

TOSHIBA

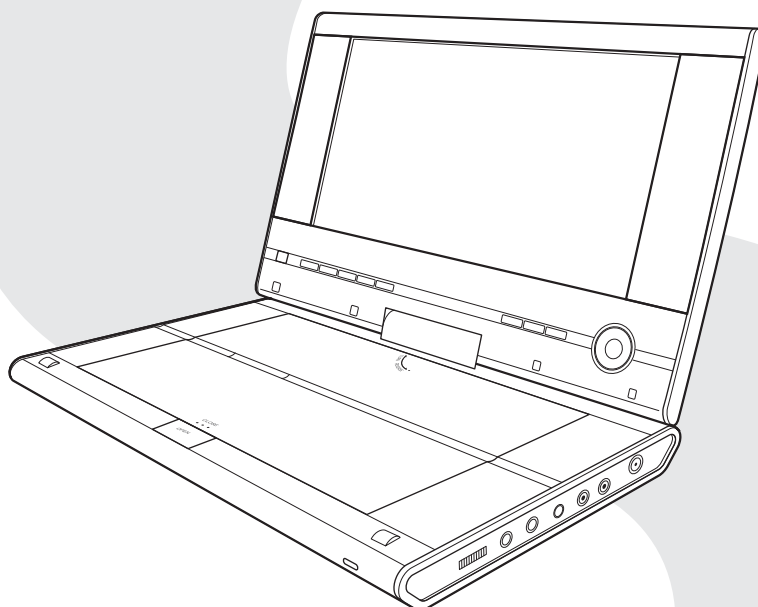
FILE No. 810-200827GR

REVISED: 01

SERVICE MANUAL



PORTABLE DVD PLAYER ***SD-P91SKN***



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

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

Jul, 2008 GREEN

(*1)

GREEN PRODUCT PROCUREMENT

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.

(*2)

LEAD-FREE SOLDER

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.

LASER BEAM CAUTION LABEL

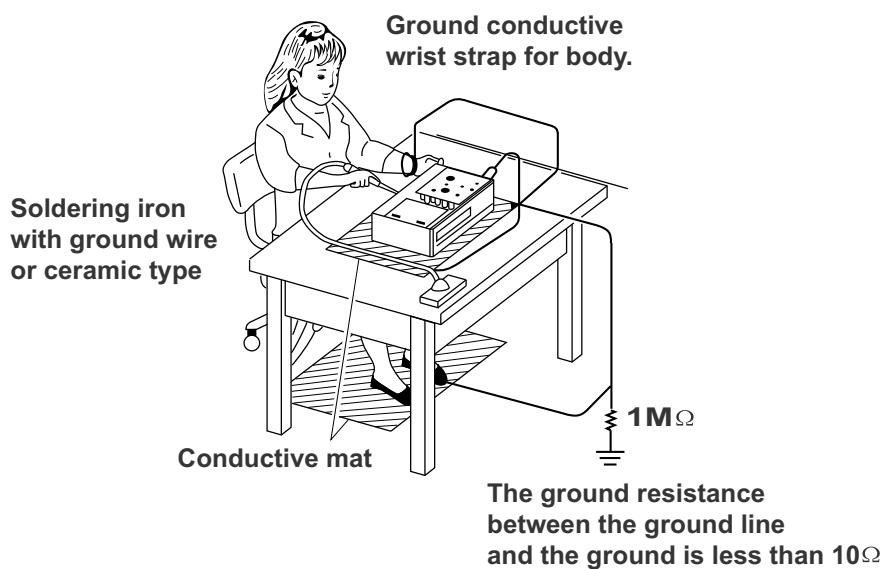
- レンズには絶対に触れないでください。
- DO NOT TOUCH THE LENS.
- LINSE NICHT BRÜHREN.
- NE PAS TOUCHER LA LENTILLE.

PREPARATION OF SERVICING

Pickup Head consists of a laser diode that is very susceptible to external static electricity.

Although it operates properly after replacement, if it was subject to electrostatic discharge during replacement, its life might be shortened. When replacing, use a conductive mat, soldering iron with ground wire, etc. to protect the laser diode from damage by static electricity.

And also, the LSI and IC are same as above.



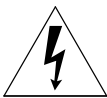
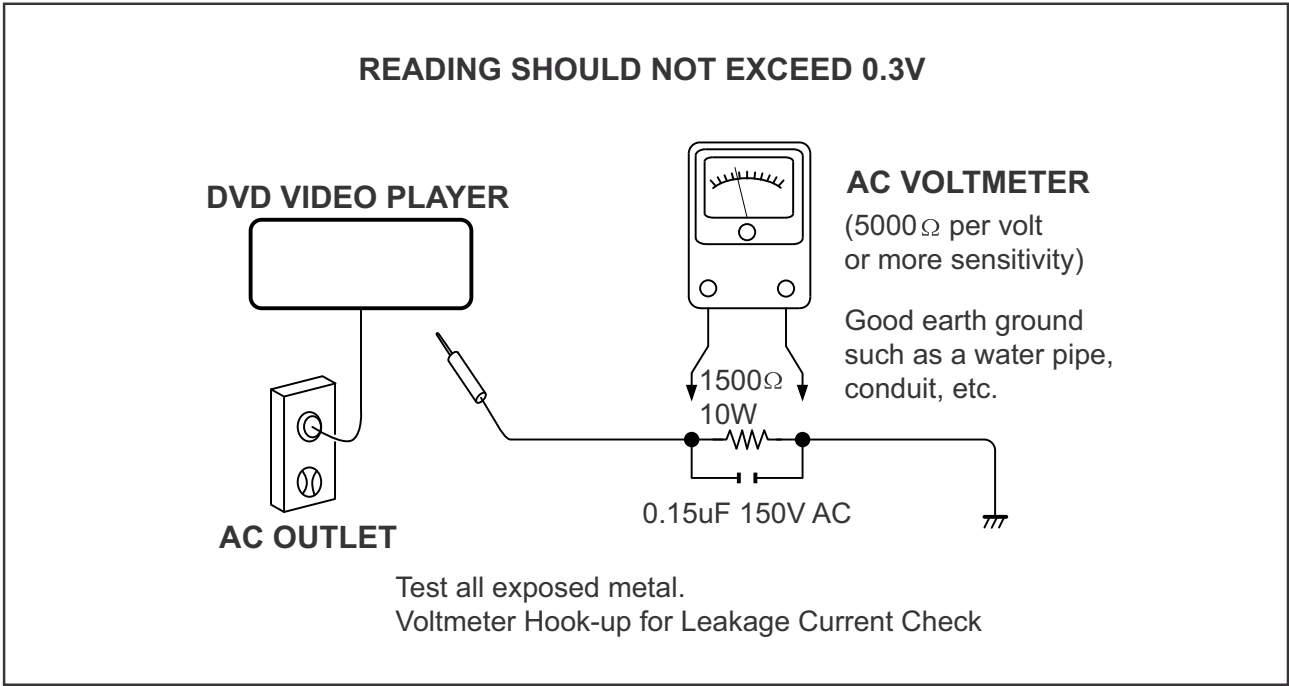
SAFTY NOTICE

SAFTY PRECAUTIONS

LEAKAGE CURRENT CHECK

Plug the AC line cord directly into a 120V AC outlet (do not use an isolation transformer for this check). Use an AC voltmeter, having 5000Ω per volt or more sensitivity. Connect a 1500Ω 10W resistor,paralleled by a 0.15uF 150V AC capacitor between a known good earth ground (water pipe, conduit, etc.) and all exposed metal parts of cabinet (antennas, handle bracket, metal cabinet screwheads, metal overlays, control shafts, etc.).

