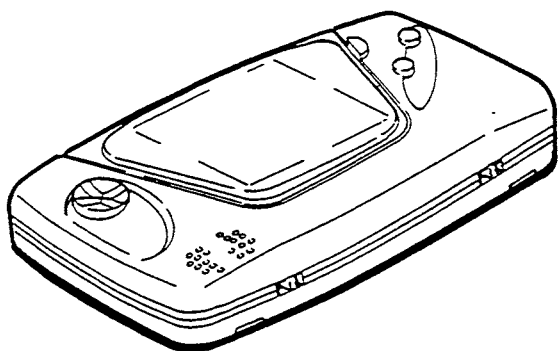


# SEGA<sup>TM</sup> SERVICE MANUAL

## GAME GEAR VA1



|        |                |
|--------|----------------|
| NO.    | 004            |
| ISSUED | DECEMBER, 1993 |

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**Sega Enterprises, Ltd.**

# BEFORE USING THIS SERVICE MANUAL

This service manual covers the one-chip custom LSI (CPU+VDP+SCA).

## The First Serial No. of 1 Chip Version Unit.

### ■ AC 120V area

- 020176537~(For USA)
- 020168498~(For CANADA)
- B20135204~
- K20117921~
- P31000001~

### ■ AC 230V/240V area

- 020019501~
- B30000001~
- K37000001~
- P31020001~

## ● COMPARISON WITH ANOTHER MODEL

### Electrical Components

| COMPONENT                     | GAME GEAR VA0         | GAME GEAR VA1     |
|-------------------------------|-----------------------|-------------------|
| CPU                           | IC Z80A               | IC CUSTOM CHIP GG |
| VIDEO PROCESSOR IC            | IC CUSTOM CHIP VDP GG |                   |
| I/O, LCD CONTROL IC           | IC CUSTOM CHIP SCA GG |                   |
| MEMORY FOR CPU'S PROGRAM      | IC UPD4364G-15L       | Same as on left   |
| MEMORY FOR VIDEO PROCESSOR IC | IC HM65256BLFP-12     | Same as on left   |
| OP AMP                        | IC UPC358G2           | Same as on left   |
| DUAL SWITCHING REGULATOR      | IC MB3775             | Same as on left   |
| DUAL LOW-VOLTAGE POWER AMP    | IC TDA2822M           | Same as on left   |

# 1. SPECIFICATIONS

## Ratings

|                       |          |                                                                |                                                                                                  |                         |
|-----------------------|----------|----------------------------------------------------------------|--------------------------------------------------------------------------------------------------|-------------------------|
| Power input           | Internal |                                                                | 6 AA (LR6, HP7)Batteries<br>(Longer life alkaline batteries are recommended.)                    |                         |
|                       | External | AC Adaptor                                                     | Input: AC120V 60Hz                                                                               | Output: DC9V 850mA      |
|                       |          |                                                                | Input: AC230V/240V 50Hz                                                                          | Output: DC10V 850mA     |
|                       |          | Battery Pack                                                   | Input: DC9V                                                                                      | Output: DC7.2V 1200mA/h |
|                       |          | Car Adaptor                                                    | Uses power from a12V car battery.<br>Input: DC10.57V~16V                      Output: DC9V 800mA |                         |
| Power consumption     |          | 9V – 3W(AC120V area), 10V – 3W(AC220V/240V area)               |                                                                                                  |                         |
| Operating environment |          | Temperature: 0℃ ~40℃ , Humidity: 10%RH~80%RH (no condensation) |                                                                                                  |                         |
| Dimensions            |          | 210(W) × 113(D) × 39(H) mm                                     |                                                                                                  |                         |

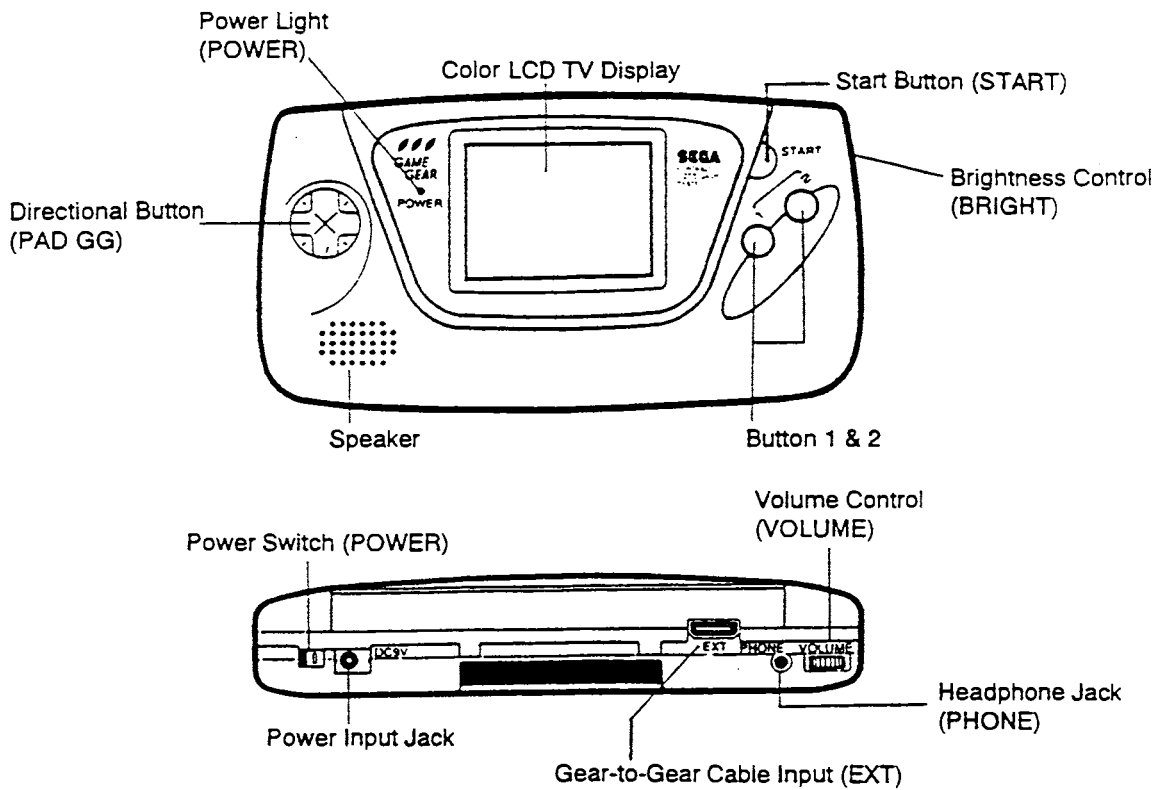
## Specifications

|                    |                      |                                                                                                              |
|--------------------|----------------------|--------------------------------------------------------------------------------------------------------------|
| CPU                |                      | Z80A (3.58MHz)                                                                                               |
| Memories           | RAM                  | 64kbit                                                                                                       |
|                    | V-RAM                | 128kbit                                                                                                      |
| Audio              |                      | 3 types of sound + 1 noise.                                                                                  |
| Display capability | VDP                  | SEGA custom LSI (1 chip= CPU+VDP+SCA)                                                                        |
|                    | Scrolling Screens    | 160 × 146 dot matrix<br>32 on-screen colors displayed from a palette of 4096 colors.                         |
|                    | Sprite Screens       | 64 sprites on-screen with dimensions of 8 × 8 dot or 16 × 16 dot<br>displayed from a palette of 4096 colors. |
|                    | Character Patterns   | Maximum of 448 defined types possible.                                                                       |
|                    | Scrolling Directions | Horizontal, vertical, diagonal.                                                                              |
|                    | Display              | 3.2" Color LCD with Back-Light.                                                                              |
|                    | Screen Dimensions    | 65.27 mm wide × 48.90mm high                                                                                 |
|                    | Screen Composition   | 160 dot wide × 146 dot high                                                                                  |
| Headphone terminal |                      | Plug in any set of normal headphones for private play.                                                       |
| Extension terminal |                      | To play multi-player games using more than one Game Gear system.                                             |
| Slots              |                      | For cartridge or TV Tuner Adaptor                                                                            |

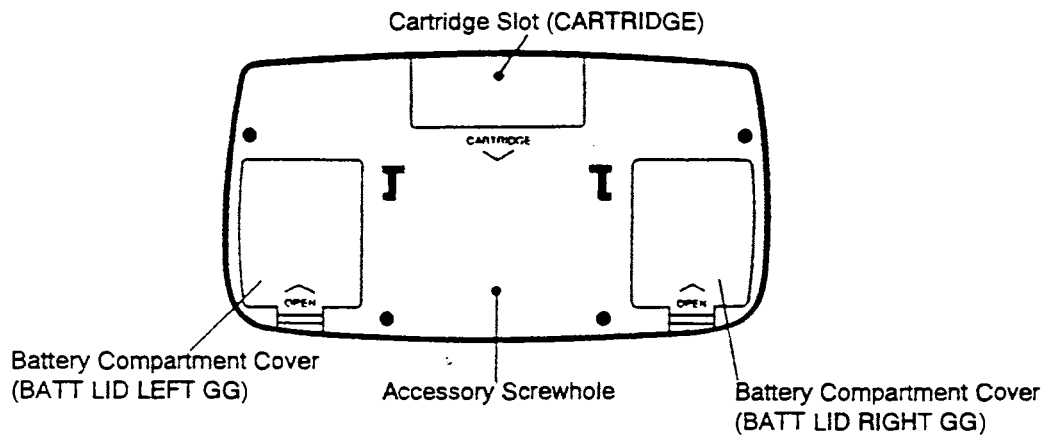
\* Design and specifications are subject to change without notice.

## 2. IDENTIFYING PARTS

### 2-1. Front & Top Views of Console



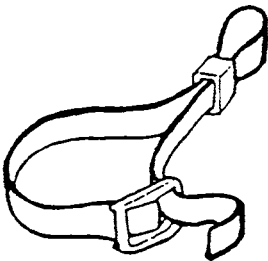
### 2-2. Bottom View of Console



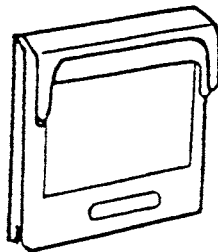
Note: Names of parts in brackets ( ) are used in the parts list.

### 2-3. Accessories

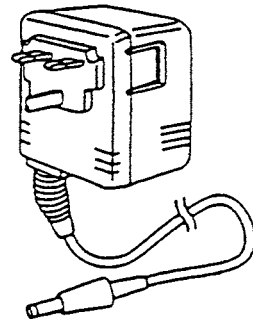
Strap



Game Cartridge



AC Adaptor



(Provided or sold separately)

(Kuwait)

## 3. DISASSEMBLY

### 3-1. Dismantling Procedure

Removal of bottom screws and bottom case  
(See Fig.1).

- 1) Turn the power button off.
- 2) Turn over the unit.
- 3) Remove both battery compartment lids (8 & 9).
- 4) Remove screw (204).
- 5) Remove six screws (201).

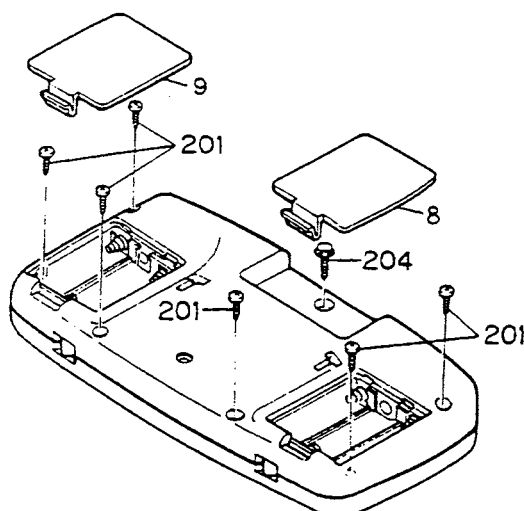


Fig-1

- 6) Remove the bottom case (See Fig.2).  
Lift bottom case in the direction of arrow (A)  
and make the open condition.  
Remove the connector of DC-DC converter  
board fixed on the bottom case.  
Disconnect two connectors of sound board.

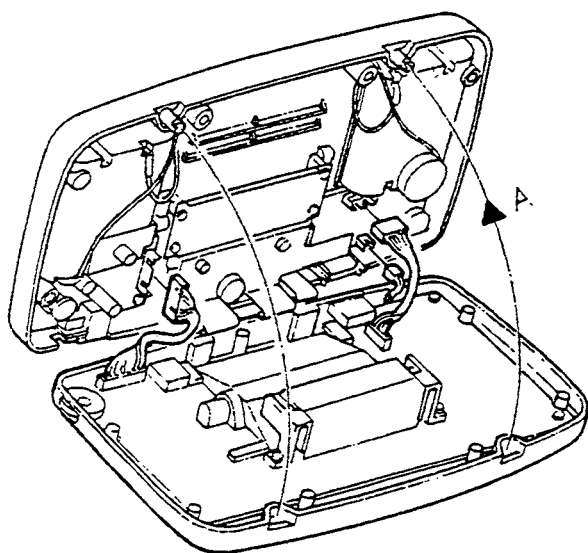


Fig-2

Main board removal (See Fig.3).

- 1) Remove two screws (202).
- 2) Remove six screws (203).
- 3) Remove the main board from the top case.

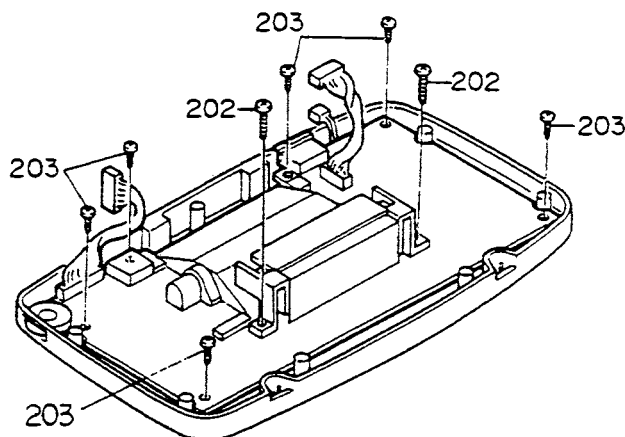


Fig-3

Sound board and DC-DC converter board  
removal (See Fig.4).

- 1) Remove four screws (203).
- 2) Remove the support plate from the bottom case.
- 3) Remove two screws (203).
- 4) Remove the sound board from the bottom case.
- 5) Remove the battery blade cover.
- 6) Remove two screws (203).
- 7) Remove the DC-DC converter board.

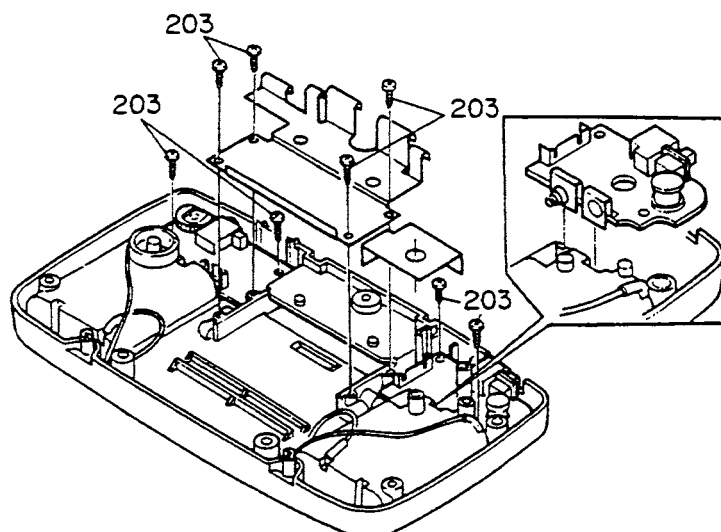


Fig-4

## 3-2. Reinstalling procedure

### Sound board and DC-DC converter board reinstallation.

- 1) Attach the power knob to the DC-DC converter board.
- 2) Attach the DC-DC converter board to the bottom case.
- 3) Tighten two screws (203).
- 4) Attach the battery blade cover.
- 5) Attach the sound board.
- 6) Tighten two screws (203).
- 7) Attach the support plate.
- 8) Tighten four screws (203).

### Main board reinstallation.

- 1) Spray surface of inside clear plate with static proof liquid.
- 2) Carefully check and remove dust inside clear plate and top case using air gun in a clean place.  
Attach each button and rubber contact in its normal position.
- 3) Attach the LCD cushion along to the bosses in the top case.
- 4) Lead the speaker cable outside the bosses of the top case.
- 5) Attach the main board.

Case 1 After exchange of LCD.

Take off protective film of LCD.

Case 2 Others

Clean surface of LCD using an air gun.

- 6) Attach the main board inside and along to the bosses of top case.

