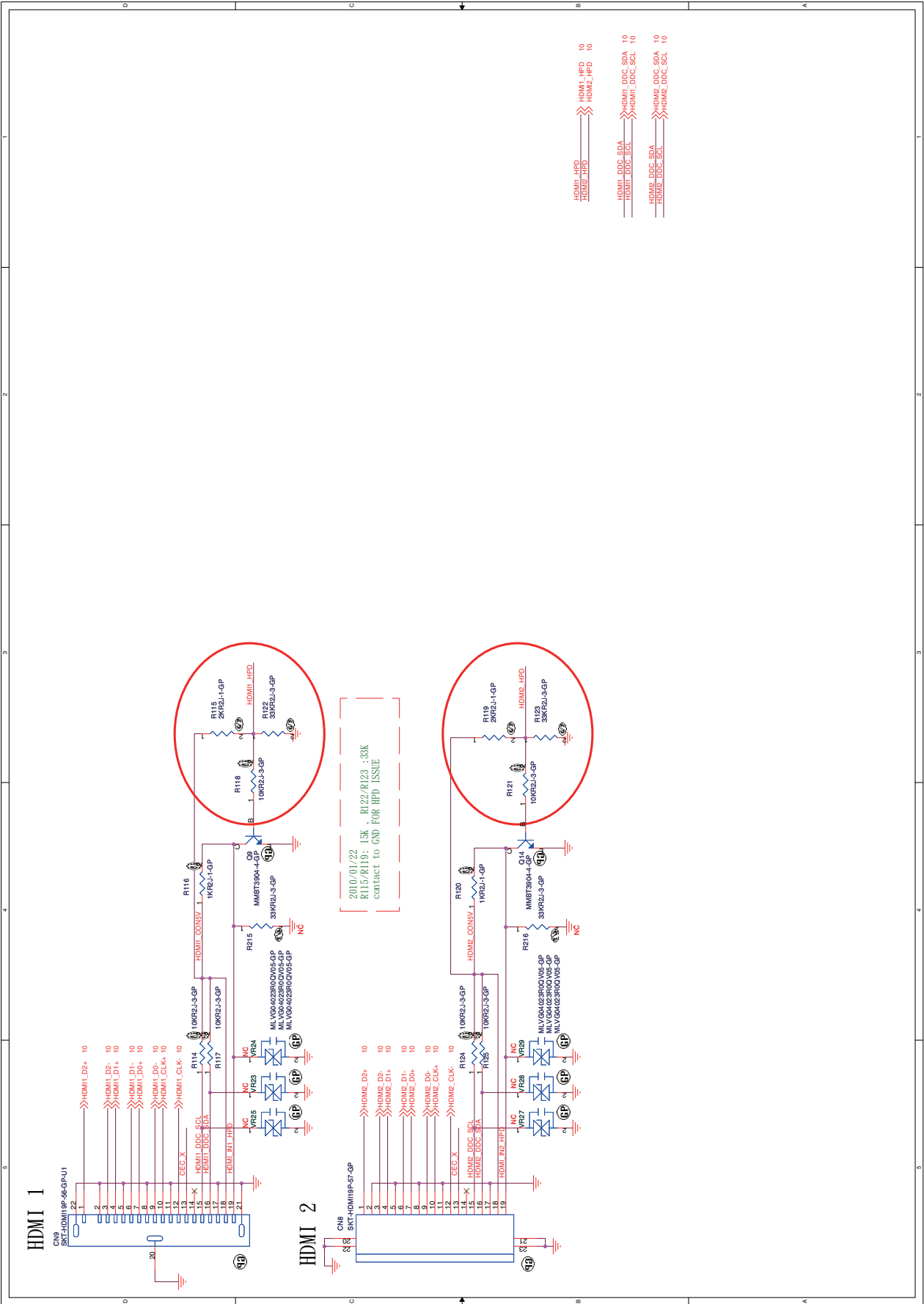


Bottom (Component)



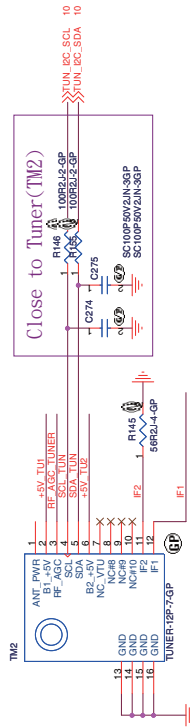
9. Schematic Diagrams

HDMI SCHEMATIC DIAGRAM



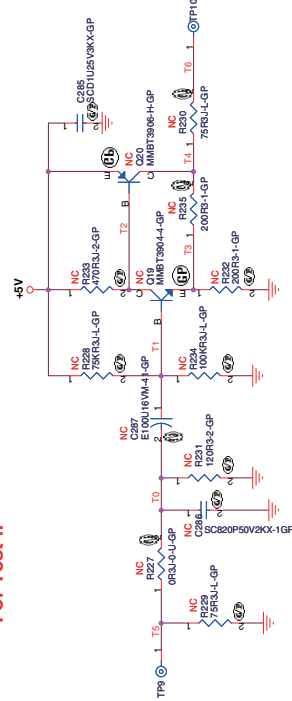
TUNER SCHEMATIC DIAGRAM

Tuner_LG (TDTC-G429D)



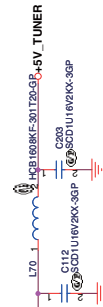
For Test !!

20091118
Add CVBS Buffer

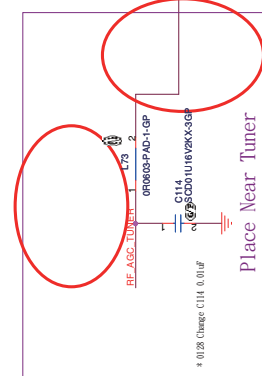
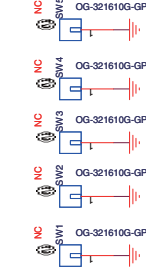


I2C pull high

+5V Tuner



+5V_Tuner

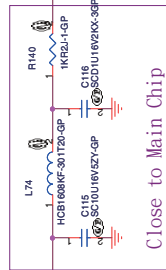


Place Near Tuner

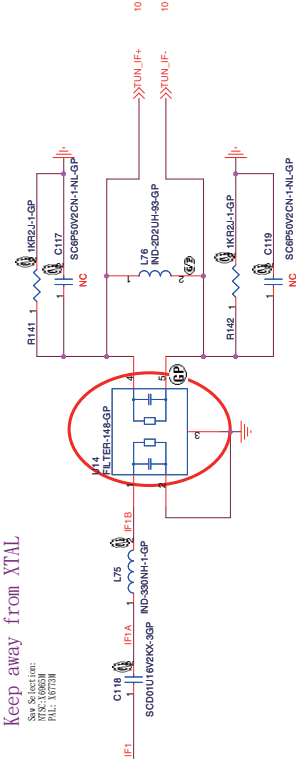
2009/12/15
Del Q8/R139/L72 for channel lose issue

