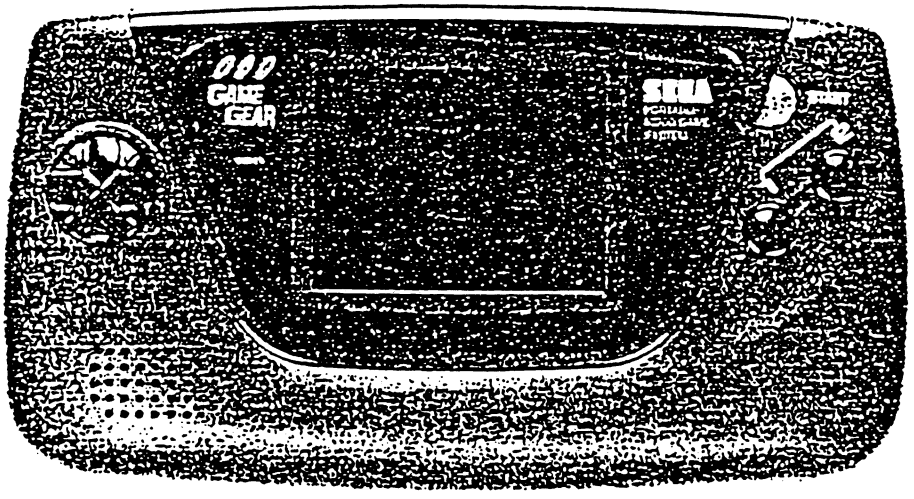
SEGA™

GAME GEAR™

COLOR PORTABLE VIDEO GAME SYSTEM

MAINTENANCE MANUAL

EUROPE



August, 1992

SEGA ENTERPRISES, LTD.

Rev. A

GAME GEAR

MAINTENANCE MANUAL

EUROPE

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7-3. MAIN BOARD IC3 IC CUSTAM SCA 315-5378A
7-4. MAIN BOARD IC4 IC μPD4364G-15L
7-5. MAIN BOARD IC5 IC HM6256BLFP-12
7-6. MAIN BOARD IC6 IC μPC358G2
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7-8. SOUND BOARD IC1 IC TDA2822M

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10-4a. IC BD GG SOUND EUROPE
10-4b. IC BD GG SOUND EUROPE SCA B

