

Service Manual

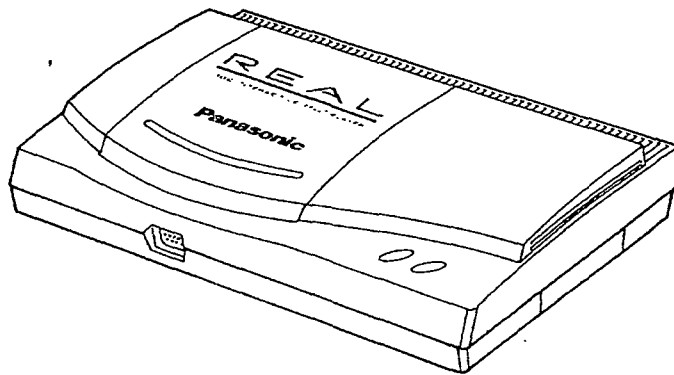
3DO Interactive Multiplayer

FZ-10



This is the Service Manual
for the following area.

...for U.K.



⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

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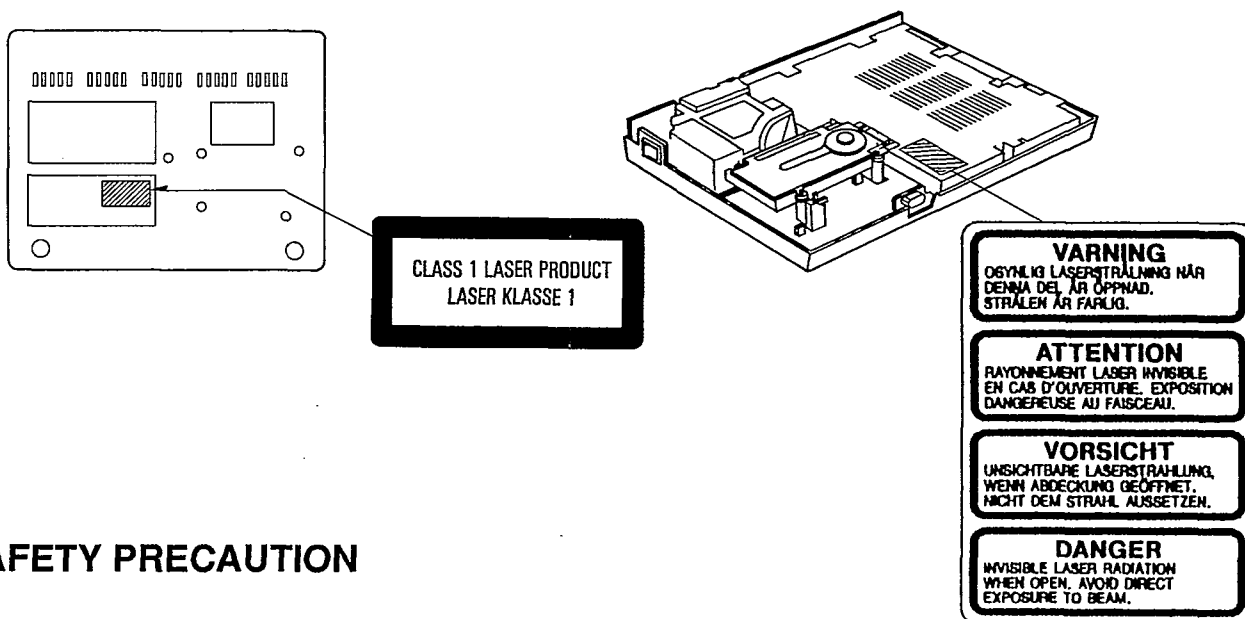
WARNING

■ PRECAUTION OF LASER DIODE

CAUTION: This unit utilizes a 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 manufactures specified replacement pickup only.
6. Use of control or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.



(Inside of product)

■ 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.

LITHIUM BATTERY ⚠

• CAUTION

- Danger of explosion if battery is incorrectly replaced.
- Replace only with the same or equivalent type recommended by the manufacture.
- Dispose of used batteries according to the manufacture's instruction.

FUSE REPLACEMENT ⚠

• CAUTION

For continued protection against risk of fire, replace only with same slow operating type 2A, 250V fuse.



Warning

FOR YOUR SAFETY PLEASE READ THE FOLLOWING TEXT CAREFULLY

This appliance is supplied with a moulded three pin mains plug for your safety and convenience.

A 3 amp fuse is fitted in this plug.

Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 3 amps and that it is approved by ASTA or BSI to BS1362.

Check for the ASTA mark  or the BSI mark  on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.

If you lose the fuse cover the plug must not be used until a replacement cover is obtained.

A replacement fuse cover can be purchased from your local Panasonic Dealer.

IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OF SAFELY.

THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13 AMP SOCKET.

If a new plug is to be fitted please observe the wiring code as shown below.

If in any doubt please consult a qualified electrician.

Important

The wires in this mains lead are coloured in accordance with the following code:


Blue: Neutral

Brown: Live

As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured BLUE must be connected to the terminal in the plug which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal in the plug which is marked with the letter L or coloured RED.

Under no circumstances should either of these wires be connected to the earth terminal of the three pin plug, marked with the letter E or the Earth Symbol .

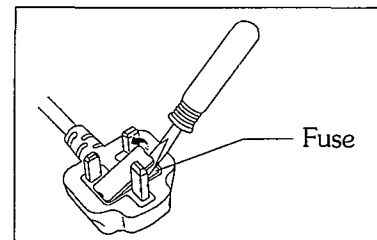
■ How to replace the fuse

Open the fuse compartment with a screwdriver and replace the fuse.

This equipment is produced to BS800/1983.

The unit is in the standby condition when the AC power supply cord is connected.

The primary circuit is always "live" as long as the power cord is connected to an electrical outlet.



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1. System Overview

1-1. General Description

The FZ-10 is the same function as FZ-1.

The FZ-10 is adopted Top Loading System and includes a CD-ROM drive circuit into the Main PCB.

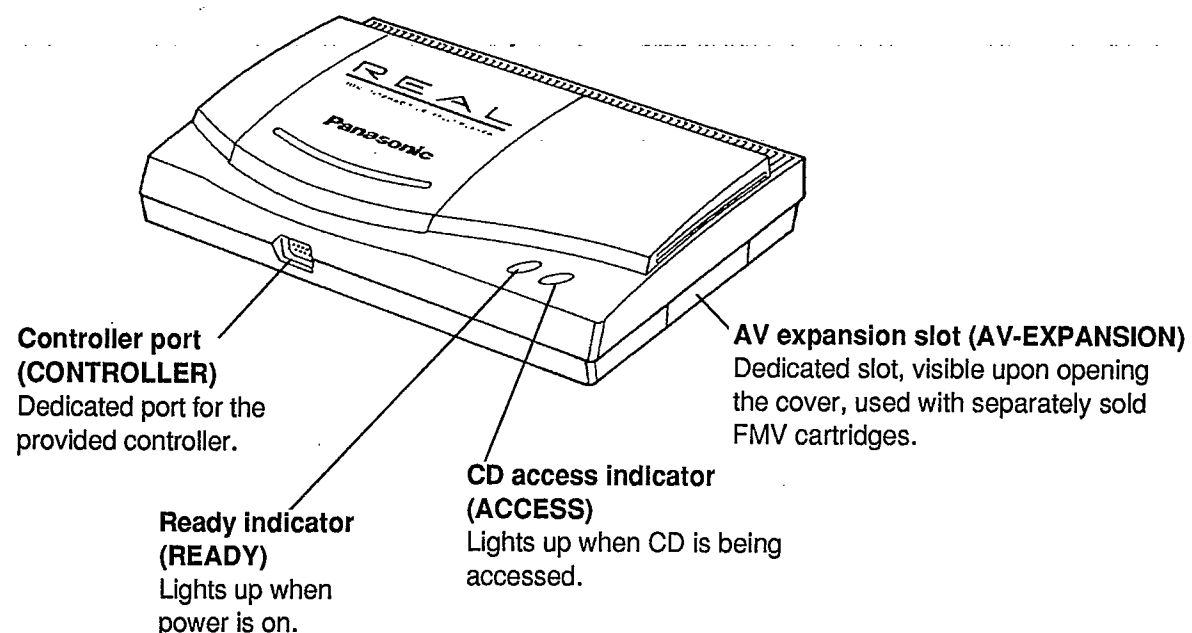
1-2. Specifications

| | | |
|--------------------------------|----------------------------------|---|
| 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, PAL S-Video, PAL RF Video, PAL, Channel 21 |
| | Resolution | 768 (H) × 576 (V) dots (Inside 384 × 288 dots) |
| | Colors | Max. 16.7 Million / Std. 32K |
| | Audio | Stereo 16-bit PCM (Sampling: 44.1 kHz) |
| Storage | CD-ROM drive | Size: 12 and 8 cm (CD single) 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 (Video CD Adaptor): 68-pin × 1 |
| System | System dimensions (W × D × H) | 310 × 236 × 68 mm (12.2 × 9.3 × 2.7 inch) |
| | Weight | 1.7 kg (3.8 lb) |
| | Power requirement | 230 – 240 V AC 50 Hz |
| | Power consumption | 30 W |
| Indicator | Power indicator | Red-LED × 1 |
| | CD-access indicator | Green-LED × 1 |
| Temperature | Operating | 10°C to 35°C (50°F to 95°F) |
| | Storage | –20°C to 60°C (–4°F to 140°F) (When packed for shipment) |

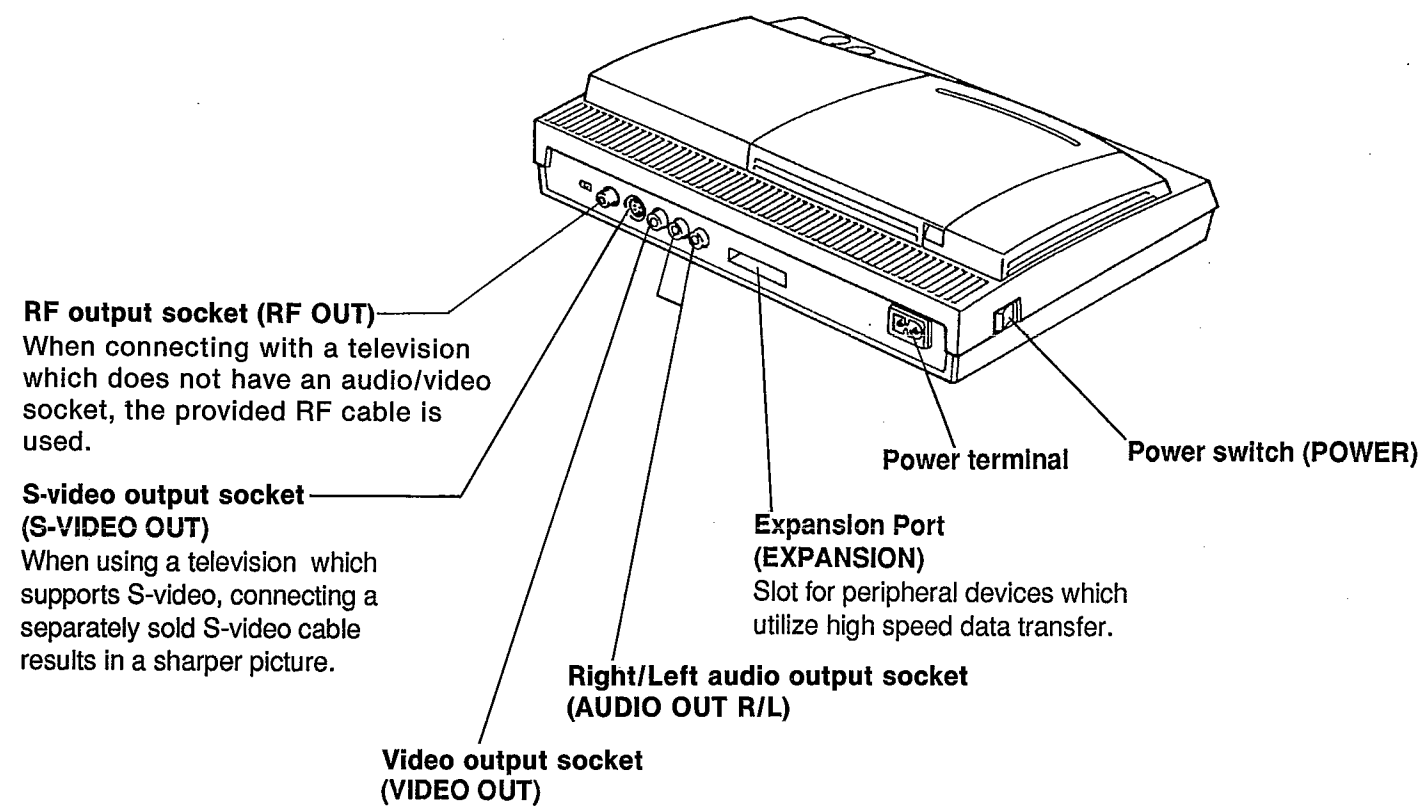
FMV: Full Motion Video

1-3. Location of Control and Components

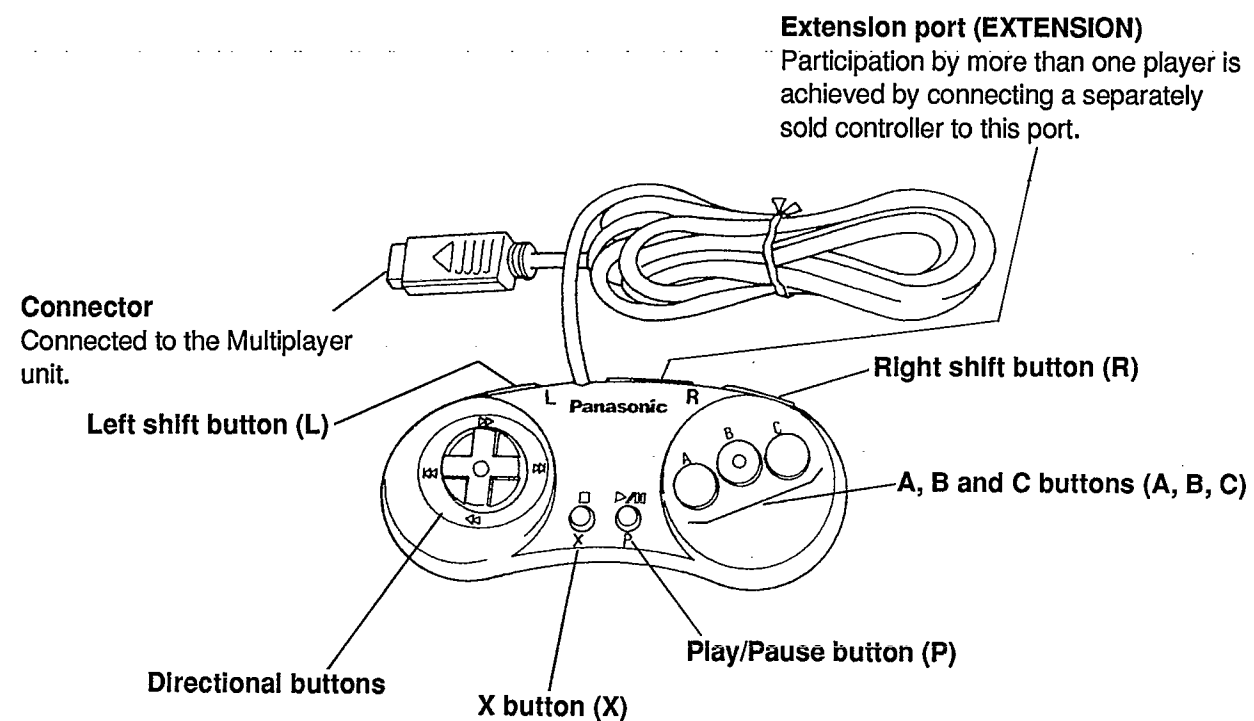
• Front View



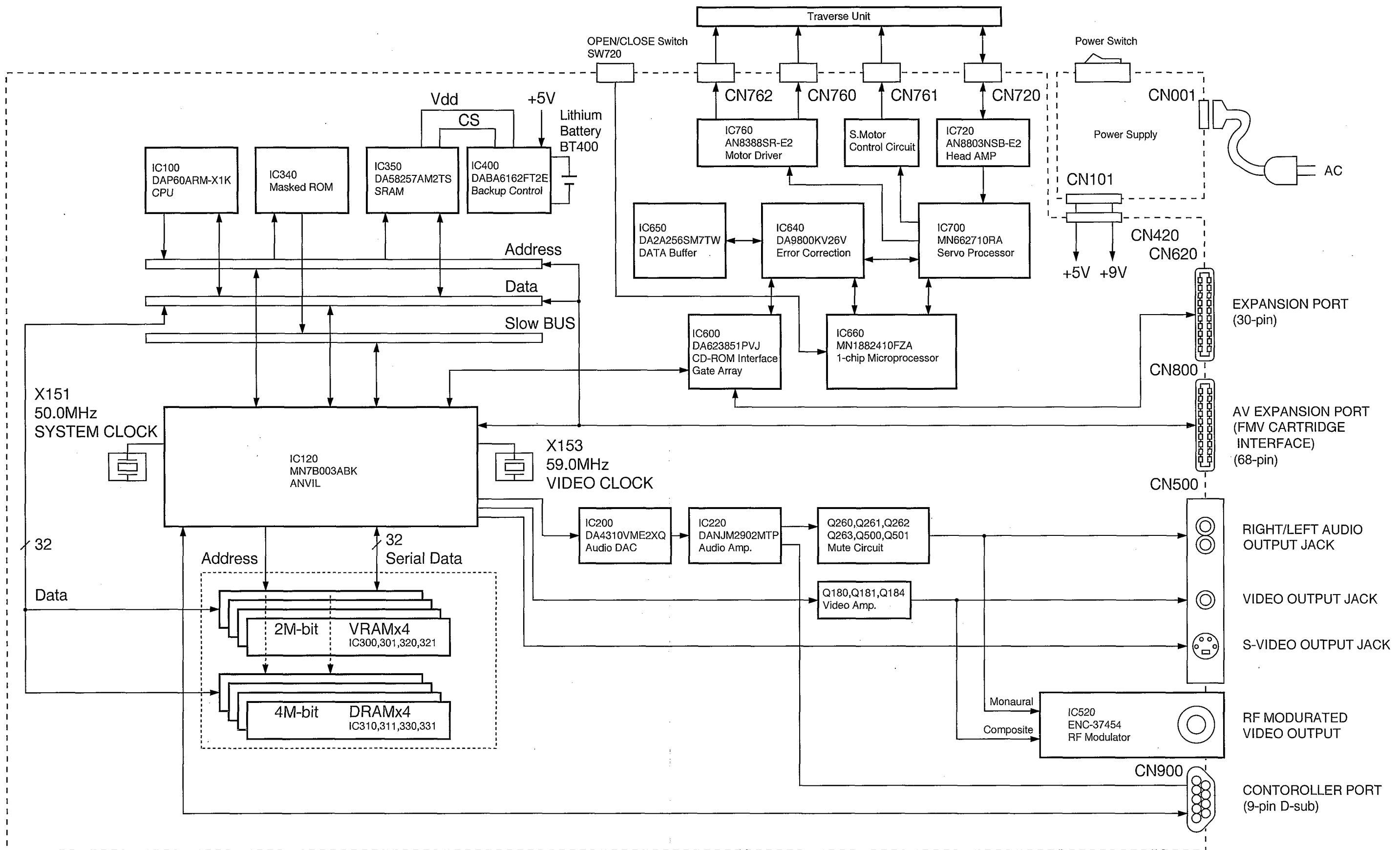
• Rear View



• Controller



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.