Close to Main Chip and
Keep away from XTAL

See Selection:
R14: 100K
R15: 100K
R16: 100K



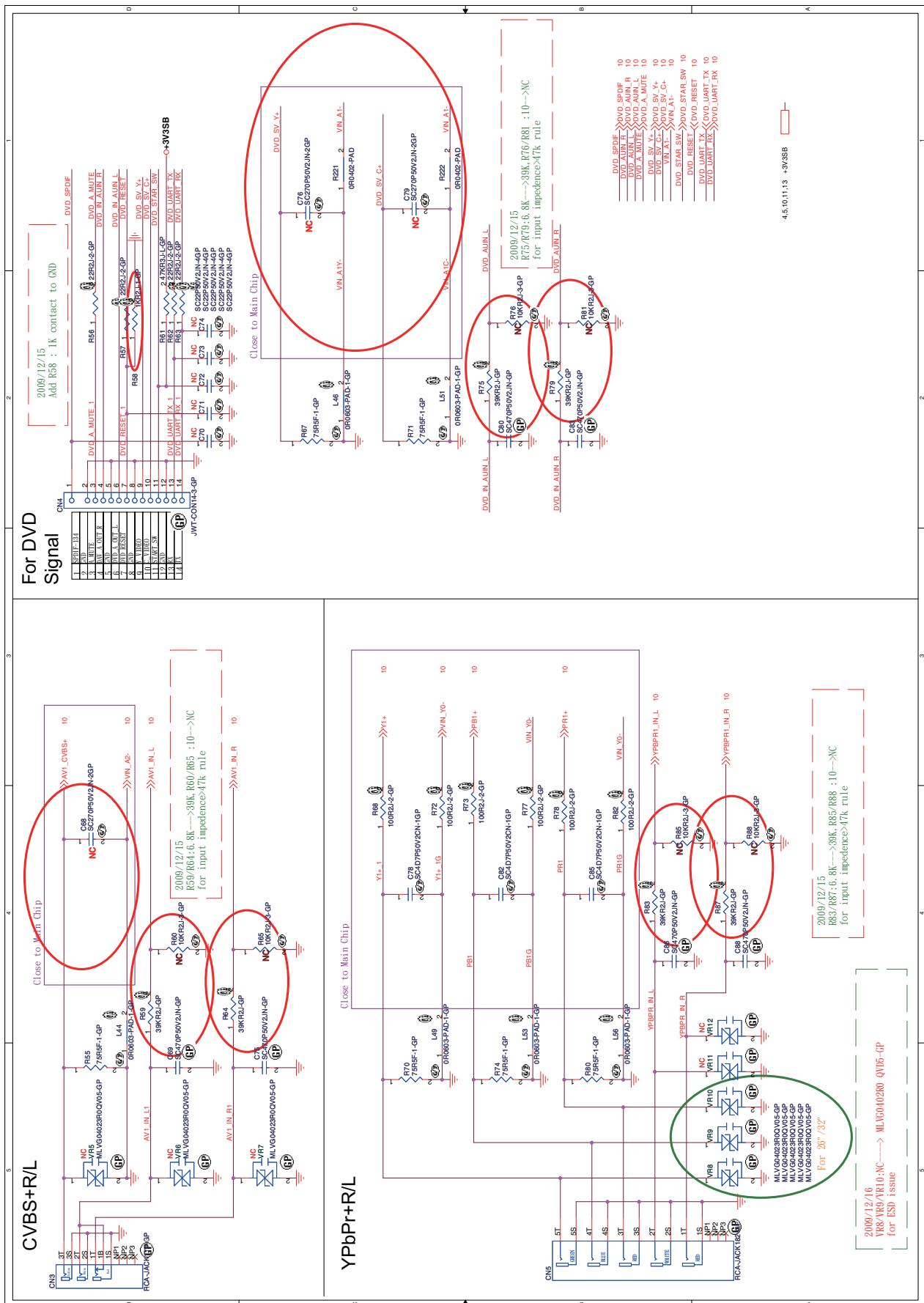
Close to Main Chip



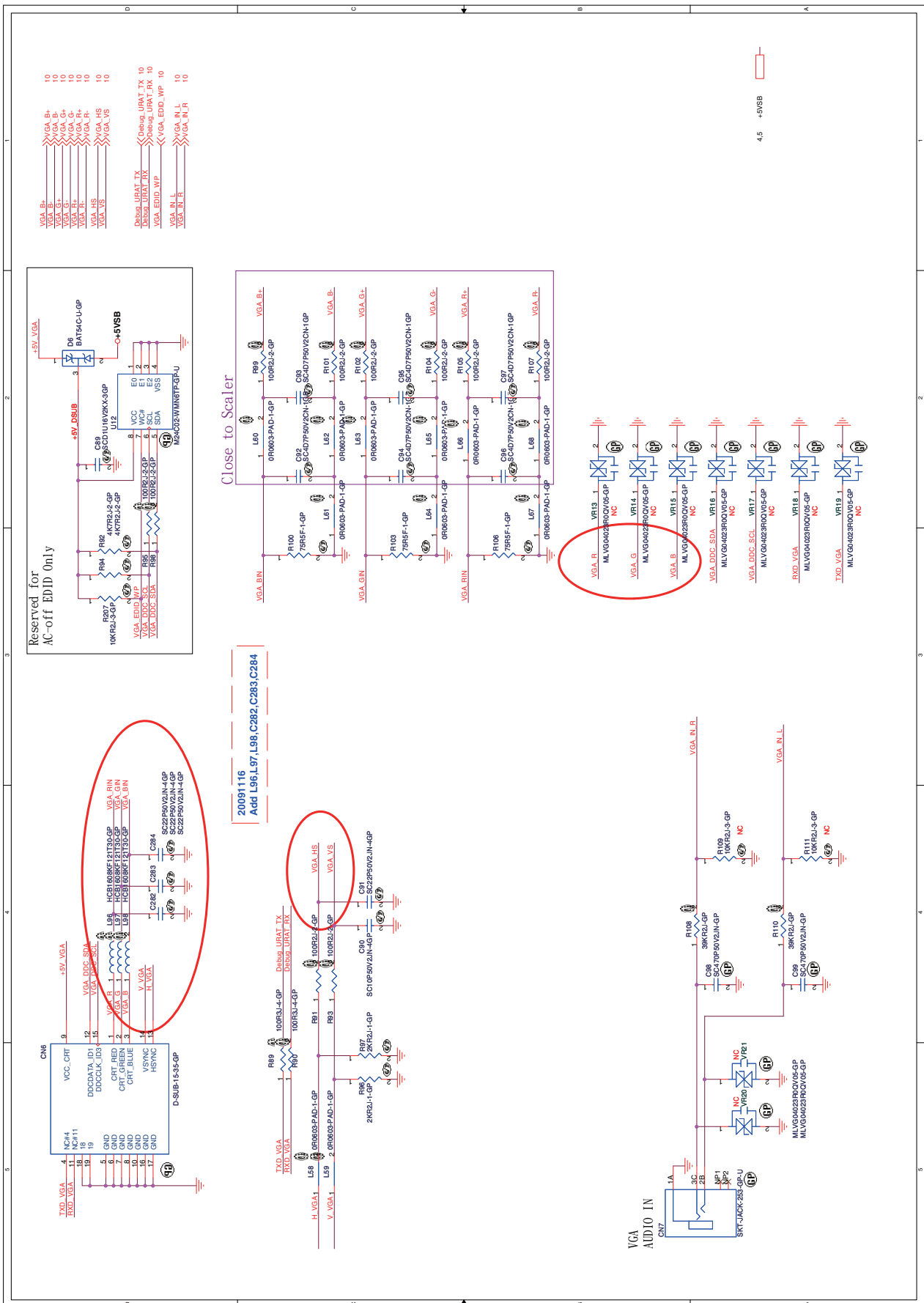
U14 need to change to 69.10051.091

