JVC

SERVICE MANUAL

DVD AUDIO/VIDEO PLAYER

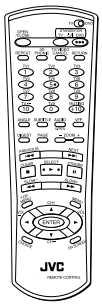
XV-SA70BK / XV-SA72SL

Area Suffix (XV-SA70BK)

EN ------- Northern Europe
UJ ---------- USA Military

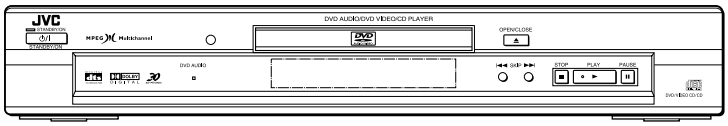
Area Suffix (XV-SA72SL)

B ---------- U.K.
E --- Continental Europe
EN ---- Northern Europe
EE - Russian Federation
US ---------- Singapore
UW -- Brazil,Mexico,Peru



Video CD (For only Europe)

(For only Asia)



(This illustration is version EN)

Each difference point

Model	Body color
XV-SA70BK	Black
XV-SA72SL	Silver

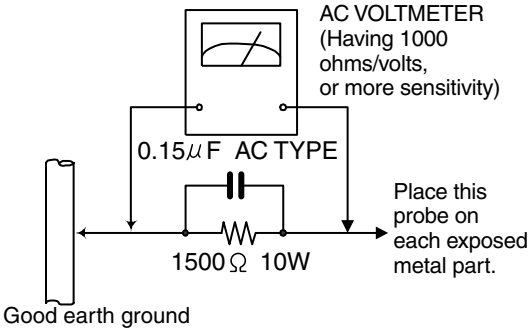
Contents

This service manual is printed on 100% recycled paper.

No.A0022
Oct. 2001

Safety Precautions

1. This design of this product contains special hardware and many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Services should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the product should not be made. Any design alterations of the product should not be made. Any design alterations or additions will void the manufacturer`s warranty and will further relieve the manufacture of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the Parts List of Service Manual. Electrical components having such features are identified by shading on the schematics and by (⚠) on the Parts List in the Service Manual. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement parts shown in the Parts List of Service Manual may create shock, fire, or other hazards.
4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after re-assembling.
5. Leakage current check (Electrical shock hazard testing)
   After re-assembling the product, always perform an isolation check on the exposed metal parts of the product (antenna terminals, knobs, metal cabinet, screw heads, headphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.
   Do not use a line isolation transformer during this check.
   - Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal parts of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground. Any leakage current must not exceed 0.5mA AC (r.m.s.).
   - Alternate check method
     Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having, 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1,500Ω 10W resistor paralleled by a 0.15μF AC-type capacitor between an exposed metal part and a known good earth ground.
     Measure the AC voltage across the resistor with the AC voltmeter.
     Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Voltage measured any must not exceed 0.75 V AC (r.m.s.). This corresponds to 0.5 mA AC (r.m.s.).



Warning

1. This equipment has been designed and manufactured to meet international safety standards.
2. It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
3. Repairs must be made in accordance with the relevant safety standards.
4. It is essential that safety critical components are replaced by approved parts.
5. If mains voltage selector is provided, check setting for local voltage.

⚠ CAUTION

Burrs formed during molding may be left over on some parts of the chassis. Therefore, pay attention to such burrs in the case of preforming repair of this system.

In regard with component parts appearing on the silk-screen printed side (parts side) of the PWB diagrams, the parts that are printed over with black such as the resistor (▬), diode (▮) and ICP (●) or identified by the "⚠" mark nearby are critical for safety.
When replacing them, be sure to use the parts of the same type and rating as specified by the manufacturer. (Except the J and C version)

Preventing static electricity

Electrostatic discharge (ESD), which occurs when static electricity stored in the body, fabric, etc. is discharged, can destroy the laser diode in the traverse unit (optical pickup). Take care to prevent this when performing repairs.

1.1. Grounding to prevent damage by static electricity

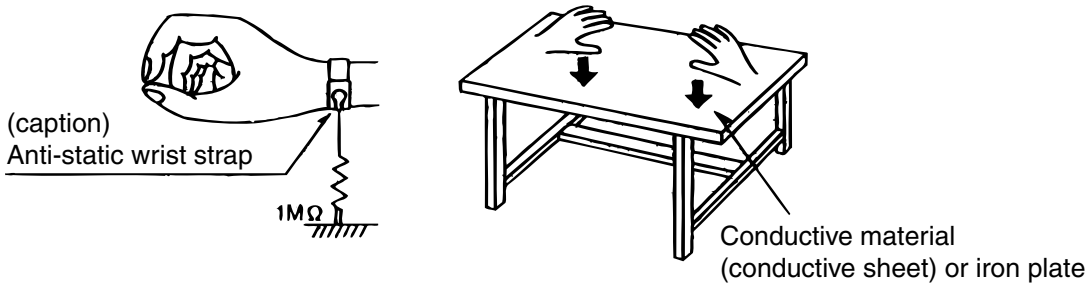
Static electricity in the work area can destroy the optical pickup (laser diode) in devices such as DVD players. Be careful to use proper grounding in the area where repairs are being performed.

1.1.1. Ground the workbench

1. Ground the workbench by laying conductive material (such as a conductive sheet) or an iron plate over it before placing the traverse unit (optical pickup) on it.

1.1.2. Ground yourself

1. Use an anti-static wrist strap to release any static electricity built up in your body.



1.1.3. Handling the optical pickup

1. In order to maintain quality during transport and before installation, both sides of the laser diode on the replacement optical pickup are shorted. After replacement, return the shorted parts to their original condition. (Refer to the text.)

2. Do not use a tester to check the condition of the laser diode in the optical pickup. The tester's internal power source can easily destroy the laser diode.

1.2. Handling the traverse unit (optical pickup)

1. Do not subject the traverse unit (optical pickup) to strong shocks, as it is a sensitive, complex unit.

2. Cut off the shorted part of the flexible cable using nippers, etc. after replacing the optical pickup. For specific details, refer to the replacement procedure in the text. Remove the anti-static pin when replacing the traverse unit. Be careful not to take too long a time when attaching it to the connector.

3. Handle the flexible cable carefully as it may break when subjected to strong force.

4. It is not possible to adjust the semi-fixed resistor that adjusts the laser power. Do not turn it

Precautions for Service

Handling of Traverse Unit and Laser Pickup

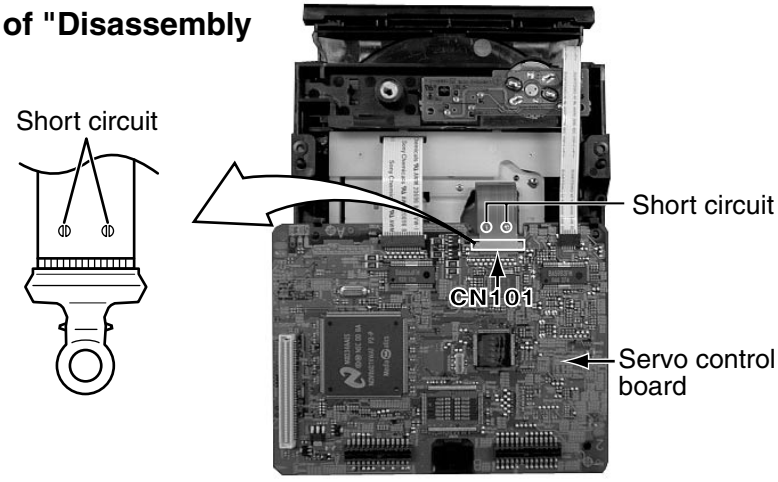
1. Do not touch any peripheral element of the pickup or the actuator.
2. The traverse unit and the pickup are precision devices and therefore must not be subjected to strong shock.
3. Do not use a tester to examine the laser diode. (The diode can easily be destroyed by the internal power supply of the tester.)
4. To replace the traverse unit, pull out the metal short pin for protection from charging.
5. When replacing the pickup, after mounting a new pickup, remove the solder on the short land which is provided at the center of the flexible wire to open the circuit.
6. Half-fixed resistors for laser power adjustment are adjusted in pairs at shipment to match the characteristics of the optical block.
   Do not change the setting of these half-fixed resistors for laser power adjustment.

Destruction of Traverse Unit and Laser Pickup by Static Electricity

Laser diodes are easily destroyed by static electricity charged on clothing or the human body. Before repairing peripheral elements of the traverse unit or pickup, be sure to take the following electrostatic protection:

1. Wear an antistatic wrist wrap.
2. With a conductive sheet or a steel plate on the workbench on which the traverse unit or the pick up is to be repaired, ground the sheet or the plate.
3. After removing the flexible wire from the connector (CN101), short-circuit the flexible wire by the metal clip.
4. Short-circuit the laser diode by soldering the land which is provided at the center of the flexible wire for the pickup. After completing the repair, remove the solder to open the circuit.

Please refer to "Fig.5" of "Disassembly method" for details.



Important for Laser Products

1.CLASS 1 LASER PRODUCT

2.DANGER : Invisible laser radiation when open and inter lock failed or defeated. Avoid direct exposure to beam.

3.CAUTION : There are no serviceable parts inside the Laser Unit. Do not disassemble the Laser Unit. Replace the complete Laser Unit if it malfunctions.

4.CAUTION : The compact disc player uses invisible laser radiation and is equipped with safety switches which prevent emission of radiation when the drawer is open and the safety interlocks have failed or are de feated. It is dangerous to defeat the safety switches.

5.CAUTION : If safety switches malfunction, the laser is able to function.

6.CAUTION : Use of controls, adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

⚠ ***CAUTION*** **Please use enough caution not to see the beam directly or touch it in case of an adjustment or operation check.**

VARNING : Osynlig laserstrålning är denna del är öppnad och spårren är urkopplad. Betrakta ej strålen.

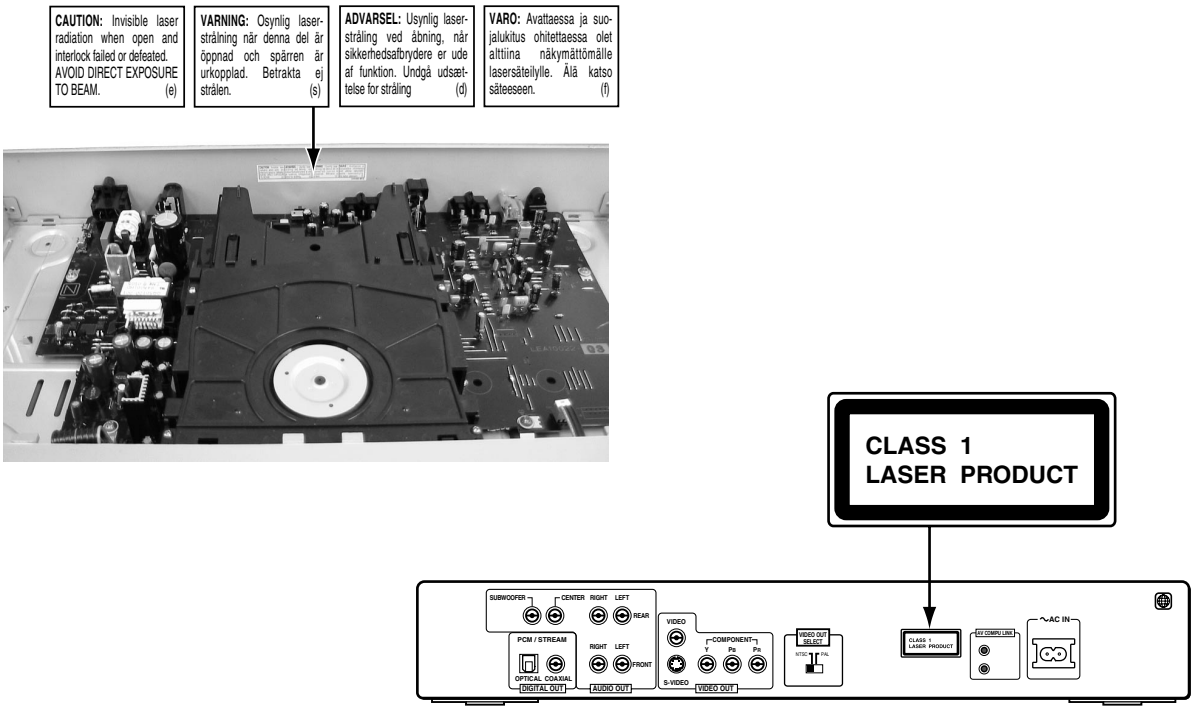
VARO : Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle.Älä katso säteeseen.

ADVARSEL : Usynlig laserstråling ved åbning , når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

ADVARSEL : Usynlig laserstråling ved åpning,når sikkerhetsbryteren er avslott. unngå utsettelse for stråling.

REPRODUCTION AND POSITION OF LABEL and PRINT

WARNING LABEL and PRINT



Disassembly method

<Main body>

■ Removing the top cover (see Fig.1)

1. Remove the two screws **A** attaching the top cover on both sides of the body.
2. Remove the three screws **B** attaching the top cover on the back of body.
3. Remove the top cover from the body by lifting the rear panel of top cover.

ATTENTION : Do not break the front panel tab fitted to the top cover.

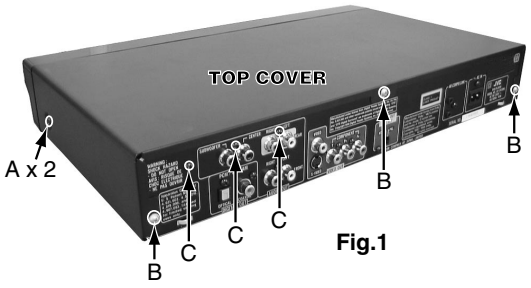


Fig.1

■ Removing the surround audio board (see Fig.1,2)

*Prior to performing the following procedure, remove the top cover.

1. Disconnect the card wire from connector CN711 on the surround audio board.
2. Remove the three screws **C** attaching the surround audio board on the rear panel.
3. The surround audio board is removed while picking up the point of the fastener in two places.

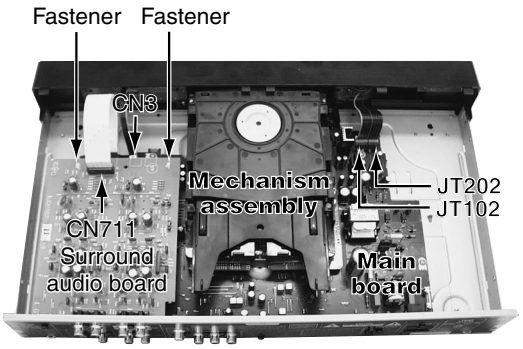


Fig.2

■ Removing the mechanism assembly (see Fig.3,4)

*Prior to performing the following procedure, remove the top cover.
*There is no need to remove the front panel assembly.

1. Remove the three screws **D** attaching the mechanism assembly on the bottom chassis.
2. The servo control board is removed from the connector CN512 and CN513 connected with the main board respectively.
3. Remove the mechanism assembly by lifting the rear part of the mechanism assembly.

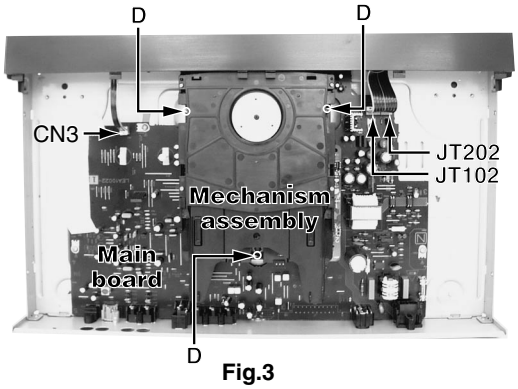


Fig.3

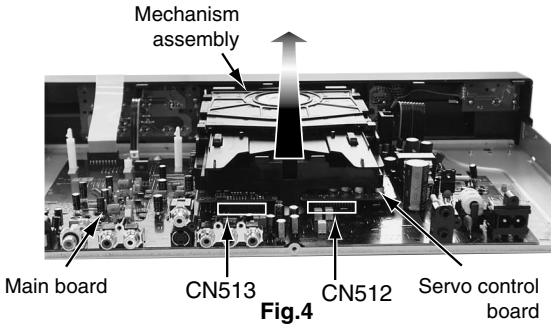


Fig.4

■ Removing the servo control board (see Fig.5)

*Prior to performing the following procedure, remove the top cover and mechanism assembly.

1. Disconnect the card wire from connector CN201 and CN202 on the servo control board respectively.
2. Disconnect the flexible wire from connector CN101 on the servo control board from pick-up.

ATTENTION
At this time, please extract the wire after short-circuited of two places on the wire in part **a** with solder.
Please remove the solder two places of part **a** after connecting the wire with CN101 when reassembling.

3. Two places in hook **b** are removed, the servo control board is lifted, and it is removed.

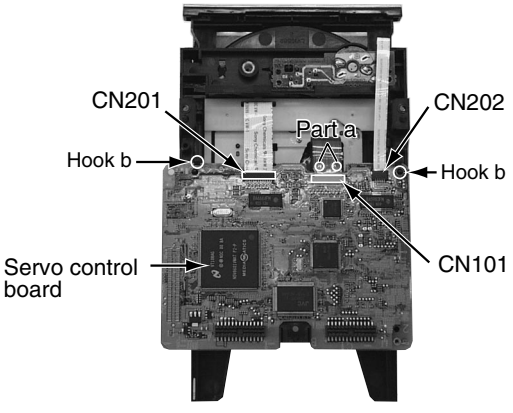


Fig.5

■ Removing the rear panel (see Fig.6)

*Prior to performing the following procedure, remove the top cover.

1.Remove the twelve screws **E** attaching the rear panel on the back of body.

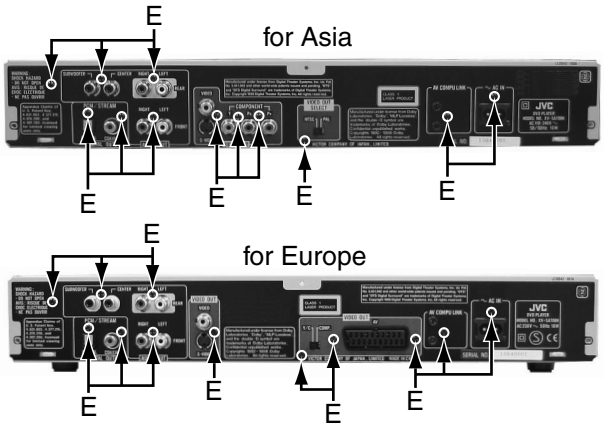


Fig.6

■ Removing the front panel assembly (see Fig.7,8)

* Prior to performing the following procedure, remove the top cover.
* There is no need to remove the mechanism assembly.

1.Remove the one screw **F** attaching the front panel assembly on the bottom chassis.

2.Remove the four screws **G** attaching the foot on the bottom chassis.

3.Disconnect the wire from CN3, JT102 and JT202 on the main board respectively.

4.Hook **c** and **d** are removed respectively, and the front panel assembly is removed.

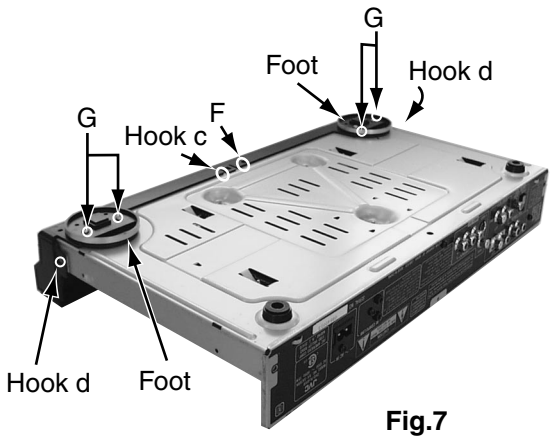


Fig.7

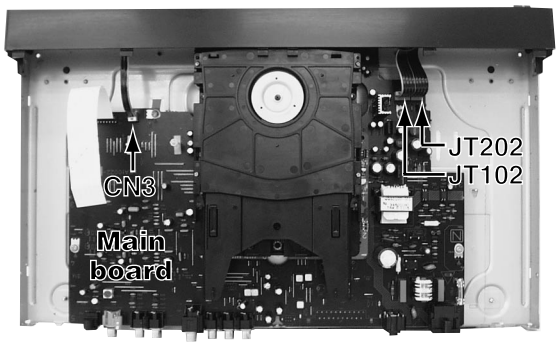


Fig.8

■ Removing the main board (see Fig.9)

* Prior to performing the following procedure, remove the top cover, surround audio board, mechanism assembly and rear panel.

1.Disconnect the wire from CN3, JT102 and JT202 and on the main board respectively.

2.Remove the four screws **H** attaching the main board on the bottom chassis.

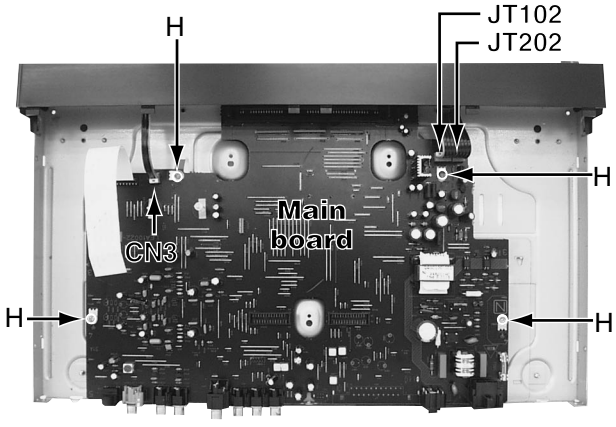


Fig.9

<Loading assembly section>

■ Removing the clamper assembly (See Fig.1)

1. Remove the four screws **A** attaching the clamper assembly.

2. Move the clamper in the direction of the arrow to release the two joints **a** on both sides.

ATTENTION: When reattaching, fit the clamper to the two joints **a**.

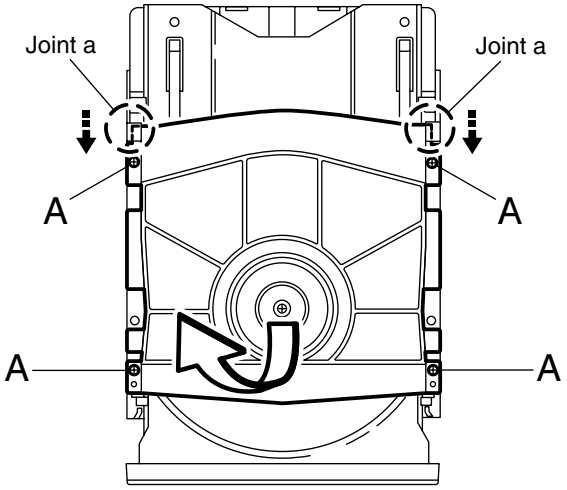


Fig.1

■ Removing the tray (See Fig.2 and 3)

・ Prior to performing the following procedure, remove the clamper assembly.

1. Push **b** of the slide cam into the slot on the left side of the loading base until it stops.

2. Draw out the tray toward the front.

ATTENTION: Before reattaching the tray, slide the part **c** of the slide cam to the right as shown in Fig.3.

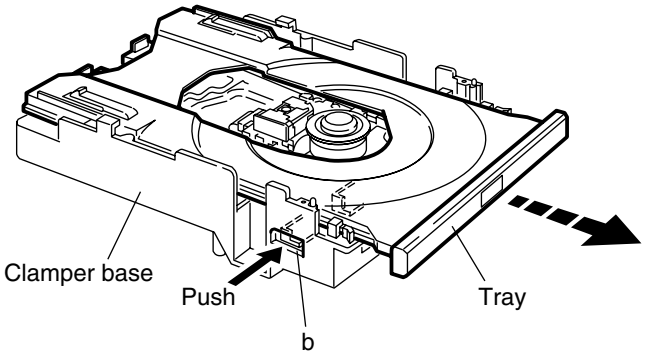


Fig.2

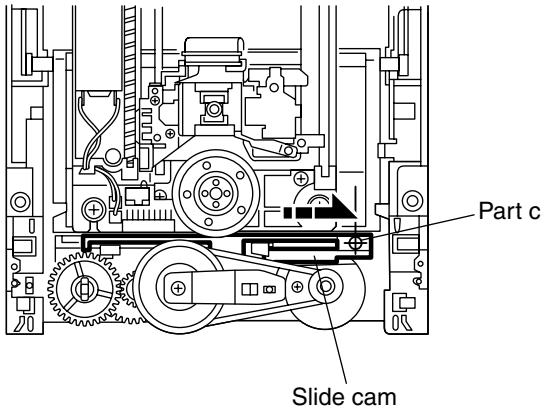


Fig.3

■Removing the traverse mechanism assembly (See Fig.4 and 5)

・ Prior to performing the following procedure, remove the clamper assembly and the tray.

1. Remove the four screws **B** attaching the traverse mechanism assembly.

ATTENTION: Before reattaching the traverse mechanism assembly, pass the card wire extending from the spindle motor board through the notch **d** of the elevator.

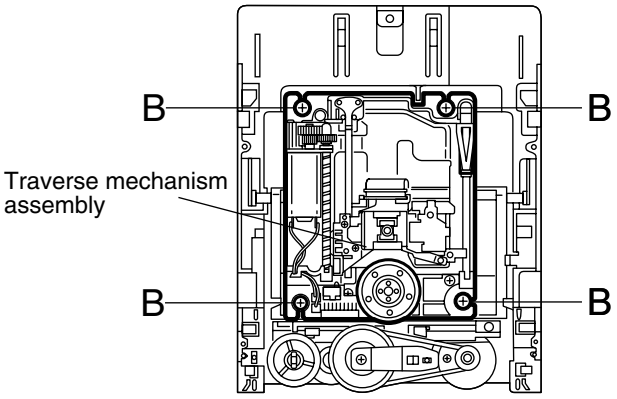


Fig.4

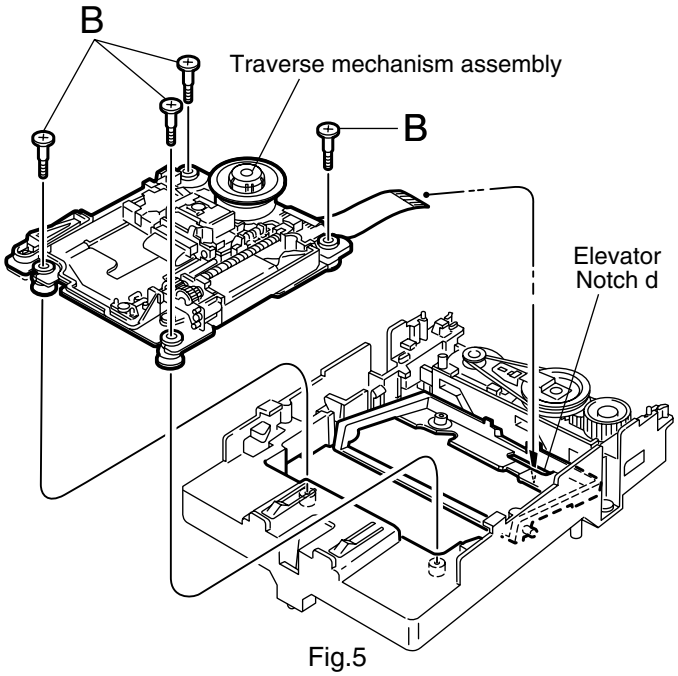


Fig.5

■Removing the elevator (See Fig.6 and 7)

・ Prior to performing the following procedure, remove the clamper assembly, the tray and the traverse mechanism assembly.

1. Extend each bar **e** inside of the loading base outward and detach the elevator shaft.

ATTENTION: When reattaching, first fit the two shafts on the front of the elevator to the slots **f** of the slide cam.

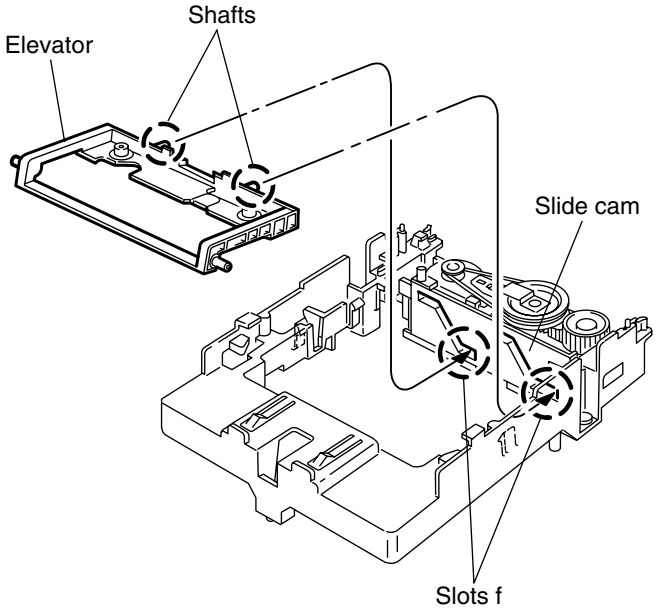


Fig.7

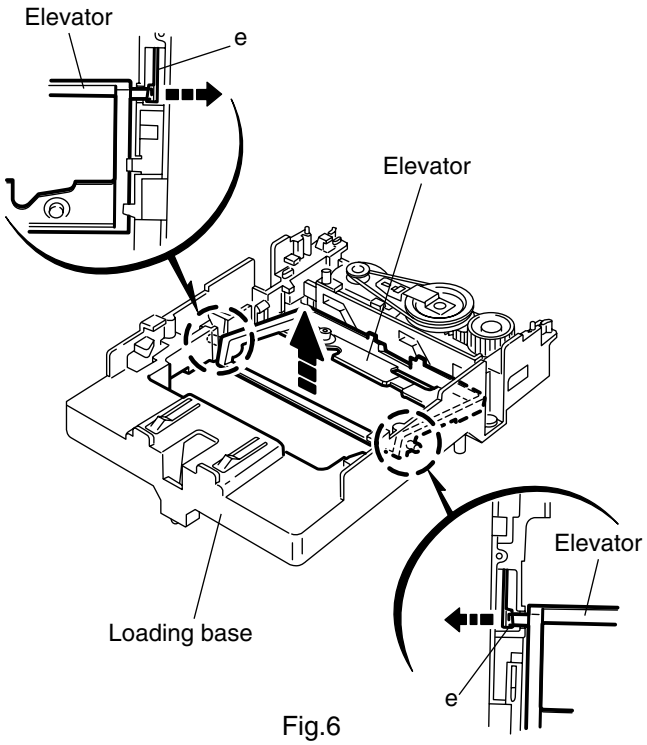


Fig.6

■ Removing the motor assembly (See Fig.8 and 9)

- Prior to performing the following procedure, remove the clamper assembly, the tray, the traverse mechanism assembly and the elevator.

1. Remove the belt from the pulley.
2. Remove the screw **C** attaching the motor assembly.
3. Turn over the body and remove the screw **D** attaching the motor assembly.
4. Release the two tabs **g** retaining the motor board.

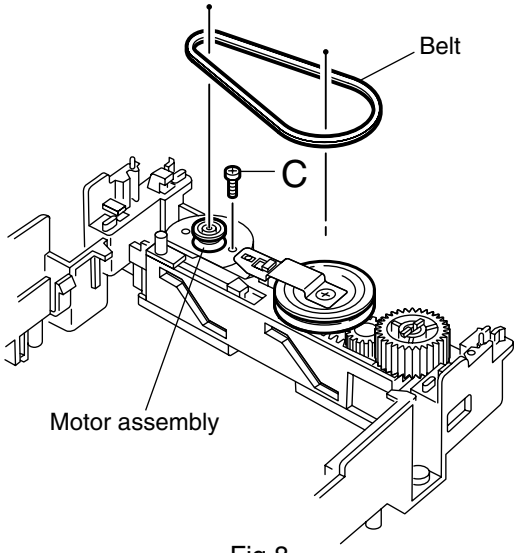


Fig.8

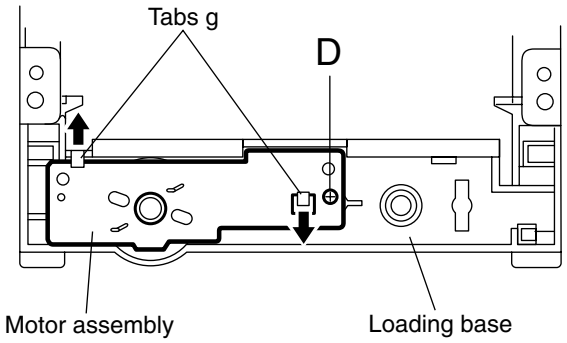


Fig.9

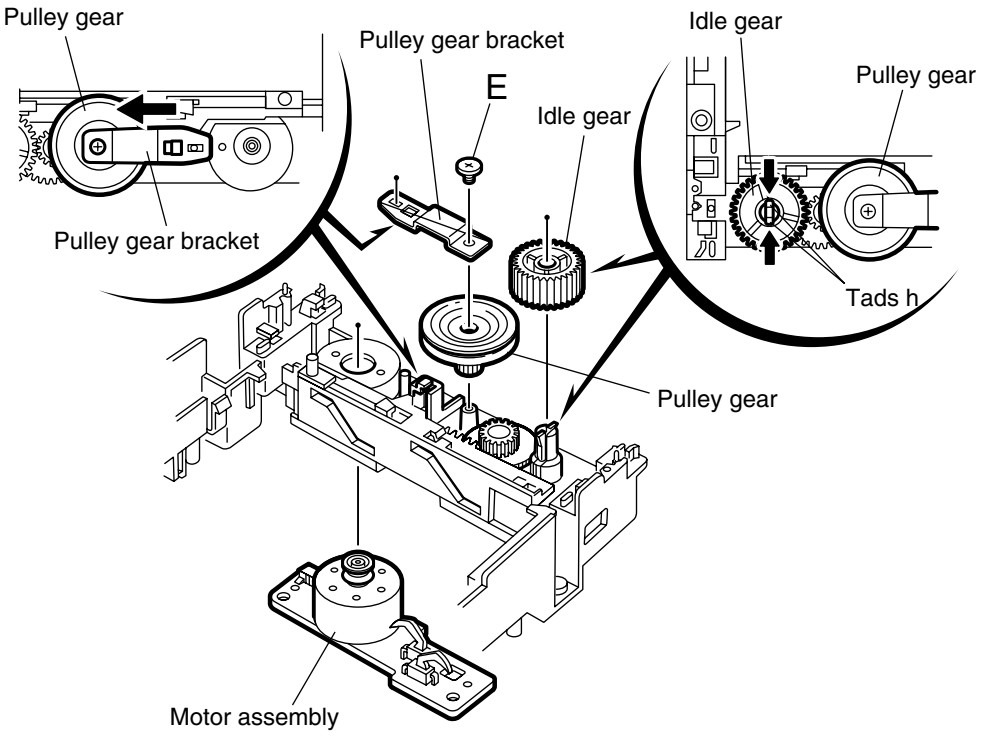


Fig.10

■Removing the Idle gear / pulley gear / middle gear / slide cam (See Fig.10 to 12)

・ Prior to performing the following procedure, remove the clamper assembly, the tray, the traverse mechanism assembly, the elevator and the motor assembly.

1. Press the two tabs **h** inward and pull out the idle gear.

2. Remove the screw **E** attaching the pulley gear bracket. Slide the pulley gear bracket in the direction of the arrow and pull out the pulley gear.

3. Slide the slide cam in the direction of the arrow to release the two joints **i** and remove upward.

4. Remove the middle gear.

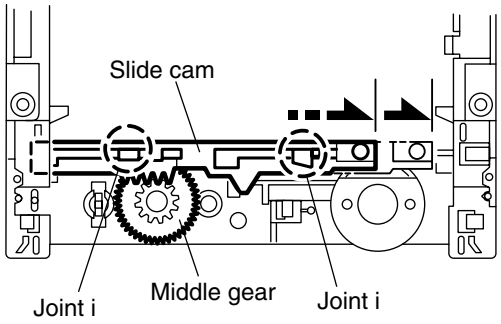


Fig.11

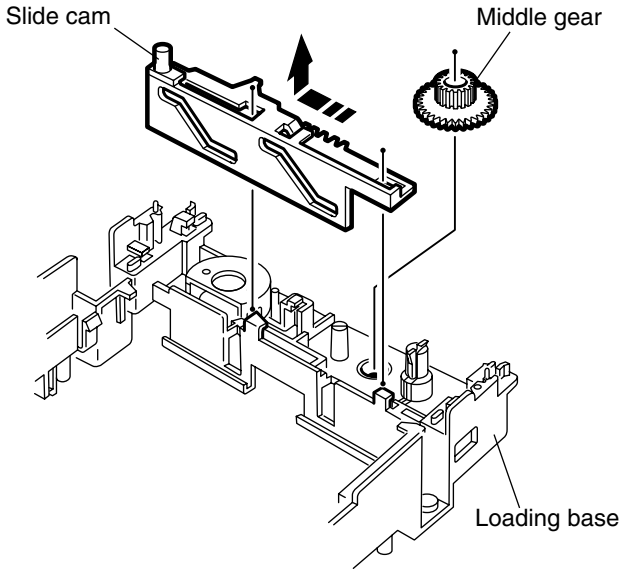


Fig.12

<Traverse mechanism assembly section>

■ Removing the feed motor assembly (See Fig.13)

1. Unsolder the two soldering **j** on the spindle motor board.

2. Remove the two screws **F** attaching the feed motor assembly.

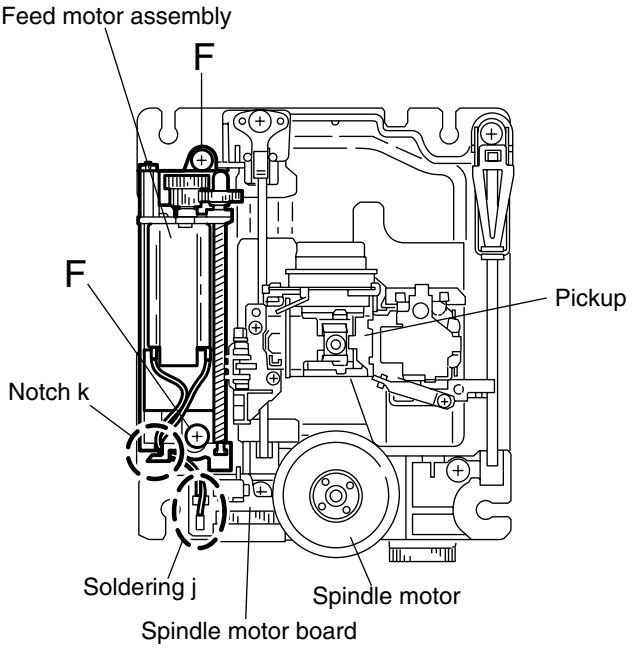


Fig.13

■ Removing the feed motor (See Fig.13 to 15)

・ Prior to performing the following procedure, remove the feed motor assembly.

1. Remove the screw **G** attaching the thrust spring.

ATTENTION: When reattaching the thrust spring, make sure that the thrust spring presses the feed gear (M) and the feed gear (E) reasonably.

2. Remove the feed gear (M).

3. Pull out the feed gear (E) and the lead screw.

4. Remove the two screws **H** attaching the feed motor.

ATTENTION: When reattaching, pass the two cables extending from the feed motor through the notch **k** of the feed holder as shown in Fig.13.

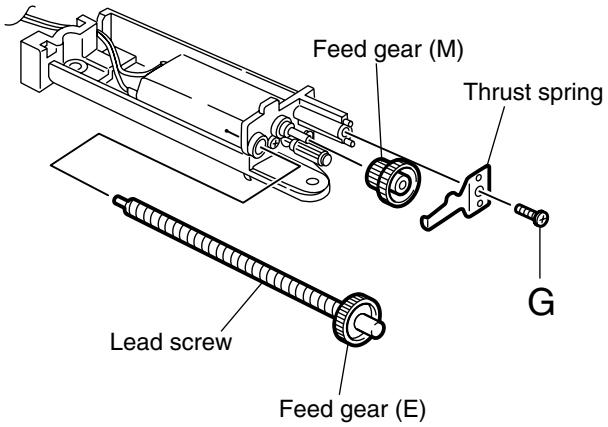


Fig.14

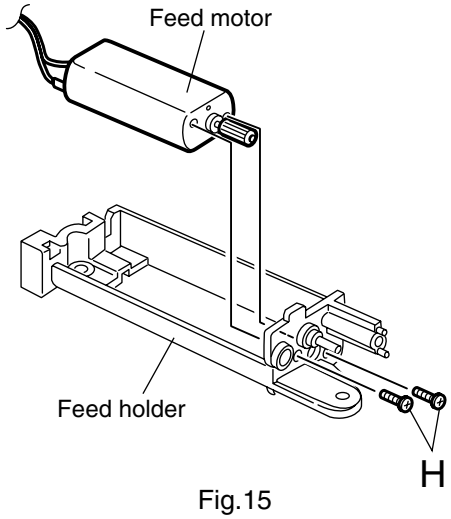


Fig.15

■ Removing the pickup (See Fig.16 and 17)

1. Remove the screw **l** attaching the T spring (S) and the shaft holder. Remove also the plate.

ATTENTION: When reattaching, make sure that the T spring (S) presses the shaft.