ANVIL

This system IC includes MADAM, CLIO (the system IC's for FZ-1) and a digital color encoder. ANVIL has the following functions.

CPU control: ANVIL drives control signals for the CPU.

Memory management: ANVIL controls access to DRAM's and VRAM's.

Cell engin: ANVIL manages cells (objects on TV screen).

DSP: ANVIL includes a digital signal processor, which deals with sound.

Video signal output: ANVIL outputs video signals (composit, Y and C).

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.

Error Correction

This is a block for error correction, and transferring data and commands. A command data which comes from Main unit goes to 1-chip microprocessor via the interface for CD-ROM. The data stored on a disk go through a data servo processor serially. Once the data will be stored in the data buffer and it will be checked and corrected if it is identified as a false data. Then it go out to the CD-ROM interface.

Data Buffer

32K SRAM memory is used to store data from CD-ROM temporarily.

1-chip Microprocessor

1-chip microprocessor is for processing commands from the main system.

Digital Servo Processor

Digital Servo Processor have some functions as optical servo(focus, tracking and traverse servo) process, digital process (EFM modulation, error correction) and digital servo process for S.Motor. The optical servo will not require adjustment for its gain, offset, and balance manually because it does all automatically. The Digital processing block provides digital signal based on RF signal, and send to the error correction IC.

Motor Driver

As the analog control signal from digital servo processor, Motor Driver supply a traverse motor, focus actuator of pick up unit and tracking actuator with electrical power.

S.Motor Control

As the control signal from digital servo processor, S.Motor control circuit generates a signal to control the speed of the S.Motor.

2. Checking Information

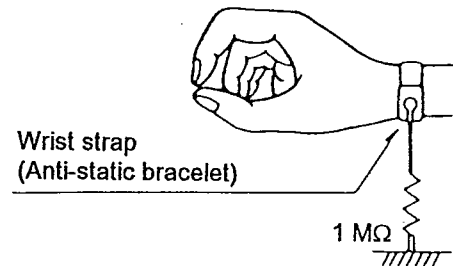
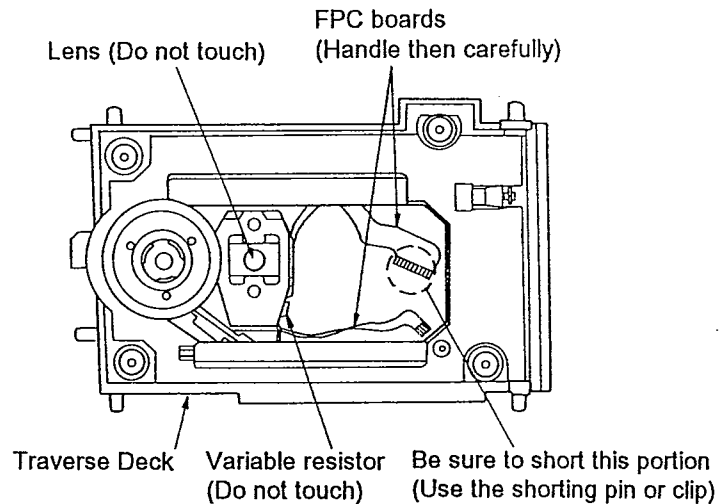
2-1. Handling Precautions for Traverse Deck

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.

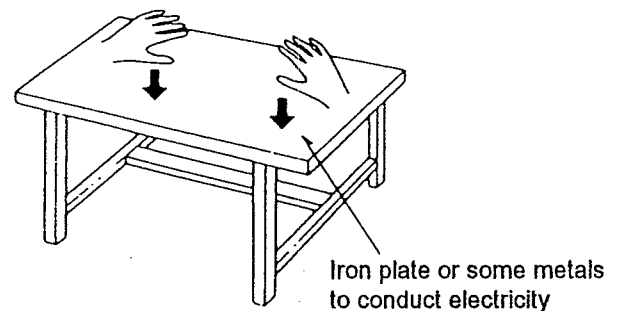


• Grounding for electrostatic breakdown prevention

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.

- Reassemble in the reverse order

Top Case

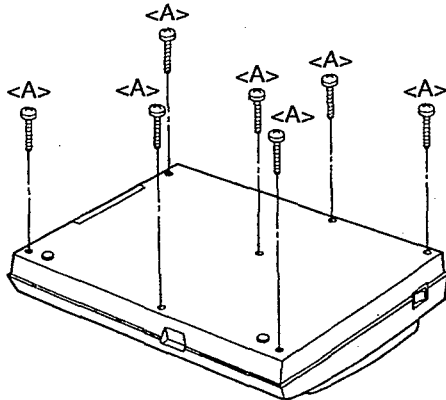


Figure 1

- (1) Turn this unit (FZ-10) upside down and place it.
- (2) Remove seven screws <A> as shown in figure 1.
- (3) Turn it over again and gradually raise the top case.

Traverse Unit

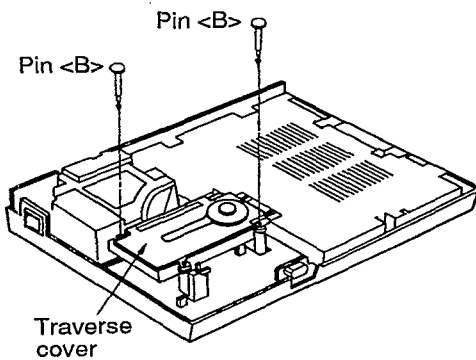


Figure 2

- (1) After removing the top case, remove the two pins as shown in figure 2.
(Push from the bottom side.)

- (2) Remove the traverse cover.

- (3) Gradually raise the traverse unit and then disconnect the five connectors as shown in figure 3.

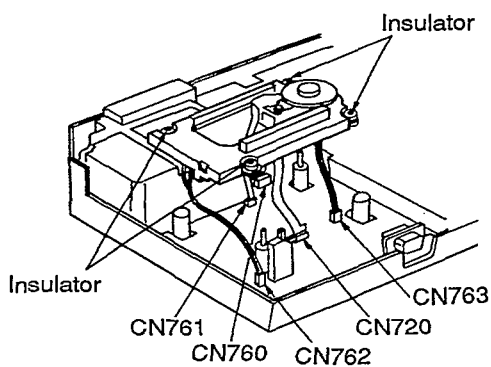


Figure 3

- (4) Remove the traverse unit.

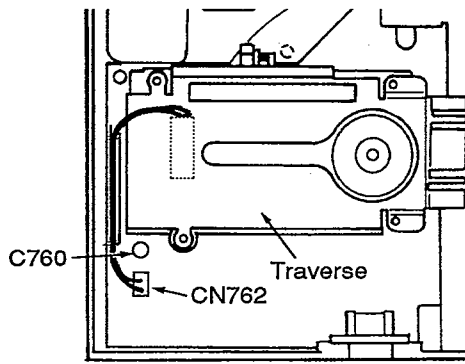


Figure 4

Caution: Reassembling, be sure to arrange the lead wire for CN762 in figure 4.

Power PCB

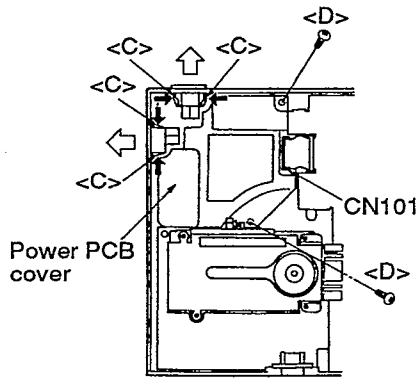


Figure 5

- (1) After removing the top case, remove the Power PCB cover.
- (2) Unlock the four hooks <C> and remove the AC inlet terminal and remove power switch as shown in figure 5.
- (3) Remove the two screws <D>.
- (4) Disconnect the connector (CN101) and remove the Power PCB.

Main PCB

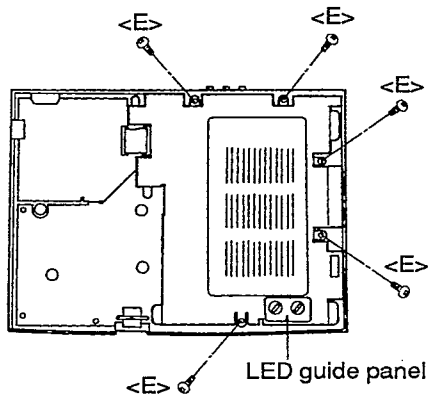


Figure 6

- (1) After removing the top case and traverse unit, remove the LED guide panel.
- (2) Remove five screws <E> and then remove the upper shield plate as shown in figure 6.
- (3) Remove the FMV cover at right side.

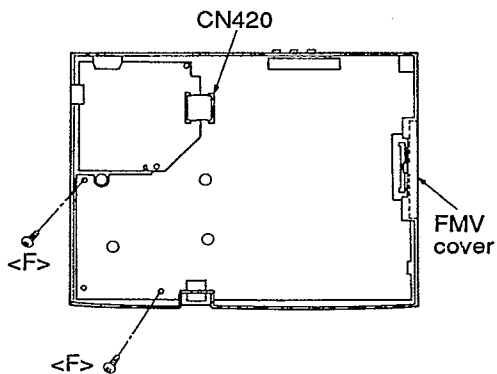


Figure 7

- (4) Remove the two screws <F> as shown in figure 7.
- (5) Disconnect the connector (CN420) and then remove the Main PCB.

CD Panel

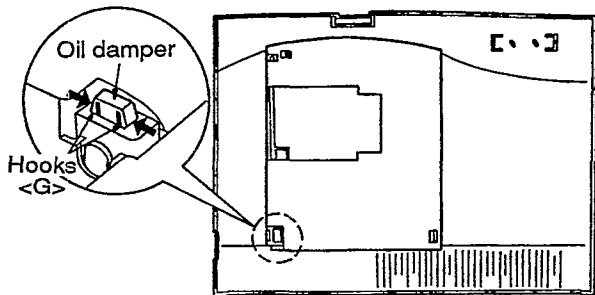


Figure 8

(1) After removing the top case, unlock two hooks <G> as shown in Figure 8.

(2) Remove the CD Panel unit.

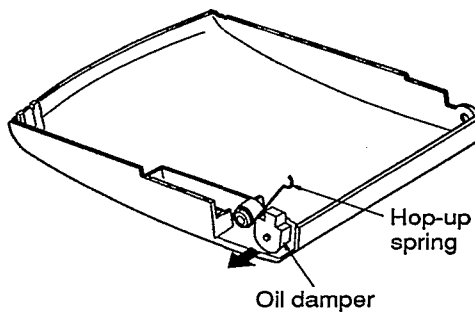


Figure 9

(3) Remove the hop-up spring and oil dumper as shown in figure 9.

(4) remove the CD Panel.

DC Latch

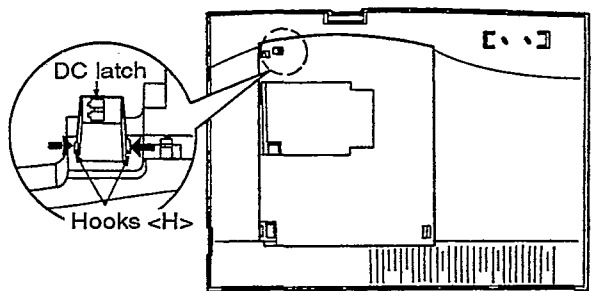


Figure 10

(1) After removing the top case, unlock two hooks <H> at reverse side of the top case as shown in figure 10.

(2) Remove the DC Latch.

2-3. Troubleshooting Table

Picture, Sound

| Symptom | Cause |
|--|---|
| No picture and no sound | Resistor array which is connected to DRAM is soldered not enough. IC310 and IC330 are abnormal. IC300, IC301, IC320 and IC322 are abnormal. One of IC120 and IC100 is abnormal. Circuit pattern around IC120 and IC100 is cut. Circuit pattern around DRAM is cut. |
| No sound | MUTE circuit(Q500, Q501, Q263, Q262, Q261 and Q260) is abnormal. If base voltage of Q500 is set high, MUTE circuit is abnormal. |
| Loud noise appear or sound disappear at random, and they are repeatable. | IC120 (ANVIL) |
| Sound is stopped accidentally. | Traverse Unit |
| Color is abnormal. | Each signal [S0-S31: between ANVIL and DRAM] is abnormal. IC120 (ANVIL) is abnormal. |
| Object (such as a meteorite in the demo-screen) is abnormal. | IC120 (ANVIL) |
| Although the image had be cleared already, it have remained on the screen. | VRAM (IC300, IC301, IC320, IC321) is abnormal. |

Operation

| Symptom | Cause |
|---|-----------------------------------|
| Particularly program is not executed. | IC120 (ANVIL) Traverse Unit |
| Program is stopped during the execution and it is repeatable. | IC120 (ANVIL) |
| Program is stopped accidentally. | Traverse Unit |
| Picture becomes stop-motion playing. | VRAM (IC300, IC301, IC320, IC321) |
| Program is stopped at random and it is repeatable. | IC120 (ANVIL) |

2-4. Terminal Function of IC's

IC100

CPU (P/N: DA86C0602XV)

| Pin No. | I/O | Pin Name | Comment |
|---------|------------|----------|------------------------------|
| 1 | I/O, TTL | D27 | Data Bus 27 |
| 2 | I/O, TTL | D28 | Data Bus 28 |
| 3 | I/O, TTL | D29 | Data Bus 29 |
| 4 | I/O, TTL | D30 | Data Bus 30 |
| 5 | I/O, TTL | D31 | Data Bus 31 |
| 6 | Input, TTL | CPA | CO processor Absent |
| 7 | | Vss | Ground |
| 8 | | Vdd | Power supply |
| 9 | Out | LOCK | Locked operation |
| 10 | Input, TTL | BIGEND | Big Endian configuration |
| 11 | Out | CPI- | CO processor Instruction |
| 12 | Input, TTL | DBE | Data Bus Enable |
| 13 | Out | WORD | Byte- / Word |
| 14 | Input, TTL | MCLK | Memory Clock input |
| 15 | Input, TTL | WAIT- | Wait signal input |
| 16 | Input, TTL | LATEABT | Late Abort input |
| 17 | Input, TTL | PROG32 | 32-bit Program configuration |
| 18 | Input, TTL | DATA32 | 32-bit Data configuration |
| 19 | Out | WRITE | Read- / Write |
| 20 | Out | OPC- | Ope-code fetch |
| 21 | Out | MREQ- | Memory Request |
| 22 | Out | SEQ | Sequential address |
| 23 | Input, TTL | ABORT | Memory Abort input |
| 24 | Input, TTL | IRQ- | Interrupt Request input |
| 25 | Input, TTL | FIRQ- | Fast Interrupt Request input |
| 26 | Input, TTL | RESET- | Reset signal input |
| 27 | I/O, TTL | ALE | Address Latch Enable |
| 28 | I/O, TTL | CPB | CO processor Busy |
| 29 | I/O, TTL | TRANS- | Memory Translation |
| 30 | Out | A31 | Address 31 |
| 31 | Out | A30 | Address 30 |
| 32 | Out | A29 | Address 29 |
| 33 | Out | A28 | Address 28 |
| 34 | Out | A27 | Address 27 |
| 35 | Out | A26 | Address 26 |
| 36 | Out | A25 | Address 25 |
| 37 | Out | A24 | Address 24 |
| 38 | Out | A23 | Address 23 |
| 39 | Out | A22 | Address 22 |
| 40 | Out | A21 | Address 21 |
| 41 | Out | A20 | Address 20 |
| 42 | Out | A19 | Address 19 |
| 43 | Out | A18 | Address 18 |
| 44 | Out | A17 | Address 17 |
| 45 | Out | A16 | Address 16 |
| 46 | Out | A15 | Address 15 |
| 47 | Out | A14 | Address 14 |
| 48 | Out | A13 | Address 13 |
| 49 | Out | A12 | Address 12 |
| 50 | Out | A11 | Address 11 |
| 51 | | Vdd | Power supply |
| 52 | | Vss | Ground |
| 53 | Out | A10 | Address 10 |
| 54 | Out | A9 | Address 9 |
| 55 | Out | A8 | Address 8 |
| 56 | Out | A7 | Address 7 |
| 57 | Out | A6 | Address 6 |
| 58 | Out | A5 | Address 5 |
| 59 | Out | A4 | Address 4 |

Continued (IC100)

| Pin No. | I/O | Pin Name | Comment |
|---------|---------------------------|----------|--------------------|
| 60 | Out | A3 | Address 3 |
| 61 | Out | A2 | Address 2 |
| 62 | Out | A1 | Address 1 |
| 63 | Out | A0 | Address 0 |
| 64 | | Vss | Ground |
| 65 | | Vdd | Power supply |
| 66 | Input, TTL | ABE | Address Bus Enable |
| 67 | Input, TTL, w/ pull-up | TCK | Test Clock |
| 68 | Input, TTL, w/ pull-up | TMS | Test Mode Select |
| 69 | Input, TTL, w/ pull-up | TRST- | Test Mode Reset |
| 70 | Input, TTL, w/ pull-up | TDI | Test Data Input |
| 71 | Out | TDO | Test Data Output |
| 72 | I/O, TTL | D0 | Data Bus 0 |
| 73 | I/O, TTL | D1 | Data Bus 1 |
| 74 | I/O, TTL | D2 | Data Bus 2 |
| 75 | I/O, TTL | D3 | Data Bus 3 |
| 76 | I/O, TTL | D4 | Data Bus 4 |
| 77 | I/O, TTL | D5 | Data Bus 5 |
| 78 | I/O, TTL | D6 | Data Bus 6 |
| 79 | I/O, TTL | D7 | Data Bus 7 |
| 80 | | Vss | Ground |
| 81 | | Vdd | Power supply |
| 82 | I/O, TTL | D8 | Data Bus 8 |
| 83 | I/O, TTL | D9 | Data Bus 9 |
| 84 | I/O, TTL | D10 | Data Bus 10 |
| 85 | I/O, TTL | D11 | Data Bus 11 |
| 86 | I/O, TTL | D12 | Data Bus 12 |
| 87 | I/O, TTL | D13 | Data Bus 13 |
| 88 | I/O, TTL | D14 | Data Bus 14 |
| 89 | I/O, TTL | D15 | Data Bus 15 |
| 90 | I/O, TTL | D16 | Data Bus 16 |
| 91 | I/O, TTL | D17 | Data Bus 17 |
| 92 | I/O, TTL | D18 | Data Bus 18 |
| 93 | I/O, TTL | D19 | Data Bus 19 |
| 94 | I/O, TTL | D20 | Data Bus 20 |
| 95 | I/O, TTL | D21 | Data Bus 21 |
| 96 | I/O, TTL | D22 | Data Bus 22 |
| 97 | I/O, TTL | D23 | Data Bus 23 |
| 98 | I/O, TTL | D24 | Data Bus 24 |
| 99 | I/O, TTL | D25 | Data Bus 25 |
| 100 | I/O, TTL | D26 | Data Bus 26 |

IC120

System IC ANVIL (P/N: MN7B003ABK)

| Pin No. | I/O | Pin Name | Comment |
|---------|-----|----------|---------------------------------|
| 1 | | AGND | Analog ground |
| 2 | O | COMPOUT | Inverted composite video signal |
| 3 | | AGND | Analog ground |
| 4 | O | YOUT | Luminance video signal |
| 5 | | VDD | Power supply |
| 6 | | GND | Ground |
| 7 | | VDD | Power supply |
| 8 | | GND | Ground |
| 9 | O | AUDOUT | Digital audio data |
| 10 | O | RESET* | Master system reset |