Note: When setting the main board, it is important to attach it as quickly as possible to prevent the adhesion of dust on the surface of the LCD and clear plate.

- 7) Tighten six screws (203).
- 8) Tighten two screws (202).

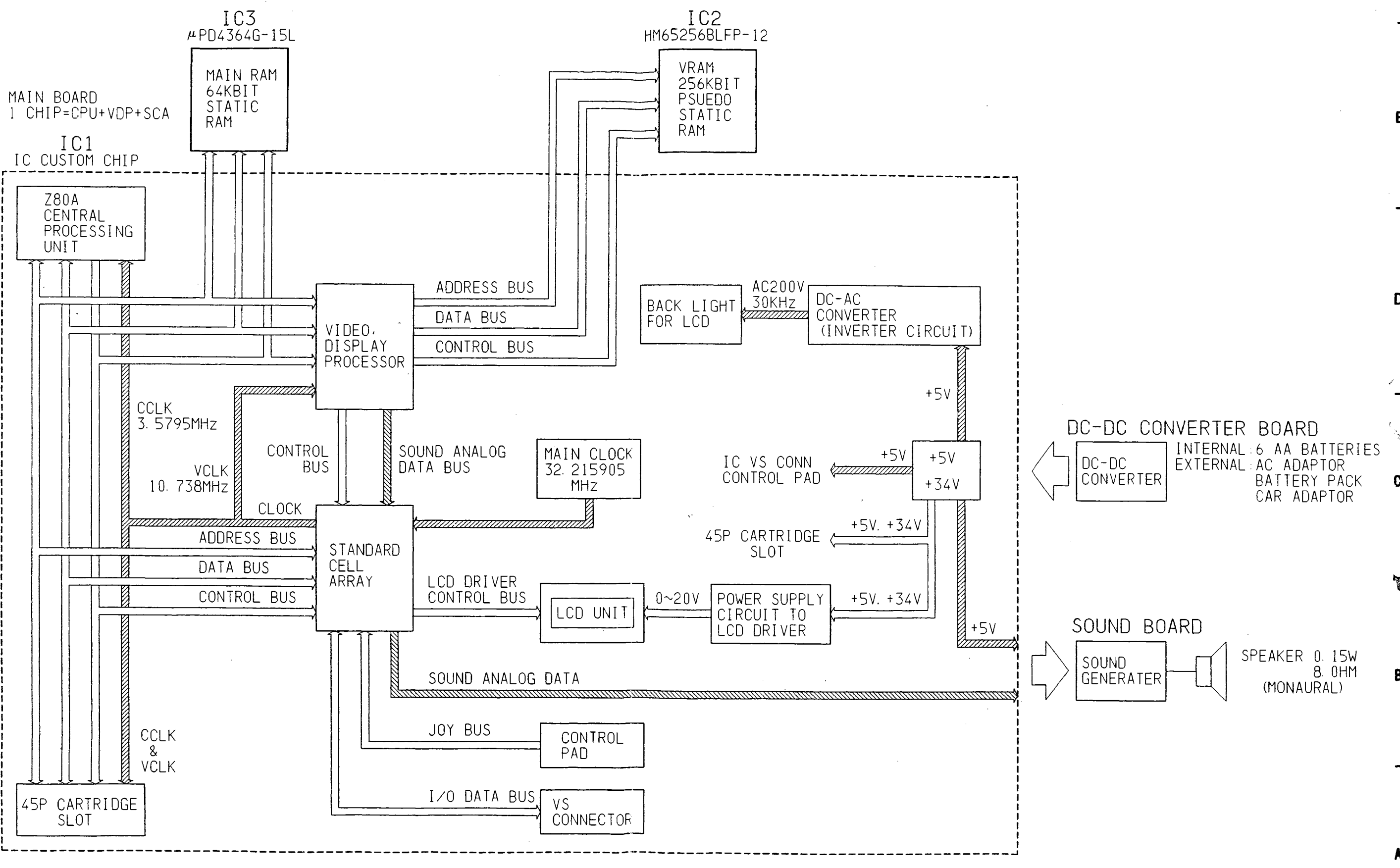
### Bottom case reinstallation.

- 1) Correct 2 connectors from the main board to the sound board and 1 connector from the main board to the DC-DC converter board.
- 2) Firmly set the bottom case to the top case taking care not to pinch the cables by the edge of the cases.

### Tightening the screws on the bottom case.

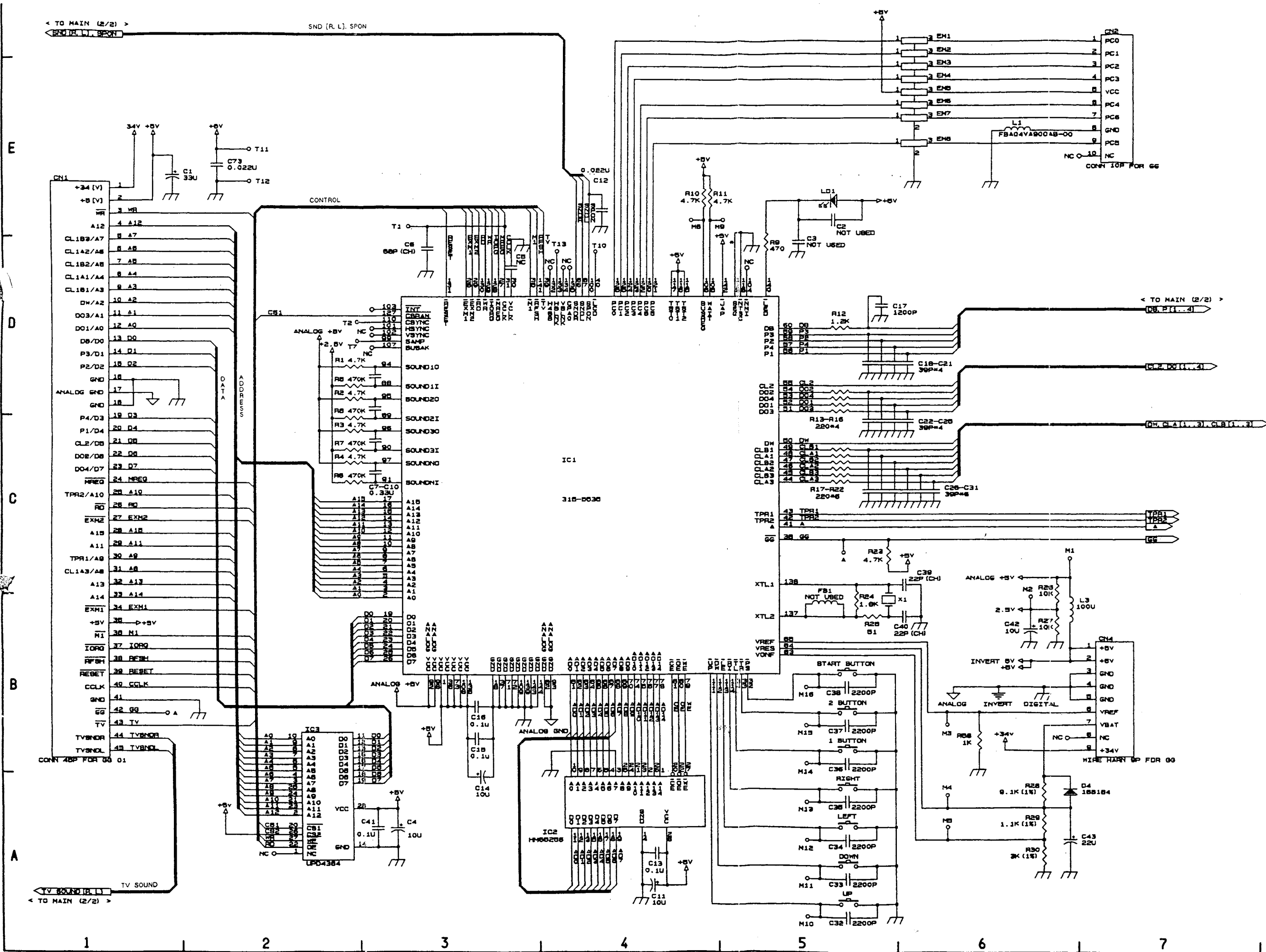
- 1) Turn over the unit.
- 2) Tighten six screws (201).
- 3) Tighten the screw (204).
- 4) Attach both battery lids (8 & 9).

4. BLOCK DIAGRAM

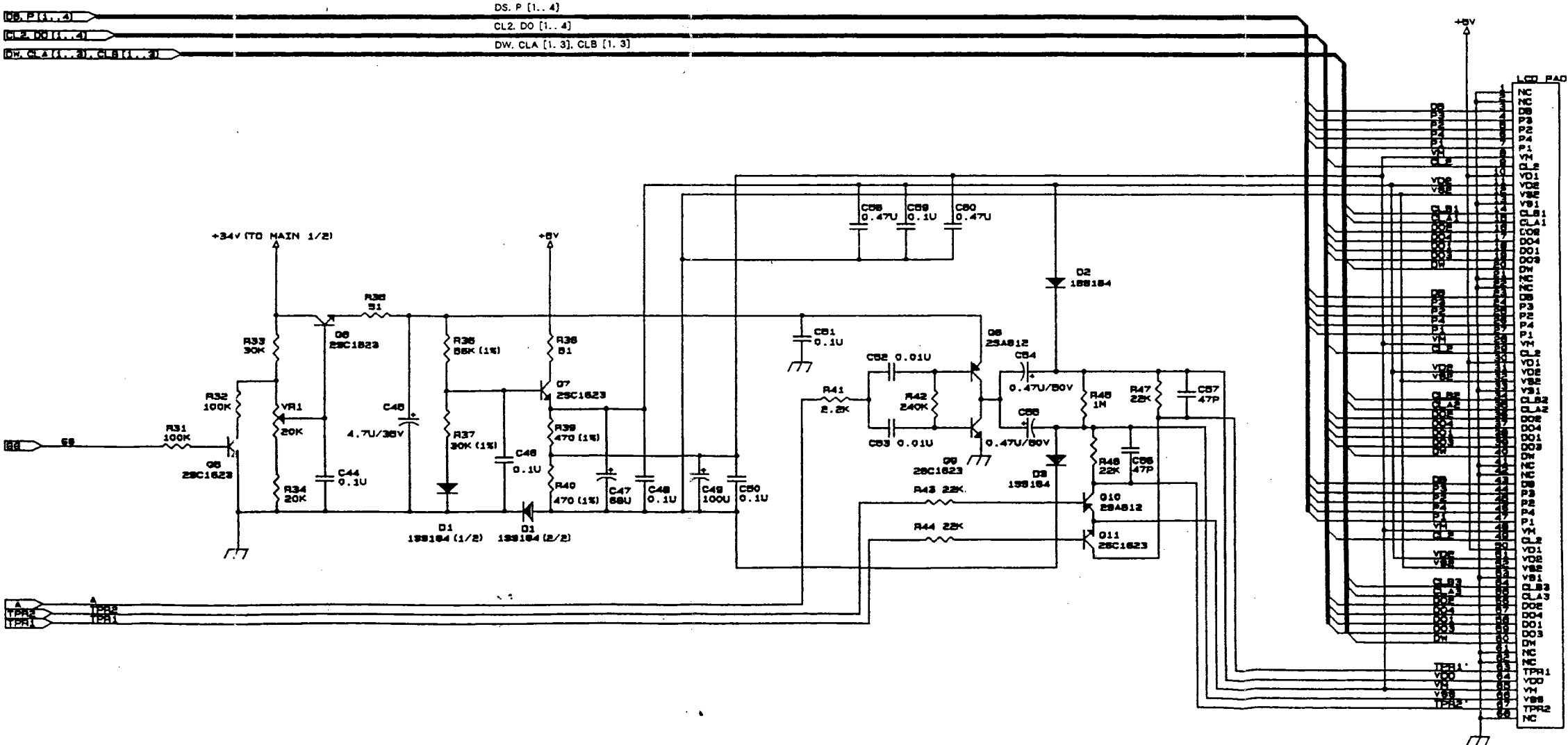
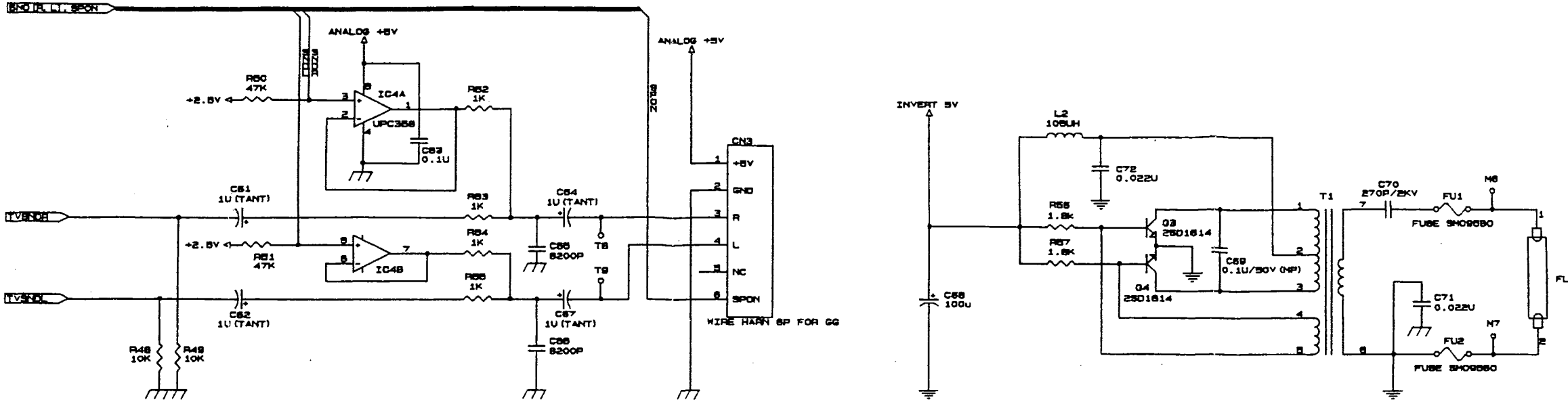


