

Service Manual

3DO Interactive Multiplayer

FZ-1



COMPACT
disc
DIGITAL AUDIO



Panasonic®

WARNING

■ PRECAUTION OF LASER DIODE

CAUTION: This unit utilizes a class 1 laser.

Invisible laser radiation is emitted from the optical pickup lens when the unit is turned on:

1. Do not look directly into the pickup lens.
2. Do not use optical instruments to look at the pickup lens.
3. Do not adjust the preset variable resistor on the optical pickup.
4. Do not disassemble the optical pickup unit.
5. If the optical pickup is replaced, use the manufacturer's specified replacement pickup only.
6. Use of control, adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

■ SAFETY PRECAUTION

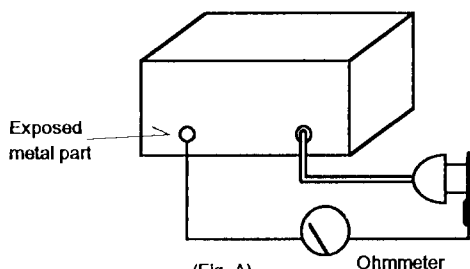
1. Before servicing, unplug the power cord to prevent an electric shock.
2. When replacing parts, use only manufacturer's recommended components for safety.
3. Check the condition of the power cord. Replace if wear or damage is evident.
4. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields, etc.
5. Before returning the serviced equipment to the customer, be sure to make the following insulation resistance test to prevent the customer from being exposed to a shock hazard.

• INSULATION RESISTANCE TEST

1. Unplug the power cord and short the two prongs of the plug with a jumper wire.
2. Turn on the power switch.
3. Measure the resistance value with ohmmeter between the jumpered AC plug and each exposed metal cabinet part, such as screwheads, antenna, control shafts, handle brackets, etc.

Equipment should read between 4.8 MΩ and 8.8 MΩ to all exposed parts. (Fig. A)

Note: Some exposed parts may be isolated from the chassis by design. These will read infinity.



Resistance = 4.4 - 8.8 MΩ

4. If the measurement is outside the specified limits, there is a possibility of a shock hazard. The equipment should be repaired and rechecked before it is returned to the customer.

LITHIUM BATTERY ⚠

• CAUTION

Danger of explosion if battery is incorrectly replaced.

Replace only with the same or equivalent type recommended by the manufacturer.

Dispose of used batteries according to the manufacturer's instruction.

FUSE REPLACEMENT ⚠

• CAUTION



For continued protection against risk of fire, replace only with same type 3.15A, 125V fuse.

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1. System Overview

1-1. General Description

The FZ-1 is a high performance audio/video entertainment and education system capable of realistic interactive video and CD-quality audio presentations.

The FZ-1 will play standard audio CDs at full 16-bit precision and bandwidth like audio stereo CD player. Also display and play Kodak Photo CD disc and Portfolio photo CD disc (Photo with CD sound).

The FZ-1 will produce NTSC (composite video), S-video and RF modulated composite video outputs to almost broadcast quality.

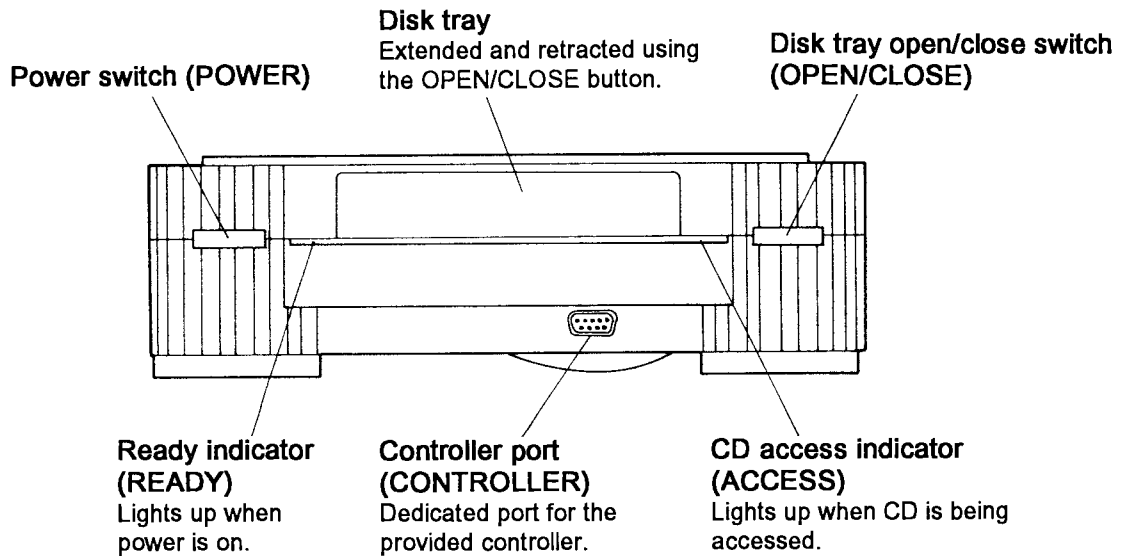
1-2. Specifications

CPU	CPU	32-bit RISC processor ARM60 (12.5 MHz)
Memory	RAM/VRAM	3 MB (Total) 2 MB: Main-RAM 1 MB: VRAM
	SRAM	32 KB (Battery back up)
	ROM	1 MB
DSP (Digital Signal Processor)		Original 16-bit digital signal processor
Video/Audio	Video output	Composite video, NTSC (RS170A standard) S-Video, NTSC RF Video, NTSC, Channel 3 or 4 (Switch selectable)
	Resolution	640 (H) × 480 (V) dots (Inside 320 × 240 dots)
	Colors	Max. 16.7 Million / Std. 320K (Pixel Clock: 12.3 MHz)
	Audio	Stereo 16-bit (CD single) PCM (Sampling: 44.1 KHz)
Storage	CD-ROM drive	Size: 4.7 and 3.1 inch (12 and 8 cm) Double Speed CD-ROM Drive (Read Buffer: 32 KB)
	Extension memory	(via Expansion Port)
I/O Port	Control port	Low speed I/O: Dsub 9-pin × 1 Daisy-chain system
	Expansion port	High speed I/O: 30-pin × 1
	AV Expansion port	High speed AV-I/O (FMV cartridge) : 68-pin × 1
System	System dimensions (W × D × H)	11.2 × 10.6 × 3.5 inch (284 × 268 × 88 mm)
	Weight	3.0 Kg (6.6 lbs.)
	Power requirement	120 VAC
	Power consumption	30 W
Indicator	Power indicator	Red-LED × 1
	CD-access indicator	Green-LED × 1
Temperature	Operating	50 °F to 95 °F (10 °C to 35 °C)
	Storage	-4 °F to 140 °F (-20 °C to 60 °C) (When packed for shipment)

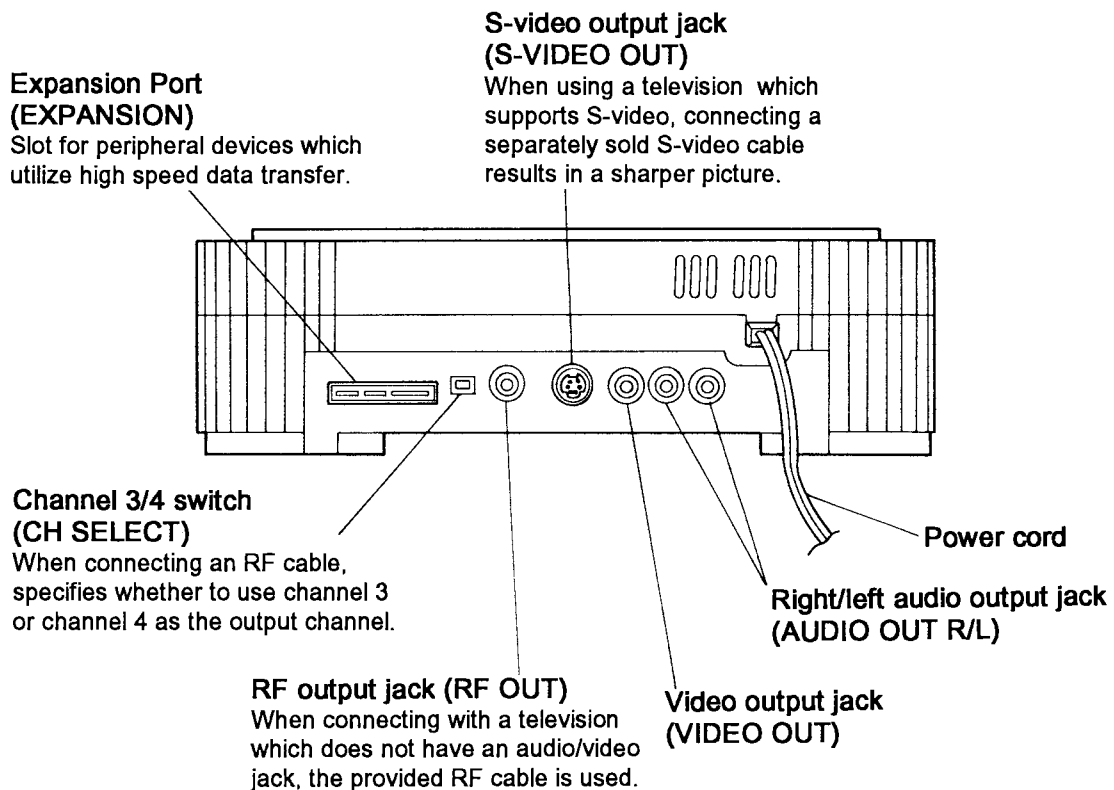
FMV: Full Motion Video

1-3. Location of Controls and Components

• Front View



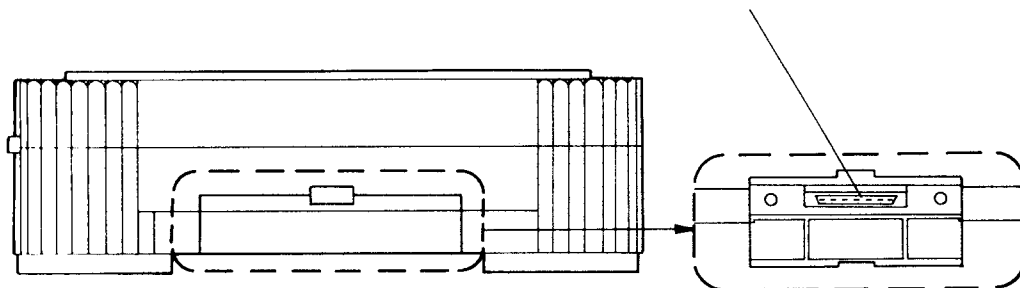
• Rear View



• Right Side View

AV expansion slot (AV-EXPANSION)

Dedicated slot, visible upon opening the cover, used with separately sold FMV cartridges.

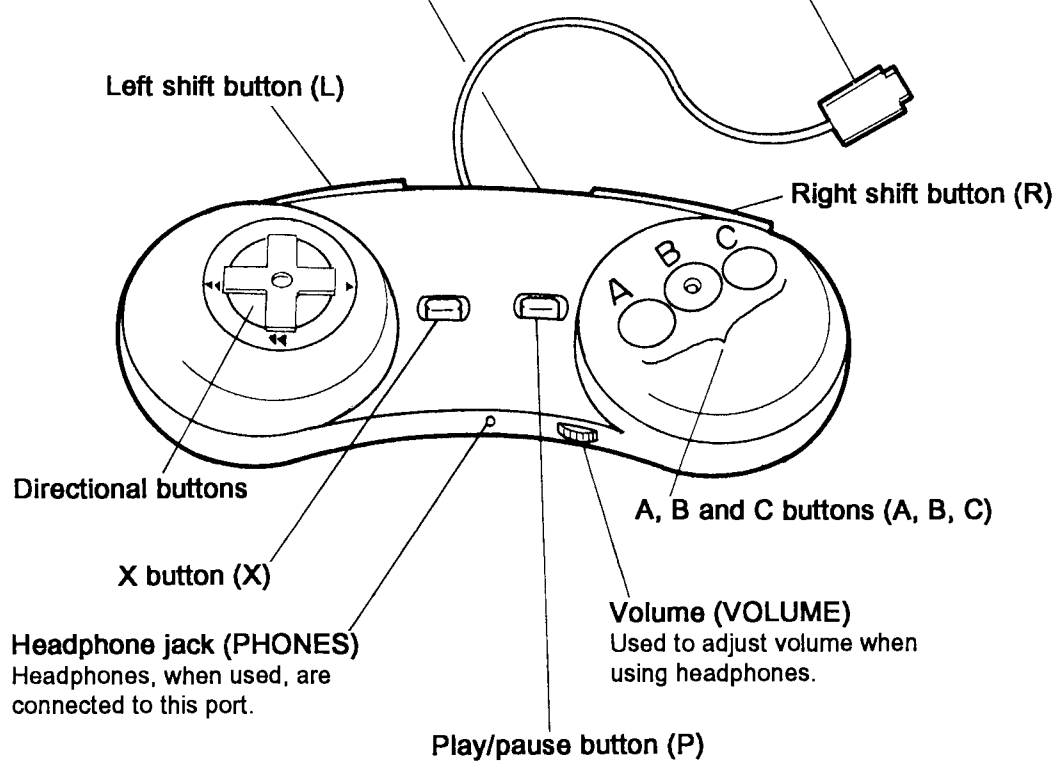


Extension port (EXTENSION)

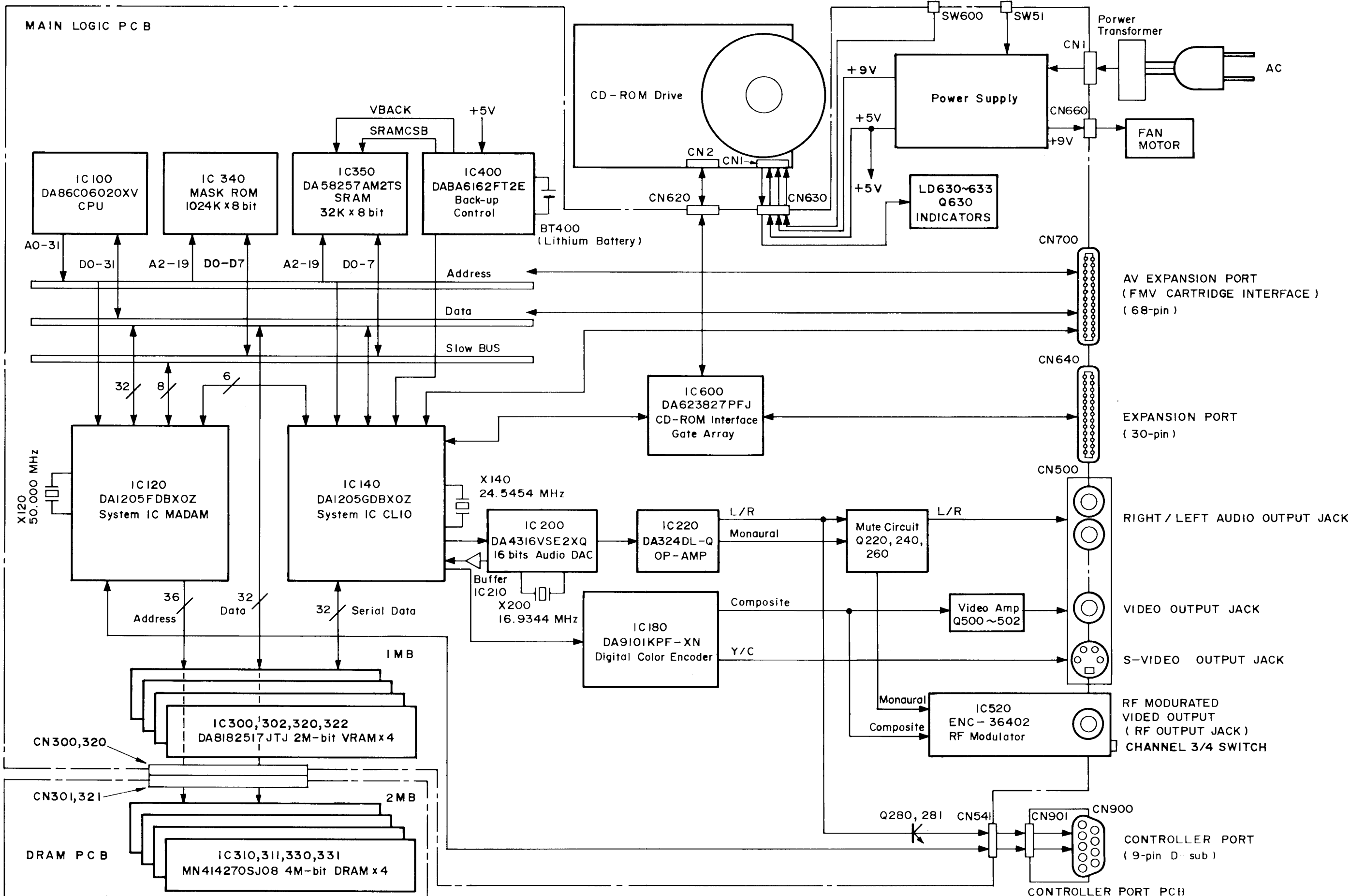
Participation by more than one player is achieved by connecting a separately sold controller to this port.

Connector

Connected to the Multiplayer unit.



1-4. Block Diagram



1-5. Block Explanation

CPU

CPU is ARM60. This RISC type micro processor has 32-bit address and 32-bit data path. MADAM supplies CPU with 12.5 MHz clock.

ROM

1 MB ROM stores the system management program. The ROM is connected to Slow bus and its data is read by MADAM and MADAM arranges 8-bit data into 32-bit word and send it to CPU.

SRAM

32 KB SRAM is connected to Slow bus. Since Lithium battery backs up SRAM while power is down, SRAM can retain data. It may be used to back up game data, for example.

DRAM/VRAM

DRAM and VRAM is used as main memory.

VRAM is dual-port memory. This means one port is used as normal DRAM and the other one is used to read and write data simultaneously with the former port. Therefore, it is used as Frame Buffer which is required fast access.

MADAM

MADAM is Address Engine. It includes DMA logic, CPU control logic, bus sharing logic and Cell Engine. A oscillator provides MADAM with 50 MHz clock, and MADAM divides it by two, and it provides CLIO, CPU and CD-ROM interface with 25 MHz clock.

CLIO

CLIO is Data Engine. It includes pixel decoding logic, 16-bit Digital Signal Processor and video interface logic. With a crystal, CLIO oscillates 24.5454 MHz clock and supplies MADAM with 24.54 MHz and supplies Digital Color Encoder with 12.27 MHz.

Digital Color Encoder

CLIO supplies Digital Color Encoder with RGB data and some control signals. And Digital Color Encoder modifies them into NTSC signals. It outputs both composite signal and Y/C signal.

Audio DAC

16-bit Audio DAC converts digital audio data from CLIO into analog audio data. CLIO sends DAC data with serial communication manner.

CD-ROM interface

CD-ROM interface Gate Array is the interface between CLIO and both internal CD-ROM drive and External drives which are connected through Expansion Port.

2. Checking Information

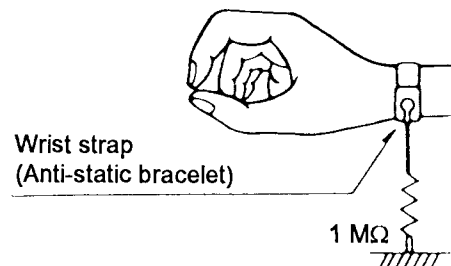
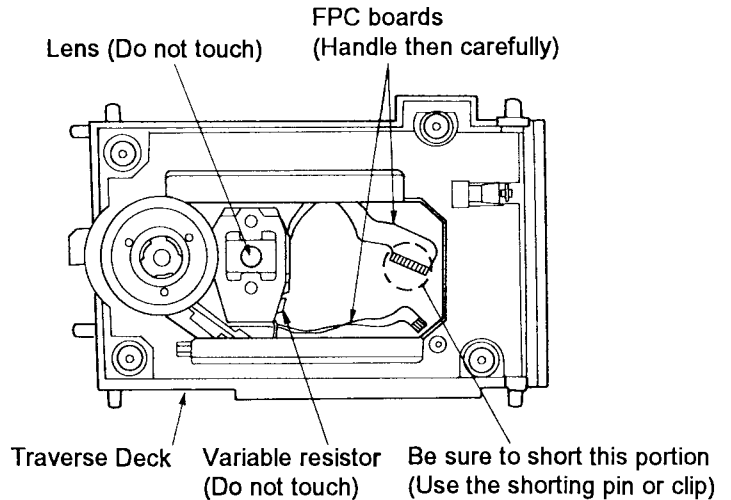
2-1. Handling Precautions for Traverse Deck

The laser diode in the traverse deck (optical pickup) may break down due to potential difference caused by static electricity of clothes or human body.