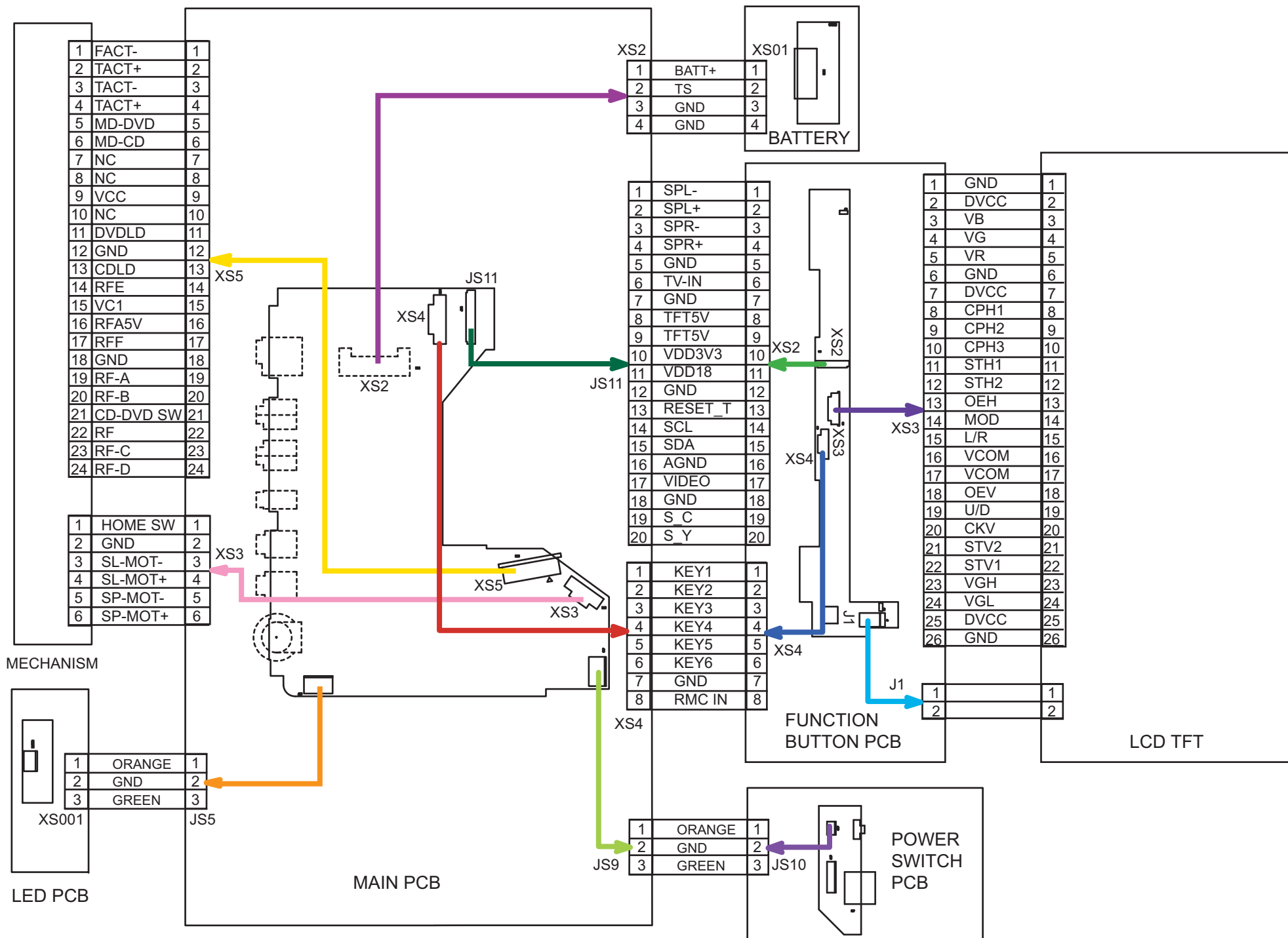
Measure the AC voltage across the 1500Ω resistor. The test must be conducted with the AC switch on and then repeated with the AC switch off. The AC voltage indicated by the meter may not exceed 0.3V.A reading exceeding 0.3V indicates that a dangerous potential exists, the fault must be located and corrected. Repeat the above test with the DVD VIDEO PLAYER power plug reversed. NEVER RETURN A DVD VIDEO PLAYER TO THE CUSTOMER WITHOUT TAKING NECESSARY CORRECTIVE ACTION.



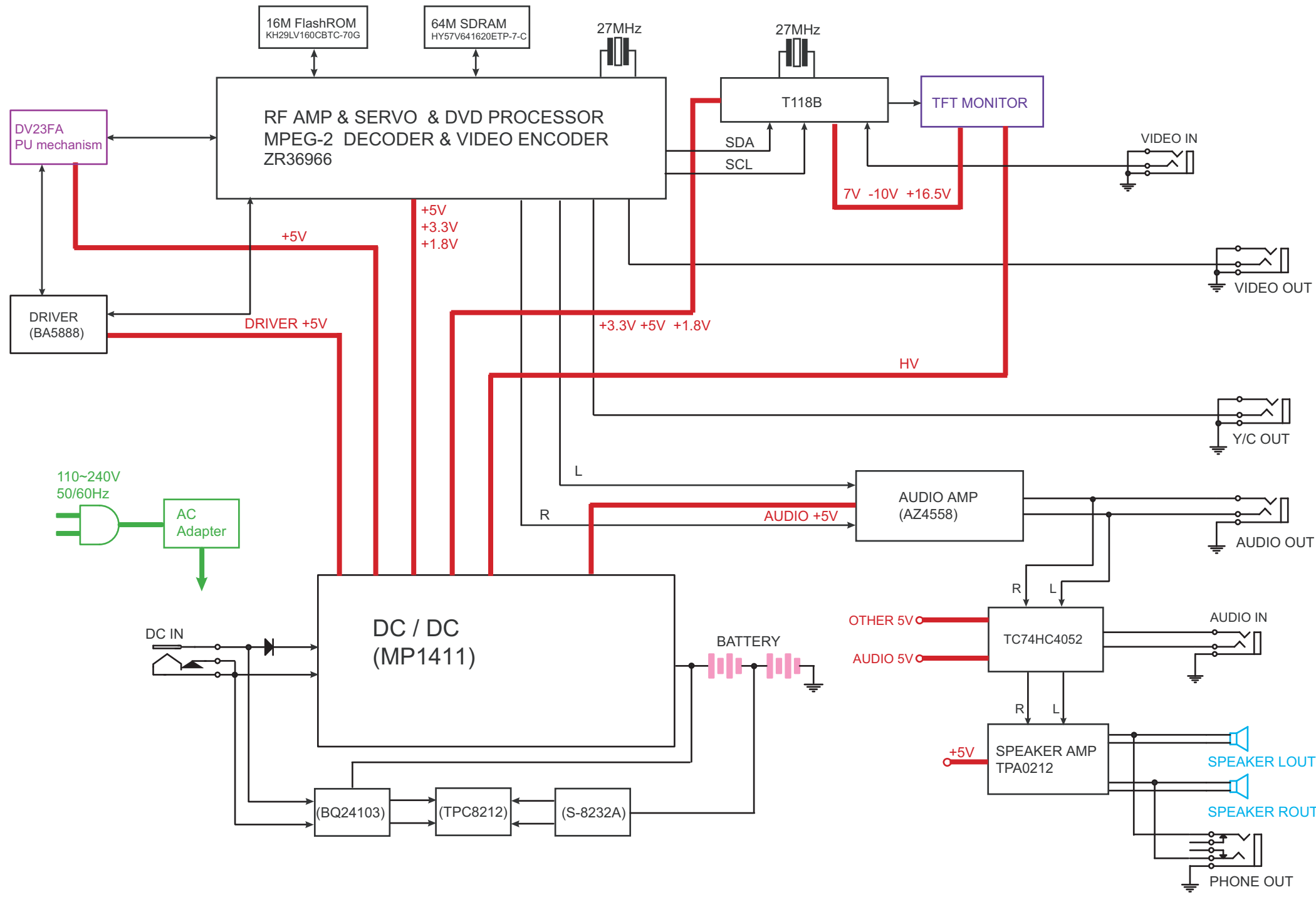
The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

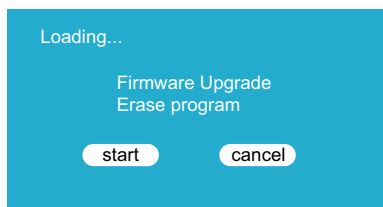


OVERALL BLOCK DIAGRAM

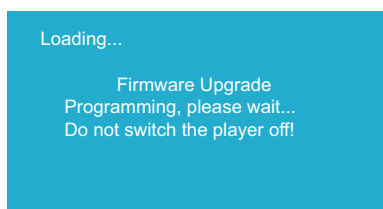


FIRMWARE UPGRADE

1. Turn on the DVD power.
2. Confirm that the "OPEN" will be appeared on the screen.
3. Insert the Up-Date Disc. Automatic read will start and "Loading..." will be displayed on the screen.