5. SCHEMATIC DIAGRAMS

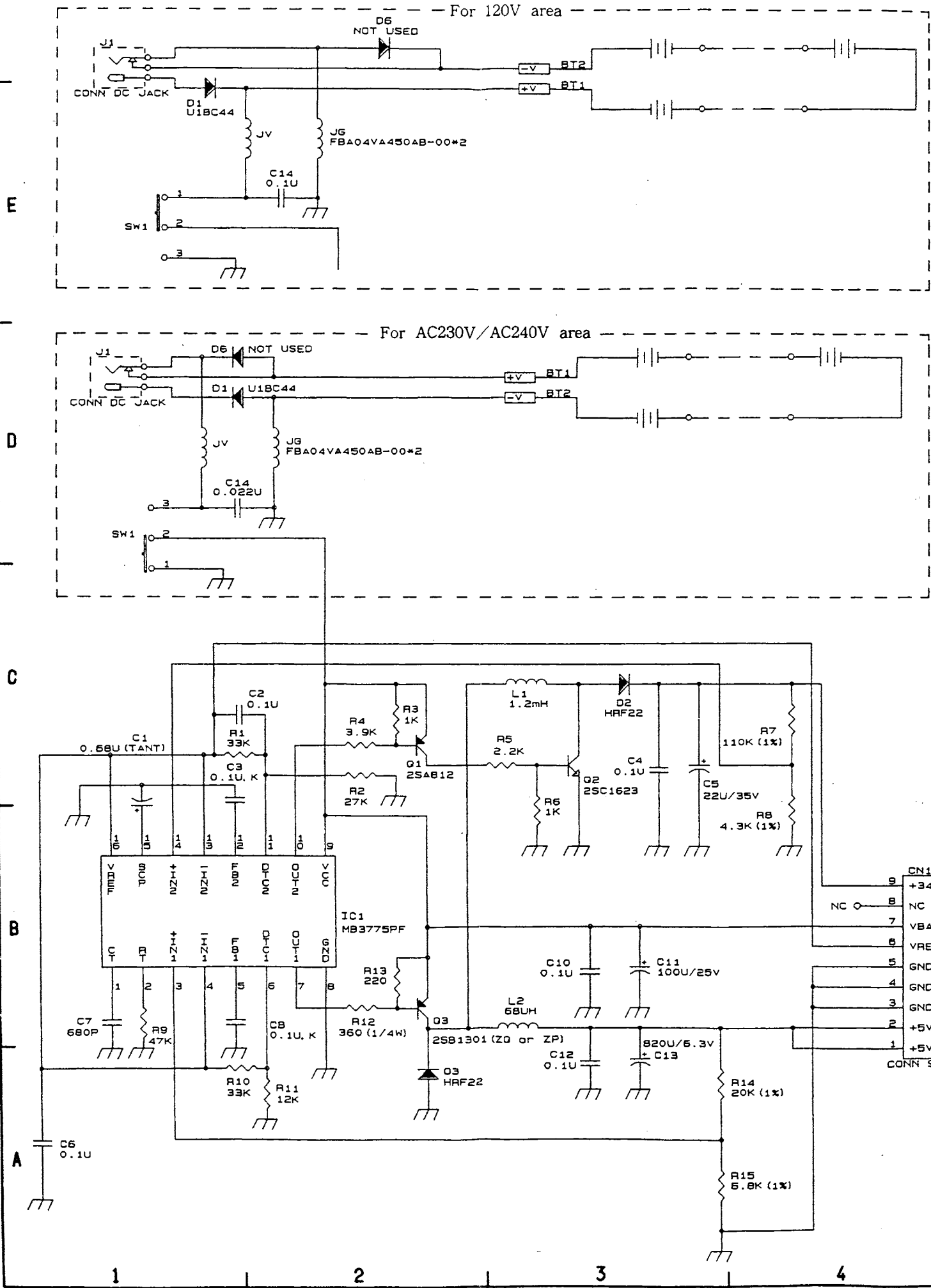
5-1. Main Circuit Board-1



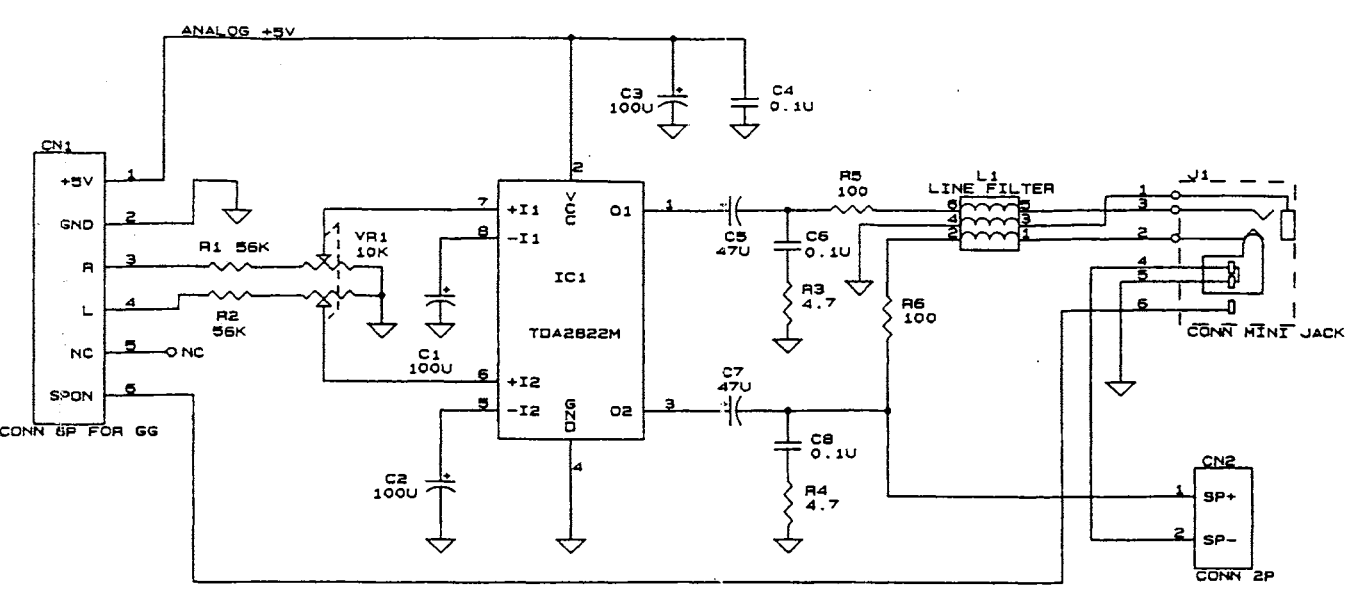
## 5-2. Main Circuit Board-2



5-3. DC-DC Converter Circuit Board

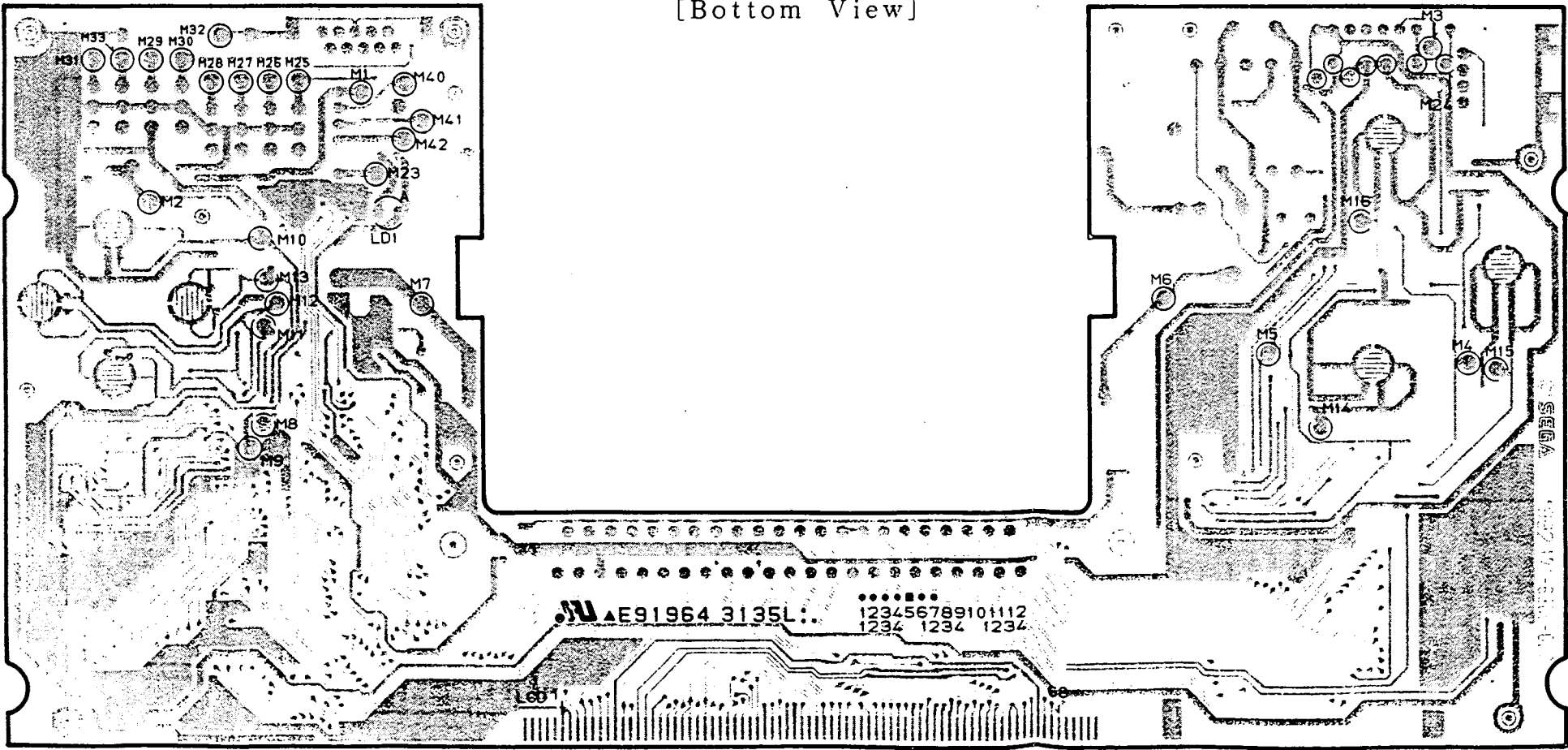
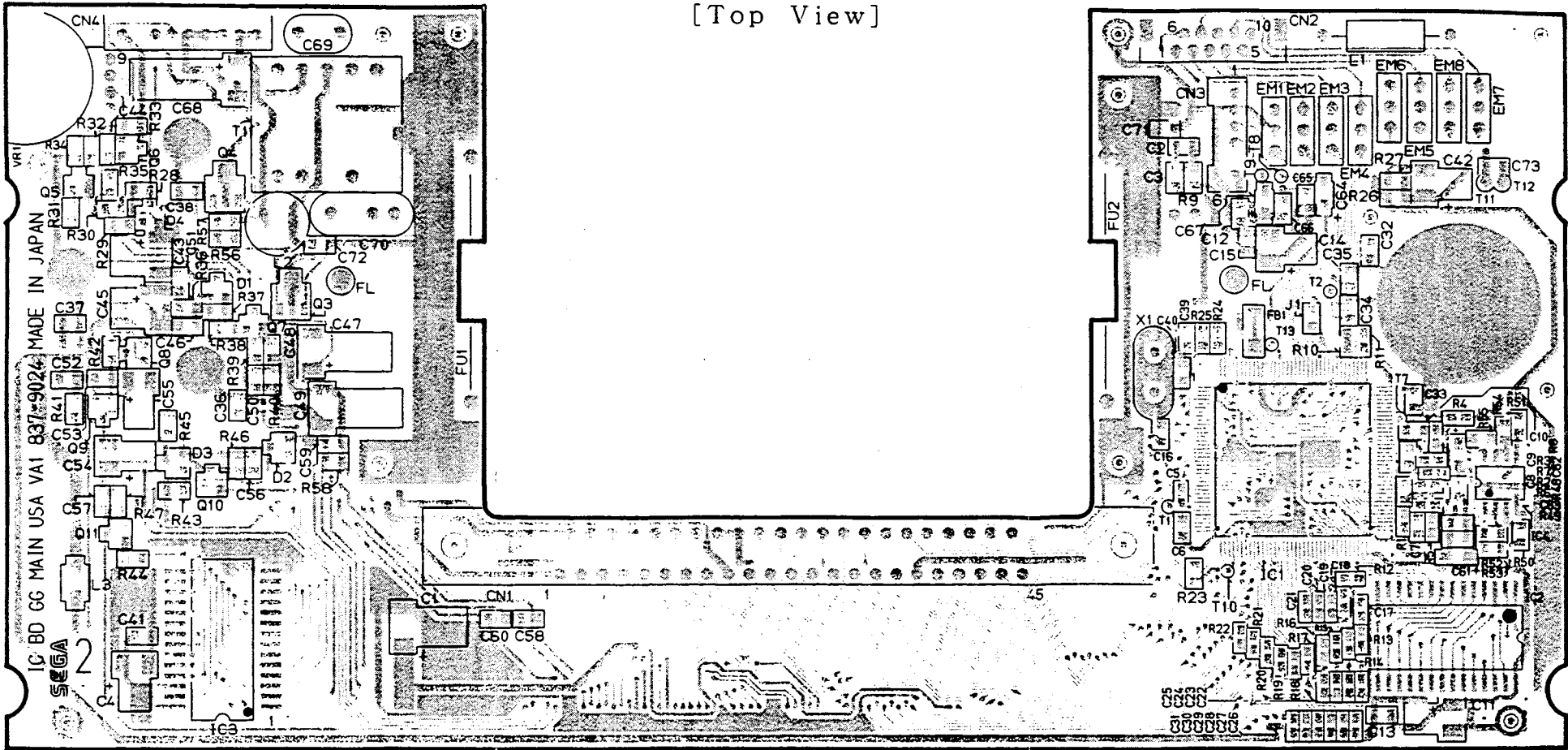


5-4. Sound Circuit Board

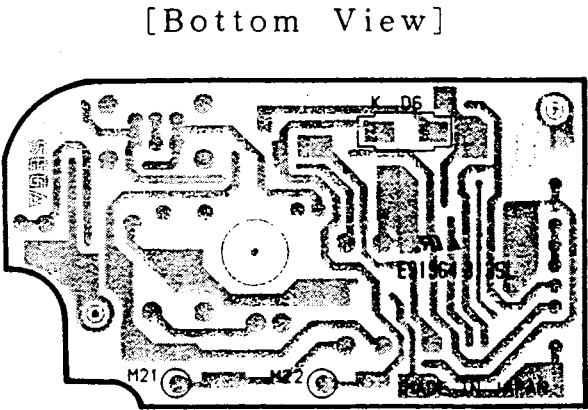
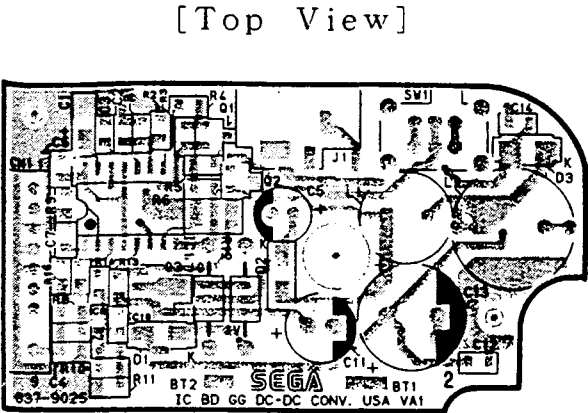


6. CIRCUIT BOARD DIAGRAMS

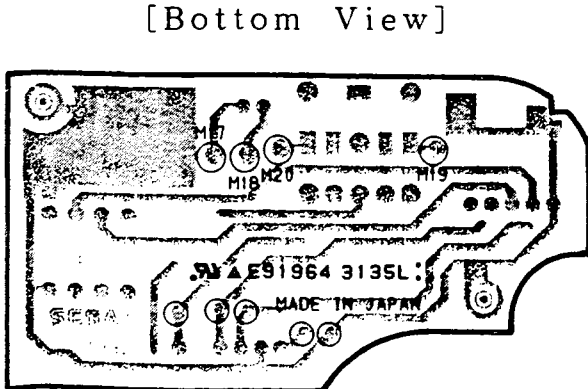
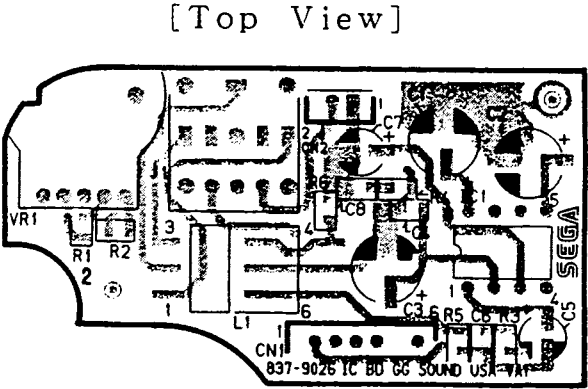
6-1. Main Circuit Board (AC120V area)