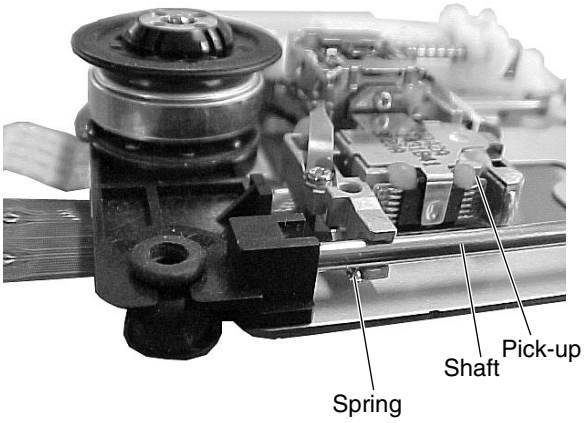
2. Pull out the part **l** of the shaft upward. Move the part **m** in the direction of the arrow and detach from the spindle base.

3. Disengage the joint **n** of the pickup and the shaft in the direction of the arrow.

4. Pull out the shaft from the pickup.

5. Remove the two screws **J** attaching the actuator.

6. Disengage the joint of the actuator and the lead spring. Pull out the lead spring.



The spring must be under the shaft when you install pick-up.

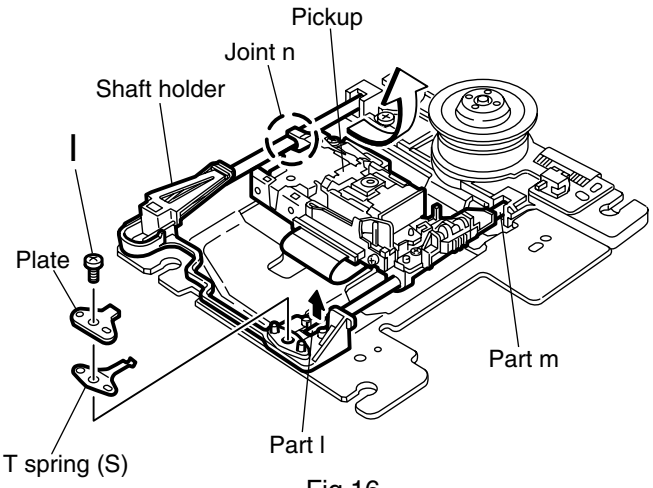


Fig.16

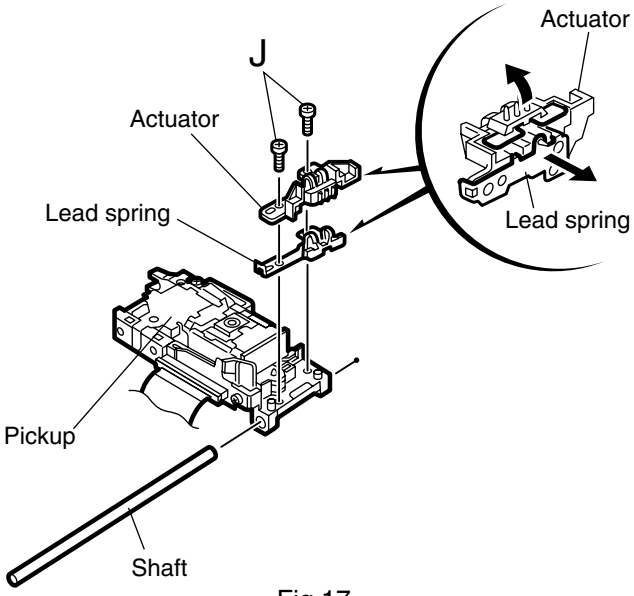


Fig.17

■ Removing the shaft holder / shaft (See Fig.18)

1. Remove the screw **K** attaching the shaft holder.

2. Remove the shaft.

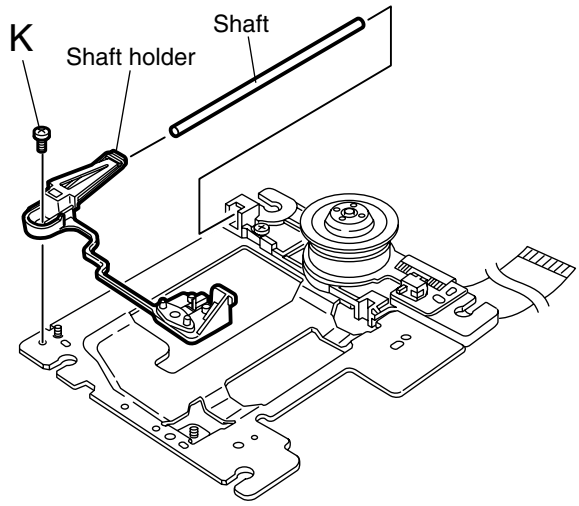


Fig.18

■ Removing the spindle motor assembly (See Fig.19 to 21)

1. Remove the three screws **L** attaching the spindle motor on the bottom of the mechanism base.

ATTENTION: When reattaching, pass the card wire extending from the spindle motor board through the notch of the spindle base.

2. Remove the three screws **M** attaching the spindle base.

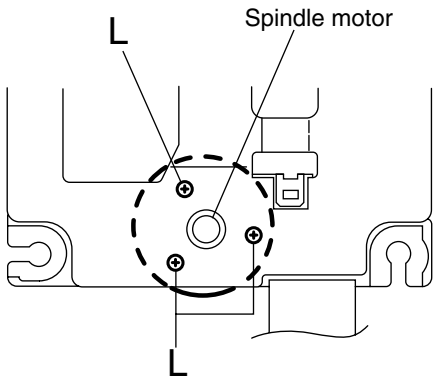


Fig.19

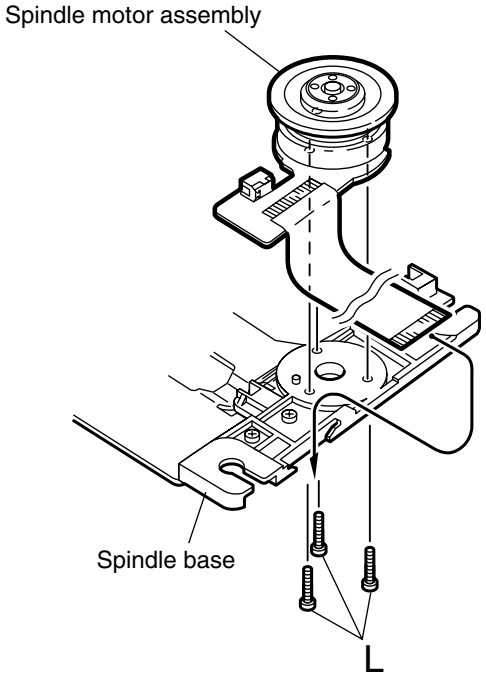


Fig.20

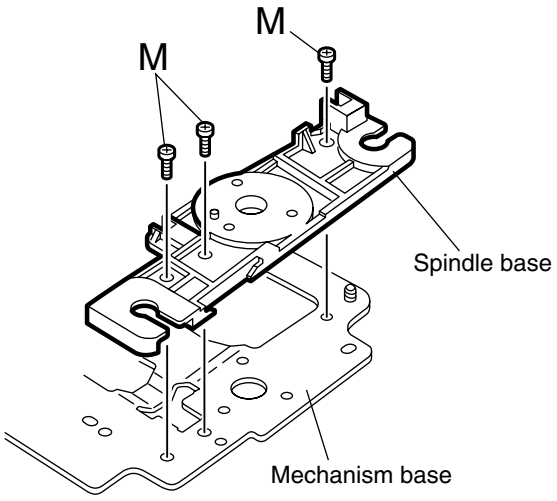


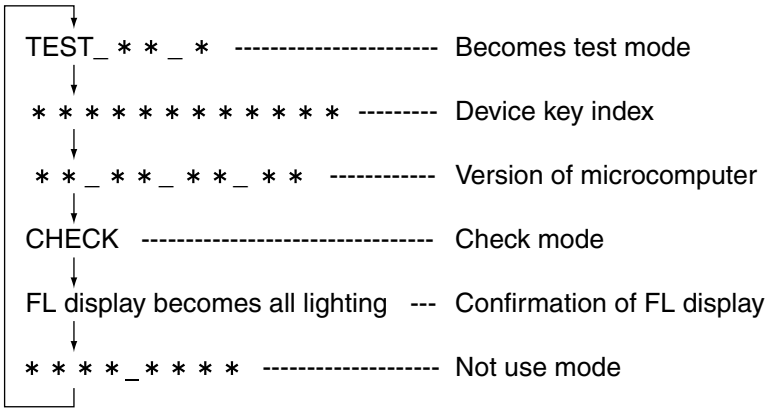
Fig.21

Adjustment method

(1) Test mode setting method

1)Take out the disc and close the tray.
2)Unplug the power plug.
3)Insert power plug into outlet while pressing both "PLAY" button and "STOP" button of the main body.
4)The player displays "TEST ＊＊ ＊" on the FL display. " ＊＊ ＊" means the player version.
5)When the power supply is turned off, test mode is released.

The mode changes as follows whenever the "CHOICE" button of remote controller is pushed in test mode.



(2) Initialization method

Please initialize according to the following procedures when microprocessor or pick-up is exchanged and when the up-grade is done.

1)Makes to test mode.
2)After "FORWARD SKIP" button (▶▶|) of the main body is pushed, "PAUSE" button is pushed.
3)DVD AUDIO indicator lights when about ten seconds pass. Then, it is initialization completion.

(3) Method of displaying device key index

1)Makes to test mode and initializes.
2)When "CHOICE" button of remote controller is pushed once, the device key index is displayed on the FL display as follows.

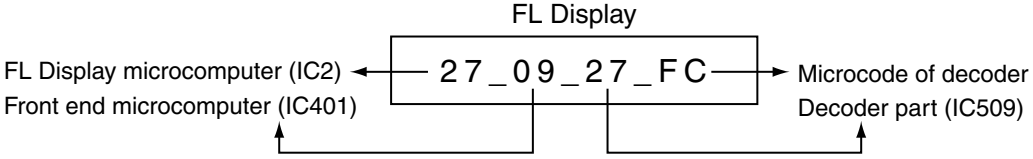
FL Display

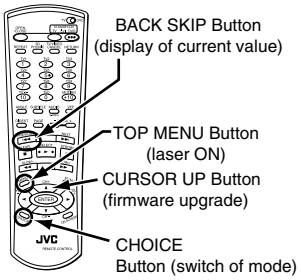
＊＊＊＊＊＊＊＊＊＊＊

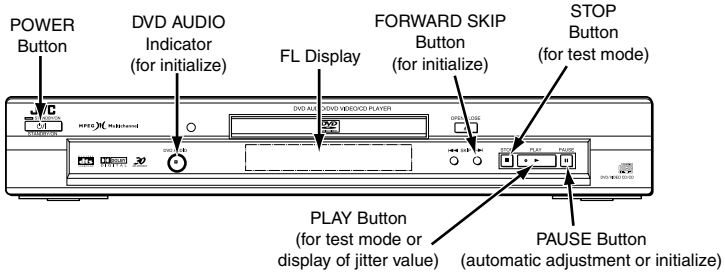
＊ is a figure or an alphabet.

(4) Method of displaying version of microcomputer

1)Makes to test mode and initializes
2)When "CHOICE" button of remote controller is pushed twice, the figure is displayed on the FL display as follows.







(5) Display of current value of laser

1)Makes to test mode and initializes
2)When "CHOICE" button of remote controller is pushed three times, It is displayed on the FL display, "CHECK".
3)The display of FL display changes from "CHECK" into "LD_ON" if the "TOP MENU" button of remote controller is pushed.
4)The laser is turned on if the "BACK SKIP" button (⏮) of remote controller is pushed in the state, and the current value of the laser is displayed on the FL display.

FL Display

LD_0034

As for the current value of the laser, the figure displayed on the FL display becomes a current value as it is by "mA" unit. becomes 34mA if displayed as 34.

5)The laser changes from CD into DVD if 3) and 4) of the above-mentioned procedures are done after the tray is opened and closed pushing the "OPEN/CLOSE" button of the main body.
(The laser changes whenever this is done. Moreover, the value displayed first is a laser electric current of DVD)

If the laser current value is 64mA or less, it is roughly good. There is a possibility to which pick-up is deteriorated, and exchange pick-up, please when there are 65mA or more laser current value.

(6) Display of jitter value

1)Makes to test mode and initializes
2)When "CHOICE" button of remote controller is pushed three times, It is displayed on the FL display, "CHECK".
3)The automatic adjustment starts when test disk (VT-501) is inserted, and "PAUSE" button of the main body is pushed.
4)When the display of the FL display changes into "CHECK OK", the "PLAY" button of the main body is pushed.
5)The jitter value is displayed on the FL display as follows.

FL Display

JIT_3978

The jitter value is displayed by the hexadecimal number and refer to the conversion table of following, please.

If the indication value is 11% or less, it can be judged by this simple checking method that the signal read precision of the set is satisfactory.
Please do "Flap adjustment of the pick-up guide shaft" when you replace the pick-up and the spindle motor when there are 11% or more jitter value.

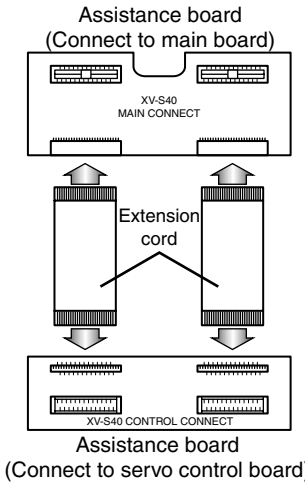
■ Jitter value

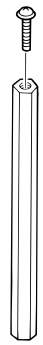
FL display	Conversion value(%)	FL display	Conversion value(%)	FL display	Conversion value(%)	FL display	Conversion value(%)
3818	4.7	3998	7.6	3B18	10.5	3C98	13.3
3828	4.8	39A8	7.7	3B28	10.6	3CA8	13.5
3838	4.9	39B8	7.8	3B38	10.7	3CB8	13.6
3848	5.1	39C8	7.9	3B48	10.8	3CC8	13.7
3858	5.2	39D8	8.1	3B58	10.9	3CD8	13.8
3868	5.3	39E8	8.2	3B68	11.1	3CE8	13.9
3878	5.4	39F8	8.3	3B78	11.2	3CF8	14.1
3888	5.5	3A18	8.5	3B88	11.3	3D18	14.3
3898	5.7	3A28	8.7	3B98	11.4	3D28	14.4
38A8	5.8	3A38	8.8	3BA8	11.5	3D38	14.5
38b8	5.9	3A48	8.9	3BB8	11.7	3D48	14.7
38c8	6.0	3A58	9.0	3BC8	11.8	3D58	14.8
38d8	6.1	3A68	9.1	3BD8	11.9	3D68	14.9
38E8	6.3	3A78	9.3	3BE8	12.0	3D78	15.0
38F8	6.4	3A88	9.4	3BF8	12.1	3D88	15.1
3918	6.6	3A98	9.5	3C18	12.4	3D98	15.3
3928	6.7	3AA8	9.6	3C28	12.5	3DA8	15.4
3938	6.9	3AB8	9.7	3C38	12.7	3DB8	15.5
3948	7.0	3AC8	9.9	3C48	12.7	3DC8	15.6
3958	7.1	3AD8	10.0	3C58	12.9	3DD8	15.7
3968	7.2	3AE8	10.1	3C68	13.0	3DE8	15.9
3978	7.3	3AF8	10.2	3C78	13.1	3DF8	16.0
3988	7.5			3C88	13.2		

(7) Flap adjustment of the pick-up guide shaft

<Tool list for adjustment>

Stud (four pieces set)
Parts No. : JIGXVS40
Extension cord set (two cord and two board)
Parts No. : EXTXVS40CB
Hex wrench for adjustment
Off-the-shelf (1.3mm)
Test disc
VT-501 or VT-502

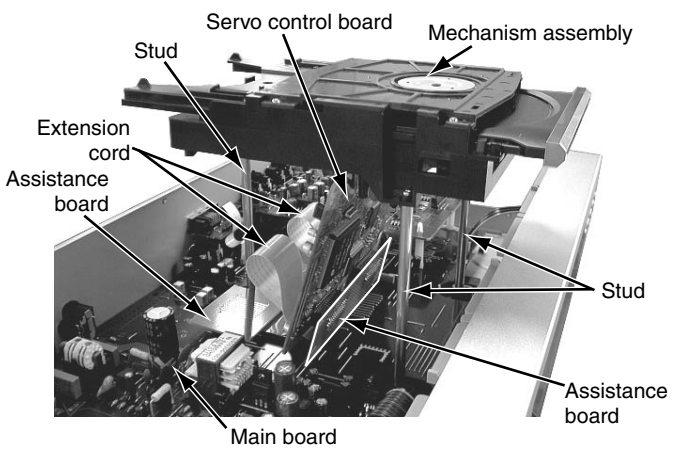


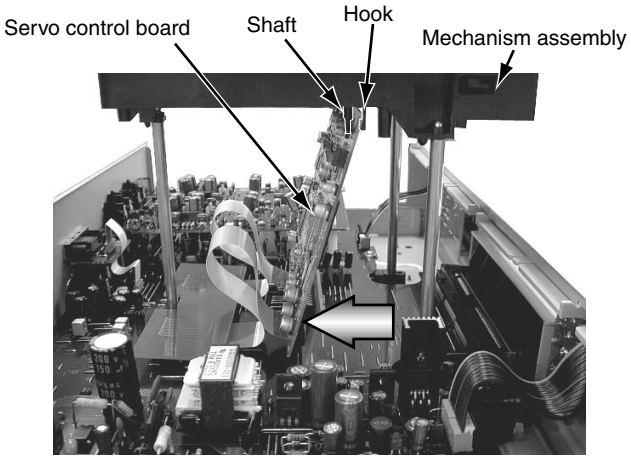


Stud
(One is not used though it is one set which consists of four units.)

<Adjustment preparation>

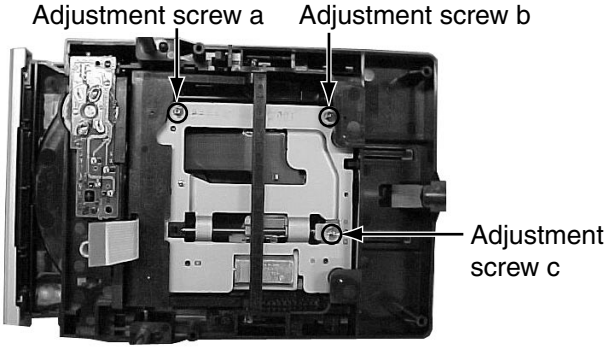
1.The mechanism assembly is made in the state from the main body from which is detached referring to the disassembly method.
2.Three studs are installed in the mechanism assembly respectively.
3.The servo control board is removed from the mechanism assembly, and puts into the state set up as shown in figure. (Each wire connected by the servo control board this time leaves the connection maintained.) Between shaft and hook of mechanism assembly of figure Board is put And, the board is inclined in the direction of the arrow on figure as much as possible.
4.The extension cord is inserted in the connector of the assistance board respectively.
The main board is connected with the servo control board as shown in figure.





<Adjustment>

1.Puts into the state to display the jitter value on the FL display referring to "Display of the jitter value".
2.The adjustment screw under the traverse mechanism is turned with hex wrench, and matches so that the jitter value displayed on the FL display may become minimum value.



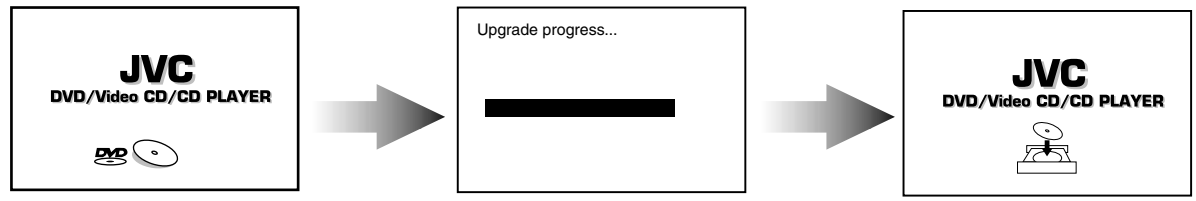
<POINT>

1.turns in the forward or the opposite direction, and makes to the position where the jitter value is good the half rotation of adjustment screw a and b(180 degrees) respectively.
2.Afterwards, adjustment screw b and c are turned in the same way, and makes to the best position.

(8) Upgrading of firmware

Please do the up-grade of the firmware after exchanging IC509,IC512,IC513.

1)The power supply is turned on pushing the "POWER" button.
2)The up-grade disk is inserted.
3)When FL display of the main body changes from "READING" into "UPGRADE", cursor UP button (▲) of remote controller is pushed.
4)The up-grade starts if the entire screen becomes blue and it is displayed, "Upgrade progress".
5)The tray opens automatically, the up-grade disk is removed.
6)The up-grade ends if the tray closes automatically, and the screen returns to the normal screen.
7)Please confirm the version of the microcomputer after makes to test mode and initializes.



After inserting the up-grade disk　　Upgrading (blue screen)　　When up-grade is completed

The disk for the up-grade is usually one piece. The disk becomes two pieces according to the version. In that case, please note the undermentioned content.

* The up-grade is done by using the STEP1 disk according to "1)" and "4)" of the above-mentioned procedure.
* The tray opens automatically after a few seconds and exchange for the disk of STEP2, please.
* The tray closes automatically. There is only about five second time that the tray opens this time, and replace the disk quickly between those, please.

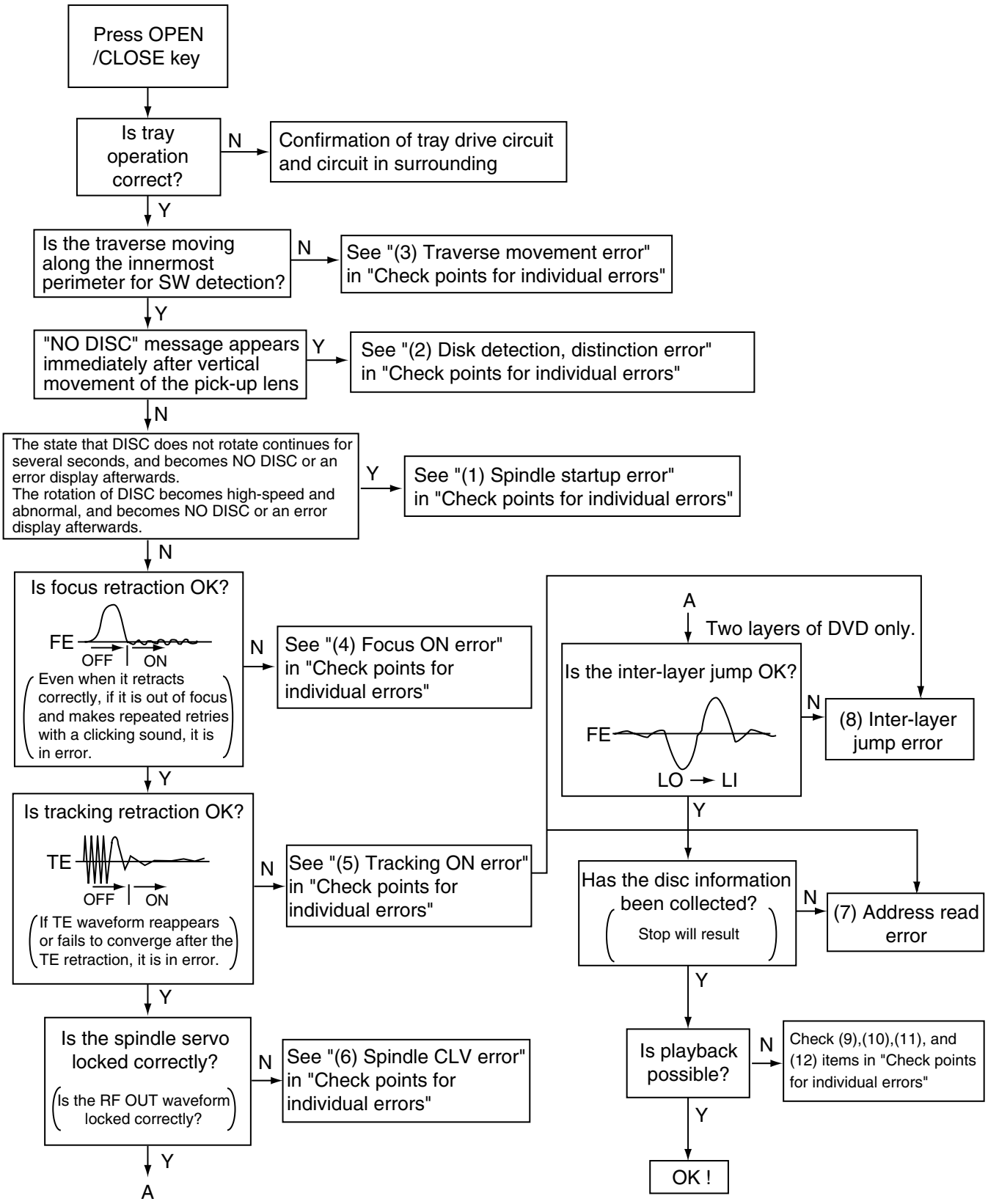
ATTENTION

- When the tray shuts with the STEP1 disk left for the tray
  The up-grade starts again and exchange for the STEP2 disk, please when the tray opens automatically.
- When the tray closes with there no disk in the tray
  The tray opens automatically and turn off the power supply once, please pushing the "POWER" button in the state. When the STANDBY indicator lights, the STEP2 disk is putting in the tray and "POWER" button is pushed.

* After the up-grade ends, the STEP2 disk is removed because the tray opens automatically.
* Afterwards, it is the same as 6),7) of the above-mentioned procedures.

Troubleshooting

Servo volume



Check points for each error

(1) Spindle start error

1.Defective spindle motor

*Are there several ohms resistance between each pin of CN201 "5-6","6-7","5-7"?
(The power supply is turned off and measured.)

*Is the sign wave of about 100mVp-p in the voltage had from each terminal?
[CN201"9"(H1-),"10"(H1+),"11"(H2-),"12"(H2+),"13"(H3-),"14"(H3+)]

2.Defective spindle motor driver (IC251)

*Has motor drive voltage of a sine wave or a rectangular wave gone out to each terminal(SM1~3)
of CN201"5,6,7" and IC251"2,4,7"?

*Is FG pulse output from the terminal of IC251"24"(FG) according to the rotation of the motor?

*Is it "L(about 0.9V)" while terminal of IC251"15"(VH) is rotating the motor?

3.Has the control signal come from servo IC or the microcomputer?

*Is it "L" while the terminal of IC251"18"(SBRK) is operating?
Is it "H" while the terminal of IC251"23"(/SPMUTE) is operating?

*Is the control signal input to the terminal of IC251"22"(EC)?
(changes from VHALF voltage while the motor is working.)

*Is the VHALF voltage input to the terminal of IC251"21"(ECR)?

4.Is the FG signal input to the servo IC?

*Is FG pulse input to the terminal of IC201"53"(FG) according to the rotation of the motor?

(2) Disc Detection, Distinction error (no disc, no RFENV)

* Laser is defective.
* Front End Processor is defective (IC101).
* APC circuit is defective. --- Q101,Q102.
* Pattern is defective. --- Lines for CN101 - All patterns which relate to pick-up and patterns between IC101
* Servo IC is defective (IC201).
* IC101 --- For signal from IC101 to IC201, is signal output from IC101 "20" (ASOUT) and
IC101 "41"(RFENV) and IC101 "22" (FEOUT)?

(3) Traverse movement NG

1.Defective traverse driver
*Has the voltage come between terminal of CN101 "1" and "2" ?

2.Defective BTL driver (IC271)
*Has the motor drive voltage gone out to IC271"17" or "18"?

3.Has the control signal come from servo IC or the microcomputer?
*Is it "H" while the terminal of IC271"9"(STBY1) ?
*TRSDRV Is the signal input? (IC201 "51")

4.TRVSW is the signal input from microcomputer? (IC401 "50")

(4) Focus ON NG

* Is FE output ? --- Pattern, IC101
* Is FODRV signal sent ? (R279) --- Pattern, IC201 "5"
* Is driving voltage sent ?
  IC271 "13", "14" --- If NG, pattern, driver, mechanical unit .
* Mechanical unit is defective.

(5) Tracking ON NG

* When the tracking loop cannot be drawn in, TE shape of waves does not settle.
* Mechanical unit is defective.
  Because the self adjustment cannot be normally adjusted, the thing which cannot be normally drawn in is thought.
* Periphery of driver (IC271)
  Constant or IC it self is defective.
* Servo IC (IC201)
  When improperly adjusted due to defective IC.

(6) Spindle CLV NG

* IC101 -- "35"(RF OUT), "30"(ARF-), "31(ARF+).
* Does not the input or the output of driver's spindle signal do the grip?
* Has the tracking been turned on?
* Spindle motor and driver is defective.
* Additionally, "IC101 and IC201" and "Mechanism is defective(jitter)", etc. are thought.

(7) Address read NG

* Besides, the undermentioned cause is thought though specific of the cause is difficult because various factors are thought.
  Mechanism is defective. (jitter)
  IC201, IC301, IC401.
  The disc is dirty or the wound has adhered.

(8) Between layers jump NG (double-layer disc only)

Mechanism defective
Defect of driver's IC(IC271)
Defect of servo control IC(IC201)

(9) Neither picture nor sound is output

1.It is not possible to search
*Has the tracking been turned on?
*To "(5) Tracking ON NG" in "Check points for each error" when the tracking is not normal.
*Is the feed operation normal?
To "(3) traverse movement NG" in "Check points for each error" when it is not normal.
Are not there caught of the feeding mechanism etc?

(10) Picture is distorted or abnormal sound occurs at intervals of several seconds.

Is the feed operation normal?
Are not there caught of the feeding mechanism etc?

(11) Others

The image is sometimes blocked, and the image stops.
The image is blocked when going to outer though it is normal in surroundings in the disk and the stopping symptom increases.

} There is a possibility with bad jitter value for such a symptom.

(12) CD During normal playback operation

a) Is TOC reading normal?
Displays total time for CD-DA.
Shifts to double-speed mode for V-CD.

↓ YES

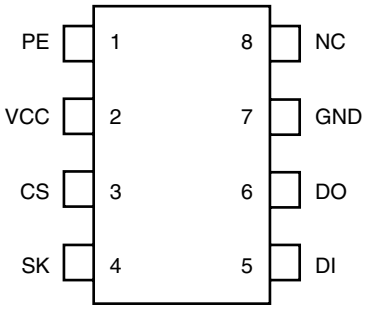
b)Playback possible? → NO

*--:-- is displayed during FL search.
According to [It is not possible to search] for DVD(9), check the feed and tracking systems.
*No sound is output although the time is displayed.(CA-DA)
DAC, etc, other than servo.
*The passage of time is not stable, or picture is abnormal.(V-CD)
*The wound of the disc and dirt are confirmed.

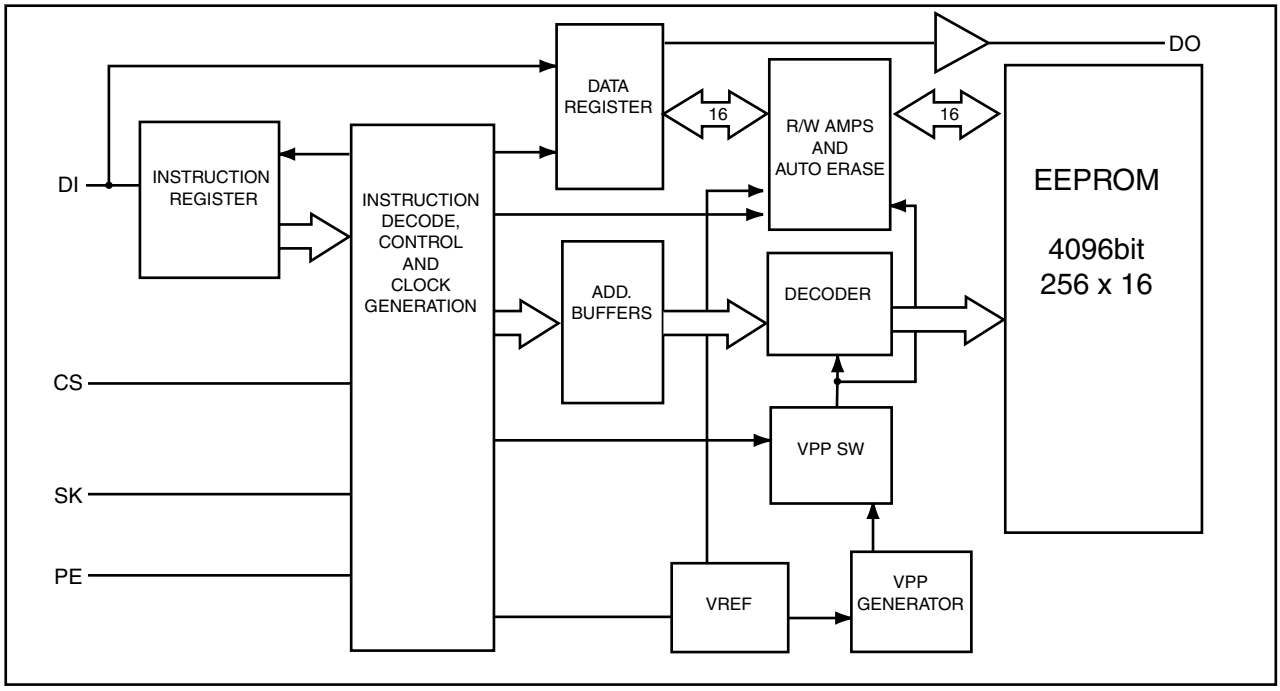
Description of major ICs

■ AK93C65AF-X(IC403):EEPROM

1.Pin layout



2.Block diagram



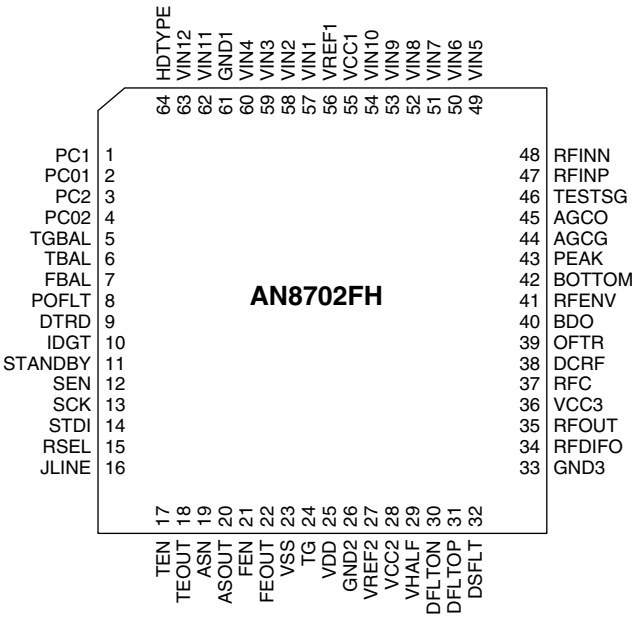
3.Pin function

Pin No.	Symbol	Description
1	PE	Program enable (Resistance with built-in pull-up)
2	VCC	Power supply terminal
3	CS	Chip select
4	SK	Serial clock input
5	DI	Serial data input
6	DO	Serial data output
7	GND	Connect to ground
8	NC	Non connect

Attention : Resistors of pin No.1(PE) are 2.5M ohm.