4. Press " START " button to start upgrade.
NOTE: Do not turn off the unit on the way or operate the keys on the unit and remocon.
Do not switch the player off.

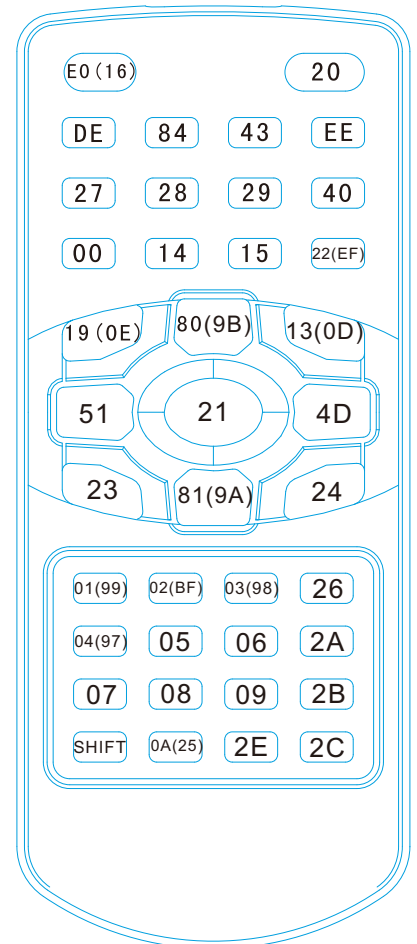
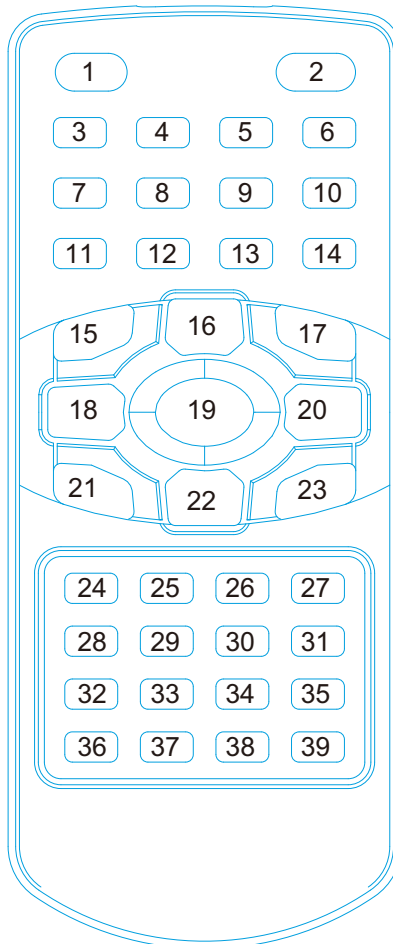
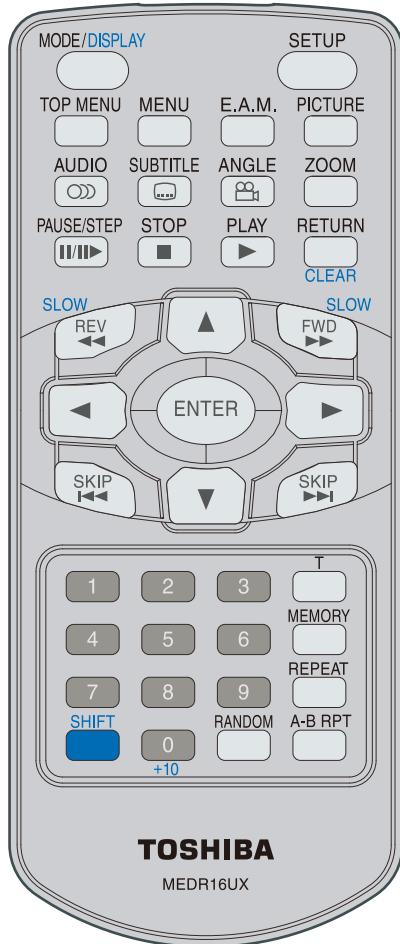


5. After the Up-Date, Logo screen will appear.
6. Unplug the power cord, then plug it in.

CHECK FOR THE FIRMWARE VERSION

7. Turn on the power, and set the DVD "OPEN" mode.
8. Press "SETUP" button on the remote control to open setup menu.
9. Press "RETURN" "1" "2" "3" button on the remote control. Firmware version will be displayed on the screen.
Firmware version : " SD-P91S-K-TN-1.00 R1 "

REMOTE CONTROL IR CODE TABLE



Key Code and Name

TOSHIBA Format

Custom Code ("45BA") + Key Code

No.	Key Name	Key Code
1	MODE/DISPLAY	E0{16}
2	SETUP	20
3	TOP MENU	DE
4	MENU	84
5	E.A.M.	43
6	PICTURE	EE
7	AUDIO	27
8	SUBTITLE	28
9	ANGLE	29
10	ZOOM	40
11	PAUSE/SETP	00
12	STOP	14
13	PLAY	15
14	RETURN	22{EF}
15	REV{SLOW (REV)}	19{0E}
16	UP	80{9B}
17	FWD{SLOW (FWD)}	13{0D}
18	LEFT	51
19	ENTER	21
20	RIGHT	4D
21	SKIP DOWN	23
22	DOWN	81{9A}
23	SKIP UP	24
24	1	01
25	2	02
26	3	03
27	T	26
28	4	04
29	5	05
30	6	06
31	MEMORY	2A
32	7	07
33	8	08
34	9	09
35	REPEAT	2B
36	SHIFT	SHIFT
37	0{+10}	0A{25}
38	RANDOM	2E
39	A-B PRT	2C

Note) { } : A code when a Shift key is pushed .

Troubleshooting

1. No power when turned on.
2. The initial screen is not displayed on the LCD.
3. The DVD drive does not work.
4. The operation of the DVD player stops at initializing display.
5. Image output stops during the operation.
6. No sound or abnormal sound comes out from the speakers in the DVD player.
7. No image or sound comes out from the external output.
8. No sound comes out from the headphones.
9. No image or sound is output by external input.
10. The DVD drive does not operate with the battery.

1. No power when turned on.

When the power is turned on, and if the LED on the front panel does not light green, check the following items and repair the defective parts.

(1) Check the power supply cable

If the cable is not the supplied one, replace it with the supplied cable and turn on the power again.

If the power supply cable is good, the AC adapter may be defective.

If the LED does not light after replacing, check the following items.

(2) Check the AC adapter

If the AC adapter is not the supplied one, replace it with the supplied AC adapter and turn on the power.

If the AC adapter is good, the Main PCB may be defective.

If the LED does not light after replacing, check the following items.

(3) Check the Power switch

Press the POWER switch on the DVD player. If the power does not turn on, check the following:

- Check the connector of the Power switch PCB in the DVD player.
(If the connection is loose, repair the connection.)
- Replace the Power switch PCB and turn on the power again.
If the LED does not light after replacing, check the following items.

(4) Check the connection of Main PCB and LED PCB

(5) Replace the Main PCB

2. The initial screen is not displayed on the LCD.

If the initial screen is not displayed on the LCD, check the following items.

(1) Check the LED on the front

If the LED does not light, proceed to 1.1.

(2) Check the backlight

If the backlight does not light up, separate the DVD player into top assembly and bottom assembly, and check the connector harness, and check the connectors for defects.

If the connector harness is broken:

Replace the broken harness.

If the connector harness is not broken:

Remove the LCD cover and plate of the LCD unit and check the following:

- Check the connector of the FL harness, replace the Function button PCB or the LCD.
- If the connectors are good, replace the Function button PCB or the LCD.