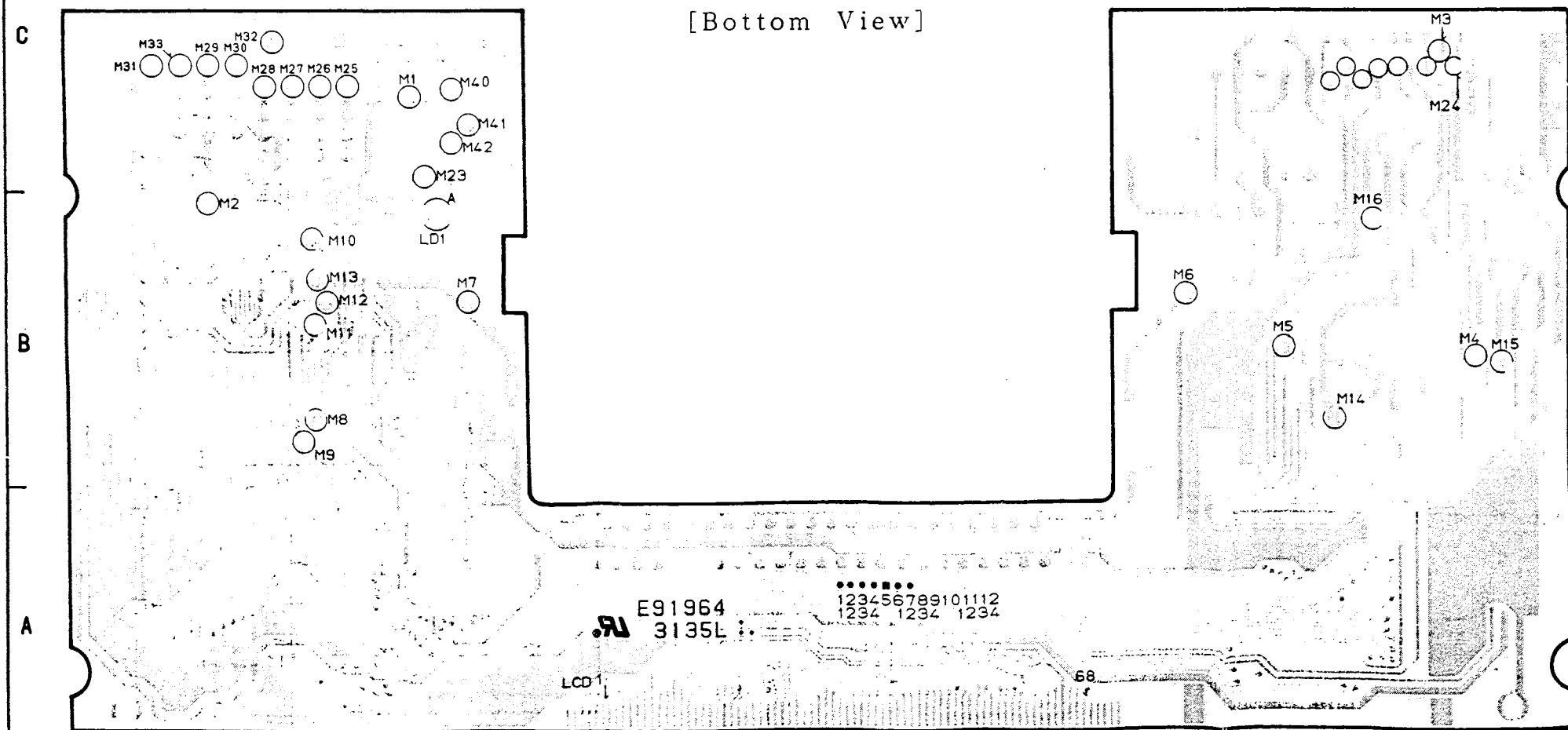
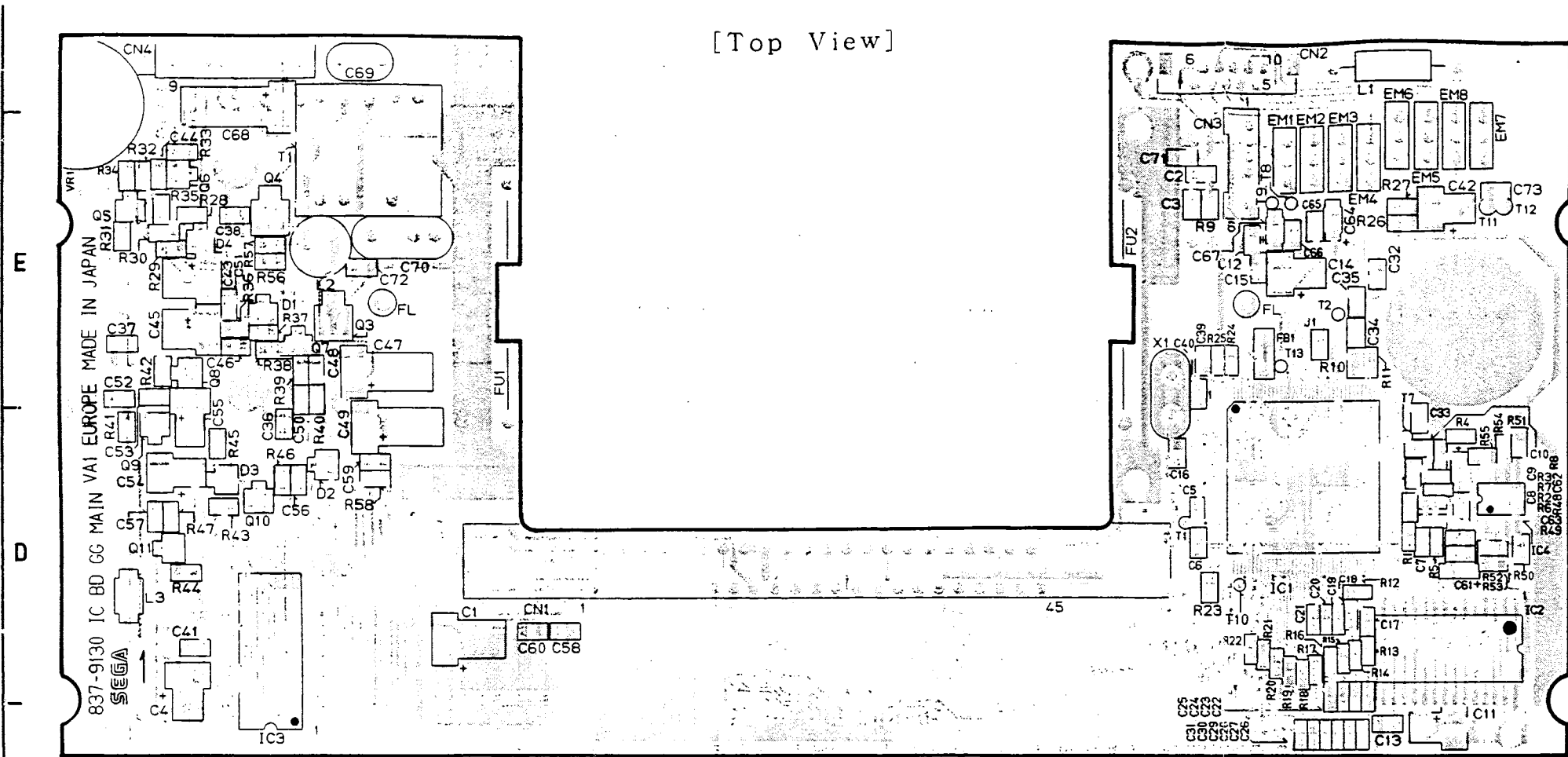
6-2. DC-DC Converter Circuit Board (AC120V area)



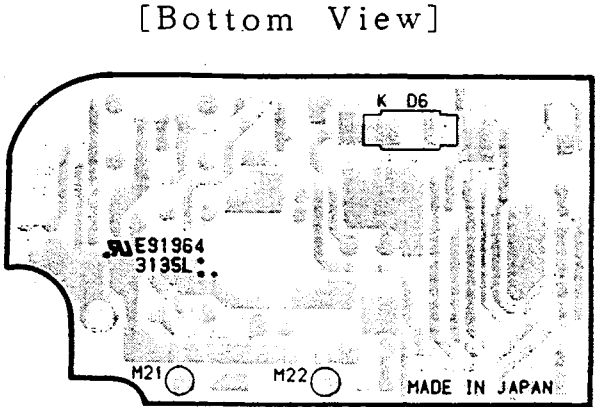
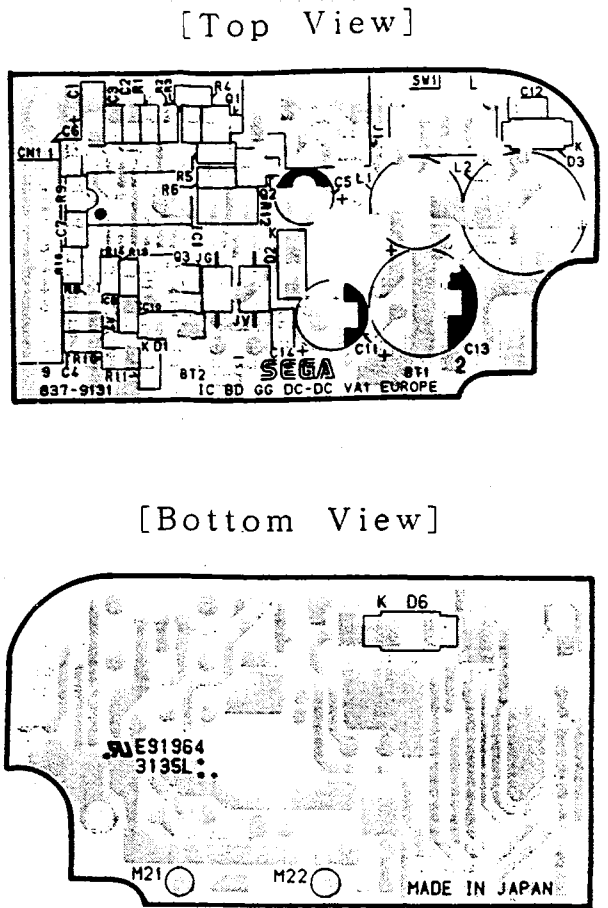
6-3. Sound Circuit Board (AC120V area)



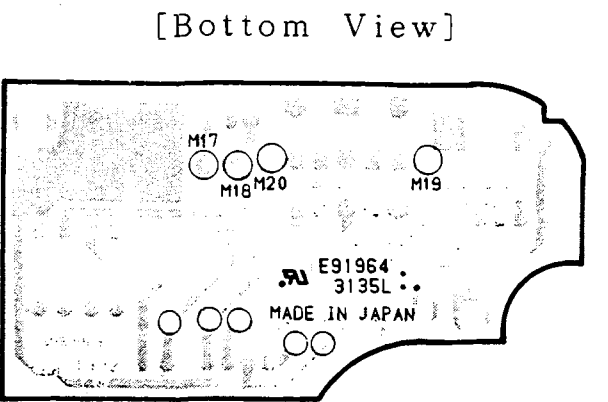
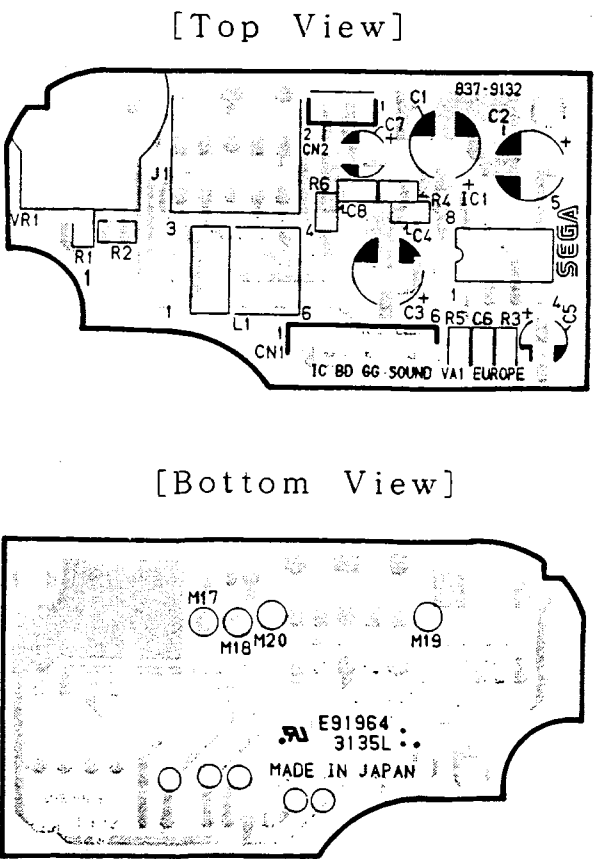
6-4. Main Circuit Board (AC230V/240V area)



6-5. DC-DC Converter Circuit Board (AC230V/240V area)



6-6. Sound Circuit Board (AC230V/240V area)



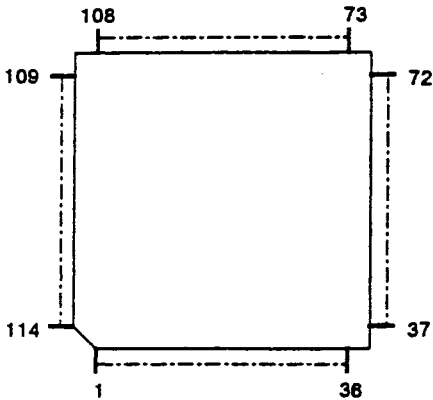
7. PARTS SPECIFICATIONS

7-1. Main Circuit Board

IC1 Custom Chip

GG QFP 144P

■ Top View

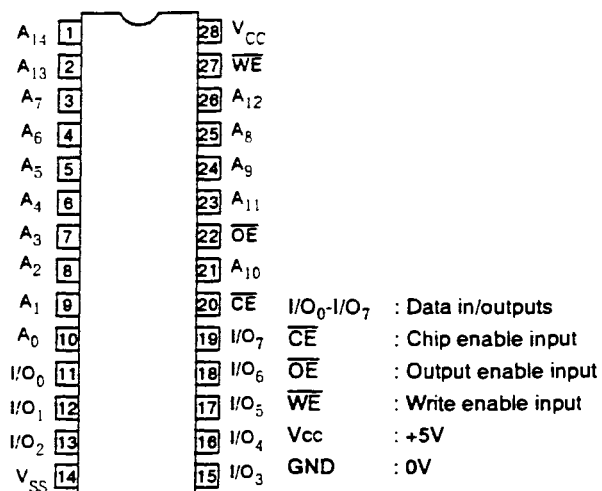


■ Description

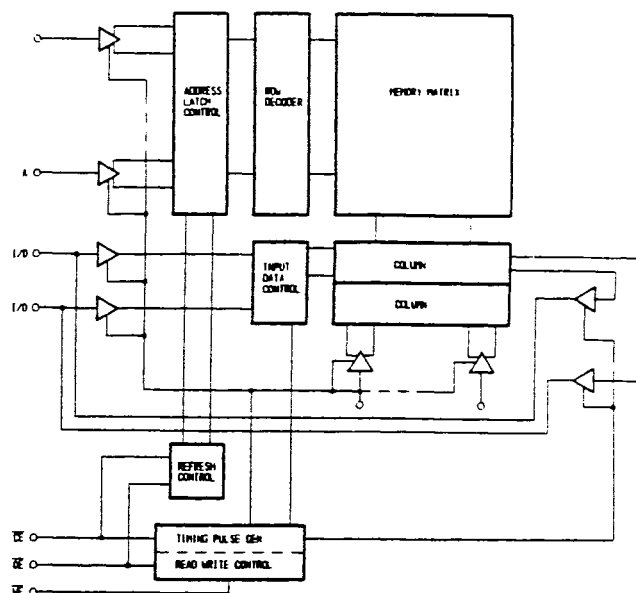
| No. | Pin Name        | No. | Pin Name | No. | Pin Name            | No. | Pin Name        |
|-----|-----------------|-----|----------|-----|---------------------|-----|-----------------|
| 1   | V <sub>DD</sub> | 37  | GND      | 73  | V <sub>DD</sub>     | 109 | GND             |
| 2   | A0              | 38  | NGG      | 74  | AD10                | 110 | CSYN            |
| 3   | A1              | 39  | NTV      | 75  | AD11                | 111 | NUP             |
| 4   | A2              | 40  | NLCD     | 76  | AD12                | 112 | NDW             |
| 5   | A3              | 41  | A        | 77  | AD13                | 113 | NLE             |
| 6   | A4              | 42  | TPR2     | 78  | AD14                | 114 | NRI             |
| 7   | A5              | 43  | TPR1     | 79  | NWE                 | 115 | TST2            |
| 8   | A6              | 44  | CLA3     | 80  | NOE                 | 116 | TST1            |
| 9   | A7              | 45  | CB3      | 81  | NCE                 | 117 | TST0            |
| 10  | A8              | 46  | CA2      | 82  | GND (A)             | 118 | NTSC            |
| 11  | A9              | 47  | CB2      | 83  | VONF                | 119 | SEC             |
| 12  | A10             | 48  | CA1      | 84  | VRES                | 120 | PC6             |
| 13  | A11             | 49  | CB1      | 85  | VREF                | 121 | PC5             |
| 14  | A12             | 50  | DW       | 86  | SNDR                | 122 | PC4             |
| 15  | A13             | 51  | D03      | 87  | SNDL                | 123 | PC3             |
| 16  | A14             | 52  | D01      | 88  | SND1                | 124 | PC2             |
| 17  | A15             | 53  | D04      | 89  | SND2                | 125 | PC1             |
| 18  | GND             | 54  | D02      | 90  | SND3                | 126 | PC0             |
| 19  | D0              | 55  | CL2      | 91  | SNDN                | 127 | CRAM            |
| 20  | D1              | 56  | P1       | 92  | V <sub>DD</sub> (A) | 128 | IRQ             |
| 21  | D2              | 57  | P4       | 93  | GND (A)             | 129 | NWR             |
| 22  | D3              | 58  | P2       | 94  | SD10                | 130 | NRD             |
| 23  | D4              | 59  | P3       | 95  | SD20                | 131 | RST             |
| 24  | D5              | 60  | DB       | 96  | SD30                | 132 | 488             |
| 25  | D6              | 61  | AD0      | 97  | SD40                | 133 | HBK             |
| 26  | D7              | 62  | AD1      | 98  | V <sub>DD</sub> (A) | 134 | VBK             |
| 27  | MRQ             | 63  | AD2      | 99  | SAMP                | 135 | CP0             |
| 28  | EXM1            | 64  | AD3      | 100 | SPON                | 136 | V <sub>DD</sub> |
| 29  | EXM2            | 65  | AD4      | 101 | HSYN                | 137 | XTL2            |
| 30  | VCK             | 66  | AD5      | 102 | VSYN                | 138 | XTL1            |
| 31  | CCK             | 67  | AD6      | 103 | INT                 | 139 | GND             |
| 32  | NPS             | 68  | AD7      | 104 | NM1                 | 140 | NLED            |
| 33  | NTR             | 69  | AD8      | 105 | WAIT                | 141 | RSH             |
| 34  | NTL             | 70  | AD9      | 106 | NBRQ                | 142 | NJAP            |
| 35  | NMI             | 71  | GND      | 107 | NBAK                | 143 | GND             |
| 36  | V <sub>DD</sub> | 72  | GND      | 108 | V <sub>DD</sub>     | 144 | GND             |