■ AN8702FH(IC101):Frontend processor

1.Pin layout

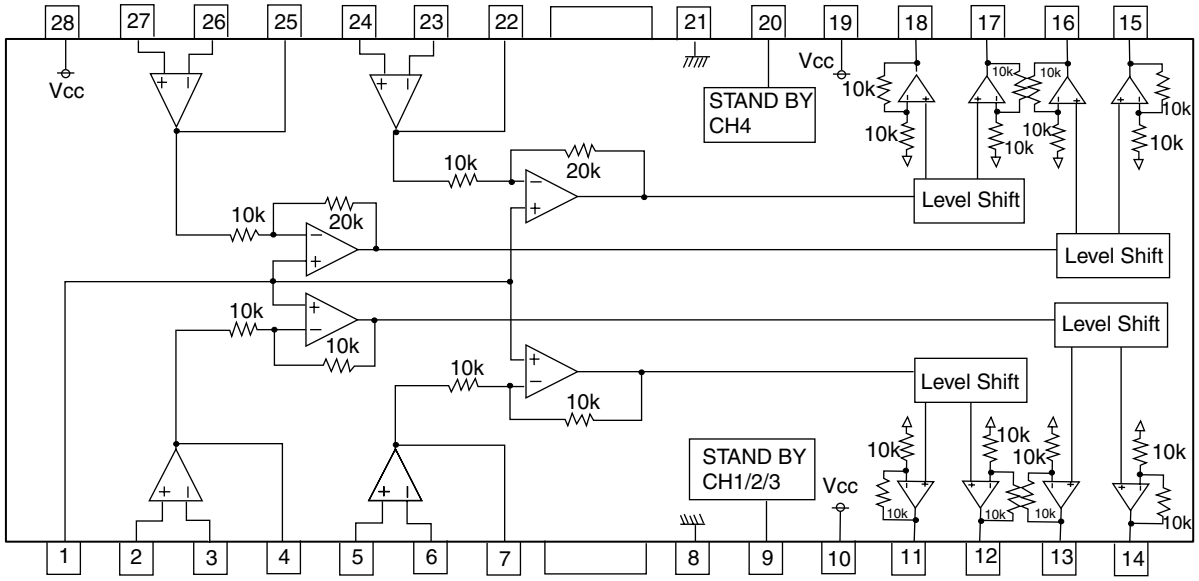


2.Pin function

Pin No.	Symbol	I/O	Description	Pin No.	Symbol	I/O	Description
1	PC1	I	Laser input terminal (DVD)	34	RFDIFO	O	Radial differential motion output terminal
2	PC01	O	Laser drive signal output terminal (DVD)	35	RFOUT	-	Connect to TP101
3	PC2	I	Laser input terminal (CD)	36	VCC3	-	Power supply terminal 5V
4	PC02	O	Laser drive signal output terminal (CD)	37	RFC	O	Filter for RF delay correction AMP.
5	TGBAL	I	Tangential phase balance control terminal	38	DCRF	O	All addition amplifier capacitor terminal
6	TBAL	I	Tracking balance control terminal	39	OFTR	O	OFTR output terminal
7	FBAL	I	Focus balance control terminal	40	BDO	O	BDO output terminal
8	POFLT	O	Track detection threshold level terminal	41	RFENV	O	RF envelope output terminal
9	DTRD	I	Data slice part data read signal input terminal	42	BOTTOM	O	Bottom envelope detection filter terminal
			(For RAM)	43	PEAK	O	Peak envelope detection filter terminal
10	IDGT	I	Data slice part address part gate signal input	44	AGCG	O	AGC amplifier gain control terminal
			terminal(For RAM)	45	AGCO	O	AGC amplifier level control terminal
11	STANDBY	I	Standby mode control terminal	46	TESTSG	I	TEST signal input terminal
12	SEN	I	SEN(Serial data input terminal)	47	RFINP	I	RF signal positive input terminal
13	SCK	I	SCK(Serial data input terminal)	48	RFINN	I	RF signal negative input terminal
14	STDI	I	STDI(Serial data input terminal)	49	VIN5	I	Focus input of external division into two terminal
15	RSEL	I	Standard electric current terminal	50	VIN6	I	Focus input of external division into two terminal
16	JLINE	I	Electric current setting terminal of JLine	51	VIN7	-	Non connect
17	TEN	I	Reversing input terminal of tracking error output AMP.	52	VIN8	-	Non connect
18	TEOUT	O	Tracking error signal output terminal	53	VIN9	I	Focus input of external division into two terminal
19	ASN	I	Offset adjusting terminal 1	54	VIN10	I	Focus input of external division into two terminal
20	ASOUT	O	Full adder signal output terminal	55	VCC1	-	Power supply terminal 5V
21	FEN	I	Focus error output amplifier reversing input terminal	56	VREF1	O	VREF1 voltage output terminal
22	FEOUT	O	Focus error signal output terminal	57	VIN1	I	External division into four (DVD/CD) RF input
23	VSS	-	Connect to GND				terminal 1
24	TG	O	Tangential phase error signal output terminal	58	VIN2	I	External division into four (DVD/CD) RF input
25	VDD	-	Power supply terminal 3V				terminal 2
26	GND2	-	Connect to GND	59	VIN3	I	External division into four (DVD/CD) RF input
27	VREF2	O	VREF2 voltage output terminal				terminal 3
28	VCC2	-	Power supply terminal 5V	60	VIN4	I	External division into four (DVD/CD) RF input
29	VHALF	O	VHALF voltage output terminal				terminal 4
30	DFLTON	O	Reversing output terminal of filter AMP.	61	GND1	-	Connect to GND
31	DFLTOP	O	Filter AMP. output terminal	62	VIN11	I	3 beam sub input terminal 2 (CD)
32	DSFLT	I	Capacity connection terminal for filter output	63	VIN12	I	3 beam sub input terminal 1 (CD)
33	GND3	-	Connect to GND	64	HDTYPE	-	Connect to ground

■ BA5983FM-X (IC271) : 4CH Driver

1.Block diagram

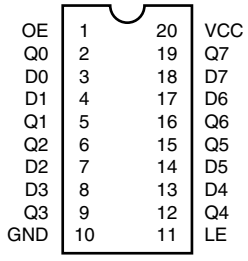


2.Pin function

Pin No.	Symbol	I/O	Description	Pin No.	Symbol	I/O	Description
1	BIAS IN	I	Input for Bias-amplifier	15	VO4(+)	O	Non inverted output of CH4
2	OPIN1(+)	I	Non inverting input for CH1 OP-AMP	16	VO4(-)	O	Inverted output of CH4
3	OPIN1(-)	I	Inverting input for CH1 OP-AMP	17	VO3(+)	O	Non inverted output of CH3
4	OPOUT1	O	Output for CH1 OP-AMP	18	VO3(-)	O	Inverted output of CH3
5	OPIN2(+)	I	Non inverting input for CH2 OP-AMP	19	PowVcc2	-	Vcc for CH3/4 power block
6	OPIN2(-)	I	Inverting input for CH2 OP-AMP	20	STBY2	I	Input for Ch4 stand by control
7	OPOUT2	O	Output for CH2 OP-AMP	21	GND	-	Substrate ground
8	GND	-	Substrate ground	22	OPOUT3	O	Output for CH3 OP-AMP
9	STBY1	I	Input for CH1/2/3 stand by control	23	OPIN3(-)	I	Inverting input for CH3 OP-AMP
10	PowVcc1	-	Vcc for CH1/2 power block	24	OPIN3(+)	I	Non inverting input for CH3 OP-AMP
11	VO2(-)	O	Inverted output of CH2	25	OPOUT4	O	Output for CH4 OP-AMP
12	VO2(+)	O	Non inverted output of CH2	26	OPIN4(-)	I	Inverting input for CH4 OP-AMP
13	VO1(-)	O	Inverted output of CH1	27	OPIN4(+)	I	Non inverting input for CH4 OP-AMP
14	VO1(+)	O	Non inverted output of CH1	28	PreVcc	-	Vcc for pre block

■ 74LCX373MTC-X(IC512,IC513)

1.Pin layout



2.Pin function

Symbol	Description
D0~D7	Data inputs
LE	Latch enable input
$\overline{OE}$	Output enable input
Q0~Q7	3-State latch outputs

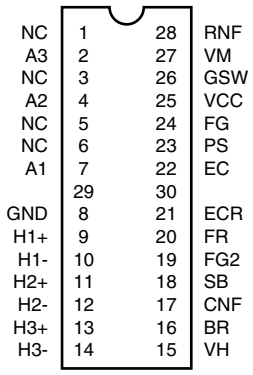
3.Truth table

INPUTS			OUTPUTS
LE	$\overline{OE}$	Dn	Qn
X	H	X	Z
H	L	L	L
H	L	H	H
L	L	X	Q0

H = HIGH Voltage level
L = LOW Voltage level
Z = High impedance
X = Immaterial
Q0 = Previous Q0 before HIGH to LOW transition of latch enable

■ BA6664FM-X(IC251):Spindle motor driver

1.Pin layout

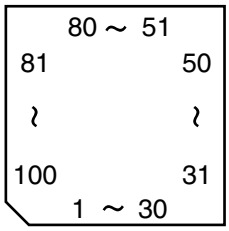


2.Pin function

Pin No.	Symbol	I/O	Description
1	NC	-	Non connect
2	A3	O	Output 3 for spindle motor
3	NC	-	Non connect
4	A2	O	Output 2 for spindle motor
5	NC	-	Non connect
6	NC	-	Non connect
7	A1	O	Output 1 for spindle motor
8	GND	-	Connect to ground
9	H1+	I	Positive input for hall input AMP 1
10	H1-	I	Negative input for hall input AMP 2
11	H2+	I	Positive input for hall input AMP 2
12	H2-	I	Negative input for hall input AMP 2
13	H3+	I	Positive input for hall input AMP 3
14	H3-	I	Negative input for hall input AMP 3
15	VH	I	Hall bias terminal
16	BR	-	Non connect
17	CNF	-	Capacitor connection pin for phase compensation
18	SB	O	Short brake terminal
19	FG2	-	Non connect
20	FR	-	Non connect
21	ECR	I	Torque control standard voltage input terminal
22	EC	I	Torque control voltage input terminal
23	PS	O	Start/stop switch (power save terminal)
24	FG	O	FG signal output terminal
25	VCC	-	Power supply for signal division
26	GSW	O	Gain switch
27	VM	-	Power supply for driver division
28	RNF	O	Resistance connection pin for output current sense
29		-	Connect to ground
30		-	Connect to ground

■ JCV8005-3(IC701):CPPM (Content protection for pre-recorded media)

1.Pin layout



2.Pin function

JCV8005-3 1/2

Pin No.	Symbol	I/O	Description
1	VDD	-	Power supply
2	GND	-	Connect to ground
3~10	HDATA0~7	I/O	Data input/output terminal (both by 8 bits)
11	VDD	-	Power supply
12	GND	-	Connect to ground
13~20	HADDR0~7	I	8 bit address bus to internal address (connect to host)
21	VDD	-	Power supply
22	GND	-	Connect to ground
23	NCS	I	Chip select signal from host
24	NRD	I	Data read signal from host
25	NWR	I	Data write signal from host
26	NIRQ	O	Interrupt of request to host
27	WAIT	O	Wait demand to host
28	NRESET	I	Reset signal from host
29	VDD	-	Power supply
30	GND	-	Connect to ground
31	VDD	-	Power supply
32	GND	-	Connect to ground
33~36	STD7~4_OUT	O	Data output to DVD decoder (8 bits)
37	GND	-	Connect to ground
38~41	STD3~0_OUT	O	Data output to DVD decoder (8 bits)
42	VDD	-	Power supply
43	GND	-	Connect to ground
44	REQ_IN	I	Request signal for forwarding control by decoder
45	DACK_OUT	O	Output signal to decoder which shows effective data
46	STCLK_OUT	O	Data strobe signal to decoder
47	SYNC_OUT	O	Sector sink signal to decoder
48	STERROUT	-	Non connect
49	VDD	-	Power supply
50	GND	-	Connect to ground
51	VDD	-	Power supply
52	GND	-	Connect to ground
53	G_NRD	I	Glue logic input signal from host
54	G_NWR	I	Glue logic input signal from host
55	G_WITODC	I	Glue logic input signal from front end
56	G_CSDEC	I	Glue logic input signal from host
57	G_WITDEC	I	Glue logic input signal from decoder
58	VDD	-	Power supply

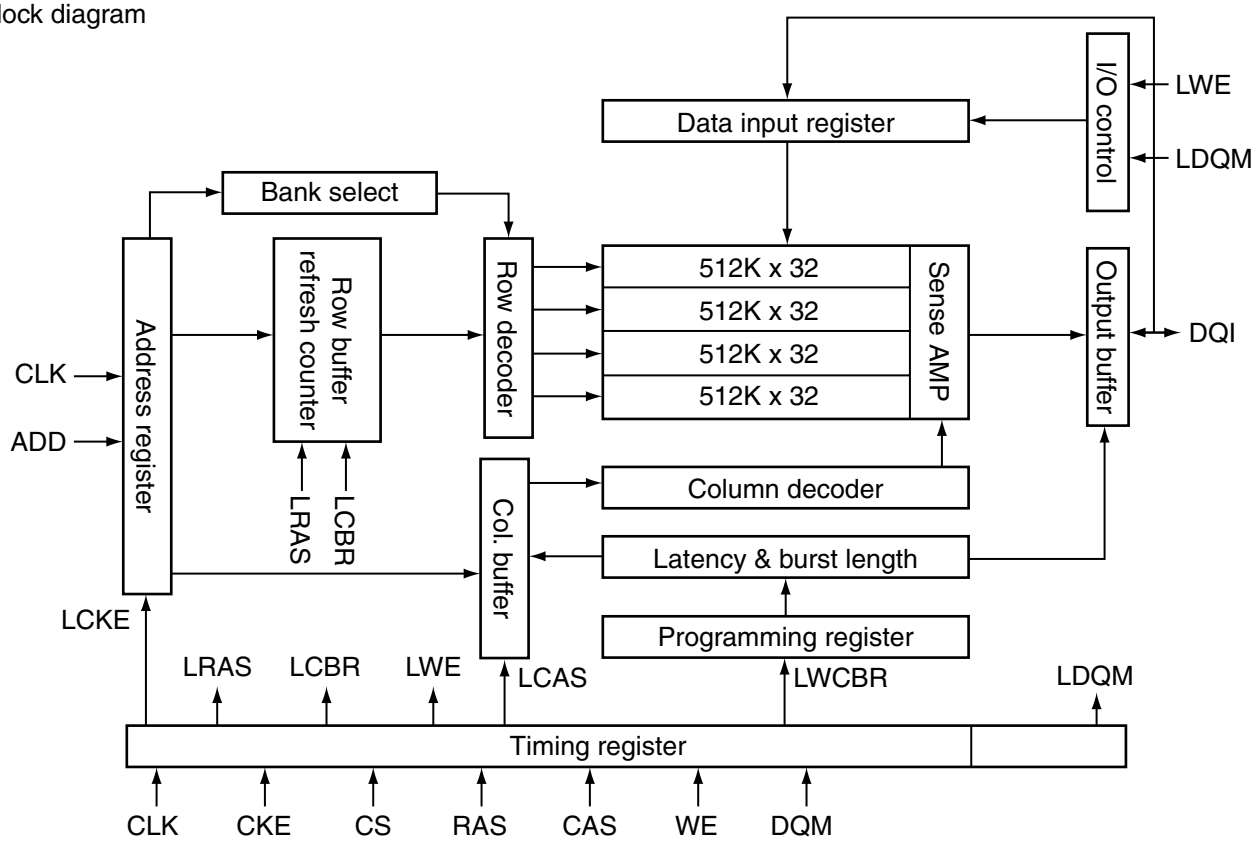
2.Pin function

JCV8005-3 2/2

Pin No.	Symbol	I/O	Description
59	GND	-	Connect to ground
60	WAIT1	O	Glue logic output signal to host
61	WAIT2	-	Non connect
62	WAITIN	I	Glue logic input signal (connect to 27 pin)
63	VDD	-	Power supply
64	GND	-	Connect to ground
65	TEST_IN	I	Connect to ground
66,67	NC	-	Non connect
68	VDD	-	Power supply
69	GND	-	Connect to ground
70	CLKOCTL	I	Input terminal for crystal-oscillator circuit on/off control
71	NC	-	Non connect
72	OSCI	I	Crystal oscillation terminal (input side)
73	OSCO	O	Crystal oscillation terminal (output side)
74	NC	-	Non connect
75	VDD	-	Power supply
76	GND	-	Connect to ground
77	33OUT	O	Oscillation output terminal
78	169OUT	O	Oscillation output terminal
79	VDD	-	Power supply
80	GND	-	Connect to ground
81	VDD	-	Power supply
82	GND	-	Connect to ground
83	STERR_IN	I	Presence of data error from front end
84	SYNC_IN	I	Sector sink signal from front end
85	STCLK_IN	I	Data clock signal from front end
86	DACK_IN	I	Signal which shows effective data from front end
87	REQ_OUT	O	Request signal for forwarding control to front end
88	VDD	-	Power supply
89	GND	-	Connect to ground
90~93	STD0~3_IN	I	Data input from front end (8 bits)
94	GND	-	Connect to ground
95~98	STD4~7_IN	I	Data input from front end (8 bits)
99	VDD	-	Power supply
100	GND	-	Connect to ground

■ K4S643232E-TC70(IC505):DRAM

1.Block diagram



2.Pin function

Symbol	Description	Symbol	Description
CLK	System clock signal input	DQM0~3	Data input/output mask
CS	Chip select input	DQ0~31	Data input/output
CKE	Clock enable	VDD	Power supply terminal
A0~A10	Address	VSS	Connect to ground
BA0,1	Bank select address	VDDQ	Power supply terminal
RAS	Row address strobe	VSSQ	Connect to ground
CAS	Column address strobe	NC	Non connect
WE	Write enable		

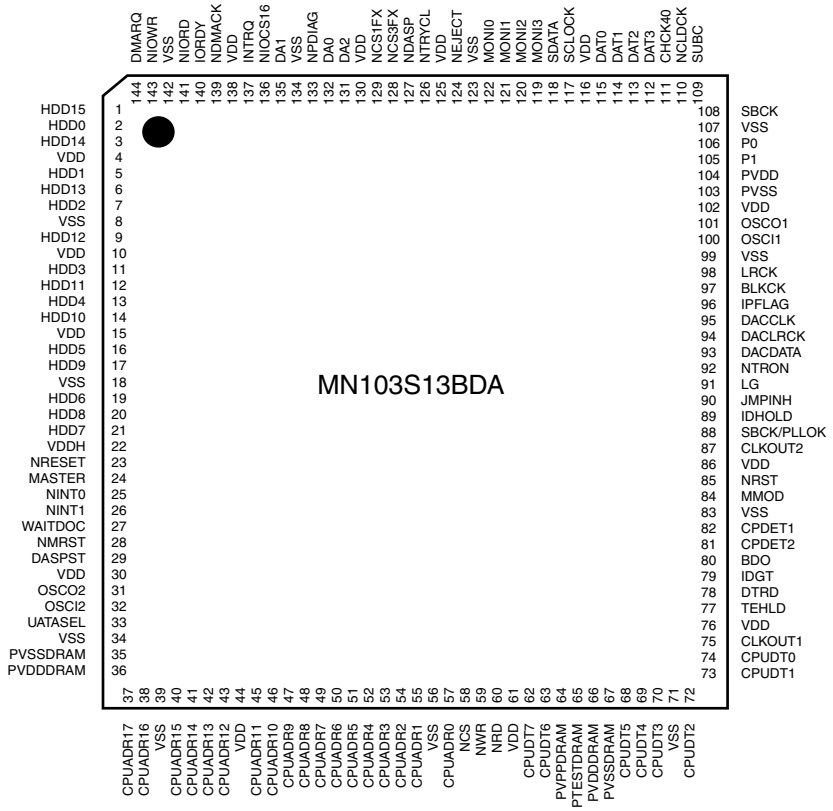
■ MN102L25GGT3(IC401):Unit CPU

Pin function

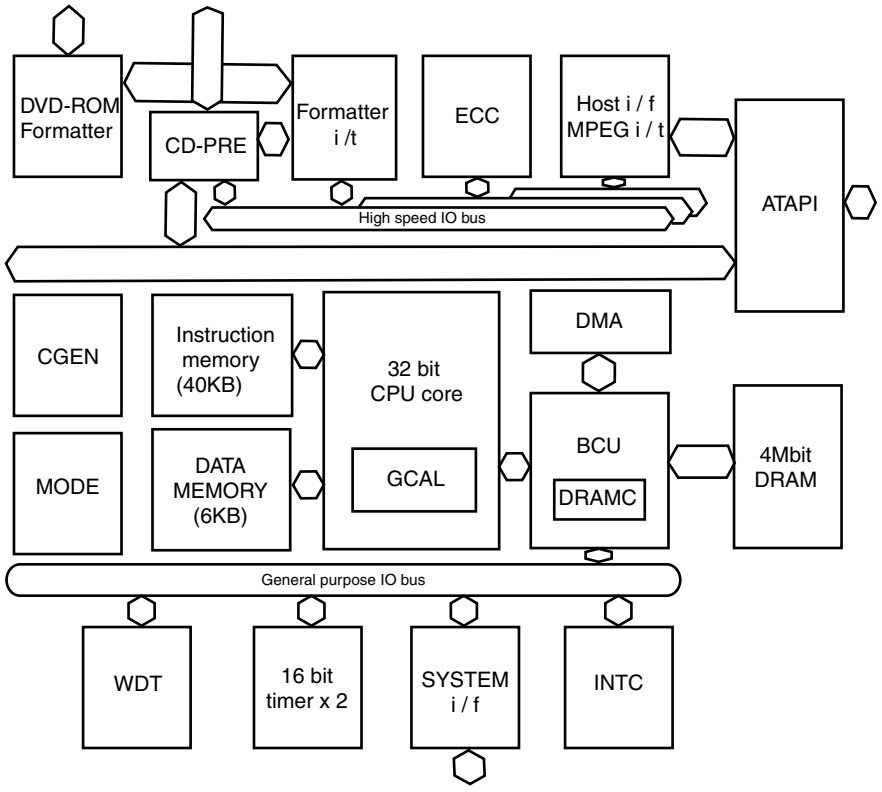
Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
1	WAIT	I	Micon wait signal input	51	SWUPDN	I	Elevator UP/DOWN switch detect
2	RE	O	Read enable	52	SWOPEN	I	Tray OPEN/CLOSE switch detect
3	SPMUTE	O	Spindle muting output to IC251	53	ADSCEN	O	Serial enable signal for ADSC
4	WEN	O	Write enable	54	VDD	-	Power supply
5	LMMUTE	O	Loading motor standby control	55	FEPEN	O	Serial enable signal for FEP
6	CS1	O	Chip select for ODC	56	SLEEP	O	Standby signal for FEP
7	CS2	O	Chip select for CPPM	57	BUSY	-	Non connect
8	CS3	-	Non connect	58	REQ	O	Communication Request
9	DRVMUTE	O	Driver mute	59	CIRCEN	O	CIRC command select
10	SPKICK	O	Spin kick (Non connect)	60	-	-	Non connect
11	LSIRST	O	LSI reset	61	VSS	-	Ground
12	WORD	O	Bus selection input	62	EPCS	O	EEPROM chip select
13	A0	O	Address bus 0 for CPU	63	EPSK	O	EEPROM clock
14	A1	O	Address bus 1 for CPU	64	DPDI	I	EEPROM data input
15	A2	O	Address bus 2 for CPU	65	EPDO	O	EEPROM data output
16	A3	O	Address bus 3 for CPU	66	VDD	-	Power supply
17	VDD	-	Power supply	67	SCLKO	I	Communication clock
18	SYSCLK	-	Connect to TP169	68	S2UDT	I	Communication input data
19	VSS	-	Ground	69	U2SDT	O	Communication output data
20	XI	-	Not use (Connect to vss)	70	CPSCK	O	Clock for ADSC serial
21	XO	-	Connect to TP170	71	SDIN	I	ADSC serial data input
22	VDD	-	Power supply	72	SDOUT	O	ADSC serial data output
23	OSCI	I	Clock signal input	73	-	-	Not use
24	OSCO	O	Clock signal output	74	-	-	Not use
25	MODE	I	CPU Mode selection input	75	NMI	-	Not use
26	A4	O	Address bus 4 for CPU	76	ADSCIRQ	I	Interrupt input of ADSC
27	A5	O	Address bus 5 for CPU	77	ODCIRQ	I	Interrupt input of ODC
28	A6	O	Address bus 6 for CPU	78	DECIRQ	I	Interrupt input of ZIVA
29	A7	O	Address bus 7 for CPU	79	CSSIRQ	-	Not use
30	A8	O	Address bus 8 for CPU	80	ODCIRQ2	I	Interruption of system control
31	A9	O	Address bus 9 for CPU	81	ADSEP	I	Address data selection input
32	A10	O	Address bus 10 for CPU	82	RST	I	Reset input
33	A11	O	Address bus 11 for CPU	83	VDD	-	Power supply
34	VDD	-	Power supply	84	TEST1	I	Test signal 1 input
35	A12	O	Address bus 12 for CPU	85	TEST2	I	Test signal 2 input
36	A13	O	Address bus 13 for CPU	86	TEST3	I	Test signal 3 input
37	A14	O	Address bus 14 for CPU	87	TEST4	I	Test signal 4 input
38	A15	O	Address bus 15 for CPU	88	TEST5	I	Test signal 5 input
39	A16	O	Address bus 16 for CPU	89	TEST6	I	Test signal 6 input
40	A17	O	Address bus 17 for CPU	90	TEST7	I	Test signal 7 input
41	A18	-	Non connect	91	TEST8	I	Test signal 8 input
42	A19	-	Non connect	92	VSS	-	Ground
43	VSS	-	Ground	93	D0	I/O	Data bus 0 of CPU
44	A20	-	Non connect	94	D1	I/O	Data bus 1 of CPU
45	TXSEL	-	Connect to TP910	95	D2	I/O	Data bus 2 of CPU
46	HAGUP	O		96	D3	I/O	Data bus 3 of CPU
47	TCLOSE	I/O	Tray close signal	97	D4	I/O	Data bus 4 of CPU
48	TOPEN	I/O	Tray open signal	98	D5	I/O	Data bus 5 of CPU
49	HMFON			99	D6	I/O	Data bus 6 of CPU
50	TRVSW	I	Detection switch of traverse inside	100	D7	I/O	Data bus 7 of CPU

■ MN103S13BDA(IC301):Optical disc controller

1.Pin layout



2.Block diagram



3.Pin function (1/3)

MN103S13BDA

Pin No.	Symbol	I/O	Description
1	HDD15	I/O	ATAPI Data
2	HDD0	I/O	ATAPI Data
3	HDD14	I/O	ATAPI Data
4	VDD	-	Power supply 3V
5	HDD1	I/O	ATAPI Data
6	HDD13	I/O	ATAPI Data
7	HDD2	I/O	ATAPI Data
8	VSS	-	Connect to GND
9	HDD12	I/O	ATAPI Data
10	VDD	-	Power supply 2.7V
11	HDD3	I/O	ATAPI Data
12	HDD11	I/O	ATAPI Data
13	HDD4	I/O	ATAPI Data
14	HDD10	I/O	ATAPI Data
15	VDD	-	Power supply 3V
16	HDD5	I/O	ATAPI Data
17	HDD9	I/O	ATAPI Data
18	VSS	-	Connect to GND
19	HDD6	I/O	ATAPI Data
20	HDD8	I/O	ATAPI Data
21	HDD7	I/O	ATAPI Data
22	VDDH		
23	NRESET	I	ATAPI Reset input
24	MASTER	I/O	ATAPI Master/slave select
25	NINT0	O	Interruption of system control 0
26	NINT1	O	Interruption of system control 1
27	WAITDOC	O	Wait control of system control
28	NMRST	O	Reset of system control (Connect to TP302)
29	DASPST	I	Setting of initial value of DASP signal
30	VDD	-	Power supply 3V
31	OSCO2	O	Non connect
32	OSCI2	I	Non connect
33	UATASEL	I	Connect to VSS
34	VSS	-	Connect to GND
35	PVSSDRAM		Connect to VSS
36	PVDDDRAM		Connect to VDD(2.7V)
37	CPUADR17	I	System control address
38	CPUADR16	I	System control address
39	VSS	-	Connect to GND
40	CPUADR15	I	System control address
41	CPUADR14	I	System control address
42	CPUADR13	I	System control address
43	CPUADR12	I	System control address
44	VDD	-	Power supply 2.7V
45	CPUADR11	I	System control address
46	CPUADR10	I	System control address
47	CPUADR9	I	System control address
48	CPUADR8	I	System control address
49	CPUADR7	I	System control address
50	CPUADR6	I	System control address

3.Pin function (2/3)

MN103S13BDA

Pin No.	Symbol	I/O	Description
51	CPUADR5	I	System control address
52	CPUADR4	I	System control address
53	CPUADR3	I	System control address
54	CPUADR2	I	System control address
55	CPUADR1	I	System control address
56	VSS	-	Connect to GND
57	CPUADR0	I	System control address
58	NCS	I	System control chip select
59	NWR	I	Writing system control
60	NRD	I	Reading system control
61	VDD	-	Power supply 3V
62	CPUDT7	I/O	System control data
63	CPUDT6	I/O	System control data
64	PVPPDRAM	O	Connect to VSS
65	PTESTDRAM	I	Connect to VSS
66	PVDDDRAM		Connect to VDD(2.7V)
67	PVSSDRAM		Connect to VSS
68	CPUDT5	I/O	System control data
69	CPUDT4	I/O	System control data
70	CPUDT3	I/O	System control data
71	VSS	-	Connect to GND
72	CPUDT2	I/O	System control data
73	CPUDT1	I/O	System control data
74	CPUDT0	I/O	System control data
75	CLKOUT1	O	Clock signal output (16.9/11.2/8.45MHz)
76	VDD	-	Power supply 3V
77	TEHLD	O	Mirror gate (Connect to TP141)
78	DTRD	O	Data frequency control switch (Connect to TP304)
79	IDGT	O	CAPA switch
80	BDO	I	RF Dropout/BCA data
81	CPDET2	I	Outer capacity detection
82	CPDET1	I	Inner capacity detection
83	VSS	-	Connect to GND
84	MMOD	I	Connect to VSS
85	NRST	I	System reset
86	VDD	-	Power supply 3V
87	CLKOUT2	O	Clock 16.9MHz
88	SBCK/PLLOK	O	Flame mark detection
89	IDOHOLD	O	ID gate for tracking holding
90	JMPINH	O	Jump prohibition
91	LG	O	Land/group switch
92	NTRON	I	Tracking ON
93	DACDATA	O	Serial data output (Connect to TP148)
94	DACLRCK	O	Identification signal of L and R (Connect to TP149)
95	DACCLK	I	Clock for serial data output
96	IPFLAG	I	Input of IP flag
97	BLKCK	I	Sub code/block/input clock
98	LRCK	I	Identification signal of L and R (Connect to VSS)
99	VSS	-	Connect to GND
100	OSCI1	I	Oscillation input terminal 16.9MHz

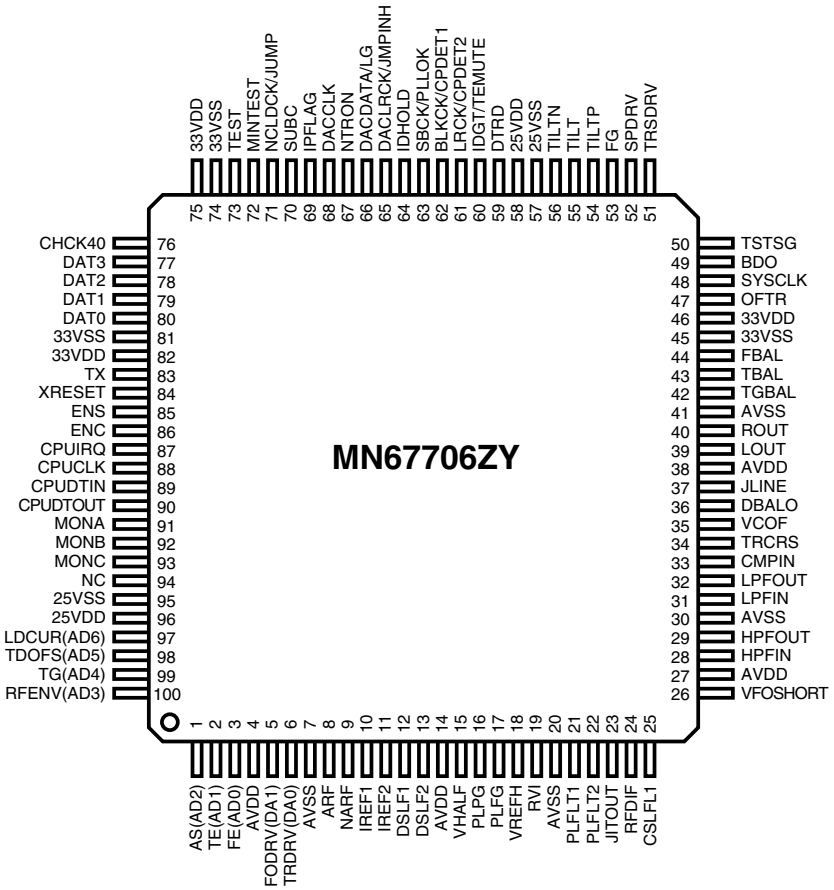
3.Pin function (3/3)

MN103S13BDA

Pin No.	Symbol	I/O	Description
101	OSCO1	O	Oscillation output terminal 16.9MHz
102	VDD	-	Power supply 3V
103	PVSS	-	Connect to GND
104	PVDD	-	Power supply 3V
105	P1	I/O	Terminal master polarity switch input
106	P0	I/O	CIRC-RAM,OVER/UNDER Interruption
107	VSS	-	Connect to GND
108	SBCK	O	Clock output for sub code,serial input
109	SUBC	I	Sub code,serial input
110	NCLDCK	I	Sub code,flame clock input
111	CHCK40	I	Clock is read to DAT3~0 (Output of division frequency from ADSC)
112	DAT3	I	Data is read from disc (Going side by side output from ADSC)
113	DAT2	I	Data is read from disc (Going side by side output from ADSC)
114	DAT1	I	Data is read from disc (Going side by side output from ADSC)
115	DAT0	I	Data is read from disc (Going side by side output from ADSC)
116	VDD	-	Power supply 3V
117	SCLOCK	I/O	Debug serial clock (270 ohm pull up)
118	SDATA	I/O	Debug serial data (270 ohm pull up)
119	MONI3	O	Internal good title monitor (Connect to TP150)
120	MONI2	O	Internal good title monitor (Connect to TP151)
121	MONI1	O	Internal good title monitor (Connect to TP152)
122	MONI0	O	Internal good title monitor (Connect to TP153)
123	VSS	-	Connect to GND
124	NEJECT	I	Eject detection
125	VDD	-	Power supply 2.7V
126	NTRYCL	I	Non connect (Tray close detection)
127	NDASP	I/O	ATAPI drive active / slave connect I/O
128	NCS3FX	I	Non connect (ATAPI host chip select)
129	NCS1FX	I	Non connect (ATAPI host chip select)
130	VDD	-	Power supply 3V
131	DA2	I/O	ATAPI host address
132	DA0	I/O	Non connect (ATAPI host address)
133	NPDIAG	I/O	ATAPI Slave master diagnosis input
134	VSS	-	Connect to GND
135	DA1	I/O	Non connect (ATAPI host address)
136	NIOCS16	O	Output of selection of width of ATAPI host data bus
137	INTRQ	O	ATAPI Host interruption output
138	VDD	-	Power supply 3V
139	NDMACK	I	Non connect (ATAPI Host DMA characteristic)
140	IORDY	O	ATAPI Host ready output (Connect to TP157)
141	NIORD	I	Non connect (ATAPI host read)
142	VSS	-	Connect to GND
143	NIOWR	I/O	ATAPI Host write
144	DMARQ	O	ATAPI Host DMA request (Connect to TP159)

■ MN67706ZY (IC201) : Auto digital servo controller

1.Pin layout



2.Pin functions (1/3)

Pin No.	Symbol	I/O	Description
1	AS(AD2)	I	AS : Full adder signal (FEP)
2	TE(AD1)	I	Phase difference/3 beam tracking error (FEP)
3	FE(AD0)	I	Focus error (FEP)
4	AVDD	-	Apply 3.3V (For analog circuit)
5	FODRV(DA1)	O	Focus drive (DRVIC)
6	TRDRV(DA0)	O	Tracking drive (DRVIC)
7	AVSS	-	Ground (For analog circuit)
8	ARF	I	Equivalence RF+ (FEP)
9	NARF	I	Equivalence RF- (FEP)
10	IREF1	I	Reference current1 (For DBAL)
11	IREF2	I	Reference current2 (For DBAL)
12	DSLF1	I/O	Connect to capacitor1 for DSL
13	DSLF2	I/O	Connect to capacitor2 for DSL
14	AVDD	-	Apply 3.3V (For analog circuit)
15	VHALF	I	Reference voltage 1.65+-0.1V (FEP)
16	PLPG	-	Not use (PLL phase gain setting resistor terminal)
17	PLFG	-	Not use (PLL frequency gain setting resistor terminal)
18	VREFH	I	Reference voltage 2.2V+-0.1V (FEP)
19	RVI	I/O	Connect to resistor for VREFH reference current source
20	AVSS	-	Ground (For analog circuit)
21	PLFLT1	O	Connect to capacitor1 for PLL
22	PLFLT2	O	Connect to capacitor2 for PLL
23	JITOUT	I/O	Output for jitter signal monitor
24	RFDIF	I	Not use
25	CSLFL1	I/O	Pull-up to VHALF

2.Pin function (2/3)

MN67706ZY

Pin No.	Symbol	I/O	Description
26	VFOSHORT	O	VFO short output
27	AVDD	-	Apply 3.3V (For analog circuit)
28	HPFIN	I	Pull-up to VHALF
29	HPFOUT	O	Connect to TP208
30	AVSS	-	Ground (For analog circuit)
31	LPFIN	I	Pull-up to VHALF
32	LPFOUT	O	Not use
33	CMPIN	I	Connect to TP210
34	TRCRS	I	Input signal for track cross formation
35	VCOF	I/O	JFVCO control voltage
36	DBALO	O	DSL balance adjust output
37	JLINE	O	J-line setting output (FEP)
38	AVDD	-	Apply 3.3V (For analog circuit)
39	LOUT	O	Connect to TP203 (Analog audio left output)
40	ROUT	O	Connect to TP204 (Analog audio right output)
41	AVSS	-	Ground (For analog circuit)
42	TGBAL	O	Tangential balance adjust (FEP)
43	TBAL	O	Tracking balance adjust (FEP)
44	FBAL	O	Focus balance adjust (FEP)
45	33VSS	-	Ground (For I/O)
46	33VDD	-	Apply 3.3V (For I/O)
47	OFTR	I	Off track signal
48	SYSCLK	I	16.9344MHz system clock input (ODC)
49	BDO	I	Drop out (FEP)
50	TSTSG	O	Calibration signal (FEP)
51	TRSDRV	O	Traverse drive (DRVIC)
52	SPDRV	O	Spindle drive output (DRVIC)
53	FG	I	FG signal input (Spindle motor driver)
54	TILTP	O	Connect to TP205
55	TILT	O	Connect to TP206
56	TILTN	O	Connect to TP207
57	25VSS	-	Ground (For internal core)
58	25VDD	-	Apply 2.5V (For internal core)
59	DTRD	I	Data read control signal (ODC)
60	IDGT/TEMUTE	I	Pull-down to Ground
61	LRCK/CPDET2	O	LR channel data strobe (ODC)/
62	BLKCK/CPDET1	O	CD sub code synchronous signal (ODC)/
63	SBCK/PLLOK	I	CD sub code data shift clock (ODC)/PLL pull-in OK signal input
64	IDHOLD	I	Pull-down to Ground
65	DACLRCK/JMPINH	I	1bit DAC-LR channel data strobe (ODC)/
66	DACDATA/LG	I	CD 1bit DAC channel data (ODC)
67	NTRON	O	L : Tracking ON (ODC)
68	DACCLK	O	1bit DAC channel data shift clock (ODC)
69	IPFLAG	O	CIRC error flag (ODC)
70	SUBC	O	CD sub code (ODC)
71	NCLDCK/JUMP	O	CD sub code data frame clock (ODC)/DVD JUMP signal (ODC)
72	MINTEST	I	Pull-down to Ground (For MINTEST)
73	TEST	I	Pull-down to Ground (For TEST)
74	33VSS	-	Ground (For I/O)
75	33VDD	-	Apply 3.3V (For I/O)
76	CHCK40	O	Clock for SRDATA (ODC)
77	DAT3	O	SRDATA3 (ODC)
78	DAT2	O	SRDATA2 (ODC)
79	DAT1	O	SRDATA1 (ODC)
80	DAT0	O	SRDATA0 (ODC)

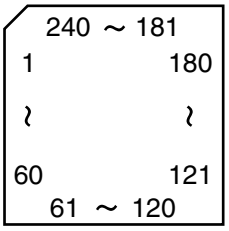
2.Pin function (3/3)

MN67706ZY

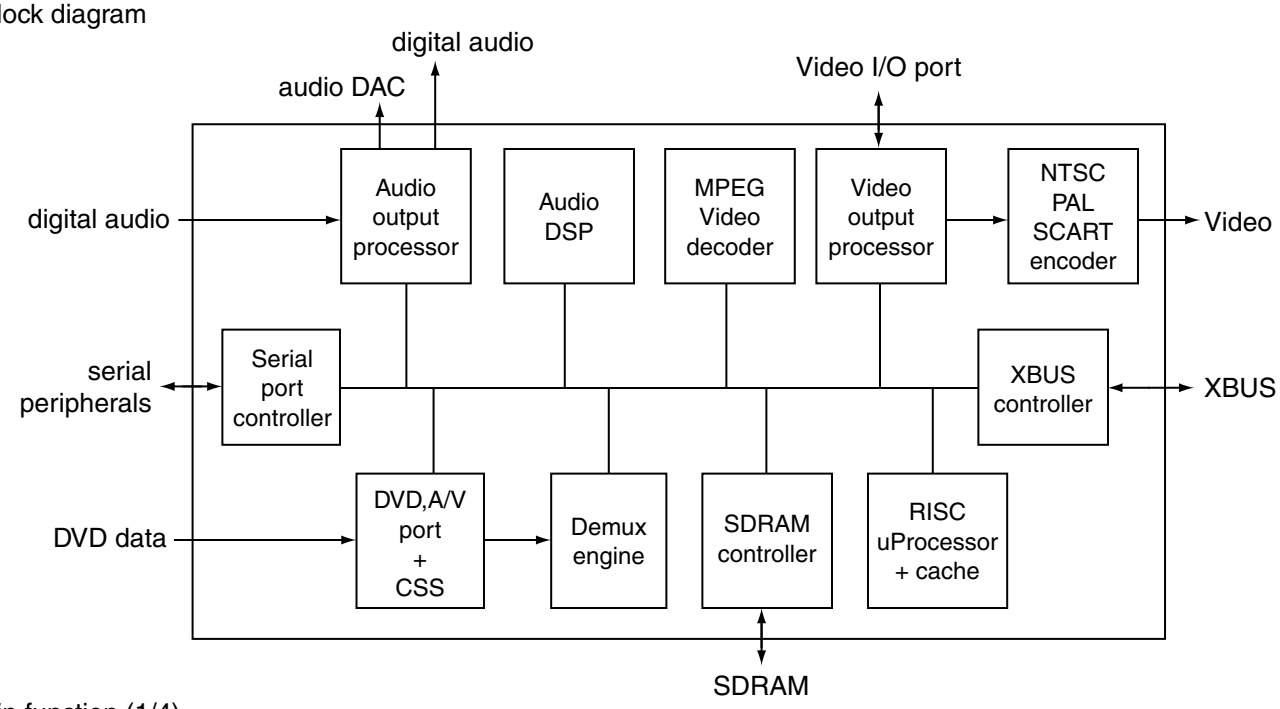
Pin No.	Symbol	I/O	Description
81	33VSS	-	Ground(For I/O)
82	33VDD	-	Apply 3.3V(For I/O)
83	TX	O	Digital audio interface
84	XRESET	I	Reset input (System control)
85	ENS	I	Servo DSC serial I/F chip select (System control)
86	ENC	I	CIRC serial I/F chip select (System control)
87	CPUIRQ	O	Interrupt request (System control)
88	CPUCLK	I	Syscon serial I/F clock (System control)
89	CPUDTIN	I	Syscon serial I/F data input (System control)
90	CPUDTOUT	O	Syscon serial I/F data output (System control)
91	MONA	O	Connect to TP226 (Monitor terminal A)
92	MONB	O	Connect to TP225 (Monitor terminal A)
93	MONC	O	Connect to TP224 (Monitor terminal A)
94	NC	O	Connect to TP211
95	25VSS	-	Ground(For internal core)
96	25VDD	-	Apply 2.5V(For internal core)
97	LDCUR(AD6)	I	
98	TDOFS(AD5)	I	
99	TG(AD4)	I	Tangential phase difference(FEP)
100	RFENV(AD3)	I	RF envelope input(FEP)

■ NDV8601VWA-BB(IC501):AV Decoder

1.Pin layout



2.Block diagram



3.Pin function (1/4)