So, be careful of electrostatic breakdown during repair of the traverse deck (optical pickup).

- **Handling of traverse deck (optical pickup)**

1. Do not subject the traverse deck (optical pickup) to static electricity as it is extremely sensitive to electrical shock.
2. To prevent the breakdown of the laser diode, an antistatic shorting pin is inserted into the flexible board (FPC board).
When removing or connecting the short pin, finish the job in as short time as possible.
3. Take care not to apply excessive stress to the flexible board (FPC board).
4. Do not turn the variable resistor (laser power adjustment). It has already been adjusted.

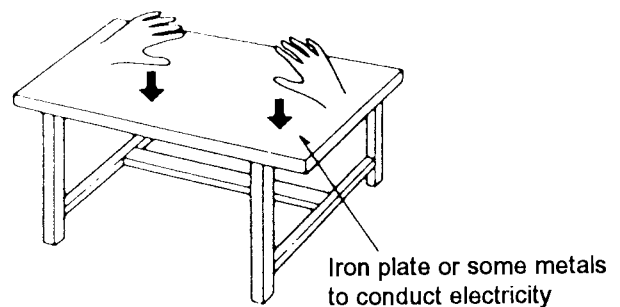


- **Grounding for electrostatic breakdown prevention**

1. Human body grounding
Use the anti-static wrist strap to discharge the static electricity from your body.
2. Work table grounding
Put a conductive material (sheet) or steel sheet on the area where the optical pickup is placed, and ground the sheet.

Caution:

The static electricity of your clothes will not be grounded through the wrist strap. So, take care not to let your clothes touch the traverse deck (optical pickup).



2-2. Disassembly / Reassembly

Note: Before disassembling, be sure to perform the following procedures first.

1. Remove the CD-ROM disk if it is inserted in the CD-ROM drive.
2. Turn the power switch off.
3. Disconnect the AC power cord.
4. Remove the optional units.

Caution: Please follow directions carefully.
Do not interchange screws in any part of the system.

Top Case

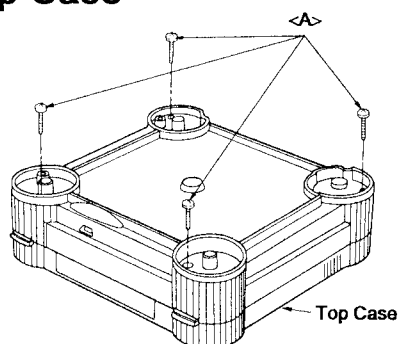


Figure 1

- (1) Turn this unit (FZ-1) upside down and place it on a flat surface.
- (2) Remove four screws <A> (3 × 14 mm) as shown in Figure 1.
- (3) Turn it over again and gradually raise the top case.

*Reassemble in the reverse order.

CD-ROM Drive

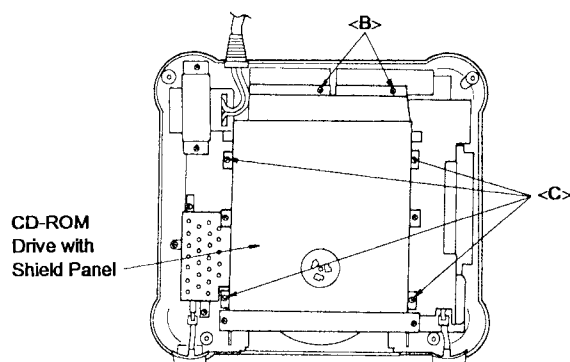


Figure 2

- (1) After removing the top case, remove two screws (2.6 × 6 mm) as shown in Figure 2.
- (2) Remove four screws <C> (2.6 × 8 mm) as shown in Figure 2.

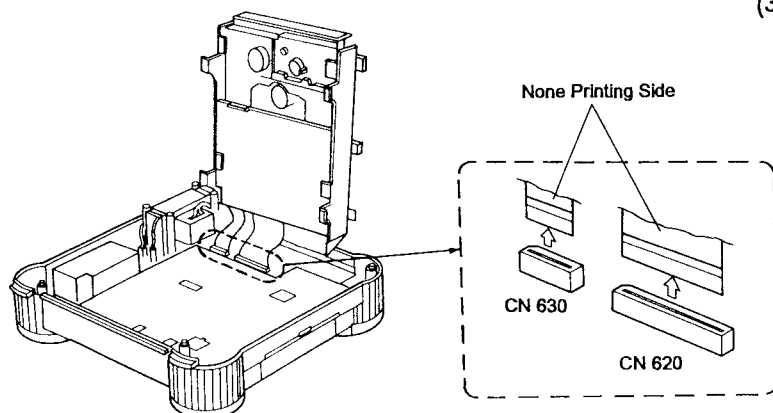


Figure 3

- (3) Gradually raise the front end of the CD-ROM drive and then disconnect the flat cables from two connectors (CN 620, CN 630) as shown in Figure 3.

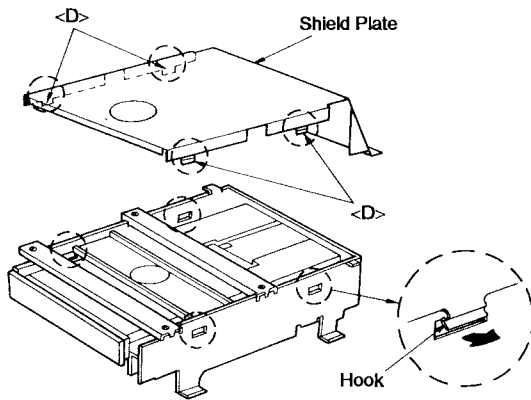


Figure 4

(4) Unhook four hooks <D> as shown in Figure 4.

(5) Raise the CD-ROM Drive shield plate.

*Reassemble in the reverse order.

Power Transformer

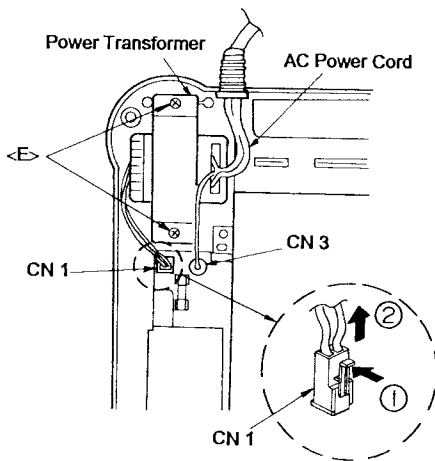


Figure 5

(1) After removing the top case and the CD-ROM drive, remove two screws <E> (3 × 10 mm) , then disconnect two connectors (CN 1, CN 3) as shown in Figure 5.

(2) Raise the power transformer (with the AC power cord).

*Reassemble in the reverse order.

Fan Motor

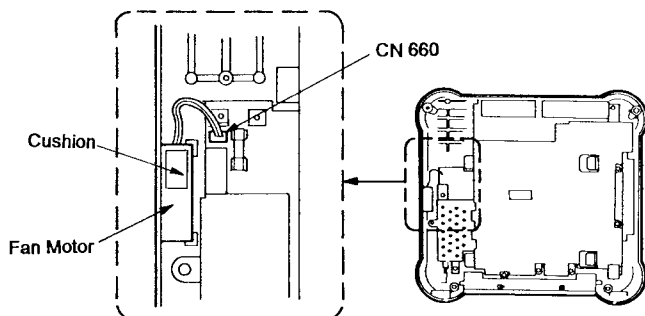


Figure 6

(1) After removing the top case, the CD-ROM drive, and the power transformer, disconnect the connector (CN 660) as shown in Figure 6.

(2) Remove the fan motor.

*Reassemble in the reverse order.

DRAM PCB

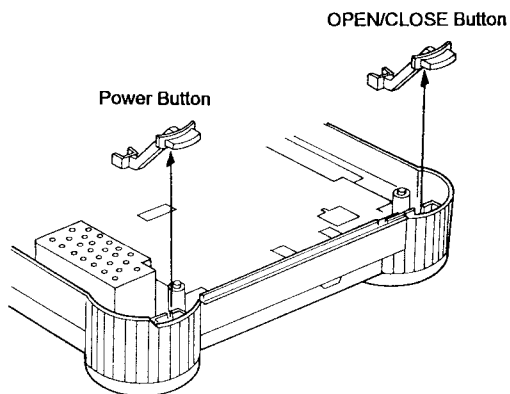


Figure 7

- (1) After removing the top case, the CD-ROM drive, the power transformer, and the fan motor, raise the power button and the open/close button as shown in Figure 7.

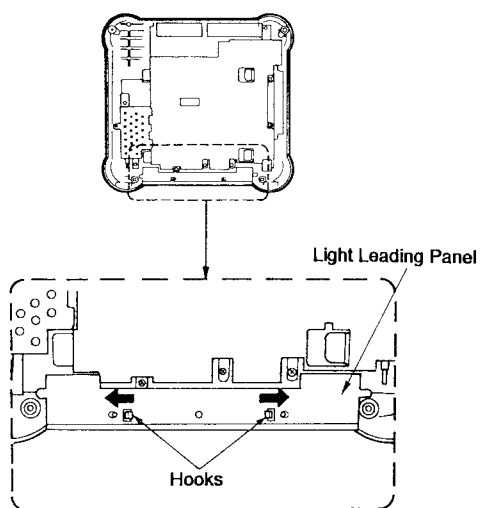


Figure 8

- (2) Gently pull out the light leading panel from the bottom cabinet while pushing two hooks as shown in Figure 8.

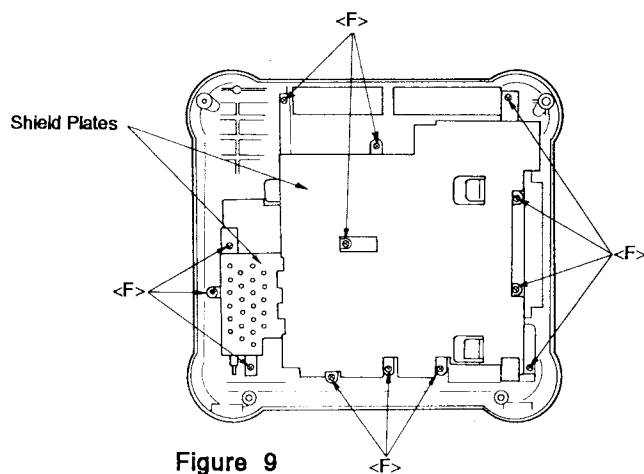


Figure 9

- (3) Remove all thirteen screws <F> (2.6 × 8 mm) as shown in Figure 9.

- (4) Carefully raise two shield plates.

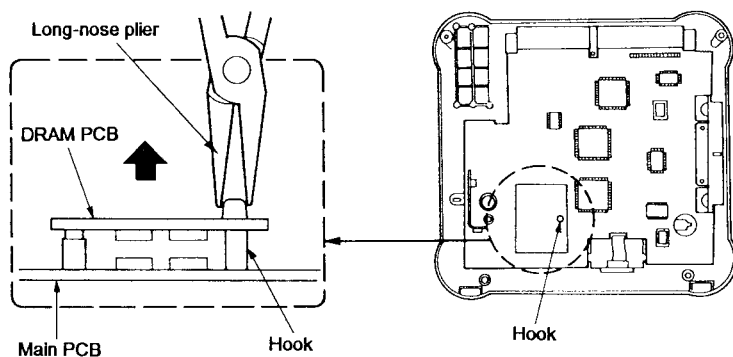


Figure 10

- (5) Unhook the hook, then raise the DRAM PCB as shown in Figure 10.

*Reassemble in the reverse order.

Main PCB

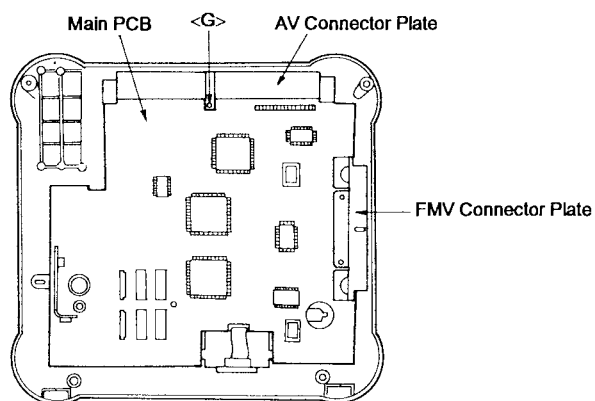


Figure 11

- (1) After removing the top case, the CD-ROM drive, the power transformer, the fan motor, and the DRAM PCB, remove screw <G> (2.6 × 8 mm), then remove the AV connector plate and the FMV-connector plate as shown in Figure 11.

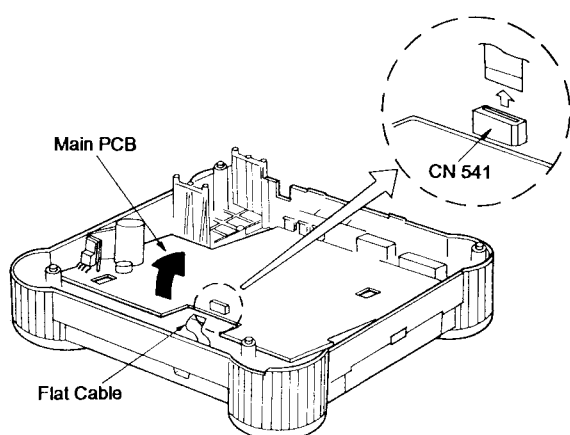


Figure 12

- (2) Disconnect the flat cable from connector (CN 541).

- (3) Gradually raise the front end of the main PCB and remove it from bottom cabinet as shown in Figure 12.

*Reassemble in the reverse order.

Controller Port PCB

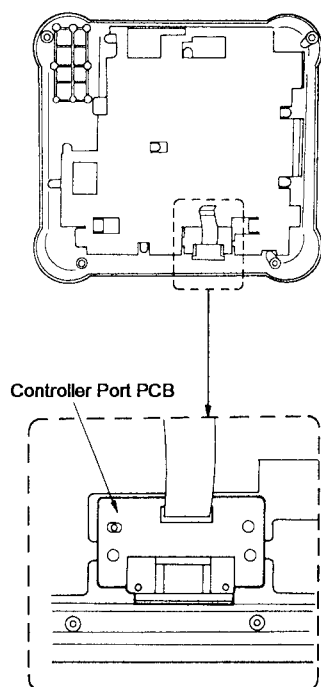


Figure 13

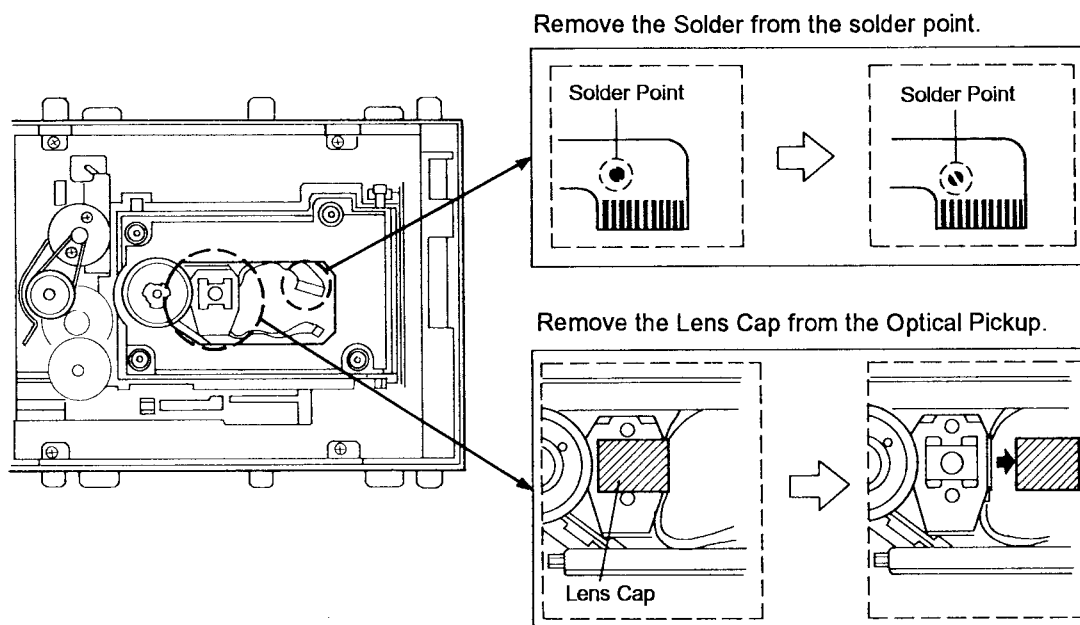
- (1) After removing the top case, the CD-ROM drive, the power transformer, the fan motor, the DRAM PCB, and the main PCB, gradually raise the Controller Port PCB as shown in Figure 13.

*Reassemble in the reverse order.

CD-ROM Drive

Precaution for replacing the CD-ROM Drive Mechanism

When replacing the Mechanism (P/N: LMX0055), the Solder and the Lens Cap should be removed as shown below.



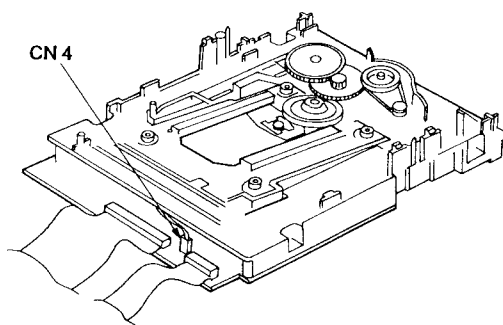


Figure 22

- (5) Disconnect the connector (CN 4) as shown in Figure 22.

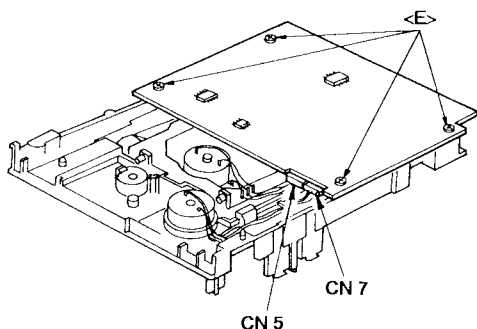


Figure 23

- (6) Turn the CD-ROM Drive Unit upside down and remove four screws <E> (2.6 × 8 mm) as shown in Figure 23.
- (7) Disconnect two connectors (CN 5, CN 7) as shown in Figure 23.

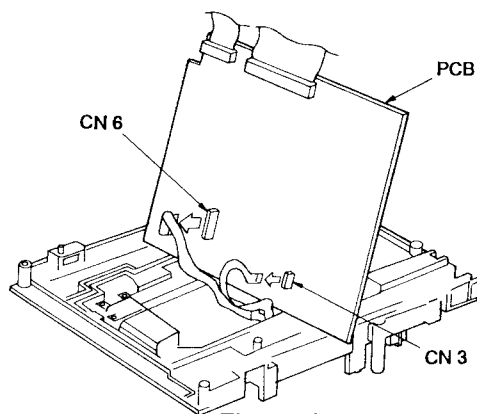


Figure 24

- (8) Gradually raise the PCB and then disconnect two connectors (CN 3, CN 6) as shown in Figure 24.
- (9) Remove the PCB.