IC HM65256BLFP-12

### ■ Top View & Pin Layout



### ■ Block Diagram



## ■ Operation Mode

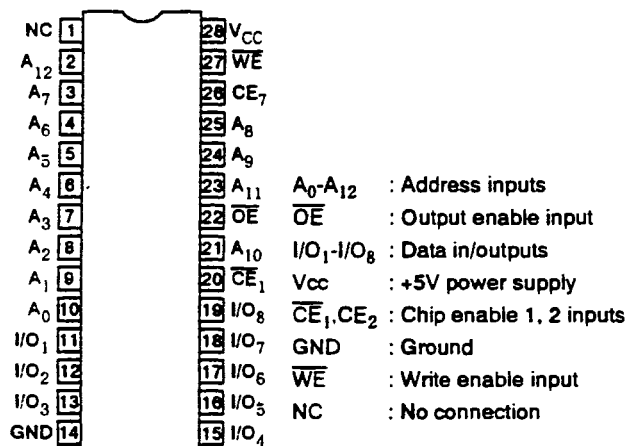
| $\overline{CE}$ | $\overline{OE}$ | $\overline{WE}$ | I/O    | Mode    |
|-----------------|-----------------|-----------------|--------|---------|
| L               | L               | H               | Low Z  | Read    |
| L               | ×               | L               | High Z | Write   |
| L               | H               | H               | High Z | —       |
| H               | L               | ×               | High Z | Refresh |
| H               | H               | ×               | High Z | Standby |

### IC3

C μ PD4364G-15L

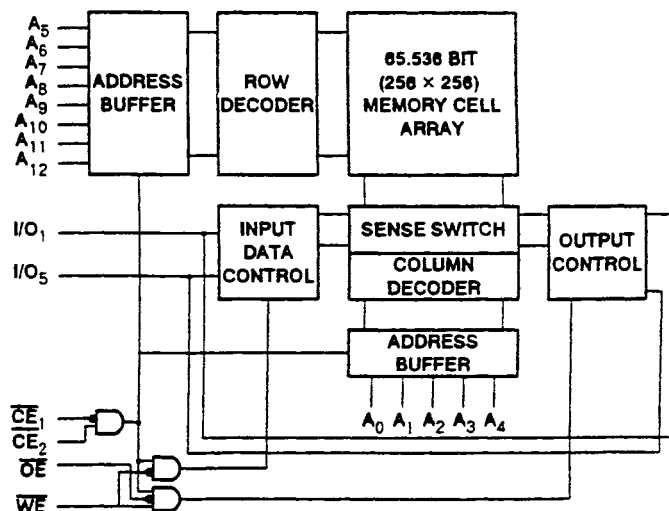
IC MB8464A-10LL

### ■ Top View & Pin Layout



IC FCB61C65L-70T

### ■ Block Diagram



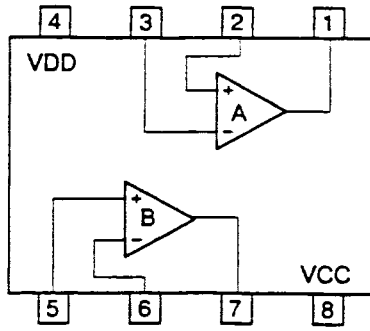
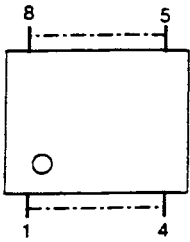
## IC4 Dual Operational Amplifier