4.5,12,13 +5V
5 +5V_Tuner

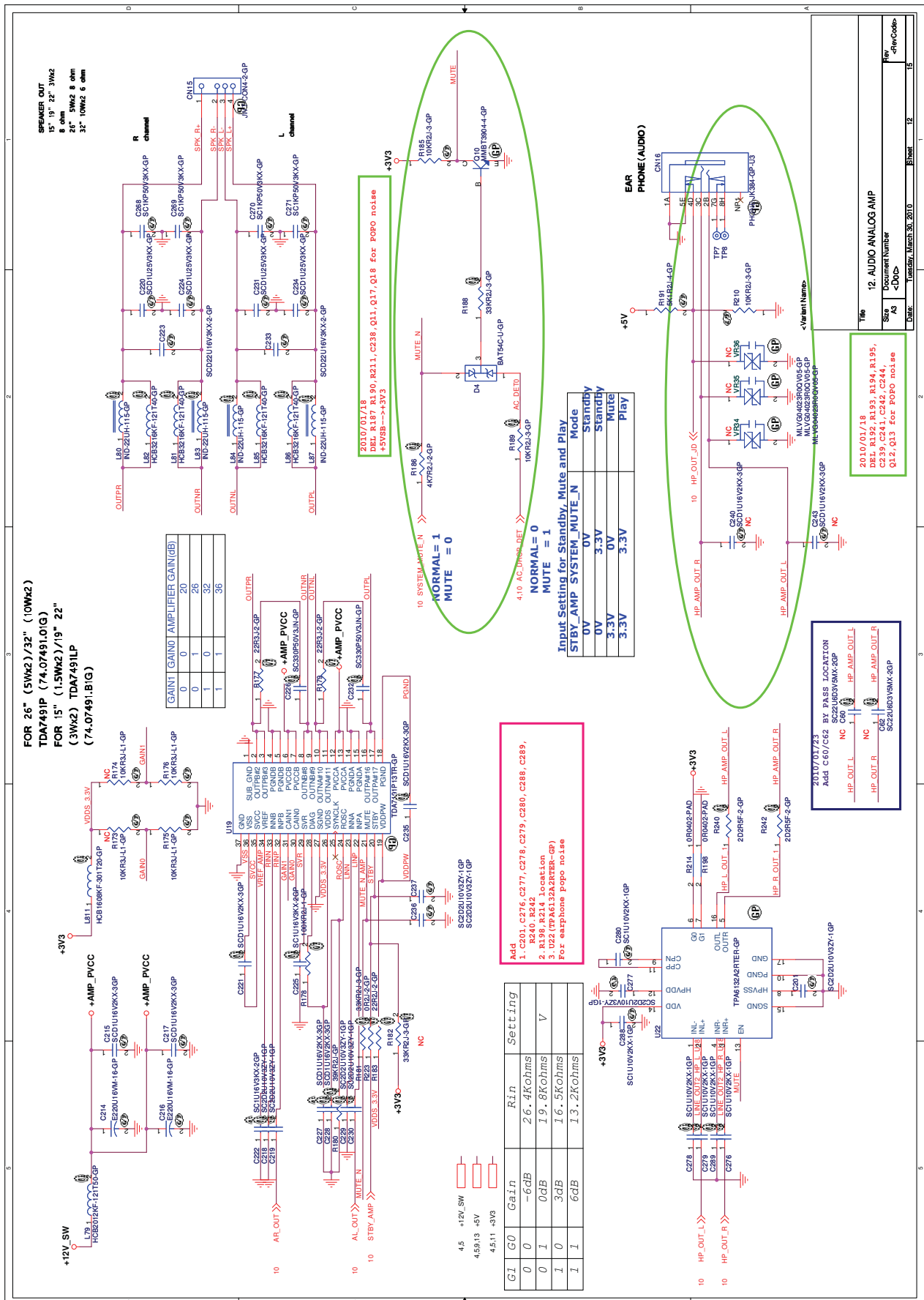
ANALOG VIDEO SCHEMATIC DIAGRAM



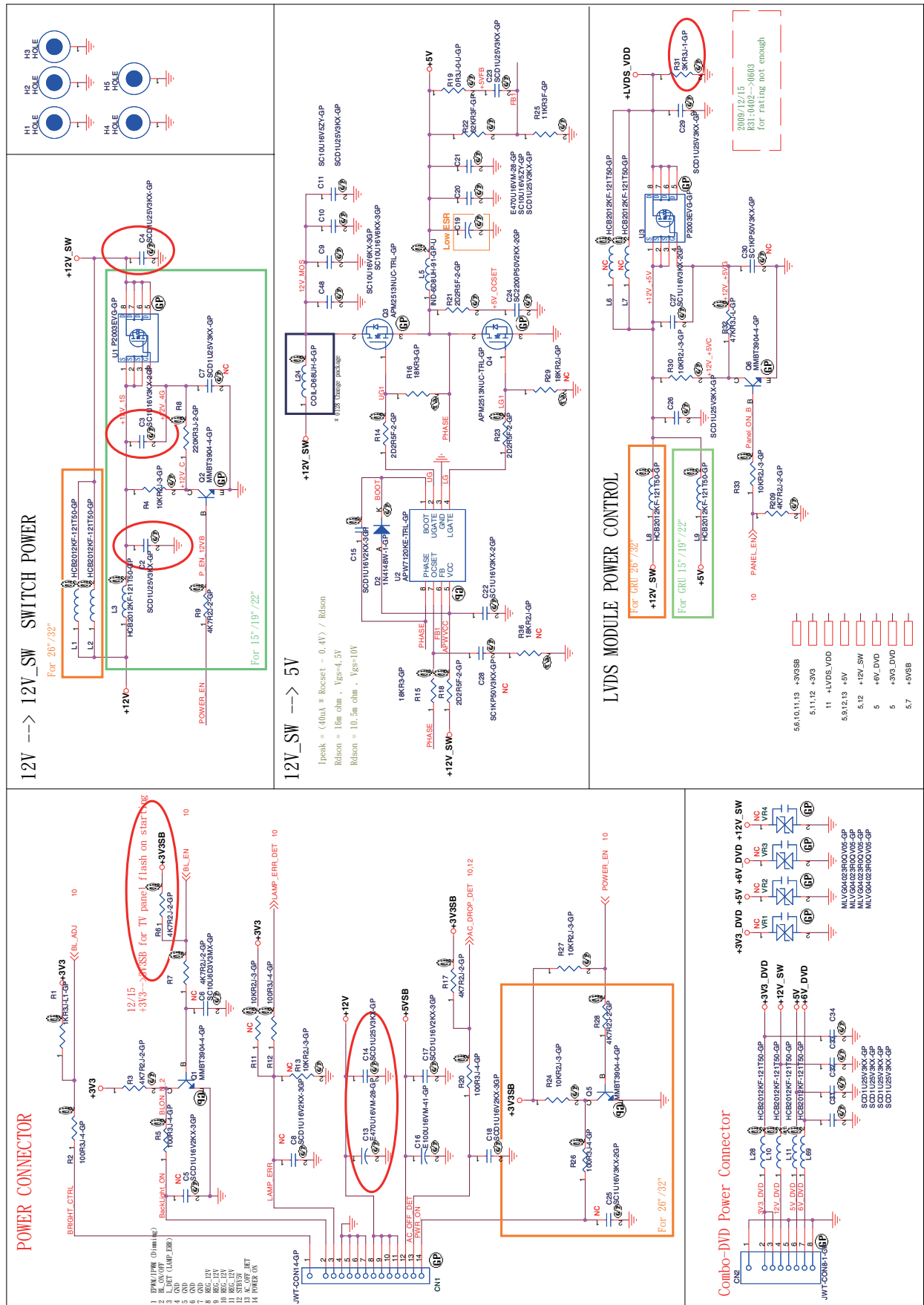
VGA SCHEMATIC DIAGRAM



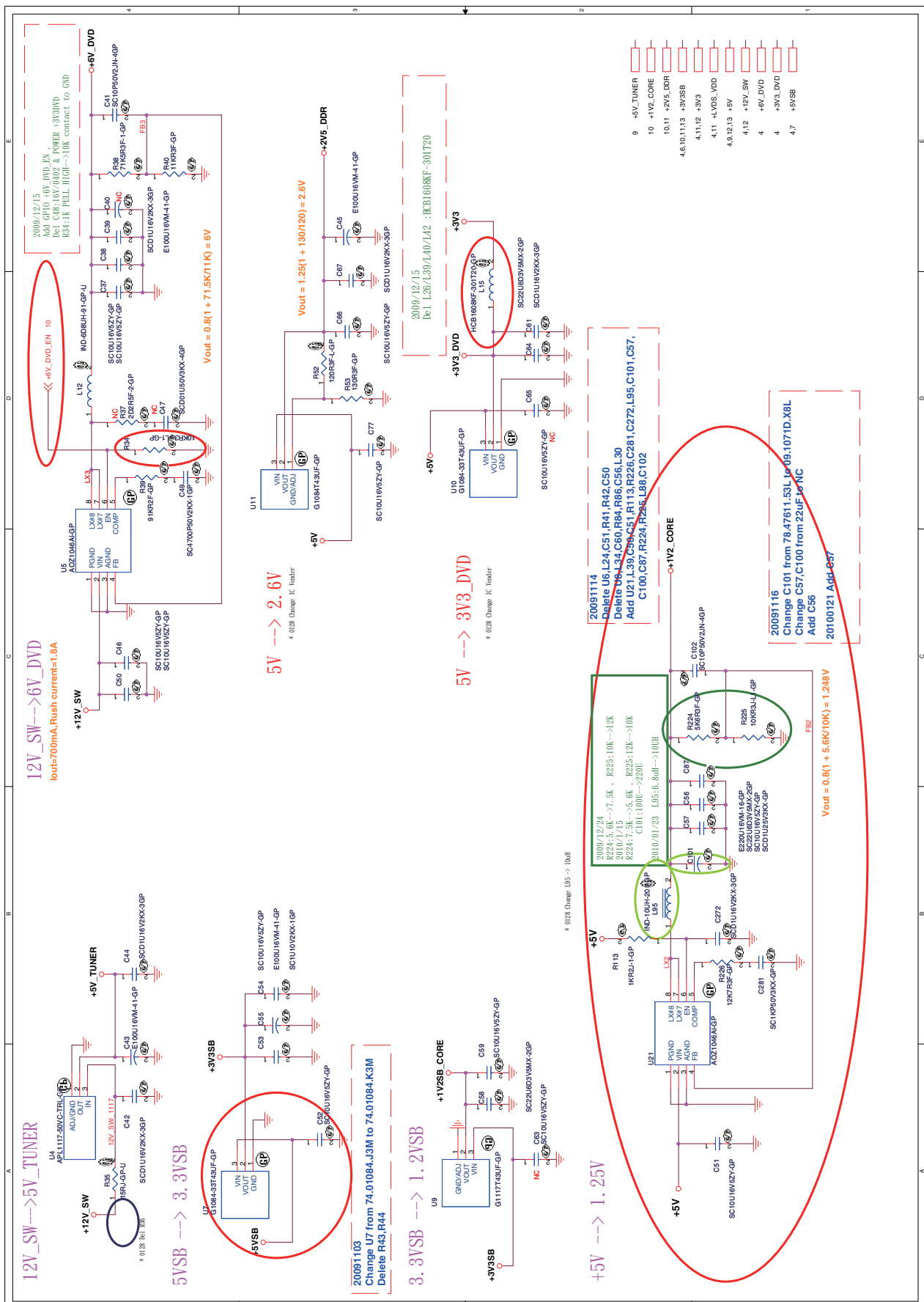