Continued (IC120)

| Pin No. | I/O | Pin Name | Comment |
|---------|-----|----------|--|
| 11 | I | TSMODE0 | Factory test signal 0 |
| 12 | I | TSMODE1 | Factory test signal 1 |
| 13 | I | PBDIN | Data input from 3DO controllers |
| 14 | | VDD | Power supply |
| 15 | O | PBCLK | Control port clock |
| 16 | O | PBDOUT | Data output to 3DO controllers |
| 17 | O | UNCACKW | Video DMA acknowledge signal |
| 18 | | GND | Ground |
| 19 | I | XACLK | Master audio clock from audio DAC |
| 20 | | VDD | Power supply |
| 21 | O | UNCACKR | Video DMA acknowledge signal |
| 22 | O | EXTACKW | Audio DMA write acknowledge signal |
| 23 | O | EXTACKR | Audio DMA read acknowledge signal |
| 24 | | GNP | Ground |
| 25 | I | XVIN | Crystal input for video clock |
| 26 | O | XVOUT | Crystal output for video clock |
| 27 | | GNP | Ground |
| 28 | O | CLC0 | CLC0, 1, 2 indicate the type of transaction |
| 29 | O | CLC1 | CLC0, 1, 2 indicate the type of transaction |
| 30 | O | CLC2 | CLC0, 1, 2 indicate the type of transaction |
| 31 | | GND | Ground |
| 32 | O | LRAS3* | Row address strobe for left DRAM (data bits [31:16]) |
| 33 | O | LRAS2* | Row address strobe for left DRAM (data bits [31:16]) |
| 34 | O | LRAS1* | Row address strobe for left VRAM (data bits [31:16]) |
| 35 | | VDD | Power supply |
| 36 | I | XV25IN | Video clock input from the on-board clock network |
| 37 | O | XV25OUT | Video clock output to the on-board clock network |
| 38 | | GND | Ground |
| 39 | I | X25IN | System clock input |
| 40 | O | X25OUT | System clock output |
| 41 | | VDD | Power supply |
| 42 | O | LRAS0* | Row address strobe for left VRAM (data bits [31:16]) |
| 43 | O | LSC | Serial VRAM clock for the left VRAM (data bits [31:16]) |
| 44 | O | LSOE0* | VRAM serial port control output enable |
| 45 | | GND | Ground |
| 46 | O | LSOE1* | VRAM serial port control output enable |
| 47 | O | LDTOE* | Indicator of internal transfer of VRAM (data bits [31:16]) |
| 48 | O | LDSF | Indicator of special function of VRAM (data bits [31:16]) |
| 49 | | VDD | Power supply |
| 50 | O | LCAS* | Column address strobe for left DRAM and VRAM (data bits [31:16]) |
| 51 | O | LWEL* | Lower byte write enable for the left DRAM |
| 52 | O | LWEU* | Upper byte write enable for the left DRAM |
| 53 | | GND | Ground |

Continued (IC120)

| Pin No. | I/O | Pin Name | Comment |
|---------|-----|----------|--|
| 54 | I | LQSF | Split register active side indicator for VRAM and DRAM (data bits [31:16]) |
| 55 | O | LA10 | Address 10 for the left DRAM and VRAM (data bits [31:16]) |
| 56 | O | LA9 | Address 9 for the left DRAM and VRAM (data bits [31:16]) |
| 57 | O | LA8 | Address 8 for the left DRAM and VRAM (data bits [31:16]) |
| 58 | | VDD | Power supply |
| 59 | O | LA0 | Address 0 for the left DRAM and VRAM (data bits [31:16]) |
| 60 | O | LA7 | Address 7 for the left DRAM and VRAM (data bits [31:16]) |
| 61 | O | LA1 | Address 1 for the left DRAM and VRAM (data bits [31:16]) |
| 62 | | GND | Ground |
| 63 | O | LA6 | Address 6 for the left DRAM and VRAM (data bits [31:16]) |
| 64 | O | LA2 | Address 2 for the left DRAM and VRAM (data bits [31:16]) |
| 65 | O | LA5 | Address 5 for the left DRAM and VRAM (data bits [31:16]) |
| 66 | | VDD | Power supply |
| 67 | O | LA3 | Address 3 for the left DRAM and VRAM (data bits [31:16]) |
| 68 | O | LA4 | Address 4 for the left DRAM and VRAM (data bits [31:16]) |
| 69 | O | RRAS3* | Row address strobe for right DRAM (data bits [15:0]) |
| 70 | | GND | Ground |
| 71 | O | RRAS2* | Row address strobe for right DRAM (data bits [15:0]) |
| 72 | O | RRAS1* | Row address strobe for right VRAM (data bits [15:0]) |
| 73 | O | RRAS0* | Row address strobe for right VRAM (data bits [15:0]) |
| 74 | | VDD | Power supply |
| 75 | O | RSC | Serial VRAM clock for the right VRAM (data bits [15:0]) |
| 76 | O | RSOE0* | VRAM serial port control output enable |
| 77 | | GND | Ground |
| 78 | O | RSOE1* | VRAM serial port control output enable |
| 79 | O | RDTOE* | Indicator of internal transfer of VRAM (data bits [15:0]) |
| 80 | O | RDSF | Indicator of special function of VRAM (data bits [15:0]) |
| 81 | | VDD | Power supply |
| 82 | O | RCAS* | Column address strobe for the right DRAM and VRAM (data bits [15:0]) |
| 83 | O | RWEL* | Lower byte write enable for the right DRAM |
| 84 | O | RWEU* | Upper byte write enable for the right DRAM |
| 85 | I | RQSF | Split register active side indicator for VRAM and DRAM (data bits [15:0]) |
| 86 | | GND | Ground |
| 87 | O | RA10 | Address 10 for the right DRAM and VRAM (data bits [15:0]) |

Continued (IC120)

| Pin No. | I/O | Pin Name | Comment |
|---------|-----|----------|---|
| 88 | O | RA9 | Address 9 for the right DRAM and VRAM (data bits [15:0]) |
| 89 | O | RA8 | Address 8 for the right DRAM and VRAM (data bits [15:0]) |
| 90 | | VDD | Power supply |
| 91 | O | RA0 | Address 0 for the right DRAM and VRAM (data bits [15:0]) |
| 92 | O | RA7 | Address 7 for the right DRAM and VRAM (data bits [15:0]) |
| 93 | O | RA1 | Address 1 for the right DRAM and VRAM (data bits [15:0]) |
| 94 | | GND | Ground |
| 95 | O | RA6 | Address 6 for the right DRAM and VRAM (data bits [15:0]) |
| 96 | O | RA2 | Address 2 for the right DRAM and VRAM (data bits [15:0]) |
| 97 | O | RA5 | Address 5 for the right DRAM and VRAM (data bits [15:0]) |
| 98 | | VDD | Power supply |
| 99 | O | RA3 | Address 3 for the right DRAM and VRAM (data bits [15:0]) |
| 100 | O | RA4 | Address 4 for the right DRAM and VRAM (data bits [15:0]) |
| 101 | | GND | Ground |
| 102 | O | ROMCS1* | ROM chip select signal 1 |
| 103 | O | ROMCS0* | ROM chip select signal 0 |
| 104 | O | PDCS0* | Slow bus chip select signal 0 |
| 105 | | VDD | Power supply |
| 106 | O | PDCS2* | Slow bus chip select signal 1 |
| 107 | O | PDCS3* | Slow bus chip select signal 2 |
| 108 | O | SRAMW* | SRAM write enable |
| 109 | | GND | Ground |
| 110 | O | SRAMR* | SRAM output enable |
| 111 | O | PDWR* | Slow bus read enable. When accessing the ROM, ANVIL uses this signal as address 1 |
| 112 | O | PDRD* | Slow bus read enable. When accessing the ROM, ANVIL uses this signal as address 0 |
| 113 | | VDD | Power supply |
| 114 | I | REF5V | Reference voltage that allows ANVIL to accept 5 volts signal inputs while operating internally 3.3 volts. |
| 115 | I | S17 | VRAM 31-bit serial bus data 17 |
| 116 | I | S16 | VRAM 31-bit serial bus data 16 |
| 117 | I | S19 | VRAM 31-bit serial bus data 19 |
| 118 | I | S18 | VRAM 31-bit serial bus data 18 |
| 119 | I | S1 | VRAM 31-bit serial bus data 1 |
| 120 | I | S0 | VRAM 31-bit serial bus data 0 |
| 121 | I | S3 | VRAM 31-bit serial bus data 3 |
| 122 | I | S2 | VRAM 31-bit serial bus data 2 |
| 123 | I | S21 | VRAM 31-bit serial bus data 21 |
| 124 | I | S20 | VRAM 31-bit serial bus data 20 |
| 125 | | GND | Ground |
| 126 | I | S23 | VRAM 31-bit serial bus data 23 |
| 127 | I | S22 | VRAM 31-bit serial bus data 22 |
| 128 | I | S5 | VRAM 31-bit serial bus data 5 |
| 129 | I | S4 | VRAM 31-bit serial bus data 4 |
| 130 | I | S7 | VRAM 31-bit serial bus data 7 |
| 131 | I | S6 | VRAM 31-bit serial bus data 6 |
| 132 | I | S25 | VRAM 31-bit serial bus data 25 |

Continued (IC120)

| Pin No. | I/O | Pin Name | Comment |
|---------|-----|----------|--------------------------------|
| 133 | I | S24 | VRAM 31-bit serial bus data 24 |
| 134 | I | S27 | VRAM 31-bit serial bus data 27 |
| 135 | I | S26 | VRAM 31-bit serial bus data 26 |
| 136 | I | S9 | VRAM 31-bit serial bus data 9 |
| 137 | | VDD | Power supply |
| 138 | I | S8 | VRAM 31-bit serial bus data 8 |
| 139 | I | S11 | VRAM 31-bit serial bus data 11 |
| 140 | I | S10 | VRAM 31-bit serial bus data 10 |
| 141 | I | S29 | VRAM 31-bit serial bus data 29 |
| 142 | I | S28 | VRAM 31-bit serial bus data 28 |
| 143 | I | S31 | VRAM 31-bit serial bus data 31 |
| 144 | I | S30 | VRAM 31-bit serial bus data 30 |
| 145 | I | S13 | VRAM 31-bit serial bus data 13 |
| 146 | I | S12 | VRAM 31-bit serial bus data 12 |
| 147 | I | S15 | VRAM 31-bit serial bus data 15 |
| 148 | I | S14 | VRAM 31-bit serial bus data 14 |
| 149 | | GND | Ground |
| 150 | | GND | Ground |
| 151 | I/O | D0 | Data bus 0 |
| 152 | I/O | D1 | Data bus 1 |
| 153 | I/O | D2 | Data bus 2 |
| 154 | I/O | D3 | Data bus 3 |
| 155 | | VDD | Power supply |
| 156 | I/O | D4 | Data bus 4 |
| 157 | I/O | D5 | Data bus 5 |
| 158 | I/O | D6 | Data bus 6 |
| 159 | I/O | D7 | Data bus 7 |
| 160 | | GND | Ground |
| 161 | I/O | D8 | Data bus 8 |
| 162 | I/O | D9 | Data bus 9 |
| 163 | I/O | D10 | Data bus 10 |
| 164 | I/O | D11 | Data bus 11 |
| 165 | | VDD | Power supply |
| 166 | I/O | D12 | Data bus 12 |
| 167 | I/O | D13 | Data bus 13 |
| 168 | I/O | D14 | Data bus 14 |
| 169 | I/O | D15 | Data bus 15 |
| 170 | | GND | Ground |
| 171 | I/O | D16 | Data bus 16 |
| 172 | I/O | D17 | Data bus 17 |
| 173 | I/O | D18 | Data bus 18 |
| 174 | I/O | D19 | Data bus 19 |
| 175 | | VDD | Power supply |
| 176 | I/O | D20 | Data bus 20 |
| 177 | I/O | D21 | Data bus 21 |
| 178 | I/O | D22 | Data bus 22 |
| 179 | I/O | D23 | Data bus 23 |
| 180 | | GND | Ground |
| 181 | I/O | D24 | Data bus 24 |
| 182 | I/O | D25 | Data bus 25 |
| 183 | I/O | D26 | Data bus 26 |
| 184 | I/O | D27 | Data bus 27 |
| 185 | | VDD | Power supply |
| 186 | I/O | D28 | Data bus 28 |
| 187 | I/O | D29 | Data bus 29 |
| 188 | I/O | D30 | Data bus 30 |
| 189 | I/O | D31 | Data bus 31 |
| 190 | | GND | Ground |
| 191 | I/O | ADBIO0 | General-purpose I/O bus 0 |
| 192 | I/O | ADBIO1 | General-purpose I/O bus 1 |

Continued (IC120)

| Pin No. | I/O | Pin Name | Comment |
|---------|-----|----------|---|
| 193 | I/O | ADBIO2 | General-purpose I/O bus 2 |
| 194 | I/O | ADBIO3 | General-purpose I/O bus 3 |
| 195 | O | AUDBCK | Audio bit clock |
| 196 | I/O | AUDWS | Audio channel selection |
| 197 | | VDD | Power supply |
| 198 | I/O | PD0 | Bi-directional data bus for the slow bus 0 |
| 199 | I/O | PD1 | Bi-directional data bus for the slow bus 1 |
| 200 | I/O | PD2 | Bi-directional data bus for the slow bus 2 |
| 201 | I/O | PD3 | Bi-directional data bus for the slow bus 3 |
| 202 | | GND | Ground |
| 203 | I/O | PD4 | Bi-directional data bus for the slow bus 4 |
| 204 | I/O | PD5 | Bi-directional data bus for the slow bus 5 |
| 205 | I/O | PD6 | Bi-directional data bus for the slow bus 6 |
| 206 | I/O | PD7 | Bi-directional data bus for the slow bus 7 |
| 207 | | VDD | Power supply |
| 208 | I/O | ED0 | Bi-directional address and data bus for the expansion bus 0 |
| 209 | I/O | ED1 | Bi-directional address and data bus for the expansion bus 1 |
| 210 | I/O | ED2 | Bi-directional address and data bus for the expansion bus 2 |
| 211 | I/O | ED3 | Bi-directional address and data bus for the expansion bus 3 |
| 212 | | GND | Ground |
| 213 | I/O | ED4 | Bi-directional address and data bus for the expansion bus 4 |
| 214 | I/O | ED5 | Bi-directional address and data bus for the expansion bus 5 |
| 215 | I/O | ED6 | Bi-directional address and data bus for the expansion bus 6 |
| 216 | I/O | ED7 | Bi-directional address and data bus for the expansion bus 7 |
| 217 | I/O | CREADY* | Device control hand shake signal |
| 218 | I/O | RTC | |
| 219 | I/O | HS* | Horizontal sync |
| 220 | I/O | VS* | Vertical sync |
| 221 | | VDD | Power supply |
| 222 | I | AUDIN | Input data from A/D converter |
| 223 | I | PDINT* | Slow bus level-sensitive interrupt |
| 224 | I | EXTREQR | Audio DMA read request signal |
| 225 | I | EXTREQW | Audio DMA write request signal |
| 226 | I | UNCREQR | Video DMA read request signal |
| 227 | I | UNCREQW | Video DMA write request signal |
| 228 | | GND | Ground |
| 229 | I | A0 | ADDRESS 0 |
| 230 | I | A1 | ADDRESS 1 |
| 231 | I | A2 | ADDRESS 2 |
| 232 | I | A3 | ADDRESS 3 |
| 233 | I | A4 | ADDRESS 4 |
| 234 | I | A5 | ADDRESS 5 |
| 235 | | VDD | Power supply |
| 236 | I | A6 | ADDRESS 6 |
| 237 | I | A7 | ADDRESS 7 |
| 238 | I | A8 | ADDRESS 8 |

Continued (IC120)

| Pin No. | I/O | Pin Name | Comment |
|---------|-----|----------|--|
| 239 | I | A9 | ADDRESS 9 |
| 240 | I | A10 | ADDRESS 10 |
| 241 | I | A11 | ADDRESS 11 |
| 242 | I | A12 | ADDRESS 12 |
| 243 | I | A13 | ADDRESS 13 |
| 244 | I | A14 | ADDRESS 14 |
| 245 | | GND | Ground |
| 246 | I | A15 | ADDRESS 15 |
| 247 | I | A16 | ADDRESS 16 |
| 248 | I | A17 | ADDRESS 17 |
| 249 | I | A18 | ADDRESS 18 |
| 250 | I | A19 | ADDRESS 19 |
| 251 | I | A20 | ADDRESS 20 |
| 252 | I | A21 | ADDRESS 21 |
| 253 | I | A22 | ADDRESS 22 |
| 254 | I | A23 | ADDRESS 23 |
| 255 | I | A24 | ADDRESS 24 |
| 256 | | VDD | Power supply |
| 257 | I | A25 | ADDRESS 25 |
| 258 | I | A26 | ADDRESS 26 |
| 259 | I | TRANS* | Indicator that the CPU is in user mode |
| 260 | O | CPURES* | CPU reset signal |
| 261 | O | FIRQ* | CPU interrupt |
| 262 | | GND | Ground |
| 263 | O | ABORT | CPU abort signal. This signal become H when a memory access is not possible |
| 264 | I | SEQ | Indicator of a sequential memory access |
| 265 | O | MCLK | Master CPU clock |
| 266 | | GND | Ground |
| 267 | I | XIN | Crystal input for the system clock |
| 268 | O | XOUT | Crystal output for the system clock |
| 269 | | GND | Ground |
| 270 | I | MREQ* | Indicator that the CPU requires memory access |
| 271 | I | READ* | Indicator of the CPU Read/Write status |
| 272 | I | BYTE* | The CPU tells ANVIL which data type is required, 8 bit (L) or 32 bit (H) |
| 273 | | VDD | Power supply |
| 274 | O | DBE | Data bus enable |
| 275 | I | LOCK | Indicator that the CPU is performing a locked memory access and that ANVIL must wait |
| 276 | O | EWRT* | Write signal for the expansion bus |
| 277 | O | ESTR* | Strobe signal for the expansion bus |
| 278 | | GND | Ground |
| 279 | I | EINT* | Interrupt signal from expansion device |
| 280 | O | ERST* | Power-on and software-controlled reset signal to the expansion bus |
| 281 | O | ESEL* | Selection signal for the expansion bus |
| 282 | O | ECMD* | Command signal for the expansion port |
| 283 | | VDD | Power supply |
| 284 | I | ERDY* | Ready signal from expansion device |
| 285 | I | CDDATA | CD interface data |

Continued (IC120)

| Pin No. | I/O | Pin Name | Comment |
|---------|-----|----------|---|
| 286 | I | CDCLK | CD interface clock |
| 287 | I | CREF | Clock reference input |
| 288 | O | LPSC* | Tracking signal of left serial clock |
| 289 | O | RPSC* | Tracking signal of right serial clock |
| 290 | I | PON | Power-on signal. PON is high and stable whenever the system is on |
| 291 | O | PCSC* | Output to indicate the beginning of a scan line |
| 292 | | GND | Ground |
| 293 | | VDD | Power supply |
| 294 | | AVDD | Analog power supply |
| 295 | | AGND | Analog ground |
| 296 | I | VREF1 | Voltage reference input. Normally 1.5V |
| 297 | O | CGAIN | Chroma full-scale current control |
| 298 | O | YGAIN | Luminance full-scale current control |
| 299 | I | CCOMP | Chroma compensation |
| 300 | I | YCOMP | Luma DAC compensation |
| 301 | I | VREF0 | Voltage reference input. Normally 1.75V |
| 302 | | AGND | Analog ground |
| 303 | O | COUT | Chrominance video signal |
| 304 | O | BLUE | Blue output when ANVIL video DAC is in the RGB mode |