IC  $\mu$  PC358G2

■ Top View

IC NJM2904-01

■ Pin Layout

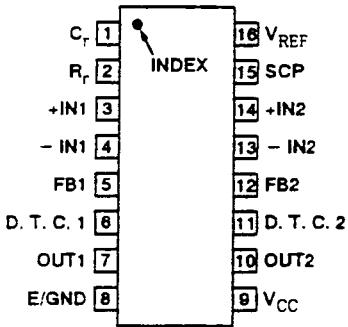


## 7-2 DC-DC Converter Circuit Board

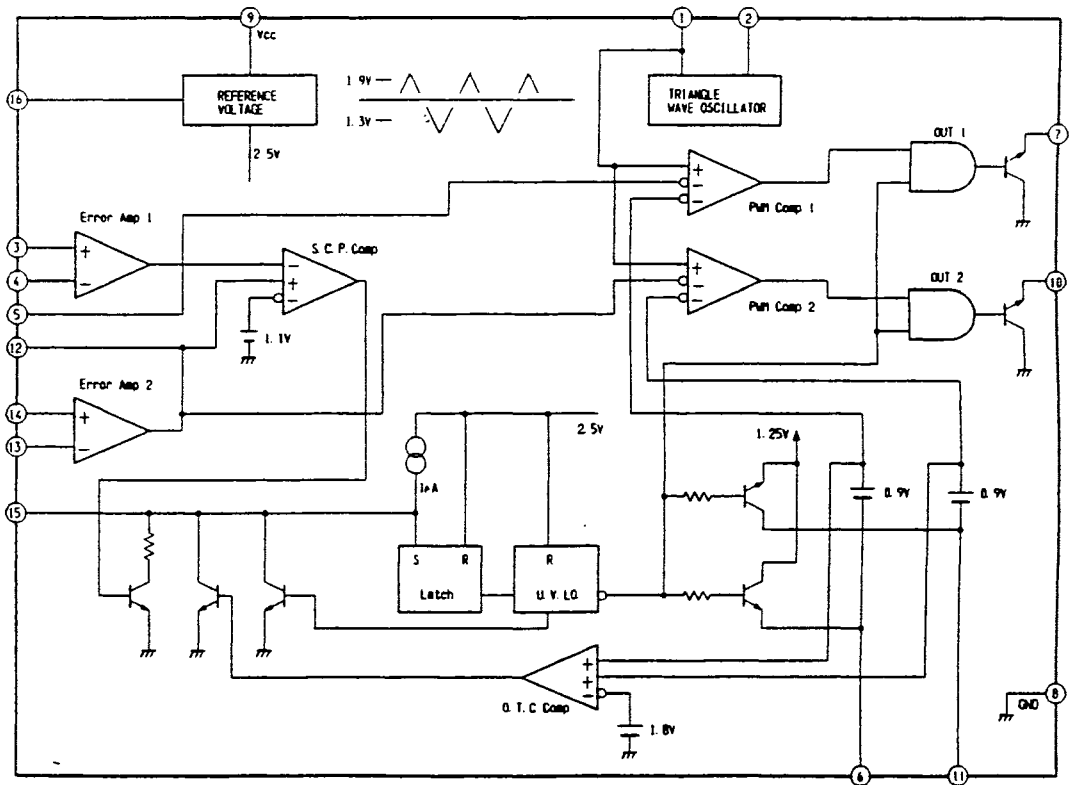
IC1

IC MB3775PF-G-BND

■ Top View & Pin Layout



■ Block Diagram

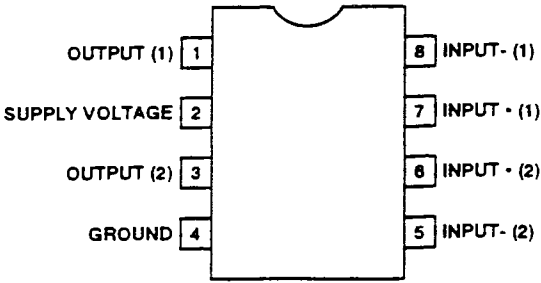


7-3 Sound Circuit Board

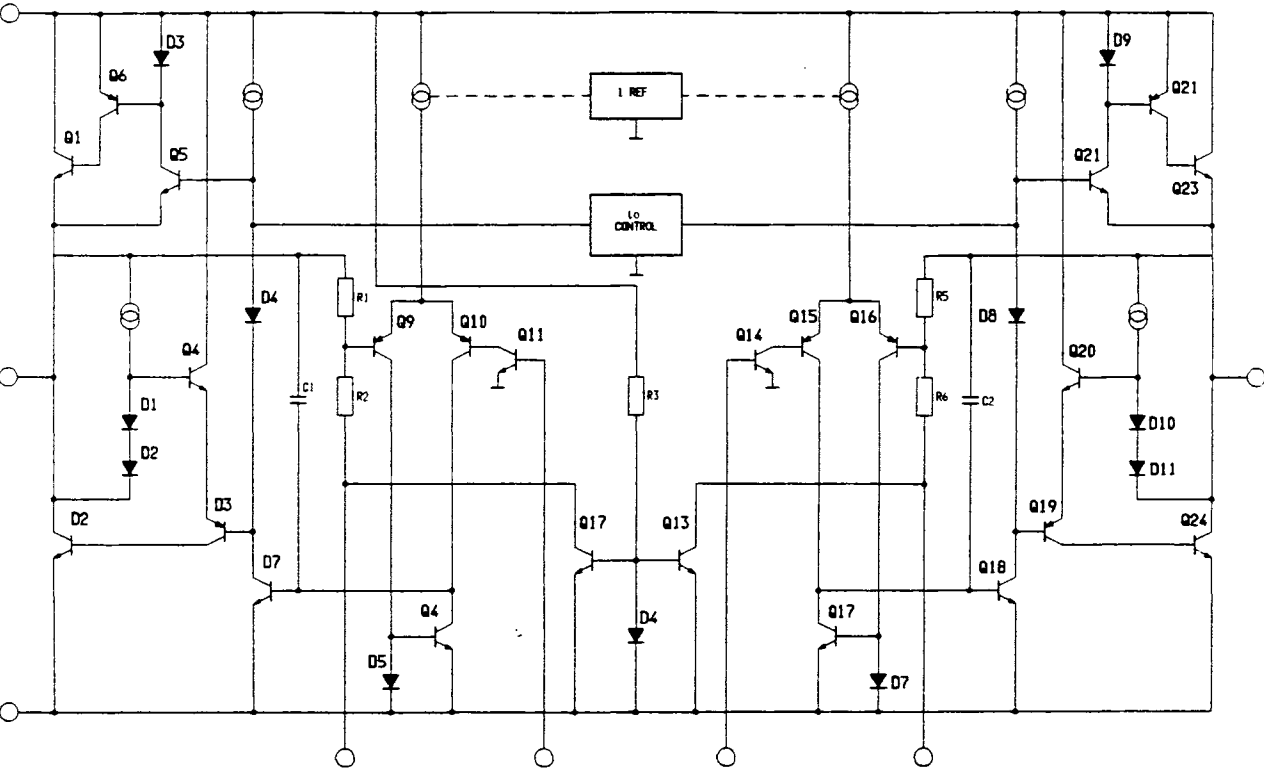
IC1

IC TDA2822M

■ Top View & Pin Layout



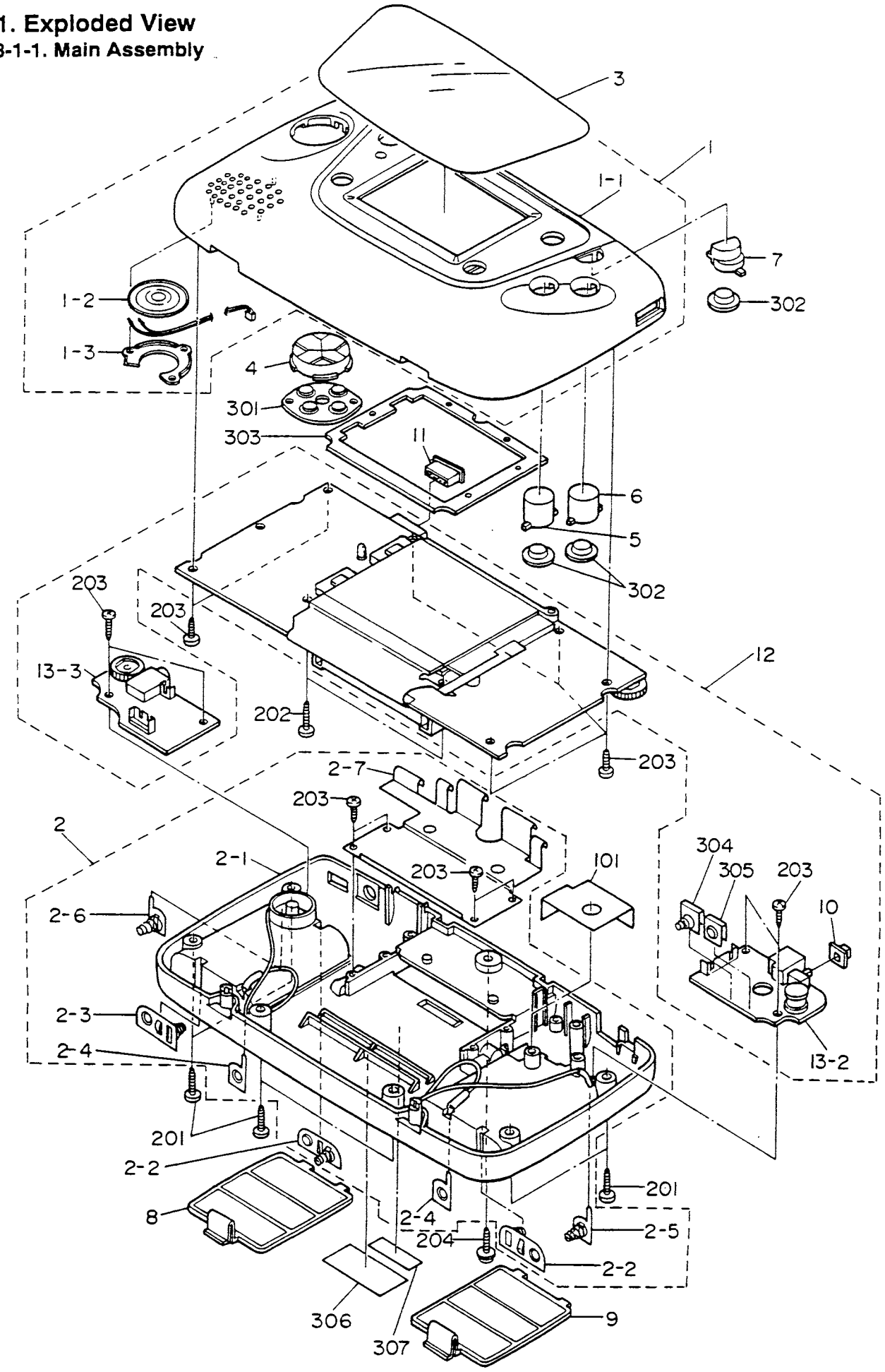
■ Block Diagram



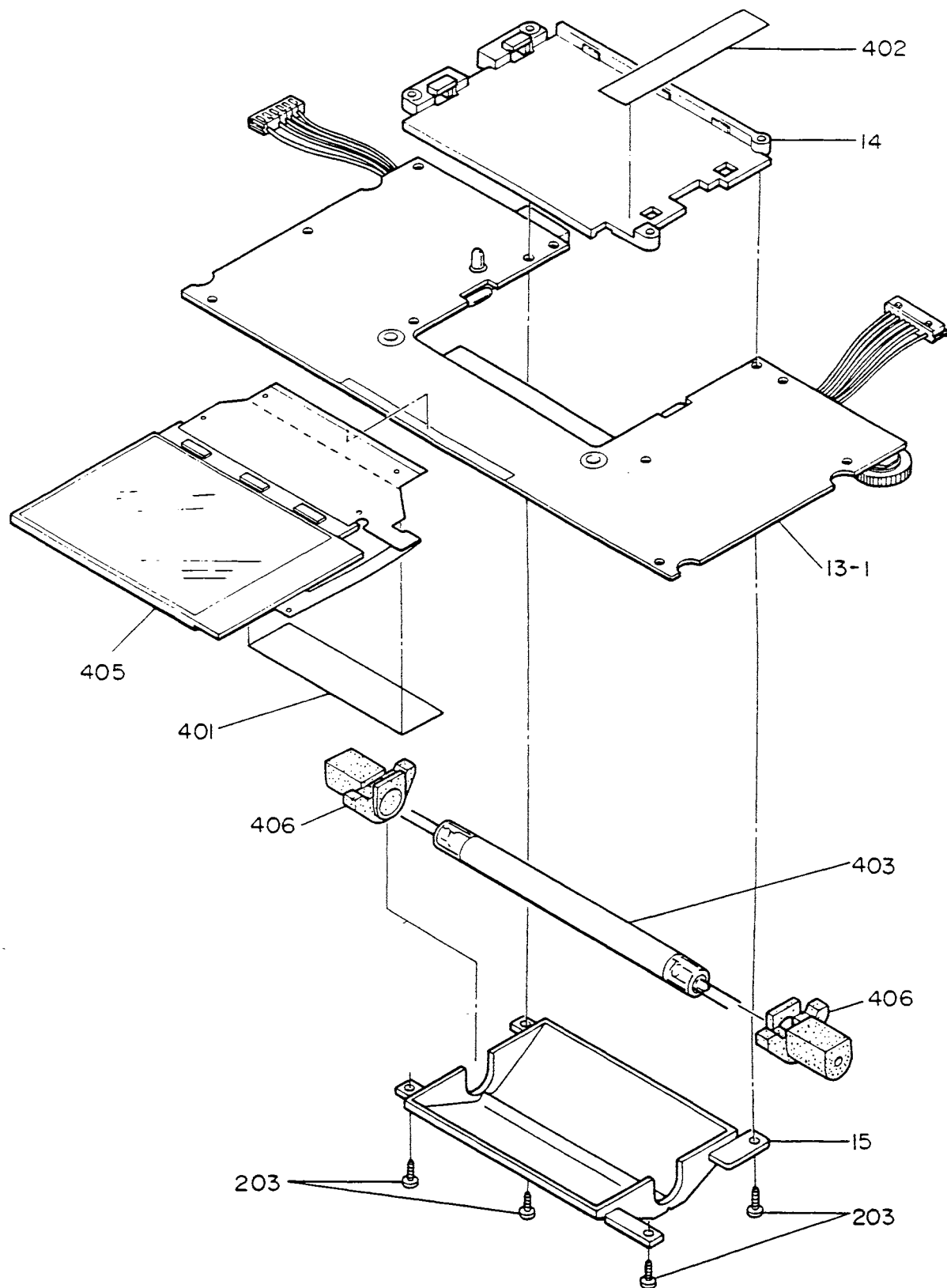
8. EXPLODED VIEW & PARTS LIST

8-1. Exploded View

8-1-1. Main Assembly



# 8-1-2. Sub Assembly



## 8-2. Mechanical Parts List

### 8-2-1. Main Assembly

| Ref No. | Parts No.      | Description                           | Circuit No.                                                                                                                                                                                                                                                                                                                                                                                                                                              | Parts No.     | Description                                 |
|---------|----------------|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------------------------------|
| 1       | 610-5403       | ASSY TOP CASE GG USA ALL [A. C]       | 13-1                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 837-9024      | IC BD GG MAIN USA VA1 (CBA) [1XX]           |
| 1       | 610-5403-01    | ASSY TOP CASE GG USA ALL 01 [C. S. C] | 13-1                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 837-9024-01P  | IC BD GG MAIN USA VA1 W/SEQ(CBA) [1XX]      |
|         |                |                                       | 13-1                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 837-9130-01P  | IC BD GG MAIN EUR VA1 W/SEQ(CBA) [2XX]      |
| 1-1     | 253-6420-91    | TOP CASE GG EXPORT ALL [A. C]         | 13-2                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 837-9025      | IC BD GG DC-DC CONV. USA VA1 (CBA) [1XX]    |
| 1-1     | 253-6420-01-91 | TOP CASE GG EXPORT 01 ALL [C. S. C]   | 13-2                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 837-9025-01P  | IC BD GG DC-DC USA VA1 W/SEQ(CBA) [1XX]     |
|         |                |                                       | 13-2                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 837-9131-01P  | IC BD GG DC-DC CONV. EUROPE VA1 (CBA) [2XX] |
| 1-2     | 130-5052       | SPKR 8 OHM 0.15W 28CS028003-01        |                                                                                                                                                                                                                                                                                                                                                                                                                                                          |               |                                             |
| 1-3     | 253-6367       | SPEAKER HOLDER GG                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                          |               |                                             |
| 2       | 610-5213       | ASSY BOTTOM CASE GG USA [A. C]        | 13-3                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 837-9026      | IC BD GG SOUND USA VA1 (CBA) [1XX]          |
| 2       | 610-5213-01    | ASSY BOTTOM CASE GG USA 01 [C. S. C]  | 13-3                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 837-9026-01P  | IC BD GG SOUND USA VA1 W/SEQ(CBA) [1XX]     |
|         |                |                                       | 13-3                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 837-9132-01P  | IC BD GG SOUND EUROPE VA1 (CBA) [2XX]       |
| 2-1     | 253-6421       | BOTTOM CASE GG EXPORT [A. C]          | 101                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 253-6422      | BATT. BLADE COVER GG                        |
| 2-1     | 253-6421-01    | BOTTOM CASE GG EXPORT 01 [C. S. C]    |                                                                                                                                                                                                                                                                                                                                                                                                                                                          |               |                                             |
| 2-2     | 250-5208       | BATT. BLADE 2P A                      | 201                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 012-P02610-0B | TAP SCR PH BLK 2.6×10                       |
| 2-3     | 250-5209       | BATT. BLADE 2P B                      | 202                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 012-P00312    | TAP SCR PH 3×12                             |
| 2-4     | 250-5210       | BATT. BLADE 1P C                      | 203                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 012-P00206    | TAP SCR PH 2×6                              |
| 2-5     | 250-5211       | BATT. BLADE 1P D                      | 204                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 029-000003-0B | TAP SCR LH-3 2.6×10 BLK                     |
| 2-6     | 250-5214       | BATT. BLADE 1P E                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                          |               |                                             |
| 2-7     | 250-5243       | SUPPORT PLATE GG 01                   | 301                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 509-5334      | RUBBER CONTACT GG 4P [2XX]                  |
|         |                |                                       | 301                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 509-5435      | RUBBER CONTACT GG 4P BALL TYPE [1XX]        |
| 3       | 253-6434       | CLEAR PLATE GG INMOLD                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                          |               |                                             |
| 4       | 253-6363-03    | PAD GG 03 (CONTACT TYPE) [2XX]        | 302                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 509-5335      | RUBBER CONTACT GG 1P                        |
| 4       | 253-6486       | PAD GG BALL TYPE [1XX]                | 303                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 601-6428      | LCD CUSHION GG                              |
|         |                |                                       | 304                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 250-5202      | BATT. BLADE 1P B                            |
|         |                |                                       | 305                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 250-5203      | BATT. BLADE 1P A                            |
| 5       | 253-6364       | BUTTON 1 GG                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                          |               |                                             |
| 6       | 253-6365       | BUTTON 2 GG                           | 306                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 670-2704      | LABEL INDICATION GG USA SMITH [1XX]         |
| 7       | 253-6366       | START BUTTON GG                       | 306                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 670-2707      | LABEL INDICATION GG MUL SMITH [2XX]         |
| 8       | 253-6368       | BATT LID LEFT GG                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                          |               |                                             |
| 9       | 253-6369       | BATT LID RIGHT GG                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                          |               |                                             |
| 10      | 253-6378       | POWER KNOB GG                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                          |               |                                             |
| 11      | 253-6401       | 10P CONN COVER GG                     | 307                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 670-2705      | LABEL SER. NO. GG                           |
| 12      | 837-7841-01P   | ASSY IC BD GG USA W/SEQ [1XX]         | <b>【NOTE】</b><br>1. The insides of the top and bottom cases are coated with aluminum or given a conductive surface treatment. Combine the top and bottom cases with the same coating. A top case coated with aluminum and a bottom case with a conductive surface treatment or vice versa cannot be used in combination.<br>2. [1XX]→ AC120V area. [2XX]→ AC230V/240V area.<br>3. The MAIN, DC-DC conv. and SOUND boards cannot be ordered individually. |               |                                             |
| 12      | 837-7994       | ASSY IC BD GG EUROPE W/SEQ [2XX]      |                                                                                                                                                                                                                                                                                                                                                                                                                                                          |               |                                             |
| 13      | 837-9023       | IC BD GG USA VA1 W/SEQ(CBA) [1XX]     |                                                                                                                                                                                                                                                                                                                                                                                                                                                          |               |                                             |
| 13      | 837-9023-01P   | IC BD GG USA VA1 W/SEQ(CBA) [1XX]     |                                                                                                                                                                                                                                                                                                                                                                                                                                                          |               |                                             |
| 13      | 837-9129-01P   | IC BD GG EUR VA1 W/SEQ(CBA) [2XX]     |                                                                                                                                                                                                                                                                                                                                                                                                                                                          |               |                                             |

### 8-2-2. Sub Assembly

| Ref No.                                                                                                                                   | Parts No.  | Description                     | Circuit No. | Parts No. | Description |
|-------------------------------------------------------------------------------------------------------------------------------------------|------------|---------------------------------|-------------|-----------|-------------|
| 14                                                                                                                                        | 253-6370   | SPREAD PLATE GG                 |             |           |             |
| 15                                                                                                                                        | 253-6380   | REFLECT COVER GG                |             |           |             |
| 203                                                                                                                                       | 012-P00206 | TAP SCR PH 2×6                  |             |           |             |
| 401                                                                                                                                       | 090-0050   | POLY FILM 633S                  |             |           |             |
| 402                                                                                                                                       | 090-0048   | TAPE GG                         |             |           |             |
| 403                                                                                                                                       | 390-5309   | FL LIGHT GG (BACK LIGHT) ELEBAM |             |           |             |
| 405                                                                                                                                       | 390-5311   | ASSY LCD 3.2" COLOR GG CITIZEN  |             |           |             |
| 406                                                                                                                                       | 601-6541   | FL LIGHT PROTECTOR GG           |             |           |             |
| <b>【NOTE】</b><br>Please place order of POLY FILM in units of rolls.<br>One roll of POLY FILM can be used for approx. 300 Game Gear units. |            |                                 |             |           |             |

# al Parts List

## Circuit Board

| No.          | Description                                             |                              | Circuit No. | Parts No.                  | Description                                                        |
|--------------|---------------------------------------------------------|------------------------------|-------------|----------------------------|--------------------------------------------------------------------|
| 7-A          | IC CUSTOM CHIP GG OFF 144P<br>IC HM65256BLFP-12 SOP 28P | NEC<br>HITACHI               | EM8<br>EM8  | 271-0007-02<br>271-0007-04 | EMI FILTER DSS306-93E222Z100 MURATA<br>EMI FILTER ED31-B222M TOKIN |
| 6-A          | IC UPD4364G-15L SOP 28P                                 | NEC                          | L1          | 271-0017                   | BEADS INDUCTOR FBA04VA900AB-00 TAIYO                               |
| 5-A          | IC KM6264BLG-12 SOP 28P                                 | SAMSUNG                      | L1          | 271-0017-02                | BEADS INDUCTOR HF70BTL3.5×9R TDK                                   |
| 1-A          | IC FCB61C65L-70T SOP 28P                                | PHILIPS                      |             |                            |                                                                    |
| 35-A         | IC MB8464A-10LL SOP                                     | FUJITSU                      | L2          | 180-5077                   | CHOKE COIL 105UH KI-1589 KIJIMA                                    |
| 53-10A       | IC LC3564PM-10L SOP                                     | SANYO                        | L2          | 180-5092                   | CHOKE COIL 105UH TOKYO TRANS                                       |
| 53-12A       | IC LC3564PM-12L SOP                                     | SANYO                        | L2          | 180-5114                   | CHOKE COIL 105UH CA-C-D007-001 FUJI                                |
| 66-10A       | IC LC3664BML-10H SOP                                    | SANYO                        |             |                            |                                                                    |
| 66-85A       | IC LC3664BML-85H SOP                                    | SANYO                        | L3          | 180-5073                   | P.COIL CHIP 100UH LEM4532T101K TAIYO                               |
| 330-10A      | IC MB8464H-10LL SOP 28P                                 | FUJITSU                      | L3          | 180-5073-02                | P.COIL CHIP 100UH NL453232T-101K TDK                               |
| 331-15A      | IC GM76C88ALFW-15 SOP 28P                               | KINSEI                       |             |                            |                                                                    |
| 134-A        | IC UPC358G2 SOP 8P                                      | NEC                          | T1          | 560-5172                   | INVERTER XFMR KI-1588 KIJIMA                                       |
| 134-01-A     | IC NJM2904-01 SOP 8P                                    | JRC                          | T1          | 560-5201                   | INVERTER XFMR TT911217-1 TOKYO TRANS                               |
|              |                                                         |                              | T1          | 560-5251                   | INVERTER XFMR CA-T-1618-001 FUJI                                   |
| 5127         | XSTR 2SD1614 CHIP                                       | NEC                          | VR1         | 220-5339                   | VOL CONT 20K B RK09J111TO ALPS                                     |
| 5127         | XSTR 2SD1614 CHIP                                       | NEC                          | VR1         | 220-5339-01                | VOL CONT 20K B-TYPE HOKURIKU                                       |
| 5126         | XSTR 2SC1623 L5..7 CHIP                                 | NEC                          |             |                            |                                                                    |
| -5126        | XSTR 2SC1623 L5..7 CHIP                                 | NEC                          | R1          | 476-1472-J-16              | RES CHIP 4.7K OHM 1/16W 5%                                         |
| -5126        | XSTR 2SC1623 L5..7 CHIP                                 | NEC                          | R2          | 476-1472-J-16              | RES CHIP 4.7K OHM 1/16W 5%                                         |
| -5125        | XSTR 2SA812 M5..7 CHIP                                  | NEC                          | R3          | 476-1472-J-16              | RES CHIP 4.7K OHM 1/16W 5%                                         |
| -5126        | XSTR 2SC1623 L5..7 CHIP                                 | NEC                          | R4          | 476-1472-J-16              | RES CHIP 4.7K OHM 1/16W 5%                                         |
| -5125        | XSTR 2SA812 M5..7 CHIP                                  | NEC                          | R5          | 476-1474-J-16              | RES CHIP 470K OHM 1/16W 5%                                         |
| -5126        | XSTR 2SC1623 L5..7 CHIP                                 | NEC                          | R6          | 476-1474-J-16              | RES CHIP 470K OHM 1/16W 5%                                         |
| -5126        | XSTR 2SC1623 L5..7 CHIP                                 | NEC                          | R7          | 476-1474-J-16              | RES CHIP 470K OHM 1/16W 5%                                         |
| T USED       | NOT USED                                                |                              | R8          | 476-1474-J-16              | RES CHIP 470K OHM 1/16W 5%                                         |
| 0-5308       | LED SLR 34-VT3F                                         | ROHM                         | R9          | 476-2471-J-10              | RES CHIP 470 OHM 1/10W 5%                                          |
| 31-5072      | DIODE 1SS184 CHIP                                       | TOSHIBA                      | R10         | 476-2472-J-10              | RES CHIP 4.7K OHM 1/10W 5%                                         |
| 31-5072      | DIODE 1SS184 CHIP                                       | TOSHIBA                      | R11         | 476-2472-J-10              | RES CHIP 4.7K OHM 1/10W 5%                                         |
| 81-5072      | DIODE 1SS184 CHIP                                       | TOSHIBA                      | R12         | 476-1122-J-16              | RES CHIP 1.2K OHM 1/16W 5%                                         |
| 81-5072      | DIODE 1SS184 CHIP                                       | TOSHIBA                      | R13         | 476-1221-J-16              | RES CHIP 220 OHM 1/16W 5%                                          |
|              |                                                         |                              | R14         | 476-1221-J-16              | RES CHIP 220 OHM 1/16W 5%                                          |
| 230-5066     | XTAL OSC 32.215905M 100PPM                              | TQC                          | R15         | 476-1221-J-16              | RES CHIP 220 OHM 1/16W 5%                                          |
|              |                                                         |                              | R16         | 476-1221-J-16              | RES CHIP 220 OHM 1/16W 5%                                          |
| 209-5037-01A | CONN 45P FOR GG 3HOLES                                  | AMP                          | R17         | 476-1221-J-16              | RES CHIP 220 OHM 1/16W 5%                                          |
| 209-5037-02A | CONN 45P FOR GG 3HOLES                                  | FUJITSU                      | R18         | 476-1221-J-16              | RES CHIP 220 OHM 1/16W 5%                                          |
|              |                                                         |                              | R19         | 476-1221-J-16              | RES CHIP 220 OHM 1/16W 5%                                          |
| 209-5038     | CONN 10P FOR GG HDC-0492                                | HOSHIDEN                     | R20         | 476-1221-J-16              | RES CHIP 220 OHM 1/16W 5%                                          |
| 600-5910     | WIRE HARN 6P FOR GG 60MM                                | HIRAKAWA                     | R21         | 476-1221-J-16              | RES CHIP 220 OHM 1/16W 5%                                          |
| 600-5911     | WIRE HARN 9P FOR GG 60MM                                | HIRAKAWA                     | R22         | 476-1221-J-16              | RES CHIP 220 OHM 1/16W 5%                                          |
|              |                                                         |                              | R23         | 476-2472-J-10              | RES CHIP 4.7K OHM 1/10W 5%                                         |
| 514-5040     | FUSE THERMAL SMO95B0                                    | NEC                          | R24         | 476-2182-J-10              | RES CHIP 1.8K OHM 1/10W 5%                                         |
| 514-5040     | FUSE THERMAL SMO95B0                                    | NEC                          | R25         | 476-2510-J-10              | RES CHIP 51 OHM 1/10W 5%                                           |
|              |                                                         |                              | R26         | 476-2103-J-10              | RES CHIP 10K OHM 1/10W 5%                                          |
| 079-000003   | EYLET 3.5×7                                             |                              | R27         | 476-2103-J-10              | RES CHIP 10K OHM 1/10W 5%                                          |
| 079-000003   | EYLET 3.5×7                                             |                              | R28         | 476-2912-F-10              | RES CHIP 9.1K OHM 1/10W 1%                                         |
|              |                                                         |                              | R29         | 476-2112-F-10              | RES CHIP 1.1K OHM 1/10W 1%                                         |
| 271-0007     | EMI FILTER STX222MB                                     | TAIYO                        | R30         | 476-2302-F-10              | RES CHIP 3K OHM 1/10W 1%                                           |
| 271-0007-02  | EMI FILTER DSS306-93E222Z100                            | MURATA                       | R31         | 476-2104-J-10              | RES CHIP 100K OHM 1/10W 5%                                         |
| 271-0007-04  | EMI FILTER ED31-B222M                                   | TOKIN                        | R32         | 476-2104-J-10              | RES CHIP 100K OHM 1/10W 5%                                         |
| 271-0007     | EMI FILTER STX222MB                                     | TAIYO                        | R33         | 476-2303-J-10              | RES CHIP 30K OHM 1/10W 5%                                          |
| 271-0007-02  | EMI FILTER DSS306-93E222Z100                            | MURATA                       | R34         | 476-2203-J-10              | RES CHIP 20K OHM 1/10W 5%                                          |
| 271-0007-04  | EMI FILTER ED31-B222M                                   | TOKIN                        | R35         | 476-2510-J-10              | RES CHIP 51 OHM 1/10W 5%                                           |
|              |                                                         |                              | R36         | 476-2563-F-10              | RES CHIP 56K OHM 1/10W 1%                                          |
| 271-0007     | EMI FILTER STX222MB                                     | TAIYO                        | R37         | 476-2303-F-10              | RES CHIP 30K OHM 1/10W 1%                                          |
| 271-0007-02  | EMI FILTER DSS306-93E222Z100                            | MURATA                       | R38         | 476-2510-J-10              | RES CHIP 51 OHM 1/10W 5%                                           |
| 271-0007-04  | EMI FILTER ED31-B222M                                   | TOKIN                        | R39         | 476-2471-F-10              | RES CHIP 470 OHM 1/10W 1%                                          |
| 4            | 271-0007                                                | EMI FILTER STX222MB          | R40         | 476-2471-F-10              | RES CHIP 470 OHM 1/10W 1%                                          |
| 14           | 271-0007-02                                             | EMI FILTER DSS306-93E222Z100 | R41         | 476-2222-J-10              | RES CHIP 2.2K OHM 1/10W 5%                                         |
| 14           | 271-0007-04                                             | EMI FILTER ED31-B222M        | R42         | 476-2244-J-10              | RES CHIP 240K OHM 1/10W 5%                                         |
|              |                                                         |                              | R43         | 476-2223-J-10              | RES CHIP 22K OHM 1/10W 5%                                          |
| M5           | 271-0007                                                | EMI FILTER STX222MB          | R44         | 476-2223-J-10              | RES CHIP 22K OHM 1/10W 5%                                          |
| M5           | 271-0007-02                                             | EMI FILTER DSS306-93E222Z100 | R45         | 476-2105-J-10              | RES CHIP 1M OHM 1/10W 5%                                           |
| M5           | 271-0007-04                                             | EMI FILTER ED31-B222M        | R46         | 476-2223-J-10              | RES CHIP 22K OHM 1/10W 5%                                          |
|              |                                                         |                              | R47         | 476-2223-J-10              | RES CHIP 22K OHM 1/10W 5%                                          |
| EM6          | 271-0007                                                | EMI FILTER STX222MB          | R48         | 476-2103-J-10              | RES CHIP 10K OHM 1/10W 5%                                          |
| EM6          | 271-0007-02                                             | EMI FILTER DSS306-93E222Z100 | R49         | 476-2103-J-10              | RES CHIP 10K OHM 1/10W 5%                                          |
| EM6          | 271-0007-04                                             | EMI FILTER ED31-B222M        |             |                            |                                                                    |
|              |                                                         |                              | R50         | 476-2473-J-10              | RES CHIP 47K OHM 1/10W 5%                                          |
| EM7          | 271-0007                                                | EMI FILTER STX222MB          | R51         | 476-2473-J-10              | RES CHIP 47K OHM 1/10W 5%                                          |
| EM7          | 271-0007-02                                             | EMI FILTER DSS306-93E222Z100 | R52         | 476-2102-J-10              | RES CHIP 1K OHM 1/10W 5%                                           |
| EM7          | 271-0007-04                                             | EMI FILTER ED31-B222M        | R53         | 476-2102-J-10              | RES CHIP 1K OHM 1/10W 5%                                           |
|              |                                                         |                              | R54         | 476-2102-J-10              | RES CHIP 1K OHM 1/10W 5%                                           |
| EM8          | 271-0007                                                | EMI FILTER STX222MB          | R55         | 476-2102-J-10              | RES CHIP 1K OHM 1/10W 5%                                           |