AUDIO ANALOG AMP SCHEMATIC DIAGRAM



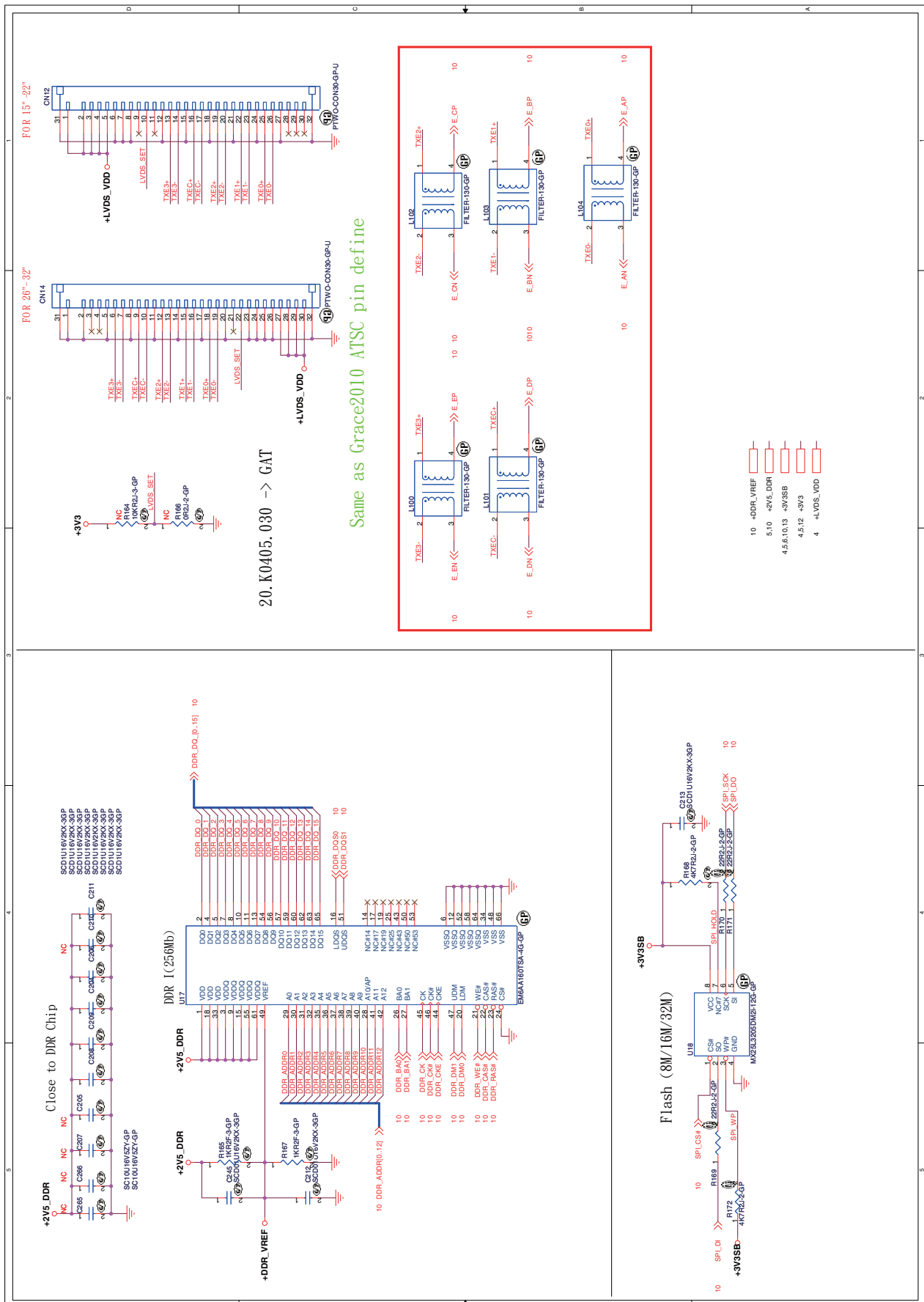
DC CONVERTER I SCHEMATIC DIAGRAM



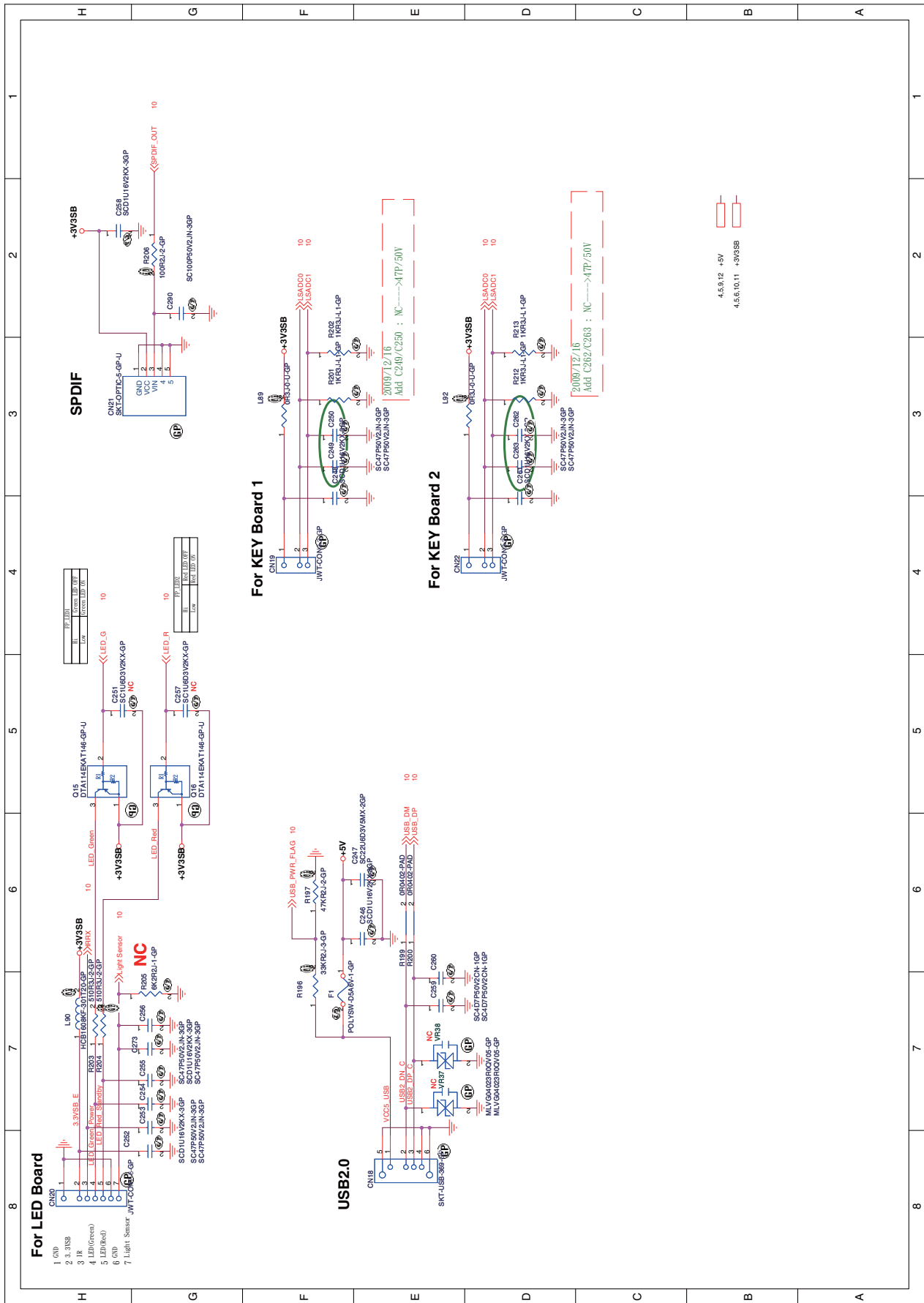
DC CONVERTER II SCHEMATIC DIAGRAM



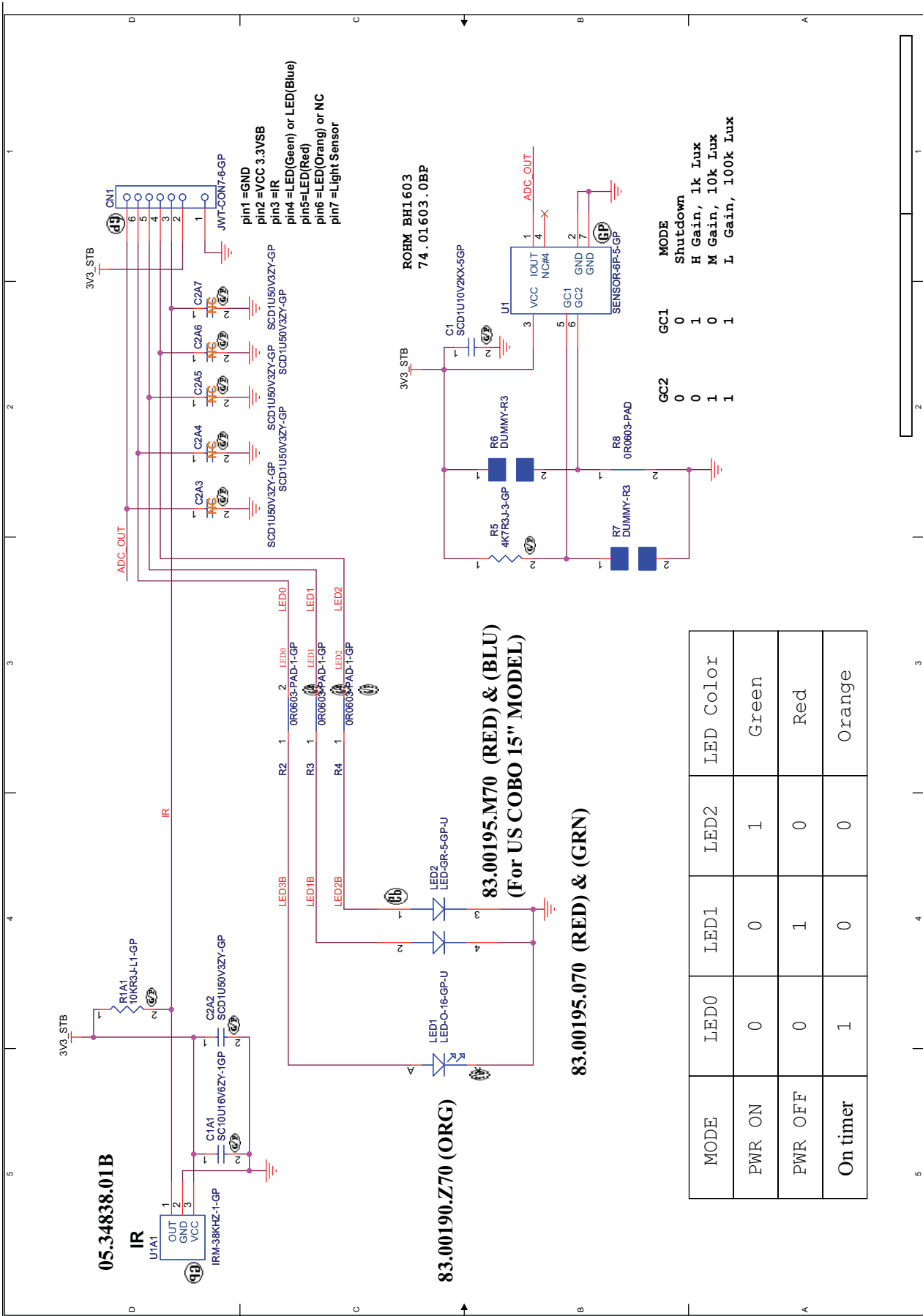