• Mechanism Reassembly

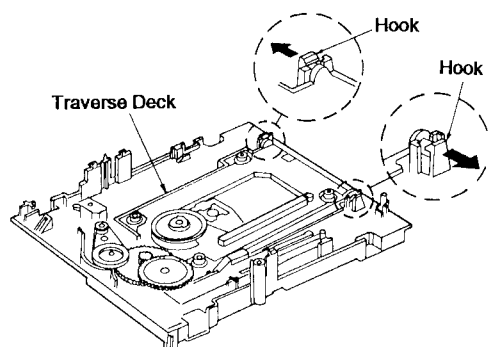


Figure 25

- (1) After removing the Tray, unhook two Hooks securing the Traverse Deck as shown in Figure 25.

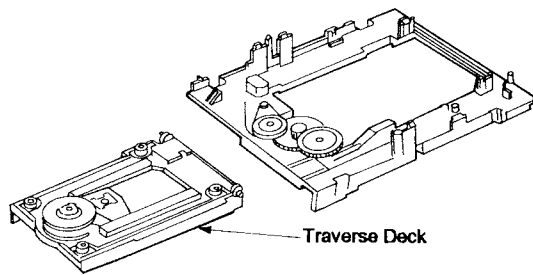


Figure 26

- (2) Remove the Traverse Deck.

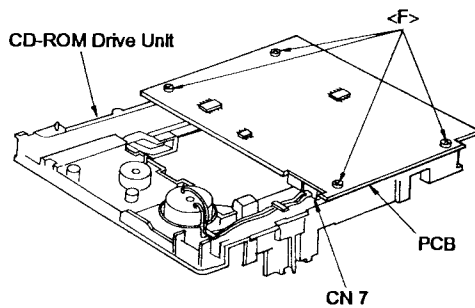


Figure 27

- (3) Turn the CD-ROM Drive Unit as shown in Figure 27.
- (4) Secure the PCB with four screws <F> (2.6 × 8 mm) as shown in Figure 27.
- (5) Connect the connector (CN 7) as shown in Figure 27.

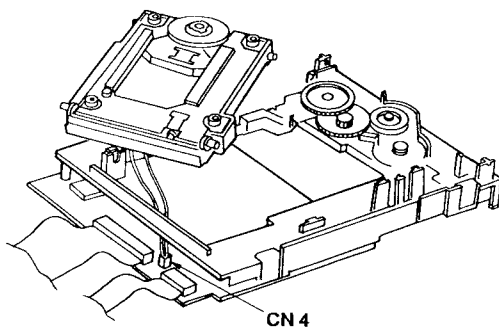


Figure 28

- (6) Turn over the CD-ROM Drive Unit again.
- (7) Connect the connector (CN 4) as shown in Figure 28

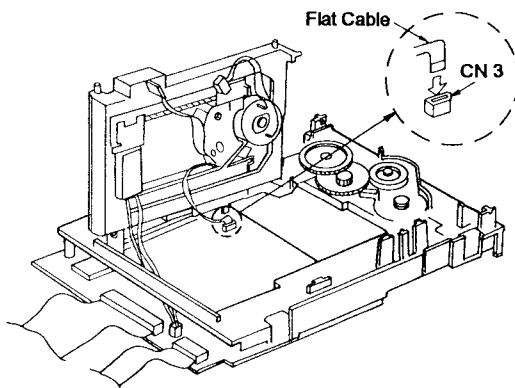


Figure 29

- (8) Connect the flat cable to CN 3 as shown in Figure 29.

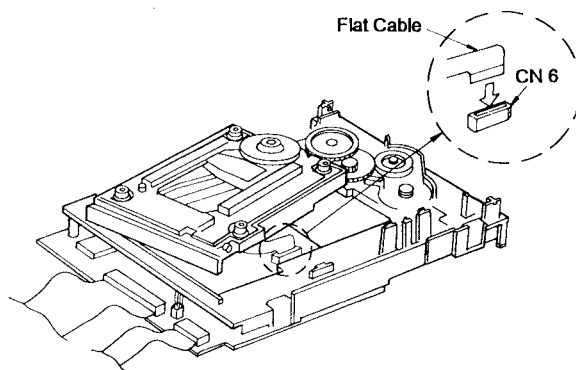


Figure 30

- (9) Connect the flat cable to CN 6 as shown in Figure 30.

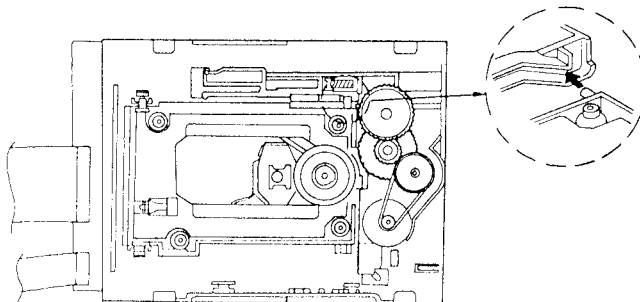


Figure 31

- (10) Fit the front end of the Traverse Deck as shown in Figure 31.

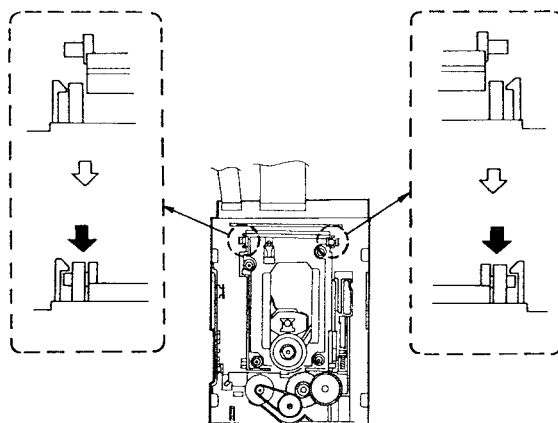


Figure 32

- (11) Lock the rear end of the Traverse Deck as shown in Figure 32.

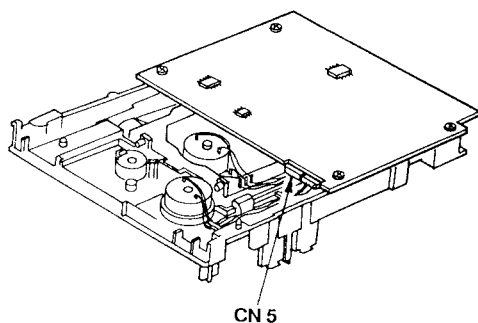
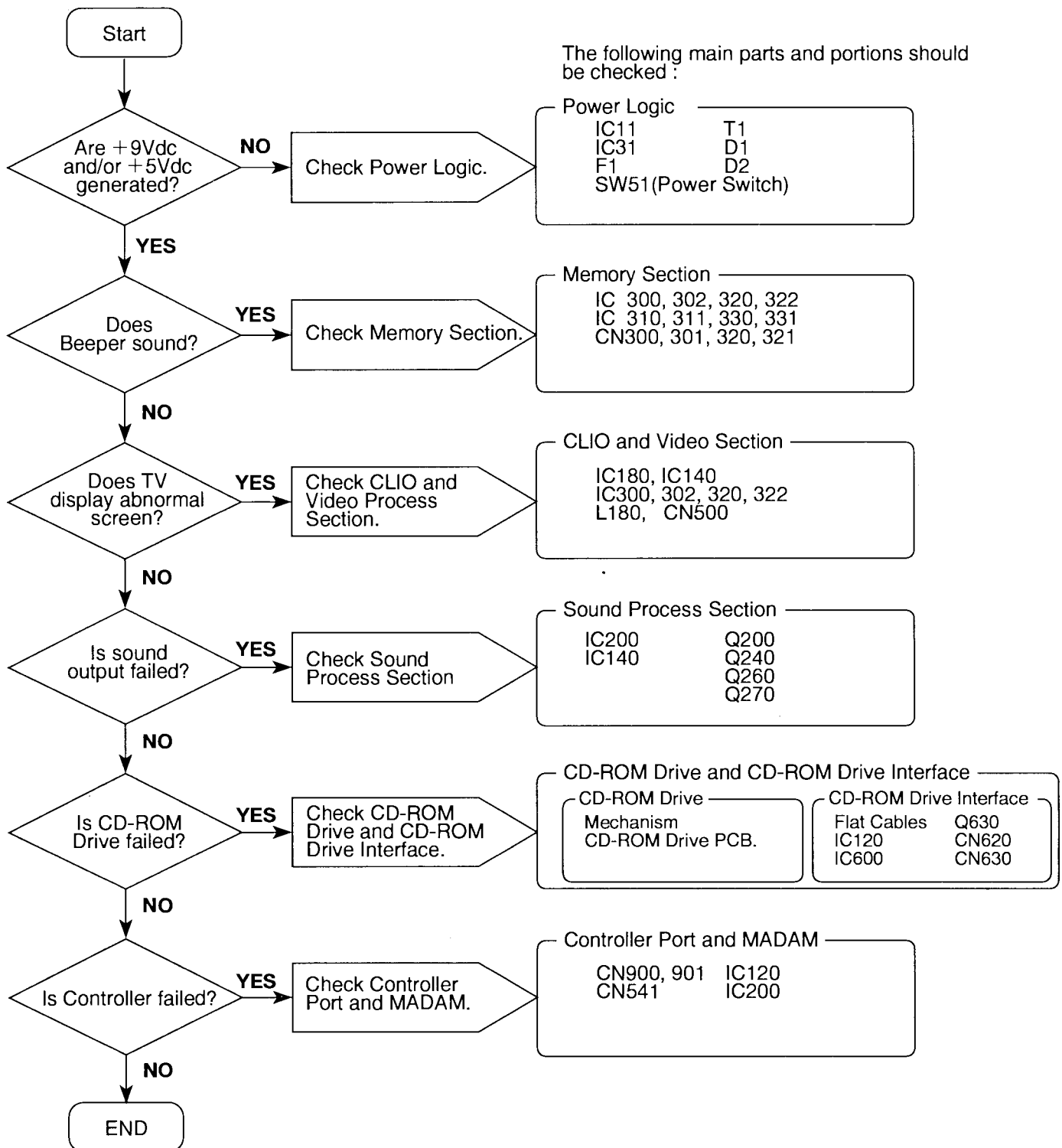


Figure 33

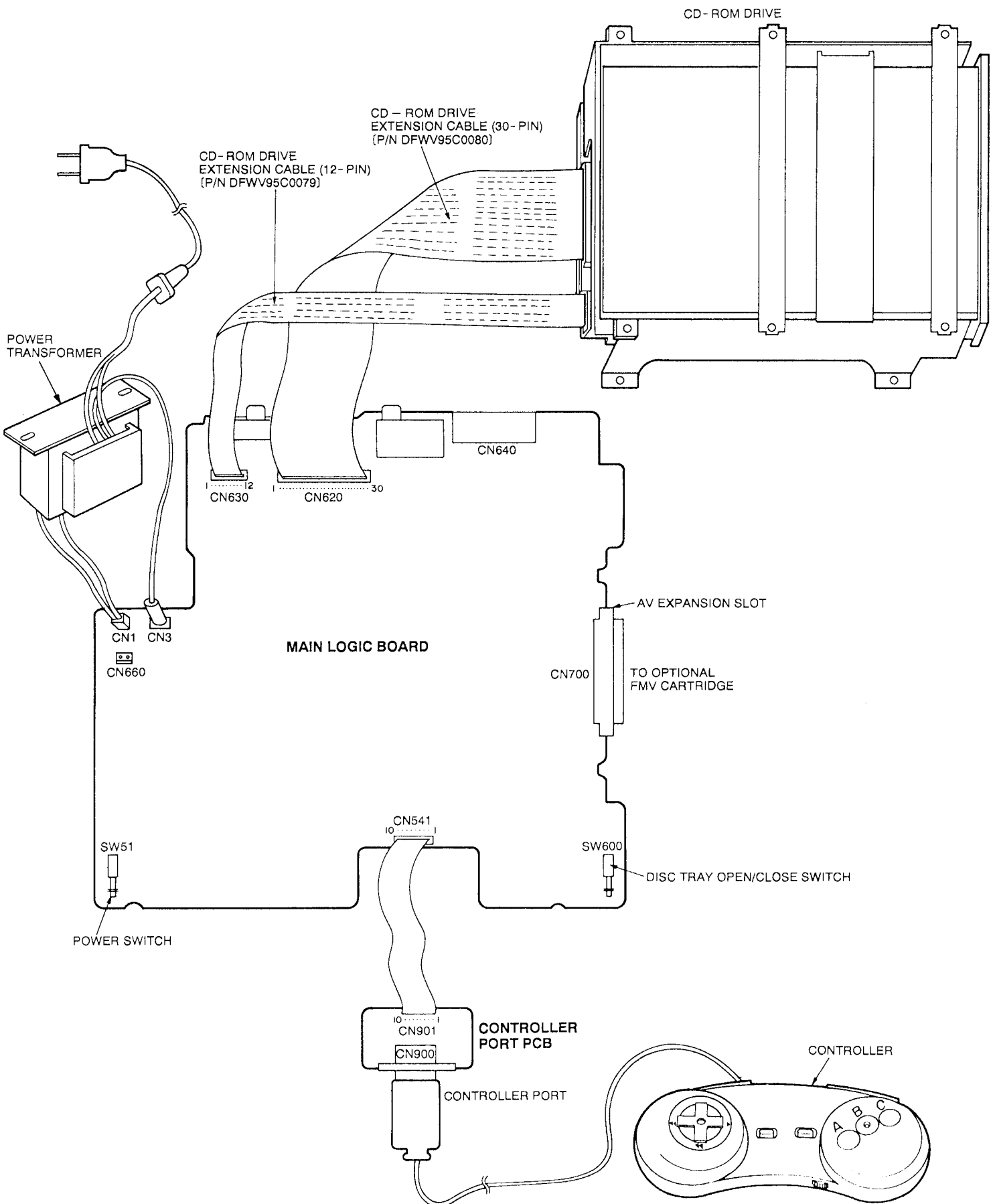
- (12) Turn the CD-ROM Drive Unit.

- (13) Connect the connector (CN 5) as shown in Figure 33.

2-3. Troubleshooting Flowchart



2-4. Interconnection of Operation Check



2-5. Terminal Function of IC's

IC100

CPU (P/N: DA86C0602XV)

Pin No.	I/O	Pin Name	Comment
1	I/O, TTL	D27	Data Bus 2 ²⁷
2	I/O, TTL	D28	Data Bus 2 ²⁸
3	I/O, TTL	D29	Data Bus 2 ²⁹
4	I/O, TTL	D30	Data Bus 2 ³⁰
5	I/O, TTL	D31	Data Bus 2 ³¹
6	In, TTL	CPA	Coprocessor absent
7		Vss	
8		Vdd	
9	Out	LOCK	Locked Operation
10	In, TTL	BIGEND	Big Endian configuration
11	Out	CPI-	Coprocessor Instruction
12	In, TTL	DBE	Data Bus Enable
13	Out	WORD	Byte- / Word
14	In, TTL	MCLK	Memory Clock input
15	In, TTL	WAIT-	Wait signal input
16	In, TTL	LATEABT	Late Abort input
17	In, TTL	PROG32	32-bit Program configuration
18	In, TTL	DATA32	32-bit data configuration
19	Out	WRITE	Read - / Write
20	Out	OPC-	Opecode fetch
21	Out	MREQ-	Memory Request
22	Out	SEQ	Sequential address
23	In, TTL	ABORT	Memory Abort input
24	In, TTL	IRQ-	Interrupt Request input
25	In, TTL	FIRQ-	Fast Interrupt Request input
26	In, TTL	RESET-	Reset signal input
27	I/O, TTL	ALE	Address Latch Enable
28	I/O, TTL	CPB	Coprocessor Busy
29	I/O, TTL	TRANS-	Memory Translation
30	Out	A31	Address 2 ³¹
31	Out	A30	Address 2 ³⁰
32	Out	A29	Address 2 ²⁹
33	Out	A28	Address 2 ²⁸
34	Out	A27	Address 2 ²⁷
35	Out	A26	Address 2 ²⁶
36	Out	A25	Address 2 ²⁵
37	Out	A24	Address 2 ²⁴
38	Out	A23	Address 2 ²³
39	Out	A22	Address 2 ²²
40	Out	A21	Address 2 ²³
41	Out	A20	Address 2 ²⁰

Continued (IC100)

Pin No.	I/O	Pin Name	Comment
42	Out	A19	Address 2 ¹⁹
43	Out	A18	Address 2 ¹⁸
44	Out	A17	Address 2 ¹⁷
45	Out	A16	Address 2 ¹⁶
46	Out	A15	Address 2 ¹⁵
47	Out	A14	Address 2 ¹⁴
48	Out	A13	Address 2 ¹³
49	Out	A12	Address 2 ¹²
50	Out	A11	Address 2 ¹³
51		Vdd	
52		Vss	
53	Out	A10	Address 2 ¹⁰
54	Out	A9	Address 2 ⁹
55	Out	A8	Address 2 ⁸
56	Out	A7	Address 2 ⁷
57	Out	A6	Address 2 ⁶
58	Out	A5	Address 2 ⁵
59	Out	A4	Address 2 ⁴
60	Out	A3	Address 2 ³
61	Out	A2	Address 2 ²
62	Out	A1	Address 2 ³
63	Out	A0	Address 2 ⁰
64		Vss	
65		Vdd	
66	In, TTL	ABE	Address Bus Enable
67	In, TTL, w/pullup	TCK	Test Clock
68	In, TTL, w/pull-up	TMS	Test Mode Select
69	In, TTL, w/pull-up	TRST-	Test Mode Reset
70	In, TTL, w/pull-up	TDI	Test Data Input
71	Out	TDO	Test Data Output
72	I/O, TTL	D0	Data Bus 2 ⁰
73	I/O, TTL	D1	Data Bus 2 ¹
74	I/O, TTL	D2	Data Bus 2 ³
75	I/O, TTL	D3	Data Bus 2 ⁴
76	I/O, TTL	D4	Data Bus 2 ⁵
77	I/O, TTL	D5	Data Bus 2 ⁶
78	I/O, TTL	D6	Data Bus 2 ⁷
79	I/O, TTL	D7	Data Bus 2 ⁸
80		Vss	
81		Vdd	

Continued (IC100)

Pin No.	I/O	Pin Name	Comment
82	I/O, TTL	D8	Data Bus 2 ⁸
83	I/O, TTL	D9	Data Bus 2 ⁹
84	I/O, TTL	D10	Data Bus 2 ¹⁰
85	I/O, TTL	D11	Data Bus 2 ¹¹
86	I/O, TTL	D12	Data Bus 2 ¹²
87	I/O, TTL	D13	Data Bus 2 ¹³
88	I/O, TTL	D14	Data Bus 2 ¹⁴
89	I/O, TTL	D15	Data Bus 2 ¹⁵
90	I/O, TTL	D16	Data Bus 2 ¹⁶
91	I/O, TTL	D17	Data Bus 2 ¹⁷
92	I/O, TTL	D18	Data Bus 2 ¹⁸
93	I/O, TTL	D19	Data Bus 2 ¹⁹
94	I/O, TTL	D20	Data Bus 2 ²⁰
95	I/O, TTL	D21	Data Bus 2 ²¹
96	I/O, TTL	D22	Data Bus 2 ²²
97	I/O, TTL	D23	Data Bus 2 ²³
98	I/O, TTL	D24	Data Bus 2 ²⁴
99	I/O, TTL	D25	Data Bus 2 ²⁵
100	I/O, TTL	D26	Data Bus 2 ²⁶

IC120

System IC MADAM (P/N: DA1205FDBX0Z)