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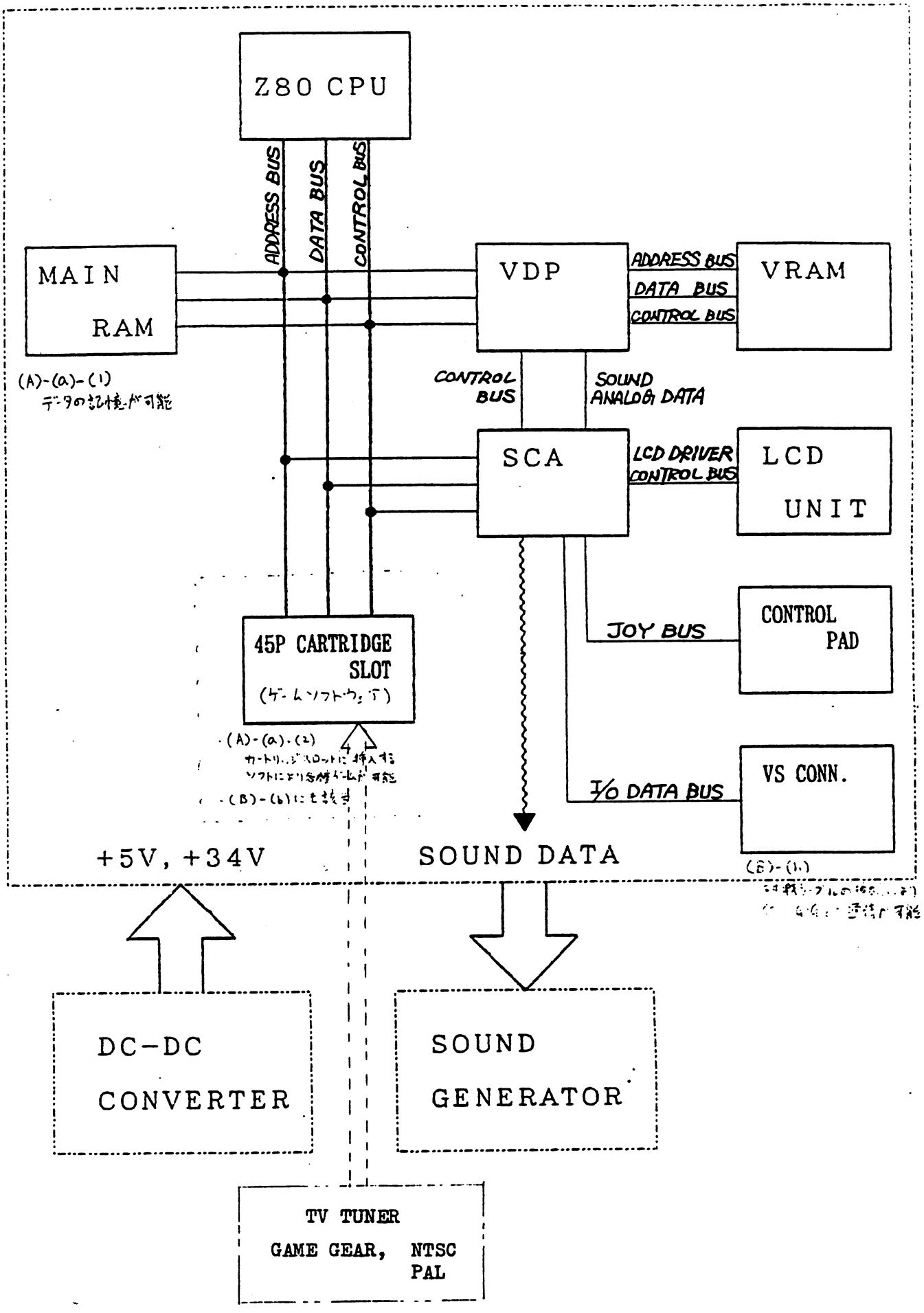
BLOCK DIAGRAM

GameGear ブロック図...



11. PCB DESIGN SPEC.

11-1a. PC BD GG MAIN BOARD COMP SIDE MARK
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11-3c. PC BD GG SOUND BOARD COMP SIDE LAYER
11-3d. PC BD GG SOUND BOARD SOLD SIDE LAYER

GAME GEAR FOR EUROPE

GENERAL REFERENCE NUMBER LIST

REF NO.	PART NO.	DESCRIPTION	QTY
001	610-5212	ASSY TOP CASE GG USA	(1)
	610-5212-01	ASSY TOP CASE GG USA 01	(1)
002	610-5255	ASSY BOTTOM CASE GG MULTI	(1)
	610-5255-01	ASSY BOTTOM CASE GG MULTI 01	(1)
003	253-6362	CLEAR PLATE GG	(1)
	253-6434	CLEAR PLATE GG INMOLD	(1)
004	253-6363-01	PAD GG 01	(1)
	253-6363-03	PAD GG 03 (CONTACT TYPE)	(1)
005	253-6364	BUTTON 1 GG	1
006	253-6365	BUTTON 2 GG	1
007	253-6366	START BUTTON GG	1
008	253-6368	BATT LID LEFT GG	1
009	253-6369	BATT LID LIGHT GG	1
010	253-6378	POWER KNOB GG	1
011	253-6401	10P CONN COVER GG	1
101	837-7994	ASSY IC BD GG EUROPE	(1)
	837-7994B	ASSY IC BD GG EUROPE B	(1)
102	837-7997	IC BD GG DC-DC CONV.EUROPE	(1)
	837-7997B	IC BD GG DC-DC CONV.EUROPE B	(1)
103	837-7998	IC BD GG SOUND EUROPE	(1)
	837-7998B	IC BD GG SOUND EUROPE B	(1)
201	029-0069	TAP SCR PH 2.6*10 BLK	6
202	012-0312	TAP SCR PH 3*12	2
203	012-0206	TAP SCR PH 2*6	10
204	029-0326	TAP SCR LH-3 2.6*10 BLK	1
301	509-5334	RUBBER CONTACT GG 4P	(1)
	509-5334-01	RUBBER CONTACT GG 4P 01	(1)
302	509-5335	RUBBER CONTACT GG 1P	3
303	601-6428	LCD CUSHION GG	1
304	253-6422	BATT. BLADE COVER GG	1
305	250-6243	SUPPORT PLATE GG 01	1