DDR FLASH SCHEMATIC DIAGRAM



IR/KEYPAD/DVD/USB SCHEMATIC DIAGRAM



IR BD SCHEMATIC DIAGRAM

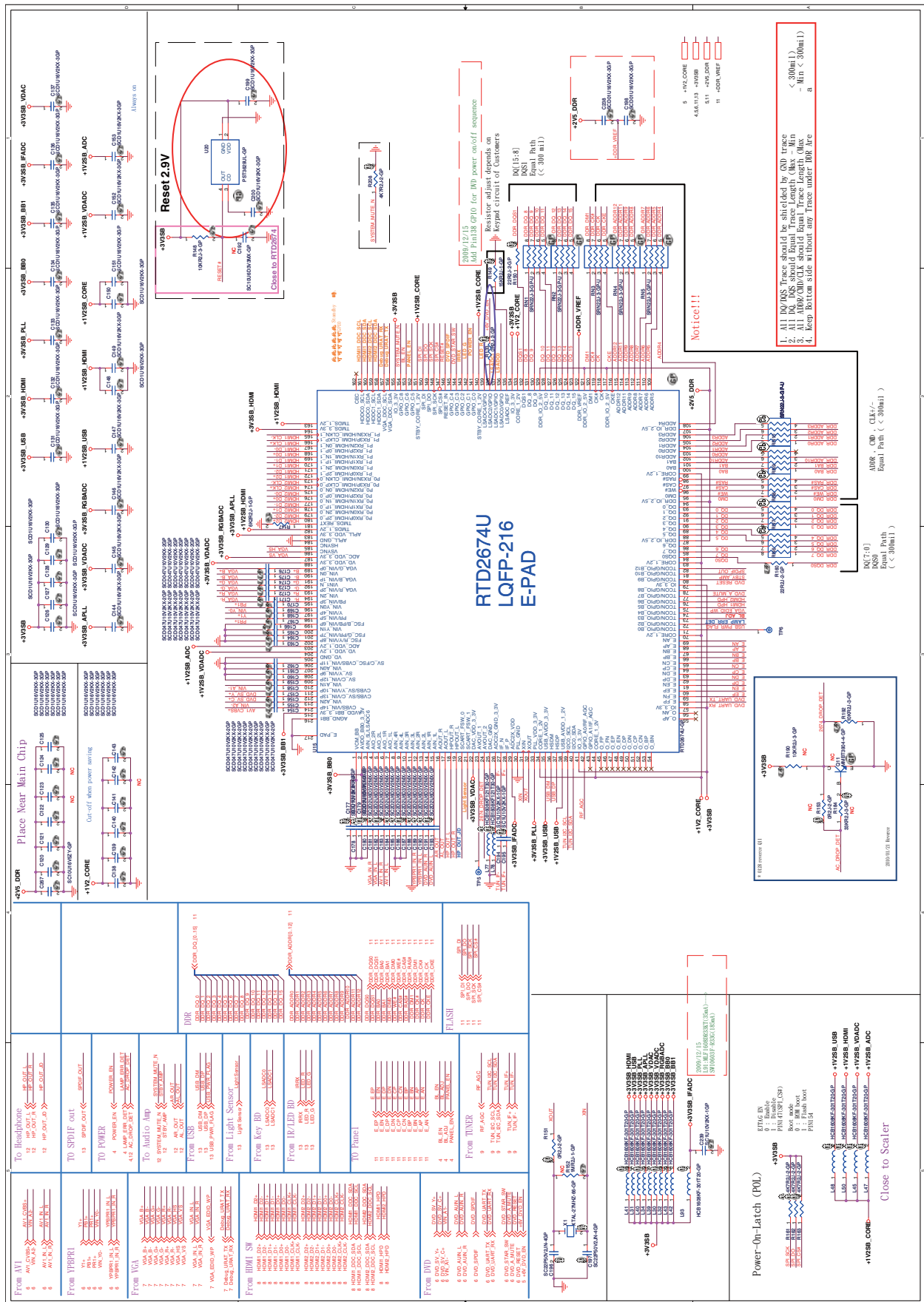


KEY PAD SCHEMATIC DIAGRAM



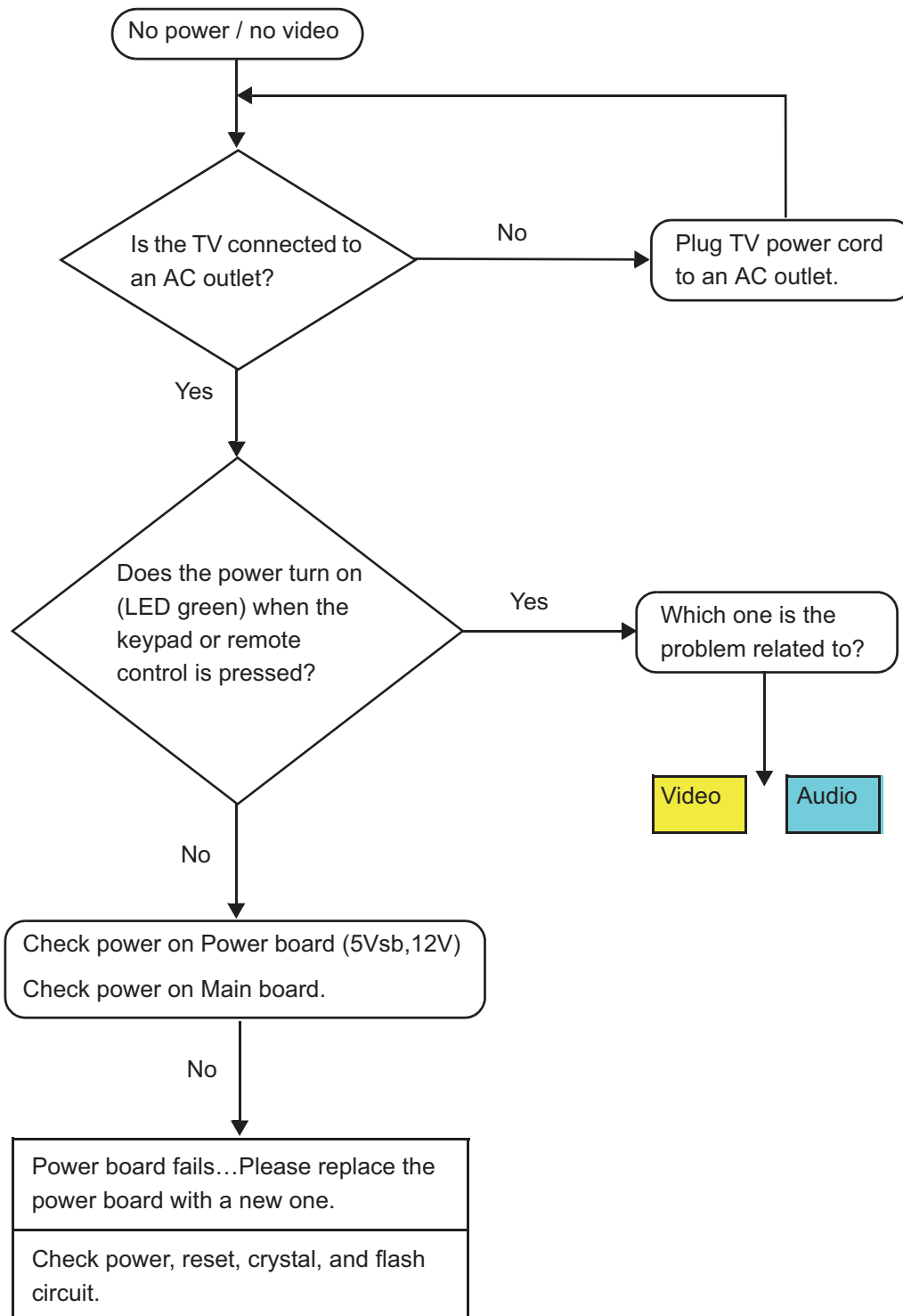
Key		Voltage
Normal	DVD	
	EJECT	S909 2.0V~3.3V
MENU	MENU	S908 1.55V~2.0V
V+	V+	S905 1.0V~3.3V
V-	V-	S907 1.1V~1.55V
C+	PLAY	S903 0V~1.4V
C-	STOP	S906 1.4V~1.9V
INPUT	ENTER	S904
POWER		S902 PUSH: GND UNPUSH: 3.3V
Remark		