Pin No.	I/O	Pin Name	Comment
1	Out, TTL	RA10	Right part memory address 2 ¹⁰
2	Out, TTL	RA9	Right part memory address 2 ⁹
3	Out, TTL	RA8	Right part memory address 2 ⁸
4	Out, TTL	RA0	Right part memory address 2 ⁰
5	Out, TTL	RA7	Right part memory address 2 ⁷
6		Vss	
7	Out, TTL	RA1	Right part memory address 2 ¹
8	Out, TTL	RA6	Right part memory address 2 ⁶
9	Out, TTL	RA2	Right part memory address 2 ²
10	Out, TTL	RA5	Right part memory address 2 ⁵
11		Vss	
12	Out, TTL	RA3	Right part memory address 2 ³
13	Out, TTL	RA4	Right part memory address 2 ⁴
14		Vdd	
15	Out, TTL	CLC2	Device control code 2 ²
16	Out, TTL	CLC1	Device control code 2 ¹
17		Vss	

Continued (IC120)

Pin No.	I/O	Pin Name	Comment
18	Out, TTL	CLC0	Device control code 2 ⁰
19	Out, TTL	PBCLK	Control port serial clock
20	Out, TTL	PBDOUT	Control port serial data output
21	In, TTL	PBDIN	Control port serial data input
22	In, TTL, w/pull-up	DIAGRQ-	Diag. test request input
23	In, TTL	PCSC-	Pixel sync signal
24	In, TTL	DMAREQ	DMA request
25		Vss	
26	In, CMOS	X25MIN	Main clock input
27		Vdd	
28	In, CMOS	XV25M	Video clock input
29	In, TTL	CREADY-	Device control hand shake signal
30	In, TTL, w/pull-up	RESET-	Master reset signal input
31	Out, TTL	PDCS3-	Chip select for slow device 3
32		Vss	
33	Out, TTL	PDCS2-	Chip select for slow device 2
34	Out, TTL	SRAMW-	SRAM Write signal
35	Out, TTL	SRAMR-	SRAM Read signal
36	Out, TTL	PDCS0-	Chip select for slow device 0
37	Out, TTL	PDWR-	Write signal for slow bus
38	Out, TTL	PDRD-	Read signal for slow bus
39		Vss	
40	I/O, TTL	PD0	Data bus 2 ⁰ for slow devices
41	I/O, TTL	PD1	Data bus 2 ¹ for slow devices
42	I/O, TTL	PD2	Data bus 2 ² for slow devices
43	I/O, TTL	PD3	Data bus 2 ³ for slow devices
44		Vdd	
45	I/O, TTL	PD4	Data bus 2 ⁴ for slow devices
46	I/O, TTL	PD5	Data bus 2 ⁵ for slow devices
47	I/O, TTL	PD6	Data bus 2 ⁶ for slow devices
48	I/O, TTL	PD7	Data bus 2 ⁷ for slow devices
49		Vss	
50	Out, TTL	ROMCS-	ROM Chip Select signal
51	Out, TTL	SIPDEL	Status output
52		A2	CPU address 2 ²
53	Out, TTL	X25M	X25M clock output
54		Vss	
55	In, special	XIN	Crystal Oscillator input for X25M

Continued (IC120)

Pin No.	I/O	Pin Name	Comment
56	Out, special	XOUT	Crystal Oscillator input for X25M
57	In, TTL	A3	CPU address 2 ³
58		Vss	
59		Vdd	
60	In, TTL	A4	CPU address 2 ⁴
61	In, TTL	A5	CPU address 2 ⁵
62	In, TTL	A6	CPU address 2 ⁶
63	In, TTL	A7	CPU address 2 ⁷
64	In, TTL	A8	CPU address 2 ⁸
65	In, TTL	A9	CPU address 2 ⁹
66	In, TTL	A10	CPU address 2 ¹⁰
67	In, TTL	A11	CPU address 2 ¹¹
68	In, TTL	A12	CPU address 2 ¹²
69	In, TTL	A13	CPU address 2 ¹³
70	In, TTL	A14	CPU address 2 ¹⁴
71	In, TTL	A15	CPU address 2 ¹⁵
72	In, TTL	A16	CPU address 2 ¹⁶
73	In, TTL	A0	CPU address 2 ⁰
74	In, TTL	A1	CPU address 2 ¹
75	In, TTL	A17	CPU address 2 ¹⁷
76	In, TTL	A18	CPU address 2 ¹⁸
77	In, TTL	A19	CPU address 2 ¹⁹
78		Vss	
79		Vdd	
80	In, TTL	A20	CPU address 2 ²⁰
81	In, TTL	A21	CPU address 2 ²¹
82	In, TTL	A22	CPU address 2 ²²
83	In, TTL	A23	CPU address 2 ²³
84	In, TTL	A24	CPU address 2 ²⁴
85	In, TTL	A25	CPU address 2 ²⁵
86	In, TTL	A26	CPU address 2 ²⁶
87	In, TTL	A27	CPU address 2 ²⁷
88	In, TTL	A28	CPU address 2 ²⁸
89	In, TTL	A29	CPU address 2 ²⁹
90	In, TTL	A30	CPU address 2 ³⁰
91	In, TTL	A31	CPU address 2 ³¹
92	In, TTL	TRANS-	CPU TRANS signal
93	Out, TTL	CPBUSY	CPU BUSY signal
94	Out, TTL	CPURES-	CPU Reset signal
95	In, TTL	MIRQ-	Interrupt request input

Continued (IC120)

Pin No.	I/O	Pin Name	Comment
96		Vss	
97		Vdd	
98	Out, TTL	ABORT	CPU Abort signal
99	In, TTL	SEQ	CPU Sequential signal
100	In, TTL	MREQ-	CPU Memory Request signal
101	In, TTL	READ-	CPU Read-/Write signal
102		Vss	
103	In, TTL	OPC-	CPU OPC- signal
104	Out, TTL	MCLK	CPU clock
105		Vdd	
106	In, TTL	BYTE-	CPU Byte-/Word signal
107	Out, TTL	DBE	CPU Data Bus Enable signal
108		Vss	
109	In, TTL	CPI-	CPU CPI- signal
110	In, TTL	LOCK	CPU LOCK signal
111	Out, TTL	CPA	CPU CPA signal
112	Out, TTL	MCLK2	CPU clock (copy of MCLK)
113		Vss	
114	I/O, TTL	D0	Main system data bus 2 ⁰
115	I/O, TTL	D1	Main system data bus 2 ¹
116	I/O, TTL	D2	Main system data bus 2 ²
117	I/O, TTL	D3	Main system data bus 2 ³
118		Vss	
119	I/O, TTL	D4	Main system data bus 2 ⁴
120	I/O, TTL	D5	Main system data bus 2 ⁵
121		Vdd	
122	I/O, TTL	D6	Main system data bus 2 ⁶
123	I/O, TTL	D7	Main system data bus 2 ⁷
124		Vss	
125	I/O, TTL	D8	Main system data bus 2 ⁸
126	I/O, TTL	D9	Main system data bus 2 ⁹
127	I/O, TTL	D10	Main system data bus 2 ¹⁰
128	I/O, TTL	D11	Main system data bus 2 ¹¹
129		Vss	
130	I/O, TTL	D12	Main system data bus 2 ¹²
131	I/O, TTL	D13	Main system data bus 2 ¹³
132	I/O, TTL	D14	Main system data bus 2 ¹⁴
133	I/O, TTL	D15	Main system data bus 2 ¹⁵
134		Vss	
135	I/O, TTL	D16	Main system data bus 2 ¹⁶

Continued (IC120)

Pin No.	I/O	Pin Name	Comment
136	I/O, TTL	D17	Main system data bus 2 ¹⁷
137		Vdd	
138	I/O, TTL	D18	Main system data bus 2 ¹⁸
139	I/O, TTL	D19	Main system data bus 2 ¹⁹
140		Vss	
141	I/O, TTL	D20	Main system data bus 2 ²⁰
142	I/O, TTL	D21	Main system data bus 2 ²¹
143	I/O, TTL	D22	Main system data bus 2 ²²
144	I/O, TTL	D23	Main system data bus 2 ²³
145		Vss	
146	I/O, TTL	D24	Main system data bus 2 ²⁴
147	I/O, TTL	D25	Main system data bus 2 ²⁵
148		Vdd	
149	I/O, TTL	D26	Main system data bus 2 ²⁶
150	I/O, TTL	D27	Main system data bus 2 ²⁷
151		Vss	
152	I/O, TTL	D28	Main system data bus 2 ²⁸
153	I/O, TTL	D29	Main system data bus 2 ²⁹
154	I/O, TTL	D30	Main system data bus 2 ³⁰
155	I/O, TTL	D31	Main system data bus 2 ³¹
156		Vss	
157	Out, TTL	LPSC-	Left Part Serial Clock for sync.
158	Out, TTL	LSPARE	Reserved signal
159	Out, TTL	LRAS3-	RAS signal for Left Bank 3
160	Out, TTL	LRAS2-	RAS signal for Left Bank 2
161		Vss	
162	Out, TTL	LRAS1-	RAS signal for Left Bank 1
163	Out, TTL	LRAS0-	RAS signal for Left Bank 0
164		Vdd	
165		Vss	
166	Out, TTL	LSC	Serial Clock for Left part VRAM
167	Out, TTL	LSOE0-	SOE signal for Left Bank 0 memory
168	Out, TTL	LSOE1-	SOE signal for Left Bank 1 memory
169	Out, TTL	LDTOE-	DTOE signal for Left part memory
170	Out, TTL	LDSF	DSF signal for Right part VRAM
171	Out, TTL	LCAS-	CAS signal for Right part memory
172		Vss	
173	Out, TTL	LWEL-	WE signal for Right Upper byte
174	Out, TTL	LWEU-	WE signal for Right Lower byte
175	In, TTL	LQSF-	QSF signal for Right part VRAM

Continued (IC120)

Pin No.	I/O	Pin Name	Comment
176	Out, TTL	LA10	Left part memory address 2 ¹⁰
177	Out, TTL	LA9	Left part memory address 2 ⁹
178	Out, TTL	LA8	Left part memory address 2 ⁸
179	Out, TTL	LA0	Left part memory address 2 ⁰
180	Out, TTL	LA7	Left part memory address 2 ⁷
181	Out, TTL	LA1	Left part memory address 2 ¹
182		Vdd	
183		Vss	
184	Out, TTL	LA6	Left part memory address 2 ⁶
185	Out, TTL	LA2	Left part memory address 2 ²
186	Out, TTL	LA5	Left part memory address 2 ⁵
187	Out, TTL	LA3	Left part memory address 2 ³
188	Out, TTL	LA4	Left part memory address 2 ⁴
189	Out, TTL	RPSC-	Right Part Serial Clock for sync.
190	Out, TTL	RSPARE	Reserved signal
191		Vss	
192	Out, TTL	RRAS3-	RAS signal for Right Bank 3
193	Out, TTL	RRAS2-	RAS signal for Right Bank 2
194	Out, TTL	RRAS1-	RAS signal for Right Bank 1
195	Out, TTL	RRAS0-	RAS signal for Right Bank 0
196	Out, TTL	RSC	Serial Clock for Right part VRAM
197		Vss	
198	Out, TTL	RSOE0-	SOE signal for Right Bank 0 memory
199	Out, TTL	RSOE1-	SOE signal for Right Bank 1 memory
200	Out, TTL	RDTOE-	DTOE signal for Right part memory
201	Out, TTL	RDSF	DSF signal for Right part VRAM
201		Vdd	
203		Vss	
204	Out, TTL	RCAS-	CAS signal for Right part memory
205	Out, TTL	RWEL-	WE signal for Right Upper byte
206	Out, TTL	RWEU-	WE signal for Right Lower byte
207	In, TTL	RQSF	QSF signal for Right part VRAM
208		Vss	

IC140**System IC CLIO (P/N: DA1205GDBX0Z)**

Pin No.	I/O	Pin Name	Comment
1	In, TTL	S19	VRAM Serial data bus 2 ¹⁹
2	In, TTL	S18	VRAM Serial data bus 2 ¹⁸
3	In, TTL	S1	VRAM Serial data bus 2 ¹

Continued (IC140)

Pin No.	I/O	Pin Name	Comment
4	In, TTL	S0	VRAM Serial data bus 2 ⁰
5	In, TTL	S3	VRAM Serial data bus 2 ³
6	In, TTL	S2	VRAM Serial data bus 2 ²
7	In, TTL	S21	VRAM Serial data bus 2 ²¹
8		Vdd	
9		Vss	
10	In, TTL	S20	VRAM Serial data bus 2 ²⁰
11	In, TTL	S23	VRAM Serial data bus 2 ²³
12	In, TTL	S22	VRAM Serial data bus 2 ²²
13	In, TTL	S5	VRAM Serial data bus 2 ⁵
14	In, TTL	S4	VRAM Serial data bus 2 ⁴
15	In, TTL	S7	VRAM Serial data bus 2 ⁷
16	In, TTL	S6	VRAM Serial data bus 2 ⁶
17		Vdd	
18	In, TTL	S25	VRAM Serial data bus 2 ²⁵
19	In, TTL	S24	VRAM Serial data bus 2 ²⁴
20	In, TTL	S27	VRAM Serial data bus 2 ²⁷
21	In, TTL	S26	VRAM Serial data bus 2 ²⁶
22	In, TTL	S9	VRAM Serial data bus 2 ⁹
23		Vss	
24		X25M	System clock
25		Vss	
26	In, TTL	S8	VRAM Serial data bus 2 ⁸
27	In, TTL	S11	VRAM Serial data bus 2 ¹¹
28	In, TTL	S10	VRAM Serial data bus 2 ¹⁰
29	In, TTL	S29	VRAM Serial data bus 2 ²⁹
30	In, TTL	S28	VRAM Serial data bus 2 ²⁸
31	In, TTL	S31	VRAM Serial data bus 2 ³¹
32	In, TTL	S30	VRAM Serial data bus 2 ³⁰
33	In, TTL	S13	VRAM Serial data bus 2 ¹³
34	In, TTL	S12	VRAM Serial data bus 2 ¹²
35	In, TTL	S15	VRAM Serial data bus 2 ¹⁵
36	In, TTL	S14	VRAM Serial data bus 2 ¹⁴
37		Vss	
38	In, CMOS	XV25MIN	Video Clock input
39		Vdd	
40		Vss	
41	Out, special	XOUT	Crystal Oscillator Output
42	In, special	XIN	Crystal Oscillator Input
43		Vss	
44	In, TTL, w/pull-up	PDINT-	Slow Bus Interrupt

Continued (IC140)

Pin No.	I/O	Pin Name	Comment
45	Out, TTL	XV25MO	Video Clock Output
46	Out, TTL	FIRQ-	CPU Fast Interrupt signal
47	Out, TTL	PCSC-	Video timing signal
48	Out, TTL	DMAREQ	DMA Request signal
49	I/O, TTL	CREADY-	Hand shake control for devices
50	Out, TTL	RESET-	System Reset signal
51	In, TTL, w/pull-up	CLC2	Opera device control signal 2 ²
52	In, TTL, w/pull-up	CLC1	Opera device control signal 2 ¹
53		Vss	
54	In, TTL, w/pull-up	CLC0	Opera device control signal 2 ⁰
55	I/O, TTL	D31	Main system data bus 2 ³¹
56	I/O, TTL	D30	Main system data bus 2 ³⁰
57		Vss	
58	I/O, TTL	D29	Main system data bus 2 ²⁹
59	I/O, TTL	D28	Main system data bus 2 ²⁸
60	I/O, TTL	D27	Main system data bus 2 ²⁷
61	I/O, TTL	D26	Main system data bus 2 ²⁶
62		Vss	
63	I/O, TTL	D25	Main system data bus 2 ²⁵
64	I/O, TTL	D24	Main system data bus 2 ²⁴
65	I/O, TTL	D23	Main system data bus 2 ²³
66		Vss	
67		Vdd	
68	I/O, TTL	D22	Main system data bus 2 ²²
69	I/O, TTL	D21	Main system data bus 2 ²¹
70		Vss	
71	I/O, TTL	D20	Main system data bus 2 ²⁰
72	I/O, TTL	D19	Main system data bus 2 ¹⁹
73	I/O, TTL	D18	Main system data bus 2 ¹⁸
74		Vss	
75	I/O, TTL	D17	Main system data bus 2 ¹⁷
76	I/O, TTL	D16	Main system data bus 2 ¹⁶
77	I/O, TTL	D15	Main system data bus 2 ¹⁵
78		Vss	
79	I/O, TTL	D14	Main system data bus 2 ¹⁴
80	I/O, TTL	D13	Main system data bus 2 ¹³
81	I/O, TTL	D12	Main system data bus 2 ¹²
82		Vss	
83		Vdd	
84	I/O, TTL	D11	Main system data bus 2 ¹¹

Continued (IC140)

Pin No.	I/O	Pin Name	Comment
85	I/O, TTL	D10	Main system data bus 2 ¹⁰
86	I/O, TTL	D9	Main system data bus 2 ⁹
87		Vss	
88	I/O, TTL	D8	Main system data bus 2 ⁸
89	I/O, TTL	D7	Main system data bus 2 ⁷
90	I/O, TTL	D6	Main system data bus 2 ⁶
91		Vss	
92	I/O, TTL	D5	Main system data bus 2 ⁵
93	I/O, TTL	D4	Main system data bus 2 ⁴
94	I/O, TTL	D3	Main system data bus 2 ³
95		Vss	
96	I/O, TTL	D2	Main system data bus 2 ²
97	I/O, TTL	D1	Main system data bus 2 ¹
98		Vss	
99		Vdd	
100	I/O, TTL	D1	Main system data bus 2 ¹
101	Out, TTL	UNCACKR	Uncle chip read Acknowledge
102	Out, TTL	UNCACKW	Uncle chip Write Acknowledge
103	In, TTL, pull-down	UNCREQR	Uncle chip Read Request
104		Vss	
105	In, TTL, pull-down	UNCREQR	Uncle chip Read Request
106	In, TTL, pull-up	A15	System address input 2 ¹⁵
107	In, TTL, pull-up	A14	System address input 2 ¹⁴
108	In, TTL, pull-up	A13	System address input 2 ¹³
109	In, TTL, pull-up	A12	System address input 2 ¹²
110		Vss	
111	In, TTL, pull-up	A11	System address input 2 ¹¹
112	In, TTL, pull-up	A10	System address input 2 ¹⁰
113	In, TTL, pull-up	A9	System address input 2 ⁹
114	In, TTL, pull-up	A8	System address input 2 ⁸
115	In, TTL, pull-up	A7	System address input 2 ⁷
116	In, TTL, pull-up	A6	System address input 2 ⁶
117		Vss	
118		Vdd	
119	In, TTL, pull-up	A5	System address input 2 ⁵

Continued (IC140)

Pin No.	I/O	Pin Name	Comment
120	In, TTL, pull-up	A4	System address input 2 ⁴
121	In, TTL, pull-up	A3	System address input 2 ³
122	In, TTL, pull-up	A2	System address input 2 ²
123	In, TTL, pull-up	SERL	Serial audio data left select
124	In, TTL, pull-up	SERR	Serial audio data right select
125	In, TTL, pull-up	SERDAT	Serial audio data input
126	In, TTL, pull-up	SERCLK	Serial audio clock input
127		Vss	
128	In, CMOS, pull-up	MCLK2	MCLK2 input
129	In, TTL	XACLK	Serial audio clock input
130		Vss	
131	Out, TTL	AUDBCK	Serial audio bit clock
132	Out, TTL	AUDWS	Serial audio word select
133	Out, TTL	AUDDAT	Serial audio data output
134	In, TTL, pull-up	EINT-	External bus interrupt input
135	In, TTL, pull-down	ERDY-	Expansion bus Ready signal
136	Out, TTL	ESEL-	Expansion bus Select signal
137	Out, TTL	ECMD-	Expansion bus Command signal
138	Out, TTL	ERST-	Expansion bus Reset signal
139	Out, TTL	EWRT-	Expansion bus Write signal
140	Out, TTL	WSTR-	Expansion bus Strobe signal
141		Vdd	
142		Vss	
143	I/O, TTL	ED7	Expansion bus Address/Data 2 ⁷
144	I/O, TTL	ED6	Expansion bus Address/Data 2 ⁶
145	I/O, TTL	ED5	Expansion bus Address/Data 2 ⁵
146	I/O, TTL	ED4	Expansion bus Address/Data 2 ⁴
147	I/O, TTL	ED3	Expansion bus Address/Data 2 ³
148	I/O, TTL	ED2	Expansion bus Address/Data 2 ²
149	I/O, TTL	ED1	Expansion bus Address/Data 2 ¹
150	I/O, TTL	ED0	Expansion bus Address/Data 2 ⁰
151		Vss	
152	In, CMOS	PON	Power on reset input
153	In, CMOS	WDIN	Watch Dog Timer C/R input
154	In, TTL, pull-up	HSYNC-	Video Hsync input
155	In, TTL, pull-up	VSNC-	Video Vsync input