1 Use the Circuit No. L2 and T1 of the same manufacturer. (KIJIMA or TOKYO TRANS)

2XX→ AC230V/240V area.

| Circuit No. | Parts No.     | Description                            | Circuit No.                                 | Parts No.     | Description                          |
|-------------|---------------|----------------------------------------|---------------------------------------------|---------------|--------------------------------------|
| R56         | 476-2182-J-10 | RES CHIP 1.8K OHM 1/10W 5%             | C59                                         | 151-0265      | CAP CER CP 0.1UF 25V ZF 2125         |
| R57         | 476-2182-J-10 | RES CHIP 1.8K OHM 1/10W 5%             | C60                                         | 151-0286      | CAP CER CHIP 0.47UF 16V Z F GSR40    |
| R58         | 476-2102-J-10 | RES CHIP 1K OHM 1/10W 5%               | C61                                         | 153-0085-01   | CAP TANT CHIP 1UF 16V 20% F931C      |
| J1          | NOT USED      | NOT USED (W/SEQ)                       | C61                                         | 153-0086      | CAP TANT CHIP 1UF 16V SVA1C105M1-8R  |
| C1          | 150-0311      | CAP E CHIP 33UF 6.3V MF6.3FC33D8       | C61                                         | 153-0090      | CAP TANT CHIP 1UF 10V SVA1A105M1     |
| C2          | NOT USED      | NOT USED                               | C62                                         | 153-0085-01   | CAP TANT CHIP 1UF 16V 20% F931C      |
| C3          | NOT USED      | NOT USED                               | C62                                         | 153-0086      | CAP TANT CHIP 1UF 16V SVA1C105M1-8R  |
| C4          | 150-0308      | CAP E CHIP 10UF 6.3V MF6.3FC10B6       | C62                                         | 153-0090      | CAP TANT CHIP 1UF 10V SVA1A105M1     |
| C4          | 150-0420      | CAP E CHIP 10UF 16V 20% UUS1A100MCZ2GH | C63                                         | 151-0265      | CAP CER CP 0.1UF 25V ZF 2125         |
| C5          | NOT USED      | NOT USED                               | C64                                         | 153-0085-01   | CAP TANT CHIP 1UF 16V 20% F931C      |
| C6          | 151-0320      | CAP CER CP 68PF 50V J CH 2125          | C64                                         | 153-0086      | CAP TANT CHIP 1UF 16V SVA1C105M1-8R  |
| C7          | 151-0358      | CAP CER CP 0.33UF 16V ZF 2125          | C64                                         | 153-0090      | CAP TANT CHIP 1UF 10V SVA1A105M1     |
| C8          | 151-0358      | CAP CER CP 0.33UF 16V ZF 2125          | C65                                         | 151-0264      | CAP CER CP 8200PF 50V KB 2125        |
| C9          | 151-0358      | CAP CER CP 0.33UF 16V ZF 2125          | C66                                         | 151-0264      | CAP CER CP 8200PF 50V KB 2125        |
| C10         | 151-0358      | CAP CER CP 0.33UF 16V ZF 2125          | C67                                         | 153-0085-01   | CAP TANT CHIP 1UF 16V 20% F931C      |
| C11         | 150-0308      | CAP E CHIP 10UF 6.3V MF6.3FC10B6       | C67                                         | 153-0086      | CAP TANT CHIP 1UF 16V SVA1C105M1-8R  |
| C11         | 150-0420      | CAP E CHIP 10UF 16V 20% UUS1A100MCZ2GH | C67                                         | 153-0090      | CAP TANT CHIP 1UF 10V SVA1A105M1     |
| C12         | 151-0307      | CAP CER CP 0.022UF 50V ZF 2125         | C68                                         | 150-0313      | CAP E CHIP 100UF 6.3V MF6.3FC100D13  |
| C13         | 151-0265      | CAP CER CP 0.1UF 25V ZF 2125           | C69                                         | 152-0177      | CAP MP 0.1UF 100V 10%                |
| C14         | 150-0308      | CAP E CHIP 10UF 6.3V MF6.3FC10B6       | C70                                         | 151-0272      | CAP CER 270PF 2KV SL MURATA          |
| C14         | 150-0420      | CAP E CHIP 10UF 16V 20% UUS1A100MCZ2GH | C70                                         | 151-0272-01   | CAP CER 270PF 2KV SL MURAYAMA        |
| C15         | 151-0265      | CAP CER CP 0.1UF 25V ZF 2125           | C71                                         | 151-0307      | CAP CER CP 0.022UF 50V ZF 2125       |
| C16         | 151-0265      | CAP CER CP 0.1UF 25V ZF 2125           | C72                                         | 151-0307      | CAP CER CP 0.022UF 50V ZF 2125       |
| C17         | 151-0357      | CAP CER CP 1200PF 50V K B 1608         | C73                                         | 151-0307      | CAP CER CP 0.022UF 50V ZF 2125       |
| C18         | 151-0291      | CAP CER CP 39PF 50V K SL 1608          |                                             |               |                                      |
| C19         | 151-0291      | CAP CER CP 39PF 50V K SL 1608          |                                             |               |                                      |
| C20         | 151-0291      | CAP CER CP 39PF 50V K SL 1608          | <b>8-3-2. DC-DC Converter Circuit Board</b> |               |                                      |
| C21         | 151-0291      | CAP CER CP 39PF 50V K SL 1608          | IC1                                         | 313-5140-A    | IC MB3775PF-G-BND SOP FUJITSU        |
| C22         | 151-0291      | CAP CER CP 39PF 50V K SL 1608          | Q1                                          | 482-5125      | XSTR 2SA812 M5..7 CHIP NEC           |
| C23         | 151-0291      | CAP CER CP 39PF 50V K SL 1608          | Q2                                          | 482-5126      | XSTR 2SC1623 L5..7 CHIP NEC          |
| C24         | 151-0291      | CAP CER CP 39PF 50V K SL 1608          | Q3                                          | 482-5130      | XSTR CHIP 2SB1301 ZQ OR ZP NEC       |
| C25         | 151-0291      | CAP CER CP 39PF 50V K SL 1608          | D1                                          | 481-5111      | DIODE CHIP U1BC44 TOSHIBA            |
| C26         | 151-0291      | CAP CER CP 39PF 50V K SL 1608          | D2                                          | 481-5071      | DIODE CHIP HRF 22 HITACHI            |
| C27         | 151-0291      | CAP CER CP 39PF 50V K SL 1608          | D3                                          | 481-5071      | DIODE CHIP HRF 22 HITACHI            |
| C28         | 151-0291      | CAP CER CP 39PF 50V K SL 1608          | D6                                          | NOT USED      | NOT USED                             |
| C29         | 151-0291      | CAP CER CP 39PF 50V K SL 1608          | J1                                          | 210-5078      | CONN DC JACK E1AJ W/SW HOSHIDEN[1XX] |
| C30         | 151-0291      | CAP CER CP 39PF 50V K SL 1608          | J1                                          | 210-5062      | CONN DC JACK W/SW LGP4013-0300 [2XX] |
| C31         | 151-0291      | CAP CER CP 39PF 50V K SL 1608          | CN1                                         | 212-5355      | CONN 9P FOR GG 178094-9 AMP          |
| C32         | 151-0263      | CAP CER CP 2200PF 50V KB 2125          | SW1                                         | 510-5028      | SLIDE SW HSW1805-010010 HOSHIDEN     |
| C33         | 151-0263      | CAP CER CP 2200PF 50V KB 2125          | L1                                          | 180-5071      | CHOKE COIL 1.2MH FL7H122J TAIYO      |
| C34         | 151-0263      | CAP CER CP 2200PF 50V KB 2125          | L2                                          | 180-5072      | CHOKE COIL 68UH TSL1110680K1R TDK    |
| C35         | 151-0263      | CAP CER CP 2200PF 50V KB 2125          | L2                                          | 180-5083      | CHOKE COIL 68UH A90-870-0 SEIBU      |
| C36         | 151-0263      | CAP CER CP 2200PF 50V KB 2125          | JV                                          | 271-0041      | BEADS INDUCTOR FBA04VA450AB-00 TAIYO |
| C37         | 151-0263      | CAP CER CP 2200PF 50V KB 2125          | JV                                          | 271-0041-01   | BEADS INDUCTOR B-01C-AT              |
| C38         | 151-0263      | CAP CER CP 2200PF 50V KB 2125          | JG                                          | 271-0041      | BEADS INDUCTOR FBA04VA450AB-00 TAIYO |
| C39         | 151-0328      | CAP CER CHIP 22PF 50V CH 2125          | JG                                          | 271-0041-01   | BEADS INDUCTOR B-01C-AT              |
| C40         | 151-0328      | CAP CER CHIP 22PF 50V CH 2125          | R1                                          | 476-2333-J-10 | RES CHIP 33K OHM 1/10W 5%            |
| C41         | 151-0265      | CAP CER CP 0.1UF 25V ZF 2125           | R2                                          | 476-2273-J-10 | RES CHIP 27K OHM 1/10W 5%            |
| C42         | 150-0308      | CAP E CHIP 10UF 6.3V MF6.3FC10B6       | R3                                          | 476-2102-J-10 | RES CHIP 1K OHM 1/10W 5%             |
| C42         | 150-0420      | CAP E CHIP 10UF 16V 20% UUS1A100MCZ2GH | R4                                          | 476-2392-J-10 | RES CHIP 3.9K OHM 1/10W 5%           |
| C43         | 151-0309      | CAP E CHIP 22UF 6.3V MF6.3FC22D6       | R5                                          | 476-2222-J-10 | RES CHIP 2.2K OHM 1/10W 5%           |
| C44         | 151-0265      | CAP CER CP 0.1UF 25V ZF 2125           | R6                                          | 476-2102-J-10 | RES CHIP 1K OHM 1/10W 5%             |
| C45         | 150-0307      | CAP E CHIP 4.7UF 35V MF35FC4.7D6       | R7                                          | 476-2114-F-10 | RES CHIP 110K OHM 1/10W 1%           |
| C46         | 151-0265      | CAP CER CP 0.1UF 25V ZF 2125           | R8                                          | 476-2432-F-10 | RES CHIP 4.3K OHM 1/10W 1%           |
| C47         | 150-0318      | CAP E CHIP 68UF 6.3V MF6.3FC68D10      | R9                                          | 476-2473-J-10 | RES CHIP 47K OHM 1/10W 5%            |
| C48         | 151-0265      | CAP CER CP 0.1UF 25V ZF 2125           | R10                                         | 476-2333-J-10 | RES CHIP 33K OHM 1/10W 5%            |
| C49         | 150-0319      | CAP E CHIP 100UF 4V MF4FC100D10        | R11                                         | 476-2123-J-10 | RES CHIP 12K OHM 1/10W 5%            |
| C50         | 151-0265      | CAP CER CP 0.1UF 25V ZF 2125           | R12                                         | 476-0361-J-04 | RES CHIP 360 OHM 1/4W 5%             |
| C51         | 151-0265      | CAP CER CP 0.1UF 25V ZF 2125           | R13                                         | 476-2221-J-10 | RES CHIP 220 OHM 1/10W 5%            |
| C52         | 151-0271      | CAP CER CP 0.01UF 50V ZF 2125          |                                             |               |                                      |
| C53         | 151-0271      | CAP CER CP 0.01UF 50V ZF 2125          |                                             |               |                                      |
| C54         | 150-0317      | CAP E CHIP 0.47UF 50V MF50VFC0.47A6    |                                             |               |                                      |
| C55         | 150-0317      | CAP E CHIP 0.47UF 50V MF50VFC0.47A6    |                                             |               |                                      |
| C56         | 151-0270      | CAP CER CP 47PF 50V KSL 2125           |                                             |               |                                      |
| C57         | 151-0270      | CAP CER CP 47PF 50V KSL 2125           |                                             |               |                                      |
| C58         | 151-0286      | CAP CER CHIP 0.47UF 16V ZF GSR 40      |                                             |               |                                      |