Pin No.	Symbol	I/O	Description
1	VDDio	-	Power supply terminal 3.3V
2,3	MD10,11	I/O	SDRAM Data bus terminal
4	VDD	-	Power supply terminal 1.8V
5	MD12	I/O	SDRAM Data bus terminal
6	VSSio	-	Connect to ground
7~9	MD13~15	I/O	SDRAM Data bus terminal
10	VDDio	-	Power supply terminal 3.3V
11	DQM1	O	SDRAM Data byte enable
12,13	MA9,8	O	SDRAM Address bus terminal
14	VSSio	-	Connect to ground
15,16	MA7,6	O	SDRAM Address bus terminal
17	VSS	-	Connect to ground
18	MA5	O	SDRAM Address bus terminal
19	VDDio	-	Power supply terminal 3.3V
20,21	MA4,3	O	SDRAM Address bus terminal
22	MCLK	O	SDRAM Clock output
23	VSSio	-	Connect to ground
24	CKE	O	SDRAM Clock enable output
25,26	MA2,1	O	SDRAM Address bus terminal
27	VDDio	-	Power supply terminal 3.3V
28	MA0	O	SDRAM Address bus terminal
29	MA10	O	SDRAM Address bus terminal

3.Pin function (NDV8601VWA-BB 2/4)

Pin No.	Symbol	I/O	Description
30	MA11	-	Non connect
31	VSSio	-	Connect to ground
32,33	MA12,13	O	SDRAM Address bus, reserved for terminal compatibility with 64Mb SDRAM
34	VDD	-	Power supply terminal 1.8V
35	CS0	O	SDRAM Primary bank chip select
36	VDDio	-	Power supply terminal 3.3V
37	RAS	O	SDRAM Command bit
38	CAS	O	SDRAM Command bit
39	WE	O	SDRAM Command bit
40	VSSio	-	Connect to ground
41	DQM0	O	SDRAM Data byte enable
42	DQM2	O	SDRAM Data byte enable
43	MD16	I/O	SDRAM Data bus terminal
44	VDDio	-	Power supply terminal 3.3V
45,46	MD17,18	I/O	SDRAM Data bus terminal
47	VSS	-	Connect to ground
48	MD19	I/O	SDRAM Data bus terminal
49	VSSio	-	Connect to ground
50~52	MD20~22	I/O	SDRAM Data bus terminal
53	VDDio	-	Power supply terminal 3.3V
54~56	MD23~25	I/O	SDRAM Data bus terminal
57	VSSio	-	Connect to ground
58~61	MD26~29	I/O	SDRAM Data bus terminal
62	VDDio	-	Power supply terminal 3.3V
63,64	MD30,31	I/O	SDRAM Data bus terminal
65	DQM3	O	SDRAM Data byte enable
66	CS1	O	SDRAM Extension bank chip select
67	VSSD	-	Connect to ground
68	SPDIF	O	S/PDIF Digital audio output terminal
69	VSSio	-	Connect to ground
70	AIN	I	Digital audio input for digital micro; can be used as GPIO
71	AOUT3	O	Serial audio output data to audio DAC for left and right channels for down-mix
72	AOUT2	O	Serial audio output data to audio DAC for surround left and right channels
73	AOUT1	O	Serial audio output data to audio DAC for center and LFE channels
74	AOUT0	O	Serial audio output data to audio DAC for left and right channels
75	VDDio	-	Power supply terminal 3.3V
76	PCMCLK	O	Audio DAC PCM sampling clock frequency, common clock for DACs and ADC
77	VDD	-	Power supply terminal 1.8V
78	ACLK	O	Audio interface serial data clock, common clock for DACs and AD converter
79	LRCLK	O	Left / right channel clock, common clock for DACs and ADC
80	SRST	O	Active low RESET signal for peripheral reset
81	RSTP	I	RESET_Power : from system, used to reset frequency synthesizer and rest of chip
82	VSSio	-	Connect to ground
83	RXD1	I	UART1 Serial data input from external serial device, used for IR receiver
84	SSPIN1	I/O	SSP1 Data in or 16X clock for USART function in UART1
85	VSS	-	Connect to ground
86	SSPOUT1	I/O	SSP1 Data out or UART1 data-terminal-ready signal
87	SSPCLK1	I/O	SSP1 Clock or UART1 clear-to -send signal
88	SSPCLK0	I/O	SSP0 Clock or request-to-send function in UART1
89	VDD	-	Power supply terminal 1.8V
90	SSPIN0	I/O	SSP0 Data in or 16X clock for USART function in UART0

3.Pin function (NDV8601VWA-BB 3/4)

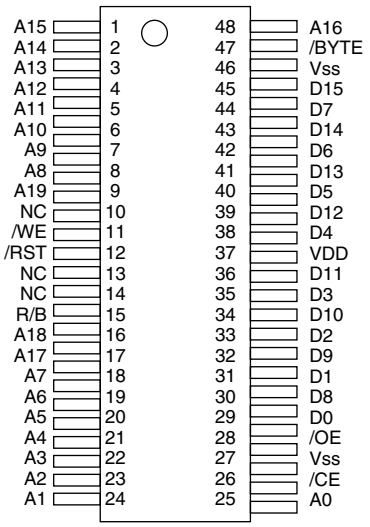
Pin No.	Symbol	I/O	Description
91	VDDio	-	Power supply terminal 3.3V
92	SSPOUT0	I/O	SSP0 Data out or UART0 data-terminal-ready signal
93	TXD0	I/O	UART0 Serial data output to an external serial device
94	RXD0	I	UART0 Serial data input from external serial device
95	CTS0	I/O	UART0 Clear-to-send signal
96	RTS0	I/O	UART0 Request-to-send signal
97	VSSio	-	Connect to ground
98	CXI	I	Crystal input terminal for on-chip oscillator or system input clock
99	CXO	O	Crystal output terminal for on-chip oscillator
100	OSCVSS	-	Connect to ground for oscillator
101	OSCVDD	-	Power supply terminal for oscillator 1.8V
102	MVCKVDD	-	Power supply terminal for main and video clock PLL 3.3V
103	SCEN	I	Scan chain test enable
104	MVCKVSS	-	Connect to ground for main and video clock PLL
105	ACLKVSS	-	Connect to ground for audio clock PLL
106	SCMD	I	Scan chain test mode
107	ACLKVDD	-	Power supply terminal for audio clock PLL 3.3V
108	VDDDAK	-	Power supply terminal for DAC digital 1.8V
109	VSSDAC	-	Connect to ground for DAC digital
110	Cr/R	O	Video signal output (Cr output : composite/component Red output)
111	IOM	O	Cascaded DAC differential output used to dump current into external resistor for power
112	C/Cb/B	O	Video signal output (Chrominance output for NTSC/PAL S-Video Cb output for component Blue output)
113	VAA3	-	Power supply terminal for DAC analog 3.3V
114	Y/G	O	Video signal output (Luminance for S-Video and component Green output)
115	VSSA	-	Connect to ground for DAC analog
116	VREF	-	Non connect
117	VAA	-	
118	CVBS/C	O	Video signal output (Composite video Chrominance output for S-Video)
119	RSET	O	Current setting resistor of output DACs
120	COMP	O	Compensation capacitor connection
121	VSS	-	Connect to ground
122	VCLK	-	Non connect
123	VSYNC	-	Non connect
124	HSYNC	-	Non connect
125	VDDio	-	Power supply terminal 3.3V
126~131	VI07~02	-	Non connect
132	VSSio	-	Connect to ground
133,134	VI01,00	-	Non connect
135	VDD	-	Power supply terminal 1.8V
136~139	AD31~28	I/O	Multiplexed address / data bus terminal
140	VDDio	-	Power supply terminal
141~144	AD27~24	I/O	Multiplexed address / data bus terminal
145	PWE3	I/O	Byte write enable for FLASH,EEPROM,SRAM or peripherals terminal
146	AD23	I/O	Multiplexed address / data bus terminal
147	VSSio	-	Connect to ground
148~153	AD22~17	I/O	Multiplexed address / data bus terminal
154	VDDio	-	Power supply terminal 3.3V
155	AD16	I/O	Multiplexed address / data bus terminal
156	PWE2	I/O	Byte write enable for FLASH,EEPROM,SRAM or peripherals terminal
157,158	AD15,14	I/O	Multiplexed address / data bus terminal
159	VDD	-	Power supply terminal 1.8V

3.Pin function (NDV8601VWA-BB 4/4)

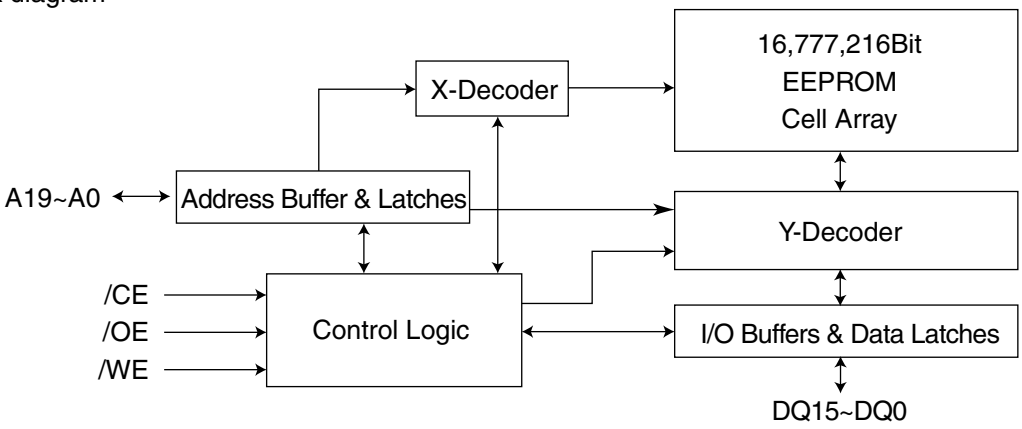
Pin No.	Symbol	I/O	Description
160	SCLK	O	External bus clock used for programmable host peripherals
161	ACK	I/O	Programmable WAIT/ACK/RDY control
162	VSSio	-	Connect to ground
163~168	AD13~8	I/O	Multiplexed address / data bus terminal
169	VDDio	-	Power supply terminal 3.3V
170	PWE1	I/O	Byte write enable for FLASH,EEPROM,SRAM or peripherals terminal
171	VSS	-	Connect to ground
172~176	AD7~3	I/O	Multiplexed address / data bus terminal
177	VSSio	-	Connect to ground
178~180	AD2~0	I/O	Multiplexed address / data bus terminal
181	VDDio	-	Power supply terminal 3.3V
182	PWE0	I/O	Byte write enable for FLASH,EEPROM,SRAM or peripherals terminal
183	ALE	I/O	Address latch enable
184~187	LA0~3	I/O	Latched address 0~3
188	VSSio	-	Connect to ground
189	RD	I/O	Read terminal
190	LHLDA	O	Bus hold acknowledge in slave mode
191	LHLD	I	Bus hold request from external master in slave mode
192	VDD	-	Power supply terminal 1.8V
193	PCS0	O	Peripheral chip select 0, generally used for enabling the program store ROM/FLASH
194,195	XI01,02	I/O	Programmable general purpose external input/output
196	VDDio	-	Power supply terminal 3.3V
197~200	XI03~06	I/O	Programmable general purpose external input/output
201	VSS	-	Connect to ground
202,203	XI07,08	I/O	Programmable general purpose external input/output
204	VSSio	-	Connect to ground
205	XI09	I/O	Programmable general purpose external input/output
206~209	XID10~13	I/O	Programmable general purpose external input/output
210	VDDio	-	Power supply terminal 3.3V
211	XID14	I/O	Programmable general purpose external input/output
212	VDD	-	Power supply terminal 1.8V
213	DSYNC	I	DVD Parallel mode sector sync
214	DREQ	O	DVD Parallel mode data request
215	DCLK	I	Data sampling clock
216	DSTB	I	Parallel mode data valid, serial mode left/right clock
217	DVD0	I	DVD Drive parallel data port
218	VSSio	-	Connect to ground
219~223	DVD1~5	I	DVD Drive parallel data port
224	VDDio	-	Power supply terminal 3.3V
225,226	DVD6,7	I	DVD Drive parallel data port
227	MD0	I/O	SDRAM Data bus terminal
228	VSSio	-	Connect to ground
229	MD1	I/O	SDRAM Data bus terminal
230	VSS	-	Connect to ground
231,232	MD2,3	I/O	SDRAM Data bus terminal
233	VDDio	-	Power supply terminal 3.3V
234~236	MD4~6	I/O	SDRAM Data bus terminal
237	VSSio	-	Connect to ground
238~240	MD7~9	I/O	SDRAM Data bus terminal

■ SST39VF160-7CEK (IC509) : 16M EEPROM

1. Pin layout



2. Block diagram

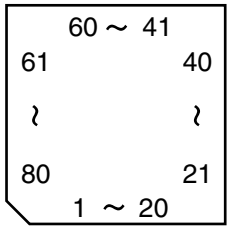


3. Pin function

Symbol	Pin name	Description
A19~A0	Address Inputs	To provide memory addresses. During sector erase A19~A11 address lines will select the sector. During block erase A19~A15 address lines will select the block.
DQ15~DQ0	Data Input/Output	To output data during read cycles and receive input data during write cycles. Data is internally latched during a write cycle. The outputs are in tri-state when /OE or /CE is high.
/CE	Chip Enable	To activate the device when /CE is low.
/OE	Output Enable	To gate the data output buffers.
/WE	Write Enable	To control the write operations.
VDD	Power Supply	To provide 3-volt supply (2.7V-3.6V).
Vss	Ground	
NC	No Connection	

■ UPD780232GC-057(IC2):System controller

1.Pin layout



2.Pin function

Pin No.	Symbol	I/O	Description
1	VDD1	-	Power supply terminal (+)
2	VSS1	-	Connect to ground
3	X1	I	Main system clock oscillation terminal
4	X2	O	Main system clock oscillation terminal
5	IC(VPP)	-	Internal connection (connect to VSS1)
6	RESET	I	System reset input
7	SCK	I/O	Serial clock input/output of serial interface
8	RXD	I	Serial data input of serial interface
9	TXD	O	Serial data output of serial interface
10	POWERSW	I	Power switch (S1) input terminal
11	AVCO	O	AV Compulink output terminal
12	INTP	I/O	8 bit input/output port
13	P.ON	O	Power ON signal output
14	RESET	O	CPU Reset output
15	AVCI	I	AV Compulink input terminal
16	CS	I	Chip select input
17	REMO	I	Remote controller signal input
18	AVSS	-	Connect to ground for A/D converter
19	ANI3	I	Operation switch (S2,S3) input terminal
20	ANI2	I	Operation switch (S4~S7) input terminal
21	ANI1	-	Connect to ground
22	ANI0	-	Connect to ground
23	VSS0	-	Connect to ground for port section
24	AVDD	-	Standard voltage input for analog power supply of A/D converter
25	VDD0	-	Power supply terminal (+) for port section
26,27	STANDBYRED	O	Standby LED control signal output (red)
28,29	STANDBYGRN	O	Standby LED control signal output (green)
30,31	PRORED	O	Progressive LED control signal output (red)
32,33	PROGRN	O	Progressive LED control signal output (green)
34	AUDIOLED	O	DVD Audio LED control signal output
35		-	
36		-	Non connect
37	INT/PROG	O	Interlace/progressive switch signal output
38		O	Muting control signal output
39~58	S24~S5	O	FL Segment control signal output
59	VDD2	-	Power supply terminal (+) for driver section
60	VLOAD	-	Connected to pull down resistor for FL driver
61~64	S4~S1	O	FL Segment control signal output
65~67		-	Non connect
68~80	13G~1G	O	FL Grid control signal output

Glossary of term and abbreviations (for AV Decoder section)

3D	3-dimension
A/V	1)audio/video 2)audio/visual
ac	alternating current
ACLK	audio serial-data (bit) clock
AD	multiplexed address / data bus
ADC	analog-to-digital converter
AIN	digital audio input
ALE	address latch enable
ANSI/SMPTE	American National Standards Institute / Society of Motion Pictures and Television Engineers
AOP	Audio Output Processor
AXCLK	test-mode audio-PLL clock output
baud	unit of signaling speed equal to one code element per second
Cb	blue color difference component (in accordance with the CCIR 601 specifications)
CCIR	Consultative Committee on International Radio
CD	compact disc
CD-DA	compact disc-digital audio
CMOS	Complementary Metal Oxide Semiconductor
CPU	Central Processing Unit
Cr	red color difference component (in accordance with the CCIR 601 specifications)
CSS	Content Scrambling System
CTS	Clear To Send
CVBS	Composite Video Blank and Sync
DAC	Digital-to-Analog Converter
dc	direct current
DEMUX	DEMUX Engine
DSP	Digital Signal Processing
DTS	Digital Theater System
DVD	Digital Versatile Disc
EAV	End Active Video
EAV/SAV	End Active Video / Start Active Video
EEI	Enable Error Interrupt
EEPROM	Electrically Erasable Programmable Read-Only Memory
FS	FIFO Status
GPIO	General Purpose Input/Output
HDCD	High Definition Compatible Digital
HDTV	High-Definition television
HSYNC	Horizontal sync
I/O	Input/Output
IEC	International Electrotechnical Commission
IOM	Current (I) Output Minus (complementary shared current path to Video DAC current paths)
IR	infrared
ITU	International Telecommunications Union
LA	Latched Address Bus
LCLK	oscillator clock (derived from internal crystal oscillator)
Lfe	Low-frequency effect
LRCLK	Left/Right clock
LSB	Least Significant Bit
Mb	Megabit
MB	Megabyte

MCLK	primary or master clock
MHz	Megahertz
MIPS	Million Instructions Per Second
MmCPU	Mediamatics CPU (synonym for internal RISC CPU)
MP3	Moving Picture Experts Group Layer-3 Audio (audio file format / extension)
MPEG1 audio	A digital audio format mainly used in video CDs. It is based on the moving picture expert group (MPEG1) format, a data compression technology.
MPEG2 audio	A digital audio format mainly used in Europe and Australia. It provides high quality, multi-channel audio of up to eight channels in the same was as Dolby Digital and DTS. It is based on the MPEG2 format, a data compression technology more improved than MPEG1
NOP	No Operation
NTSC	1)National Television System Committee 2)Worldwide video standard in North America and Japan
NTSC-M	Version of NTSC used in certain parts of the world (Brazil)
OSD	On-screen display
PAL	Phase alteration by line
PCM	Pulse Code Modulation
PCMCLK	PCM audio-data over-sampling clock
PCS	1)Picture Control and Size 2)Perpheral Chip Select
PLL	Phase Lock Loop
PQFP	Plastic Quad Flat Pack (Package)
PWM	Pulse Width Modulator
r/w	Read/Write access
RAM	Random Access Memory
RGB	Red-Green-Blue (color model)
RISC	Reduced Instruction Set Computer
ROM	Read-Only Memory
RXD	Receive signal
RW	Readable / Write able
SAV	Start Active Video
SCART	Syndicat des Constructeurs d'Appareils Radiorecepteurs et Televiseurs (connector used in Europe to connect many kinds of audiovisual equipment)
SCLK	Secondary or slave clock
SDRAM	Synchronous Dynamic Random Access Memory
S/PDIF	Sony / Philips Digital Interface
S/PDIFCLK	clock associated with the S/PDIF output
SRAM	Static Random Access Memory
SSP	Synchronous Serial Port
TXD	transmit signal
UART	Universal Asynchronous Receiver-transmitter
USART	Universal Synchronous / Asynchronous Receiver / Transmitter
VGA	Video Graphics Array
VIO	Video Input / Output
VREF	Voltage REFerence
Vref	Vertical reference
VSSA	quiet analog ground
VSYNC	Vertical sync
XBUS	External peripheral bus
XIO	External Input / Output
Y	Luminance component (in accordance with the CCIR 601 specifications)
YCbCr	Luminance component, blue color difference component, red color difference component (in accordance with the CCIR 601 specifications)

JVC

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No.A0022

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200110(S)

PARTS LIST

[XV-SA70BK]
[XV-SA72SL]

* All printed circuit boards and its assemblies are not available as service parts.

[XV-SA70BK]

Area Suffix	
EN	Northern Europe
UJ	U.S. military

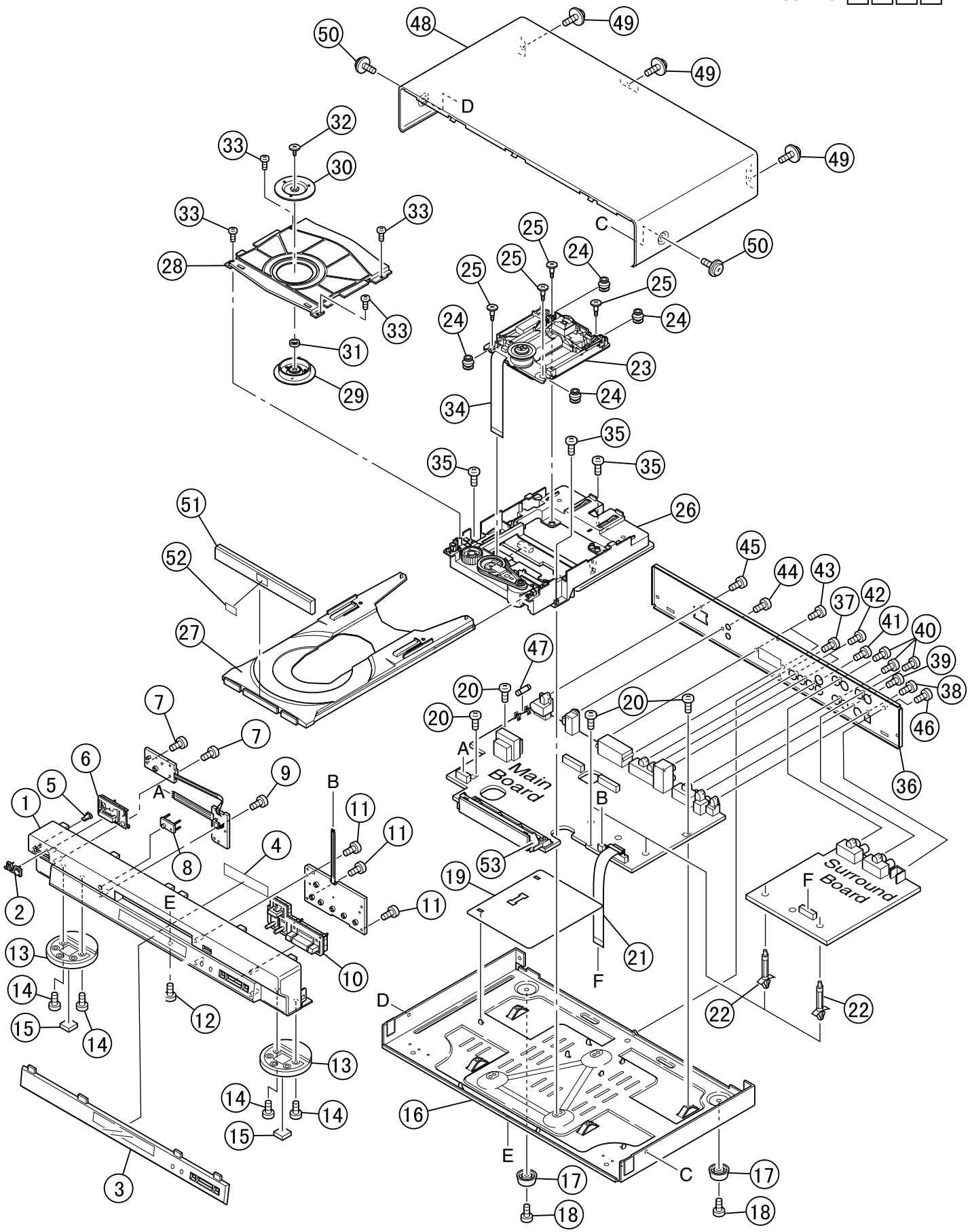
[XV-SA72SL]

Area Suffix	
B	U.K.
E	Continental Europe
EN	Northern Europe
EE	Russian Federation
US	Singapore
UW	Brazil,Mexico,Peru

- Contents -

Exploded view of general assembly and parts list

Block No. M 1 M M



■ **Parts list (General assembly) 1/2** **Block No. M1MM**

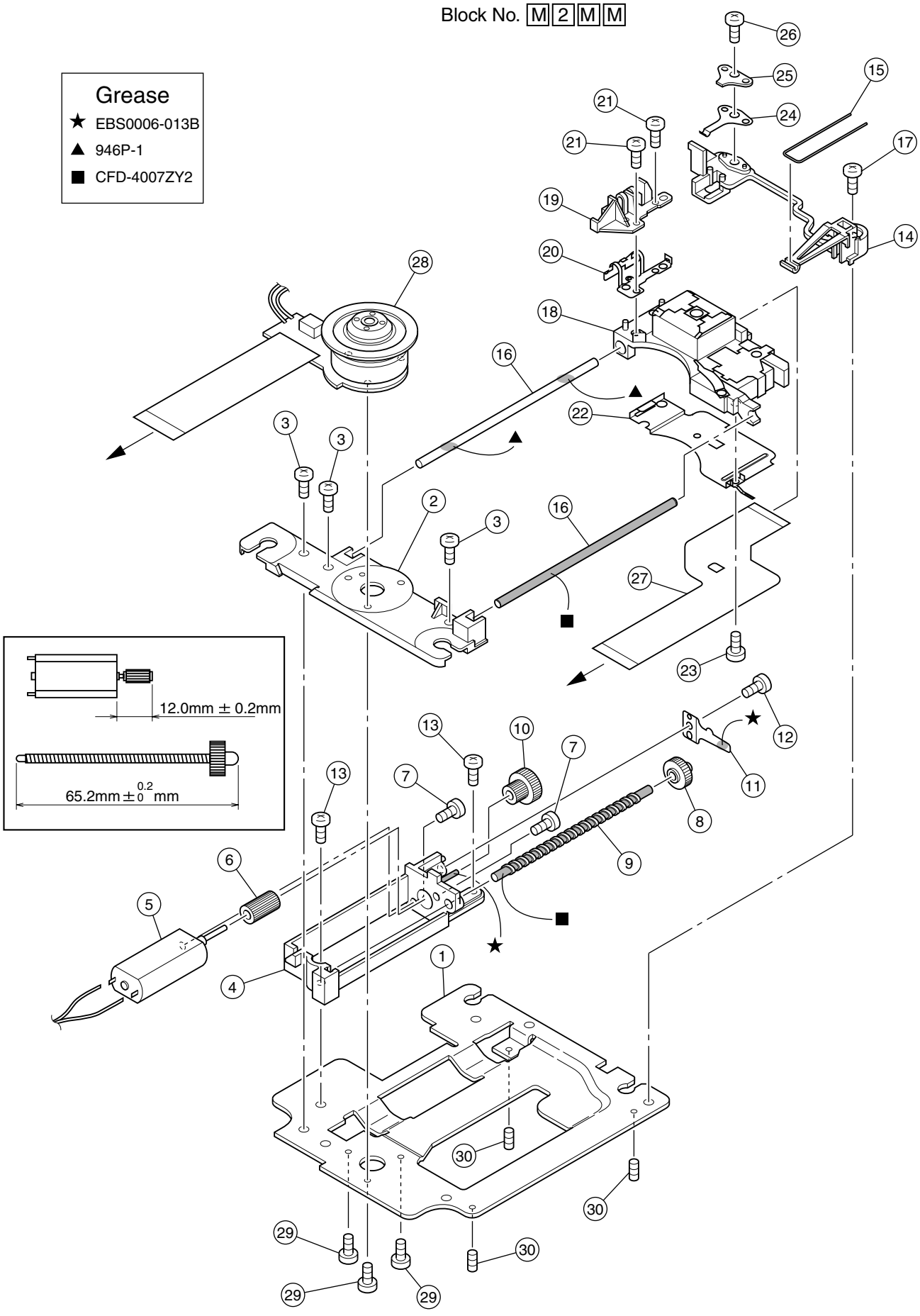
⚠	Item	Parts number	Parts name	Q'ty	Description	Area
	1	LE10251-017A	FRONT PANEL	1		b,e,ee,slen
		LE10251-016A	FRONT PANEL	1		bken
		LE10251-007A	FRONT PANEL	1		uj
		LE10251-035A	FRONT PANEL	1		us,uw
	2	VJD5429-002SS	JVC MARK	1		b,e,ee,slen,us,uw
		VJD5429-001SS	JVC MARK	1		bken,uj
	3	LE20535-021A	WINDOW SCREEN	1		b,bken,e,ee,slen
		LE20535-020A	WINDOW SCREEN	1		uj,us,uw
	4	LE40759-001A	FL SCREEN	1		
	5	LE30900-001A	INDICATOR	1		
	6	LE20537-002A	PUSH BUTTON	1		b,e,ee,slen,us,uw
		LE20537-001A	PUSH BUTTON	1		bken,uj
	7	QYSBSF2608Z	T.SCREW	2		
	8	LE30899-002A	REMOTE LENS	1		b,e,ee,slen,us,uw
		LE30899-001A	REMOTE LENS	1		bken,uj
	9	QYSBSF2608Z	T.SCREW	1		
	10	LE20538-002A	PUSH BUTTON	1		b,e,ee,slen,us,uw
		LE20538-001A	PUSH BUTTON	1		bken,uj
	11	QYSBSF2608Z	T.SCREW	3		
	12	QYSDSG3008N	T.SCREW	1		
	13	LE30951-002A	FOOT	2		b,e,ee,slen,us,uw
		LE30951-001A	FOOT	2		bken,uj
	14	QYSBSG3010Z	T.SCREW	4		
	15	LE40798-001A	SPACER	2		
	16	LE10250-002A	CHASSIS BASE	1		
	17	E47227-029	FOOT	2		
	18	QYSBSG3010Z	T.SCREW	2		
	19	LE40768-003A	PROTECT SHEET	1		
	20	QYSBSGG3008E	T.SCREW	4		
	21	QUQB12-1710AM	FFC WIRE	1		
	22	LE30968-001A	FASTENER	2		
	23	-----	TRAVERSE MECHA	1		
	24	LV41659-201A	INSULATOR	4		
	25	LV41424-001A	SPECIAL SCREW	4		
	26	-----	1DISC LAODING B	1		
	27	LV10582-001A	TRAY LONG TYPE	1		
	28	LV20913-002A	CLAMPER BASE	1		
	29	LV32417-001A	CLAMPER	1		
	30	LV42089-001A	YOKE	1		
	31	LV41118-003A	MAGNET	1		
	32	LV41741-001A	SPECIAL SCREW	1		
	33	QYSBSF2008Z	SCREW	4		
	34	QUQ110-0610AJ	FFC WIRE	1		
	35	QYSBSG3010E	T.SCREW	3		
	36	LE20542-085A	REAR PANEL	1		b,e,slen
		LE20542-080A	REAR PANEL	1		bken

■ **Parts list (General assembly) 2/2** **Block No. M1MM**

⚠	Item	Parts number	Parts name	Q'ty	Description	Area
	36	LE20542-086A	REAR PANEL	1		ee
		LE20542-079A	REAR PANEL	1		uj
		LE20542-081A	REAR PANEL	1		us
		LE20542-084A	REAR PANEL	1		uw
	37	QYSBSGY3008M	SPECIAL SCREW	1	REAR+CHASSIS	
	38	QYSBSGY3008M	SPECIAL SCREW	1	OPT OUT	
	39	QYSBSGY3008M	SPECIAL SCREW	1	COAXIAL	
	40	QYSBSGY3008M	SPECIAL SCREW	3	AUDIO OUT	
	41	QYSBSGY3008M	SPECIAL SCREW	1	VIDEO OUT	
	42	QYSBSGY3008M	SPECIAL SCREW	2	COMPONENT	uj,us,uw
	43	QYSBSGY3008M	SPECIAL SCREW	2	21P OUT	b,e,ee,bken,slen
	44	QYSBSGY3008M	SPECIAL SCREW	1	COMPU LINK	
	45	QYSBSGY3008M	SPECIAL SCREW	1	AC INLET	
	46	QYSBSGY3008M	SPECIAL SCREW	1	EARTH	
⚠	47	QMF51E2-1R6-J1	FUSE	1		
	48	LE20541-002A/S/	METAL COVER	1		b,e,ee,slen,us,uw
		LE20541-001A/S/	METAL COVER	1		bken,uj
	49	QYSBSGG3008E	T.SCREW	3		
	50	E406308-004	SPECIAL SCREW	2		b,e,ee,slen,us,uw
		E406308-003	SPECIAL SCREW	2		bken,uj
	51	LE20536-010A	FITTING	1		b,e,ee,slen,us,uw
		LE20536-004A	FITTING	1		bken,uj
	52	LE40758-002A	MARK	1		b,e,ee,slen,us,uw
		LE40758-001A	MARK	1		bken,uj
	53	LE20540-001A	FL HOLDER	1		

DVD Traverse mechanism assembly and parts list

Block No. M 2 M M



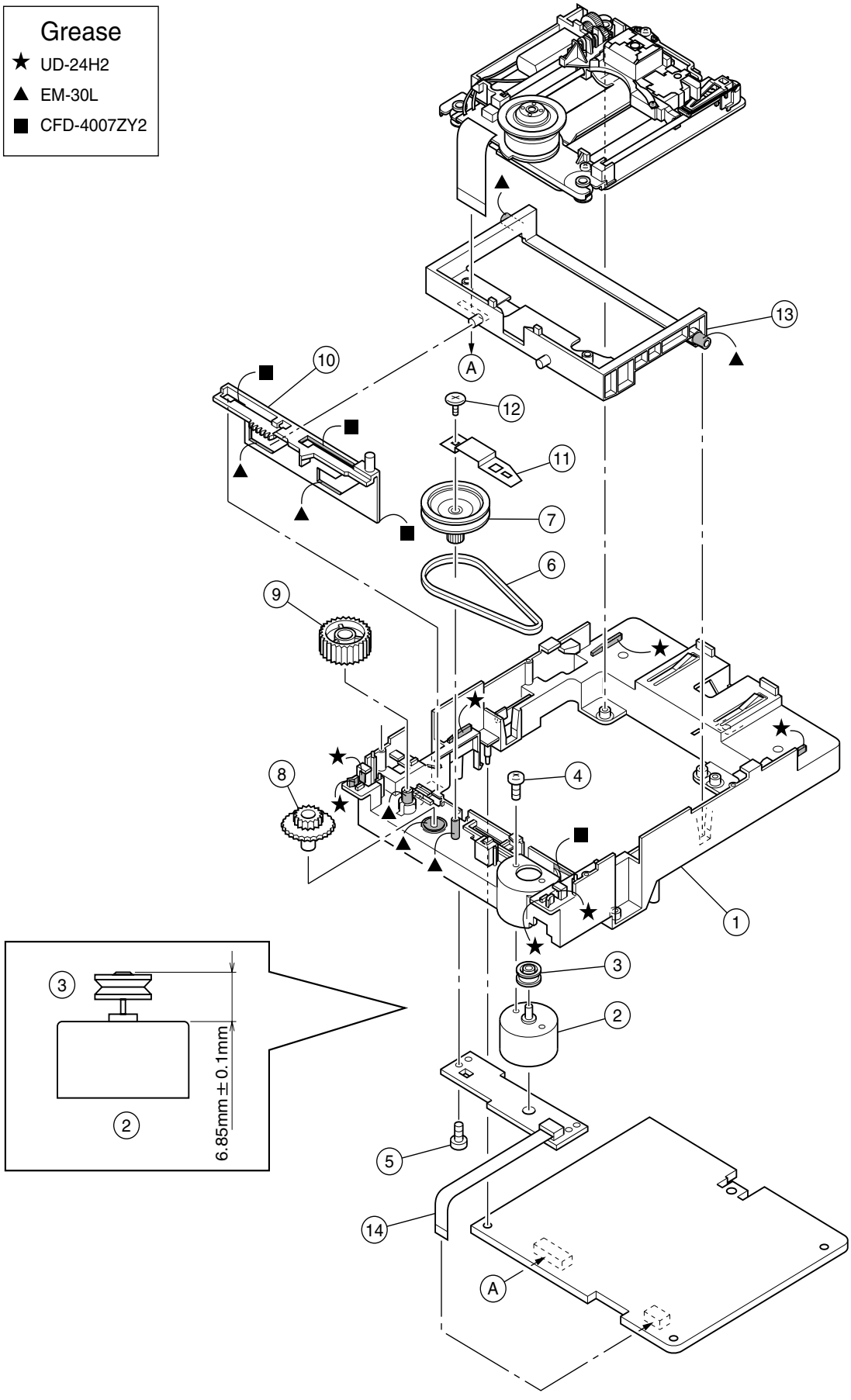
■ Parts list (DVD Traverse mechanism assembly)

Block No. M2MM

⚠	Item	Parts number	Parts name	Q'ty	Description	Area
	1	LE20520-002A	MECHA BASE	1		
	2	LE20516-001A	SPINDLE BASE	1		
	3	QYSDST2605M	TAPPING SCREW	3		
	4	LE30909-001A	HOLDER	1		
	5	QAR0165-001	FEED MOTOR	1		
	6	LV41510-001A	FEED GEAR	1		
	7	QYSPSPU2040M	SCREW	2		
	8	LV41512-001A	FEED GEAR	1		
	9	LV41517-001A	LEAD SCREW	1		
	10	LV41511-002A	FEED GEAR	1		
	11	LE40742-001A	TORSION SPRING	1		
	12	QYSDSF2005Z	SCREW	1		
	13	QYSDST2605M	TAPPING SCREW	2		
	14	LE20517-001A	HOLDER	1		
	15	LE40744-001A	SPRING	1		
	16	LV41121-002A	SLIDE SHAFT	2		
	17	QYSDST2605M	TAPPING SCREW	1		
	18	QAL0279-001	OPTICAL PICK-UP	1		
	19	LE20519-001A	ACTUATOR	1		
	20	LE30886-001A	SPRING	1		
	21	QYSPSPU1740Z	SCREW	2		
	22	LE30888-003A	SPRING	1		
	23	QYSPSPU1420Z	SCREW	1		
	24	LE40743-001A	SPRING	1		
	25	LE40774-001A	PLATE	1		
	26	QYSDST2606Z	SCREW	1		
	27	QAL0284-001	F.P.C.WIRE ASSY	1		
	28	QAR0162-001	SPINDLE MOTOR	1		
	29	QYSPSPU1760Z	SCREW	3		
	30	QYYASPF2608N	SCREW	3		

DVD Loading mechanism assembly and parts list

Block No. M 3 M M



■ Parts list (DVD Loading mechanism assembly)

Block No. M3MM

⚠	Item	Parts number	Parts name	Q'ty	Description	Area
	1	LV10454-007A	LOADING BASE	1		
	2	QAR0164-001	MOTOR	1		
	3	LV42087-001A	MOTOR PULLEY	1		
	4	QYSPSPU1730Z	SCREW	1		
	5	VKZ4777-003	MINI SCREW	1		
	6	LV42209-001A	BELT	1		
	7	LV42084-002A	PULLEYGEAR	1		
	8	LV42085-002A	MIDDLE GEAR	1		
	9	LV42086-001A	IDLE GEAR	1		
	10	LV32514-002A	SLIDE CAM	1		
	11	LV42348-001A	GEAR BRACKET	1		
	12	QYSBSF2006Z	SCREW	1		
	13	LV20912-002A	ELEVATOR	1		
	14	QUQ110-0610AJ	FFC WIRE	1		

■ Electrical parts list (Loading motor board)

Block No. 03

⚠	Item	Parts number	Parts name	Remarks	Area
	CN 1	QGF1016F3-06	CONNECTOR		
	S 1	QSW0910-002	SWITCH		
	S 2	QSW0910-002	SWITCH		