(3) Check the lighting of LCD

If the LCD does not light, separate the DVD player into the top assembly and bottom assembly, and check the LCD harness, and check the connectors on the Main PCB.

If the connector is broken:

Replace the LCD harness or the Main PCB.

If the connector is not broken:

Remove the LCD cover and plate of the LCD unit, and check the connection to the harness of the LCD unit.

- If a bad connection is found.
Connect the LCD harness to the LCD unit.
- Other than the above
Replace the LCD unit or the Main PCB.

3. The DVD drive does not work.

When the DVD drive does not work after the power is turned on, check the following items and repair or replace the defective parts.

(1) Press the DISC cover switch and turn on the power. Then check whether or not the optical pick-up lens of the DVD drive lights.

CAUTION: Visible laser radiation when open and interlock defeated. Do not stare into Laser beam.

The optical pick-up lens lights dim:

It is caused by deterioration of the optical pick-up lens. Replace the DVD drive.

The optical pick-up lens does not light:

Check the connectors of the DVD-FFC. Also check the connection to the main PCB and to the DVD drive.

- Loose connection is found.
Repair the connection, and then check the operation of the DVD drive again.
- The DVD-FFC is broken.
Replace the DVD drive.
- Other than the above.
Replace the DVD drive or the Main PCB.

(2) Insert a DVD disk and turn on the power

The DVD drive does not work:

The motor of the DVD drive or the Main PCB is defective. Replace the DVD drive or the Main PCB.

The DVD drive works but the initializing operation of the optical pick-up lens does not start (the optical pick-up lens operates twice), or abnormal noise sound:

The DVD drive is defective. Replace the DVD drive.

4. The operation of the DVD player stops at initializing display.

If the DVD player does not work after the initializing screen is displayed, check the indication on the screen. Then repair the defect according to it.

(1) Insert a DVD disk and close the DISC cover, and turn on the power. Then check the LCD screen or use an external display.

- **The message "loading" is not displayed or the operation stops at the message "Loading".**
Since the DVD drive or the Main PCB is defective, check in the following order:
 - 1) DVD drive
 - 2) Main PCB
- **The message "CHECK DISK" is displayed.**
Check the DVD disk for fingerprints, dirt, etc.
If the DVD disk is OK, then check the following items:
 - 1) Check the DVD-FFC
If a loose connection, repair the connection.
If it is damaged, replace the DVD drive.
 - 2) Other than above
For other cases, replace the unit in the following order:
 - DVD drive (defective optical pick-up)
 - Main PCB

5. Image output stops during the operation.

If the image output from the media in the DVD player stops during the operation, replace the DVD drive.

6. No sound or abnormal sound comes out from the speakers in the DVD player.

If no sound comes out from the speakers in the DVD player, check the following:

(1) Check for moving images on the LCD screen

Check whether or not the move of image stops in halfway. If it stops, replace the DVD drive.

(2) Check the operation of the DVD driver.

Check whether or not the DVD drive works. If it stops, replace the DVD drive.

(3) Check the connection of the speakers in the DVD player.

Separate the DVD player into the top assembly and bottom assembly, and then check the connections of the speaker harnesses to the Function button PCB and the Function button PCB to the Main PCB. If the connection is loose, repair connection. If the connector has been connected firmly, replace the Main PCB or speaker.

7. No image or sound comes out from the external output

If any image or sound is output from the TV connected by the external cable, replace the Main PCB.

NOTE: Before this test, make sure the drive works.

8. No sound comes out from the headphones.

If no sound comes out from the headphones, replace the Main PCB.

9. No image or sound is output by the external input.

If any image or sound is output by external input, replace the Main PCB.

10. The DVD drive does not operate with the battery.

(1) Check the operation with a good battery.

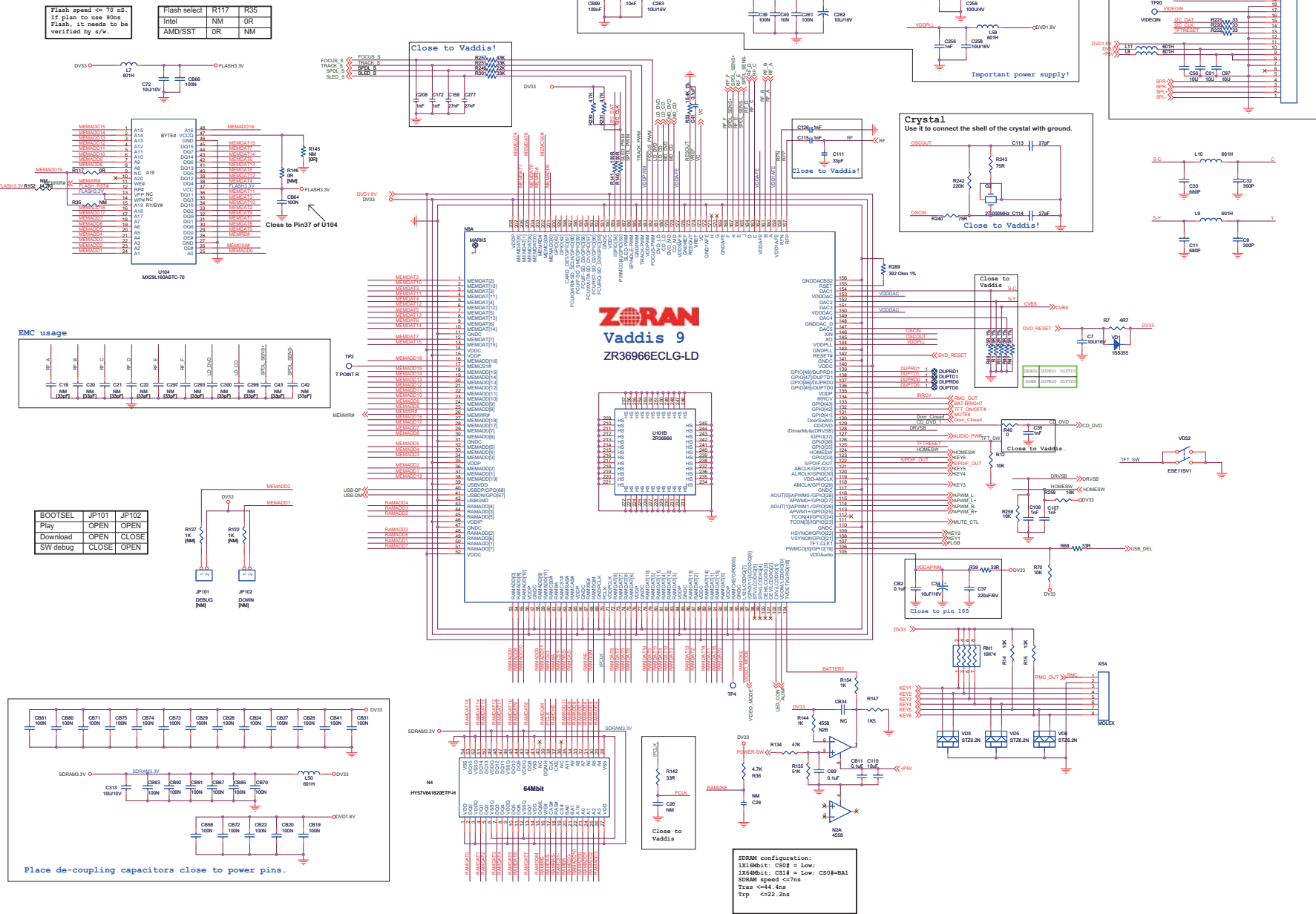
Install a good battery and make sure the LED lights up orange while the AC adapter is connected. When the LED does not light up or blinks, check the connection of the battery connector inside the DVD player. If the connection is loose, repair connection. If the connector has been connected firmly, replace the Main PCB.

(2) Other than the above, replace the battery.

NOTE:

- For this check, use a battery which is not fully charged (because the LED does not light when the battery is fully charged.)
- Before this check, make sure other function work correctly.