IC200

Audio DAC (P/N: DA4310VME2XQ)

| Pin No. | I/O | Pin Name | Comment |
|---------|--------|----------|--|
| 1 | Input | TST1 | Test pin |
| 2 | | DVDD | Digital 5V |
| 3 | | DVSS | Digital ground |
| 4 | Input | PD- | Power down signal input |
| 5 | Input | RST- | Reset pin |
| 6 | Input | MCLK | Master clock pin |
| 7 | Input | CKS | Clock selection (H: 256 fs, L: 384 fs) |
| 8 | Input | BICK | Serial bit clock |
| 9 | Input | SDATA | Serial data input |
| 10 | Input | LRCK | L/R channel clock |
| 11 | | N/C | Not connected |
| 12 | | N/C | Not connected |
| 13 | | N/C | Not connected |
| 14 | | N/C | Not connected |
| 15 | Output | AOUTR | Rch Analog output |
| 16 | Output | AOUTL | Lch Analog output |
| 17 | Output | VCOM | Common voltage, AVDD/2 |
| 18 | | AVDD | Analog power supply |
| 19 | | AVSS | Analog ground |
| 20 | | N/C | Not connected |
| 21 | | N/C | Not connected |
| 22 | Input | VREFH | Reference voltage (High level) VREFH and VREFL determine full scale of D/A output |
| 23 | Input | VREFL | Reference voltage (Low level) |
| 24 | Output | DZF | Zero detect |

IC400

Backup Controller (P/N: DABA6162FT2E)

| Pin No. | I/O | Pin Name | Comment |
|---------|-------|----------|--------------------------|
| 1 | | N/C | (Not Connected) |
| 2 | Out | VREF | Voltage Reference Output |
| 3 | | N/C | (Not Connected) |
| 4 | | AVDD | Analog Power supply |
| 5 | | AVSS | Analog ground |
| 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: DA623854PVJ)

| Pin No. | I/O | Pin Name | Comment |
|---------|---------|----------|-------------------------------|
| 1 | Out | CDEN- | CD drive enable |
| 2 | | GND | Ground |
| 3 | I/O | CDD7 | CD drive data bus 7 |
| 4 | I/O | CDD6 | CD drive data bus 6 |
| 5 | I/O | CDD5 | CD drive data bus 5 |
| 6 | I/O | CDD4 | CD drive data bus 4 |
| 7 | I/O | CDD3 | CD drive data bus 3 |
| 8 | I/O | CDD2 | CD drive data bus 2 |
| 9 | I/O | CDD1 | CD drive data bus 1 |
| 10 | I/O | CDD0 | CD drive data bus 0 |
| 11 | Out | CDRST- | CD drive reset |
| 12 | | GND | Ground |
| 13 | Input | CLK33M | 33MHz clock |
| 14 | Input | ROMSEL | ROM selection |
| 15 | Input | ROMEN | ROM enable |
| 16 | Out | ROMA20 | ROM address 20 |
| 17 | Out | ROME0- | ROM output enable 0 |
| 18 | Out | ROME1- | ROM output enable 1 |
| 19 | Out | ROMCS- | ROM chip selection |
| 20 | Input | CPURES- | CPU reset |
| 21 | I/O | ED0 | Internal expansion bus 0 |
| 22 | I/O | ED1 | Internal expansion bus 1 |
| 23 | | GND | Ground |
| 24 | I/O | ED2 | Internal expansion bus 2 |
| 25 | I/O | ED3 | Internal expansion bus 3 |
| 26 | I/O | ED4 | Internal expansion bus 4 |
| 27 | I/O | ED5 | Internal expansion bus 5 |
| 28 | I/O | ED6 | Internal expansion bus 6 |
| 29 | I/O | ED7 | Internal expansion bus 7 |
| 30 | Input | ESTR- | Internal strobe |
| 31 | Input | EWRT- | Internal write |
| 32 | Input | ERST- | Internal reset |
| 33 | | VDD | Power supply |
| 34 | Input | ECMD- | Internal command |
| 35 | Input | ESEL- | Internal selection |
| 36 | Tri-Out | ERDY- | Internal ready |
| 37 | Tri-Out | EINT- | Internal interrupt |
| 38 | Input | IDIN | ID input from previous device |
| 39 | Out | AND | AND output (pins 43 and 44) |
| 40 | Out | XACLK | Audio reference clock |
| 41 | Out | NAND | NAND output (pins 43 and 44) |
| 42 | | GND | Ground |
| 43 | Input | A | General input A |
| 44 | Input | B | General input B |
| 45 | Out | XRST- | External bus reset |
| 46 | Out | IDOUT | ID output |
| 47 | Input | XDIN | ID input |
| 48 | Out | XWRT- | External bus write |
| 49 | Out | XSEL- | External bus selection |

Continued (IC600)

| Pin No. | I/O | Pin Name | Comment |
|---------|-------|-------------|------------------------|
| 50 | Out | XCMD- | External bus command |
| 51 | Out | XSTR- | External bus strobe |
| 52 | | GND | Ground |
| 53 | Input | XRDY- | External bus ready |
| 54 | Input | XINT- | External bus interrupt |
| 55 | I/O | XD7 | External bus data 7 |
| 56 | I/O | XD6 | External bus data 6 |
| 57 | I/O | XD5 | External bus data 5 |
| 58 | I/O | XD4 | External bus data 4 |
| 59 | Input | EN15- | Ground |
| 60 | Input | EN7- | Ground |
| 61 | I/O | XD3 | External bus data 3 |
| 62 | I/O | XD2 | External bus data 2 |
| 63 | | GND | Ground |
| 64 | I/O | XD1 | External bus data 1 |
| 65 | I/O | XD0 | External bus data 0 |
| 66 | Out | IPFLAG0 | Complement flag output |
| 67 | Input | S1- | S1 |
| 68 | Input | S2- | S2 |
| 69 | Input | IPFLAG1 | Complement flag input |
| 70 | Input | BYTCLK | Byte clock |
| 71 | Input | A15 | A15 input |
| 72 | Out | A15- | A15 reverse output |
| 73 | | VDD | Power supply |
| 74 | Input | CDMDCH G | CD media change |
| 75 | Input | CDSTEN- | CD status enable |
| 76 | Input | CDDTEN- | CD data enable |
| 77 | Input | CDWAIT- | CD wait |
| 78 | Out | CDHRD- | CD drive read |
| 79 | Out | CDHWR- | CD drive write |
| 80 | Out | CDCMD- | CD command |

IC640

Error Correction (P/N:DA98000KV26V)

| Pin No. | I/O | Pin Name | Comment |
|---------|-----|----------|------------------------|
| 1 | Out | RA9 | Data buffer address 9 |
| 2 | Out | RA10 | Data buffer address 10 |
| 3 | Out | RA11 | Data buffer address 11 |
| 4 | Out | RA12 | Data buffer address 12 |
| 5 | Out | RA13 | Data buffer address 13 |
| 6 | Out | RA14 | Data buffer address 14 |
| 7 | Out | RA15 | Data buffer address 15 |
| 8 | | VSS | Ground |
| 9 | I/O | IO0 | Data buffer address 0 |
| 10 | I/O | IO1 | Data buffer address 1 |
| 11 | I/O | IO2 | Data buffer address 2 |
| 12 | I/O | IO3 | Data buffer address 3 |
| 13 | I/O | IO4 | Data buffer address 4 |
| 14 | I/O | IO5 | Data buffer address 5 |
| 15 | I/O | IO6 | Data buffer address 6 |
| 16 | I/O | IO7 | Data buffer address 7 |
| 17 | | VDD | Power supply |
| 18 | | VSS | Ground |
| 19 | I/O | HD0 | Host data 0 |
| 20 | I/O | HD1 | Host data 1 |
| 21 | I/O | HD2 | Host data 2 |
| 22 | I/O | HD3 | Host data 3 |
| 23 | | VSS | Ground |
| 24 | I/O | HD4 | Host data 4 |
| 25 | I/O | HD5 | Host data 5 |

Continued (IC640)

| Pin No. | I/O | Pin Name | Comment |
|---------|-------|----------|---|
| 26 | I/O | HD6 | Host data 6 |
| 27 | I/O | HD7 | Host data 7 |
| 28 | | VSS | Ground |
| 29 | | NC | No connection |
| 30 | Input | TEC | TEC |
| 31 | Input | MRC | MRC |
| 32 | Out | DIR | DIR |
| 33 | Out | TCK | TCK |
| 34 | Out | OTCF | OTCF |
| 35 | Out | OTCR | OTCR |
| 36 | Input | IOCTL | IOCTL |
| 37 | Input | ENABLE- | Chip selection from Host |
| 38 | Input | CMD- | Command/Data selection from Host |
| 39 | Input | RAMSL | DRAM/SRAM selection |
| 40 | | VSS | Ground |
| 41 | | VDD | Power supply |
| 42 | Input | HWR- | Write from Host |
| 43 | Input | HRD- | Read from Host |
| 44 | Out | WAIT- | Wait to host |
| 45 | Out | DTEN- | Data enable |
| 46 | Out | STEN- | Status enable |
| 47 | Out | EOP- | End of process |
| 48 | Out | STPH- | STPH |
| 49 | Out | MDACHG | Media change signal |
| 50 | Input | SELDQR | Data access mode selection with Host type |
| 51 | Input | RD- | Read from Microprocessor |
| 52 | Input | WR- | Write from Microprocessor |
| 53 | Input | CS- | Chip selection from Microprocessor |
| 54 | Input | RS | Register selection |
| 55 | | VDD | Power supply |
| 56 | | VSS | Ground |
| 57 | I/O | D0 | Microprocessor data 0 |
| 58 | I/O | D1 | Microprocessor data 1 |
| 59 | I/O | D2 | Microprocessor data 2 |
| 60 | I/O | D3 | Microprocessor data 3 |
| 61 | I/O | D4 | Microprocessor data 4 |
| 62 | I/O | D5 | Microprocessor data 5 |
| 63 | I/O | D6 | Microprocessor data 6 |
| 64 | I/O | D7 | Microprocessor data 7 |
| 65 | | VSS | Ground |
| 66 | Out | INT- | Interrupt to Microprocessor |
| 67 | Out | SWAIT- | Wait signal to SUB CPU |
| 68 | Input | TEST0 | Test pin |
| 69 | Input | TEST1 | Test pin |
| 70 | Input | TEST2 | Test pin |
| 71 | Input | TEST3 | Test pin |
| 72 | Out | EXCK | Sub code |
| 73 | Input | WFCK | Sub code |
| 74 | Input | SBSO | Sub code |
| 75 | Input | SCOR | Sub code |
| 76 | | VDD | Power supply |
| 77 | Input | SDATA | Serial data |
| 78 | Input | BCK | Serial data input terminal |
| 79 | Input | LRCK | 44.1kHz strobe signal |
| 80 | Input | C2PO | C2 Pointer |
| 81 | | VSS | Ground |
| 82 | Input | XTALCK | Crystal Oscillator Input |
| 83 | Out | XTAL | Crystal Oscillator Output |
| 84 | Out | MCK | XTALCK 1/2 Output |
| 85 | Input | RESET- | RESET |

Continued (IC600)

| Pin No. | I/O | Pin Name | Comment |
|---------|-----|----------|------------------------------|
| 86 | Out | RCS | RAM Chip selection |
| 87 | Out | RWE- | RAM Data Write enable signal |
| 88 | Out | ROE- | RAM Data Read enable signal |
| 89 | | VDD | Power supply |
| 90 | | VSS | Ground |
| 91 | Out | RA0 | Data buffer address 0 |
| 92 | Out | RA1 | Data buffer address 1 |
| 93 | Out | RA2 | Data buffer address 2 |
| 94 | Out | RA3 | Data buffer address 3 |
| 95 | Out | RA4 | Data buffer address 4 |
| 96 | Out | RA5 | Data buffer address 5 |
| 97 | Out | RA6 | Data buffer address 6 |
| 98 | Out | RA7 | Data buffer address 7 |
| 99 | | VSS | Ground |
| 100 | Out | RA8 | Data buffer address 8 |

IC660

1-chip Microprocessor (P/N: MN1882410FZA)

| Pin No. | I/O | Pin Name | Comment |
|---------|-------|----------|-------------------------------|
| 1 | Out | CA13 | ROM Address 13 |
| 2 | Out | CA12 | ROM Address 12 |
| 3 | Out | CA11 | ROM Address 11 |
| 4 | Out | CA10 | ROM Address 10 |
| 5 | Out | CA9 | ROM Address 9 |
| 6 | Out | CA8 | ROM Address 8 |
| 7 | Out | CA7 | ROM Address 7 |
| 8 | Out | CA6 | ROM Address 6 |
| 9 | Out | CA5 | ROM Address 5 |
| 10 | Out | CA4 | ROM Address 4 |
| 11 | Out | CA3 | ROM Address 3 |
| 12 | Out | CA2 | ROM Address 2 |
| 13 | Out | CA1 | ROM Address 1 |
| 14 | Out | CA0 | ROM Address 0 |
| 15 | Input | EXI | External bus selection |
| 16 | Input | RST- | Reset |
| 17 | Out | RE- | Read enable |
| 18 | Out | WE- | Write enable |
| 19 | | TERM- | No connection |
| 20 | | R/W- | No connection |
| 21 | | S3- | No connection |
| 22 | Out | S2- | Timing signal generation |
| 23 | Out | S1- | Timing signal generation |
| 24 | Out | S0- | ROM chip selection |
| 25 | Input | P26 | DIR (IC640 PIN-32) |
| 26 | Input | P25 | Sub-code block clock |
| 27 | Input | P24 | Interrupt request from IC640 |
| 28 | Input | P22 | Timing signal |
| 29 | Out | P21 | Traverse Unit control |
| 30 | Input | P20 | Complement flag |
| 31 | Out | OSC2 | Oscillator output |
| 32 | Input | OSC1 | Oscillator input |
| 33 | | VSS | Ground |
| 34 | Input | X1 | Oscillator input (Low speed) |
| 35 | Out | X0 | Oscillator output (Low speed) |
| 36 | Input | P17 | Door open/close |
| 37 | Input | P16 | Reset of pick-up location |
| 38 | | P15 | No connection |
| 39 | Input | P14 | DSP status signal |
| 40 | Input | P13 | Q code input |
| 41 | Input | P12 | Tracking servo control |
| 42 | Input | P11 | Focus servo control |
| 43 | Out | P10 | S.Motor control |

Continued (IC660)

| Pin No. | I/O | Pin Name | Comment |
|---------|-------|----------|--|
| 44 | Out | P33 | Traverse motor control |
| 45 | Out | P32 | Reset to IC700 |
| 46 | Out | P31 | Reset to stop the operation of the circuit where MASH circuit after. |
| 47 | Out | P30 | Command load |
| 48 | Out | P02 | Command clock |
| 49 | Input | P01 | Sense input |
| 50 | Out | P00 | Command data |
| 51 | | NC | No connection |
| 52 | | P97 | No connection |
| 53 | | P96 | No connection |
| 54 | | P95 | No connection |
| 55 | Out | P94 | Access LED control |
| 56 | | P93 | No connection |
| 57 | | P92 | No connection |
| 58 | Out | P91 | Clock for Q code |
| 59 | Out | P90 | Play control |
| 60 | | AVSS | Analog ground |
| 61 | | SH | No connection |
| 62 | | VREF- | Reference voltage for ADC |
| 63 | Input | AD7 | AD converter input 7 |
| 64 | Input | AD6 | AD converter input 6 |
| 65 | Input | AD5 | AD converter input 5 |
| 66 | Input | AD4 | AD converter input 4 |
| 67 | Input | AD3 | AD converter input 3 |
| 68 | Input | AD2 | AD converter input 2 |
| 69 | Input | AD1 | AD converter input 1 |
| 70 | Input | AD0 | AD converter input 0 |
| 71 | | VREF+ | Reference voltage for ADC |
| 72 | | AVDD | Analog power supply |
| 73 | | VDD | Power supply |
| 74 | | D7 | External data bus 7 |
| 75 | | D6 | External data bus 6 |
| 76 | | D5 | External data bus 5 |
| 77 | | D4 | External data bus 4 |
| 78 | | D3 | External data bus 3 |
| 79 | | D2 | External data bus 2 |
| 80 | | D1 | External data bus 1 |
| 81 | | D0 | External data bus 0 |
| 82 | | VSS | Ground |
| 83 | | A15 | External address bus 15 |
| 84 | | A14 | External address bus 14 |

IC700

Digital Servo Processor (P/N MN662720RB)

| Pin No. | I/O | Pin Name | Comment |
|---------|-------|----------|----------------------------|
| 1 | Out | BCLK | Bit clock output for SDATA |
| 2 | Out | LRCK | L/R selection |
| 3 | Out | SRDATA | Serial data |
| 4 | Input | DVDD1 | Digital power supply |
| 5 | Input | DVSS1 | Digital ground |
| 6 | Out | TX | Digital audio interface |
| 7 | Input | MCLK | Command clock |
| 8 | Input | MDATA | Command data |
| 9 | Input | MLD | Command load |
| 10 | Out | SENSE | Sense output |
| 11 | Out | FLOCK- | Focus servo control |
| 12 | Out | TLOCK- | Tracking servo control |
| 13 | Out | BLKCK | Sub code block clock |
| 14 | Input | SQCK | Clock for Q register |
| 15 | Out | SUBQ | Q code output |
| 16 | Input | DMUTE | Muting |

Continued (IC700)

| Pin No. | I/O | Pin Name | Comment |
|---------|---------|----------|--|
| 17 | Out | STAT | Status |
| 18 | Input | RST- | Reset |
| 19 | Out | SMCK | Clock |
| 20 | Out | PMCK | 88.2kHz clock |
| 21 | Out | TRV | Traverse compulsory drive |
| 22 | Out | TVD | Traverse drive |
| 23 | Tri-Out | PC | S.Motor On signal |
| 24 | Out | ECM | S.Motor drive (compulsory mode) |
| 25 | Out | ECS | S.Motor drive (on servo differential signal) |
| 26 | Out | KICK | Kick pulse |
| 27 | Out | TRD | Tracking drive control |
| 28 | Out | FOD | Focus drive control |
| 29 | Input | VREF | Reference voltage for DA |
| 30 | Out | FBAL | Focus balance adjustment control |
| 31 | Out | TBAL | Tracking balance adjustment control |
| 32 | Input | FE | Focus error input |
| 33 | Input | TE | Tracking error input |
| 34 | Input | RFENV | RF envelope input |
| 35 | Input | VDET | Detecting vibration |
| 36 | Input | OFT | Off track |
| 37 | Input | TRCRS | Track cross |
| 38 | Input | RFDET- | Detecting RF |
| 39 | Input | BDO | Drop out |
| 40 | Out | LDON | Laser ON |
| 41 | Out | TES | Tracking error shunt |
| 42 | Out | PLAY | Play |
| 43 | Out | WVEL | Status signal in double speed mode |
| 44 | Input | ARF | RF input |
| 45 | Input | IREF | Reference current |
| 46 | Input | DRF | Bias terminal for DSL |
| 47 | I/O | DSLFL | Loop filter terminal for DSL |
| 48 | I/O | PLLF | Loop filter terminal for PLL |
| 49 | I/O | VCOF | Loop filter terminal for VCO |
| 50 | Input | AVDD2 | Analog power supply |
| 51 | Input | AVSS2 | Analog ground |
| 52 | Out | EFM | EFM output |
| 53 | Out | PCK | PLL Clock |
| 54 | Out | PDO | Phase difference between EFM and PCK |
| 55 | Out | SUBC | Sub code serial data |
| 56 | Input | SBCK | Sub code serial clock |
| 57 | Input | VSS | Internal oscillator ground |
| 58 | Input | X1 | Crystal oscillator input |
| 59 | Out | X2 | Crystal oscillator output |
| 60 | Input | VDD | Internal oscillator power supply |
| 61 | Out | BYTCK | Byte clock |
| 62 | Out | CLDCK- | Sub code frame clock |
| 63 | Out | FCLK | Crystal frame clock |
| 64 | Out | HPFLAG | Complement flag |
| 65 | Out | FLAG | Flag output |
| 66 | Out | CLVS | Status signal of Phase sync of S. servo |
| 67 | Out | CRC | Sub code CRC |
| 68 | Out | DEMPH | Detecting de-emphasis |
| 69 | Out | RESY | Re sync signal of frame sync |
| 70 | Input | RST2 | Reset to stop the operation of the circuit where MASH circuit after. |
| 71 | Input | TEST- | Test pin |
| 72 | Input | AVDD1 | Analog power supply |
| 73 | Out | OUTL | L ch. output |
| 74 | Input | AVSS1 | Analog ground |