■ **Electrical parts list (Main board)** **Block No. 01**

⚠	Item	Parts number	Parts name	Remarks	Area
	BK 1	LE20539-001A	FL HOLDER		
	C 1	QEKC1HM-475Z	E.CAPACITOR	4.7MF 20% 50V	
	C 2	QEKC1HM-475Z	E.CAPACITOR	4.7MF 20% 50V	
	C 3	NCB31CK-104X	C CAPACITOR		
	C 4	QEKC1AM-476Z	E.CAPACITOR	47MF 20% 10V	
	C 5	QETN0JM-108Z	E CAPACITOR	1000MF 20% 6.3V	
	C 6	NCB31CK-104X	C CAPACITOR		
	C 7	NCB31CK-103X	C CAPACITOR		
	C 8	QETN1HM-105Z	E CAPACITOR	1.0MF 20% 50V	
	C 9	NCS31HJ-331X	C.CAPA. C.M		
	C 21	NCS31HJ-300X	C CAPACITOR		
	C 22	NCS31HJ-300X	C CAPACITOR		
	C 111	QETN1AM-107Z	E CAPACITOR	100MF 20% 10V	
	C 700	QTE0J28-477Z	E CAPACITOR		
	C 701	NCB31HK-152X	C CAPACITOR		
	C 702	NCB31CK-104X	C CAPACITOR		
	C 703	QTE1A28-227Z	E CAPACITOR		
	C 707	QETN0JM-107Z	E CAPACITOR	100MF 20% 6.3V	
	C 711	QCZ0202-155Z	ML C CAPA I/M	1.5MF	
	C 713	NCS31HJ-471X	C CAPACITOR		
	C 714	QTE0J28-477Z	E CAPACITOR		
	C 715	QCZ0202-155Z	ML C CAPA I/M	1.5MF	
	C 716	QTE0J28-477Z	E CAPACITOR		
	C 717	QCZ0202-155Z	ML C CAPA I/M	1.5MF	
	C 721	QCZ0202-155Z	ML C CAPA I/M	1.5MF	
	C 730	QFV21HJ-224Z	MF CAPACITOR	.22MF 5% 50V	
	C 731	QFN31HJ-103Z	M CAPACITOR	.010MF 5% 50V	
	C 735	NCB31CK-104X	C CAPACITOR		
	C 737	QETN1EM-226Z	E CAPACITOR	22MF 20% 25V	b,bken,e,ee,slen
	C 738	QETN1EM-226Z	E CAPACITOR	22MF 20% 25V	b,bken,e,ee,slen
	C 740	QFLC1HJ-561Z	M.CAPA I.M	560PF 5% 50V	
	C 741	QFP31HJ-121Z	PP CAPACITOR	120PF 5% 50V	
	C 742	QFLC1HJ-182Z	M CAPACITOR	1800PF 5% 50V	
	C 743	QFLC1HJ-272Z	M.CAPA. I.M	2700PF 5% 50V	
	C 744	QFLC1HJ-561Z	M.CAPA I.M	560PF 5% 50V	
	C 745	QFLC1HJ-103Z	M CAPACITOR	.010MF 5% 50V	
	C 746	QTE1E28-476Z	E CAPACITOR		
	C 747	QFLC1HJ-182Z	M CAPACITOR	1800PF 5% 50V	
	C 748	QFLC1HJ-561Z	M.CAPA I.M	560PF 5% 50V	
	C 749	QFLC1HJ-561Z	M.CAPA I.M	560PF 5% 50V	
	C 750	QFLC1HJ-561Z	M.CAPA I.M	560PF 5% 50V	
	C 751	QFP31HJ-121Z	PP CAPACITOR	120PF 5% 50V	
	C 752	QFLC1HJ-182Z	M CAPACITOR	1800PF 5% 50V	
	C 753	QFLC1HJ-272Z	M.CAPA. I.M	2700PF 5% 50V	
	C 754	QFLC1HJ-561Z	M.CAPA I.M	560PF 5% 50V	
	C 755	QFLC1HJ-103Z	M CAPACITOR	.010MF 5% 50V	
	C 756	QTE1E28-476Z	E CAPACITOR		
	C 757	QFLC1HJ-182Z	M CAPACITOR	1800PF 5% 50V	
	C 761	QTE1C28-227Z	E CAPACITOR		
	C 762	QTE1C28-227Z	E CAPACITOR		
	C 771	QTE1C28-227Z	E CAPACITOR		
	C 772	QTE1C28-227Z	E CAPACITOR		
	C 797	NCB31HK-152X	C CAPACITOR		
	C 801	QETN1AM-107Z	E CAPACITOR	100MF 20% 10V	
	C 802	NCB31CK-104X	C CAPACITOR		uj,us,uw
	C 803	NCB31CK-104X	C CAPACITOR		uj,us,uw
	C 804	NCB31CK-104X	C CAPACITOR		b,bken,e,ee,slen
	C 805	NCB31CK-104X	C CAPACITOR		b,bken,e,ee,slen
	C 806	QETN0JM-477Z	E CAPACITOR	470MF 20% 6.3V	uj,us,uw
	C 807	QETN0JM-477Z	E CAPACITOR	470MF 20% 6.3V	uj,us,uw
	C 808	QETN0JM-477Z	E CAPACITOR	470MF 20% 6.3V	uj,us,uw
	C 809	QETN0JM-477Z	E CAPACITOR	470MF 20% 6.3V	uj,us,uw
	C 810	QETN0JM-477Z	E CAPACITOR	470MF 20% 6.3V	uj,us,uw
	C 811	NCB31CK-104X	C CAPACITOR		uj,us,uw
	C 812	QETN0JM-477Z	E CAPACITOR	470MF 20% 6.3V	b,bken,e,ee,slen
	C 813	QETN0JM-477Z	E CAPACITOR	470MF 20% 6.3V	b,bken,e,ee,slen
	C 814	QETN0JM-477Z	E CAPACITOR	470MF 20% 6.3V	b,bken,e,ee,slen
	C 815	QETN0JM-477Z	E CAPACITOR	470MF 20% 6.3V	b,bken,e,ee,slen
	C 816	QETN0JM-477Z	E CAPACITOR	470MF 20% 6.3V	b,bken,e,ee,slen
	C 817	QETN0JM-477Z	E CAPACITOR	470MF 20% 6.3V	b,bken,e,ee,slen
	C 818	QETN1HM-475Z	E CAPACITOR	4.7MF 20% 50V	uj,us,uw
	C 819	NCB31CK-104X	C CAPACITOR		uj,us,uw
	C 820	NCS31HJ-101X	C.CAPA. C.M		b,bken,e,ee,slen
	C 821	NCS31HJ-471X	C CAPACITOR		b,bken,e,ee,slen
	C 822	NCS31HJ-471X	C CAPACITOR		b,bken,e,ee,slen
⚠	C 902	QFZ9040-683	M CAPACITOR	.068MF	
⚠	C 903	QFZ9075-683	M CAPACITOR	.068MF	
⚠	C 905	QCZ9079-102	C CAPACITOR	1000PF	
⚠	C 906	QCZ9079-102	C CAPACITOR	1000PF	
⚠	C 907	QEZ0452-826	E.CAPACITOR	B/E*	b,bken,e,ee,slen
⚠	C 907	QEZ0522-127	E.CAPACITOR	U/A	uj,us,uw
	C 908	NZZ000000000500	C CAPACITOR		
	C 909	NZZ000000000499	C CAPACITOR		
	C 910	NCS31HJ-221X	C.CAPA. C.M		
	C 913	NZZ000000000499	C CAPACITOR		
	C 914	QEZ0532-396Z	E CAPACITOR	39MF	
	C 915	NCB31HK-471X	C CAPACITOR		
	C 918	QCFB1HZ-104Y	C CAPACITOR	.10MF +80:-20%	
	C 960	QEZ0529-826Z	E CAPACITOR	82MF	
	C 961	NCB31CK-104X	C CAPACITOR		
	C 962	QETN1HM-226Z	E CAPACITOR	22MF 20% 50V	
	C 963	QEZ0533-396Z	E CAPACITOR	39MF	
	C 964	NCB31CK-104X	C CAPACITOR		
	C 965	QEZ0528-108	E CAPACITOR	1000MF	
	C 966	QETN1AM-477Z	E CAPACITOR	470MF 20% 10V	
	C 967	NCB31CK-104X	C CAPACITOR		
	C 968	NCB31CK-104X	C CAPACITOR		
	C 969	QETN1AM-227Z	E CAPACITOR	220MF 20% 10V	
	C 970	NCB31CK-104X	C CAPACITOR		
	C 973	QETN1AM-107Z	E CAPACITOR	100MF 20% 10V	
	C 978	QETN1AM-107Z	E CAPACITOR	100MF 20% 10V	
	C 979	QEZ0530-827	E CAPACITOR	820MF	
	C 981	NCB31CK-104X	C CAPACITOR		
	C 982	QEZ0532-187Z	E CAPACITOR	180MF	
	C 984	QETN1EM-107Z	E CAPACITOR	100MF 20% 25V	
	C 987	QEZ0532-187Z	E CAPACITOR	180MF	
	C 989	QETN1EM-107Z	E CAPACITOR	100MF 20% 25V	
	C 992	QETN1HM-474Z	E CAPACITOR	.47MF 20% 50V	
	C 993	NCS31HJ-101X	C.CAPA. C.M		
	C 995	NCB31CK-104X	C CAPACITOR		
	C 997	QETN1CM-227Z	E CAPACITOR	220MF 20% 16V	
	C1701	QETN1EM-476Z	E CAPACITOR	47MF 20% 25V	
	C1702	QETN1EM-476Z	E CAPACITOR	47MF 20% 25V	
	C1703	NCS31HJ-151X	C CAPACITOR		
	C1704	NCS31HJ-221X	C.CAPA. C.M		
	C1706	NCB31CK-223X	C CAPACITOR		
	CN 3	QGD2501C1-03Z	SOCKET		
	CN512	QGB2027M8-26	B TO B CONNECTO		
	CN513	QGB2027M8-26	B TO B CONNECTO		
	CN701	QGF1205C1-17	CONNECTOR		
⚠	CP951	ICP-N10-T	ICP		
	D 1	SPR-325MVW/L/-T	LED	STANDBY	
	D 2	SPR-325MVW/L/-T	LED	PROGRESSIVE	uj,us,uw
	D 3	SELU2E10C	LED		
	D 4	1SS355-X	DIODE C.M		
	D 9	1SS355-X	DIODE C.M		
	D 702	MTZJ3.3B-T2	ZENER DIODE IM		
⚠	D 901	S1WB/A/60-4101	BRIDGE DIODE		
⚠	D 902	F1T4-T2	FR DIODE		
⚠	D 903	F1T4-T2	FR DIODE		
⚠	D 904	F1T4-T2	FR DIODE		
⚠	D 908	F1T4-T2	FR DIODE		

■Electrical parts list (Main board)

Block No. 01

⚠	Item	Parts number	Parts name	Remarks	Area
⚠	D 910	F1T4-T2	FR DIODE		
	D 911	1SS355-X	DIODE C.M		
⚠	D 950	F1T4-T2	FR DIODE		
⚠	D 951	F1T4-T2	FR DIODE		
⚠	D 952	F1T4-T2	FR DIODE		
⚠	D 953	FMB-24	FUSEIODE		
⚠	D 954	F1T4-T2	FR DIODE		
⚠	D 956	F1T4-T2	FR DIODE		
⚠	D 957	F1T4-T2	FR DIODE		
	D 960	MTZJ4.7B-T2	Z DIODE I M		
	D 991	MTZJ5.1C-T2	ZENER DIODE		
	DI 1	QLF0090-001	FL TUBE		
	EP901	QNZ0136-001Z	EARTH PLATE		
⚠	FC901	QNG0003-001Z	FUSE CLIP		
⚠	FC902	QNG0003-001Z	FUSE CLIP		
	FW 1	QUM104-11Z4Z4	PARA RIBON WIRE		
	FW 2	QUM109-11DGZ4	PARA RIBON WIRE	TO CN2	
	FW 3	QUM103-11DGZ4	PARA RIBON WIRE	TO CN3	
	HS901	E70306-002	HEAT SINK		
	HS952	LV41785-001A	HEAT SINK		
	IC 1	GP1U271X	RM RECIVER		
	IC 2	UPD780232GC-057	MASK	SYSTEM MICOM	
	IC 3	PST574CMT-X	IC		
	IC701	PQ05RD11	IC		
	IC703	MN35505-X	IC C.M		
	IC704	TC7SH08F-X	IC C.M		
	IC741	NJM5532M-XE	IC		
	IC751	NJM5532M-XE	IC		
	IC801	BA7660FS-X	V.BUFFER		uj,us,uw
	IC802	BA7665FS-X	V.BUFFER		uj,us,uw
	IC803	BA7660FS-X	V.BUFFER		b,bken,e,ee,slen
	IC804	BA7660FS-X	V.BUFFER		b,bken,e,ee,slen
⚠	IC901	STR-G6651	IC		
	IC951	PQ05RD21	IC		
	IC952	SI-3033C	IC		
	J 700	QNN0461-001	PIN JACK	AUDIO L/R	
	J 701	QNN0458-001	PIN JACK	COAXIAL	
	J 702	QNS0089-001	3.5 JACK	AV COMPULINK	
	J 703	QNZ0487-001	OPT TRANSMITTER	OPT DIGITAL OUT	
	J 801	QNN0395-001	PIN JACK	COMPONENT	uj,us,uw
	J 802	QNN0454-001	PIN JACK	S/COMP.	
	J 804	QNZ0516-001	RGB CONNECTOR	PERICONE	b,bken,e,ee,slen
	JT102	QGD2501C1-05Z	SOCKET I.M	CN2	
	JT202	QGD2501C1-04Z	SOCKET	CN2	
	K 701	NQR0227-004X	FERRITE BEADS		
	K 703	NQR0227-004X	FERRITE BEADS		
	K 704	NQR0227-004X	FERRITE BEADS		
	K 705	NQR0227-004X	FERRITE BEADS		
	K 706	NQR0227-004X	FERRITE BEADS		
	K 801	QQR0601-001Z	FERRITE BEADS		
	K 902	QQR1183-001Z	F.BEADS I.M		
	L 709	QQL231K-2R2Y	INDUCTOR I.M		
	L 801	QQR1088-001	LPF		b,bken,e,ee,slen
	L 801	QQR1089-001	LPF		uj,us,uw
	L 802	QQR1088-001	LPF		
	L 803	QQR1088-001	LPF		
	L 804	QQR1088-001	LPF		
⚠	L 901	QQR1105-001	LINE FILTER		
	L 952	QQL26AK-220Z	INDUCTOR		
	L 955	QQL26AK-220Z	INDUCTOR		
	L 957	QQL244K-100Z	INDUCTOR		
	L 959	QQL244K-100Z	INDUCTOR		
⚠	P 901	QNC0081-001	AC INLET	NO POLARITY	
⚠	PC901	PC123Y02	IC(PHOTO COUPLE		
⚠	PC902	PC123Y02	IC(PHOTO COUPLE		
	Q 1	KRC104S-X	TRANSISTOR		

⚠	Item	Parts number	Parts name	Remarks	Area
	Q 2	KRC107S-X	DIGITAL.TR		
	Q 4	DTC144WKA-X	TRANSISTOR		
	Q 5	KRA102S-X	DIGITAL.TR		
	Q 743	2SD2144S/VW/-T	TRANSISTOR	AMUTE1	
	Q 744	2SD2144S/VW/-T	TRANSISTOR	AMUTE1	b,bken,e,ee,slen
	Q 753	2SD2144S/VW/-T	TRANSISTOR	AMUTE1	
	Q 754	2SD2144S/VW/-T	TRANSISTOR	AMUTE1	b,bken,e,ee,slen
	Q 755	2SD2144S/VW/-T	TRANSISTOR	FREQ	
	Q 756	2SD2144S/VW/-T	TRANSISTOR	FREQ	
	Q 791	2SC2412K/RS/-X	CHIP TRANSISTOR		
	Q 792	KRA102S-X	DIGITAL.TR		
	Q 804	KRC102S-X	DIGITAL.TR		b,bken,e,ee,slen
	Q 805	KRA102S-X	DIGITAL.TR		b,bken,e,ee,slen
	Q 806	KRC102S-X	DIGITAL.TR		b,bken,e,ee,slen
	Q 807	KRC102S-X	DIGITAL.TR		b,bken,e,ee,slen
	Q 808	KRA102S-X	DIGITAL.TR		b,bken,e,ee,slen
	Q 809	KRC102S-X	DIGITAL.TR		b,bken,e,ee,slen
	Q 951	KTD863/Y/-T	TRANSISTOR		
	Q 952	KRA104S-X	DIGITAL.TR		
	Q 991	KTC3199/Y/-T	TR I/M		
	R 1	NRSA63J-331X	MG RESISTOR		
	R 3	NRSA63J-431X	MG RESISTOR		
	R 4	NRSA63J-431X	MG RESISTOR		
	R 5	NRSA63J-561X	MG RESISTOR		
	R 6	NRSA63J-431X	MG RESISTOR		
	R 7	NRSA63J-222X	MG RESISTOR		
	R 8	NRSA63J-681X	MG RESISTOR		
	R 9	NRSA63J-681X	MG RESISTOR		
	R 10	NRSA63J-681X	MG RESISTOR		
	R 11	NRSA63J-681X	MG RESISTOR		
	R 12	NRSA63J-391X	MG RESISTOR		uj,us,uw
	R 13	NRSA63J-391X	MG RESISTOR		uj,us,uw
	R 14	NRSA63J-201X	MG RESISTOR		uj,us,uw
	R 15	NRSA63J-201X	MG RESISTOR		uj,us,uw
	R 16	NRSA63J-222X	MG RESISTOR		
	R 18	NRSA63J-102X	MG RESISTOR		
	R 19	NRSA63J-472X	MG RESISTOR		
	R 20	NRSA63J-102X	MG RESISTOR		
	R 21	NRSA63J-103X	MG RESISTOR		
	R 22	NRSA63J-103X	MG RESISTOR		
	R 23	NRSA63J-222X	MG RESISTOR		
	R 700	NRSA63J-105X	MG RESISTOR		
	R 701	NRSA63J-103X	MG RESISTOR		
	R 702	NRSA63J-105X	MG RESISTOR		
	R 703	NRSA63J-103X	MG RESISTOR		
	R 705	NRSA63J-105X	MG RESISTOR		
	R 706	NRSA63J-104X	MG RESISTOR		
	R 708	NRSA63J-101X	MG RESISTOR		
	R 711	QRE141J-680Y	C RESISTOR	68 5% 1/4W	
	R 712	QRE141J-100Y	C RESISTOR	10 5% 1/4W	
	R 713	QRE141J-100Y	C RESISTOR	10 5% 1/4W	
	R 715	QRE141J-100Y	C RESISTOR	10 5% 1/4W	
	R 721	NRSA63J-471X	MG RESISTOR		
	R 723	NRSA63J-471X	MG RESISTOR		
	R 724	NRSA63J-471X	MG RESISTOR		
	R 725	NRSA63J-471X	MG RESISTOR		
	R 726	QRE141J-680Y	C RESISTOR	68 5% 1/4W	
	R 728	NRSA63J-471X	MG RESISTOR		
	R 729	NRSA63J-471X	MG RESISTOR		
	R 731	QRE141J-332Y	C RESISTOR	3.3K 5% 1/4W	
	R 740	QRE141J-273Y	C RESISTOR	27K 5% 1/4W	
	R 741	QRE141J-273Y	C RESISTOR	27K 5% 1/4W	
	R 742	QRA14CF-1802Y	M.F.RESISTOR	18 1/4W	
	R 743	QRA14CF-1802Y	M.F.RESISTOR	18 1/4W	
	R 744	NRSA63J-362X	MG RESISTOR		
	R 746	QRA14CF-3301Y	MF.RES IM	33 1/4W	

■Electrical parts list (Main board)

Block No. 01

⚠	Item	Parts number	Parts name	Remarks	Area
	R 747	NRSA63J-362X	MG RESISTOR		
	R 748	QRA14CF-6800Y	M.F.RESISTOR	68 1/4W	
	R 750	QRE141J-273Y	C RESISTOR	27K 5% 1/4W	
	R 751	QRE141J-273Y	C RESISTOR	27K 5% 1/4W	
	R 752	QRA14CF-1802Y	M.F.RESISTOR	18 1/4W	
	R 753	QRA14CF-1802Y	M.F.RESISTOR	18 1/4W	
	R 754	NRSA63J-362X	MG RESISTOR		
	R 756	QRA14CF-3301Y	MF.RES IM	33 1/4W	
	R 757	NRSA63J-362X	MG RESISTOR		
	R 758	QRA14CF-6800Y	M.F.RESISTOR	68 1/4W	
	R 761	QRA14CF-6200Y	M.F.RESISTOR	62 1/4W	
	R 762	QRE141J-821Y	C RESISTOR	820 5% 1/4W	
	R 763	NRSA63J-362X	MG RESISTOR		
	R 764	QRE141J-183Y	C RESISTOR	18K 5% 1/4W	
	R 765	QRE141J-561Y	C RESISTOR	560 5% 1/4W	
	R 766	QRE141J-273Y	C RESISTOR	27K 5% 1/4W	
	R 767	QRE141J-101Y	C RESISTOR	100 5% 1/4W	
	R 768	NRSA63J-103X	MG RESISTOR		
	R 769	NRSA63J-103X	MG RESISTOR		b,bken,e,ee,slen
	R 771	QRA14CF-6200Y	M.F.RESISTOR	62 1/4W	
	R 772	QRE141J-821Y	C RESISTOR	820 5% 1/4W	
	R 773	NRSA63J-362X	MG RESISTOR		
	R 774	QRE141J-183Y	C RESISTOR	18K 5% 1/4W	
	R 775	QRE141J-561Y	C RESISTOR	560 5% 1/4W	
	R 776	QRE141J-273Y	C RESISTOR	27K 5% 1/4W	
	R 777	QRE141J-101Y	C RESISTOR	100 5% 1/4W	
	R 778	NRSA63J-103X	MG RESISTOR		
	R 779	NRSA63J-103X	MG RESISTOR		b,bken,e,ee,slen
	R 780	QRE141J-112Y	C RESISTOR	1.1K 5% 1/4W	b,bken,e,ee,slen
	R 781	QRE141J-112Y	C RESISTOR	1.1K 5% 1/4W	b,bken,e,ee,slen
	R 782	QRE141J-221Y	C RESISTOR	220 5% 1/4W	
	R 783	QRE141J-221Y	C RESISTOR	220 5% 1/4W	
	R 789	NRSA63J-103X	MG RESISTOR		
	R 790	QRE141J-112Y	C RESISTOR	1.1K 5% 1/4W	b,bken,e,ee,slen
	R 791	QRE141J-112Y	C RESISTOR	1.1K 5% 1/4W	b,bken,e,ee,slen
	R 792	QRE141J-221Y	C RESISTOR	220 5% 1/4W	
	R 793	QRE141J-221Y	C RESISTOR	220 5% 1/4W	
	R 794	NRSA63J-103X	MG RESISTOR		
	R 795	NRSA63J-103X	MG RESISTOR		
	R 796	NRSA63J-103X	MG RESISTOR		
	R 797	QRE141J-473Y	C RESISTOR	47K 5% 1/4W	
	R 798	NRSA63J-473X	MG RESISTOR		
	R 799	NRSA63J-333X	MG RESISTOR		
	R 801	NRSA63J-750X	MG RESISTOR		uj,us,uw
	R 802	NRSA63J-750X	MG RESISTOR		uj,us,uw
	R 803	NRSA63J-750X	MG RESISTOR		uj,us,uw
	R 804	NRSA63J-750X	MG RESISTOR		
	R 805	NRSA63J-750X	MG RESISTOR		
	R 808	NRSA63J-750X	MG RESISTOR		
	R 809	NRSA63J-103X	MG RESISTOR		b,bken,e,ee,slen
	R 810	NRSA63J-750X	MG RESISTOR		b,bken,e,ee,slen
	R 811	NRSA63J-750X	MG RESISTOR		b,bken,e,ee,slen
	R 812	NRSA63J-750X	MG RESISTOR		b,bken,e,ee,slen
	R 813	NRSA63J-750X	MG RESISTOR		b,bken,e,ee,slen
	R 814	NRSA63J-104X	MG RESISTOR		b,bken,e,ee,slen
	R 815	NRSA63J-102X	MG RESISTOR		b,bken,e,ee,slen
	R 816	NRSA63J-102X	MG RESISTOR		b,bken,e,ee,slen
	R 818	QRE141J-101Y	C RESISTOR	100 5% 1/4W	b,bken,e,ee,slen
	R 826	NRSA63J-150X	MG RESISTOR		b,bken,e,ee,slen
	R 827	NRSA63J-150X	MG RESISTOR		b,bken,e,ee,slen
	R 831	NRSA63J-102X	MG RESISTOR		
	R 832	NRSA63J-0R0X	MG RESISTOR		b,bken,e,ee,slen
	R 833	NRSA63J-750X	MG RESISTOR		
	R 834	NRSA63J-102X	MG RESISTOR		
	R 835	NRSA63J-750X	MG RESISTOR		
	R 836	NRSA63J-102X	MG RESISTOR		
	R 837	NRSA63J-750X	MG RESISTOR		
	R 838	NRSA63J-102X	MG RESISTOR		
	R 839	NRSA63J-910X	MG RESISTOR		b,bken,e,ee,slen
	R 839	NRSA63J-750X	MG RESISTOR		uj,us,uw
	R 840	NRSA63J-103X	MG RESISTOR		
	R 841	NRSA63J-271X	MG RESISTOR		b,bken,e,ee,slen
	R 900	NRSA63J-221X	MG RESISTOR		
⚠	R 901	QRL01DJ-683X	OMF RESISTOR	68K 5% 1/1W	
⚠	R 903	QRE141J-510Y	C RESISTOR	51 5% 1/4W	
	R 904	QRE141J-222Y	C RESISTOR	2.2K 5% 1/4W	
⚠	R 905	QRL027J-683	OMF RESISTOR	68K 5% 1/2W	
	R 906	QRE141J-681Y	C RESISTOR	680 5% 1/4W	
⚠	R 907	QRT022J-R47	OMF RESISTOR	5% 1/2W	
	R 908	QRE141J-332Y	C RESISTOR	3.3K 5% 1/4W	
	R 910	QRE141J-754Y	C RESISTOR	750K 5% 1/4W	
	R 911	QRE141J-754Y	C RESISTOR	750K 5% 1/4W	
	R 920	QRZ9044-335	COMP.RESISTOR	3.3M 1/0W	
	R 952	NRSA63J-103X	MG RESISTOR		
	R 953	NRSA63J-103X	MG RESISTOR		
	R 955	NRSA63J-223X	MG RESISTOR		
	R 956	QRE141J-120Y	C RESISTOR	12 5% 1/4W	
	R 960	NRSA63J-101X	MG RESISTOR		
	R 961	NRSA63J-681X	MG RESISTOR		
	R 963	NRSA63J-101X	MG RESISTOR		
	R 965	NRSA63J-103X	MG RESISTOR		
	R 969	NRSA63J-221X	MG RESISTOR		
⚠	R 992	QRZ9005-100X	F.RES I/M	10 1/0W	
	R1500	QRA14CF-1802Y	M.F.RESISTOR	18 1/4W	
	R1501	QRA14CF-1802Y	M.F.RESISTOR	18 1/4W	
	R1721	QRE141J-331Y	C RESISTOR	330 5% 1/4W	
	R1722	NRSA63J-750X	MG RESISTOR		
	R1723	NRSA63J-270X	MG RESISTOR		
	R1724	NRSA63J-101X	MG RESISTOR		
	S 1	QSW0651-001Z	TACT SWITCH		
	S 2	QSW0651-001Z	TACT SWITCH		
	S 3	QSW0651-001Z	TACT SWITCH		
	S 4	QSW0651-001Z	TACT SWITCH		
	S 5	QSW0651-001Z	TACT SWITCH		
	S 6	QSW0651-001Z	TACT SWITCH		
	S 7	QSW0651-001Z	TACT SWITCH		
	S 801	QSW0454-001	SW	RGB/YC	b,bken,e,ee,slen,us,uw
⚠	T 901	QQS0100-001	SW TRANSF		
	T1701	QQR1185-001	PULSE TRANS		
	X 1	NAX0477-001X	RESONATOR I.M		

■ **Electrical parts list (Servo control board)** **Block No. 02**

⚠	Item	Parts number	Parts name	Remarks	Area
	C 101	NCB31CK-104X	C CAPACITOR		
	C 104	NCB31CK-104X	C CAPACITOR		
	C 105	NEA70JM-476X	E.CAPACITOR		
	C 106	NEA70JM-476X	E.CAPACITOR		
	C 107	NCB31CK-104X	C CAPACITOR		
	C 108	NCB31CK-104X	C CAPACITOR		
	C 109	NCB31CK-104X	C CAPACITOR		
	C 118	NCB21CK-154X	C.CAPA. C.M		
	C 119	NCS31HJ-221X	C.CAPA. C.M		
	C 120	NCS31HJ-820X	C CAPACITOR		
	C 121	NCS31HJ-220X	C CAPACITOR		
	C 122	NCB31HK-181X	C CAPACITOR		
	C 123	NCB31CK-104X	C CAPACITOR		
	C 124	NCB31CK-104X	C CAPACITOR		
	C 125	NCB31CK-104X	C CAPACITOR		
	C 126	NEA70JM-107X	E.CAPACITOR		
	C 127	NCB31HK-102X	C CAPACITOR		
	C 128	NCB31CK-104X	C CAPACITOR		
	C 130	NCB31CK-104X	C CAPACITOR		
	C 131	NCS31HJ-120X	C.CAPA. C.M		
	C 132	NCB31CK-104X	C CAPACITOR		
	C 133	NCB31HK-561X	C CAPACITOR		
	C 134	NCB31HK-561X	C CAPACITOR		
	C 135	NCB31CK-273X	C CAPACITOR		
	C 136	NCB31CK-473X	C CAPACITOR		
	C 138	NCB31CK-104X	C CAPACITOR		
	C 139	NCB31CK-104X	C CAPACITOR		
	C 140	NEA70JM-226X	E CAPACITOR		
	C 141	NCB31CK-104X	C CAPACITOR		
	C 143	NCB31CK-104X	C CAPACITOR		
	C 144	NCB31CK-104X	C CAPACITOR		
	C 145	NCB31CK-103X	C CAPACITOR		
	C 151	NEA70JM-226X	E CAPACITOR		
	C 152	NEA70JM-226X	E CAPACITOR		
	C 159	NCB31CK-104X	C CAPACITOR		
	C 160	NCB31CK-104X	C CAPACITOR		
	C 161	NEA70GM-336X	E CAPACITOR		
	C 201	NCB11CK-474X	C.CAPA. C.M		
	C 202	NCB31HK-561X	C CAPACITOR		
	C 203	NCB31HK-561X	C CAPACITOR		
	C 204	NCB31HK-331X	C CAPACITOR		
	C 205	NCS31HJ-121X	C CAPACITOR		
	C 206	NCS31HJ-271X	C CAPACITOR		
	C 207	NCB31HK-471X	C CAPACITOR		
	C 208	NCB31CK-104X	C CAPACITOR		
	C 209	NCB31HK-102X	C CAPACITOR		
	C 210	NCB31HK-102X	C CAPACITOR		
	C 213	NCB31CK-104X	C CAPACITOR		
	C 214	NCB31CK-104X	C CAPACITOR		
	C 215	NEA70JM-336X	E CAPACITOR		
	C 216	NCB11CK-105X	C CAPACITOR		
	C 217	NEA70JM-107X	E.CAPACITOR		
	C 218	NCB31CK-104X	C CAPACITOR		
	C 219	NEA70JM-107X	E.CAPACITOR		
	C 220	NCB11CK-105X	C CAPACITOR		
	C 221	NCB31HK-561X	C CAPACITOR		
	C 222	NCB31CK-104X	C CAPACITOR		
	C 223	NCB31CK-104X	C CAPACITOR		
	C 224	NCB31CK-104X	C CAPACITOR		
	C 225	NBE91CM-105X	E CAPACITOR		
	C 227	NCB31HK-102X	C CAPACITOR		
	C 228	NCB31HK-102X	C CAPACITOR		
	C 229	NCB31CK-104X	C CAPACITOR		
	C 231	NCB31CK-103X	C CAPACITOR		
	C 232	NCB31HK-102X	C CAPACITOR		
	C 233	NCB31CK-104X	C CAPACITOR		

⚠	Item	Parts number	Parts name	Remarks	Area
	C 237	NCB31CK-104X	C CAPACITOR		
	C 238	NCB31CK-104X	C CAPACITOR		
	C 239	NCB31CK-183X	C CAPACITOR		
	C 240	NCS31HJ-101X	C.CAPA. C.M		
	C 241	NCB31CK-103X	C CAPACITOR		
	C 242	NCB11CK-105X	C CAPACITOR		
	C 244	NCB31CK-104X	C CAPACITOR		
	C 245	NCB31CK-103X	C CAPACITOR		
	C 246	NCB31CK-104X	C CAPACITOR		
	C 247	NCB31CK-104X	C CAPACITOR		
	C 248	NCB21CK-154X	C.CAPA. C.M		
	C 249	NCB31CK-223X	C CAPACITOR		
	C 251	NCB31CK-104X	C CAPACITOR		
	C 252	NEA71CM-226X	E.CAPAP. C.M		
	C 253	NCB31CK-104X	C CAPACITOR		
	C 254	NEA70JM-226X	E CAPACITOR		
	C 255	NCB31HK-223X	C CAPACITOR		
	C 256	NCB31CK-104X	C CAPACITOR		
	C 257	NCB31CK-103X	C CAPACITOR		
	C 258	NCB31CK-103X	C CAPACITOR		
	C 259	NCB31CK-103X	C CAPACITOR		
	C 260	NCB31CK-104X	C CAPACITOR		
	C 261	NCB31CK-104X	C CAPACITOR		
	C 262	NCB31CK-104X	C CAPACITOR		
	C 263	NCB31CK-104X	C CAPACITOR		
	C 264	NCB31CK-103X	C CAPACITOR		
	C 271	NEA70JM-226X	E CAPACITOR		
	C 273	NCB31CK-104X	C CAPACITOR		
	C 274	NCB31CK-104X	C CAPACITOR		
	C 275	NCB31HK-271X	C CAPACITOR		
	C 277	NCB31HK-102X	C CAPACITOR		
	C 278	NCB31HK-102X	C CAPACITOR		
	C 281	NCB31HK-223X	C CAPACITOR		
	C 282	NCB31CK-103X	C CAPACITOR		
	C 286	NEA71HM-105X	E.CAPA. C.M.		
	C 287	NCB31CK-104X	C CAPACITOR		
	C 288	NEA71HM-105X	E.CAPA. C.M.		
	C 301	NCB31CK-104X	C CAPACITOR		
	C 302	NCB31CK-104X	C CAPACITOR		
	C 303	NCB31CK-104X	C CAPACITOR		
	C 304	NCB31CK-104X	C CAPACITOR		
	C 305	NCB31CK-104X	C CAPACITOR		
	C 306	NCB31CK-104X	C CAPACITOR		
	C 307	NCB31CK-104X	C CAPACITOR		
	C 309	NCB31CK-104X	C CAPACITOR		
	C 310	NCB31CK-104X	C CAPACITOR		
	C 311	NCB31CK-104X	C CAPACITOR		
	C 314	NCB31CK-104X	C CAPACITOR		
	C 315	NCB31CK-104X	C CAPACITOR		
	C 316	NEA70GM-107X	E CAPACITOR		
	C 317	NCB11CK-105X	C CAPACITOR		
	C 318	NCB31CK-104X	C CAPACITOR		
	C 319	NCB31CK-104X	C CAPACITOR		
	C 320	NCB31CK-104X	C CAPACITOR		
	C 321	NCB31CK-104X	C CAPACITOR		
	C 324	NCB31CK-104X	C CAPACITOR		
	C 326	NCB31CK-104X	C CAPACITOR		
	C 327	NEA70GM-107X	E CAPACITOR		
	C 401	NCB31CK-104X	C CAPACITOR		
	C 402	NCB31CK-104X	C CAPACITOR		
	C 405	NCB31CK-104X	C CAPACITOR		
	C 406	NCB31CK-104X	C CAPACITOR		
	C 407	NCB31CK-104X	C CAPACITOR		
	C 408	NEA70JM-226X	E CAPACITOR		
	C 409	NCB31CK-104X	C CAPACITOR		
	C 412	NCB31CK-104X	C CAPACITOR		

■ **Electrical parts list (Servo control board)** **Block No. 02**

⚠	Item	Parts number	Parts name	Remarks	Area
	C 501	NCB31CK-104X	C CAPACITOR		
	C 502	NCB31CK-104X	C CAPACITOR		
	C 503	NCB31CK-104X	C CAPACITOR		
	C 504	NDC31HG-120X	C CAPACITOR		
	C 505	NDC31HG-130X	C CAPACITOR		
	C 509	NCB31CK-104X	C CAPACITOR		
	C 510	NCB31CK-104X	C CAPACITOR		
	C 511	NEA70JM-226X	E CAPACITOR		
	C 512	NCB31CK-104X	C CAPACITOR		
	C 513	NCB31CK-104X	C CAPACITOR		
	C 514	NCB31CK-104X	C CAPACITOR		
	C 515	NCB31CK-104X	C CAPACITOR		
	C 516	NCB31CK-104X	C CAPACITOR		
	C 517	NCB31CK-104X	C CAPACITOR		
	C 518	NCB31CK-104X	C CAPACITOR		
	C 519	NCB31CK-104X	C CAPACITOR		
	C 520	NCB31CK-104X	C CAPACITOR		
	C 523	NCB31CK-104X	C CAPACITOR		
	C 524	NEA70JM-226X	E CAPACITOR		
	C 525	NCB31CK-104X	C CAPACITOR		
	C 526	NCB31CK-104X	C CAPACITOR		
	C 527	NEA70JM-107X	E.CAPACITOR		
	C 528	NCB31CK-104X	C CAPACITOR		
	C 529	NCB31CK-104X	C CAPACITOR		
	C 531	NCB31CK-104X	C CAPACITOR		
	C 532	NCB31CK-104X	C CAPACITOR		
	C 533	NCB31CK-104X	C CAPACITOR		
	C 534	NCB31CK-104X	C CAPACITOR		
	C 535	NCB31CK-104X	C CAPACITOR		
	C 536	NCB31CK-104X	C CAPACITOR		
	C 539	NCB31CK-104X	C CAPACITOR		
	C 540	NCB31CK-104X	C CAPACITOR		
	C 541	NCB31CK-104X	C CAPACITOR		
	C 542	NCB31CK-104X	C CAPACITOR		
	C 543	NCB31CK-104X	C CAPACITOR		
	C 544	NCB31CK-104X	C CAPACITOR		
	C 545	NCB31CK-104X	C CAPACITOR		
	C 547	NCB31CK-104X	C CAPACITOR		
	C 548	NCB31CK-104X	C CAPACITOR		
	C 549	NEA70JM-227X	E CAPACITOR		
	C 550	NCB31CK-104X	C CAPACITOR		
	C 551	NEA70JM-227X	E CAPACITOR		
	C 554	NCB31CK-104X	C CAPACITOR		
	C 555	NCB31CK-104X	C CAPACITOR		
	C 557	NCB31CK-104X	C CAPACITOR		
	C 558	NCB11CK-105X	C CAPACITOR		
	C 568	NEA70JM-226X	E CAPACITOR		
	C 569	NCB31CK-104X	C CAPACITOR		
	C 571	NEA70JM-226X	E CAPACITOR		
	C 572	NCB31CK-104X	C CAPACITOR		
	C 573	NEA70JM-227X	E CAPACITOR		
	C 578	NCB31CK-104X	C CAPACITOR		
	C 580	NEA70JM-226X	E CAPACITOR		
	C 581	NEX50GM-107X	E CAPACITOR.		
	C 582	NEA70JM-226X	E CAPACITOR		
	C 601	NEA70JM-226X	E CAPACITOR		
	C 602	NEA70JM-226X	E CAPACITOR		
	C 619	NCB31CK-104X	C CAPACITOR		
	C 620	NCB31CK-104X	C CAPACITOR		
	C 621	NCB31CK-104X	C CAPACITOR		
	C 702	NCB31CK-104X	C CAPACITOR		
	C 703	NCB31CK-104X	C CAPACITOR		
	C 704	NCB31CK-104X	C CAPACITOR		
	C 705	NCB31CK-104X	C CAPACITOR		
	C 706	NCB31CK-104X	C CAPACITOR		
	C 707	NCB31CK-104X	C CAPACITOR		
	C 708	NCB31CK-104X	C CAPACITOR		
	C 709	NCB31CK-104X	C CAPACITOR		
	C 710	NCB31CK-104X	C CAPACITOR		
	C 711	NCB31CK-104X	C CAPACITOR		
	C 712	NCB31CK-104X	C CAPACITOR		
	C 713	NCB31CK-104X	C CAPACITOR		
	C 714	NCB31CK-104X	C CAPACITOR		
	C 715	NCB31CK-104X	C CAPACITOR		
	C 716	NCS31HJ-100X	C CAPACITOR		
	C 717	NCS31HJ-100X	C CAPACITOR		
	C 718	NCB31CK-104X	C CAPACITOR		
	C 901	NEA70JM-226X	E CAPACITOR		
	C 902	NCB31CK-104X	C CAPACITOR		
	C 903	NEA70JM-226X	E CAPACITOR		
	C 904	NCB31CK-104X	C CAPACITOR		
	C 905	NEA70JM-107X	E.CAPACITOR		
	C 906	NCB31CK-104X	C CAPACITOR		
	C 907	NEA70JM-107X	E.CAPACITOR		
	C 908	NCB31CK-104X	C CAPACITOR		
	C 911	NCB31CK-104X	C CAPACITOR		
	C 912	NCB31CK-104X	C CAPACITOR		
	C 913	NCB31CK-104X	C CAPACITOR		
	C 914	NCB31CK-104X	C CAPACITOR		
	C 915	NCB31CK-104X	C CAPACITOR		
	C 992	NCB31CK-104X	C CAPACITOR		
	C 993	NCB31CK-104X	C CAPACITOR		
	C 994	NCB31CK-104X	C CAPACITOR		
	C 995	NCB31CK-104X	C CAPACITOR		
	C 996	NCB31CK-104X	C CAPACITOR		
	C 997	NCB31CK-104X	C CAPACITOR		
	C 998	NCB31CK-104X	C CAPACITOR		
	C1000	NCB31CK-104X	C CAPACITOR		
	C1001	NCB31CK-104X	C CAPACITOR		
	C1002	NCB31CK-104X	C CAPACITOR		
	C1003	NCB31CK-104X	C CAPACITOR		
	C1004	NCB31CK-104X	C CAPACITOR		
	C1005	NCB31CK-104X	C CAPACITOR		
	C1006	NCB31CK-103X	C CAPACITOR		
	CN101	QGF0501F2-30X	FC/FPC CONNE	PU	
	CN105	QGF1016C2-05W	FFC/FPC CONNE	DEVICEKEY	
	CN201	QGF1016F2-15W	CONNECTOR C.M	SP&STP	
	CN202	QGF1016F2-06W	W TO B CONNE	LOADER	
	CN502	QGB2027L1-26X	B TO B CONNE	SYSTEM	
	CN503	QGB2027L1-26X	B TO B CONNE	VIDEO	
	IC101	AN8702FH	IC		
	IC102	MM3022JN-X	IC		
	IC201	MN67706ZY	IC		
	IC251	BA6664FM-X	LSI		
	IC271	BA5983FM-X	IC		
	IC301	MN103S13BDA	IC		
	IC401	MN102L25GGT3	IC		
	IC403	AK93C65AF-X	IC		
	IC501	NDV8601VWA-BB	IC		
	IC505	K4S643232E-TC70	IC		
	IC509	SST39VF160-7CEK	IC	LSB	
	IC510	AK93C65AF-X	IC		
	IC511	LM1117MP1.8-X	IC		
	IC512	74LCX373MTC-X	IC(DIGITAL)		
	IC513	74LCX373MTC-X	IC(DIGITAL)		
	IC521	MM74HCT32MTC-X	IC		
	IC522	74LCX32MTC-X	IC(DIGITAL)		
	IC523	NC7SZ125P5-X	IC(DIGITAL)		
	IC701	JCV8005-3	IC		
	K 102	NQR0007-002X	FERRITE BEADS		
	K 103	NQR0007-002X	FERRITE BEADS		
	K 104	NQR0265-003X	FERRITE BEADS		