MAIN PCB CIRCUIT DIAGRAM
(ZR36966 & SDRAM & FLASH CIRCUIT DIAGRAM)



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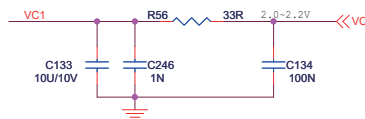
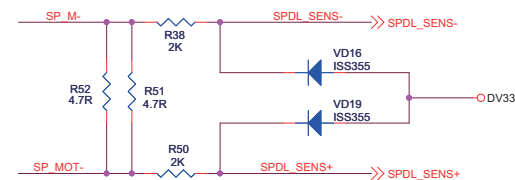
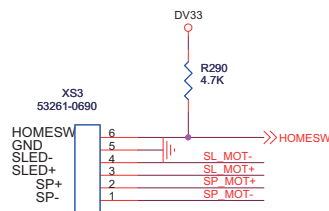
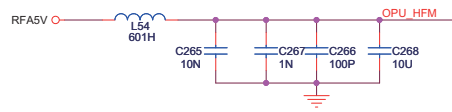
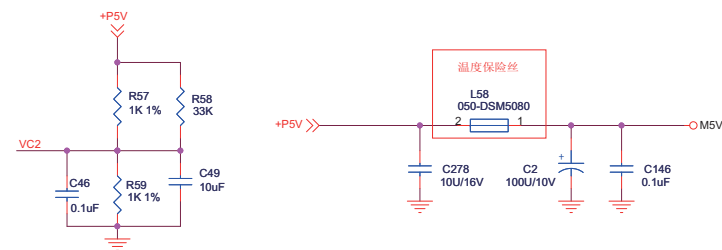
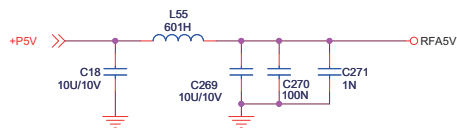
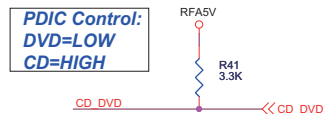
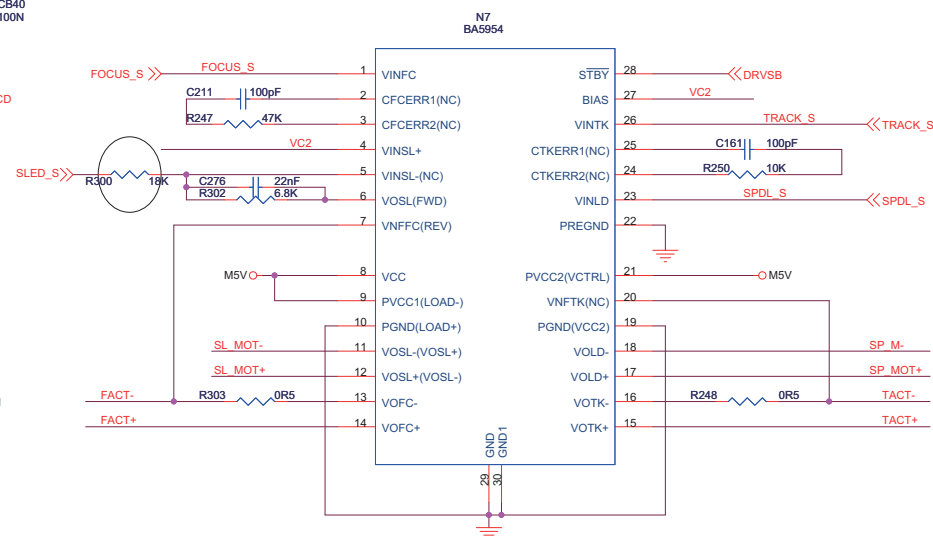
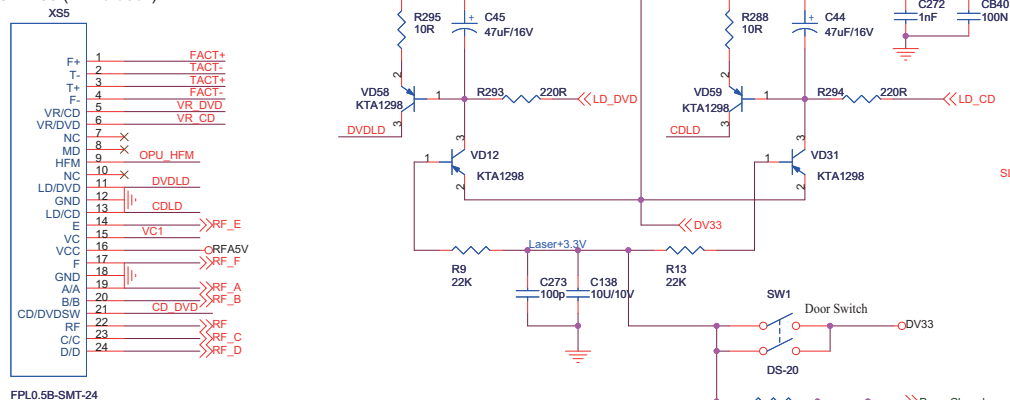
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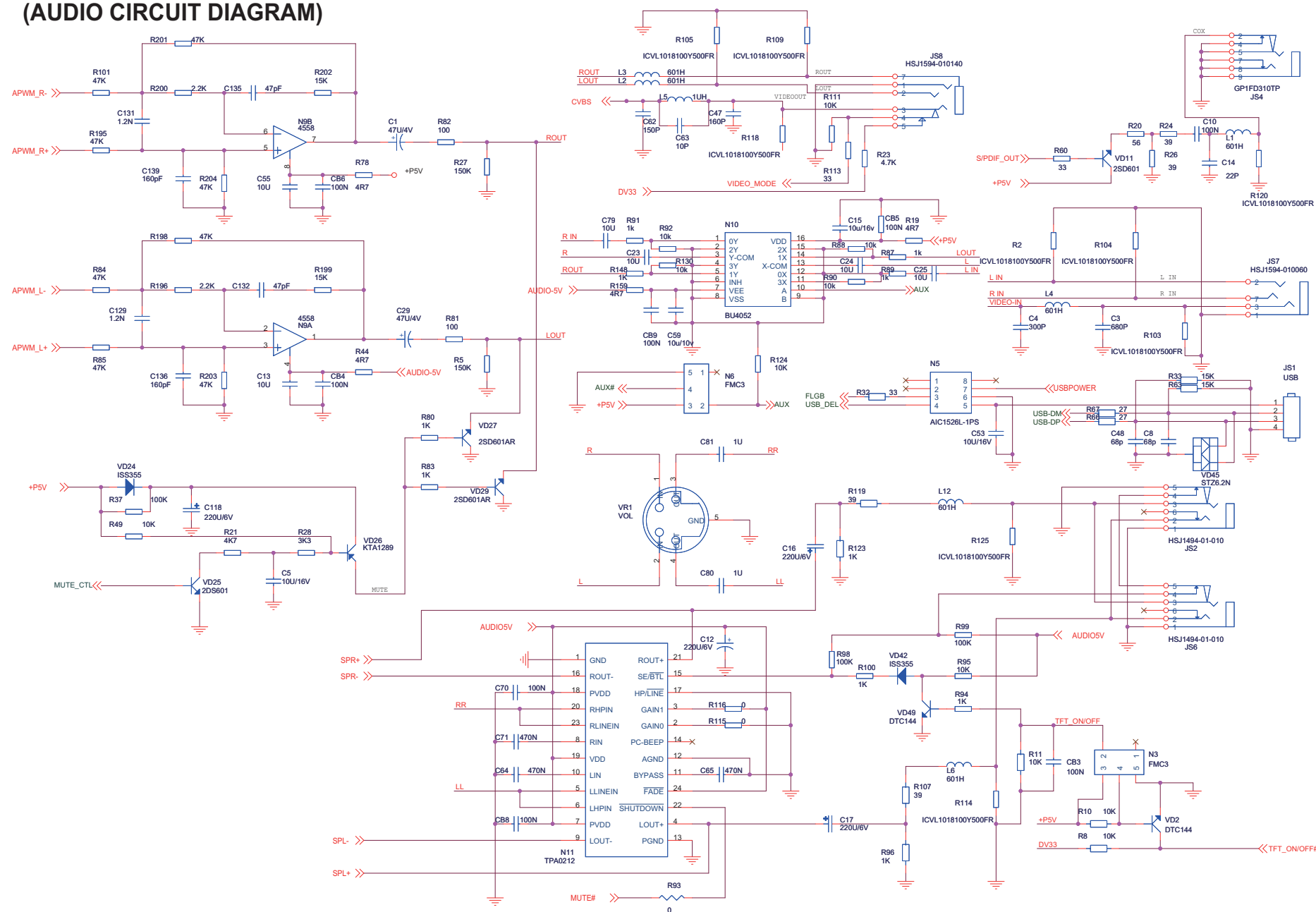
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MAIN PCB CIRCUIT DIAGRAM (OPU Connector & DRIVER CIRCUIT DIAGRAM)