Continued (IC700)

| Pin No. | I/O | Pin Name | Comment |
|---------|-------|----------|---|
| 75 | Out | OUTR | R ch. output |
| 76 | Input | RSEL | Designation pole of RF |
| 77 | Input | CSEL | Designation crystal oscillator frequency |
| 78 | Input | PSEL | Test pin |
| 79 | Input | MSEL | SMCK terminal (switching terminal for output frequency) |
| 80 | Input | SSEL | SUQB terminal (switching terminal for output mode) |

IC720

Head Amplifier (P/N: AN8603NSB-E2)

| Pin No. | I/O | Pin Name | Comment |
|---------|-------|----------|--|
| 1 | Input | PD | Auto power control input |
| 2 | Out | LD | Auto power control output |
| 3 | Input | LDON | Auto power control On/Off |
| 4 | | CCRS | CROSS capacitor pin |
| 5 | | VCC | Power supply |
| 6 | Input | RF- | RF reverse input |
| 7 | Out | RFOUT | RF AMP output |
| 8 | Input | RFIN | AGC input |
| 9 | | CACG | Loop filter pin for AGC |
| 10 | Out | ARF | AGC output |
| 11 | | CENV | Capacitor pin for detecting RF |
| 12 | | CEA | Capacitor pin for HPF Amp. |
| 13 | | CSBDO | Capacitor pin for detecting envelope of black portion in RF |
| 14 | Out | BDO | BDO output |
| 15 | | CSBRT | Capacitor pin for detecting envelope of blight portion in RF |
| 16 | Out | OFTTR | OFTTR output |
| 17 | Out | MRFDE- | REDET output |
| 18 | | GND | Ground |
| 19 | Out | ENV | 3TENV output |
| 20 | Out | VREF | VREF output |
| 21 | | LDOFF | APC Off control |
| 22 | Out | VDET | Detecting vibration output |
| 23 | Input | TEBPF | Detecting vibration input |
| 24 | Out | CROSS | Track cross |
| 25 | Out | TEOUT | Tracking error AMP output |
| 26 | Input | TE- | Tracking error reverse input |
| 27 | Out | FEOUT | Focus error AMP output |
| 28 | Input | FE- | Focus error reverse input |
| 29 | Input | FBAL | Focus balance control |
| 30 | Input | TBAL | Tracking balance control |
| 31 | | PDFR | Converting resistor of IV AMP control |
| 32 | | PDER | Converting resistor of IV AMP control |
| 33 | Input | PDE | IV AMP E input |
| 34 | Input | PDF | IV AMP F input |
| 35 | Input | PDBD | IV AMP BD input |
| 36 | Input | PDAC | IV AMP AC input |

IC760

Motor Driver (P/N: AN8388SR-E2)

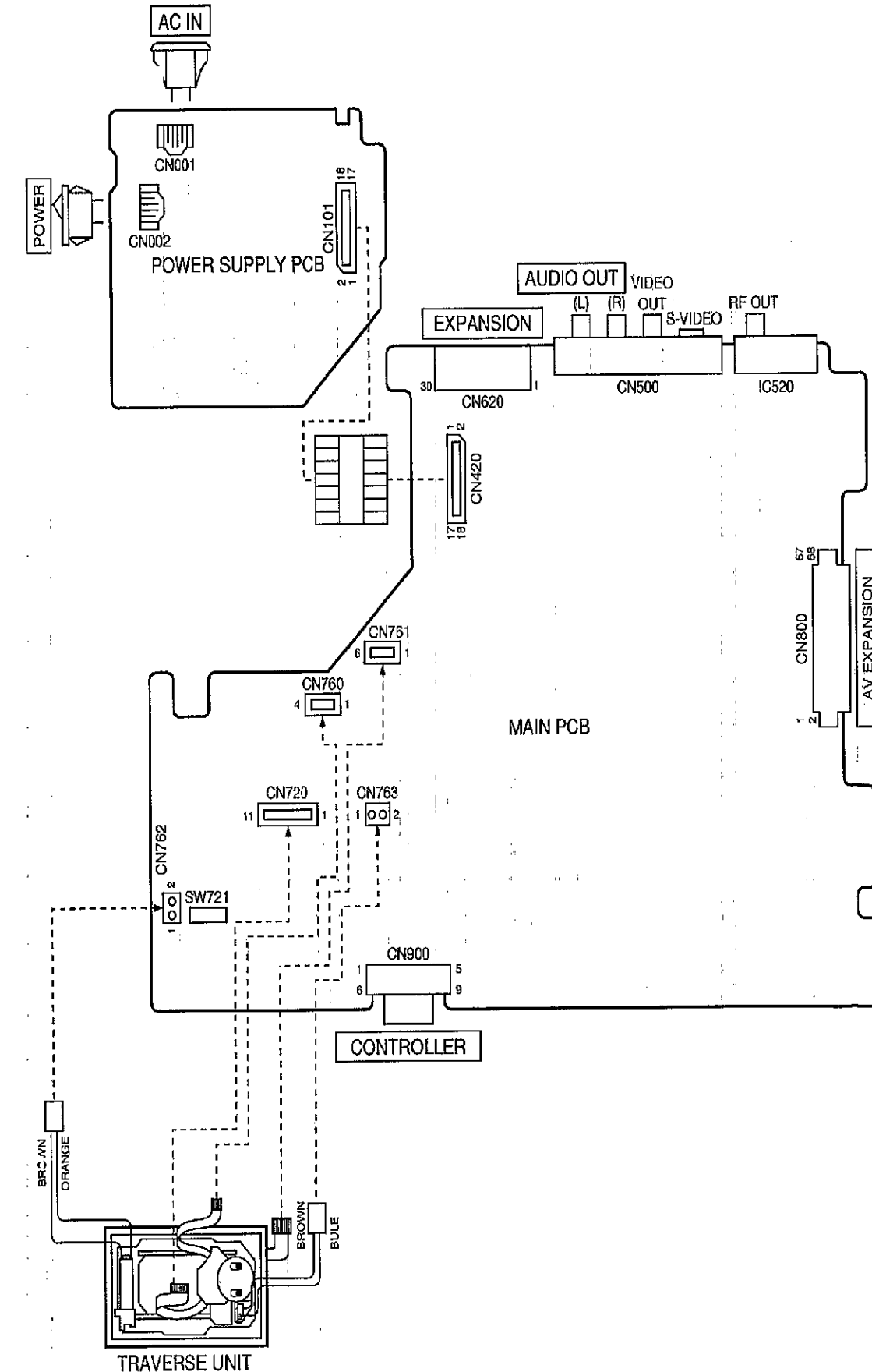
| Pin No. | I/O | Pin Name | Comment |
|---------|-----|----------|--|
| 1 | | PVCC1 | Power supply for driver 1 and driver 2 |
| 2 | | PGND1 | Ground for driver 1 and driver 2 |
| 3 | Out | M1- | Driver 1 reverse output |
| 4 | Out | M1+ | Driver 1 output |
| 5 | Out | M2- | Driver 2 reverse output |
| 6 | Out | M2+ | Driver 2 output |

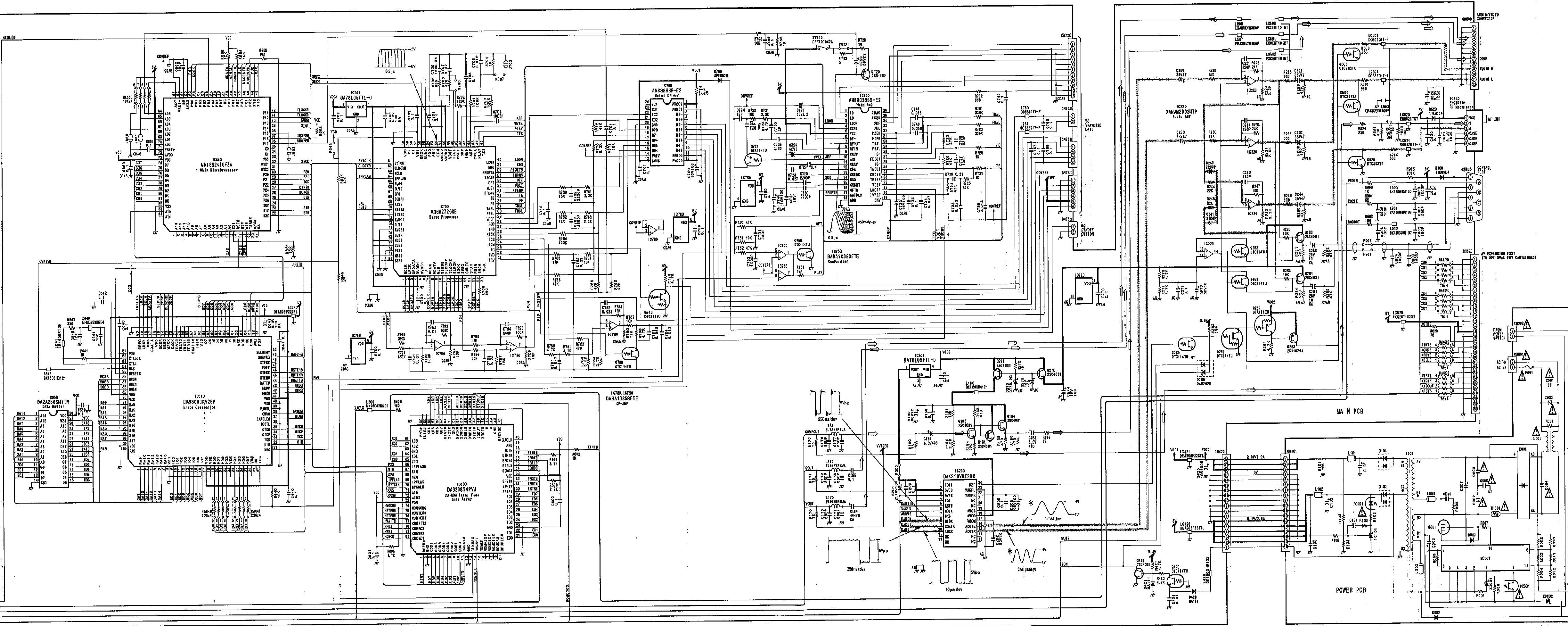
Continued (IC760)

| Pin No. | I/O | Pin Name | Comment |
|---------|-------|----------|---|
| 7 | Out | M3- | Driver 3 reverse output |
| 8 | Out | M3+ | Driver 3 output |
| 9 | Out | M4- | Driver 4 reverse output |
| 10 | Out | M4+ | Driver 4 output |
| 11 | | PGND2 | Power supply for driver 3 and driver 4 |
| 12 | | PVCC2 | Ground for driver 3 and driver 4 |
| 13 | | SVCC | Power supply for driver control circuit |
| 14 | Input | VREF | Reference voltage |
| 15 | Input | MO4 | Driver 4 error input |
| 16 | Input | MO3 | Driver 3 error input |
| 17 | Input | OP+ | OP-AMP reverse input |
| 18 | Input | OP- | OP-AMP input |
| 19 | Out | OPO | OP-AMP output |
| 20 | | GND | Ground |
| 21 | Input | MO2 | Driver 2 error input |
| 22 | Input | PC2 | Driver 2 output switch |
| 23 | Input | MO1 | Driver 1 error input |
| 24 | Input | PC1 | Driver 1 output switch |

3. Diagrams and Replacement Parts List

3-1. Wiring Connection Diagram

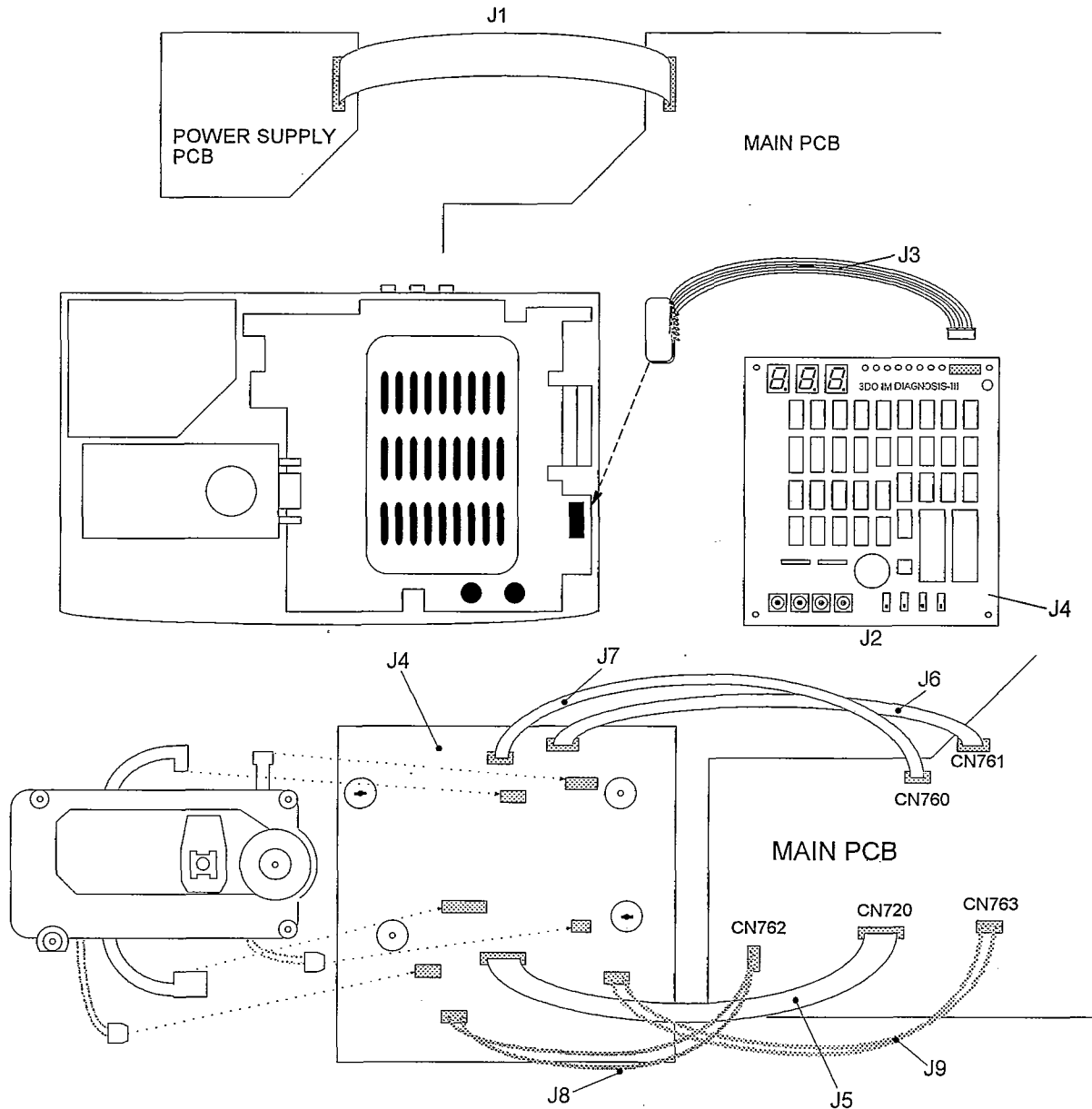




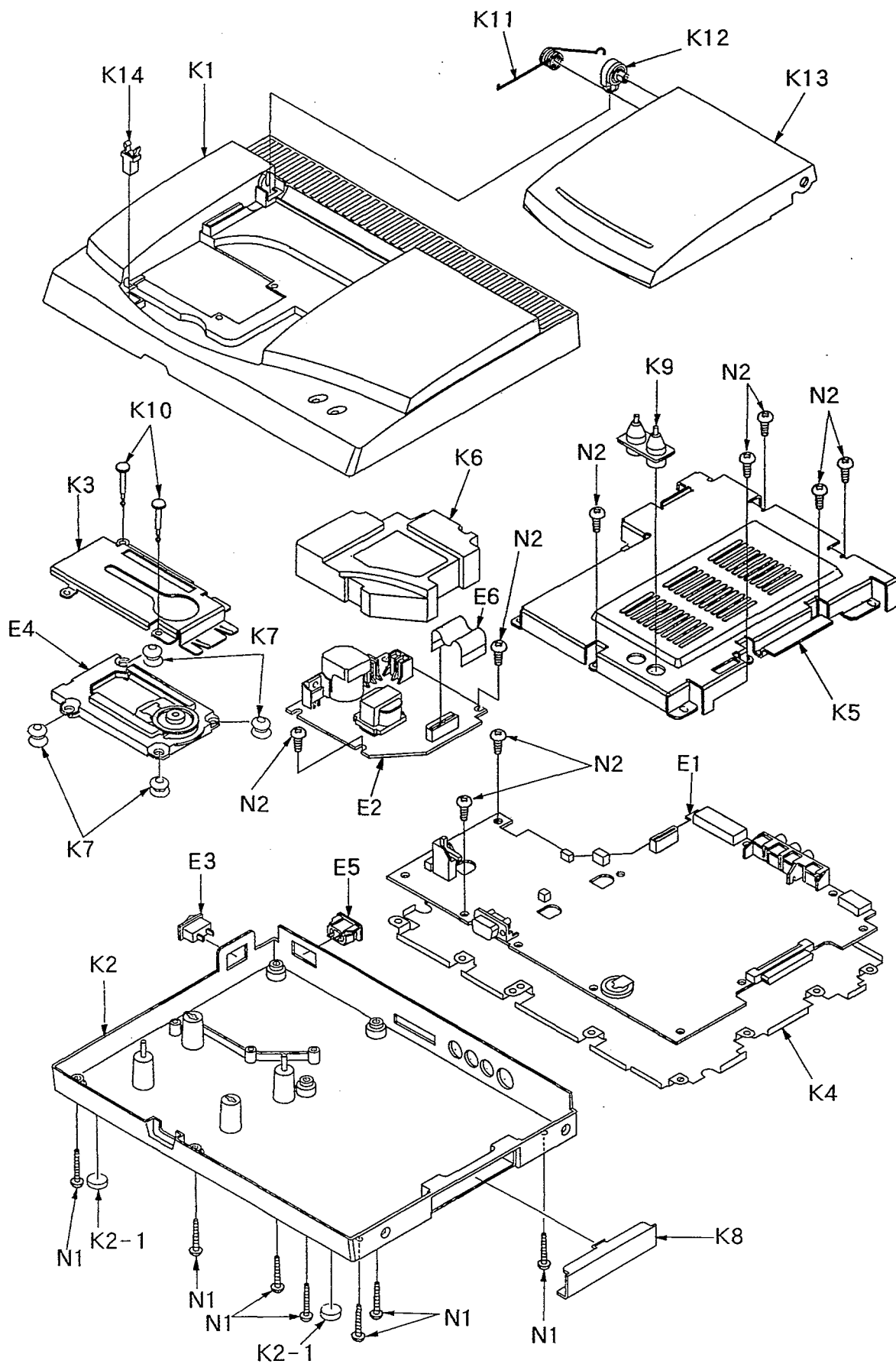
3-5. Service Tools

The following service tools are useful for servicing.