■ **Electrical parts list (Servo control board)** **Block No. 02**

⚠	Item	Parts number	Parts name	Remarks	Area
	K 201	NQR0007-002X	FERRITE BEADS		
	K 202	NQR0007-002X	FERRITE BEADS		
	K 203	NQR0007-002X	FERRITE BEADS		
	K 301	NQR0007-002X	FERRITE BEADS		
	K 302	NQR0007-002X	FERRITE BEADS		
	K 303	NQR0007-002X	FERRITE BEADS		
	K 402	NQR0007-002X	FERRITE BEADS		
	K 501	NQR0007-002X	FERRITE BEADS		
	K 504	NQR0007-002X	FERRITE BEADS		
	K 505	NQR0007-002X	FERRITE BEADS		
	K 507	NQR0007-002X	FERRITE BEADS		
	K 508	NQR0007-002X	FERRITE BEADS		
	K 509	NQR0007-002X	FERRITE BEADS		
	K 510	NQR0007-002X	FERRITE BEADS		
	K 513	NQR0007-002X	FERRITE BEADS		
	K 515	NQR0007-002X	FERRITE BEADS		
	K 518	NQR0007-002X	FERRITE BEADS		
	K 519	NQR0007-002X	FERRITE BEADS		
	K 520	NQR0007-002X	FERRITE BEADS		
	K 556	NQR0007-002X	FERRITE BEADS		
	K 557	NQR0007-002X	FERRITE BEADS		
	K 558	NQR0007-002X	FERRITE BEADS		
	K 559	NQR0007-002X	FERRITE BEADS		
	K 562	NQR0007-002X	FERRITE BEADS		
	K 564	NQR0007-002X	FERRITE BEADS		
	K 565	NQR0007-002X	FERRITE BEADS		
	K 566	NQR0007-002X	FERRITE BEADS		
	K 567	NQR0007-002X	FERRITE BEADS		
	K 569	NQR0007-002X	FERRITE BEADS		
	K 570	NQR0007-002X	FERRITE BEADS		
	K 571	NQR0007-002X	FERRITE BEADS		
	K 572	NQR0007-002X	FERRITE BEADS		
	K 573	NQR0007-002X	FERRITE BEADS		
	K 574	NQR0007-002X	FERRITE BEADS		
	K 575	NQR0007-002X	FERRITE BEADS		
	K 576	NQR0007-002X	FERRITE BEADS		
	K 577	NQR0007-002X	FERRITE BEADS		
	K 582	NQR0007-002X	FERRITE BEADS		
	K 586	NQR0007-002X	FERRITE BEADS		
	K 593	NQR0007-002X	FERRITE BEADS		
	K 594	NQR0007-002X	FERRITE BEADS		
	K 701	NQR0007-002X	FERRITE BEADS		
	L 501	NQL044K-100X	INDUCTOR		
	L 901	NQL044K-100X	INDUCTOR		
	L 902	NQL044K-100X	INDUCTOR		
	Q 101	KTA1001/Y/-X	TRANSISTOR		
	Q 102	KTA1001/Y/-X	TRANSISTOR		
	Q 501	2SB1424/QR/-X	TRANSISTOR		
	Q 502	2SC2412K/RS/-X	CHIP TRANSISTOR		
	Q 901	KTC4377/C/-X	POW TRANSISTOR		
	R 101	NRSA63J-103X	MG RESISTOR		
	R 102	NRSA63J-333X	MG RESISTOR		
	R 103	NRSA63J-333X	MG RESISTOR		
	R 104	NRS125J-270X	MG RESISTOR		
	R 105	NRS125J-270X	MG RESISTOR		
	R 106	NRSA63J-2R2X	MG RESISTOR		
	R 107	NRSA63J-2R2X	MG RESISTOR		
	R 108	NRSA63J-473X	MG RESISTOR		
	R 110	NRSA63J-273X	MG RESISTOR		
	R 112	NRSA63J-273X	MG RESISTOR		
	R 113	NRSA63J-682X	MG RESISTOR		
	R 114	NRSA63J-102X	MG RESISTOR		
	R 115	NRVA63D-243X	RES. C.M		
	R 116	NRSA63J-683X	MG RESISTOR		
	R 117	NRSA63J-123X	MG RESISTOR		
	R 118	NRSA63J-303X	MG RESISTOR		

⚠	Item	Parts number	Parts name	Remarks	Area
	R 121	NRSA63J-0R0X	MG RESISTOR		
	R 122	NRSA63J-0R0X	MG RESISTOR		
	R 123	NRSA63J-0R0X	MG RESISTOR		
	R 124	NRSA63J-0R0X	MG RESISTOR		
	R 127	NRSA63J-222X	MG RESISTOR		
	R 128	NRSA63J-105X	MG RESISTOR		
	R 129	NRSA63J-105X	MG RESISTOR		
	R 131	NRSA63J-822X	MG RESISTOR		
	R 132	NRSA63J-103X	MG RESISTOR		
	R 152	NRS125J-1R0X	MG RESISTOR		
	R 153	NRS125J-4R7X	MG RESISTOR		
	R 155	NRSA63J-0R0X	MG RESISTOR		
	R 166	NRSA63J-182X	MG RESISTOR		
	R 202	NRSA63J-473X	MG RESISTOR		
	R 203	NRSA63J-473X	MG RESISTOR		
	R 204	NRSA63J-473X	MG RESISTOR		
	R 205	NRSA63J-473X	MG RESISTOR		
	R 206	NRS125J-4R7X	MG RESISTOR		
	R 208	NRSA63J-473X	MG RESISTOR		
	R 209	NRSA63J-123X	MG RESISTOR		
	R 210	NRSA63J-473X	MG RESISTOR		
	R 211	NRSA63J-273X	MG RESISTOR		
	R 212	NRSA63J-273X	MG RESISTOR		
	R 213	NRSA63J-562X	MG RESISTOR		
	R 214	NRSA63J-123X	MG RESISTOR		
	R 215	NRSA63J-105X	MG RESISTOR		
	R 218	NRSA63J-153X	MG RESISTOR		
	R 219	NRSA63J-473X	MG RESISTOR		
	R 220	NRSA63J-473X	MG RESISTOR		
	R 223	NRSA63J-473X	MG RESISTOR		
	R 225	NRSA63J-682X	MG RESISTOR		
	R 226	NRSA63J-123X	MG RESISTOR		
	R 227	NRSA63J-102X	MG RESISTOR		
	R 228	NRSA63J-473X	MG RESISTOR		
	R 229	NRSA63J-273X	MG RESISTOR		
	R 230	NRSA63J-273X	MG RESISTOR		
	R 231	NRSA63J-0R0X	MG RESISTOR		
	R 232	NRSA63J-472X	MG RESISTOR		
	R 233	NRSA63J-472X	MG RESISTOR		
	R 234	NRSA63J-472X	MG RESISTOR		
	R 235	NRSA63J-0R0X	MG RESISTOR		
	R 236	NRSA63J-0R0X	MG RESISTOR		
	R 237	NRSA63J-221X	MG RESISTOR		
	R 238	NRSA63J-221X	MG RESISTOR		
	R 239	NRSA63J-221X	MG RESISTOR		
	R 240	NRSA63J-221X	MG RESISTOR		
	R 241	NRSA63J-221X	MG RESISTOR		
	R 242	NRSA63J-102X	MG RESISTOR		
	R 243	NRSA63J-102X	MG RESISTOR		
	R 245	NRSA63J-102X	MG RESISTOR		
	R 246	NRSA63J-102X	MG RESISTOR		
	R 248	NRSA63J-473X	MG RESISTOR		
	R 249	NRSA63J-473X	MG RESISTOR		
	R 250	NRSA63J-473X	MG RESISTOR		
	R 251	NRS125J-1R0X	MG RESISTOR		
	R 252	NRSA63J-3R3X	MG RESISTOR		
	R 254	NRSA63J-203X	MG RESISTOR		
	R 255	NRSA63J-103X	MG RESISTOR		
	R 256	NRSA63J-470X	MG RESISTOR		
	R 257	NRS125J-1R0X	MG RESISTOR		
	R 258	NRSA63J-0R0X	MG RESISTOR		
	R 259	NRSA63J-103X	MG RESISTOR		
	R 271	NRSA63J-470X	MG RESISTOR		
	R 272	NRS125J-1R0X	MG RESISTOR		
	R 273	NRSA63J-0R0X	MG RESISTOR		
	R 274	NRSA63J-103X	MG RESISTOR		

■ **Electrical parts list (Servo control board)** **Block No. 02**

⚠	Item	Parts number	Parts name	Remarks	Area
	R 275	NRSA63J-103X	MG RESISTOR		
	R 276	NRSA63J-123X	MG RESISTOR		
	R 277	NRSA63J-123X	MG RESISTOR		
	R 278	NRSA63J-103X	MG RESISTOR		
	R 279	NRSA63J-103X	MG RESISTOR		
	R 280	NRSA63J-392X	MG RESISTOR		
	R 281	NRSA63J-392X	MG RESISTOR		
	R 282	NRSA63J-103X	MG RESISTOR		
	R 283	NRSA63J-103X	MG RESISTOR		
	R 284	NRSA63J-103X	MG RESISTOR		
	R 285	NRSA63J-103X	MG RESISTOR		
	R 286	NRSA63J-912X	MG RESISTOR		
	R 288	NRSA63J-0R0X	MG RESISTOR		
	R 289	NRSA63J-752X	MG RESISTOR		
	R 290	NRSA63J-752X	MG RESISTOR		
	R 291	NRSA63J-682X	MG RESISTOR		
	R 292	NRSA63J-103X	MG RESISTOR		
	R 293	NRSA63J-912X	MG RESISTOR		
	R 301	NRSA63J-473X	MG RESISTOR		
	R 302	NRSA63J-473X	MG RESISTOR		
	R 303	NRSA63J-473X	MG RESISTOR		
	R 304	NRSA63J-473X	MG RESISTOR		
	R 305	NRSA63J-473X	MG RESISTOR		
	R 306	NRSA63J-473X	MG RESISTOR		
	R 307	NRSA63J-473X	MG RESISTOR		
	R 308	NRSA63J-473X	MG RESISTOR		
	R 309	NRSA63J-103X	MG RESISTOR		
	R 310	NRSA63J-102X	MG RESISTOR		
	R 311	NRSA63J-102X	MG RESISTOR		
	R 317	NRSA63J-0R0X	MG RESISTOR		
	R 318	NRSA63J-0R0X	MG RESISTOR		
	R 322	NRSA63J-473X	MG RESISTOR		
	R 324	NRSA63J-473X	MG RESISTOR		
	R 328	NRSA63J-473X	MG RESISTOR		
	R 345	NRSA63J-562X	MG RESISTOR		
	R 346	NRSA63J-472X	MG RESISTOR		
	R 347	NRSA63J-102X	MG RESISTOR		
	R 348	NRSA63J-102X	MG RESISTOR		
	R 349	NRSA63J-102X	MG RESISTOR		
	R 350	NRSA63J-102X	MG RESISTOR		
	R 363	NRSA63J-472X	MG RESISTOR		
	R 364	NRSA63J-0R0X	MG RESISTOR		
	R 403	NRSA63J-472X	MG RESISTOR		
	R 408	NRSA63J-472X	MG RESISTOR		
	R 411	NRSA63J-472X	MG RESISTOR		
	R 412	NRSA63J-472X	MG RESISTOR		
	R 413	NRSA63J-472X	MG RESISTOR		
	R 414	NRSA63J-472X	MG RESISTOR		
	R 415	NRSA63J-472X	MG RESISTOR		
	R 416	NRSA63J-472X	MG RESISTOR		
	R 417	NRSA63J-472X	MG RESISTOR		
	R 418	NRSA63J-472X	MG RESISTOR		
	R 425	NRSA63J-0R0X	MG RESISTOR		
	R 429	NRSA63J-102X	MG RESISTOR		
	R 430	NRSA63J-102X	MG RESISTOR		
	R 431	NRSA63J-102X	MG RESISTOR		
	R 432	NRSA63J-102X	MG RESISTOR		
	R 434	NRSA63J-332X	MG RESISTOR		
	R 512	NRSA63J-332X	MG RESISTOR		
	R 521	NRSA63J-103X	MG RESISTOR		
	R 531	NRSA63J-562X	MG RESISTOR		
	R 532	NRSA63J-392X	MG RESISTOR		
	R 533	NRSA63J-102X	MG RESISTOR		
	R 534	NRSA63J-561X	MG RESISTOR		
	R 535	NRSA63J-333X	MG RESISTOR		
	R 536	NRSA63J-102X	MG RESISTOR		
	R 541	NRSA63J-0R0X	MG RESISTOR		
	R 543	NRSA63J-0R0X	MG RESISTOR		
	R 544	NRSA63J-471X	MG RESISTOR		
	R 545	NRSA63J-471X	MG RESISTOR		
	R 546	NRSA63J-471X	MG RESISTOR		
	R 547	NRSA63J-0R0X	MG RESISTOR		
	R 548	NRSA63J-471X	MG RESISTOR		
	R 549	NRSA63J-471X	MG RESISTOR		
	R 550	NRSA63J-471X	MG RESISTOR		
	R 551	NRSA63J-0R0X	MG RESISTOR		
	R 552	NRSA63J-0R0X	MG RESISTOR		
	R 553	NRSA63J-0R0X	MG RESISTOR		
	R 565	NRVA63D-622X	CMF RESISTOR		
	R 566	NRVA63D-132X	MG.RESI C.M		
	R 567	NRVA63D-750X	RES. C.M		b,bken,e,ee,slen
	R 567	NRVA63D-101X	RES. C.M		uj,us,uw
	R 568	NRVA63D-750X	RES. C.M		
	R 569	NRVA63D-750X	RES. C.M		b,bken,e,ee,slen
	R 569	NRVA63D-820X	RES. C.M		uj,us,uw
	R 570	NRSA63J-100X	MG RESISTOR		
	R 572	NRVA63D-820X	RES. C.M		
	R 573	NRSA63J-162X	MG RESISTOR		
	R 574	NRSA63J-162X	MG RESISTOR		
	R 575	NRSA63J-471X	MG RESISTOR		
	R 576	NRSA63J-471X	MG RESISTOR		
	R 578	NRSA63J-471X	MG RESISTOR		
	R 579	NRSA63J-471X	MG RESISTOR		
	R 580	NRSA63J-471X	MG RESISTOR		
	R 583	NRSA63J-471X	MG RESISTOR		
	R 584	NRSA63J-332X	MG RESISTOR		
	R 585	NRSA02J-0R0X	MG RESISTOR		
	R 586	NRSA02J-0R0X	MG RESISTOR		
	R 587	NRSA02J-0R0X	MG RESISTOR		
	R 608	NRSA63J-103X	MG RESISTOR		
	R 655	NRSA63J-0R0X	MG RESISTOR		
	R 713	NRSA63J-0R0X	MG RESISTOR		
	R 715	NRSA63J-0R0X	MG RESISTOR		
	R 717	NRSA63J-0R0X	MG RESISTOR		
	R 719	NRSA63J-0R0X	MG RESISTOR		
	R 721	NRSA63J-0R0X	MG RESISTOR		
	R 723	NRSA63J-0R0X	MG RESISTOR		
	R 725	NRSA63J-0R0X	MG RESISTOR		
	R 727	NRSA63J-0R0X	MG RESISTOR		
	R 729	NRSA63J-102X	MG RESISTOR		
	R 730	NRSA63J-0R0X	MG RESISTOR		
	R 731	NRSA63J-105X	MG RESISTOR		
	R 732	NRSA63J-472X	MG RESISTOR		
	R 733	NRSA63J-0R0X	MG RESISTOR		
	R 734	NRSA63J-0R0X	MG RESISTOR		
	R 735	NRSA63J-0R0X	MG RESISTOR		
	R 736	NRSA63J-0R0X	MG RESISTOR		
	R 738	NRSA63J-152X	MG RESISTOR		
	R 739	NRSA63J-0R0X	MG RESISTOR		
	R 740	NRSA63J-0R0X	MG RESISTOR		
	R 901	NRSA63J-100X	MG RESISTOR		
	R 991	NRSA63J-220X	MG RESISTOR		
	R 995	NRSA63J-223X	MG RESISTOR		b,bken,e,ee,slen,us,uw
	R 996	NRSA63J-0R0X	MG RESISTOR		uj,us,uw
	R 997	NRSA63J-0R0X	MG RESISTOR		uj
	R 998	NRSA63J-152X	MG RESISTOR		b,bken,e,ee,slen
	X 401	NAX0291-001X	C OSCILLATOR		
	X 501	NAX0481-001X	CRYSTAL		
	X 701	NAX0277-002X	CRYSTAL		

■ **Electrical parts list (Audio board)** **Block No. 03**

⚠	Item	Parts number	Parts name	Remarks	Area
	BK811	E409182-001SM	GRAND TERMINAL		
	C 838	QFLC1HJ-102Z	M CAPACITOR	1000PF 5% 50V	
	C 839	QFLC1HJ-102Z	M CAPACITOR	1000PF 5% 50V	
	C 841	QFLC1HJ-222Z	M CAPACITOR	2200PF 5% 50V	
	C 842	QFLC1HJ-222Z	M CAPACITOR	2200PF 5% 50V	
	C 843	QTE1E28-476Z	E CAPACITOR		
	C 844	QTE1E28-476Z	E CAPACITOR		
	C 845	QTE1C28-227Z	E CAPACITOR		
	C 846	QTE1C28-227Z	E CAPACITOR		
	C 847	QTE1C28-227Z	E CAPACITOR		
	C 848	QTE1C28-227Z	E CAPACITOR		
	C 849	QFN31HJ-102Z	M CAPACITOR	1000PF 5% 50V	
	C 850	QFN31HJ-102Z	M CAPACITOR	1000PF 5% 50V	
	C 851	QFLC1HJ-123Z	M CAPACITOR	.012MF 5% 50V	
	C 852	QFLC1HJ-123Z	M CAPACITOR	.012MF 5% 50V	
	C 853	QFLC1HJ-121Z	M CAPACITOR	120PF 5% 50V	
	C 854	QFLC1HJ-121Z	M CAPACITOR	120PF 5% 50V	
	C 855	QFN31HJ-472Z	M CAPACITOR	4700PF 5% 50V	
	C 856	QFN31HJ-472Z	M CAPACITOR	4700PF 5% 50V	
	C 857	QFLC1HJ-122Z	M.CAPA. I.M	1200PF 5% 50V	
	C 858	QFLC1HJ-122Z	M.CAPA. I.M	1200PF 5% 50V	
	C 859	QTE0J28-477Z	E CAPACITOR		
	C 860	QTE0J28-477Z	E CAPACITOR		
	C 861	QCZ0202-155Z	ML C CAPA I/M	1.5MF	
	C 862	QCZ0202-155Z	ML C CAPA I/M	1.5MF	
	C 863	QCZ0202-155Z	ML C CAPA I/M	1.5MF	
	C 864	QCZ0202-155Z	ML C CAPA I/M	1.5MF	
	C 866	QFN31HJ-103Z	M CAPACITOR	.010MF 5% 50V	
	C 867	QFVJ1HJ-224Z	MF CAPACITOR	.22MF 5% 50V	
	C 868	QTE0J28-477Z	E CAPACITOR		
	C 869	QFLC1HJ-152Z	M CAPACITOR	1500PF 5% 50V	
	C 871	QFLC1HJ-152Z	M CAPACITOR	1500PF 5% 50V	
	C 873	QFLC1HJ-222Z	M CAPACITOR	2200PF 5% 50V	
	C 874	QFLC1HJ-222Z	M CAPACITOR	2200PF 5% 50V	
	C 875	QTE1E28-476Z	E CAPACITOR		
	C 876	QTE1E28-476Z	E CAPACITOR		
	C 877	QTE1C28-227Z	E CAPACITOR		
	C 878	QTE1C28-227Z	E CAPACITOR		
	C 879	QTE1C28-227Z	E CAPACITOR		
	C 880	QTE1C28-227Z	E CAPACITOR		
	C 881	QFN31HJ-102Z	M CAPACITOR	1000PF 5% 50V	
	C 882	QFN31HJ-102Z	M CAPACITOR	1000PF 5% 50V	
	C 883	QFLC1HJ-123Z	M CAPACITOR	.012MF 5% 50V	
	C 884	QFLC1HJ-123Z	M CAPACITOR	.012MF 5% 50V	
	C 885	QFN31HJ-472Z	M CAPACITOR	4700PF 5% 50V	
	C 886	QFN31HJ-472Z	M CAPACITOR	4700PF 5% 50V	
	C 887	QFLC1HJ-121Z	M CAPACITOR	120PF 5% 50V	
	C 888	QFLC1HJ-121Z	M CAPACITOR	120PF 5% 50V	
	C 889	QFLC1HJ-122Z	M.CAPA. I.M	1200PF 5% 50V	
	C 890	QFLC1HJ-122Z	M.CAPA. I.M	1200PF 5% 50V	
	C 891	QTE0J28-477Z	E CAPACITOR		
	C 892	QTE0J28-477Z	E CAPACITOR		
	C 893	QCZ0202-155Z	ML C CAPA I/M	1.5MF	
	C 894	QCZ0202-155Z	ML C CAPA I/M	1.5MF	
	C 895	QCZ0202-155Z	ML C CAPA I/M	1.5MF	
	C 897	QTE0J28-477Z	E CAPACITOR		
	C 898	QFVJ1HJ-224Z	MF CAPACITOR	.22MF 5% 50V	
	C 899	QFN31HJ-103Z	M CAPACITOR	.010MF 5% 50V	
	C 900	QCZ0202-155Z	ML C CAPA I/M	1.5MF	
	C 902	QFLC1HJ-102Z	M CAPACITOR	1000PF 5% 50V	
	C 903	QFLC1HJ-102Z	M CAPACITOR	1000PF 5% 50V	
	CN711	QGF1205C1-17	CONNECTOR		
	IC811	NJM4580L	IC		
	IC812	NJM4580L	IC		
	IC813	MN35505-X	IC C M		
	IC821	NJM4580L	IC		

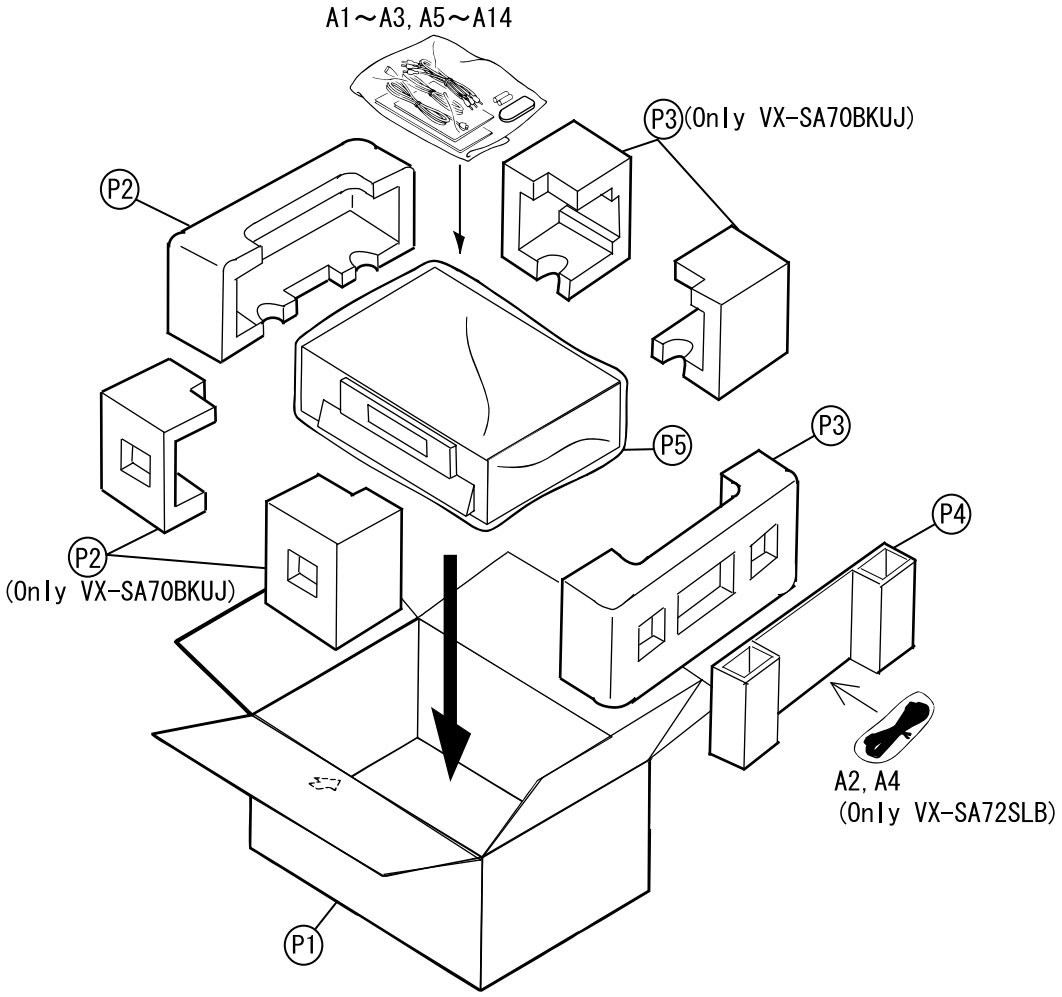
⚠	Item	Parts number	Parts name	Remarks	Area
	IC822	NJM4580L	IC		
	IC823	MN35505-X	IC C M		
	J 811	QNN0461-001	PIN JACK		
	J 821	QNN0455-001	PIN JACK		
	K 811	QQR0601-001Z	FERRITE BEADS		
	K 812	QQR0601-001Z	FERRITE BEADS		
	K 813	QQR0601-001Z	FERRITE BEADS		
	K 821	QQR0601-001Z	FERRITE BEADS		
	K 822	QQR0601-001Z	FERRITE BEADS		
	K 823	QQR0601-001Z	FERRITE BEADS		
	Q 811	2SD2144S/VW/-T	TRANSISTOR		
	Q 812	2SD2144S/VW/-T	TRANSISTOR		
	Q 821	2SD2144S/VW/-T	TRANSISTOR		
	Q 822	2SD2144S/VW/-T	TRANSISTOR		
	R 861	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 862	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 863	QRE141J-101Y	C RESISTOR	100 5% 1/4W	
	R 864	QRE141J-101Y	C RESISTOR	100 5% 1/4W	
	R 865	QRE141J-561Y	C RESISTOR	560 5% 1/4W	
	R 866	QRE141J-561Y	C RESISTOR	560 5% 1/4W	
	R 867	QRE141J-273Y	C RESISTOR	27K 5% 1/4W	
	R 868	QRE141J-273Y	C RESISTOR	27K 5% 1/4W	
	R 869	QRE141J-183Y	C RESISTOR	18K 5% 1/4W	
	R 870	QRE141J-183Y	C RESISTOR	18K 5% 1/4W	
	R 871	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 872	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 873	QRE141J-221Y	C RESISTOR	220 5% 1/4W	
	R 874	QRE141J-221Y	C RESISTOR	220 5% 1/4W	
	R 875	QRE141J-221Y	C RESISTOR	220 5% 1/4W	
	R 876	QRE141J-221Y	C RESISTOR	220 5% 1/4W	
	R 877	QRA14CF-7500Y	MF.RES IM	75 1/4W	
	R 878	QRA14CF-7500Y	MF.RES IM	75 1/4W	
	R 881	QRA14CF-7500Y	MF.RES IM	75 1/4W	
	R 882	QRA14CF-7500Y	MF.RES IM	75 1/4W	
	R 883	QRE141J-362Y	C RESISTOR	3.6K 5% 1/4W	
	R 884	QRE141J-362Y	C RESISTOR	3.6K 5% 1/4W	
	R 885	QRA14CF-3602Y	MF.RES IM	36 1/4W	
	R 886	QRA14CF-3602Y	MF.RES IM	36 1/4W	
	R 887	QRA14CF-1601Y	MF.RES IM	16 1/4W	
	R 888	QRA14CF-1601Y	MF.RES IM	16 1/4W	
	R 889	QRE141J-272Y	C RESISTOR	2.7K 5% 1/4W	
	R 890	QRE141J-272Y	C RESISTOR	2.7K 5% 1/4W	
	R 891	QRA14CF-1802Y	M.F.RESISTOR	18 1/4W	
	R 892	QRA14CF-1802Y	M.F.RESISTOR	18 1/4W	
	R 893	QRA14CF-1802Y	M.F.RESISTOR	18 1/4W	
	R 894	QRA14CF-1802Y	M.F.RESISTOR	18 1/4W	
	R 895	QRE141J-303Y	C RESISTOR	30K 5% 1/4W	
	R 896	QRE141J-303Y	C RESISTOR	30K 5% 1/4W	
	R 897	QRE141J-303Y	C RESISTOR	30K 5% 1/4W	
	R 898	QRE141J-303Y	C RESISTOR	30K 5% 1/4W	
	R 899	QRE141J-100Y	C RESISTOR	10 5% 1/4W	
	R 909	QRE141J-471Y	C RESISTOR	470 5% 1/4W	
	R 911	QRE141J-100Y	C RESISTOR	10 5% 1/4W	
	R 912	QRE141J-100Y	C RESISTOR	10 5% 1/4W	
	R 913	QRE141J-332Y	C RESISTOR	3.3K 5% 1/4W	
	R 914	QRE141J-471Y	C RESISTOR	470 5% 1/4W	
	R 915	QRE141J-100Y	C RESISTOR	10 5% 1/4W	
	R 916	QRE141J-471Y	C RESISTOR	470 5% 1/4W	
	R 917	QRE141J-471Y	C RESISTOR	470 5% 1/4W	
	R 918	QRE141J-471Y	C RESISTOR	470 5% 1/4W	
	R 919	QRE141J-471Y	C RESISTOR	470 5% 1/4W	
	R 923	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 924	QRE141J-103Y	C RESISTOR	10K 5% 1/4W	
	R 925	QRE141J-101Y	C RESISTOR	100 5% 1/4W	
	R 926	QRE141J-101Y	C RESISTOR	100 5% 1/4W	
	R 927	QRE141J-561Y	C RESISTOR	560 5% 1/4W	

■ **Electrical parts list (Audio board)** **Block No. 03**

⚠	Item	Parts number	Parts name	Remarks	Area
	R 928	QRE141J-561Y	C RESISTOR	560 5% 1/4W	
	R 929	QRE141J-273Y	C RESISTOR	27K 5% 1/4W	
	R 930	QRE141J-273Y	C RESISTOR	27K 5% 1/4W	
	R 931	QRE141J-183Y	C RESISTOR	18K 5% 1/4W	
	R 932	QRE141J-183Y	C RESISTOR	18K 5% 1/4W	
	R 933	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 934	QRE141J-102Y	C RESISTOR	1.0K 5% 1/4W	
	R 935	QRE141J-221Y	C RESISTOR	220 5% 1/4W	
	R 936	QRE141J-221Y	C RESISTOR	220 5% 1/4W	
	R 937	QRE141J-221Y	C RESISTOR	220 5% 1/4W	
	R 938	QRE141J-221Y	C RESISTOR	220 5% 1/4W	
	R 939	QRA14CF-7500Y	MF.RES IM	75 1/4W	
	R 940	QRA14CF-7500Y	MF.RES IM	75 1/4W	
	R 943	QRA14CF-7500Y	MF.RES IM	75 1/4W	
	R 944	QRA14CF-7500Y	MF.RES IM	75 1/4W	
	R 945	QRE141J-362Y	C RESISTOR	3.6K 5% 1/4W	
	R 946	QRE141J-362Y	C RESISTOR	3.6K 5% 1/4W	
	R 947	QRA14CF-3602Y	MF.RES IM	36 1/4W	
	R 948	QRA14CF-3602Y	MF.RES IM	36 1/4W	
	R 949	QRA14CF-1601Y	MF.RES IM	16 1/4W	
	R 950	QRA14CF-1601Y	MF.RES IM	16 1/4W	
	R 951	QRA14CF-1802Y	M.F.RESISTOR	18 1/4W	
	R 954	QRA14CF-1802Y	M.F.RESISTOR	18 1/4W	
	R 957	QRE141J-303Y	C RESISTOR	30K 5% 1/4W	
	R 958	QRE141J-303Y	C RESISTOR	30K 5% 1/4W	
	R 959	QRE141J-303Y	C RESISTOR	30K 5% 1/4W	
	R 962	QRE141J-100Y	C RESISTOR	10 5% 1/4W	
	R 966	QRE141J-471Y	C RESISTOR	470 5% 1/4W	
	R 967	QRE141J-471Y	C RESISTOR	470 5% 1/4W	
	R 968	QRE141J-471Y	C RESISTOR	470 5% 1/4W	
	R 970	QRE141J-471Y	C RESISTOR	470 5% 1/4W	
	R 971	QRE141J-471Y	C RESISTOR	470 5% 1/4W	
	R 972	QRE141J-100Y	C RESISTOR	10 5% 1/4W	
	R 973	QRE141J-100Y	C RESISTOR	10 5% 1/4W	
	R 974	QRE141J-100Y	C RESISTOR	10 5% 1/4W	
	R 975	QRE141J-100Y	C RESISTOR	10 5% 1/4W	
	R 976	QRE141J-471Y	C RESISTOR	470 5% 1/4W	
	R 977	QRE141J-332Y	C RESISTOR	3.3K 5% 1/4W	
	R 980	QRE141J-100Y	C RESISTOR	10 5% 1/4W	
	R 981	QRE141J-303Y	C RESISTOR	30K 5% 1/4W	
	R 982	QRA14CF-1802Y	M.F.RESISTOR	18 1/4W	
	R 983	QRE141J-272Y	C RESISTOR	2.7K 5% 1/4W	
	R 984	QRE141J-272Y	C RESISTOR	2.7K 5% 1/4W	
	R 985	QRA14CF-1802Y	M.F.RESISTOR	18 1/4W	
	R1825	QRE141J-272Y	C RESISTOR	2.7K 5% 1/4W	
	R1826	QRE141J-272Y	C RESISTOR	2.7K 5% 1/4W	
	R1845	QRE141J-272Y	C RESISTOR	2.7K 5% 1/4W	
	R1846	QRE141J-272Y	C RESISTOR	2.7K 5% 1/4W	
	SP813	VYH7653-001	IC HOLDER		
	SP823	VYH7653-001	IC HOLDER		

Packing materials and accessories parts list

Block No. M 4 M M
Block No. M 5 M M



■ Packing parts list

Block No. M4MM

⚠	Item	Parts number	Parts name	Q'ty	Description	Area
	P 1	LE30945-052A	PACKING CASE	1		b
		LE30945-047A	PACKING CASE	1		bken
		LE30945-050A	PACKING CASE	1		e,slen
		LE30945-051A	PACKING CASE	1		ee
		LE30945-046A	PACKING CASE	1		uj
		LE30945-053A	PACKING CASE	1		us
		LE30945-055A	PACKING CASE	1		uw
	P 2	LE20609-001A	PACKING PAD(L)	1		b,bken,e,ee,slen,us,uw
		LE20607-001A	PACKING PAD(F)	1		uj
	P 3	LE20610-001A	PACKING PAD(R)	1		b,bken,e,ee,slen,us,uw
		LE20608-001A	PACKING PAD(R)	1		uj
	P 4	LE30920-002A	SHEET ASSY	1		b
	P 5	QPC06005515P	POLY BAG	1		

■ Accessories parts list

Block No. M5MM

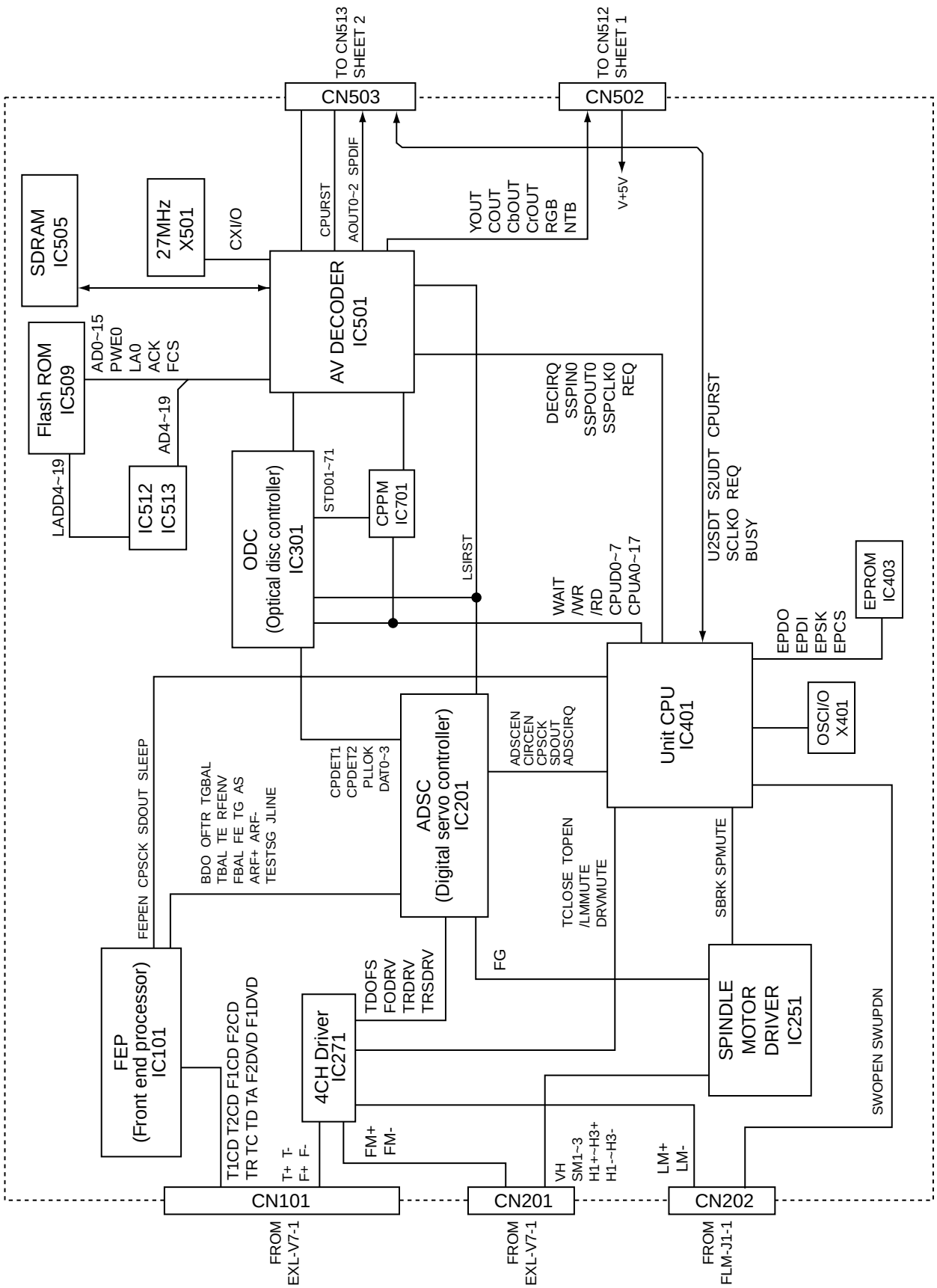
⚠	Item	Parts number	Parts name	Q'ty	Description	Area
	A 1	LET0185-004A	INST BOOK	1		b
		LET0185-006A	INST BOOK	1		bken,e,slen
		LET0185-011A	INST BOOK	1		bken,slen
		LET0185-012A	INST BOOK	1		bken,slen
		LET0185-010A	INST BOOK	1		bken,slen
		LET0185-009A	INST BOOK	1		bken,slen
		LET0185-005A	INST BOOK	1		bken,e,slen
		LET0185-008A	INST BOOK	1		bken,slen
		LET0185-007A	INST BOOK	1		e
		LET0185-013A	INST BOOK	1		ee
		LET0185-001C	INST BOOK	1		uj
		LET0185-017A	INST BOOK	1		us,uw
		LET0185-023A	INST BOOK	1		us
		LET0185-019A	INST BOOK	1		uw
		LET0185-020A	INST BOOK	1		uw
⚠	A 2	QMPP060-183-JD	POWER CORD	1		b
⚠		QMPL150-183-JC	POWER CORD	1		bken,e,ee,slen
⚠		QMP39F0-183E	POWER CORD	1		uj,us,uw
⚠	A 3	QAM0112-001	AC PLUG ADAPTER	1		uj,us,uw
	A 4	QPC02503510P	POLY BAG	1		b
	A 5	BT-54008-2	WARRANTY CARD	1		b,bken,e,slen
		BT-54012-2	W.CARD	1		ee
	A 6	BT-51028-1	J=REGIST CAR	1		uj
		VNA3000-204	REGIST.CARD	1		b
	A 7	YU20333	SAFETY INST.	1		uj
	A 8	QAM0328-001	AV CORD 3P	1		
	A 9	QAM0327-001	S-VIDEO CORD	1		
	A 10	QAM0326-001	1P PLUG CORD(JE	1		uj,us,uw
	A 11	EWP302-011W	SIGNAL CORD	2		
	A 12	RM-SXVSA72E	REMOCON UNIT	1		b,e,ee,slen
		RM-SXVSA70E	REMOCON UNIT	1		bken
		RM-SXVSA70J	REMOCON UNIT	1		uj
		RM-SXVSA72U	REMOCON UNIT	1		us,uw
	A 13	-----	BATTERY	2		
	A 14	QPC02504015P	POLY BAG	1		