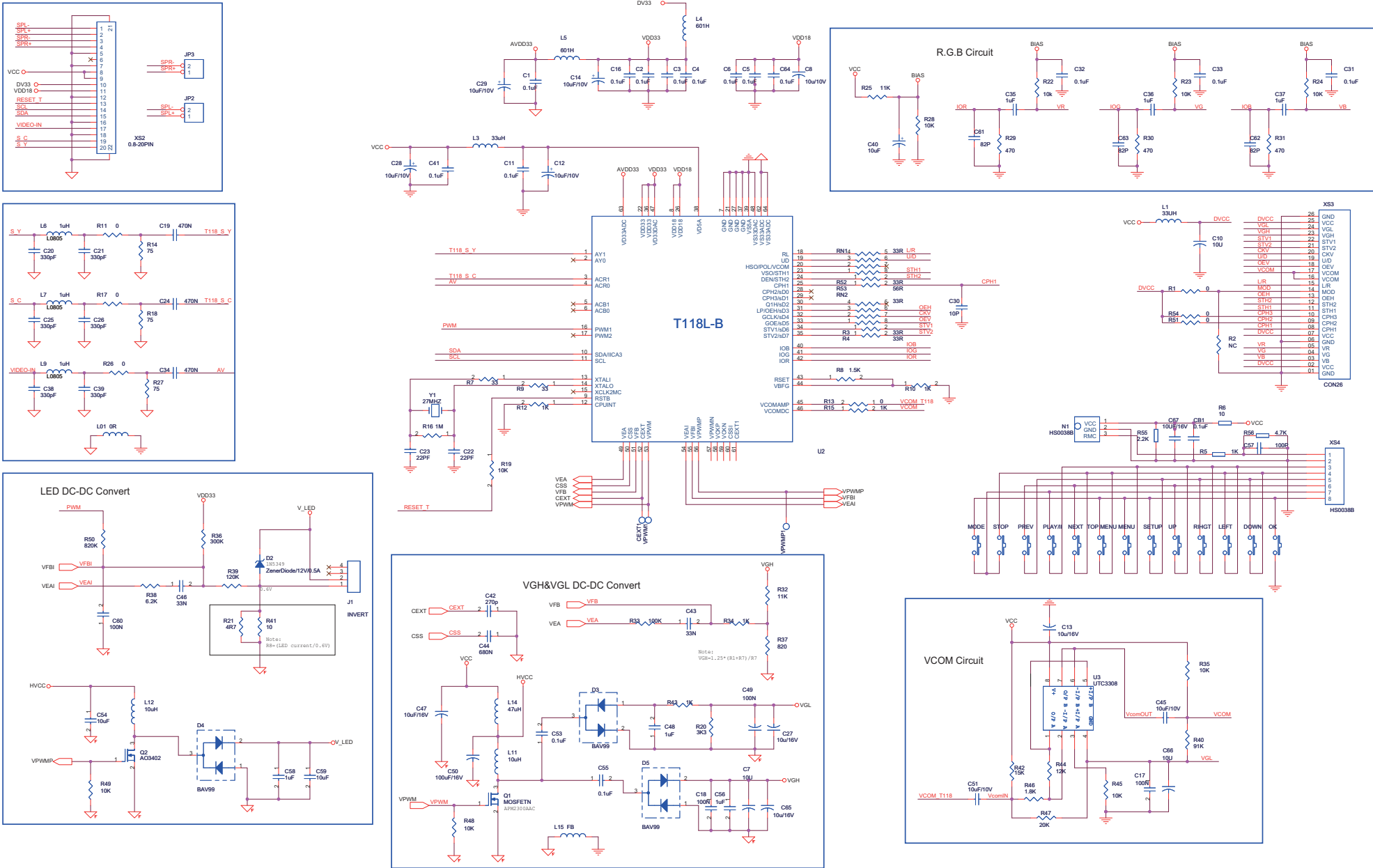
OPU:HD88 (DV23 deck)



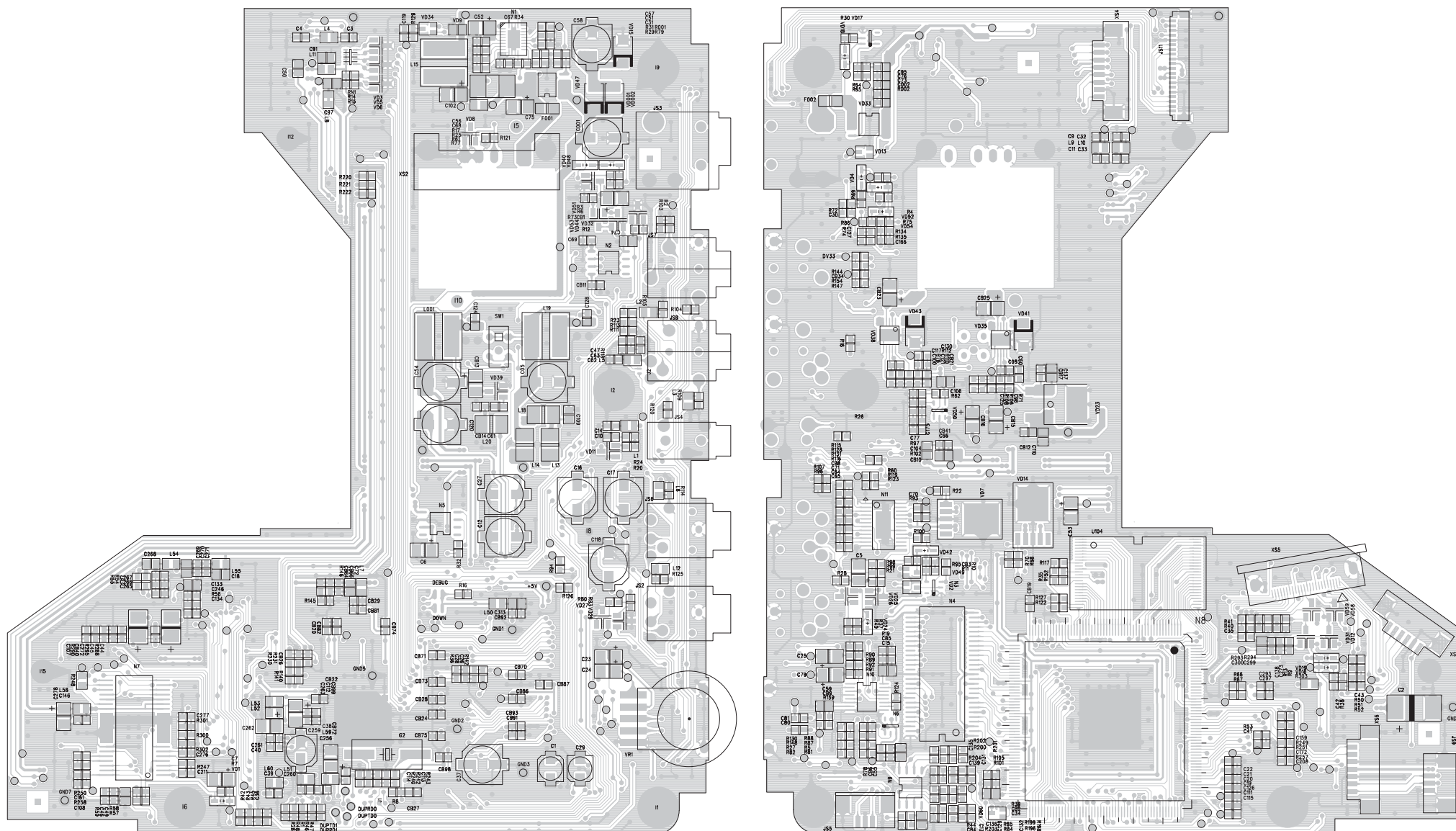
MAIN PCB CIRCUIT DIAGRAM (AUDIO CIRCUIT DIAGRAM)