Continued (IC140)

Pin No.	I/O	Pin Name	Comment
156	Out, TTL, ODout	WDRES-	Watch Dog timer reset output
157		Vss	
158	Out, TTL	AD0	Video pixel data 2 ⁰
159	Out, TTL	AD1	Video pixel data 2 ¹
160	Out, TTL	AD2	Video pixel data 2 ²
161	Out, TTL	AD3	Video pixel data 2 ³
162		Vdd	
163		Vss	
164	Out, TTL	AD4	Video pixel data 2 ⁴
165	Out, TTL	AD5	Video pixel data 2 ⁵
166	Out, TTL	AD6	Video pixel data 2 ⁶
167	Out, TTL	AD7	Video pixel data 2 ⁷
168		Vss	
169	Out, TTL	AD8	Video pixel data 2 ⁸
170	Out, TTL	AD9	Video pixel data 2 ⁹
171	Out, TTL	AD10	Video pixel data 2 ¹⁰
172	Out, TTL	AD11	Video pixel data 2 ¹¹
173		Vss	
174	Out, TTL	AD12	Video pixel data 2 ¹²
175	Out, TTL	AD13	Video pixel data 2 ¹³
176	Out, TTL	AD14	Video pixel data 2 ¹⁴
177	Out, TTL	AD15	Video pixel data 2 ¹⁵
178		Vdd	
179		Vss	
180	Out, TTL	AD16	Video pixel data 2 ¹⁶
181	Out, TTL	AD17	Video pixel data 2 ¹⁷
182	Out, TTL	AD18	Video pixel data 2 ¹⁸
183	Out, TTL	AD19	Video pixel data 2 ¹⁹
184		Vss	
185	Out, TTL	AD20	Video pixel data 2 ²⁰
186	Out, TTL	AD21	Video pixel data 2 ²¹
187	Out, TTL	AD22	Video pixel data 2 ²²
188	Out, TTL	AD23	Video pixel data 2 ²³
189		Vss	
190	Out, TTL	AMYCTL	Color encoder control signal
191	Out, TTL	TMUXSEL	Color encoder control signal
192	Out, TTL	BLANK-	Video Blanking signal
193	Out, TTL	EXTACKR	External Read Acknowledge
194	Out, TTL	EXTACKW	External Write Acknowledge
195		Vdd	
196		Vss	

Continued (IC140)

Pin No.	I/O	Pin Name	Comment
197	I/O, TTL	ADBIO0	General purpose video I/O 1
198	I/O, TTL	ADBIO1	General purpose video I/O 2
199	I/O, TTL	ADBIO2	General purpose video I/O 3
200	I/O, TTL	ADBIO3	General purpose video I/O 4
201		Vss	
201	In, TTL, pull-down	EXTREQR	External Read DMA Request
203	In, TTL, pull-down	EXTREQW	External Write DMA Request
204	In, TTL, pull-up	RPSC-	Right part VRAM serial clock
205	In, TTL, pull-up	LPSC-	Left part VRAM serial clock
206	In, TTL	S17	VRAM Serial data bus 2 ¹⁷
207	In, TTL	S16	VRAM Serial data bus 2 ¹⁶
208		Vss	

IC180**Digital Color Encoder (P/N: DA9101KPF-XN)**

Pin No.	I/O	Pin Name	Comment
1	TTL, I/O	Field_1	Field input/output
2-4		N/C	(Not Connected)
5	TTL, Input	R0	Red pixel data input 2 ⁰
6	TTL, Input	R1	Red pixel data input 2 ¹
7	TTL, Input	R2	Red pixel data input 2 ²
8	TTL, Input	R3	Red pixel data input 2 ³
9	TTL, Input	R4	Red pixel data input 2 ⁴
10	TTL, Input	R5	Red pixel data input 2 ⁵
11	TTL, Input	R6	Red pixel data input 2 ⁶
12	TTL, Input	R7	Red pixel data input 2 ⁷
13	TTL, Input	B0	Blue pixel data input 2 ⁰
14	TTL, Input	B1	Blue pixel data input 2 ¹
15	TTL, Input	B2	Blue pixel data input 2 ²
16	TTL, Input	B3	Blue pixel data input 2 ³
17	TTL, Input	B4	Blue pixel data input 2 ⁴
18	TTL, Input	B5	Blue pixel data input 2 ⁵
19	TTL, Input	B6	Blue pixel data input 2 ⁶
20	TTL, Input	B7	Blue pixel data input 2 ⁷
21,22		N/C	(Not Connected)
23,24		VAA	
25,26		GND	
27,28		VAA	
29	TTL, Input	G0	Green pixel data input 2 ⁰

Continued (IC180)

Pin No.	I/O	Pin Name	Comment
30	TTL, Input	G1	Green pixel data input 2 ¹
31	TTL, Input	G2	Green pixel data input 2 ²
32	TTL, Input	G3	Green pixel data input 2 ³
33	TTL, Input	G4	Green pixel data input 2 ⁴
34	TTL, Input	G5	Green pixel data input 2 ⁵
35	TTL, Input	G6	Green pixel data input 2 ⁶
36	TTL, Input	G7	Green pixel data input 2 ⁷
37-40		N/C	(Not Connected)
41	TTL, Input	OL3	Overlay select input 2 ³
42	TTL, Input	OL2	Overlay select input 2 ²
43	TTL, Input	OL1	Overlay select input 2 ¹
44	TTL, Input	OL0	Overlay select input 2 ⁰
45		GND	
46		VAA	
47	TTL, I/O	D7	Data Bus 2 ⁷
48	TTL, I/O	D6	Data Bus 2 ⁶
49	TTL, I/O	D5	Data Bus 2 ⁵
50	TTL, I/O	D4	Data Bus 2 ⁴
51	TTL, I/O	D3	Data Bus 2 ³
52	TTL, I/O	D2	Data Bus 2 ²
53	TTL, I/O	D1	Data Bus 2 ¹
54	TTL, I/O	D0	Data Bus 2 ⁰
55	TTL, Input	RD-	Read strobe input
56	TTL, Input	WR-	Write strobe input
57	TTL, Input	RS0	Register Select input
58	TTL, Input	RS1	Register Select input
59	TTL, Input	RS2	Register Select input
60,61		GND	
62-65		VAA	
66		GND	
67	TTL, Input	CLOCK_IN	Pixel clock input
68-99		N/C	
100		GND	
101		GND	
102		VAA	
103		VAA	
104-110		N/C	(Not Connected)
111	TTL, Input	RESET	Reset input
112	TTL, Input	BLANK	Composite blank control input
113		GND	
114	TTL, Input	CBFALG	Cb Flag control input

Continued (IC180)

Pin No.	I/O	Pin Name	Comment
115	TTL, Input	KEY_0	Key control input
116-120		N/C	(Not Connected)
121-124		VAA	
125		GND	
126		GND	
127-136		N/C	(Not Connected)
137	Analog input	FS_ADJUST	Full Scale adjust input
138	Analog input	COMP	Compensation pin
139		GND	
140	Analog input	VREF	Voltage Reference input
141		VAA	
142		VAA	
143	Analog input	NCOMP	Compensation pin
144		VAA	
145	Analog output	NTSC	Composite video output
146		GND	
147	Analog input	CCOMP	Compensation pin
148		VAA	
149	Analog output	C	Chroma signal output
150		GND	
151	Analog input	YCOMP	Compensation pin
152		VAA	
153	Analog output	Y	Luminance signal output
154		GND	
155		GND	
156	TTL, Output	CLOCK_OUT	Pixel clock output
157	TTL, I/O	HSYNC	Horizontal sync control input/output
158	TTL, I/O	VSNC	Vertical sync control input/output
159	TTL, I/O	CSYNC	Composite sync control input/output
160	TTL, I/O	FIELD_0	Field input/output

IC200**Audio DAC (P/N: DA4316VSE2XQ)**

Pin No.	I/O	Pin Name	Comment
1		N/C	(Not Connected)
2	Output	VREF	Voltage Reference Output
3		N/C	(Not Connected)
4		AVDD	
5		AVSS	
6	Input	TST	Test pin
7	Input	LRCK	L/R Clock input
8	Input	BICK	Serial data clock
9	Input	SDATA	Serial Data
10		DVSS	Digital ground
11		N/C	(Not Connected)
12		DVDD	Digital 5V
13-16		N/C	(Not Connected)
17	Input	XTI	Master clock input
18		N/C	(Not Connected)
19	Output	XTO	Crystal Oscillator output
20	Input	PD-	Power Down signal input
21	Input	CKS	Master clock select
22	Output	DZF	Zero input detect pin
23	Output	AOUTR-	Right channel analog negative output
24	Output	AOUTR+	Right channel analog positive output
25	Output	AOURL-	Left channel analog negative output
26	Output	AOURL+	Left channel analog positive output
27,28		N/C	(Not Connected)

IC400**Backup Controller (P/N: DABA6162FT2E)**

Pin No.	I/O	Pin Name	Comment
1		N/C	(Not Connected)
2	Output	VREF	Voltage Reference Output
3		N/C	(Not Connected)
4		AVDD	
5		AVSS	
6	Input	TST	Test pin
7	Input	LRCK	L/R Clock input
8	Input	BICK	Serial data clock

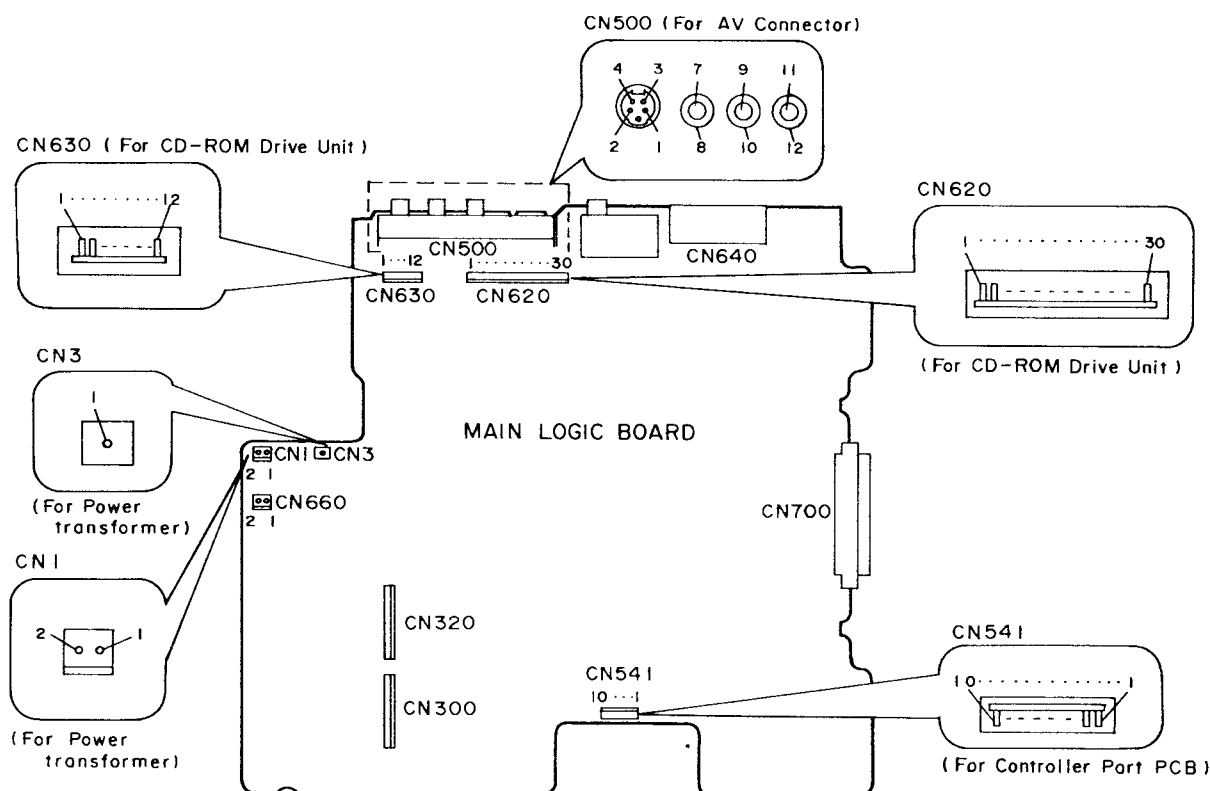
IC600**CD-ROM Interface Gate Array****(P/N: DA623827PFJ)**

Pin No.	I/O	Pin Name	Comment
1	I/O, TTL, w/Pull-up	EXD3	Internal expansion bus (2 ³)
2	I/O, TTL, w/Pull-up	EXD4	Internal expansion bus (2 ⁴)
3	I/O, TTL, w/Pull-up	EXD5	Internal expansion bus (2 ⁵)
4	I/O, TTL, w/Pull-up	EXD6	Internal expansion bus (2 ⁶)
5	I/O, TTL, w/Pull-up	EXD7	Internal expansion bus (2 ⁷)
6	In, TTL	EXSTR-	Internal Strobe signal
7	In, TTL	EXWRT-	Internal Write signal
8	In, TTL	EXRST-	Internal Reset signal
9	Tri-out, TTL	EXRDY-	Internal Ready signal
10		Vss	
11	Tri-out, TTL	EXINT-	Internal Interrupt signal
12	In, TTL	EXCMD-	Internal Command signal
13	In, TTL	EXSEL-	Internal Selection signal
14	In, TTL	BFRST-	External Reset signal
15	Out, TTL	IDOUT	ID output to next device
16	I/O, TTL, w/Pull-up	BFWRT-	External Write signal
17	Out, TTL	BFSEL-	External Selection signal
18	In, TTL, w/Pull-up	IDIN	ID input from previous device
19	In, TTL, w/Pullup	BFRDY-	External bus Ready input
20	Out, TTL	BFCMD-	External bus Command output
21	Out, TTL	BFSTR-	External bus Strobe output
22	In, TTL, w/Pull-up	BFINT-	External bus Interrupt input
23	I/O, TTL, w/Pull-up	BFD7	External bus data 2 ⁷
24	I/O, TTL, w/Pull-up	BFD6	External bus data 2 ⁶
25		Vss	
26		Vdd	
27	I/O, TTL, w/Pull-up	BFD5	External bus data 2 ⁵
28	I/O, TTL, w/Pull-up	BFD4	External bus data 2 ⁴
29	I/O, TTL, w/Pull-up	BFD3	External bus data 2 ³
30	I/O, TTL, w/Pull-up	BFD2	External bus data 2 ²
31	In, TTL, w/Pull-up	EN7B	General purpose input
32	In, TTL, w/Pull-up	EN15B	General purpose output

Continued (IC600)

Pin No.	I/O	Pin Name	Comment
33	I/O, TTL, w/Pull-up	BFD1	External bus data 2 ¹
34	I/O, TTL, w/Pull-up	BFD1	External bus data 2 ⁰
35	In, TTL	PDCS0-	Slow bus Chip select strobe
36	I/O, TTL, w/Pull-up	BFIDIN	ID signal return from EX-Bus
37	In, TTL	PDWR-	Slow bus Write signal
38	In, TTL	PDRD-	Slow bus Read signal
39	Out, TTL	PDWRO-	Write strobe to BT9101
40	Out, TTL	PDRDO-	Read strobe to BT9101
41	In, TTL	CLK25M	Clock input 25 MHz
42		Vss	
43	I/O, TTL, w/Pull-up	CDD0	Data bus for CD drive 2 ⁰
44	I/O, TTL, w/Pull-up	CDD1	Data bus for CD drive 2 ¹
45	I/O, TTL, w/Pull-up	CDD2	Data bus for CD drive 2 ²
46	I/O, TTL, w/Pull-up	CDD3	Data bus for CD drive 2 ³
47	I/O, TTL, w/Pull-up	CDD4	Data bus for CD drive 2 ⁴
48	I/O, TTL, w/Pull-up	CDD5	Data bus for CD drive 2 ⁵
49	I/O, TTL, w/Pull-up	CDD6	Data bus for CD drive 2 ⁶
50	I/O, TTL, w/Pull-up	CDD7	Data bus for CD drive 2 ⁷
51	Out, TTL	CDEN-	CD drive Enable signal
52	Out, TTL	CDHWR-	CD drive Write signal
53	Out, TTL	CDHRD-	CD drive Read signal
54	In, TTL, w/Pull-up	CDWAIT-	CD drive Wait signal
55	In, TTL, w/Pull-up	CDDTEN-	CD drive Data enable signal
56	In, TTL, w/Pull-up	CDSTEN-	CD drive Status enable signal
57		Vss	
58		Vdd	
59	Out, TTL	CDCMD-	CD drive Command signal
60	In, TTL, w/Pull-up	CDMDCHG	CD drive Media change signal
61	Out, TTL	CDRST-	CD drive Reset signal
62	I/O, TTL, w/Pull-up	EXD0	Internal expansion data 2 ⁰
63	I/O, TTL, w/Pull-up	EXD1	Internal expansion data 2 ¹
64	I/O, TTL, w/Pull-up	EXD2	Internal expansion data 2 ²

2-6. Pin Configurations of PCB



CN1
Power Connector (2-pin)

Pin No.	Signal Name/Description	Direction
1	AC	—
2	AC	—

CN3
Power Connector (1-pin)

Pin No.	Signal Name/Description	Direction
1	(for discharge)	—

CN500
AV Connector (12-pin)

Pin No.	Signal Name/Description	Direction
1	GND	—
2	GND	—
3	Y SVHS OUT	Out
4	C SVHS OUT	Out
5	GND	—
6	GND	—
7	COMP VIDEO	Out
8	GND	—
9	LEFT AUDIO	Out
10	GND	—
11	RIGHT AUDIO	Out
12	GND	—

CN541
PCB Connector (10-pin)

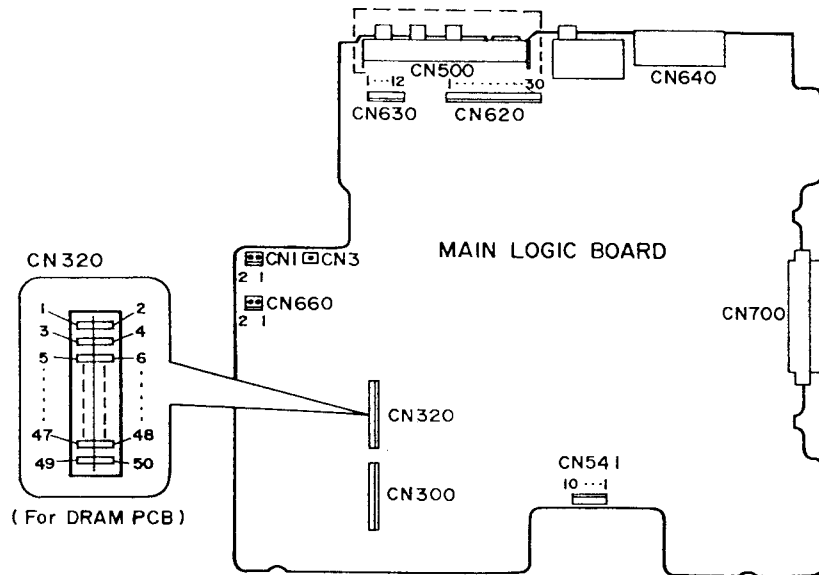
Pin No.	Signal Name/Description	Direction
1	+5V	—
2	PBDIN	In
3	PBCLK	Out
4	PBDOUT	Out
5	GND	—
6	+5V	—
7	GND	—
8	RIGHT AUDIO	Out
9	LEFT AUDIO	Out
10	GND	—