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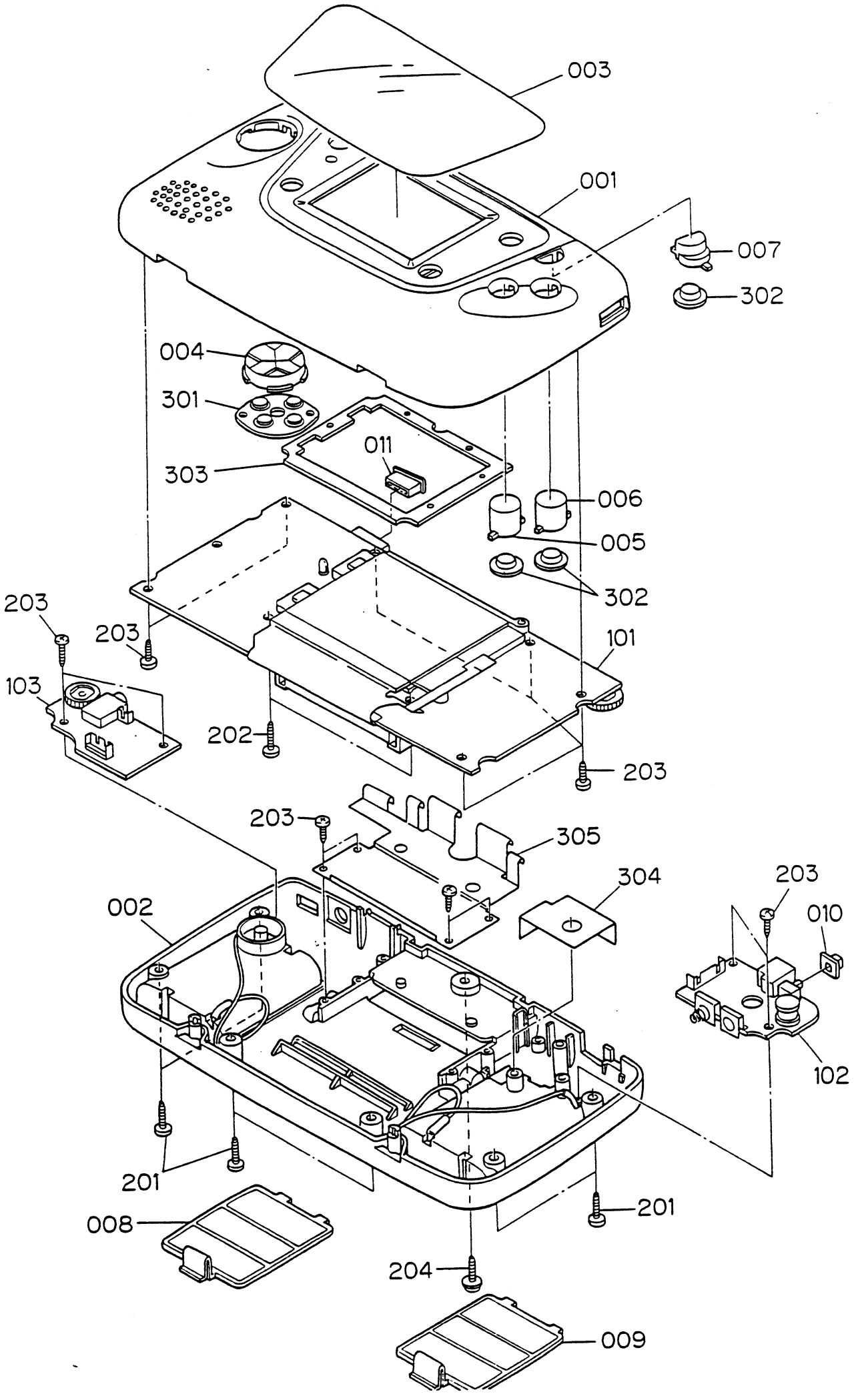
ASSEMBLY DRAWING


003
001
007
302
004
301
011
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005
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203
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101
103
202
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304
203
010
002
102
201
201
008
204
009