FUNCTION BUTTON PCB CIRCUIT DIAGRAM



MAIN PCB DIAGRAM



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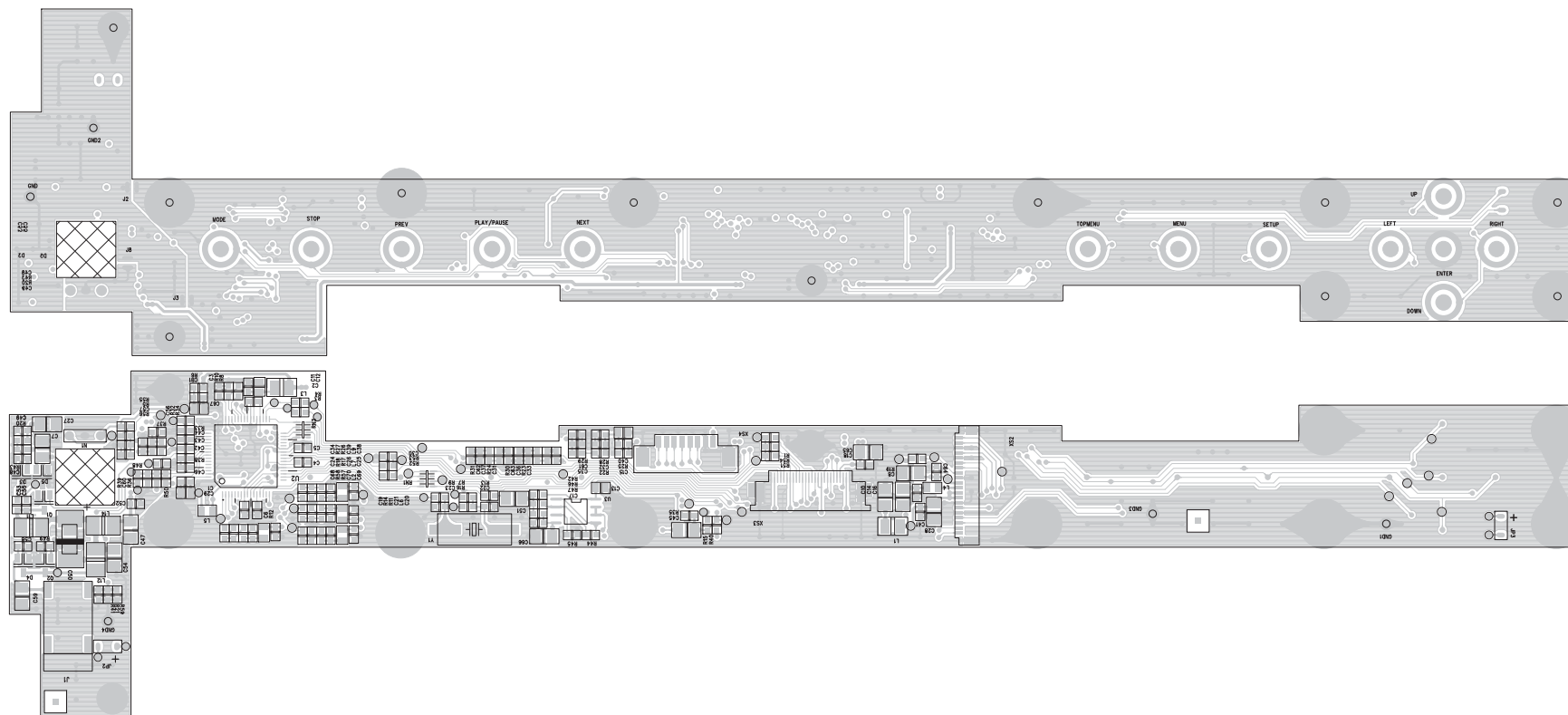
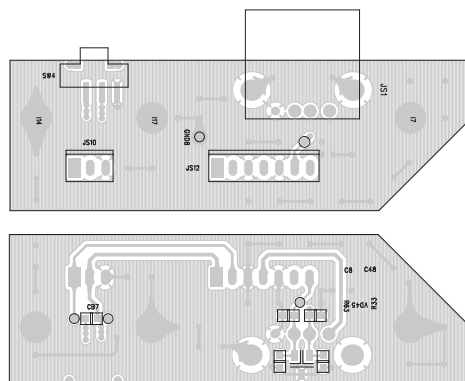
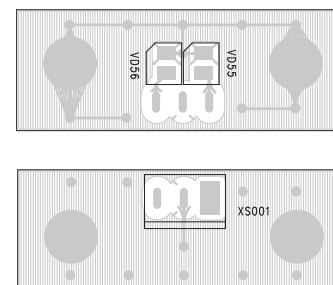
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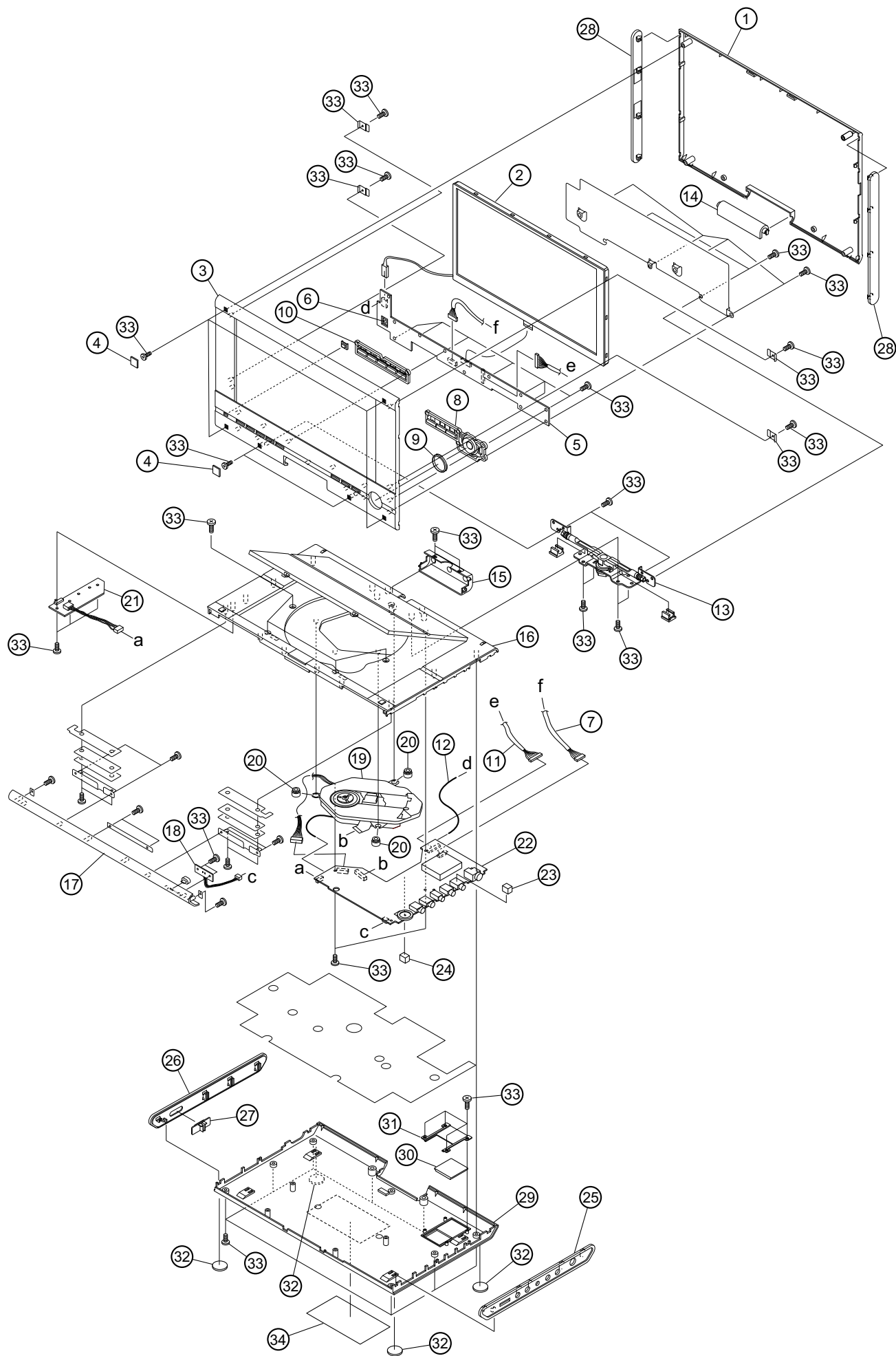
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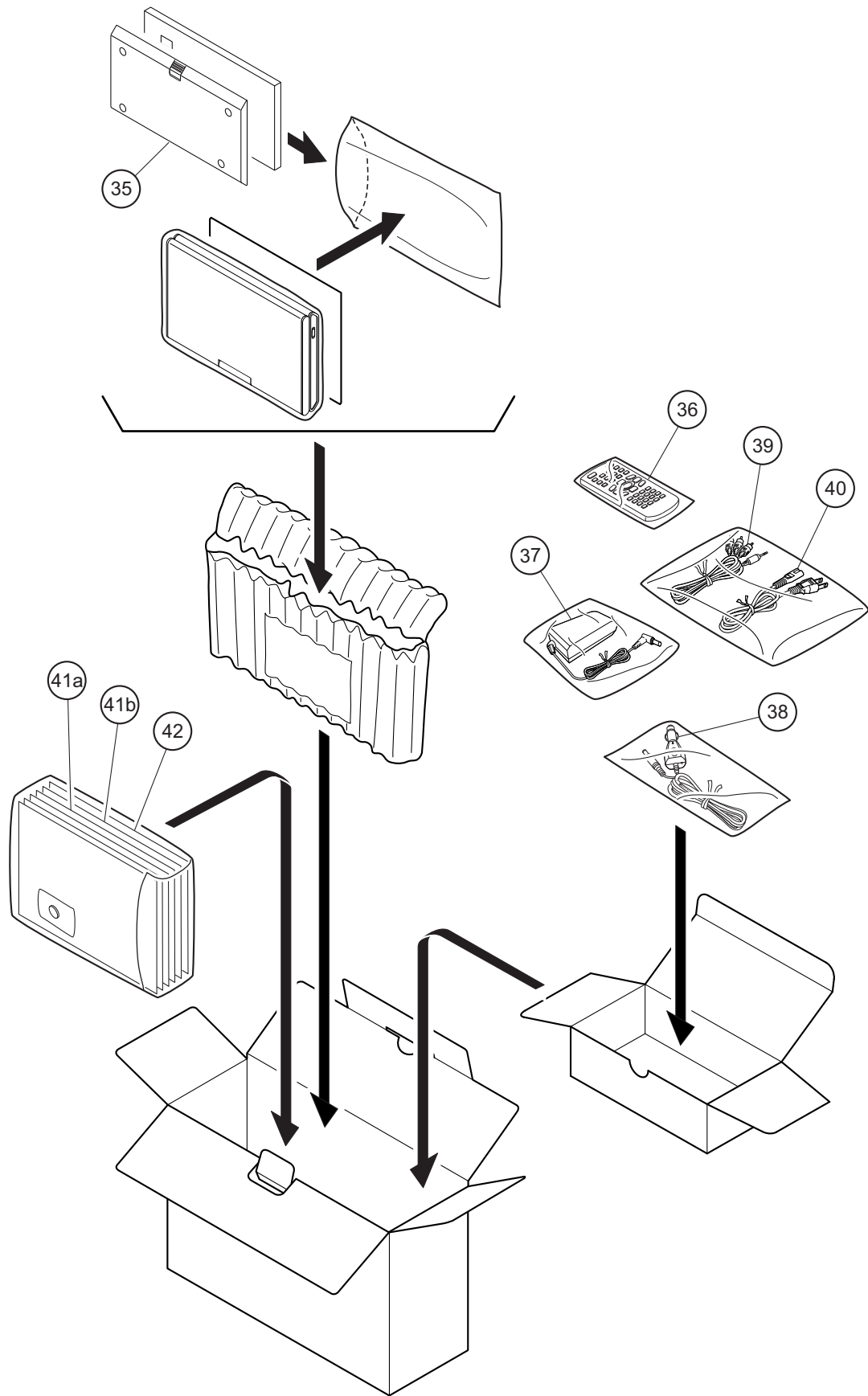
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FUNCTION BUTTON PCB DIAGRAM**POWER SWITCH PCB DIAGRAM****LED PCB DIAGRAM**