CN620
CD-ROM I/F Connector (30-pin)

Pin No.	Signal Name/Description	Direction	Pin No.	Signal Name/Description	Direction
1	CDRSTB	Out	16	CDENB	Out
2	CDMDCHG	In	17	GND	—
3	GND	—	18	CDD7	In/Out
4	CDCMDB	Out	19	GND	—
5	GND	—	20	CDD6	In/Out
6	CDSTENB	In	21	GND	—
7	GND	—	22	CDD5	In/Out
8	CDDTENB	In	23	CDD4	In/Out
9	GND	—	24	GND	—
10	CDWAITB	In	25	CDD3	In/Out
11	GND	—	26	CDD2	In/Out
12	CDHRDB	Out	27	GND	—
13	GND	—	28	CDD1	In/Out
14	CDHWRB	Out	29	GND	—
15	GND	—	30	CDD0	In/Out

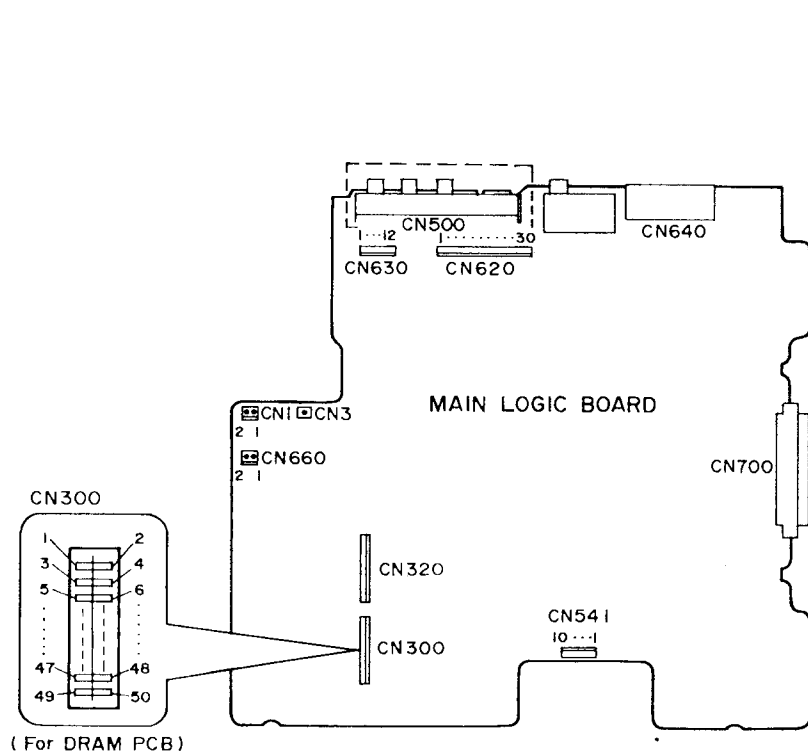
CN830
CD-ROM Power Supply Connector (12-pin)

Pin No.	Signal Name/Description	Direction
1	LED (BUSY)	In
2	SWITCH	Out
3	+5V	Out
4	+5V	Out
5	GND	—
6	GND	—
7	GND	—
8	GND	—
9	GND	—
10	VDC1 (+9V)	Out
11	VDC1 (+9V)	Out
12	VDC1 (+9V)	Out

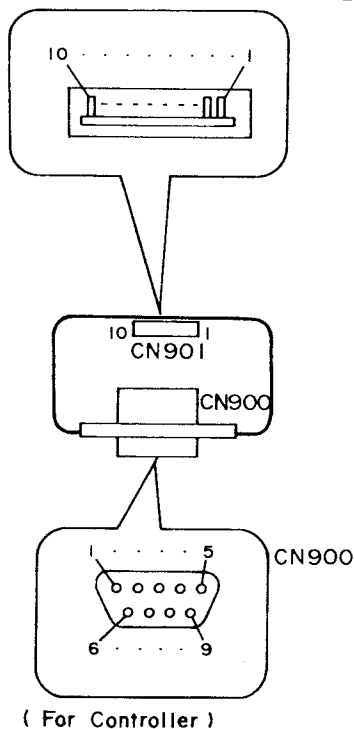


CN320
PCB Connector (50-pin)

Pin No.	Signal Name/Description	Direction	Pin No.	Signal Name/Description	Direction
1	+5V	--	26	LRAS3BD	Out
2	+5V	--	27	GND	--
3	GND	--	28	LRAS2BD	Out
4	D31D	I/O	29	LDTOEBD	Out
5	D30D	I/O	30	LWELBD	Out
6	D29D	I/O	31	GND	--
7	GND	--	32	LCASBD	Out
8	D28D	I/O	33	GND	--
9	D27D	I/O	34	LWEUBD	Out
10	D26D	I/O	35	GND	--
11	GND	--	36	LA8D	Out
12	D25D	I/O	37	LA0D	Out
13	D24D	I/O	38	LA7D	Out
14	D23D	I/O	39	GND	--
15	GND	--	40	LA1D	Out
16	D22D	I/O	41	LA6D	Out
17	D21D	I/O	42	LA2D	Out
18	D20D	I/O	43	GND	--
19	GND	--	44	LA5D	Out
20	D19D	I/O	45	LA3D	Out
21	D18D	I/O	46	LA4D	Out
22	D17D	I/O	47	+5V	--
23	GND	--	48	+5V	--
24	D16D	I/O	49	+5V	--
25	GND	--	50	+5V	--



CN901 (For MAIN LOGIC PCB)



Top View of
Controller Port PCB

CN300
PCB Connector (50-pin)

Pin No.	Signal Name/Description	Direction	Pin No.	Signal Name/Description	Direction
1	+5V	—	26	RRAS3BD	Out
2	+5V	—	27	GND	—
3	GND	—	28	RRAS2BD	Out
4	D15D	I/O	29	RDTOEBD	Out
5	D14D	I/O	30	RWELBD	Out
6	D13D	I/O	31	GND	—
7	GND	—	32	RCASBD	Out
8	D12D	I/O	33	GND	—
9	D11D	I/O	34	RWEUBD	Out
10	D10D	I/O	35	GND	—
11	GND	—	36	RA8D	Out
12	D9D	I/O	37	RA0D	Out
13	D8D	I/O	38	RA7D	Out
14	D7D	I/O	39	GND	—
15	GND	—	40	RA1D	Out
16	D6D	I/O	41	RA6D	Out
17	D5D	I/O	42	RA2D	Out
18	D4D	I/O	43	GND	—
19	GND	—	44	RA5D	Out
20	D3D	I/O	45	RA3D	Out
21	D2D	I/O	46	RA4D	Out
22	D1D	I/O	47	+5V	—
23	GND	—	48	+5V	—
24	D0D	I/O	49	+5V	—
25	GND	—	50	+5V	—

CN901
PCB Connector (12-pin)

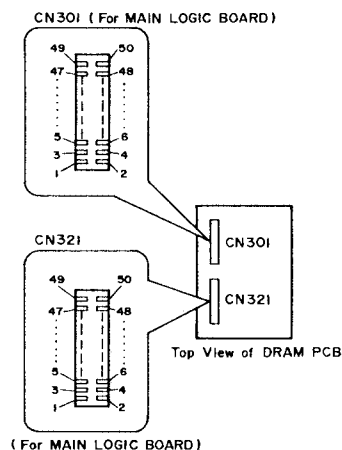
Pin No.	Signal Name/Description	Direction
1	ZVCC	—
2	ZPDIN	Out
3	ZPBCLK	In
4	ZPBDOUT	In
5	GND	—
6	GND	—
7	GND	—
8	ZLAUDIO	In
9	ZRAUDIO	In
10	GND	—

CN900
Controller Port (9-pin)

Pin No.	Signal Name/Description	Direction
1	GND	—
2	ZVCC	—
3	ZRAUDIO	Out
4	ZLAUDIO	Out
5	ZVCC	—
6	ZPBDOUT	Out
7	ZPBCLK	Out
8	GND	—
9	ZPDIN	In

CN301
PCB Connector (50-pin)

Pin No.	Signal Name/Description	Direction
1	VDRAM	—
2	VDRAM	—
3	GND	—
4	D15D	I/O
5	D14D	I/O
6	D13D	I/O
7	GND	—
8	D12D	I/O
9	D11D	I/O
10	D10D	I/O
11	GND	—
12	D9D	I/O
13	D8D	I/O
14	D7D	I/O
15	GND	—
16	D6D	I/O
17	D5D	I/O
18	D4D	I/O
19	GND	—
20	D3D	I/O
21	D2D	I/O
22	D1D	I/O
23	GND	—
24	D0D	I/O
25	GND	—
26	RRAS3BD	In
27	GND	—
28	RRAS2BD	In
29	RDTEBD	In
30	RWELBD	In
31	GND	—
32	RCASBD	In
33	GND	—
34	RWEUBD	In
35	GND	—
36	RA8D	In
37	RA0D	In
38	RA7D	In
39	GND	—
40	RA1D	In
41	RA6D	In
42	RA2D	In
43	GND	—
44	RA5D	In
45	RA3D	In
46	RA4D	In
47	VDRAM	—
48	VDRAM	—
49	VDRAM	—
50	VDRAM	—

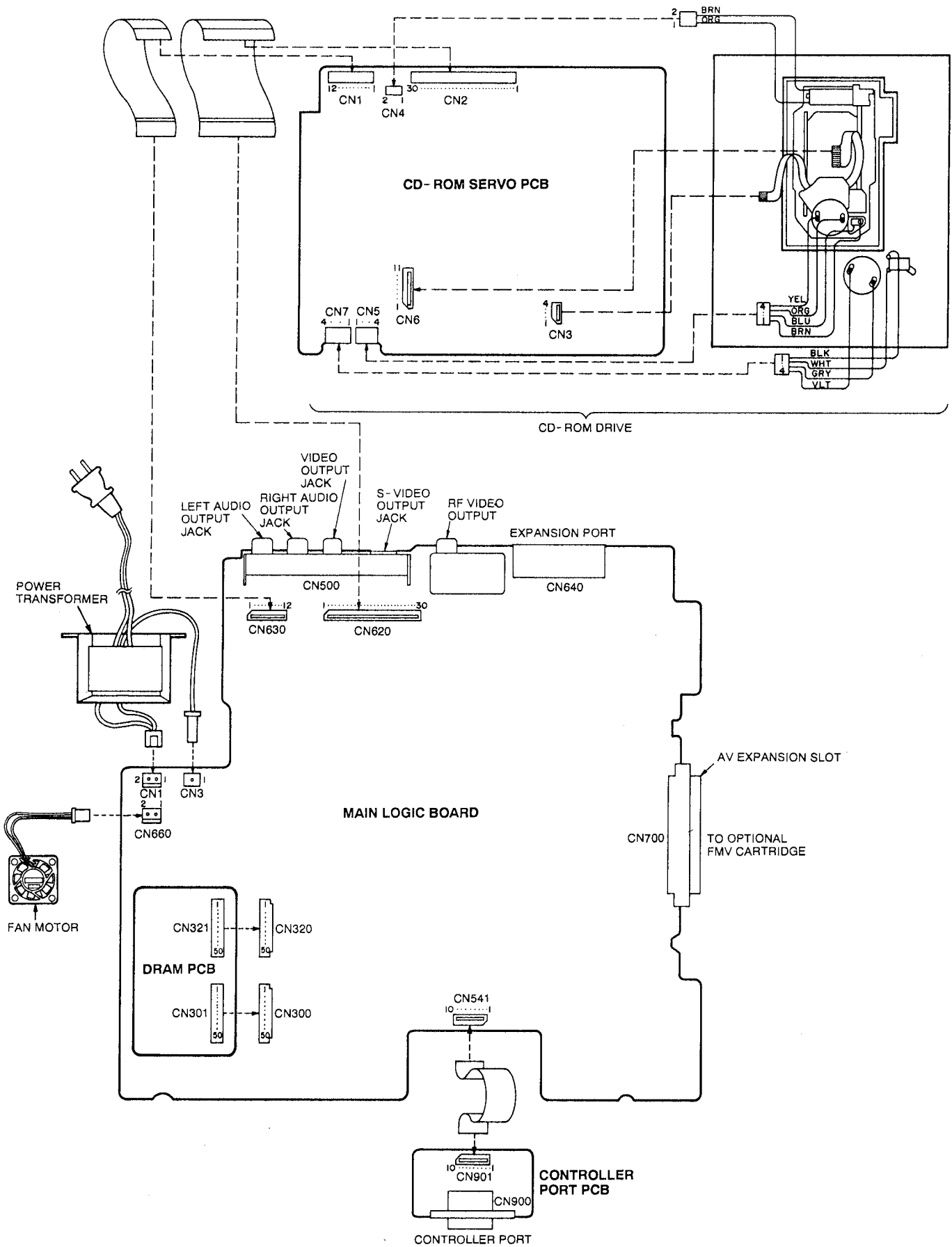


CN321
PCB Connector (50-pin)

Pin No.	Signal Name/Description	Direction	Pin No.	Signal Name/Description	Direction
1	VDRAM	—	26	LRAS3BD	In
2	VDRAM	—	27	GND	—
3	GND	—	28	LRAS2BD	In
4	D31D	I/O	29	LDTDEBD	In
5	D30D	I/O	30	LWELBD	In
6	D29D	I/O	31	GND	—
7	GND	—	32	LCASBD	In
8	D28D	I/O	33	GND	—
9	D27D	I/O	34	LWEUBD	In
10	D26D	I/O	35	GND	—
11	GND	—	36	LA8D	In
12	D25D	I/O	37	LA0D	In
13	D24D	I/O	38	LA7D	In
14	D23D	I/O	39	GND	—
15	GND	—	40	LA1D	In
16	D22D	I/O	41	LA6D	In
17	D21D	I/O	42	LA2D	In
18	D20D	I/O	43	GND	—
19	GND	—	44	LA5D	In
20	D19D	I/O	45	LA3D	In
21	D18D	I/O	46	LA4D	In
22	D17D	I/O	47	VDRAM	—
23	GND	—	48	VDRAM	—
24	D16D	I/O	49	VDRAM	—
25	GND	—	50	VDRAM	—