[NOTE] 1. [1XX] → AC120V area. [2XX] → AC230V/240V area.

| Circuit No.                       | Parts No.     | Description                     | Circuit No. | Parts No. | Description |
|-----------------------------------|---------------|---------------------------------|-------------|-----------|-------------|
| R14                               | 476-2203-F-10 | RES CHIP 20K OHM 1/10W 1%       |             |           |             |
| R15                               | 476-2682-F-10 | RES CHIP 6.8K OHM 1/10W 1%      |             |           |             |
| C1                                | 153-0088      | CAP TANT CP 0.68UF 16V 3216     |             |           |             |
| C1                                | 153-0096      | CAP TANT CHIP 0.68UF 20V 20% F9 |             |           |             |
| C2                                | 151-0265      | CAP CER CP 0.1UF 25V ZF 2125    |             |           |             |
| C3                                | 151-0269      | CAP CER CP 0.1UF 25V K 2125     |             |           |             |
| C4                                | 151-0265      | CAP CER CP 0.1UF 25V ZF 2125    |             |           |             |
| C5                                | 150-0314-A    | CAP E 22UF 35V M 35SP(X)22      |             |           |             |
| C5                                | 150-0314-01A  | CAP E 22UF 35V 35YXB22MY0511    |             |           |             |
| C6                                | 151-0265      | CAP CER CP 0.1UF 25V ZF 2125    |             |           |             |
| C7                                | 151-0268      | CAP CER CHIP 680PF K B 2125     |             |           |             |
| C8                                | 151-0269      | CAP CER CP 0.1UF 25V K 2125     |             |           |             |
| C10                               | 151-0265      | CAP CER CP 0.1UF 25V ZF 2125    |             |           |             |
| C11                               | 150-0315-A    | CAP E 100UF 25V M 25SP(X)100    |             |           |             |
| C11                               | 150-0315-01A  | CAP E 100UF 25V 25YXB100MY0611  |             |           |             |
| C12                               | 151-0265      | CAP CER CP 0.1UF 25V ZF 2125    |             |           |             |
| C13                               | 150-0316-A    | CAP E 820UF 6.3V M 6.3SP(X)820  |             |           |             |
| C13                               | 150-0316-01A  | CAP E 820UF 6.3V 6.3YXB820Y     |             |           |             |
| C14                               | 151-0265      | CAP CER CP 0.1UF 25V ZF 2125    |             |           |             |
| <b>8-3-3. Sound Circuit Board</b> |               |                                 |             |           |             |
| IC1                               | 313-5141      | IC TDA2822M                     |             |           | SGS         |
| IC1                               | 313-5141-01   | IC KA2209 8P DIP                |             |           | SAMSUNG     |
| J1                                | 210-5061      | CONN MINI JACK HSJ0873-01-440   |             |           | HOSHIDEN    |
| CN1                               | 212-5354      | CONN 6P FOR GG 188094-6         |             |           | AMP         |
| CN2                               | 212-5356-02   | CONN M MT AMP CT 2P 173981-2    |             |           | AMP         |
| VR1                               | 220-5343      | SW VOL CONT 10K OHM K102J0Z25   |             |           | ALPS        |
| VR1                               | 220-5343-01   | VOL CONT 10K OHM A-TYPE         |             |           | HOKURIKU    |
| R1                                | 476-2563-J-10 | RES CHIP 56K OHM 1/10W 5%       |             |           |             |
| R2                                | 476-2563-J-10 | RES CHIP 56K OHM 1/10W 5%       |             |           |             |
| R3                                | 476-24R7-J-10 | RES CHIP 4.7 OHM 1/10W 5%       |             |           |             |
| R4                                | 476-24R7-J-10 | RES CHIP 4.7 OHM 1/10W 5%       |             |           |             |
| R5                                | 476-2101-J-10 | RES CHIP 100 OHM 1/10W 5%       |             |           |             |
| R6                                | 476-2101-J-10 | RES CHIP 100 OHM 1/10W 5%       |             |           |             |
| C1                                | 150-0313-01   | CAP E CP 100UF 6.3V MV6.3VC100  |             |           |             |
| C1                                | 150-0313-03   | CAP E CHIP 100UF 6.3V 20% UWXO  |             |           |             |
| C2                                | 150-0313-01   | CAP E CP 100UF 6.3V MV6.3VC100  |             |           |             |
| C2                                | 150-0313-03   | CAP E CHIP 100UF 6.3V 20% UWXO  |             |           |             |
| C3                                | 150-0313-01   | CAP E CP 100UF 6.3V MV6.3VC100  |             |           |             |
| C3                                | 150-0313-03   | CAP E CHIP 100UF 6.3V 20% UWXO  |             |           |             |
| C4                                | 151-0265      | CAP CER CP 0.1UF 25V ZF 2125    |             |           |             |
| C5                                | 150-0312-01   | CAP E CP 47UF 4V MV4VC47        |             |           |             |
| C5                                | 150-0312-02   | CAP E CHIP 47UF 4V UWXOG470MCR  |             |           |             |
| C6                                | 151-0265      | CAP CER CP 0.1UF 25V ZF 2125    |             |           |             |
| C7                                | 150-0312-01   | CAP E CP 47UF 4V MV4VC47        |             |           |             |
| C7                                | 150-0312-02   | CAP E CHIP 47UF 4V UWXOG470MCR  |             |           |             |
| C8                                | 151-0265      | CAP CER CP 0.1UF 25V ZF 2125    |             |           |             |
| LF1                               | 270-5044-02   | LINE FILTER SDP-103C1           |             |           | TOKIN       |
| LF1                               | 270-5057      | LINE FILTER CM04RC02T           |             |           | TAIYO       |

【NOTE】 1. [1XX]→ AC120V area. [2XX]→ AC230V/240V area.

# 8-4. Accessories/Package List

| No. | Parts No.   | Description                                                                                               | No. | Parts No.    | Description                                                                                  |
|-----|-------------|-----------------------------------------------------------------------------------------------------------|-----|--------------|----------------------------------------------------------------------------------------------|
| 1   | 400-5050    | AC ADAPTOR AC240V/DC9V 1A AS(AUSTRALIA)                                                                   | 16  | 671-1362     | INR CTN GG MULTI(2180)                                                                       |
| 1   | 400-5109A   | AC ADAP. AC240V/DC9V 0.85A BS<br>(U. K. KUWAIT)                                                           | 16  | 671-3857     | (MK-2180(Except USA & CANADA))<br>INR CTN GG MULTI 2100 PM<br>(MK-2100(Except USA & CANADA)) |
| 1   | 400-5204    | AC ADAPTOR AC220V/DC 10V 0.85A<br>(EXCEPT U. K. KUWAIT, USA&CANADA)                                       | 16  | 671-3862     | INR-CTN GG MULTI 2184 PM<br>(MK-2184(Except USA & CANADA))                                   |
| 2   | 601-6499    | STRAP GG                                                                                                  | 16  | 671-3941     | INR-CTN GG MULTI 2180 PM<br>(MK-2180(Except USA & CANADA))                                   |
| 3   | 610-5343    | PACKING GG PLUS TRAY & LID(MK-2182<br>(AUSTRALIA, KUWAIT, SAUDIARABIA &<br>SPAIN))                        | 17  | 671-2370E    | MA CTN GG USA 2122 E(MK-2122(USA))                                                           |
| 3   | 610-5365    | PACKING TRAY GG EXPORT SET<br>(MK-2180(SPAIN))                                                            | 17  | 671-3760     | MA CTN GG USA 2100 PM(MK-2100(USA))                                                          |
| 4   | 670-0332-01 | SEAL G. PREZIOSI ITALY 01<br>(MK-2100/2182/2184(ITALY))                                                   | 17  | 671-3766     | MA CTN GG USA 2121 PM (MK-2121(USA))                                                         |
| 5   | 670-0364-27 | BAR CODE SEAL MULTI(2180)<br>(MK-2180(SPAIN))                                                             | 17  | 671-3778     | MA CTN GG USA 2131 PM(MK-2131(USA))                                                          |
| 6   | 670-0863-02 | MEMBERSHIP CARD SWEDEN 02(SWEDEN)                                                                         | 17  | 671-2370-02  | MA CTN GG CAN 2122-22 (MK-2122(CANADA))                                                      |
| 7   | 670-1440    | STICKER GG USA (MK-2100(USA))                                                                             | 17  | 671-3788     | MA CTN GG CAN 2100 PM (MK-2100(CANADA))                                                      |
| 7   | 670-2582    | STICKER INCL. COLUMNS GG ITALY<br>(MK-2100(ITALY))                                                        | 17  | 671-3800     | MA CTN GG CAN 2131 PM(MK-2131(CANADA))                                                       |
| 8   | 670-1523    | INFOR SHEET GG CANADA(MK-2100(CANADA))                                                                    | 17  | 671-1363     | MA CTN GG MULTI (2180)<br>(MK-2180(Except USA & CANADA))                                     |
| 9   | 670-1564-04 | BUSINESS REPLY MAIL GG USA 04(USA)                                                                        | 17  | 671-1893     | MA CTN GG PLUS MULTI (2182)<br>MK-2182(Except USA & CANADA))                                 |
| 9   | 670-4106    | BUSINESS REPLY CARD SOC(MK-2122/2131<br>(CANADA))                                                         | 17  | 671-3858     | MA CTN GG MULTI 2100 PM<br>(MK-2100(Except USA & CANADA))                                    |
| 10  | 670-1513    | WARRANTY CARD GG CANADA<br>(MK-2100(CANADA))                                                              | 17  | 671-3863     | MA CTN GG MULTI 2184 PM<br>(MK-2184(Except USA & CANADA))                                    |
| 10  | 670-1629-01 | WARRANTY CARD GG ITA 01(ITALY)                                                                            | 17  | 671-3942     | MA CTN GG MULTI 2180 PM<br>(MK-2180(Except USA & CANADA))                                    |
| 10  | 670-2401    | GUARANTEE CARD SOE GG ESP(ESPAIN)                                                                         | 18  | 671-1917     | PACKING CASE GG MULTI (MK-2180(SPAIN))                                                       |
| 10  | 670-2757-02 | GUARANTEE CARD GG SOE 02(SEGA OF EUROPE)                                                                  | 18  | 671-1918     | PACKING BOARD GG MULTI (MK-2180(SPAIN))                                                      |
| 10  | 670-3327    | WARRANTY CARD OZISOFT AUS(AUSTRALIA)                                                                      | 19  | 672-0422-02  | INSTR MANUAL GG USA 02(USA)                                                                  |
| 11  | 670-2778    | EPILEPSY WARNING SHEET USA(USA)                                                                           | 19  | 672-0422-22E | INSTR MANUAL GG CANADA E(CANADA)                                                             |
| 11  | 670-2779    | EPILEPSY WARNING SHEET MULTI<br>(MK-2100(CANADA))                                                         | 19  | 672-0422-22F | INSTR MANUAL GG CANADA F(CANADA)                                                             |
| 12  | 670-2116-** | GAME CATALOG GG USA<br>(MK-2122/2131(CANADA))                                                             | 19  | 672-0422-51  | INSTR MANUAL GG MUL EPILEPSY<br>(Except USA / CANADA & SAUDIARABIA)                          |
| 13  | 670-4206    | PERIPHERAL CATALOG GG USA<br>(MK-2122/2131(USA & CANADA))                                                 | 19  | 672-1041     | INSTR MANUAL GG KSA(SAUDIARABIA)                                                             |
| 14  | 671-1270-02 | BOX GG MULTI CE SMITH 02<br>(MK-2180(SPAIN))                                                              | 20  | 672-0423     | PLAY INSTR GG USA COLUMNS (USA)                                                              |
| 14  | 671-1892-02 | BOX GG W/AC MULTI CE SMITH 02<br>(MK-2182(KUWAIT/SAUDIARABIA/SPAIN))                                      | 20  | 672-0646     | PLAY INSTR GG USA SONIC H-H (USA)                                                            |
| 15  | 671-3757    | BOX & PACK SET GG 2100 PM(MK-2100(USA))                                                                   | 20  | 672-0972     | PLAY INSTR GG USA SONIC2 (USA)                                                               |
| 15  | 671-3763    | BOX & PACK SET GG 2121 PM(MK-2121(USA))                                                                   | 20  | 672-0972-22  | PLAY INSTR GG SONIC2 CAN(CANADA)                                                             |
| 15  | 671-3775    | BOX & PACK SET GG 2131 PM(MK-2131(USA))                                                                   | 20  | 672-0423-50  | PLAY INSTR GG COLUMNS MULTI(Except USA)                                                      |
| 15  | 671-4664    | BOX & PACK SET GG 2122 PM(MK-2122(USA))                                                                   | 20  | 672-0646-50  | PLAY INSTR GG SONIC H-H MUL<br>(Except USA & CANADA)                                         |
| 15  | 671-3785    | BOX & PACK SET GG CAN 2100 PM<br>(MK-2100(CANADA))                                                        | 20  | 672-1063-50  | PLAY INSTR GG 4 IN 1 MUL<br>(Except USA & CANADA)                                            |
| 15  | 671-3790    | BOX & PACK SET GG CAN 2122 PP<br>(MK-2122(CANADA))                                                        |     |              |                                                                                              |
| 15  | 671-3797    | BOX & PACK SET GG CAN 2131 PM<br>(MK-2131(CANADA))                                                        |     |              |                                                                                              |
| 15  | 671-3856    | BOX & PACK SET GG MUL 2100 PM<br>(MK-2100(Except USA & CANADA))                                           |     |              |                                                                                              |
| 15  | 671-3861    | BOX & PACK SET GG MUL 2184 PM<br>(MK-2184(Except USA & CANADA))                                           |     |              |                                                                                              |
| 15  | 671-3919    | BOX & PACK SET GG MUL 2182 PP<br>(MK-2182(Except USA, CANADA, AUSTRALIA,<br>KUWAIT, SPAIN & SAUDIARABIA)) |     |              |                                                                                              |
| 15  | 671-3940    | BOX & PACK SET GG MUL 2180 P<br>(MK-2180(Except USA & CANADA))                                            |     |              |                                                                                              |
| 16  | 671-2369E   | INR-CTN GG USA 2122 E(MK-2122(USA))                                                                       |     |              |                                                                                              |
| 16  | 671-3759    | INR-CTN GG USA 2100 PM(MK-2100(USA))                                                                      |     |              |                                                                                              |
| 16  | 671-3765    | INR-CTN GG USA 2121 PM(MK-2121(USA))                                                                      |     |              |                                                                                              |
| 16  | 671-3777    | INR-CTN GG USA 2131 PM(MK-2131(USA))                                                                      |     |              |                                                                                              |
| 16  | 671-2369-02 | INR-CTN GG CAN 2122-22(MK-2122(CANADA))                                                                   |     |              |                                                                                              |
| 16  | 671-3787    | INR-CTN GG CAN 2100 PM(MK-2100(CANADA))                                                                   |     |              |                                                                                              |
| 16  | 671-3799    | INR-CTN GG CAN 2131 PM(MK-2131(CANADA))                                                                   |     |              |                                                                                              |

【NOTE】

ACCESSORY PROVIDED

| MODEL NO.         | MK-2100 | MK-2121 | MK-2122 | MK-2131 |
|-------------------|---------|---------|---------|---------|
| SONIC CARTRIDGE   | NO      | YES     | NO      | NO      |
| SONIC2 CARTRIDGE  | NO      | NO      | NO      | YES     |
| COLUMNS CARTRIDGE | YES     | NO      | NO      | NO      |
| 4 IN 1 CARTRIDGE  | NO      | NO      | NO      | NO      |
| AC ADAPTOR        | NO      | NO      | NO      | NO      |

| MK-2180 | MK-2182 | MK-2184 |
|---------|---------|---------|
| NO      | YES     | NO      |
| NO      | NO      | NO      |
| NO      | NO      | NO      |
| NO      | NO      | YES     |
| NO      | YES     | NO      |