SCALER SCHEMATIC DIAGRAM

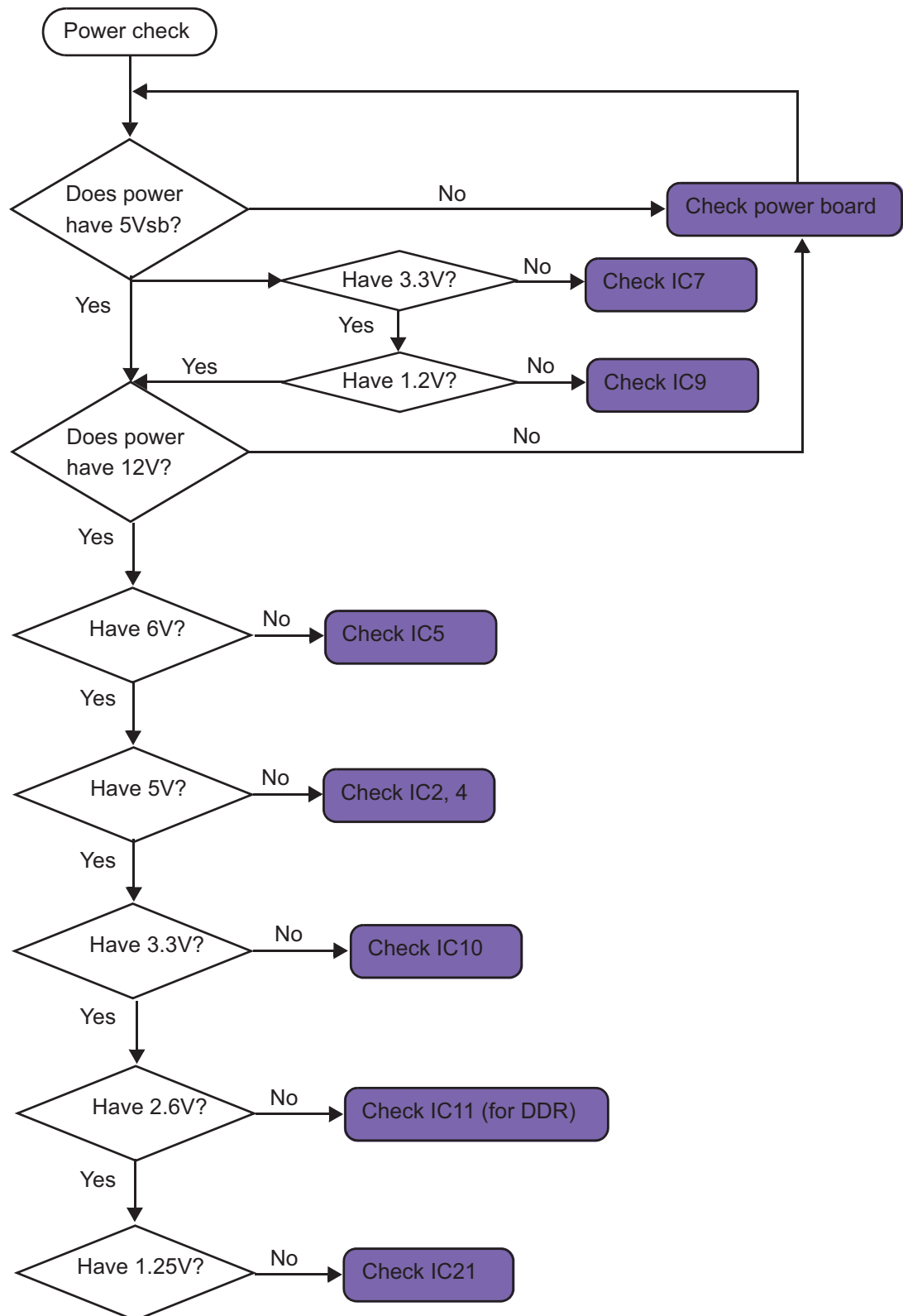


10. Troubleshooting

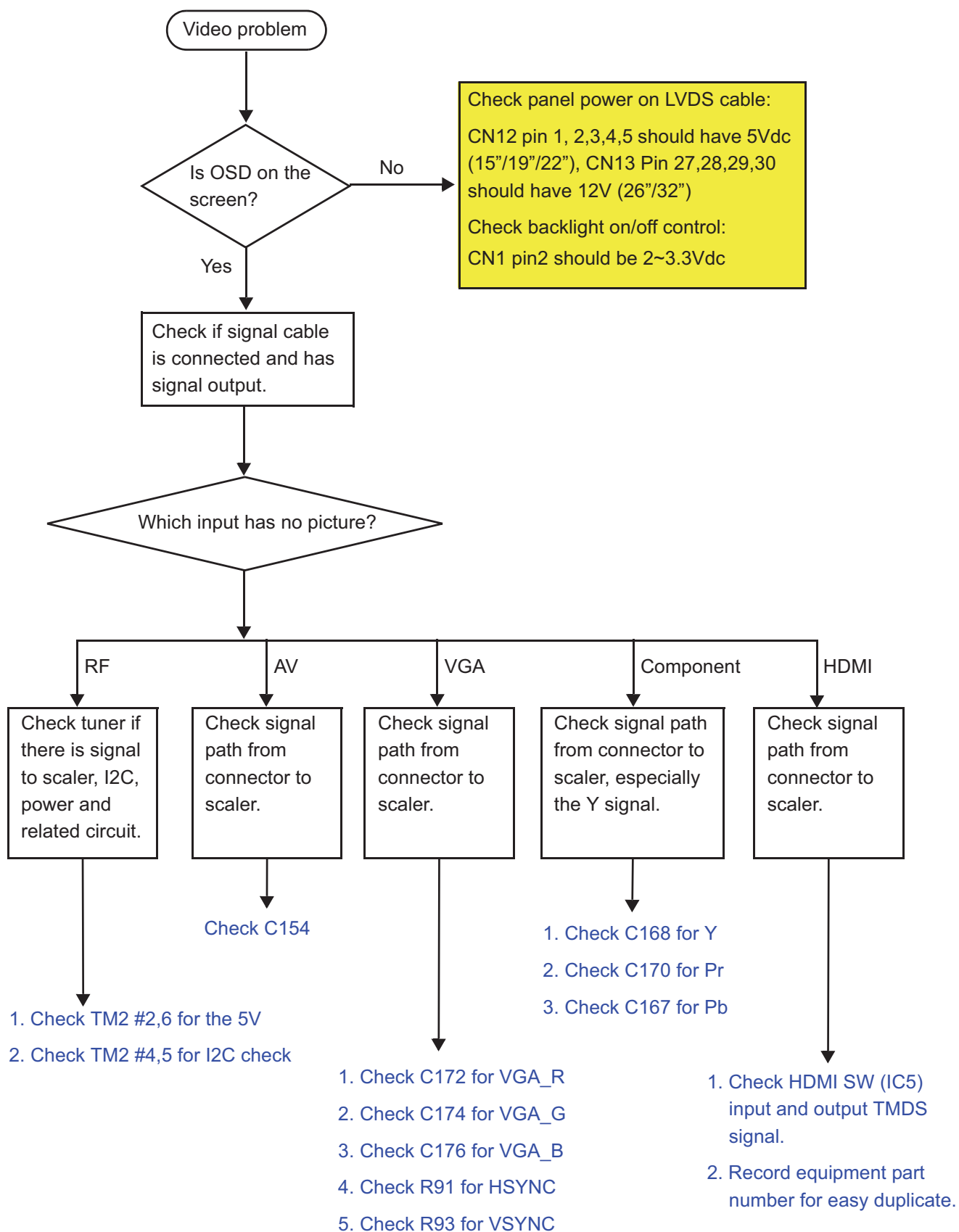
No display on screen (screen is black, no power)