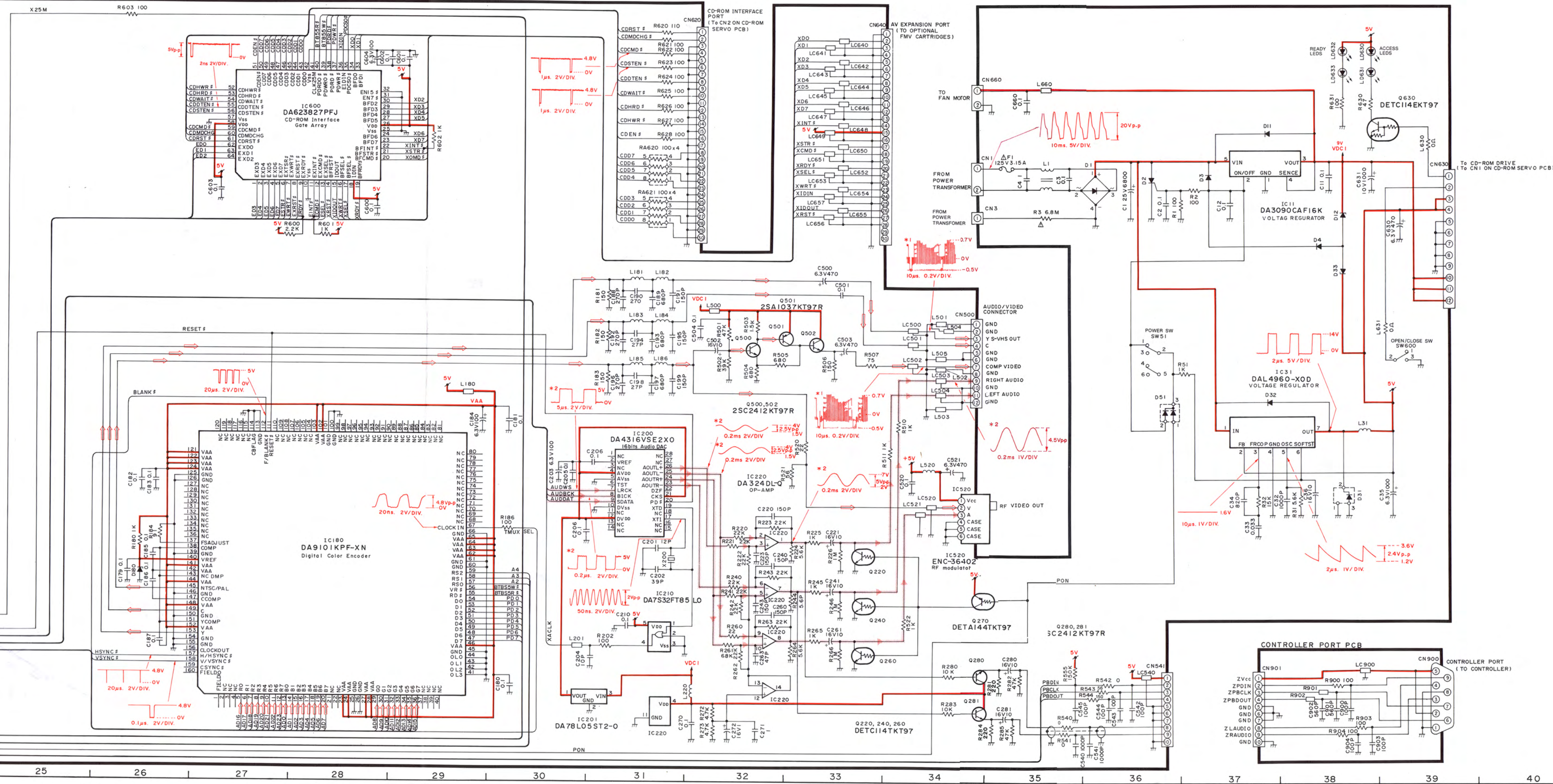
3. Diagrams and Replacement Parts List

3-1. Wiring Connection Diagram

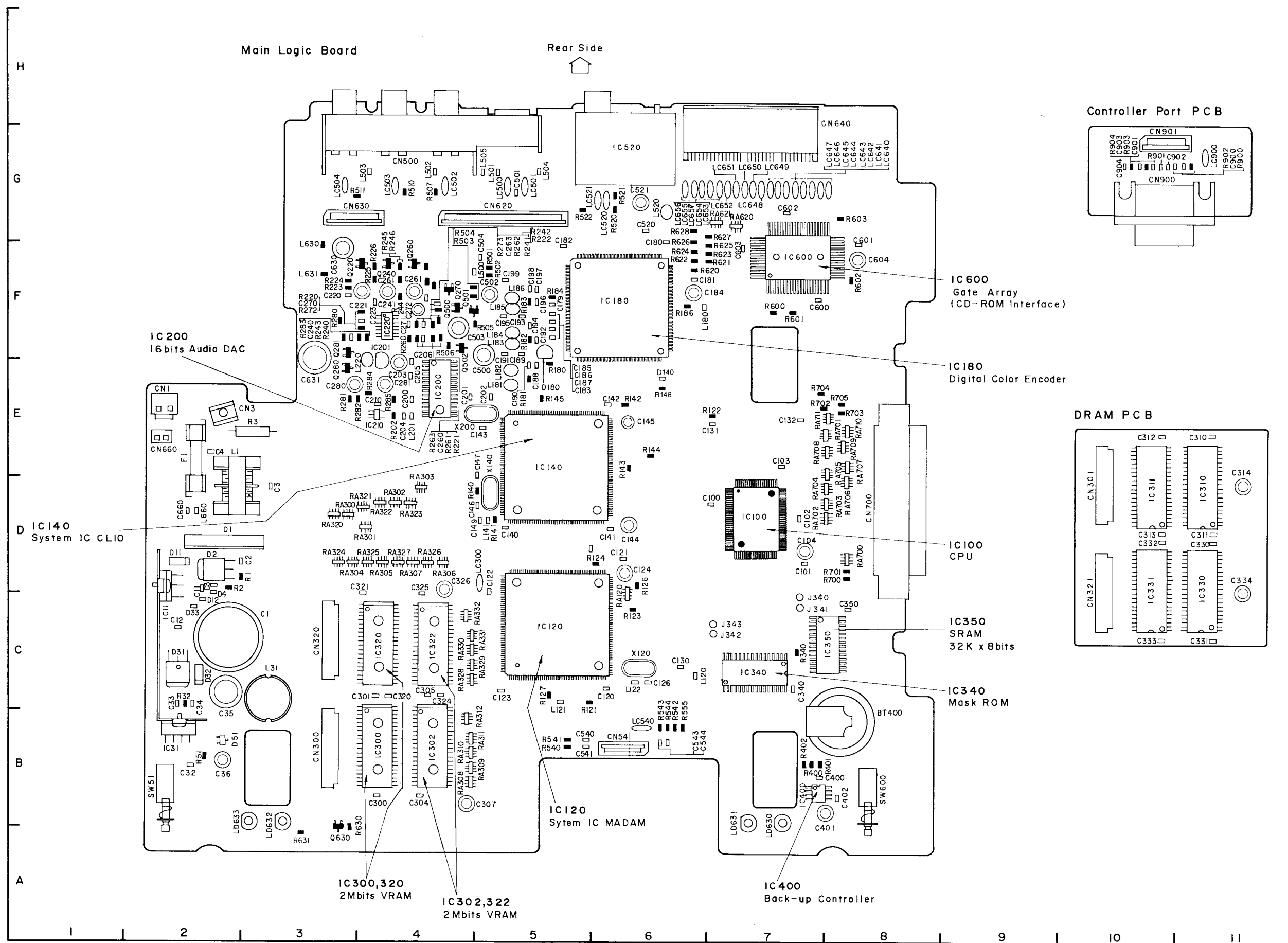


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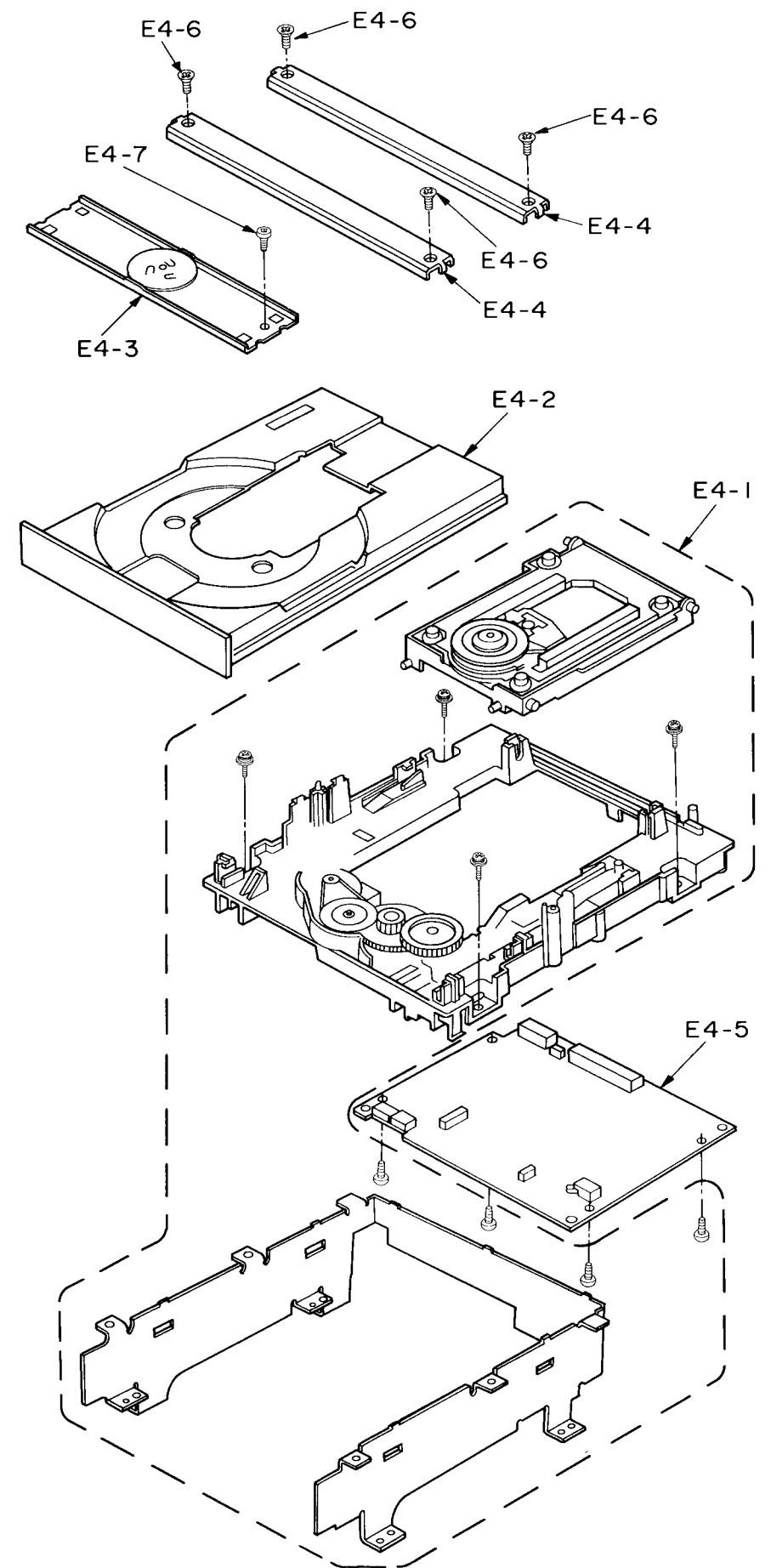
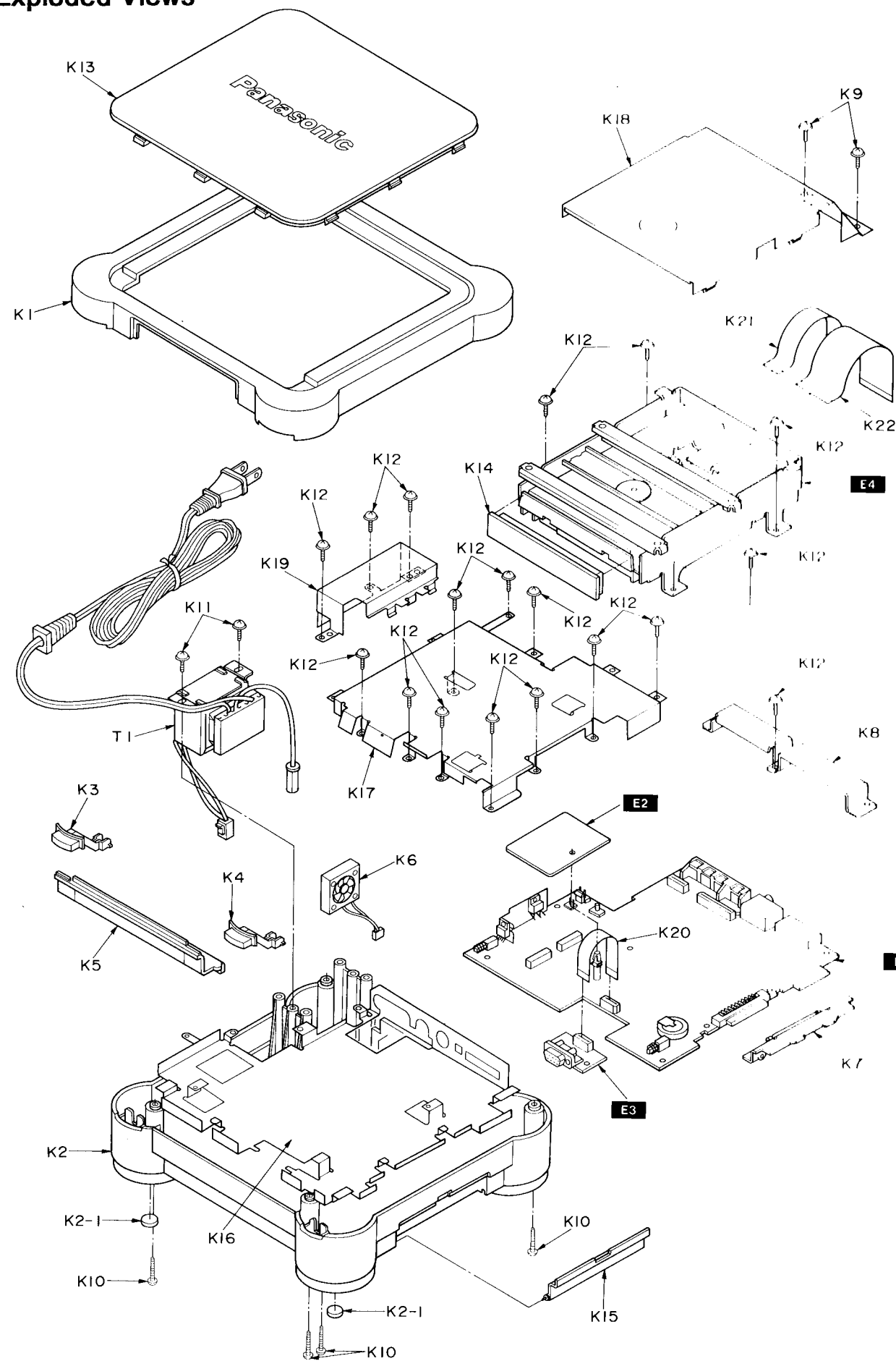




3-3. Printed Circuit Boards



3-4. Exploded Views



3.5 Replacement Parts List (Mechanical, Accessories, Packing and Electrical)

Note: 1. Important safety notice.

Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's special parts.

REF. No.	PART No.	DESCRIPTION	Q'TY
MAIN BLOCK UNITS			
E 1	DL3U10576AAA	Ass'y, MAIN LOGIC PCB	1
E 2	DL3U10617AAA	Ass'y, DRAM PCB	1
E 3	DL3U20576AAA	Ass'y, CONTROLLER PORT PCB	1
E 4 ⚠	CR560-B	Ass'y, CD-ROM DRIVE	1
MECHANICAL PARTS			
K 1	DFKM0149ZA-0	TOP CABINET	1
K 2	DFWV80C0308	Ass'y, BOTTOM CABINET	1
K 2-1	DFHG330ZA-0	FOOT	2
K 3	DFBC0128ZA-0	POWER ON/OFF BUTTON	1
K 4	DFBC0127ZA-0	DISC TRAY OPEN/CLOSE BUTTON	1
K 5	DFGL0031ZA	LIGHT LEADING PANEL	1
K 6	DFJQ014ZA	FAN MOTOR	1
K 7	DFMD7206ZA	FMV CONNECTOR HOLDER	1
K 8	DFMD7207ZB	AV CONNECTOR HOLDER	1
K 9	XSB26+6	SCREW, 2.6 × 6 mm	2
K 10	XTN3+14JFZ	SCREW, 3 × 14 mm	4
K 11	XTW3+10QFZ	SCREW, 3 × 10 mm	2
K 12	DFHE5036ZA	SCREW, 2.6 × 8 mm	18
K 13	DFKE0260ZA-0	TOP PANEL	1
K 14	DFGP8019ZA	TRAY ORNAMENT	1
K 15	DFKE0261ZA-0	LID, FMV CONNECTOR	1
K 16	DFMC0307ZA	LOWER SHIELD PLATE	1
K 17	DFMC0308ZA	UPPER SHIELD PLATE	1
K 18	DFMC0309ZA	SHIELD PLATE (CD-ROM DRIVE)	1
K 19	DFMC0314ZA	SHIELD PLATE (POWER SOURCE)	1
K 20	DFJE10A050AV	FLAT CABLE (10-Pin)	1
K 21	DFJE12A070AV	FLAT CABLE (12-Pin)	1
K 22	DFJE30A070AV	FLAT CABLE (30-Pin)	1
ACCESSORIES			
A 1	FZ-JP1	CONTROLLER	1
A 2	DFSE9004ZA	RF CABLE	1
A 3	DFJP014ZA	AV CABLE	1
A 4	DFJN5001ZAZ	DEMO CD No.1 (SAMPLER CD)	1
A 5	DFJN5002ZAZ	DEMO CD No.2 (CRASH'N BURN)	1
A 6	DFQX2442ZA	MANUAL, OPERATING	1
A 7	DFQX2444ZA	MANUAL, PRECAUTIONS	1

REF. No.	PART No.	DESCRIPTION	Q'TY
PACKING MATERIALS			
P 1	DFPK0671ZA	PACKING CASE	1
P 2	DFPE0185ZA	HOLDER, ACCESSORIES	1
P 3	DFPN0542ZA	CUSHION (LEFT)	1
P 4	DFPN0543ZA	CUSHION (RIGHT)	1
MAIN LOGIC PCB			
E 1	DL3U10576AAA	Ass'y, MAIN LOGIC PCB	1
E 1-1	DFHR5295ZA	SPACER	1
TM 1	EYF52BCL	FUSE TERMINAL	1
TM 2	EYF52BCR	FUSE TERMINAL	1
BT 400 	CR2354/1GUF	LITHIUM BATTERY, 3V	1
C 1	ECEC1EA682BB	CAPACITOR, ELECTROLYTIC, 25 V, 6800 μ F	1
C 2, 3	DCUV1E104ZFL	CAPACITOR, CERAMIC, CHIP, 0.1 μ F	2
C 4	DCUC1E105ZFY	CAPACITOR, CERAMIC, CHIP, 25 V, 1 μ F	1
C 11, 12	DCUV1E104ZFL	CAPACITOR, CERAMIC, CHIP, 0.1 μ F	2
C 32	DCUV1H102KBL	CAPACITOR, CERAMIC, CHIP, 1000 pF	1
C 33	DCUV1E333ZFL	CAPACITOR, CERAMIC, CHIP, 0.033 μ F	1
C 34	DCUV1H821KBL	CAPACITOR, CERAMIC, CHIP, 820 pF	1
C 35	ECEA0JU102B	CAPACITOR, ELECTROLYTIC, 6.3 V, 1000 μ F	1
C 36	ECEA1CU100B	CAPACITOR, ELECTROLYTIC, 16 V, 10 μ F	1
C 100-103	DCUV1E104ZFL	CAPACITOR, CERAMIC, CHIP, 0.1 μ F	4
C 104	ECEA0JU101B	CAPACITOR, ELECTROLYTIC, 6.3 V, 100 μ F	1
C 120-123	DCUV1E104ZFL	CAPACITOR, CERAMIC, CHIP, 0.1 μ F	4
C 124	ECEA0JU101B	CAPACITOR, ELECTROLYTIC, 6.3 V, 100 μ F	1
C 126	DCUV1E104ZFL	CAPACITOR, CERAMIC, CHIP, 0.1 μ F	1
C 130-132	DCUV1E104ZFL	CAPACITOR, CERAMIC, CHIP, 0.1 μ F	3
C 140-143	DCUV1E104ZFL	CAPACITOR, CERAMIC, CHIP, 0.1 μ F	4
C 144	ECEA0JU101B	CAPACITOR, ELECTROLYTIC, 6.3 V, 100 μ F	1
C 145	ECEA0JU470B	CAPACITOR, ELECTROLYTIC, 6.3 V, 47 μ F	1
C 146, 147	DCUV1H120JCL	CAPACITOR, CERAMIC, CHIP, 12 pF, 5%	2
C 149	DCUV1H100JCL	CAPACITOR, CERAMIC, CHIP, 10 pF	1
C 179-183	DCUV1E104ZFL	CAPACITOR, CERAMIC, CHIP, 0.1 μ F	5
C 184	ECEA0JU101B	CAPACITOR, ELECTROLYTIC, 6.3 V, 100 μ F	1
C 185-187	DCUV1E104ZFL	CAPACITOR, CERAMIC, CHIP, 0.1 μ F	3
C 188	DCUV1H271JCL	CAPACITOR, CERAMIC, CHIP, 270 pF, 5%	1
C 189	DCUV1H681JCL	CAPACITOR, CERAMIC, CHIP, 680 pF, 5%	1
C 190	DCUV1H270JCL	CAPACITOR, CERAMIC, CHIP, 27 pF, 5%	1
C 191	DCUV1H151JCL	CAPACITOR, CERAMIC, CHIP, 150 pF, 5%	1
C 192	DCUV1H271JCL	CAPACITOR, CERAMIC, CHIP, 270 pF, 5%	1
C 193	DCUV1H681JCL	CAPACITOR, CERAMIC, CHIP, 680 pF, 5%	1
C 194	DCUV1H270JCL	CAPACITOR, CERAMIC, CHIP, 27 pF, 5%	1
C 195	DCUV1H151JCL	CAPACITOR, CERAMIC, CHIP, 150 pF, 5%	1
C 196	DCUV1H271JCL	CAPACITOR, CERAMIC, CHIP, 270 pF, 5%	1
C 197	DCUV1H681JCL	CAPACITOR, CERAMIC, CHIP, 680 pF, 5%	1
C 198	DCUV1H270JCL	CAPACITOR, CERAMIC, CHIP, 27 pF, 5%	1
C 199	DCUV1H151JCL	CAPACITOR, CERAMIC, CHIP, 150 pF, 5%	1
C 200	DCUV1E104ZFL	CAPACITOR, CERAMIC, CHIP, 0.1 μ F	1
C 201	DCUV1H120JCL	CAPACITOR, CERAMIC, CHIP, 12 pF, 5%	1