| REF. No. | PART No. | DESCRIPTION | Q'TY |
|----------|-------------|--|------|
| J1 | DFWV95C0103 | EXTENSION FLAT CABLE FOR POWER SUPPLY | 1 |
| J2 | DFWV95C0104 | FZ-10 CHECKER WITH MANUAL | 1 |
| J3 | DFWV95C0105 | CABLE FOR FZ-10 CHECKER Cable with the device that connects the cable with FZ-10. | 1 |
| J4 | DFWV95C0106 | TRAVERSE PLATFORM WITH MANUAL In order to check circuit under the traverse, you can place it on the platform. | 1 |
| J5 | DFWV95C0107 | FLAT CABLE (11 PIN) | 1 |
| J6 | DFWV95C0108 | FLAT CABLE (6 PIN) | 1 |
| J7 | DFWV95C0109 | FLAT CABLE (4 PIN) | 1 |
| J8 | DFWV95C0110 | CABLE | 1 |
| J9 | DFWV95C0111 | CABLE | 1 |



3-6. Exploded Views and Replacement Parts List



3-7. Replacement Parts List (Mechanical, Accessories Packing and Electrical)

Note: Important safety notice.
Components identified by \triangle mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

| REF. No. | PART No. | DESCRIPTION | QTY |
|--------------------------|--------------------------|-----------------------------|-----|
| Main Block Units | | | |
| E 1 | DL3U10714GAA | Ass'y MAIN LOGIC PCB RTL | 1 |
| E 2 | \triangle ETXMM002E2B | PC BOARD, POWER | 1 |
| E 3 | \triangle DFST1A10YBH | SWITCH | 1 |
| E 4 | LMAE0101 | Ass'y TRAVERSE BASE | 1 |
| E 5 | \triangle DFJA2Z03ZB | JACK, AC INLET | 1 |
| E 6 | DFJE18A050AV | FLAT CABLE(18-Pin) | 1 |
| Mechanical Parts | | | |
| K 1 | DFWV80A0178 | TOP CABINET | 1 |
| K 2 | \triangle DFWV80C0343 | BOTTOM CABINET | 1 |
| K 2-1 | DFHG337ZA | FOOT | 2 |
| K 3 | DFMD9038ZA | COVER, TRAVERSE | 1 |
| K 4 | DFMC0342ZA | SHIELD PLATE (LOWER) | 1 |
| K 5 | DFMC0343ZA | SHIELD PLATE (UPPER) | 1 |
| K 6 | DFMX0364ZA | SHIELD PLATE (POWER SOURCE) | 1 |
| K 7 | DFHG413ZA | INSULATOR | 4 |
| K 8 | DFKE0299ZA-0 | LID, FMV CONNECTOR | 1 |
| K 9 | DFGL0040ZA | LIGHT LEADING PANEL | 1 |
| K 10 | DFHR5330ZB | PIN, TRAVERS | 2 |
| K 11 | DFUN0020ZA | SPRING | 1 |
| K 12 | DFBH3011ZA | OIL DAMPER | 1 |
| K 13 | DFGP0161ZA-0 | PANEL, CD | 1 |
| K 14 | DFBM0002ZA | LATCH, DC | 1 |
| N 1 | XTB3+16GFZ | SCREW | 7 |
| N 2 | DFHE5036ZA | SCREW | 9 |
| Accessories | | | |
| A 1 | DFJL0009ZA-0 | CONTROLLER | 1 |
| A 2 | DFSE9005ZA | RF CABLE | 1 |
| A 3 | \triangle DFJA0042ZAKK | AC CORD | 1 |
| A 4 | DFJP014ZA | AV CABLE | 1 |
| A 5 | DFQS1014ZA | CUSTOM REGISTRATION CARD | 1 |
| A 6 | DFQS1015ZA | 3DO REGISTRATION CARD | 1 |
| A 7 | DFQS3024ZA | MANUAL, OPERATING | 1 |
| Packing Materials | | | |
| P 1 | DFPK0761ZA | PACKING CASE | 1 |
| P 2 | DFPP0095ZA | BAG, UNIT PROTECTION | 1 |
| P 3 | DFPN0578ZA | CUSHION (LEFT) | 1 |
| P 4 | DFPN0579ZA | CUSHION (RIGHT) | 1 |

| REF. No. | PART No. | DESCRIPTION | Q'TY |
|-----------------------|--------------|--|------|
| Main Logic PCB | | | |
| BT 400 | △ CR2032/1GV | LITHIUM BATTERY, 3V | 1 |
| C 100-103 | ECUV1C104ZFV | CAPACITOR, CERAMIC, CHIP, 16 V, 0.1 μ F | 4 |
| C 104 | ECA1CM101B | CAPACITOR, ELECTROLYTIC, 16 V, 100 μ F | 1 |
| C 120-127 | ECUV1C104ZFV | CAPACITOR, CERAMIC, CHIP, 16 V, 0.1 μ F | 8 |
| C 128 | ECA1EFQ221B | CAPACITOR, ELECTROLYTIC, 25 V, 220 μ F | 1 |
| C 130, 131 | ECUV1H100DCV | CAPACITOR, CERAMIC, CHIP, 50 V, 10 pF, \pm 0.5pF | 2 |
| C 132 | ECUV1C104ZFV | CAPACITOR, CERAMIC, CHIP, 16 V, 0.1 μ F | 1 |
| C 140 | ECUV1C104ZFV | CAPACITOR, CERAMIC, CHIP, 16 V, 0.1 μ F | 1 |
| C 142 | ECEA0JKA101B | CAPACITOR, ELECTROLYTIC, 6.3 V, 100 μ F | 1 |
| C 143, 144 | ECUV1C104ZFV | CAPACITOR, CERAMIC, CHIP, 16 V, 0.1 μ F | 2 |
| C 150 | ECUV1C104ZFV | CAPACITOR, CERAMIC, CHIP, 16 V, 0.1 μ F | 1 |
| C 154 | ECUV1C104ZFV | CAPACITOR, CERAMIC, CHIP, 16 V, 0.1 μ F | 1 |
| C 160 | ECUV1C104ZFV | CAPACITOR, CERAMIC, CHIP, 16 V, 0.1 μ F | 1 |
| C 161 | ECA1AM331B | CAPACITOR, ELECTROLYTIC, 10 V, 330 μ F | 1 |
| C 162-165 | ECUV1C104ZFV | CAPACITOR, CERAMIC, CHIP, 16 V, 0.1 μ F | 4 |
| C 170, 171 | ECUV1H561JCV | CAPACITOR, CERAMIC, CHIP, 50 V, 560 pF, \pm 5% | 2 |
| C 173, 174 | ECUV1H561JCV | CAPACITOR, CERAMIC, CHIP, 50 V, 560 pF, \pm 5% | 2 |
| C 176, 177 | ECUV1H561JCV | CAPACITOR, CERAMIC, CHIP, 50 V, 560 pF, \pm 5% | 2 |
| C 180 | ECUV1C104ZFV | CAPACITOR, CERAMIC, CHIP, 16 V, 0.1 μ F | 1 |
| C 181 | ECA0JM471B | CAPACITOR, ELECTROLYTIC, 6.3 V, 470 μ F | 1 |
| C 182 | ECA1HM220B | CAPACITOR, ELECTROLYTIC, 50 V, 22 μ F | 1 |
| C 183 | ECA0JM471B | CAPACITOR, ELECTROLYTIC, 6.3 V, 470 μ F | 1 |
| C 184 | ECEA0GKA471Q | CAPACITOR, ELECTROLYTIC, 4 V, 470 μ F | 1 |
| C 185 | ECUV1C104ZFV | CAPACITOR, CERAMIC, CHIP, 16 V, 0.1 μ F | 1 |
| C 200 | ECUV1C104ZFV | CAPACITOR, CERAMIC, CHIP, 16 V, 0.1 μ F | 1 |
| C 201 | ECA1CM101B | CAPACITOR, ELECTROLYTIC, 16 V, 100 μ F | 1 |
| C 202 | ECA1HM100B | CAPACITOR, ELECTROLYTIC, 50 V, 1 μ F | 1 |
| C 203 | ECA1CM101B | CAPACITOR, ELECTROLYTIC, 16 V, 100 μ F | 1 |
| C 205 | ECUV1C104ZFV | CAPACITOR, CERAMIC, CHIP, 16 V, 0.1 μ F | 1 |
| C 220 | ECA1VM470B | CAPACITOR, ELECTROLYTIC, 35 V, 47 μ F | 1 |
| C 221 | ECUV1H121JCV | CAPACITOR, CERAMIC, CHIP, 50 V, 120 pF, \pm 10% | 1 |
| C 223 | ECA1VM470B | CAPACITOR, ELECTROLYTIC, 35 V, 47 μ F | 1 |
| C 230 | ECA1VM470B | CAPACITOR, ELECTROLYTIC, 35 V, 47 μ F | 1 |
| C 231 | ECUV1H121JCV | CAPACITOR, CERAMIC, CHIP, 50 V, 120 pF, \pm 10% | 1 |
| C 233 | ECA1VM470B | CAPACITOR, ELECTROLYTIC, 35 V, 47 μ F | 1 |
| C 240, 241 | ECUV1H222KBV | CAPACITOR, CERAMIC, CHIP, 50 V, 2200 pF, \pm 10% | 2 |
| C 242 | ECUV1H151KCV | CAPACITOR, CERAMIC, CHIP, 50 V, 150 pF, \pm 10% | 1 |
| C 244 | ECA1VM470B | CAPACITOR, ELECTROLYTIC, 35 V, 47 μ F | 1 |
| C 270, 271 | ECUV1C104ZFV | CAPACITOR, CERAMIC, CHIP, 16 V, 0.1 μ F | 2 |
| C 272 | ECA1HM100B | CAPACITOR, ELECTROLYTIC, 50 V, 1 μ F | 1 |
| C 273 | ECA1AM471B | CAPACITOR, ELECTROLYTIC, 10 V, 330 μ F | 1 |
| C 274 | ECA1CM101B | CAPACITOR, ELECTROLYTIC, 16 V, 100 μ F | 1 |
| C 275 | ECUV1C104ZFV | CAPACITOR, CERAMIC, CHIP, 16 V, 0.1 μ F | 1 |
| C 280, 281 | ECEA1EKA100B | CAPACITOR, ELECTROLYTIC, 25 V, 10 μ F | 2 |
| C 300-303 | ECUV1C104ZFV | CAPACITOR, CERAMIC, CHIP, 16 V, 0.1 μ F | 4 |
| C 304 | ECA1CM101B | CAPACITOR, ELECTROLYTIC, 16 V, 100 μ F | 1 |
| C 310-313 | ECUV1C104ZFV | CAPACITOR, CERAMIC, CHIP, 16 V, 0.1 μ F | 4 |
| C 321 | ECUV1C104ZFV | CAPACITOR, CERAMIC, CHIP, 16 V, 0.1 μ F | 1 |

| REF. No. | PART No. | DESCRIPTION | Q'TY |
|------------|--------------|--|------|
| C 323 | ECUV1C104ZFV | CAPACITOR, CERAMIC, CHIP, 16 V, 0.1 μ F | 1 |
| C 331 | ECUV1C104ZFV | CAPACITOR, CERAMIC, CHIP, 16 V, 0.1 μ F | 1 |
| C 333 | ECUV1C104ZFV | CAPACITOR, CERAMIC, CHIP, 16 V, 0.1 μ F | 1 |
| C 340 | ECUV1C104ZFV | CAPACITOR, CERAMIC, CHIP, 16 V, 0.1 μ F | 1 |
| C 350, 351 | ECUV1C104ZFV | CAPACITOR, CERAMIC, CHIP, 16 V, 0.1 μ F | 2 |
| C 400 | ECUV1C104ZFV | CAPACITOR, CERAMIC, CHIP, 16 V, 0.1 μ F | 1 |
| C 401 | ECA1VM470B | CAPACITOR, ELECTROLYTIC, 35 V, 47 μ F | 1 |
| C 402 | DCUA1C105ZFY | CAPACITOR, CERAMIC, CHIP, 16 V, 1 μ F | 1 |
| C 420 | ECA1AM102B | CAPACITOR, ELECTROLYTIC, 10 V, 1000 μ F | 1 |
| C 421 | DCUG1E104ZFR | CAPACITOR, CERAMIC, CHIP, 25 V, 0.1 μ F | 1 |
| C 520 | ECUV1C104ZFV | CAPACITOR, CERAMIC, CHIP, 16 V, 0.1 μ F | 1 |
| C 521 | ECA1AM102B | CAPACITOR, ELECTROLYTIC, 10 V, 1000 μ F | 1 |
| C 522 | ECA1CM101B | CAPACITOR, ELECTROLYTIC, 16 V, 100 μ F | 1 |
| C 523 | ECA1AM102B | CAPACITOR, ELECTROLYTIC, 10 V, 1000 μ F | 1 |
| C 600, 601 | ECUV1C104ZFV | CAPACITOR, CERAMIC, CHIP, 16 V, 0.1 μ F | 2 |
| C 640-643 | ECUV1C104ZFV | CAPACITOR, CERAMIC, CHIP, 16 V, 0.1 μ F | 4 |
| C 644, 645 | ECUV1H100DCV | CAPACITOR, CERAMIC, CHIP, 50 V, 10 pF, \pm 0.5pF | 2 |
| C 647 | ECEA0JKA101B | CAPACITOR, ELECTROLYTIC, 6.3 V, 100 μ F | 1 |
| C 650 | ECUV1C104ZFV | CAPACITOR, CERAMIC, CHIP, 16 V, 0.1 μ F | 1 |
| C 660, 661 | ECUV1C104ZFV | CAPACITOR, CERAMIC, CHIP, 16 V, 0.1 μ F | 2 |
| C 662 | ECUV1H151KCV | CAPACITOR, CERAMIC, CHIP, 50 V, 150 pF, \pm 10% | 1 |
| C 700-702 | ECUV1C104ZFV | CAPACITOR, CERAMIC, CHIP, 16 V, 0.1 μ F | 3 |
| C 703 | ECEA0JKA101B | CAPACITOR, ELECTROLYTIC, 6.3 V, 100 μ F | 1 |
| C 704 | ECUV1H102KBV | CAPACITOR, CERAMIC, CHIP, 50 V, 1000 pF, \pm 10% | 1 |
| C 705 | ECUV1C104ZFV | CAPACITOR, CERAMIC, CHIP, 16 V, 0.1 μ F | 1 |
| C 706 | ECUV1H123KBV | CAPACITOR, CERAMIC, CHIP, 50 V, 12000 pF, \pm 10% | 1 |
| C 707 | DCUC1E224KBY | CAPACITOR, CERAMIC, CHIP, 25 V, 220000 pF, \pm 10% | 1 |
| C 708 | DCUC1C334KBY | CAPACITOR, CERAMIC, CHIP, 16 V, 330000 pF, \pm 10% | 1 |
| C 709, 710 | ECUV1C104ZFV | CAPACITOR, CERAMIC, CHIP, 16 V, 0.1 μ F | 2 |
| C 720 | ECA1HM220B | CAPACITOR, ELECTROLYTIC, 50 V, 22 μ F | 1 |
| C 721 | ECA1HM2R2B | CAPACITOR, ELECTROLYTIC, 50 V, 2.2 μ F | 1 |
| C 722 | ECUV1H020CCV | CAPACITOR, CERAMIC, CHIP, 50 V, 2 pF, \pm 0.25pF | 1 |
| C 723 | ECUV1H390JCV | CAPACITOR, CERAMIC, CHIP, 50 V, 39 pF, \pm 5% | 1 |
| C 724 | ECUV1H120JCV | CAPACITOR, CERAMIC, CHIP, 50 V, 12 pF, \pm 10% | 1 |
| C 725 | DCUA1C224KBY | CAPACITOR, CERAMIC, CHIP, 25 V, 22000 pF, \pm 10% | 1 |
| C 726 | ECA1HM010B | CAPACITOR, ELECTROLYTIC, 50 V, 1 μ F | 1 |
| C 727 | ECUV1C104ZFV | CAPACITOR, CERAMIC, CHIP, 16 V, 0.1 μ F | 1 |
| C 728 | ECUV1E273KBX | CAPACITOR, CERAMIC, CHIP, 25 V, 27000 pF, \pm 10% | 1 |
| C 729, 730 | ECUV1H222KBV | CAPACITOR, CERAMIC, CHIP, 50 V, 2200 pF, \pm 10% | 2 |
| C 731 | DCUA1C105ZFY | CAPACITOR, CERAMIC, CHIP, 16 V, 1 μ F | 1 |
| C 732 | ECA1CM101B | CAPACITOR, ELECTROLYTIC, 16 V, 100 μ F | 1 |
| C 733 | ECUV1C104ZFV | CAPACITOR, CERAMIC, CHIP, 16 V, 0.1 μ F | 1 |
| C 734 | ECUV1E273KBX | CAPACITOR, CERAMIC, CHIP, 25 V, 27000 pF, \pm 10% | 1 |
| C 735 | ECUV1E223KBX | CAPACITOR, CERAMIC, CHIP, 25 V, 22000 pF, \pm 10% | 1 |
| C 736 | DCUA1C224KBY | CAPACITOR, CERAMIC, CHIP, 25 V, 22000 pF, \pm 10% | 1 |
| C 737 | ECUV1H101KCV | CAPACITOR, CERAMIC, CHIP, 50 V, 100 pF, \pm 10% | 1 |
| C 738 | ECUV1H153KBV | CAPACITOR, CERAMIC, CHIP, 50 V, 15000 pF, \pm 10% | 1 |
| C 739 | ECUV1H331KCV | CAPACITOR, CERAMIC, CHIP, 50 V, 330 pF, \pm 10% | 1 |
| C 740 | DCUA1E683KBY | CAPACITOR, CERAMIC, CHIP, 25 V, 68000 pF, \pm 10% | 1 |
| C 741 | DCUA1E683KBY | CAPACITOR, CERAMIC, CHIP, 25 V, 68000 pF, \pm 10% | 1 |