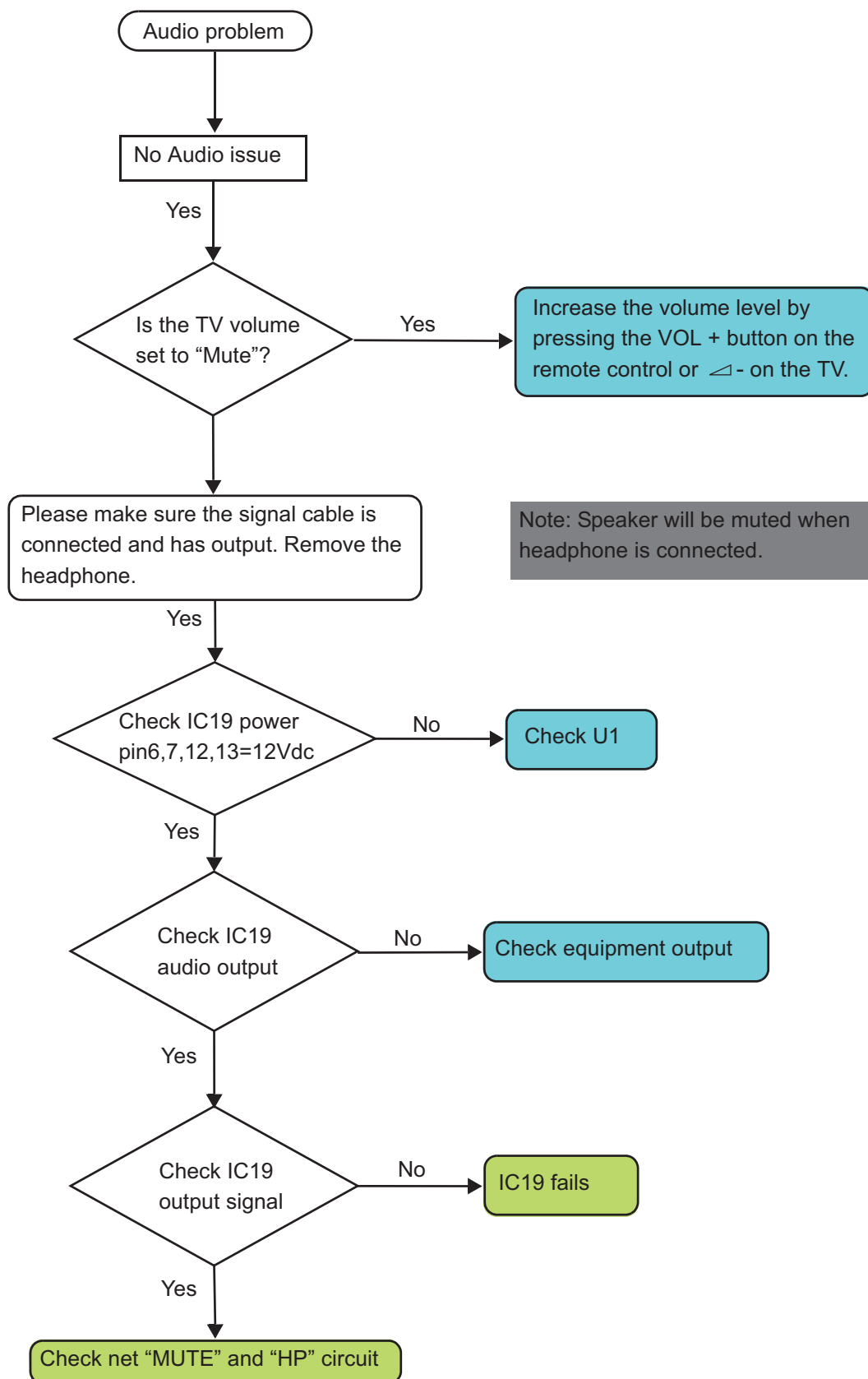
Power check step



Video problem



Speaker No Sound (Test signal: $\leq 0.5V_{rms}$ @1KHz sine waveform)

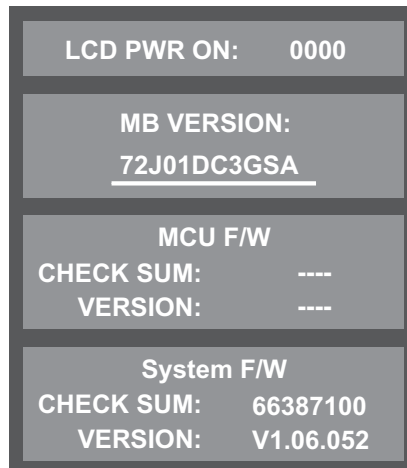


11. Firmware

Checking the LCD TV Firmware Version

Follow these steps:

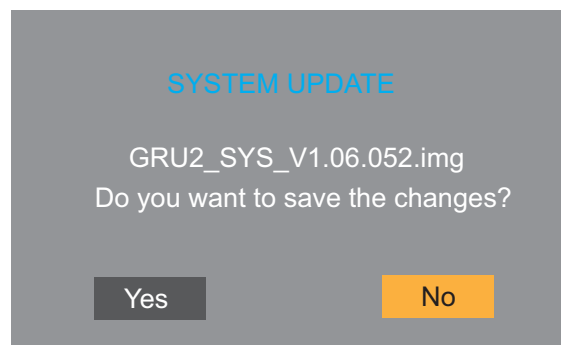
1. Turn on the LCD TV.
2. Press and hold the $\triangleleft$ – button on the TV and, at the same time, press and hold **8** button on the remote control.
3. After a least 2 seconds, the TV firmware information is displayed.



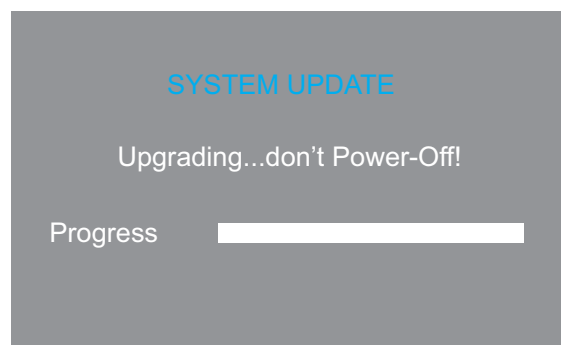
Updating the LCD TV Firmware

Follow these steps:

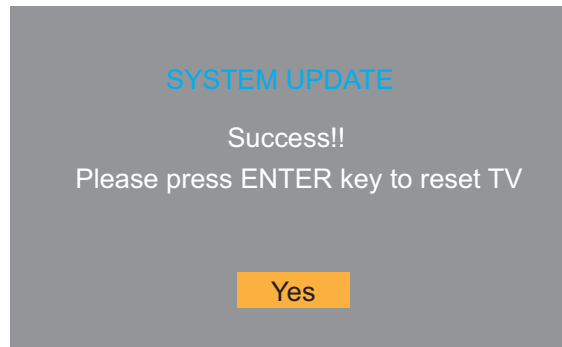
1. Insert the USB device with the new firmware into the side USB jack. The below window appears.



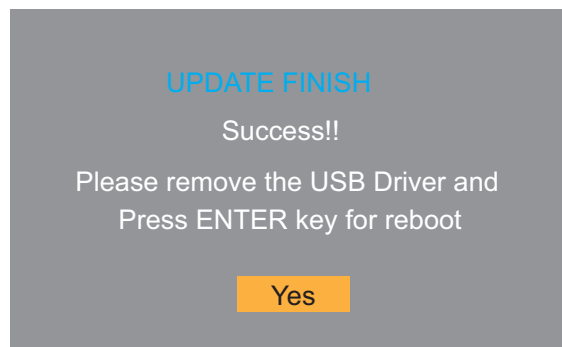
2. Highlight **Yes** and press **ENTER** on the remote control. The firmware update begins.



3. After the firmware update completes, the below window appears.



4. Press **ENTER** on the remote control. The below window appears.



5. Press **ENTER** and then remove the USB driver.

Checking the DVD Firmware Version

Follow these steps:

1. Turn on the LCD TV.
2. Press **TV/DVD** on the remote control to switch to DVD mode.
Make sure there is no disc inserted.
3. Press and hold the **STOP** button on the LCD TV and, at the same time, press and hold the **1** button on the remote control.
4. After at least 2 seconds, the firmware information is displayed.



TOSHIBA CORPORATION

1-1, SHIBAURA 1-CHOME, MINATO-KU, TOKYO 105-8001, JAPAN