REF. No.	PART No.	DESCRIPTION	Q'TY
C 202	DCUV1H390JCL	CAPACITOR, CERAMIC, CHIP, 39 pF, 5%	1
C 203	ECEA0JU101B	CAPACITOR, ELECTROLYTIC, 6.3 V, 100 μ F	1
C 204	DCUV1H100JCL	CAPACITOR, CERAMIC, CHIP, 10 pF	1
C 205, 206	DCUV1E104ZFL	CAPACITOR, CERAMIC, CHIP, 0.1 μ F	2
C 210	DCUV1E104ZFL	CAPACITOR, CERAMIC, CHIP, 0.1 μ F	1
C 220	DCUV1H151JCL	CAPACITOR, CERAMIC, CHIP, 150 pF, 5%	1
C 221	ECEA1CU100B	CAPACITOR, ELECTROLYTIC, 16 V, 10 μ F	1
C 223	DCUV1H151JCL	CAPACITOR, CERAMIC, CHIP, 150 pF, 5%	1
C 240	DCUV1H151JCL	CAPACITOR, CERAMIC, CHIP, 150 pF, 5%	1
C 241	ECEA1CU100B	CAPACITOR, ELECTROLYTIC, 16 V, 10 μ F	1
C 243	DCUV1H151JCL	CAPACITOR, CERAMIC, CHIP, 150 pF, 5%	1
C 260	DCUV1H470JCL	CAPACITOR, CERAMIC, CHIP, 47 pF, 5%	1
C 261	ECEA1CU100B	CAPACITOR, ELECTROLYTIC, 16 V, 10 μ F	1
C 263	DCUV1H470JCL	CAPACITOR, CERAMIC, CHIP, 47 pF, 5%	1
C 270	DCUV1E104ZFL	CAPACITOR, CERAMIC, CHIP, 0.1 μ F	1
C 271	DCUV1C105ZFL	CAPACITOR, CERAMIC, CHIP, 16 V, 1 μ F	1
C 272	ECEA1CU100B	CAPACITOR, ELECTROLYTIC, 16 V, 10 μ F	1
C 280, 281	ECEA1CU100B	CAPACITOR, ELECTROLYTIC, 16 V, 10 μ F	2
C 300, 301	DCUV1E104ZFL	CAPACITOR, CERAMIC, CHIP, 0.1 μ F	2
C 304, 305	DCUV1E104ZFL	CAPACITOR, CERAMIC, CHIP, 0.1 μ F	2
C 307	ECEV0JV101SP	CAPACITOR, ELECTROLYTIC, 6.3 V, 100 μ F	1
C 320, 321	DCUV1E104ZFL	CAPACITOR, CERAMIC, CHIP, 0.1 μ F	2
C 324, 325	DCUV1E104ZFL	CAPACITOR, CERAMIC, CHIP, 0.1 μ F	2
C 326	ECEV0JV101SP	CAPACITOR, ELECTROLYTIC, 6.3 V, 100 μ F	1
C 340	DCUV1E104ZFL	CAPACITOR, CERAMIC, CHIP, 0.1 μ F	1
C 350	DCUV1E104ZFL	CAPACITOR, CERAMIC, CHIP, 0.1 μ F	1
C 400	DCUV1E104ZFL	CAPACITOR, CERAMIC, CHIP, 0.1 μ F	1
C 401	ECEA1CU220B	CAPACITOR, ELECTROLYTIC, 16 V, 22 μ F	1
C 402	DCUV1C105ZFL	CAPACITOR, CERAMIC, CHIP, 16 V, 1 μ F	1
C 500	ECA0JM471B	CAPACITOR, ELECTROLYTIC, 6.3 V, 470 μ F	1
C 501	DCUV1E104ZFL	CAPACITOR, CERAMIC, CHIP, 0.1 μ F	1
C 502	ECEA1CU100B	CAPACITOR, ELECTROLYTIC, 16 V, 10 μ F	1
C 503	ECA0JM471B	CAPACITOR, ELECTROLYTIC, 6.3 V, 470 μ F	1
C 504	DCUV1E104ZFL	CAPACITOR, CERAMIC, CHIP, 0.1 μ F	1
C 520	DCUV1E104ZFL	CAPACITOR, CERAMIC, CHIP, 0.1 μ F	1
C 521	ECA0JM471B	CAPACITOR, ELECTROLYTIC, 6.3 V, 470 μ F	1
C 540, 541	DCUV1H102KBL	CAPACITOR, CERAMIC, CHIP, 1000 pF	2
C 543, 544	DCUV1H101KCL	CAPACITOR, CERAMIC, CHIP, 100 μ F	2
C 600-603	DCUV1E104ZFL	CAPACITOR, CERAMIC, CHIP, 0.1 μ F	4
C 604	ECEA0JU101B	CAPACITOR, ELECTROLYTIC, 6.3 V, 100 μ F	1
C 630	ECA0JM471B	CAPACITOR, ELECTROLYTIC, 6.3 V, 470 μ F	1
C 631	ECA1AM102B	CAPACITOR, ELECTROLYTIC, 10 V, 1000 μ F	1
C 660	DCUV1E104ZFL	CAPACITOR, CERAMIC, CHIP, 0.1 μ F	1
CN 1	DFJP02C14ZAB	CONNECTOR, 2-PIN, POWER TRANSFORMER	1
CN 3	DFJP006ZA001	CONNECTOR, 1-PIN, POWER TRANSFORMER	1
CN 300	DFJS018ZA050	CONNECTOR, 50-PIN, DRAM PCB	1
CN 320	DFJS018ZA050	CONNECTOR, 50-PIN, DRAM PCB	1
CN 500	DFJF0A003ZAH	CONNECTOR, 12-PIN, AUDIO/VIDEO	1
CN 541	DFJS10N12YAJ	CONNECTOR, 10-PIN, CONTROLLER PORT PCB	1

REF. No.	PART No.	DESCRIPTION	Q'TY
CN 620	DFJS30N12YAJ	CONNECTOR, 30-PIN, CD-ROM DRIVE	1
CN 630	DFJS12N12YAJ	CONNECTOR, 12-PIN, CD-ROM DRIVE	1
CN 640	DFJP30C95ZAH	CONNECTOR, 30-PIN, EXPANSION PORT	1
CN 660	DFJP02C30WAB	CONNECTOR, 2-PIN, FAN MOTOR	1
CN 700	DFJS68D61ZAF	CONNECTOR, 68-PIN, FMV CARTRIDGE	1
D 1	DEDD4SBS6	RECTIFIER, BRIDGE, SCHOTTKY	1
D 2	DED5P4JZE2-D	DIODE, THRUST	1
D 3	DEDDTZ033CTT	DIODE, ZENNER	1
D 4	MA110TX	DIODE	1
D 11	DEDSFPM52V	DIODE	1
D 12	DEDDTZ011ATT	DIODE, ZENNER	1
D 31	DED30QS04FTF	DIODE	1
D 32	DEDSFPM52V	DIODE	1
D 33	DEDDTZ5R6ATT	DIODE, ZENNER	1
D 51	DEDAN202KT97	DIODE	1
D 140	MA110TX	DIODE	1
D 180	DED4041EIZ1T	DIODE, ZENNER	1
F 1 	XBADFBT3R15F	FUSE, 3.15 A	1
IC 11	DA3090CAF16K	IC, VOLTAGE REGULATOR, 9 V	1
IC 31	DAL4960-X0D	IC, VOLTAGE REGULATOR, 5 V	1
IC 100	DA86C06020XV	IC, CPU	1
IC 120	DA1205FDBX0Z	IC, SYSTEM-IC MADAM	1
IC 140	DA1205GDBX0Z	IC, SYSTEM-IC CLIO	1
IC 180	DA9101KPF-XN	IC, DIGITAL COLOR ENCODER	1
IC 200	DA4316VSE2XQ	IC, AUDIO DAC	1
IC 201	DA78L05ST2-0	IC, VOLTAGE REGULATOR, 5 V	1
IC 210	DA7S32FT85L0	IC, OR-GATE	1
IC 220	DA324DL-Q	IC, OP-AMP	1
IC 300	DA8182517JTJ	IC, 2M-bit, VRAM	1
IC 302	DA8182517JTJ	IC, 2M-bit, VRAM	1
IC 320	DA8182517JTJ	IC, 2M-bit, VRAM	1
IC 322	DA8182517JTJ	IC, 2M-bit, VRAM	1
IC 340	DA27C81GW15D	IC, 1024K x 8-bit, ROM	1
IC 350	DA58257AM2TS	IC, 32K x 8-bit, SRAM	1
IC 400	DABA6162FT2E	IC, BACK-UP CONTROLLER	1
IC 520	ENC-36402	IC, RF MODULATOR	1
IC 600	DA623827PFJ	IC, CD-ROM INTERFACE GATE ARRAY	1
L 1	DDB8Z028-F	FILTER	1
L 31	DDAWZ101KV-W	CHOKING COIL	1
L 120	DDB5Z015-Y	FERRITE BEAD	1
L 121	DDAZRR10KT1Y	FERRITE BEAD	1
L 122	DDB5Z016-Y	FERRITE BEAD	1
L 141	DDAZRR10KT1Y	FERRITE BEAD	1
L 180	DDB5Z015-Y	FERRITE BEAD	1
L 181	ELESN3R9JA	FILTER	1
L 182	ELESN2R7KA	FILTER	1
L 183	ELESN3R9JA	FILTER	1
L 184	ELESN2R7KA	FILTER	1
L 185	ELESN3R9JA	FILTER	1

REF. No.	PART No.	DESCRIPTION	Q'TY
L 186	ELESN2R7KA	FILTER	1
L 201	DDB5Z005-L	FERRITE BEAD	1
L 220	ELESN470KA	FILTER	1
L 500	DDB5Z005-L	FERRITE BEAD	1
L 501-505	DDB5Z015-Y	FERRITE BEAD	5
L 520	ELESN470KA	FILTER	1
L 630, 631	DBJ6GMJR00VE	RESISTOR, 1/10 W, 0 Ω	2
L 660	DDB5Z015-Y	FERRITE BEAD	1
LC 300	EXCEMT103DT	FILTER	1
LC 500, 501	EXCEMT101BT	FILTER	2
LC 502-504	DDB6Z017-F	FILTER	3
LC 520	EXCEMT101BT	FILTER	1
LC 521	DDB6Z017-F	FILTER	1
LC 540	EXCEMT103DT	FILTER	1
LC 640-648	EXCEMT101BT	FILTER	9
LC 649	EXCEMT103DT	FILTER	1
LC 650-657	EXCEMT101BT	FILTER	8
LD 630, 631	DEDSL305MCA	LED, CD ACCESS INDICATOR	2
LD 632, 633	DEDSL305VCA	LED, READY INDICATOR	2
Q 220	DETC114TKT97	TRANSISTOR, RESISTOR BUILT-IN	1
Q 240	DETC114TKT97	TRANSISTOR, RESISTOR BUILT-IN	1
Q 260	DETC114TKT97	TRANSISTOR, RESISTOR BUILT-IN	1
Q 270	DETA144TKT97	TRANSISTOR, RESISTOR BUILT-IN	1
Q 280, 281	2SC2412KT97R	TRANSISTOR	2
Q 500	2SC2412KT97R	TRANSISTOR	1
Q 501	2SA1037KT97R	TRANSISTOR	1
Q 502	2SC2412KT97R	TRANSISTOR	1
Q 630	DETC114EKT97	TRANSISTOR, RESISTOR BUILT-IN	1
R 1, 2	DBJ6GMJ101VE	RESISTOR, 1/10 W, 100 Ω	2
R 3 $\triangle$	ERC12UGK685C	RESISTOR, 1/2 W, 6.8 M Ω	1
R 31	DBJ6GMJ562VE	RESISTOR, 1/10 W, 5.6 K Ω	1
R 32	DBJ6GMJ153VE	RESISTOR, 1/10 W, 15 K Ω	1
R 51	DBJ6GMJ102VE	RESISTOR, 1/10 W, 1 K Ω	1
R 121	DBJ6GMJ470VE	RESISTOR, 1/10 W, 47 Ω	1
R 122	DBJ6GMJ222VE	RESISTOR, 1/10 W, 2.2 K Ω	1
R 123, 124	DBJ6GMJ472VE	RESISTOR, 1/10 W, 4.7 K Ω	2
R 125, 126	DBJ6GMJ101VE	RESISTOR, 1/10 W, 100 Ω	2
R 127	DBJ6GMJ151VE	RESISTOR, 1/10 W, 150 Ω	1
R 140	DBJ6GMJ105VE	RESISTOR, 1/10 W, 1 M Ω	1
R 141	DBJ6GMJ470VE	RESISTOR, 1/10 W, 47 Ω	1
R 142	DBJ6GMJ104VE	RESISTOR, 1/10 W, 100 K Ω	1
R 143, 144	DBJ6GMJ101VE	RESISTOR, 1/10 W, 100 Ω	2
R 145	DBJ6GMJ750VE	RESISTOR, 1/10 W, 75 Ω	1
R 148	DBJ6GMJ102VE	RESISTOR, 1/10 W, 1 K Ω	1
R 180	DBJ6GMJ102VE	RESISTOR, 1/10 W, 1 K Ω	1
R 181-183	DBJ6GMJ151VE	RESISTOR, 1/10 W, 150 Ω	3
R 184	DBJ6GF91R0VE	RESISTOR, 1/10 W, 91 Ω , 1%	1
R 186	DBJ6GMJ101VE	RESISTOR, 1/10 W, 100 Ω	1
R 202	DBJ6GMJ101VE	RESISTOR, 1/10 W, 100 Ω	1

REF. No.	PART No.	DESCRIPTION	Q'TY
R 220-223	DBJ6GMJ223VE	RESISTOR, 1/10 W, 22 K Ω	4
R 224	DBJ6GMJ562VE	RESISTOR, 1/10 W, 5.6 K Ω	1
R 225	DBJ6GMJ102VE	RESISTOR, 1/10 W, 1 K Ω	1
R 226	DBJ6GMJ473VE	RESISTOR, 1/10 W, 47 K Ω	1
R 240-243	DBJ6GMJ223VE	RESISTOR, 1/10 W, 22 K Ω	4
R 244	DBJ6GMJ562VE	RESISTOR, 1/10 W, 5.6 K Ω	1
R 245	DBJ6GMJ102VE	RESISTOR, 1/10 W, 1 K Ω	1
R 246	DBJ6GMJ473VE	RESISTOR, 1/10 W, 47 K Ω	1
R 260, 261	DBJ6GMJ683VE	RESISTOR, 1/10 W, 68 K Ω	2
R 262, 263	DBJ6GMJ223VE	RESISTOR, 1/10 W, 22 K Ω	2
R 264	DBJ6GMJ562VE	RESISTOR, 1/10 W, 5.6 K Ω	1
R 265	DBJ6GMJ102VE	RESISTOR, 1/10 W, 1 K Ω	1
R 266	DBJ6GMJ473VE	RESISTOR, 1/10 W, 47 K Ω	1
R 272, 273	DBJ6GMJ472VE	RESISTOR, 1/10 W, 4.7 K Ω	2
R 280	DBJ6GMJ103VE	RESISTOR, 1/10 W, 10 K Ω	1
R 281	DBJ6GMJ221VE	RESISTOR, 1/10 W, 220 Ω	1
R 282	DBJ6GMJ473VE	RESISTOR, 1/10 W, 47 K Ω	1
R 283	DBJ6GMJ103VE	RESISTOR, 1/10 W, 10 K Ω	1
R 284	DBJ6GMJ221VE	RESISTOR, 1/10 W, 220 Ω	1
R 285	DBJ6GMJ473VE	RESISTOR, 1/10 W, 47 K Ω	1
R 340	DBJ6GMJ102VE	RESISTOR, 1/10 W, 1 K Ω	1
R 400	DBJ6GMJ471VE	RESISTOR, 1/10 W, 470 Ω	1
R 401	DBJ6GMJ473VE	RESISTOR, 1/10 W, 47 K Ω	1
R 402	DBJ6GMJ102VE	RESISTOR, 1/10 W, 1 K Ω	1
R 501	DBJ6GMJ473VE	RESISTOR, 1/10 W, 47 K Ω	1
R 502	DBJ6GMJ393VE	RESISTOR, 1/10 W, 39 K Ω	1
R 503	DBJ6GMJ152VE	RESISTOR, 1/10 W, 1.5 K Ω	1
R 504, 505	DBJ6GMJ681VE	RESISTOR, 1/10 W, 680 Ω	2
R 506	DBJ6GMJ151VE	RESISTOR, 1/10 W, 150 Ω	1
R 507	DBJ6GMJ750VE	RESISTOR, 1/10 W, 75 Ω	1
R 510, 511	DBJ6GMJ102VE	RESISTOR, 1/10 W, 1 K Ω	2
R 520	DBJ6GMJ220VE	RESISTOR, 1/10 W, 1.2 K Ω	1
R 521	DBJ6GMJ560VE	RESISTOR, 1/10 W, 56 Ω	1
R 522	DBJ6GMJ102VE	RESISTOR, 1/10 W, 1 K Ω	1
R 540, 541	DBJ6GMJR00VE	RESISTOR, 1/10 W, 0 Ω	2
R 542	DBJ6GMJ102VE	RESISTOR, 1/10 W, 1 K Ω	1
R 543	DBJ6GMJ560VE	RESISTOR, 1/10 W, 56 Ω	1
R 544	DBJ6GMJ151VE	RESISTOR, 1/10 W, 150 Ω	1
R 555	DBJ6GMJ154VE	RESISTOR, 1/10 W, 150 K Ω	1
R 600	DBJ6GMJ222VE	RESISTOR, 1/10 W, 2.2 K Ω	1
R 601, 602	DBJ6GMJ102VE	RESISTOR, 1/10 W, 1 K Ω	2
R 603	DBJ6GMJ101VE	RESISTOR, 1/10 W, 100 Ω	1
R 620-628	DBJ6GMJ101VE	RESISTOR, 1/10 W, 100 Ω	9
R 630	DBJ6GMJ470VE	RESISTOR, 1/10 W, 47 Ω	1
R 631	DBJ6GMJ101VE	RESISTOR, 1/10 W, 100 Ω	1
R 700-703	DBJ6GMJ330VE	RESISTOR, 1/10 W, 33 Ω	4
R 704	DBJ6GMJ102VE	RESISTOR, 1/10 W, 1 K Ω	1
R 705	DBJ6GMJ330VE	RESISTOR, 1/10 W, 33 Ω	1
RA 120	EXBV8VR000V	RESISTOR ARRAY, 0 Ω	1

REF. No.	PART No.	DESCRIPTION	Q'TY
RA 300-303	EXBV8V101JV	RESISTOR ARRAY, 100 Ω	4
RA 304-307	EXBV8V470JV	RESISTOR ARRAY, 47 Ω	4
RA 308-312	EXBV8V101JV	RESISTOR ARRAY, 100 Ω	5
RA 320-323	EXBV8V101JV	RESISTOR ARRAY, 100 Ω	4
RA 324-327	EXBV8V470JV	RESISTOR ARRAY, 47 Ω	4
RA 328-332	EXBV8V101JV	RESISTOR ARRAY, 100 Ω	5
RA 620, 621	EXBV8V101JV	RESISTOR ARRAY, 100 Ω	2
RA 700-711	EXBV8V330JV	RESISTOR ARRAY, 33 Ω	12
SW 51	ESB60516	SWITCH, POWER ON/OFF	1
SW 600	ESB60515	SWITCH, DISC TRAY OPEN/CLOSE	1
X 120	DECL50000P2W	OSCILLATOR (50.00 MHz)	1
X 140	DECX24545H1W	CRYSTAL (24.5454 MHz)	1
X 200	DECX16934L1W	CRYSTAL (16.9344 MHz)	1
T 1 	DDT5L5M01ZW1	POWER TRANSFORMER	1
DRAM PCB			
E 2	DL3U10617AAA	Ass'y, DRAM PCB RTL	1
C 310-313	DCUV1E104ZFL	CAPACITOR, CERAMIC, CHIP, 0.1 μ F	4
C 330-333	DCUV1E104ZFL	CAPACITOR, CERAMIC, CHIP, 0.1 μ F	4
C 314	ECEV0JV101SP	CAPACITOR, ELECTROLYTIC, 6.3 V, 100 μ F	1
C 334	ECEV0JV101SP	CAPACITOR, ELECTROLYTIC, 6.3 V, 100 μ F	1
CN 301	DFJP013ZA050	CONNECTOR, 50-PIN, MAIN LOGIC PCB	1
CN 321	DFJP013ZA050	CONNECTOR, 50-PIN, MAIN LOGIC PCB	1
IC 310, 311	MN414270SJ08	IC, 4M-bit, DRAM	2
IC 330, 331	MN414270SJ08	IC, 4M-bit, DRAM	2
CONTROLLER PORT PCB			
E 3	DL3U20576AAA	Ass'y, CONTROLLER PORT PCB RTL	1
C 900	DCUV1H101KCL	CAPACITOR, CERAMIC, CHIP, 100 pF	1
C 901, 902	DCUV1H561KBL	CAPACITOR, CERAMIC, CHIP, 560 pF	2
C 903, 904	DCUV1H101KCL	CAPACITOR, CERAMIC, CHIP, 100 pF	2
CN 900	DFJP09E22ZAM	CONNECTOR, 9-PIN, CONTROLLER PORT	1
CN 901	DFJS10N12YAJ	CONNECTOR, 10-PIN, MAIN LOGIC PCB	1
LC 900	EXCEMT103DT	FILTER	1
R 900	DBJ6GMJ101VE	RESISTOR, 1/10 W, 100 Ω	1
R 901, 902	DDB5Z016-Y	FERRITE BEAD	2
R 903, 904	DBJ6GMJ101VE	RESISTOR, 1/10 W, 100 Ω	2
CD-ROM DRIVE PARTS			
E 4 	CR560-B	Ass'y, CD-ROM DRIVE RTL	1
E 4-1	LMXY0055	Ass'y MECHANISM	1
E 4-2	LMXQ0114	Ass'y TRAY	1
E 4-3	LMXA0097	Ass'y HOLDER BEAM	1
E 4-4	LMMA0155	BEAM	2
E 4-5	LMEP0253A	CD-ROM DRIVE PCB	1
E 4-6	XSS3+6	SCREW, 3 $\times$ 6 mm	4
E 4-7	XTN26+8G	SCREW, 2.6 $\times$ 8 mm	1