| REF. No. | PART No. | DESCRIPTION | Q'TY |
|------------|--------------|---|------|
| C 742 | ECUV1C104ZFV | CAPACITOR, CERAMIC, CHIP, 16 V, 0.1 μ F | 1 |
| C 743 | ECA1CM101B | CAPACITOR, ELECTROLYTIC, 16 V, 100 μ F | 1 |
| C 745 | ECUV1C104ZFV | CAPACITOR, CERAMIC, CHIP, 16 V, 0.1 μ F | 1 |
| C 750 | ECUV1C104ZFV | CAPACITOR, CERAMIC, CHIP, 16 V, 0.1 μ F | 1 |
| C 751 | ECUV1H331KCV | CAPACITOR, CERAMIC, CHIP, 50 V, 330 pF, \pm 10% | 1 |
| C 752 | ECUV1H102KBV | CAPACITOR, CERAMIC, CHIP, 50 V, 1000 pF, \pm 10% | 1 |
| C 760 | ECA1CM101B | CAPACITOR, ELECTROLYTIC, 16 V, 100 μ F | 1 |
| C 761 | ECUV1C104ZFV | CAPACITOR, CERAMIC, CHIP, 16 V, 0.1 μ F | 1 |
| C 762, 763 | ECUV1H222KBV | CAPACITOR, CERAMIC, CHIP, 50 V, 2200 pF, \pm 10% | 2 |
| C 764 | ECUV1C104ZFV | CAPACITOR, CERAMIC, CHIP, 16 V, 0.1 μ F | 1 |
| C 765 | DCUA1C224KBY | CAPACITOR, CERAMIC, CHIP, 25 V, 22000 pF, \pm 10% | 1 |
| C 766-768 | ECUV1C104ZFV | CAPACITOR, CERAMIC, CHIP, 16 V, 0.1 μ F | 3 |
| C 780 | ECUV1C104ZFV | CAPACITOR, CERAMIC, CHIP, 16 V, 0.1 μ F | 1 |
| C 781 | ECUV1E473KBX | CAPACITOR, CERAMIC, CHIP, 25 V, 47000 pF, \pm 10% | 1 |
| C 782 | ECUV1E333KBX | CAPACITOR, CERAMIC, CHIP, 25 V, 33000 pF, \pm 10% | 1 |
| C 783 | DCUA1E683KBY | CAPACITOR, CERAMIC, CHIP, 25 V, 68000 pF, \pm 10% | 1 |
| C 784 | ECUV1E333KBX | CAPACITOR, CERAMIC, CHIP, 25 V, 33000 pF, \pm 10% | 1 |
| C 790 | ECUV1C104ZFV | CAPACITOR, CERAMIC, CHIP, 16 V, 0.1 μ F | 1 |
| C 791, 792 | ECUV1H103KBV | CAPACITOR, CERAMIC, CHIP, 50 V, 10000 pF, \pm 10% | 2 |
| C 793 | DCUA1C224KBY | CAPACITOR, CERAMIC, CHIP, 25 V, 22000 pF, \pm 10% | 1 |
| C 794 | ECUV1H561KBV | CAPACITOR, CERAMIC, CHIP, 50 V, 560 pF, \pm 5% | 1 |
| C 800 | ECUV1C104ZFV | CAPACITOR, CERAMIC, CHIP, 16 V, 0.1 μ F | 1 |
| C 900 | ECUV1H102KBV | CAPACITOR, CERAMIC, CHIP, 50 V, 1000 pF, \pm 10% | 1 |
| C 901, 902 | ECUV1H561KBV | CAPACITOR, CERAMIC, CHIP, 50 V, 560 pF, \pm 5% | 2 |
| C 903, 904 | ECUV1H102KBV | CAPACITOR, CERAMIC, CHIP, 50 V, 1000 pF, \pm 10% | 2 |
| C 905, 906 | ECUV1H101KCV | CAPACITOR, CERAMIC, CHIP, 50 V, 100 pF, \pm 10% | 2 |
| C 907 | ECUV1C104ZFV | CAPACITOR, CERAMIC, CHIP, 16 V, 0.1 μ F | 1 |
| CN 420 | DFJS18N12YAJ | CONNECTOR, 18-Pin, PC BOARD, POWER | 1 |
| CN 500 | DFJF0A003ZAH | CONNECTOR, 12-Pin AUDIO/VIDEO | 1 |
| CN 620 | DFJP30C95ZAH | CONNECTOR, 30-Pin, EXPANSION PORT | 1 |
| CN 720 | DFJS11N39WA | CONNECTOR, 11-Pin, CD-ROM DRIVE | 1 |
| CN 760 | DFJS090ZA004 | CONNECTOR, 4-Pin, CD-ROM DRIVE | 1 |
| CN 761 | DFJS090ZA006 | CONNECTOR, 6-Pin, CD-ROM DRIVE | 1 |
| CN 762 | DFJP02C88ZAJ | CONNECTOR, 2-Pin, CD-ROM DRIVE | 1 |
| CN 763 | DFJP02C30WAB | CONNECTOR, 2-Pin, CD-ROM DRIVE | 1 |
| CN 800 | DFJS68D61YBF | CONNECTOR, 68-Pin, AV EXPANSION PORT | 1 |
| CN 900 | DFJP09E22ZAM | CONNECTOR, 9-Pin, CONTROLLER PORT | 1 |
| D 160, 161 | DAM4041MTAJN | DIODE | 2 |
| D 260 | DEDAP202UT7 | DIODE | 1 |
| D 420, 421 | MA111TX | DIODE | 2 |
| D 520 | DED11EQS04T5 | DIODE | 1 |
| D 760 | DEDSFPM52V | DIODE | 1 |
| D 900 | DED11EQS04T5 | DIODE | 1 |
| IC 100 | DA86C06020XV | IC, CPU | 1 |
| IC 120 | MN7B003ABK | IC, SYSTEM IC, ANVIL | 1 |
| IC 140 | DA33269D33-Q | IC, REGULATOR | 1 |
| IC 141 | DAHCT7007FT0 | IC, LOGIC | 1 |
| IC 200 | DA4310VME2XQ | IC, AUDIO DAC | 1 |
| IC 201 | DA78L05FTL-0 | IC, REGULATOR | 1 |

| REF. No. | PART No. | DESCRIPTION | Q'TY |
|-------------|--------------|----------------------|------|
| IC 220 | DANJM2902MTP | IC, OP AMP | 1 |
| IC 300, 301 | DA8182517JTJ | IC, 2M VRAM | 2 |
| IC 310, 311 | DA4800AJ8T0 | IC, 4M DRAM | 2 |
| IC 320, 321 | DA8182517JTJ | IC, 2M VRAM | 2 |
| IC 330, 331 | DA4800AJ8T0 | IC, 4M DRAM | 2 |
| IC 340 | DA5388Y9T-S | IC, 8M MASK ROM | 1 |
| IC 350 | DA2A256SM7TW | IC, SRAM | 1 |
| IC 351 | DAHC132AFT0 | IC, LOGIC | 1 |
| IC 400 | DABA6162FT2E | IC, RESET | 1 |
| IC 520 | ENC37454 | IC, RF MODULATOR | 1 |
| IC 600 | DA623854PVJ | IC, CD-ROM I/F | 1 |
| IC 640 | DA98000KV26V | IC, ECC | 1 |
| IC 650 | DA2A256SM7TW | IC, SRAM | 1 |
| IC 660 | MN1882410FZA | IC, CPU CD-ROM DRIVE | 1 |
| IC 700 | MN662720RB | IC, CD DSP | 1 |
| IC 701 | DA78L05FTL-0 | IC, REGULATOR | 1 |
| IC 720 | AN8803NSB-E2 | IC, HEAD AMP | 1 |
| IC 750 | DABA10393FTE | IC, LENEAR | 1 |
| IC 760 | AN8388SR-E2 | IC, MOTOR DRIVER | 1 |
| IC 780 | DABA10358FTE | IC, OP AMP | 1 |
| IC 790 | DABA10358FTE | IC, OP AMP | 1 |
| L 122, 123 | DDAZSR10KT-Y | FERRITE BEAD | 2 |
| L 150, 151 | DDB5Z021D-Y | FERRITE BEAD | 2 |
| L 154, 155 | DDB5Z021D-Y | FERRITE BEAD | 2 |
| L 170 | ELESN3R3JA | INDUCTOR 3.3uH | 1 |
| L 172 | ELESN3R3JA | INDUCTOR 3.3uH | 1 |
| L 174 | ELESN3R3JA | INDUCTOR 3.3uH | 1 |
| L 180 | DDB5Z021A-Y | FERRITE BEAD | 1 |
| L 420 | DDB5Z021E-Y | FERRITE BEAD | 1 |
| L 503 | ERJ3GEY0R00V | CHIP JUMPER | 1 |
| L 506, 507 | ERJ3GEY0R00V | CHIP JUMPER | 2 |
| L 600 | DDB5Z021D-Y | FERRITE BEAD | 1 |
| L 641 | DDAZSR10KT-Y | FERRITE BEAD | 1 |
| L 643 | DDB5Z021A-Y | FERRITE BEAD | 1 |
| L 760, 761 | DDB6Z017-F | FERRITE BEAD | 2 |
| L 900-902 | DDB5Z021E-Y | FERRITE BEAD | 3 |
| LC 100 | DEA306F223TL | FILTER | 1 |
| LC 140 | DEA306F223TL | FILTER | 1 |
| LC 160 | DEA306F223TL | FILTER | 1 |
| LC 300 | DEA306F223TL | FILTER | 1 |
| LC 420 | DEA306F223TL | FILTER | 1 |
| LC 421 | DEA306F223TL | FILTER | 1 |
| LC 500-502 | EXCEMT101BT | FILTER | 3 |
| LC 503, 504 | DDB6Z017-F | FERRITE BEAD | 2 |
| LC 520 | ERDS2TY0T | JUMPER | 1 |
| LC 521 | DDB6Z017-F | FERRITE BEAD | 1 |
| LC 629 | EXCEMT103DT | FILTER | 1 |
| LC 640 | DEA306F223TL | FILTER | 1 |
| LC 800 | DEA306F223TL | FILTER | 1 |

| REF. No. | PART No. | DESCRIPTION | Q'TY |
|------------|--------------|---|------|
| LD 410 | DEDSL325MC3 | LED GREEN | 1 |
| LD 412 | DEDSL325VC3 | LED RED | 1 |
| Q 180, 181 | 2SC4081RT107 | TRANSISTOR | 2 |
| Q 184 | 2SC4081RT107 | TRANSISTOR | 1 |
| Q 260, 261 | DETC114TUT07 | TRANSISTOR, RESISTOR BUILT-IN | 2 |
| Q 262 | DETA114EUT07 | TRANSISTOR, RESISTOR BUILT-IN | 1 |
| Q 263 | 2SA1576RT107 | TRANSISTOR | 1 |
| Q 270, 271 | 2SC4081RT107 | TRANSISTOR | 2 |
| Q 280, 281 | 2SC4081RT107 | TRANSISTOR | 2 |
| Q 410 | DETC114EUT07 | TRANSISTOR, RESISTOR BUILT-IN | 1 |
| Q 420 | DETC114TUT07 | TRANSISTOR, RESISTOR BUILT-IN | 1 |
| Q 421 | 2SC4081RT107 | TRANSISTOR | 1 |
| Q 500 | DETC363TKT47 | TRANSISTOR, RESISTOR BUILT-IN | 1 |
| Q 501 | DETC363TKT47 | TRANSISTOR, RESISTOR BUILT-IN | 1 |
| Q 520 | DETC363TKT47 | TRANSISTOR, RESISTOR BUILT-IN | 1 |
| Q 720 | 2SB1132QT100 | TRANSISTOR | 1 |
| Q 721 | DETA114TUT07 | TRANSISTOR, RESISTOR BUILT-IN | 1 |
| Q 750 | DETC114TUT07 | TRANSISTOR, RESISTOR BUILT-IN | 1 |
| Q 760 | DETC114EUT07 | TRANSISTOR, RESISTOR BUILT-IN | 1 |
| Q 780 | DETC114TUT07 | TRANSISTOR, RESISTOR BUILT-IN | 1 |
| R 120, 121 | ERJ3GEYJ103V | RESISTOR, THICK FILM, CHIP, 1/16W, 10 k Ω , \pm 5% | 2 |
| R 122 | ERJ3GEYJ101V | RESISTOR, THICK FILM, CHIP, 1/16W, 100 Ω , \pm 5% | 1 |
| R 124 | ERJ3GEYJ101V | RESISTOR, THICK FILM, CHIP, 1/16W, 100 Ω , \pm 5% | 1 |
| R 125 | ERJ3GEYJ470V | RESISTOR, THICK FILM, CHIP, 1/16W, 47 Ω , \pm 5% | 1 |
| R 126 | ERJ3GEYJ472V | RESISTOR, THICK FILM, CHIP, 1/16W, 4.7 k Ω , \pm 5% | 1 |
| R 127 | ERJ3GEYJ223V | RESISTOR, THICK FILM, CHIP, 1/16W, 22 k Ω , \pm 5% | 1 |
| R 128 | ERJ3GEYJ222V | RESISTOR, THICK FILM, CHIP, 1/16W, 2.2 k Ω , \pm 5% | 1 |
| R 129, 130 | ERJ3GEYJ223V | RESISTOR, THICK FILM, CHIP, 1/16W, 22 k Ω , \pm 5% | 2 |
| R 131 | ERJ3GEYJ101V | RESISTOR, THICK FILM, CHIP, 1/16W, 100 Ω , \pm 5% | 1 |
| R 135 | ERJ3GEYJ472V | RESISTOR, THICK FILM, CHIP, 1/16W, 4.7 k Ω , \pm 5% | 1 |
| R 150 | ERJ3GEYJ101V | RESISTOR, THICK FILM, CHIP, 1/16W, 100 Ω , \pm 5% | 1 |
| R 151 | ERJ3GEYJ471V | RESISTOR, THICK FILM, CHIP, 1/16W, 470 Ω , \pm 5% | 1 |
| R 153 | ERJ3GEYJ101V | RESISTOR, THICK FILM, CHIP, 1/16W, 100 Ω , \pm 5% | 1 |
| R 154 | ERJ3GEYJ331V | RESISTOR, THICK FILM, CHIP, 1/16W, 330 Ω , \pm 5% | 1 |
| R 160 | ERJ3EKF3481V | RESISTOR, THICK FILM, CHIP, 1/16W, 3.48 k Ω , \pm 1% | 1 |
| R 161 | ERJ3EKF5761V | RESISTOR, THICK FILM, CHIP, 1/16W, 5.76 k Ω , \pm 1% | 1 |
| R 162 | ERJ3EKF6812V | RESISTOR, THICK FILM, CHIP, 1/16W, 68.1k Ω , \pm 1% | 1 |
| R 163 | ERJ3EKF3092V | RESISTOR, THICK FILM, CHIP, 1/16W, 30.9 k Ω , \pm 1% | 1 |
| R 164, 165 | ERJ3GEYJ102V | RESISTOR, THICK FILM, CHIP, 1/16W, 1 k Ω , \pm 5% | 2 |
| R 166 | ERJ3EKF6812V | RESISTOR, THICK FILM, CHIP, 1/16W, 6.81 k Ω , \pm 1% | 1 |
| R 167 | ERJ3EKF2802V | RESISTOR, THICK FILM, CHIP, 1/16W, 28 k Ω , \pm 1% | 1 |
| R 168 | ERJ3GEYJ472V | RESISTOR, THICK FILM, CHIP, 1/16W, 4.7 k Ω , \pm 5% | 1 |
| R 170-172 | ERJ3GEYJ750V | RESISTOR, THICK FILM, CHIP, 1/16W, 75 Ω , \pm 5% | 3 |
| R 180 | ERJ3GEYJ750V | RESISTOR, THICK FILM, CHIP, 1/16W, 75 Ω , \pm 5% | 1 |
| R 181 | ERJ3GEYJ123V | RESISTOR, THICK FILM, CHIP, 1/16W, 12 k Ω , \pm 5% | 1 |
| R 182 | ERJ3GEYJ332V | RESISTOR, THICK FILM, CHIP, 1/16W, 3.3 k Ω , \pm 5% | 1 |
| R 183 | ERJ3GEYJ471V | RESISTOR, THICK FILM, CHIP, 1/16W, 470 Ω , \pm 5% | 1 |
| R 184 | ERJ3GEYJ221V | RESISTOR, THICK FILM, CHIP, 1/16W, 220 Ω , \pm 5% | 1 |
| R 185, 186 | ERJ6GEYJ471V | RESISTOR, THICK FILM, CHIP, 1/10W, 470 Ω , \pm 5% | 2 |

| REF. No. | PART No. | DESCRIPTION | Q'TY |
|------------|--------------|---|------|
| R 187 | ERJ3GEYJ750V | RESISTOR, THICK FILM, CHIP, 1/16W, 75 Ω , $\pm 5\%$ | 1 |
| R 220 | ERJ3GEYJ153V | RESISTOR, THICK FILM, CHIP, 1/16W, 15 k Ω , $\pm 5\%$ | 1 |
| R 223 | ERJ3GEYJ243V | RESISTOR, THICK FILM, CHIP, 1/16W, 24 k Ω , $\pm 5\%$ | 1 |
| R 224 | ERJ3GEYJ222V | RESISTOR, THICK FILM, CHIP, 1/16W, 2.2 k Ω , $\pm 5\%$ | 1 |
| R 224, 245 | ERJ3GEYJ223V | RESISTOR, THICK FILM, CHIP, 1/16W, 22 k Ω , $\pm 5\%$ | 2 |
| R 225 | ERJ3GEYJ561V | RESISTOR, THICK FILM, CHIP, 1/16W, 560 Ω , $\pm 5\%$ | 1 |
| R 226 | ERJ3GEYJ473V | RESISTOR, THICK FILM, CHIP, 1/16W, 47 k Ω , $\pm 5\%$ | 1 |
| R 230 | ERJ3GEYJ153V | RESISTOR, THICK FILM, CHIP, 1/16W, 15 k Ω , $\pm 5\%$ | 1 |
| R 233 | ERJ3GEYJ243V | RESISTOR, THICK FILM, CHIP, 1/16W, 24 k Ω , $\pm 5\%$ | 1 |
| R 234 | ERJ3GEYJ222V | RESISTOR, THICK FILM, CHIP, 1/16W, 2.2 k Ω , $\pm 5\%$ | 1 |
| R 235 | ERJ3GEYJ561V | RESISTOR, THICK FILM, CHIP, 1/16W, 560 Ω , $\pm 5\%$ | 1 |
| R 236 | ERJ3GEYJ473V | RESISTOR, THICK FILM, CHIP, 1/16W, 47 k Ω , $\pm 5\%$ | 1 |
| R 247 | ERJ3GEYJ103V | RESISTOR, THICK FILM, CHIP, 1/16W, 10 k Ω , $\pm 5\%$ | 1 |
| R 248 | ERJ3GEYJ222V | RESISTOR, THICK FILM, CHIP, 1/16W, 2.2 k Ω , $\pm 5\%$ | 1 |
| R 249 | ERJ3GEYJ561V | RESISTOR, THICK FILM, CHIP, 1/16W, 560 Ω , $\pm 5\%$ | 1 |
| R 250 | ERJ3GEYJ473V | RESISTOR, THICK FILM, CHIP, 1/16W, 47 k Ω , $\pm 5\%$ | 1 |
| R 261 | ERJ3GEYJ472V | RESISTOR, THICK FILM, CHIP, 1/16W, 4.7 k Ω , $\pm 5\%$ | 1 |
| R 262 | ERJ3GEYJ103V | RESISTOR, THICK FILM, CHIP, 1/16W, 10 k Ω , $\pm 5\%$ | 1 |
| R 270, 271 | ERJ3GEYJ472V | RESISTOR, THICK FILM, CHIP, 1/16W, 4.7 k Ω , $\pm 5\%$ | 2 |
| R 272 | ERJ3GEYJ102V | RESISTOR, THICK FILM, CHIP, 1/16W, 1 k Ω , $\pm 5\%$ | 1 |
| R 280 | ERJ3GEYJ103V | RESISTOR, THICK FILM, CHIP, 1/16W, 10 k Ω , $\pm 5\%$ | 1 |
| R 281 | ERJ6GEYJ221V | RESISTOR, THICK FILM, CHIP, 1/10W, 220 Ω , $\pm 5\%$ | 1 |
| R 282 | ERJ3GEYJ473V | RESISTOR, THICK FILM, CHIP, 1/16W, 47 k Ω , $\pm 5\%$ | 1 |
| R 283 | ERJ3GEYJ103V | RESISTOR, THICK FILM, CHIP, 1/16W, 10 k Ω , $\pm 5\%$ | 1 |
| R 284 | ERJ6GEYJ221V | RESISTOR, THICK FILM, CHIP, 1/10W, 220 Ω , $\pm 5\%$ | 1 |
| R 285 | ERJ3GEYJ473V | RESISTOR, THICK FILM, CHIP, 1/16W, 47 k Ω , $\pm 5\%$ | 1 |
| R 340 | ERJ3GEYJ222V | RESISTOR, THICK FILM, CHIP, 1/16W, 2.2 k Ω , $\pm 5\%$ | 1 |
| R 400 | ERJ3GEYJ471V | RESISTOR, THICK FILM, CHIP, 1/16W, 470 Ω , $\pm 5\%$ | 1 |
| R 401 | ERJ3GEYJ103V | RESISTOR, THICK FILM, CHIP, 1/16W, 10 k Ω , $\pm 5\%$ | 1 |
| R 402 | ERJ3GEYJ102V | RESISTOR, THICK FILM, CHIP, 1/16W, 1 k Ω , $\pm 5\%$ | 1 |
| R 403 | ERJ3GEYJ471V | RESISTOR, THICK FILM, CHIP, 1/16W, 470 Ω , $\pm 5\%$ | 1 |
| R 410 | ERJ3GEYJ271V | RESISTOR, THICK FILM, CHIP, 1/16W, 270 Ω , $\pm 5\%$ | 1 |
| R 411 | ERJ3GEYJ331V | RESISTOR, THICK FILM, CHIP, 1/16W, 330 Ω , $\pm 5\%$ | 1 |
| R 420, 421 | ERJ3GEYJ472V | RESISTOR, THICK FILM, CHIP, 1/16W, 4.7 k Ω , $\pm 5\%$ | 2 |
| R 500, 501 | ERJ3GEYJ561V | RESISTOR, THICK FILM, CHIP, 1/16W, 560 Ω , $\pm 5\%$ | 2 |
| R 520, 521 | ERJ3GEYJ331V | RESISTOR, THICK FILM, CHIP, 1/16W, 330 Ω , $\pm 5\%$ | 2 |
| R 522 | ERJ3GEYJ561V | RESISTOR, THICK FILM, CHIP, 1/16W, 560 Ω , $\pm 5\%$ | 1 |
| R 523 | ERJ3GEYJ391V | RESISTOR, THICK FILM, CHIP, 1/16W, 390 Ω , $\pm 5\%$ | 1 |
| R 600 | ERJ3GEYJ222V | RESISTOR, THICK FILM, CHIP, 1/16W, 2.2 k Ω , $\pm 5\%$ | 1 |
| R 601 | ERJ3GEYJ392V | RESISTOR, THICK FILM, CHIP, 1/16W, 3.9 k Ω , $\pm 5\%$ | 1 |
| R 602 | ERJ3GEYJ222V | RESISTOR, THICK FILM, CHIP, 1/16W, 2.2 k Ω , $\pm 5\%$ | 1 |
| R 603 | ERJ3GEYJ101V | RESISTOR, THICK FILM, CHIP, 1/16W, 100 Ω , $\pm 5\%$ | 1 |
| R 605 | ERJ3GEYJ472V | RESISTOR, THICK FILM, CHIP, 1/16W, 4.7 k Ω , $\pm 5\%$ | 1 |
| R 620 | ERJ3GEYJ750V | RESISTOR, THICK FILM, CHIP, 1/16W, 75 Ω , $\pm 5\%$ | 1 |
| R 640 | ERJ3GEYJ103V | RESISTOR, THICK FILM, CHIP, 1/16W, 10 k Ω , $\pm 5\%$ | 1 |
| R 641 | ERJ3GEYJ105V | RESISTOR, THICK FILM, CHIP, 1/16W, 1 M Ω , $\pm 5\%$ | 1 |
| R 642 | ERJ3GEYJ331V | RESISTOR, THICK FILM, CHIP, 1/16W, 330 Ω , $\pm 5\%$ | 1 |
| R 644 | ERJ3GEYJ471V | RESISTOR, THICK FILM, CHIP, 1/16W, 470 Ω , $\pm 5\%$ | 1 |
| R 645 | ERJ3GEYJ470V | RESISTOR, THICK FILM, CHIP, 1/16W, 47 Ω , $\pm 5\%$ | 1 |