Safety precaution

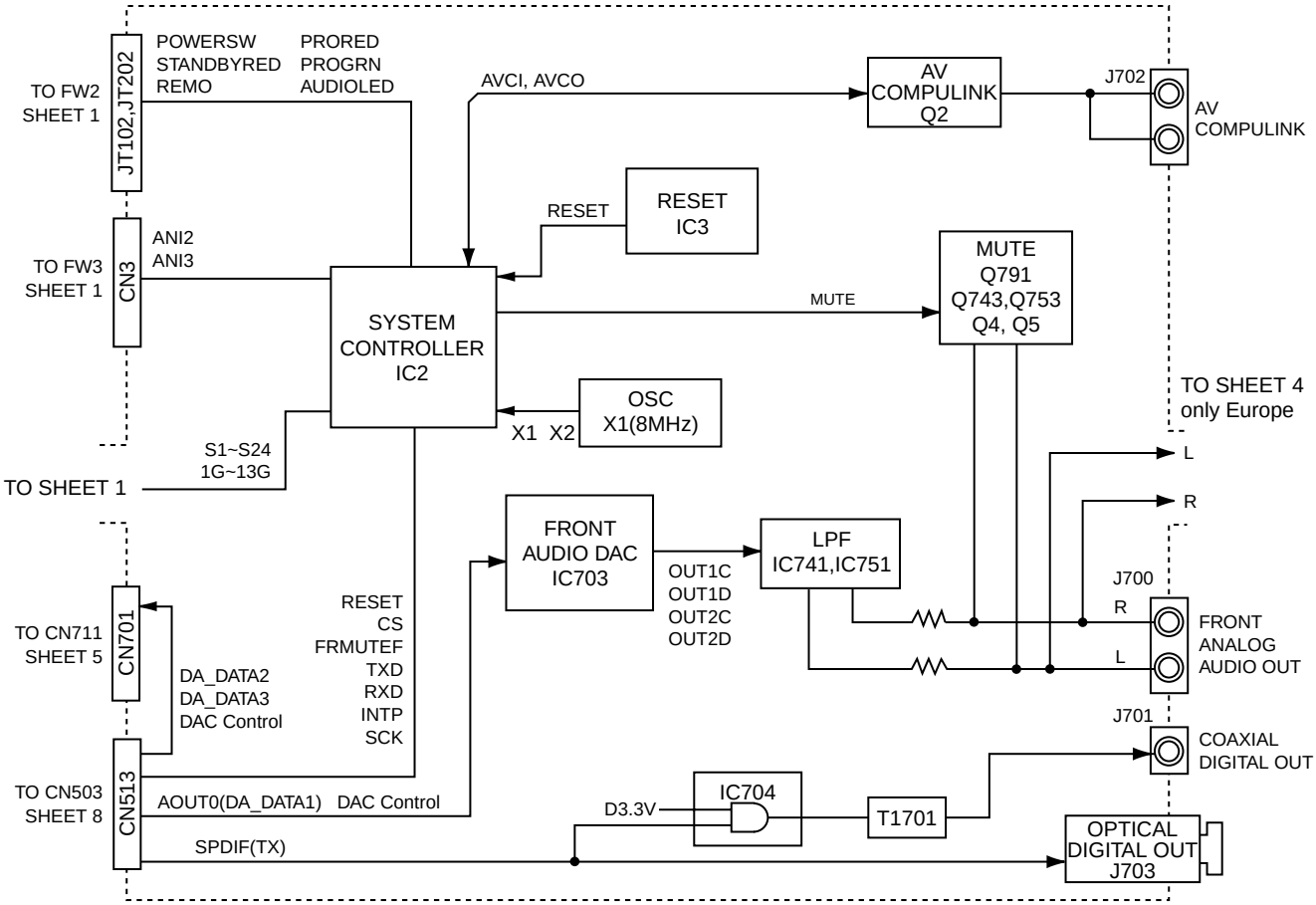
In regard with component parts appearing on the silk-screen printed side (parts side) of the PWB diagrams, the parts that are printed over with black such as the resistor (▬), diode (▬) and ICP (●) or identified by the "⚠" mark nearby are critical for safety.
When replacing them, be sure to use the parts of the same type and rating as specified by the manufacturer. (Except the JC version)

Block diagrams

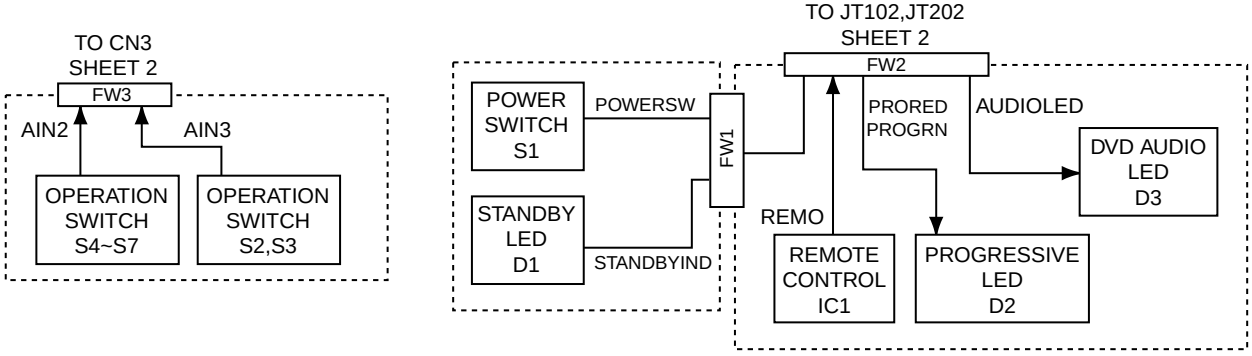
■ DVD Servo control & AV decoder section (SHEET 6,7,8)



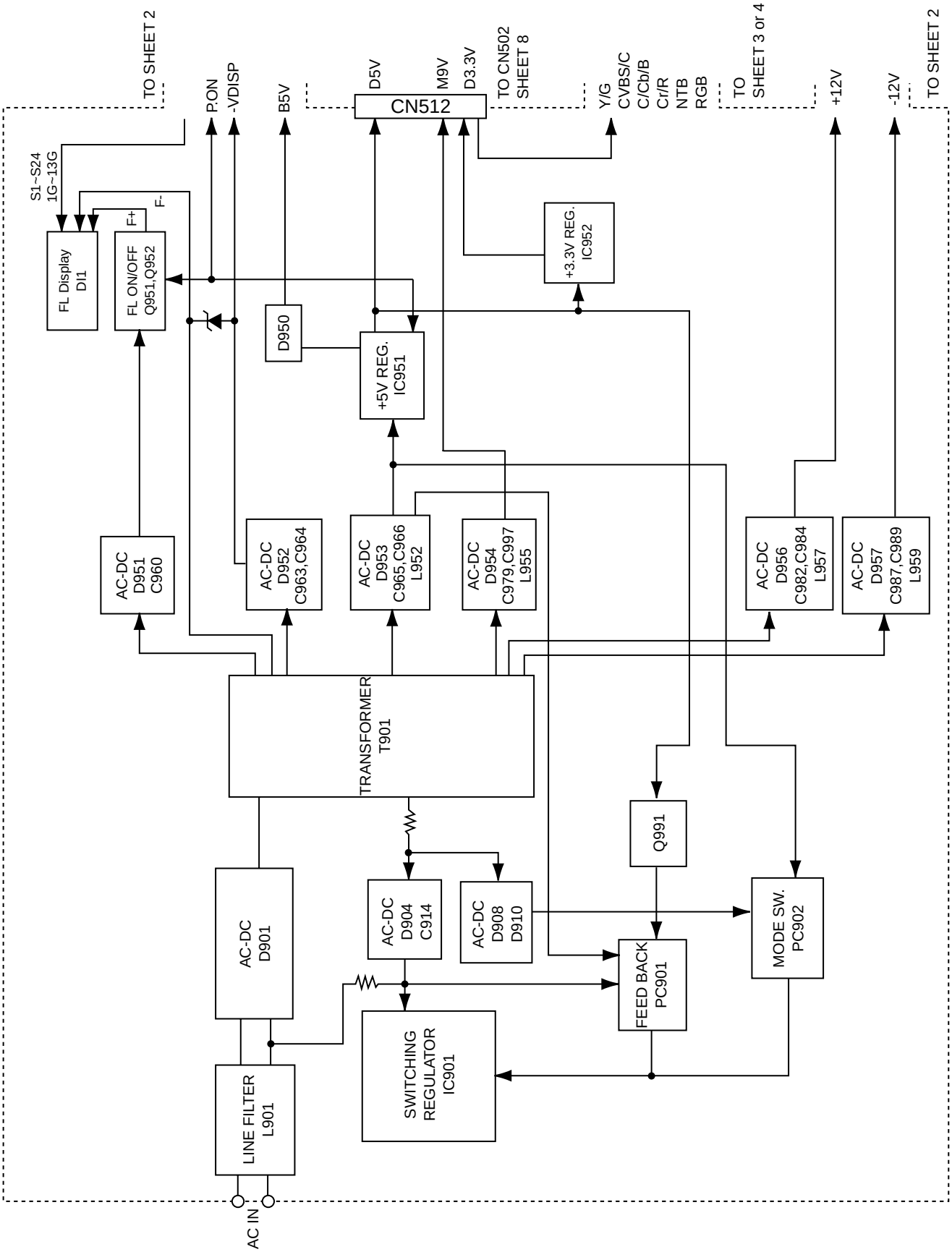
■ System control & audio signal output section (SHEET 2)



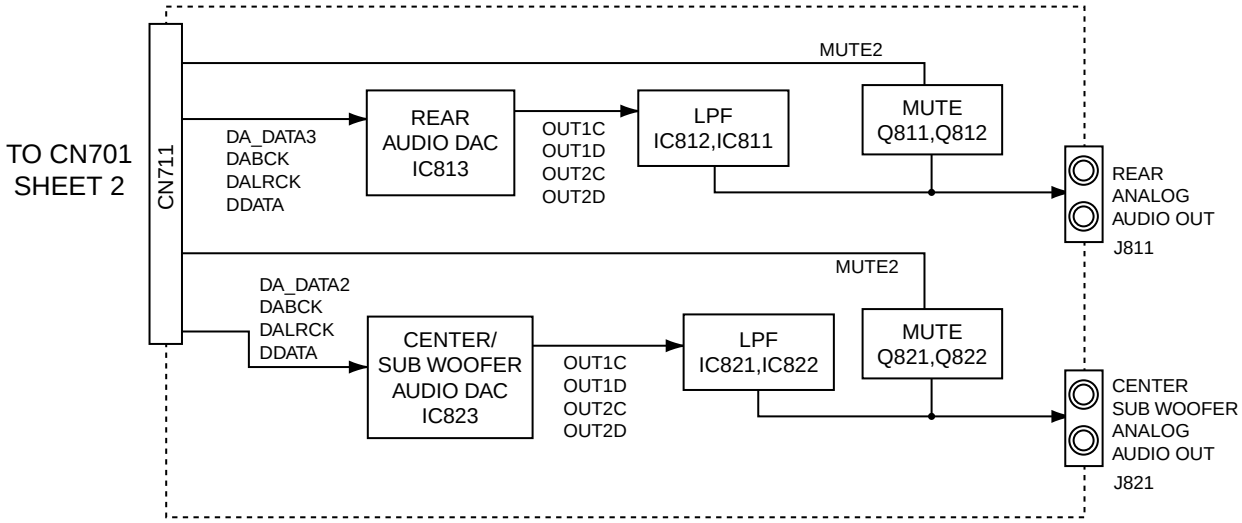
■ Operation switch section (SHEET 1)



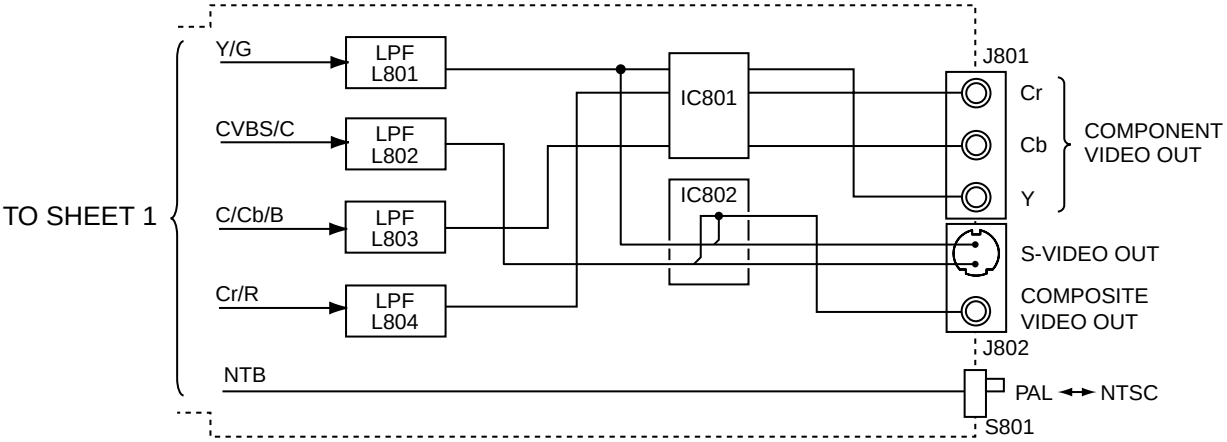
■ DC Regulator section (SHEET 1)



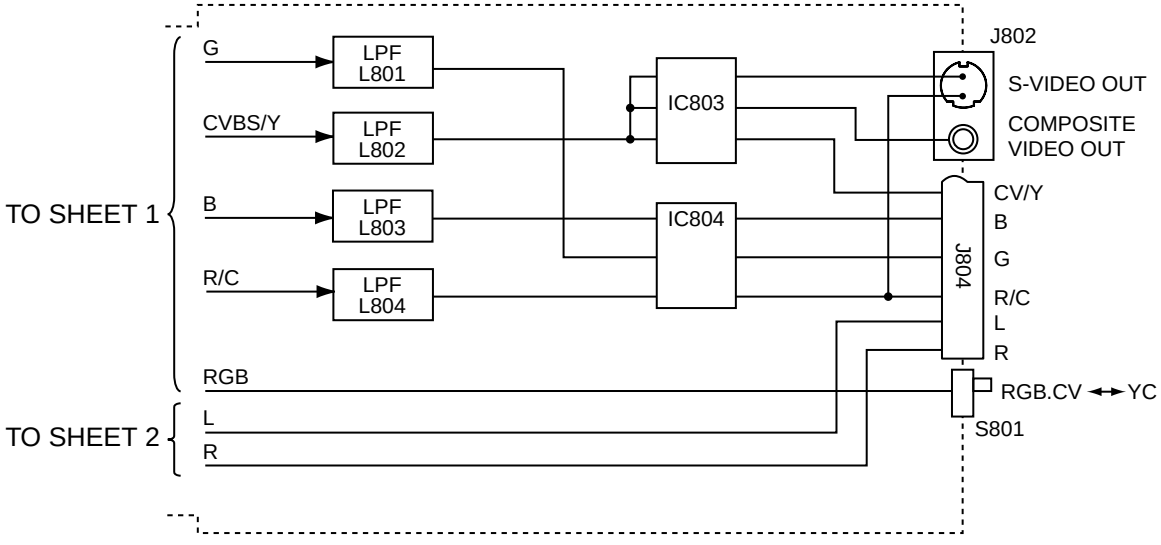
■ Surround audio signal output section (SHEET 5)



■ Video signal output section (SHEET 3 for Asia area)

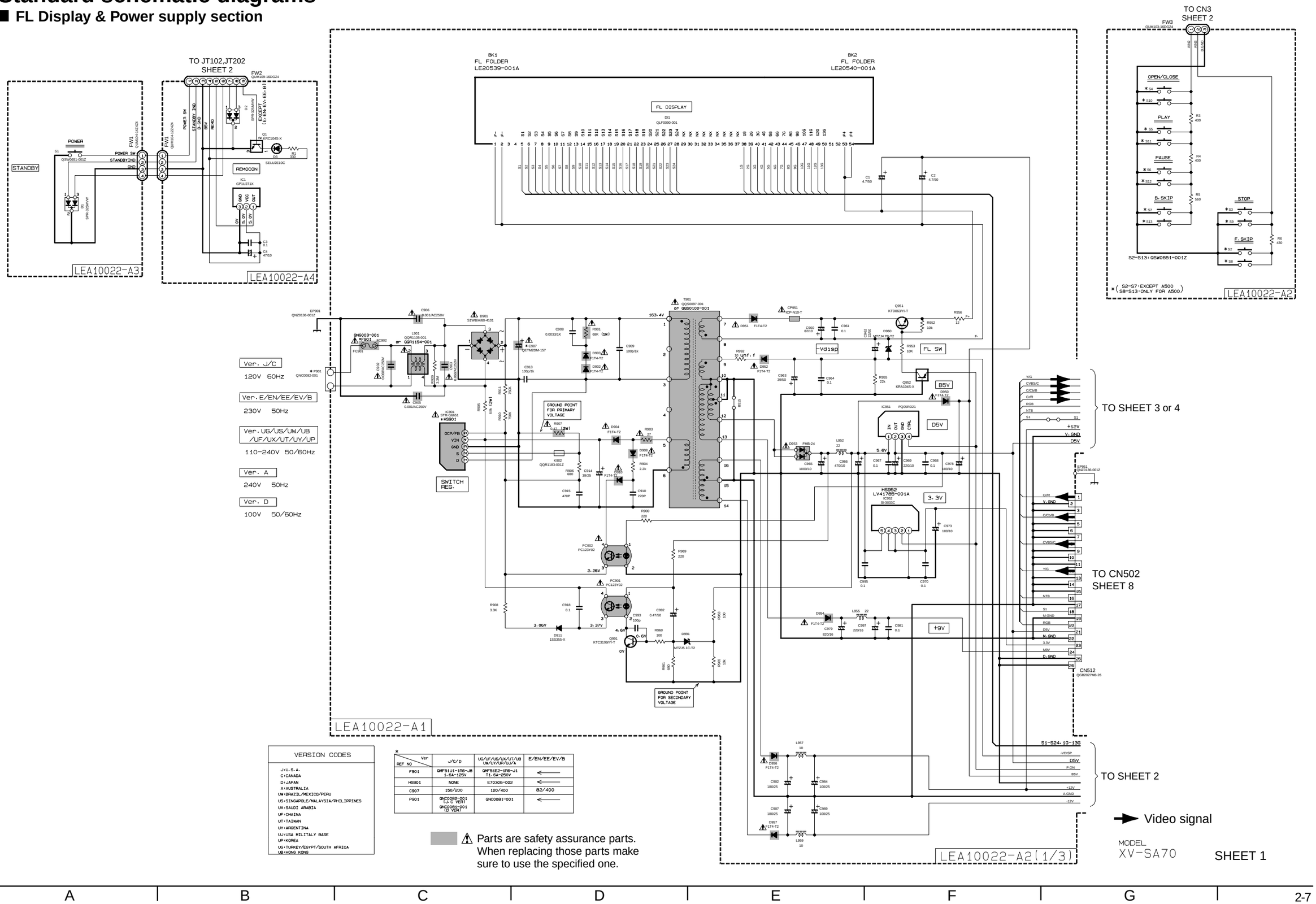


■ Video signal output section (SHEET 4 for Europe area)



Standard schematic diagrams

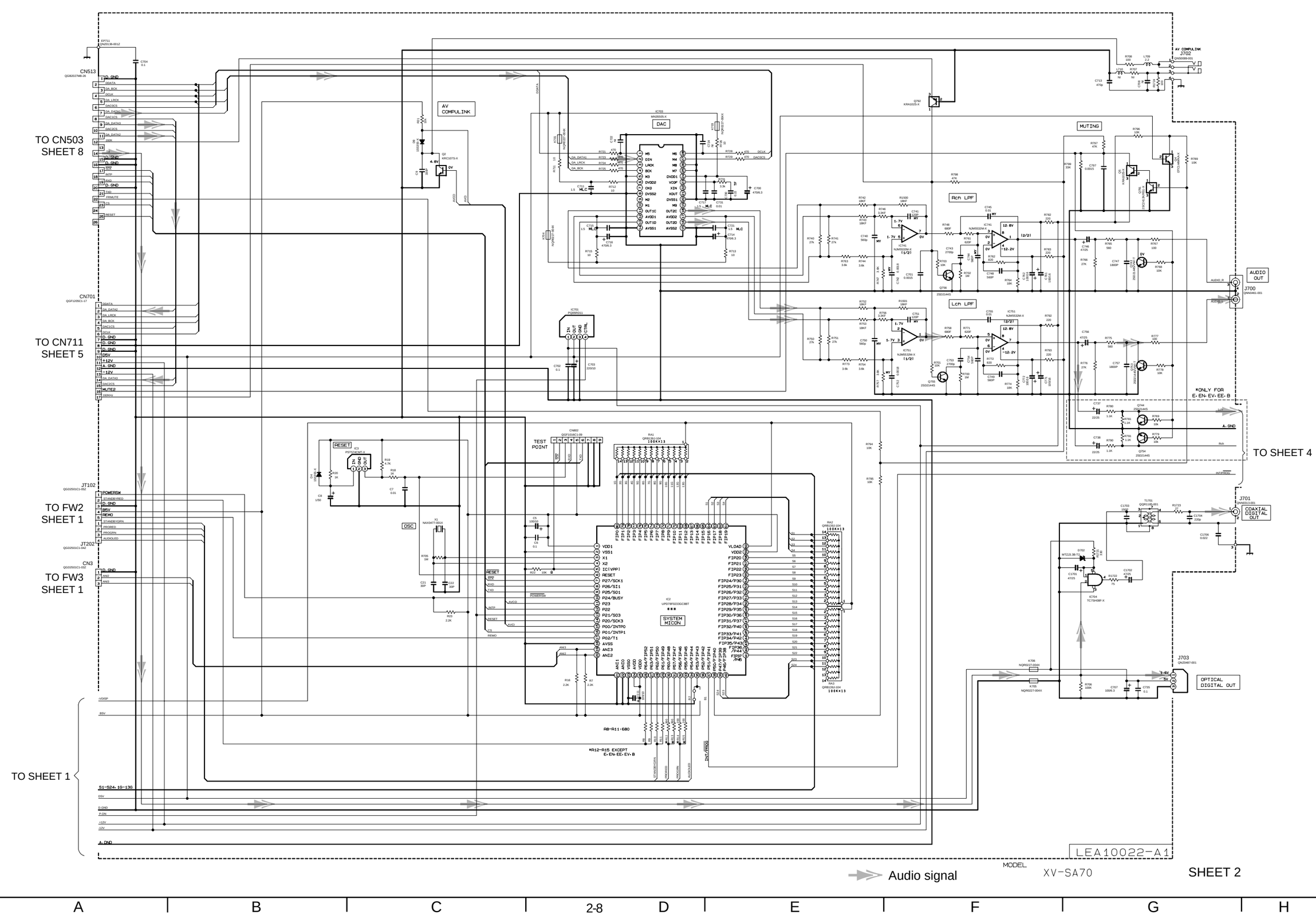
■ FL Display & Power supply section



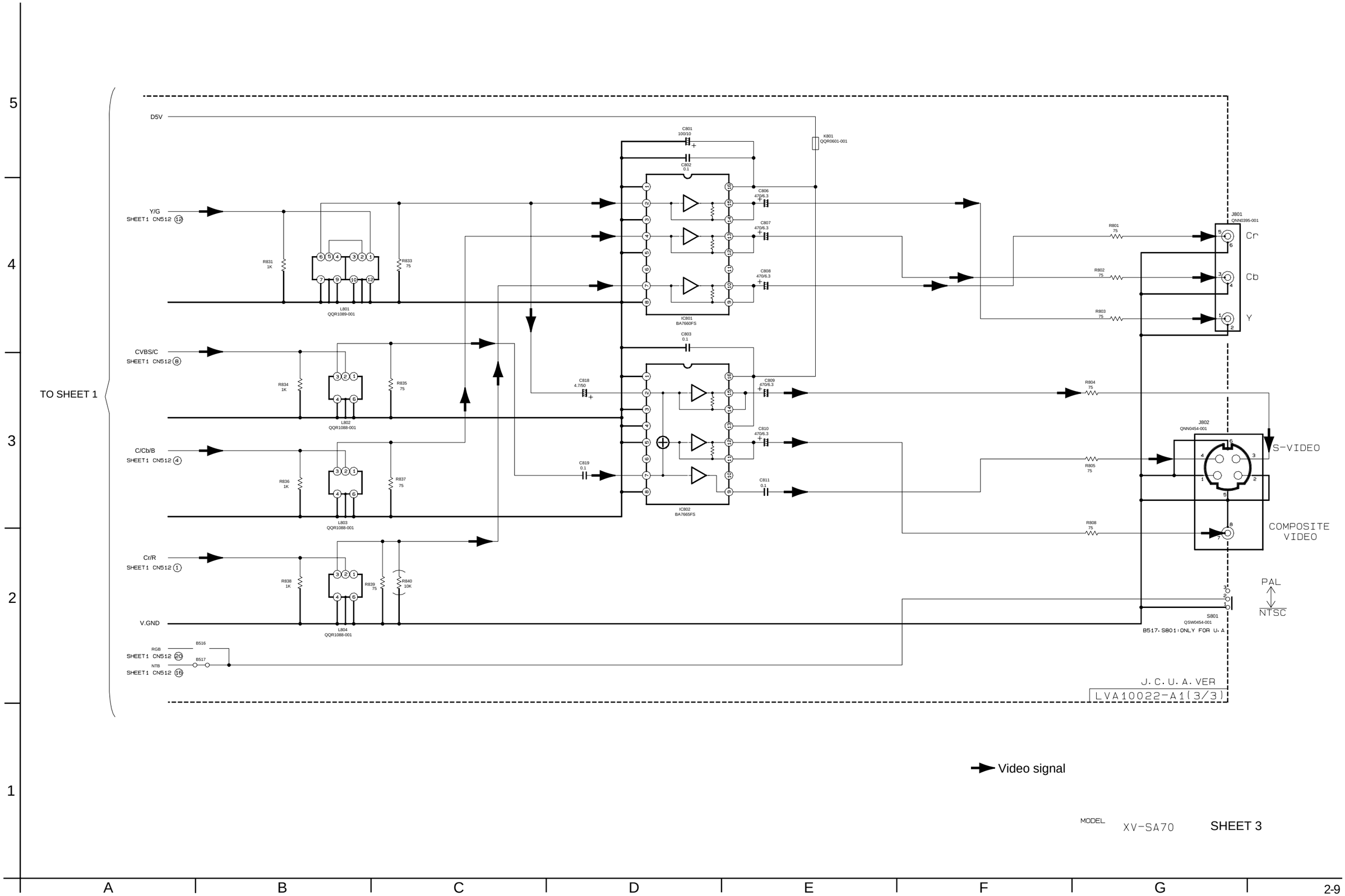
* Ver / REF NO	J/C/D	UG/UF/US/UX/UT/UB UW/UY/UP/UJ/A	E/EN/EE/EV/B
F901	QMF51U1-1R6-JB 1.6A-125V	QMF51E2-1R6-J1 T1.6A-250V	←
HS901	NONE	E70306-002	←
C907	150/200	120/400	82/400
P901	QNC0082-001 (J,C VER) QNC0081-001 (D VER)	QNC0081-001	←

⚠ Parts are safety assurance parts. When replacing those parts make sure to use the specified one.

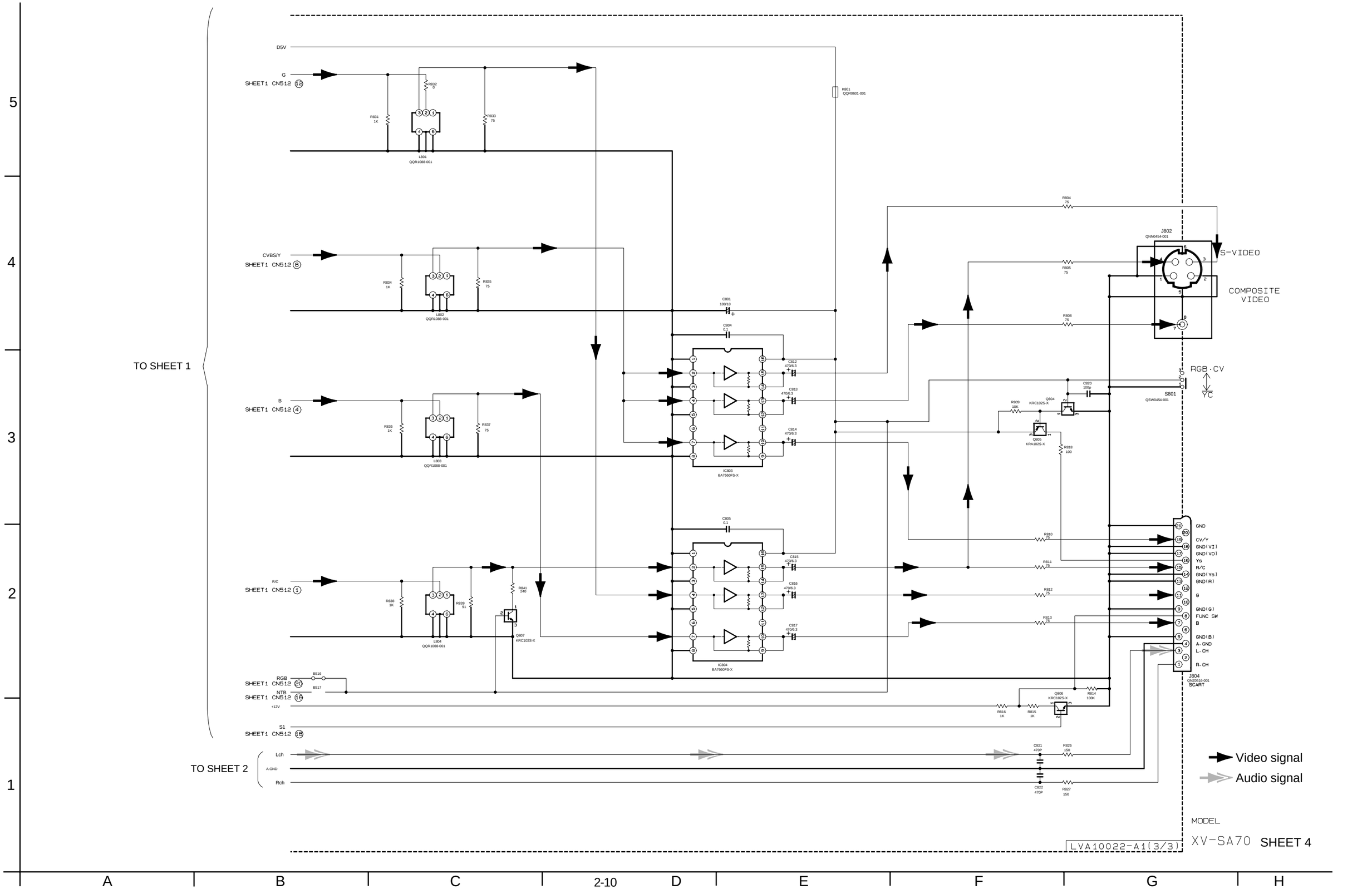
■ System control & audio signal output section



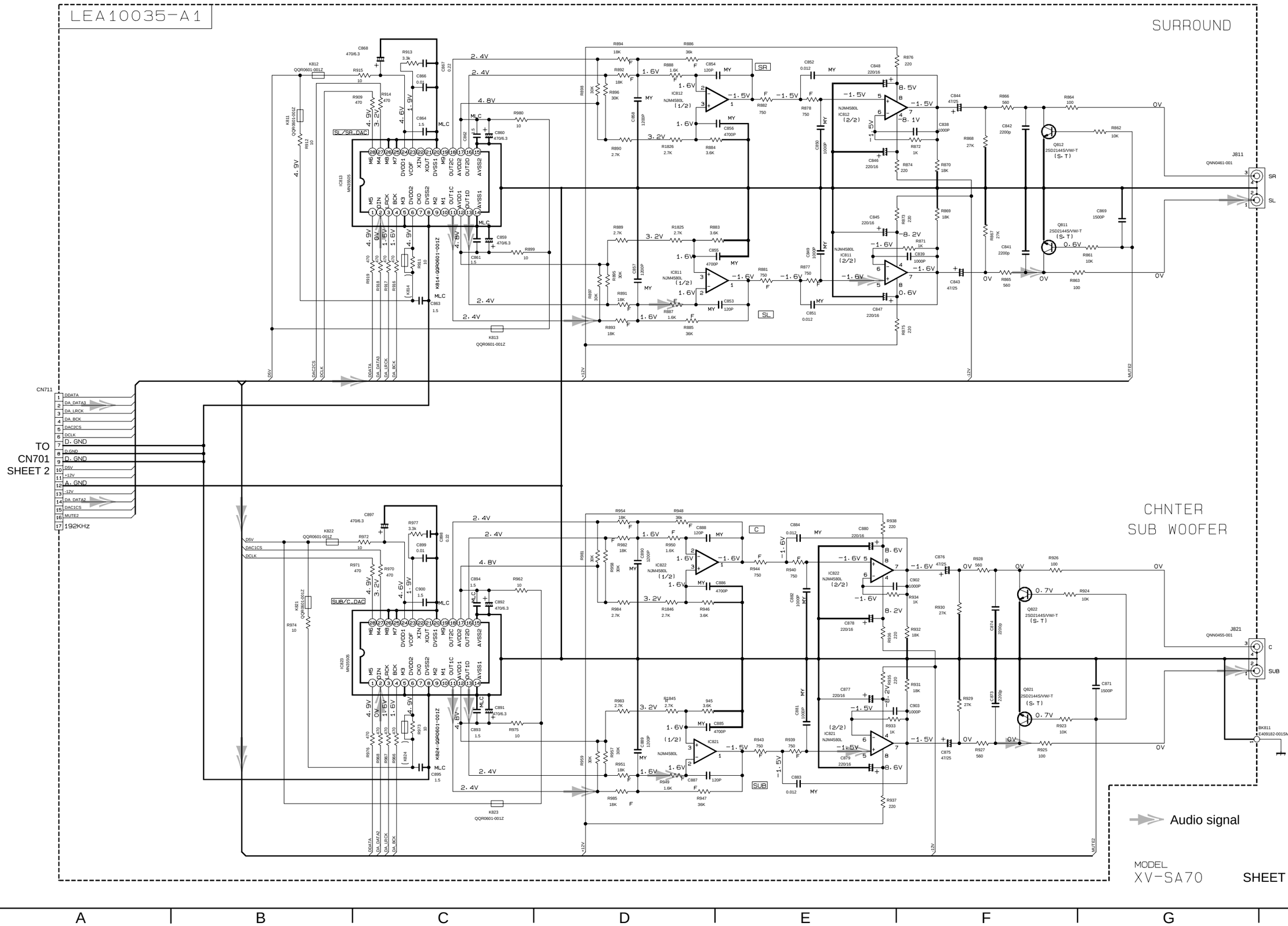
■ Video signal output section (For ver. J,C,U,A)



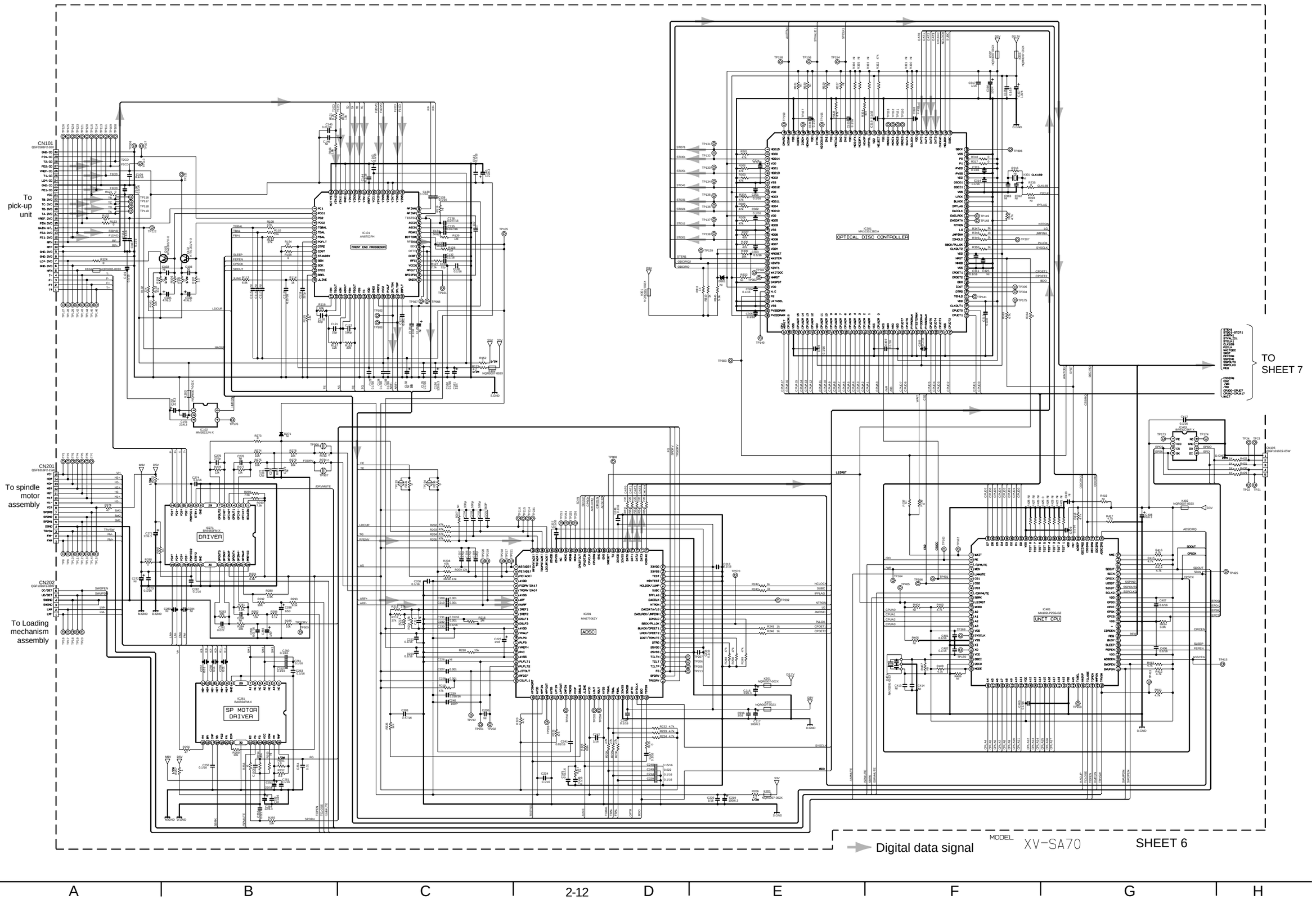
■ Video signal output terminal section (For europe)