SD-P91SKN CHASSIS ASSEMBLY



SD-P91SKN PACKING ASSEMBLY



PARTS LIST: SD-P91SKN

NOTE:

When the bottom cover (29) is replaced with a new one, put a new rating label (34) on the new bottom cover.
Transcribe the following items (SERIAL NO., MANUFACTURED etc.) described on the old rating label to the new rating label by using a permanent maker.

	Loc. No.	TSB P/N	Ref. No.	Description
	1	AH303064	e25244	Top Cover Ass'y
	2	AH303065	ea60139	LCD Unit
	3	AH303066	e25245	LCD Mask Ass'y
	4	AH303067	eb38571	LCD Mask Pad
	5	AH303068	e23201	Function Button PCB Ass'y
	5	AH303280	e23457	Function Button PCB Ass'y
	6	AH301927	ea6733d	IR Sensor
	7	AH303069	e25246	8 Pin Cable
	8	AH303070	e25247	Function Button (Arrow Key & 3 Buttons)
	9	AH303071	eb38549hd	Arrow Key Ring
	10	AH303072	e25248	Function Button (5 Buttons)
	11	AH303073	e25249	Harness
	12	AH303074	es31797	Earth Wire
	13	AH303075	eb38559	Hinge Ass'y
	14	AH303076	eb38540d	Hinge Cover (Top Side)
	15	AH303077	eb38541d	Hinge Cover (Bottom Side)
	16	AH303078	e25250	Sub Cover Ass'y
	17	AH303079	e25251	Front Cover
	18	AH303080	e23305	LED PCB Ass'y
	19	AH303081	e25252	DVD Mecha Ass'y
	20	AH303082	eb20326	Damper
	21	AH303083	e23306	Power Switch PCB Ass'y
	22	AH303084	e23304	Main PCB Ass'y
	23	AH303085	ea8371	Gasket (Large)
	24	AH303086	ea8370	Gasket (Small)
	25	AH303087	e25253	Right Cover
	26	AH303088	e25254	Left Cover
	27	AH303089	eb38555h	Power Switch Button
	28	AH303090	eb38539j	LCD Cover Right/Left
	29	AH303091	e25255	Bottom Cover Ass'y
	30	AH301619	eb32320h	Battery Slot Slider
	31	AH301620	eb32295h	Battery Slot Holder
	32	AH303092	eb38579	Bottom Cover Pad
	33	AH303093	e25256	Screw Kit
	34	AH303094	es13563	Rating Label without serial number
	35	AH303095	e25257	Battery Pack, SD-PBP91
	36	AH301126	es06054a	Remote Control, MEDR16UX
	37	AH302148	es9014c	AC Adaptor, ADPV16A
	38	AH303096	es8302b	Car Adaptor, MEDC01AX
	39	AH301124	es3468a	AV Cable
	40	AH301123	es3581	Power Cord (for USA, 2 pin)
	41a	AH303097	es15285ss	Owner's Manual, English
	41b	AH303098	es15285ssa	Owner's Manual, French
	42	AH303099	es14605	Quick Guide, Spanish

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.

Appendix: SD-P91SKN

REVISION HISTORY

REV	Date	Reason for Change
1	07/28/08	Added new Function Button PCB Ass'y (TSB P/N: AH303280) in PARTS LIST

TOSHIBA CORPORATION

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