| REF. No. | PART No. | DESCRIPTION | Q'TY |
|------------|--------------|--|------|
| R 661 | ERJ3GEYJ103V | RESISTOR, THICK FILM, CHIP, 1/16W, 10 k Ω , \pm 5% | 1 |
| R 662 | ERJ3GEYJ102V | RESISTOR, THICK FILM, CHIP, 1/16W, 1 k Ω , \pm 5% | 1 |
| R 663-665 | ERJ3GEYJ103V | RESISTOR, THICK FILM, CHIP, 1/16W, 10 k Ω , \pm 5% | 3 |
| R 700 | ERJ3GEYJ561V | RESISTOR, THICK FILM, CHIP, 1/16W, 560 Ω , \pm 5% | 1 |
| R 701 | ERJ3GEYJ104V | RESISTOR, THICK FILM, CHIP, 1/16W, 100 k Ω , \pm 5% | 1 |
| R 702 | ERJ3GEYJ124V | RESISTOR, THICK FILM, CHIP, 1/16W, 120 k Ω , \pm 5% | 1 |
| R 703 | ERJ3GEYJ104V | RESISTOR, THICK FILM, CHIP, 1/16W, 100 k Ω , \pm 5% | 1 |
| R 704 | ERJ3GEYJ105V | RESISTOR, THICK FILM, CHIP, 1/16W, 1 M Ω , \pm 5% | 1 |
| R 705 | ERJ3GEYJ471V | RESISTOR, THICK FILM, CHIP, 1/16W, 470 Ω , \pm 5% | 1 |
| R 706 | ERJ3GEYJ681V | RESISTOR, THICK FILM, CHIP, 1/16W, 680 Ω , \pm 5% | 1 |
| R 720 | ERJ6GEYJ100V | RESISTOR, THICK FILM, CHIP, 1/10W, 10 Ω , \pm 5% | 1 |
| R 721 | ERJ3GEYJ332V | RESISTOR, THICK FILM, CHIP, 1/16W, 3.3 k Ω , \pm 5% | 1 |
| R 722 | ERJ3GEYJ103V | RESISTOR, THICK FILM, CHIP, 1/16W, 10 k Ω , \pm 5% | 1 |
| R 723, 773 | ERJ3GEYJ472V | RESISTOR, THICK FILM, CHIP, 1/16W, 4.7 k Ω , \pm 5% | 2 |
| R 724-726 | ERJ3GEYJ473V | RESISTOR, THICK FILM, CHIP, 1/16W, 47 k Ω , \pm 5% | 3 |
| R 727 | ERJ3GEYJ102V | RESISTOR, THICK FILM, CHIP, 1/16W, 1 k Ω , \pm 5% | 1 |
| R 728 | ERJ3GEYJ273V | RESISTOR, THICK FILM, CHIP, 1/16W, 2.7 k Ω , \pm 5% | 1 |
| R 729 | ERJ3GEYJ102V | RESISTOR, THICK FILM, CHIP, 1/16W, 1 k Ω , \pm 5% | 1 |
| R 730, 731 | ERJ3GEYJ334V | RESISTOR, THICK FILM, CHIP, 1/16W, 33 k Ω , \pm 5% | 2 |
| R 732 | ERJ3GEYJ561V | RESISTOR, THICK FILM, CHIP, 1/16W, 560 Ω , \pm 5% | 1 |
| R 733 | ERJ3GEY0R00V | CHIP JUMPER | 1 |
| R 745 | ERJ3GEYJ102V | RESISTOR, THICK FILM, CHIP, 1/16W, 1 k Ω , \pm 5% | 1 |
| R 746 | ERJ3GEYJ103V | RESISTOR, THICK FILM, CHIP, 1/16W, 10 k Ω , \pm 5% | 1 |
| R 750 | ERJ3GEYJ473V | RESISTOR, THICK FILM, CHIP, 1/16W, 47 k Ω , \pm 5% | 1 |
| R 751 | ERJ3GEYJ103V | RESISTOR, THICK FILM, CHIP, 1/16W, 10 k Ω , \pm 5% | 1 |
| R 752 | ERJ3GEYJ473V | RESISTOR, THICK FILM, CHIP, 1/16W, 47 k Ω , \pm 5% | 1 |
| R 753 | ERJ3GEYJ123V | RESISTOR, THICK FILM, CHIP, 1/16W, 12 k Ω , \pm 5% | 1 |
| R 760 | ERJ3GEYJ153V | RESISTOR, THICK FILM, CHIP, 1/16W, 15 k Ω , \pm 5% | 1 |
| R 761 | ERJ3GEYJ332V | RESISTOR, THICK FILM, CHIP, 1/16W, 3.3 k Ω , \pm 5% | 1 |
| R 762 | ERJ3GEYJ123V | RESISTOR, THICK FILM, CHIP, 1/16W, 12 k Ω , \pm 5% | 1 |
| R 763 | ERJ3GEYJ222V | RESISTOR, THICK FILM, CHIP, 1/16W, 2.2 k Ω , \pm 5% | 1 |
| R 764 | ERJ3GEYJ104V | RESISTOR, THICK FILM, CHIP, 1/16W, 100 k Ω , \pm 5% | 1 |
| R 765 | ERJ3GEYJ473V | RESISTOR, THICK FILM, CHIP, 1/16W, 47 k Ω , \pm 5% | 1 |
| R 766 | ERJ3GEYJ123V | RESISTOR, THICK FILM, CHIP, 1/16W, 12 k Ω , \pm 5% | 1 |
| R 767 | ERJ3GEYJ103V | RESISTOR, THICK FILM, CHIP, 1/16W, 10 k Ω , \pm 5% | 1 |
| R 768 | ERJ3GEYJ473V | RESISTOR, THICK FILM, CHIP, 1/16W, 47 k Ω , \pm 5% | 1 |
| R 769 | ERJ3GEYJ223V | RESISTOR, THICK FILM, CHIP, 1/16W, 22 k Ω , \pm 5% | 1 |
| R 770 | ERJ3GEYJ822V | RESISTOR, THICK FILM, CHIP, 1/16W, 8.2 k Ω , \pm 5% | 1 |
| R 771 | ERJ3GEYJ103V | RESISTOR, THICK FILM, CHIP, 1/16W, 10 k Ω , \pm 5% | 1 |
| R 772 | ERJ3GEYJ473V | RESISTOR, THICK FILM, CHIP, 1/16W, 47 k Ω , \pm 5% | 1 |
| R 774 | ERX2SJ2R2P | RESISTOR, 2W 2.2 Ω | 1 |
| R 780, 781 | ERJ3GEYJ472V | RESISTOR, THICK FILM, CHIP, 1/16W, 4.7 k Ω , \pm 5% | 2 |
| R 782 | ERJ3GEYJ473V | RESISTOR, THICK FILM, CHIP, 1/16W, 47 k Ω , \pm 5% | 1 |
| R 783 | ERJ3GEYJ682V | RESISTOR, THICK FILM, CHIP, 1/16W, 6.8 k Ω , \pm 5% | 1 |
| R 784 | ERJ3GEYJ272V | RESISTOR, THICK FILM, CHIP, 1/16W, 2.7 k Ω , \pm 5% | 1 |
| R 785, 786 | ERJ3GEYJ123V | RESISTOR, THICK FILM, CHIP, 1/16W, 12 k Ω , \pm 5% | 2 |
| R 787 | ERJ3GEYJ103V | RESISTOR, THICK FILM, CHIP, 1/16W, 10 k Ω , \pm 5% | 1 |
| R 788 | ERJ3GEYJ472V | RESISTOR, THICK FILM, CHIP, 1/16W, 4.7 k Ω , \pm 5% | 1 |
| R 790, 791 | ERJ3GEYJ154V | RESISTOR, THICK FILM, CHIP, 1/16W, 150 k Ω , \pm 5% | 2 |

| REF. No. | PART No. | DESCRIPTION | Q'TY |
|-----------------------|--------------------------|--|------|
| R 792, 793 | ERJ3GEYJ104V | RESISTOR, THICK FILM, CHIP, 1/16W, 100 k Ω , \pm 5% | 2 |
| R 794 | ERJ3GEYJ103V | RESISTOR, THICK FILM, CHIP, 1/16W, 10 k Ω , \pm 5% | 1 |
| R 795 | ERJ3GEYJ123V | RESISTOR, THICK FILM, CHIP, 1/16W, 12 k Ω , \pm 5% | 1 |
| R 796 | ERJ3GEYJ103V | RESISTOR, THICK FILM, CHIP, 1/16W, 10 k Ω , \pm 5% | 1 |
| R 797 | ERJ3GEYJ183V | RESISTOR, THICK FILM, CHIP, 1/16W, 18 k Ω , \pm 5% | 1 |
| R 798 | ERJ3GEYJ104V | RESISTOR, THICK FILM, CHIP, 1/16W, 100 k Ω , \pm 5% | 1 |
| R 799 | ERJ3GEYJ103V | RESISTOR, THICK FILM, CHIP, 1/16W, 10 k Ω , \pm 5% | 1 |
| R 800 | ERJ3GEYJ330V | RESISTOR, THICK FILM, CHIP, 1/16W, 33 Ω , \pm 5% | 1 |
| R 801 | ERJ3GEYJ223V | RESISTOR, THICK FILM, CHIP, 1/16W, 22 k Ω , \pm 5% | 1 |
| R 802 | ERJ3GEYJ472V | RESISTOR, THICK FILM, CHIP, 1/16W, 4.7 k Ω , \pm 5% | 1 |
| R 900 | ERJ3GEYJ102V | RESISTOR, THICK FILM, CHIP, 1/16W, 1 k Ω , \pm 5% | 1 |
| R 901 | ERJ3GEYJ560V | RESISTOR, THICK FILM, CHIP, 1/16W, 56 Ω , \pm 5% | 1 |
| R 902 | ERJ3GEYJ151V | RESISTOR, THICK FILM, CHIP, 1/16W, 150 Ω , \pm 5% | 1 |
| R 905 | ERJ3GEYJ154V | RESISTOR, THICK FILM, CHIP, 1/16W, 150 k Ω , \pm 5% | 1 |
| RA 300-303 | EXBV8V101JV | RESISTOR ARAY, 100 Ω | 4 |
| RA 304-307 | EXBV8V470JV | RESISTOR ARAY, 47 Ω | 4 |
| RA 324-327 | EXBV8V470JV | RESISTOR ARAY, 47 Ω | 4 |
| RA 308-312 | EXBV8V101JV | RESISTOR ARAY, 100 Ω | 5 |
| RA 320-323 | EXBV8V101JV | RESISTOR ARAY, 100 Ω | 4 |
| RA 328-332 | EXBV8V101JV | RESISTOR ARAY, 100 Ω | 5 |
| RA 620-623 | EXBV8V750JV | RESISTOR ARAY, 75 Ω | 4 |
| RA 640, 641 | EXBV8V221JV | RESISTOR ARAY, 220 Ω | 2 |
| RA 660 | EXBV8V103JV | RESISTOR ARAY, 100 Ω | 1 |
| RA 800-812 | EXBV8V330JV | RESISTOR ARAY, 33 Ω | 3 |
| SW 720 | DFFA0004ZA | SWITCH | 1 |
| X 151 | DECL50000P2W | OSCILLATOR (50.00MHz) | 1 |
| X 153 | DECL59000H1W | OSCILLATOR (59.00MHz) | 1 |
| X 640 | EF0EN3385T4 | CRYSTAL 33.8688MHZ | 1 |
| PC BOARD POWER | | | |
| C 001 | \triangle ECQU2A224MVA | CAPACITOR, PLASTIC, FILM, 50 V, 0.220000 μ F, \pm 5% | 1 |
| C 002, 003 | \triangle ECKZRS222ME | CAPACITOR, CERAMIC, 400V, 2200pF | 2 |
| C 004 | \triangle ECQU2A104MVA | CAPACITOR, PLASTIC, FILM, 250 V, 0.1 μ F, \pm 5% | 1 |
| C 005 | \triangle ECKZRS222ME | CAPACITOR, CERAMIC, 400V, 2200pF | 1 |
| C 007 | ECEC2GG470D | CAPACITOR, ELECTROLYTIC, 400V, 47 μ F | 1 |
| C 009 | ECEA1VFS330B | CAPACITOR, ELECTROLYTIC, 35V, 33 μ F | 1 |
| C 010 | ECKR3A221KBP | CAPACITOR, CERAMIC, 1KV, 220pF, \pm 10% | 1 |
| C 101 | EEUFA1E561Q | CAPACITOR, ELECTROLYTIC, 25V, 560 μ F | 1 |
| C 102 | EEUFA1E102Q | CAPACITOR, ELECTROLYTIC, 25V, 1000 μ F | 1 |
| C 103 | EEUFA1E471E | CAPACITOR, ELECTROLYTIC, 25V, 470 μ F | 1 |
| C 104 | ECQB1H473KF3 | CAPACITOR, PLASTIC, FILM, 50V, 0.047 μ F | 1 |
| CN 001, 002 | \triangle DFWV40D0281 | CONNECTOR | 2 |
| CN 101 | DFWV40D0282 | CONNECTOR, 18-Pin, MAIN LOGIC PCB | 1 |
| D 001 | DFWV03C0178 | DIODE | 1 |
| D 002 | DFWV03C0179 | DIODE | 1 |
| D 003 | MA700ATA | DIODE | 1 |
| D 101 | DFWV03C0180 | DIODE | 1 |
| D 102 | MA10799HDSX | DIODE | 1 |
| F 001 | \triangle DFWV38A0037 | FUSE, 250V 2A | 1 |

| REF. No. | PART No. | DESCRIPTION | Q'TY |
|------------|----------------|------------------------------|------|
| IC 101 | AN1431T | IC | 1 |
| L 001 | △ ELF18D290H | FILTER CHOKE | 1 |
| L 002, 003 | EXCELD35V | BEAD | 2 |
| L 101 | DFWV21B0067 | CHOKE | 1 |
| L 102 | DFWV21B0068 | CHOKE | 1 |
| MC 001 | ML30E1-1 | MODULE | 1 |
| PC 001 | △ DFWV03F0034 | PHOTO COUPLER | 1 |
| Q 001 | DFWV03A0021 | FET | 1 |
| R 001 | ERDS1TJ474T | RESISTOR, 1/2W, 470K Ω, ±5% | 1 |
| R 002 | ERDS1TJ104T | RESISTOR, 1/2W, 100K Ω, ±5% | 1 |
| R 003 | ERDS1TJ823T | RESISTOR, 1/2W, 82K Ω, ±5% | 1 |
| R 004 | ERDS1TJ823T | RESISTOR, 1/2W, 82K Ω, ±5% | 1 |
| R 005 | ER0S2TKF1373 | RESISTOR, 1/4W, 137K Ω, ±5% | 1 |
| R 006 | ERDS2TJ561T | RESISTOR, 1/2W, 560 Ω, ±5% | 1 |
| R 007 | ERG12SJW180E | RESISTOR, 1/4W, 18 Ω, ±5% | 1 |
| R 008 | ER0S2TKF4701 | RESISTOR, 1/4W, 4.7K Ω, ±5% | 1 |
| R 009 | ERG2SJW180E | RESISTOR, 2W, 18 Ω, ±5% | 1 |
| R 010 | ERDS1TJ104T | RESISTOR, 1/2W, 100K Ω, ±5% | 1 |
| R 011, 012 | ERDS1TJ823T | RESISTOR, 1/2W, 82K Ω, ±5% | 2 |
| R 101 | ERDS1TJ331T | RESISTOR, 1/2W, 330 Ω, ±5% | 1 |
| R 102 | ERDS1TJ101T | RESISTOR, 1/2W, 100 Ω, ±5% | 1 |
| R 103 | ERDS2TJ222T | RESISTOR, 1/2W, 2.2K Ω, ±5% | 1 |
| R 104 | ER0S2TKF3301 | RESISTOR, 1/4W, 3.3K Ω, ±5% | 1 |
| R 105 | ER0S2TKF8662 | RESISTOR, 1/4W, 86.6K Ω, ±5% | 1 |
| R 106 | ER0S2TKF3921 | RESISTOR, 1/4W, 3.92K Ω, ±5% | 1 |
| T 001 | △ ETB28AE115AC | POWER TRANSFORMER | 1 |
| TH 001 | △ DFWV19B0014 | THERMISTOR | 1 |
| Z 002 | △ ERZV10D471 | VARISTER | 1 |
| ZD 001 | MA4200NMTA | DIODE, ZENNER | 1 |
| ZD 002 | MA4240NLTA | DIODE, ZENNER | 1 |

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