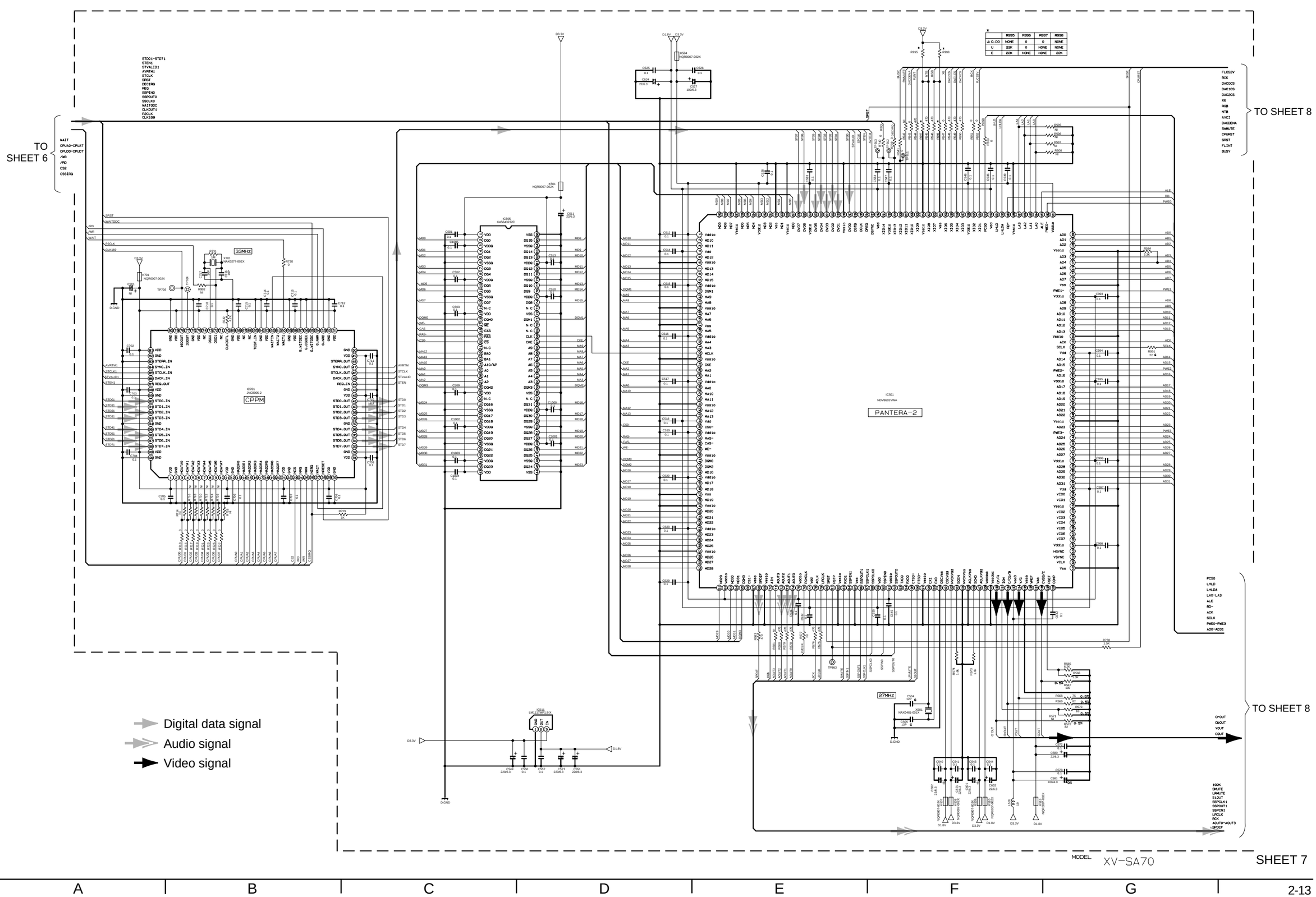
■ Surround audio signal output section



■ Servo control section



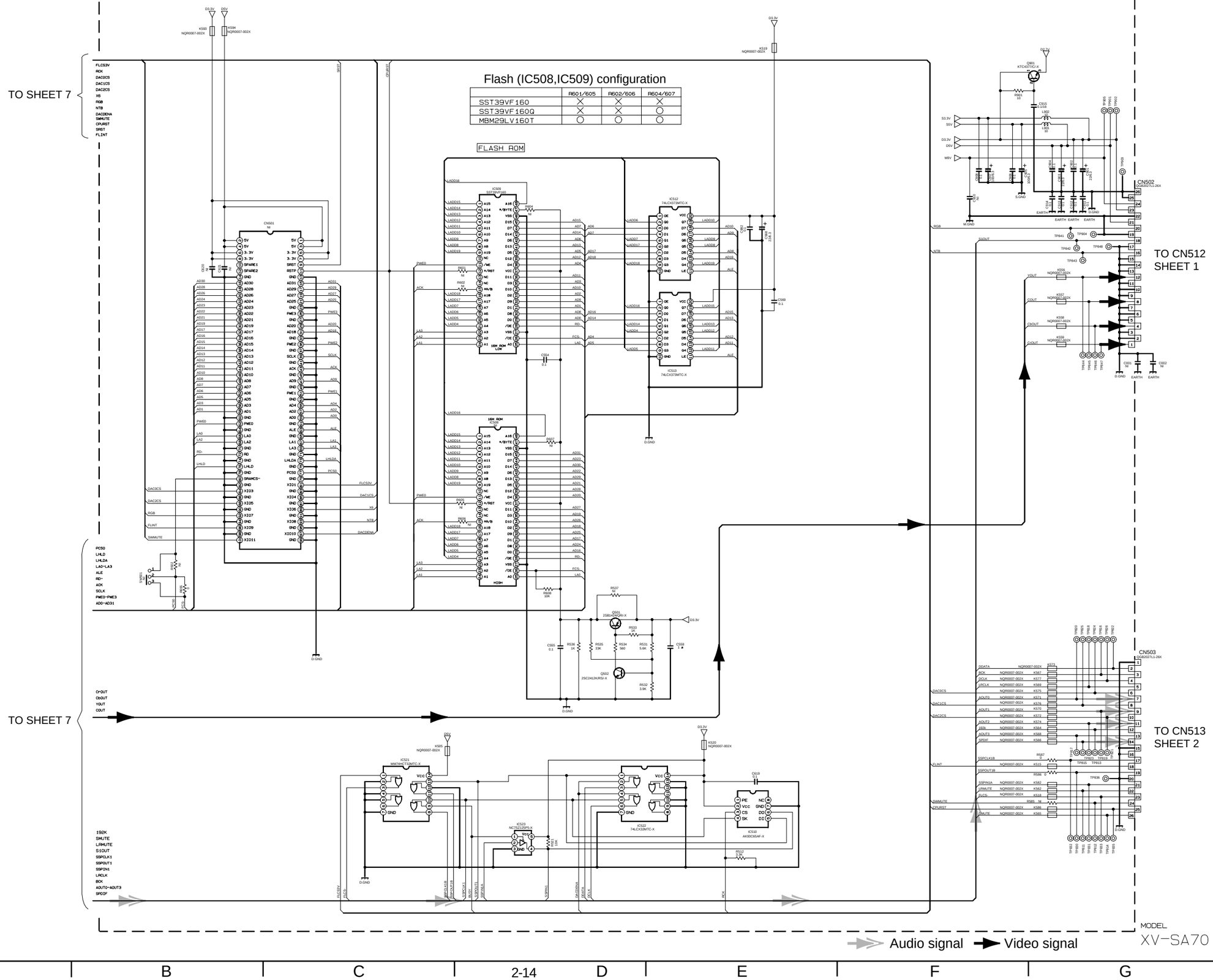
■ AV Decoder section



■ Flash ROM section

Flash (IC508,IC509) configuration

	R601/605	R602/606	R604/607
SST39VF160	×	×	×
SST39VF160Q	×	×	○
MBM29LV160T	○	○	○



■ Voltage value section (SHEET 6~8)

IC101

NO	DC (V)	NO	DC (V)
1	0V	51	2.2V
2	4.2V	52	2.2V
3	0V	53	2.2V
4	4.3V	54	2.2V
5	1.7V	55	4.8V
6	1.7V	56	2.2V
7	1.7V	57	2.2V
8	4.1V	58	2.2V
9	3.3V	59	2.2V
10	0V	60	2.2V
11	4.9V	61	0V
12	4.9V	62	2.2V
13	4.9V	63	2.2V
14	4.9V	64	1.6V
15	1.2V		
16	1.7V		
17	1.7V		
18	1.7V		
19	1.7V		
20	1.7V		
21	1.7V		
22	1.7V		
23	0V		
24	1.7V		
25	3.3V		
26	0V		
27	2.1V		
28	4.8V		
29	4.8V		
30	2.1V		
31	2.1V		
32	2.0V		
33	0V		
34	1.3V		
35	2.4V		
36	3.3V		
37	1.9V		
38	2.4V		
39	0V		
40	0V		
41	1.7V		
42	1.5V		
43	1.6V		
44	1.1V		
45	2.5V		
46	2.1V		
47	2.1V		
48	2.1V		
49	2.2V		
50	2.2V		

IC102

NO	DC (V)
1	0V
2	5.0V
3	0V
4	0V
5	0V

IC201

NO	DC (V)	NO	DC (V)
1	1.7V	51	1.7V
2	1.7V	52	1.7V
3	1.7V	53	3.2V
4	3.2V	54	0V
5	1.7V	55	0V
6	1.7V	56	0V
7	0V	57	0V
8	1.6V	58	2.6V
9	1.6V	59	0V
10	1.5V	60	0V
11	1.5V	61	0V
12	1.7V	62	0V
13	1.5V	63	0V
14	3.2V	64	0V
15	1.7V	65	0V
16	2.7V	66	0V
17	0.2V	67	3.3V
18	2.2V	68	1.7V
19	1.5V	69	3.3V
20	0V	70	2.5V
21	1.6V	71	0V
22	1.6V	72	0V
23	1.5V	73	0V
24	1.7V	74	0V
25	1.5V	75	3.3V
26	2.1V	76	1.7V
27	3.2V	77	1.1V
28	1.7V	78	1.1V
29	0V	79	1.1V
30	0V	80	1.1V
31	1.7V	81	0V
32	0V	82	3.3V
33	1.7V	83	3.3V
34	1.7V	84	4.8V
35	0.1V	85	4.9V
36	1.6V	86	4.9V
37	1.7V	87	3.3V
38	3.2V	88	4.9V
39	1.6V	89	4.9V
40	1.6V	90	0.5V
41	0V	91	1.7V
42	1.7V	92	2.5V
43	1.7V	93	3.3V
44	1.7V	94	0.7V
45	0V	95	0V
46	3.3V	96	2.6V
47	0V	97	1.8V
48	1.7V	98	1.6V
49	0V	99	1.6V
50	0.3V	100	1.7V

IC271

NO	DC (V)
1	0V
2	0V
3	0V
4	9V
5	9V
6	0V
7	0V
8	1.37V
9	3.9V
10	3.4V
11	0V
12	3.4V
13	4.5V
14	5.7V
15	3V
16	0V
17	0V
18	0V
19	0V
20	1.37V
21	0V
22	1.37V
23	1.37V
24	0V
25	0V
26	3.16V
27	1.37V
28	0V
29	1.41V
30	2.37V
31	2.56V
32	0V
33	2.39V
34	2.56V
35	1.34V
36	1.37V
37	4.93V
38	0V
39	9V
40	1.37V
41	3.2V
42	3V

IC301

NO	DC (V)	NO	DC (V)	NO	DC (V)
1	3.3V	51	1.0V	101	1.6V
2	3.3V	52	1.0V	102	3.3V
3	3.3V	53	3.6V	103	0V
4	3.3V	54	3.8V	104	3.3V
5	0V	55	1.0V	105	3.3V
6	3.3V	56	0V	106	3.3V
7	3.3V	57	0.7V	107	0V
8	0V	58	4.9V	108	0V
9	3.3V	59	4.9V	109	2.5V
10	3.6V	60	4.4V	110	0V
11	3.3V	61	3.3V	111	1.7V
12	3.3V	62	1.2V	112	1.1V
13	3.3V	63	2.4V	113	1.1V
14	3.3V	64	0V	114	1.1V
15	3.3V	65	0V	115	1.1V
16	3.3V	66	2.6V	116	3.3V
17	3.3V	67	0V	117	3.3V
18	0V	68	1.0V	118	3.3V
19	0V	69	2.1V	119	0V
20	3.3V	70	1.0V	120	0V
21	3.3V	71	0V	121	0V
22	4.5V	72	2.3V	122	0V
23	4.5V	73	0.8V	123	0V
24	0V	74	0.8V	124	3.3V
25	0.1V	75	1.7V	125	2.6V
26	4.9V	76	3.3V	126	1.3V
27	4.9V	77	0V	127	0V
28	1.4V	78	3.3V	128	1.4V
29	0V	79	0V	129	1.1V
30	3.3V	80	3.3V	130	3.3V
31	0V	81	0V	131	1.6V
32	3.3V	82	0V	132	3.3V
33	0V	83	0V	133	0V
34	0V	84	0V	134	0V
35	0V	85	4.8V	135	3.3V
36	2.6V	86	2.6V	136	1.3V
37	0V	87	1.7V	137	0V
38	0.3V	88	0V	138	3.3V
39	0V	89	0V	139	1.3V
40	4.1V	90	0V	140	1.0V
41	4.3V	91	0V	141	1.1V
42	4.2V	92	3.3V	142	0V
43	1.6V	93	0V	143	3.3V
44	2.6V	94	3.3V	144	3.3V
45	3.3V	95	0V		
46	3.6V	96	3.3V		
47	3.7V	97	0V		
48	3.8V	98	0V		
49	3.7V	99	0V		
50	3.8V	100	1.6V		

IC401

NO	DC (V)	NO	DC (V)
1	5.0V	51	0.6V
2	5.0V	52	5.0V
3	5.0V	53	5.0V
4	5.0V	54	5.0V
5	0V	55	5.0V
6	5.0V	56	5.0V
7	5.0V	57	0V
8	4.4V	58	0V
9	0V	59	5.0V
10	0V	60	0V
11	4.9V	61	0V
12	5.0V	62	0V
13	0V	63	0V
14	0V	64	0V
15	2.1V	65	0V
16	1.9V	66	5.0V
17	5.0V	67	4.8V
18	2.3V	68	3.8V
19	0V	69	4.8V
20	0V	70	5.0V
21	5.0V	71	0V
22	5.0V	72	5.0V
23	2.4V	73	5.0V
24	2.4V	74	5.0V
25	5.0V	75	5.0V
26	2.7V	76	5.0V
27	1.8V	77	5.0V
28	2.1V	78	3.1V
29	1.7V	79	0V
30	3.5V	80	5.0V
31	3.5V	81	5.0V
32	2.1V	82	4.9V
33	2V	83	5.0V
34	5.0V	84	5.0V
35	2.6V	85	0V
36	4.3V	86	0V
37	4V	87	0V
38	0V	88	5.0V
39	5V	89	5.0V
40	0V	90	5.0V
41	0V	91	5.0V
42	0V	92	0V
43	0V	93	1.1V
44	0V	94	1.5V
45	0V	95	0V
46	0V	96	0V
47	0V	97	2.3V
48	5V	98	2.3V
49	0V	99	2.3V
50	5.0V	100	2.4V

IC403

NO	DC (V)
1	4.9V
2	5.0V
3	0V
4	0V
5	0V
6	1.0V
7	0V
8	0V

IC701

NO	DC (V)	NO	DC (V)
1	3.2V	51	3.2V
2	0V	52	0V
3	0.2V	53	3.2V
4	0.2V	54	3.2V
5	0V	55	3.2V
6	0.1V	56	0V
7	0.1V	57	0V
8	0V	58	3.2V
9	0.1V	59	5.0V
10	0V	60	3.1V
11	3.2V	61	3.1V
12	0V	62	3.2V
13	0.6V	63	3.2V
14	1.4V	64	0V
15	1.4V	65	0V
16	1.4V	66	0V
17	1.5V	67	0V
18	1.8V	68	3.2V
19	2.0V	69	0V
20	2.1V	70	3.2V
21	3.2V	71	3.0V
22	0V	72	1.5V
23	3.2V	73	1.5V
24	3.2V	74	0V
25	3.2V	75	3.2V
26	0.2V	76	0V
27	3.2V	77	1.3V
28	3.2V	78	1.0V
29	3.2V	79	3.2V
30	0V	80	0V
31	3.2V	81	3.2V
32	0V	82	0V
33	0V	83	0V
34	0V	84	3.2V
35	0V	85	1.6V
36	0V	86	0V
37	0V	87	3.2V
38	0V	88	3.2V
39	0V	89	0V
40	3.1V	90	3.2V
41	3.2V	91	3.2V
42	3.2V	92	0V
43	0V	93	0V
44	3.2V	94	0V
45	0V	95	0V
46	1.5V	96	0V
47	3.1V	97	3.1V
48	0V	98	0V
49	3.2V	99	3.1V
50	0V	100	0V

IC501

NO	DC (V)	NO	DC (V)	NO	DC (V)	NO	DC (V)	NO	DC (V)
1	3.3V	51	0V	101	1.8V	151	0V	201	0V
2	0V	52	0V	102	3.3V	152	0V	202	3.2V
3	0V	53	3.3V	103	0V	153	0V	203	3.2V
4	1.8V	54	0V	104	0V	154	3.3V	204	0V
5	0V	55	0V	105	0V	155	0V	205	5V
6	0V	56	0V	106	0V	156	3.3V	206	3.2V
7	0V	57	0V	107	3.3V	157	0V	207	3.2V
8	0V	58	0V	108	1.8V	158	0V	208	3.2V
9	0V	59	0V	109	0V	159	1.8V	209	0V
10	3.3V	60	0V	110	0V	160	1.8V	210	3.3V
11	0V	61	0V	111	0V	161	3.3V	211	0V
12	0V	62	3.2V	112	0V	162	0V	212	1.8V
13	0V	63	0V	113	3.3V	163	0V	213	3.2V
14	0V	64	0V	114	0V	164	0V	214	0V
15	1.8V	65	0V	115	0V	165	0V	215	0V
16	1.2V	66	0V	116	0V	166	0V	216	0V
17	0V	67	0V	117	1.8V	167	0V	217	0V
18	1.0V	68	1.5V	118	0V	168	0V	218	0V
19	3.2V	69	0V	119	1.2V	169	3.2V	219	0V
20	1.2V	70	0V	120	3.3V	170	3.2V	220	0V
21	2.0V	71	0V	121	0V	171	0V	221	0V
22	1.6V	72	0V	122	0V	172	0V	222	0V
23	0V	73	0V	123	0V	173	0V	223	0V
24	3.2V	74	0V	124	0V	174	0V	224	3.3V
25	0V	75	3.3V	125	3.3V	175	0V	225	0V
26	0V	76	3.3V	126	0V	176	0V	226	0V
27	3.3V	77	1.8V	127	0V	177	0V	227	0V
28	0V	78	1.5V	128	0V	178	0V	228	0V
29	0V	79	1.5V	129	0V	179	0V	229	0V
30	0V	80	3.2V	130	0V	180	0V	230	0V
31	0V	81	3.2V	131	0V	181	3.3V	231	0V
32	0V	82	0V	132	0V	182	3.3V	232	0V
33	0V	83	0V	133	0V	183	0V	233	3.3V
34	1.8V	84	3.2V	134	0V	184	0V	234	0V
35	2.7V	85	0V	135	1.8V	185	0V	235	0V
36	3.3V	86	0V	136	0V	186	0V	236	0V
37	3.3V	87	3.2V	137	0V	187	0V	237	0V
38	2.8V	88	3.2V	138	0V	188	0V	238	0V
39	3.2V	89	1.8V	139	0V	189	0V	239	0V
40	0V	90	0V	140	3.3V	190	1.8V	240	0V
41	0V	91	3.3V	141	0V	191	0V		
42	0V	92	0V	142	0V	192	1.8V		
43	0V	93	0V	143	0V	193	3.2V		
44	3.3V	94	0V	144	0V	194	3.2V		
45	0V	95	3.2V	145	3.3V	195	0V		
46	0V	96	0V	146	0V	196	0V		
47	0V	97	0V	147	0V	197	3.2V		
48	0V	98	0V	148	0V	198	3.2V		
49	0V	99	0V	149	0V	199	3.2V		
50	0V	100	0V	150	0V	200	3.2V		

IC505

NO	DC (V)	NO	DC (V)
1	3.3V	51	0V
2	0V	52	0V
3	3.3V	53	0V
4	0V	54	0V
5	0V	55	3.3V
6	0V	56	0V
7	0V	57	0V
8	0V	58	0V
9	3.3V	59	0V
10	0V	60	2.0V
11	0V	61	1.2V
12	0V	62	1.0V
13	0V	63	1.2V
14	0V	64	1.8V
15	3.3V	65	0V
16	0V	66	0V
17	3.2V	67	3.2V
18	2.8V	68	1.6V
19	3.3V	69	0V
20	2.7V	70	0V
21	0V	71	0V
22	0V	72	0V
23	0V	73	0V
24	0V	74	0V
25	0V	75	3.3V
26	0V	76	0V
27	0V	77	0V
28	0V	78	0V
29	3.3V	79	0V
30	0V	80	0V
31	0V	81	3.3V
32	0V	82	0V
33	0V	83	0V
34	0V	84	0V
35	3.3V	85	0V
36	0V	86	0V
37	0V		
38	0V		
39	0V		
40	0V		
41	3.3V		
42	0V		
43	3.3V		
44	0V		
45	0V		
46	0V		
47	0V		
48	0V		
49	3.3V		
50	0V		

IC509

NO	DC (V)
1	0V
2	0V
3	0V
4	0V
5	0V
6	0V
7	0V
8	0V
9	0V
10	0V
11	3.2V
12	5V
13	0V
14	0V
15	0V
16	0V
17	0V
18	0V
19	0V
20	0V
21	0V
22	0V
23	0V
24	0V
25	0V
26	0V
27	0V
28	0V
29	0V
30	0V
31	0V
32	0V
33	0V
34	0V
35	0V
36	0V
37	3.2V
38	0V
39	0V
40	0V
41	0V
42	0V
43	0V
44	0V
45	0V
46	0V
47	0V
48	0V

IC510

NO	DC (V)
1	0V
2	3.3V
3	0V
4	0V
5	0V
6	3.3V
7	0V
8	0V

IC511

NO	DC (V)
1	0V
2	1.8V
3	3.3V

IC512
IC513

NO	DC (V)
1	0V
2	0V
3	0V
4	0V
5	0V
6	0V
7	0V
8	0V
9	0V
10	0V
11	0V
12	0V
13	0V
14	0V
15	0V
16	0V
17	0V
18	0V
19	0V
20	3.3V

IC521

NO	DC (V)
1	3V
2	0V
3	3.3V
4	0V
5	0V
6	0V
7	0V
8	3.3V
9	0V
10	0V
11	3.3V
12	0V
13	0V
14	5V

IC522

NO	DC (V)
1	0V
2	0V
3	3.3V
4	0V
5	0V
6	3.1V
7	0V
8	0V
9	0V
10	0V
11	0V
12	0V
13	0V
14	3.3V

IC523

NO	DC (V)
1	0V
2	3.3V
3	0V
4	3.3V
5	3.3V

IC701

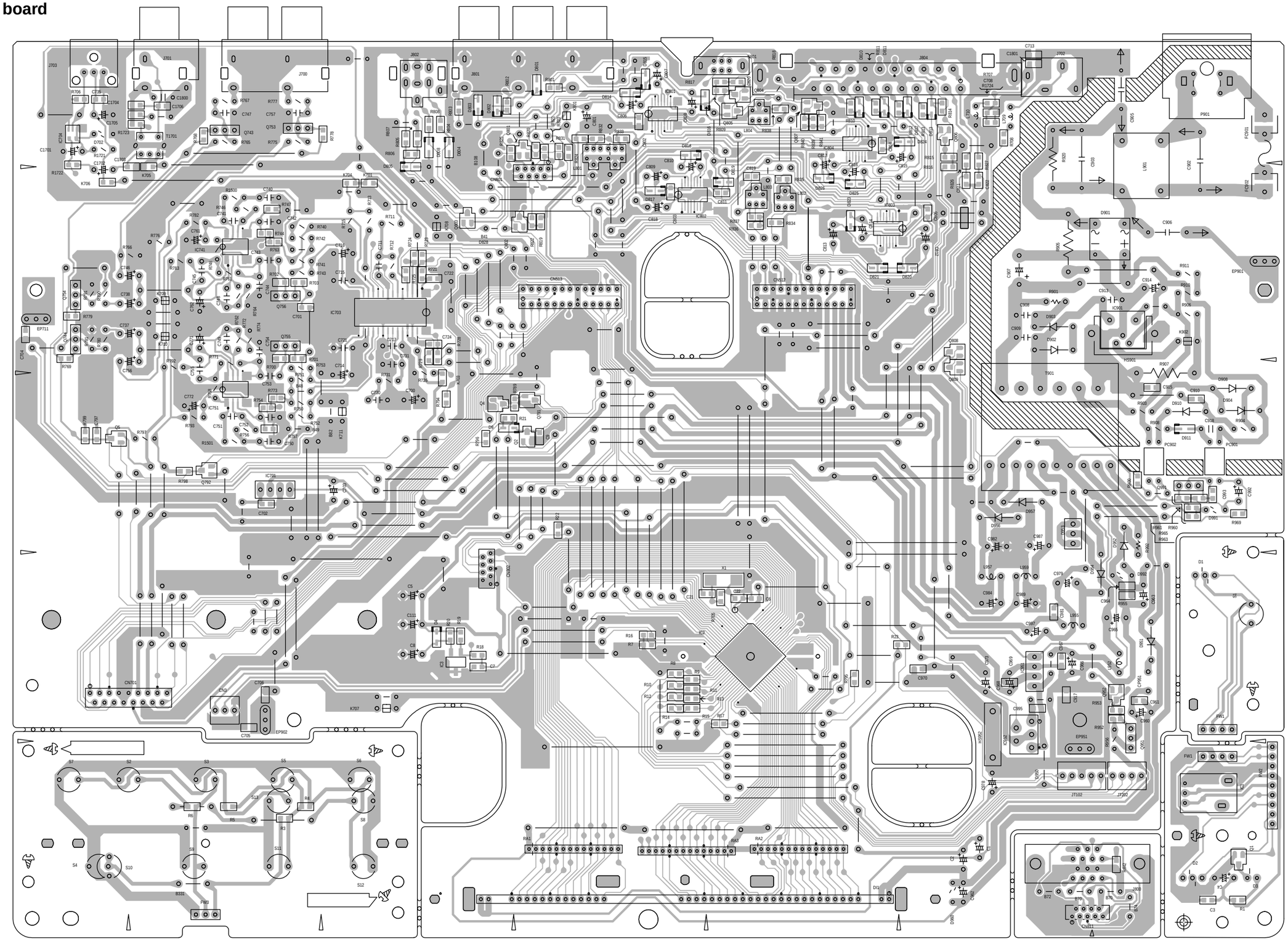
NO	DC (V)	NO	DC (V)
1	3.3V	51	3.3V
2	0V	52	0V
3	0.8V	53	3.3V
4	0.8V	54	3.3V
5	2.3V	55	3.3V
6	1.0V	56	0V
7	2.1V	57	0V
8	1.0V	58	3.3V
9	2.4V	59	0V
10	1.2V	60	3.1V
11	3.3V	61	3.1V
12	0V	62	3.2V
13	0.7V	63	3.2V
14	1.0V	64	0V
15	3.8V	65	0V
16	3.6V	66	0V
17	1.0V	67	0V
18	1.0V	68	3.2V
19	3.8V	69	0V
20	3.7V	70	3.2V
21	3.3V	71	3.0V
22	0V	72	1.5V
23	5V	73	1.5V
24	4.4V	74	0V
25	4.9V	75	3.2V
26	3.3V	76	0V
27	0V	77	1.3V
28	4.9V	78	1.0V
29	3.3V	79	3.2V
30	0V	80	0V
31	3.3V	81	3.2V
32	0V	82	0V
33	0V	83	0V
34	0V	84	3.2V
35	0V	85	1.6V
36	0V	86	0V
37	0V	87	3.2V
38	0V	88	3.2V
39	0V	89	0V
40	0V	90	3.2V
41	0V	91	3.2V
42	3.3V	92	0V
43	0V	93	0V
44	0V	94	0V
45	0V	95	0V
46	0V	96	0V
47	3.2V	97	3.1V
48	0V	98	0V
49	3.3V	99	3.1V
50	0V	100	0V

MODEL XV-SA70

SHEET 9

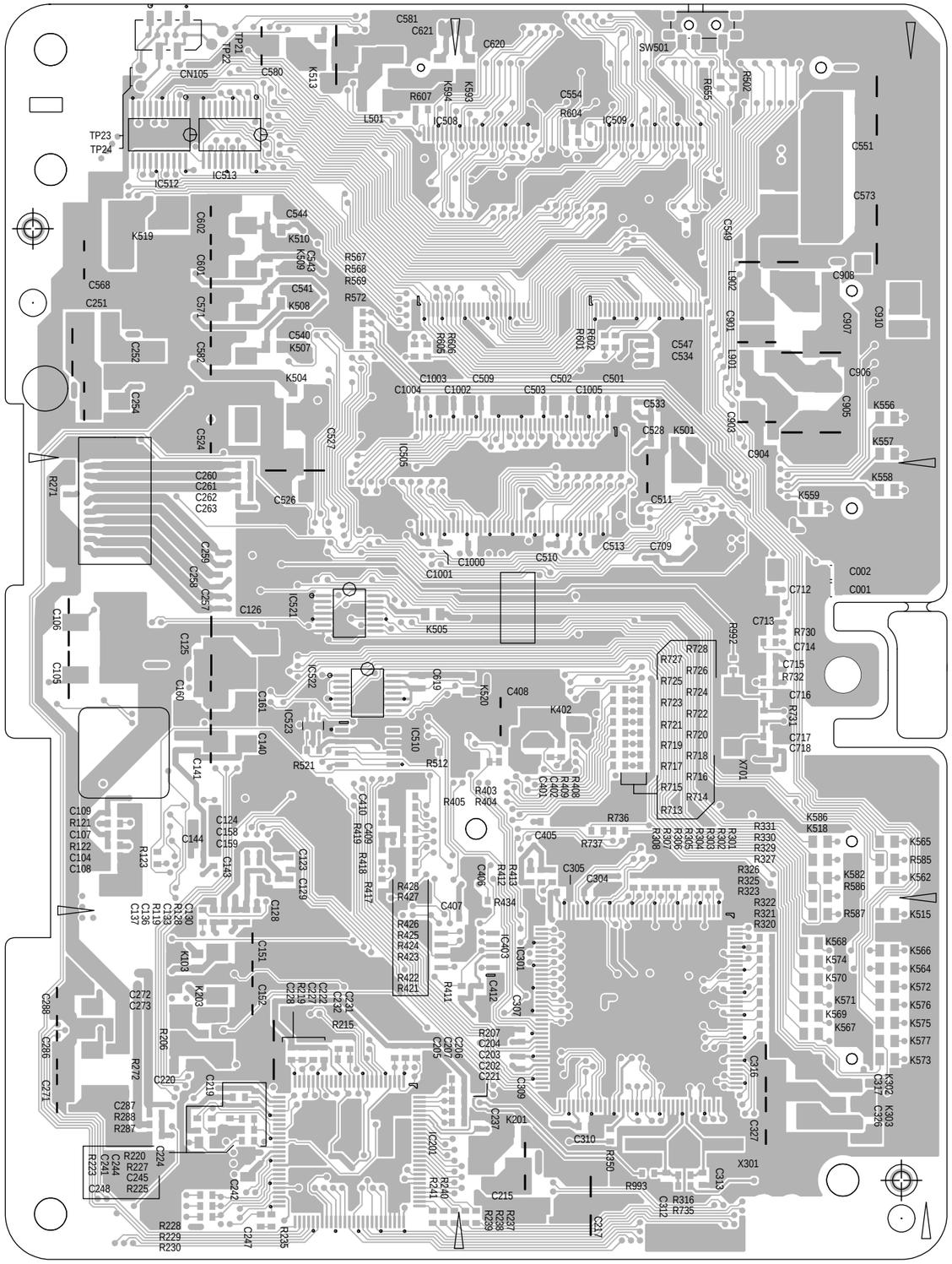
Printed circuit boards

■ Main board

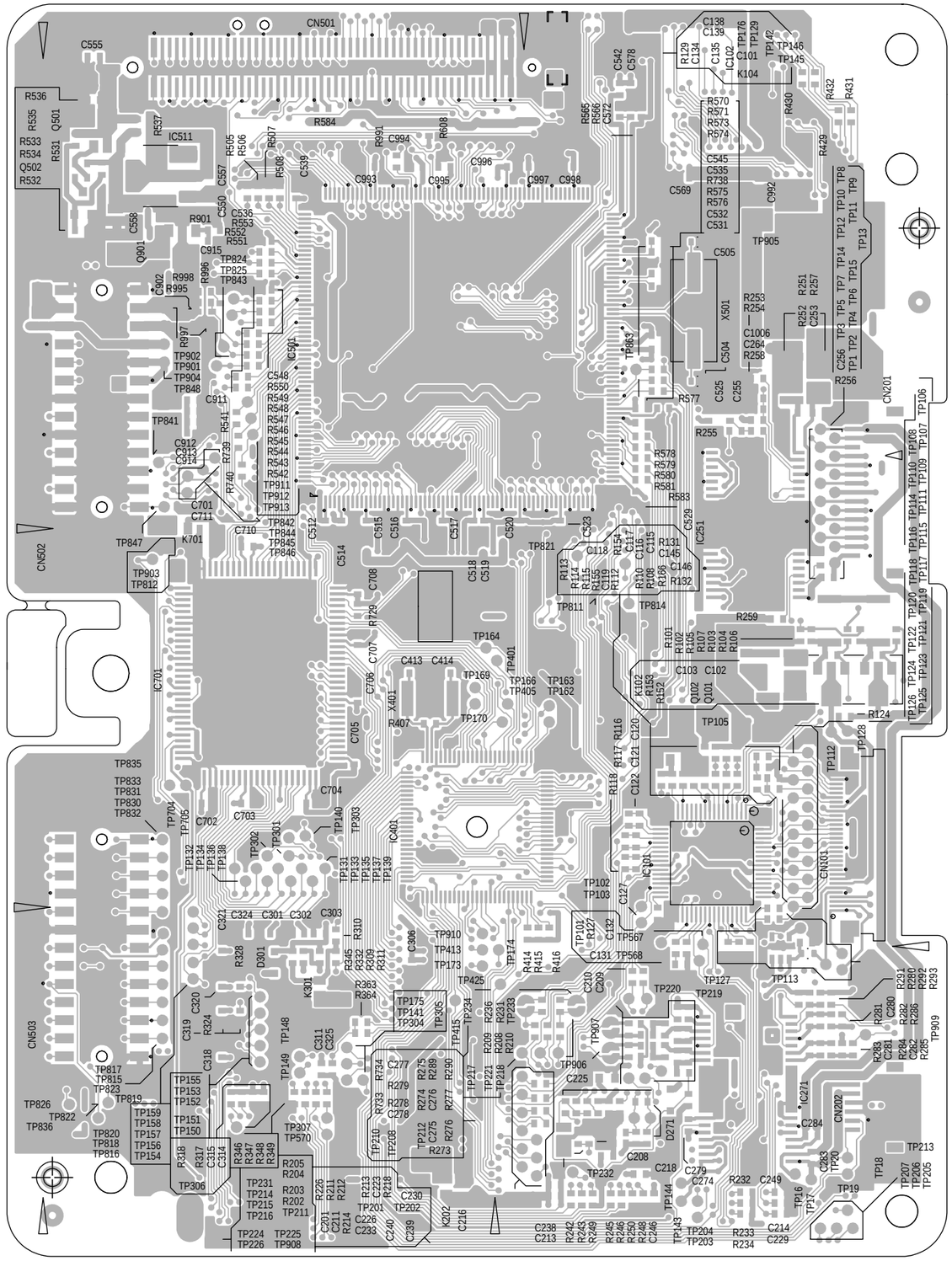


■ DVD Servo control board

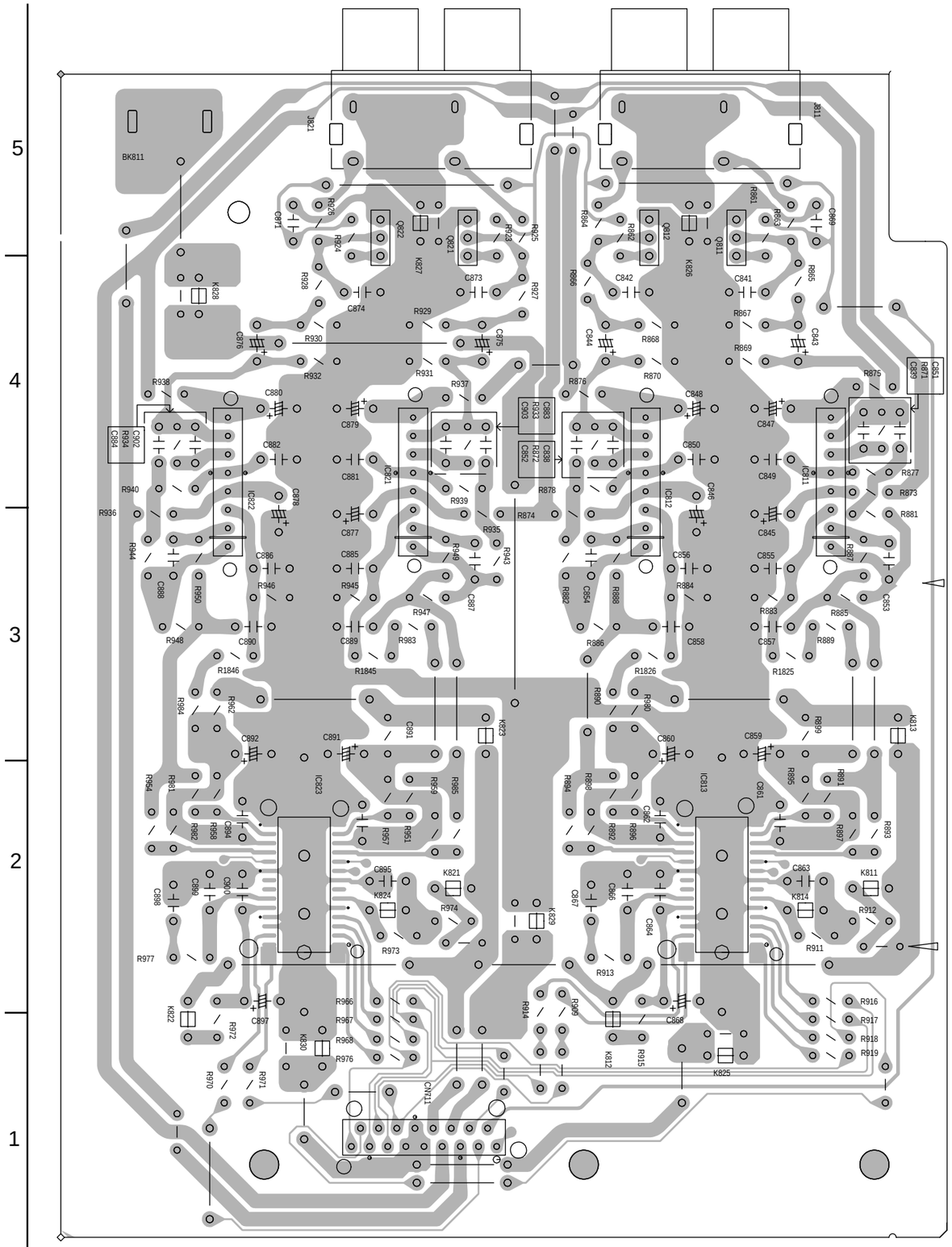
Forward side



Reverse side



■ Surround audio board



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