ASSEMBLY LIST FOR GAME GEAR EUROPE

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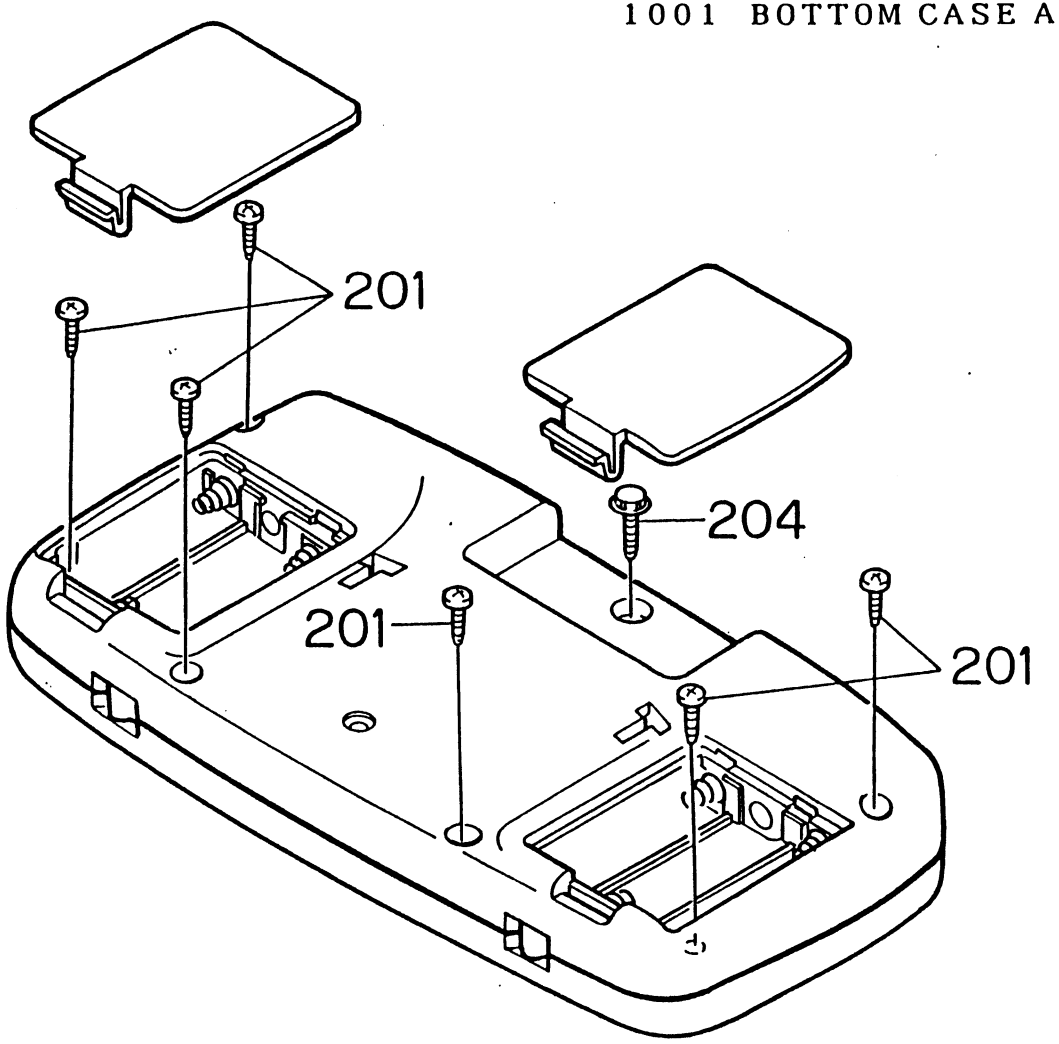
PARTS LIST FOR GAME GEAR EUROPE

1001 BOTTOM CASE ASSEMBLY 1

REF NO.	PART NO.	DESCRIPTION	QTY
008	253-6368	BATT LID LEFT GG	1
009	253-6369	BATT LID LIGHT GG	1
201	029-0069	TAP SCR PH 2.6*10 BLK	6
204	029-0326	TAP SCR LH-3 2.6*10 BLK	1

1001 BOTTOM CASE ASSEMBLY 1

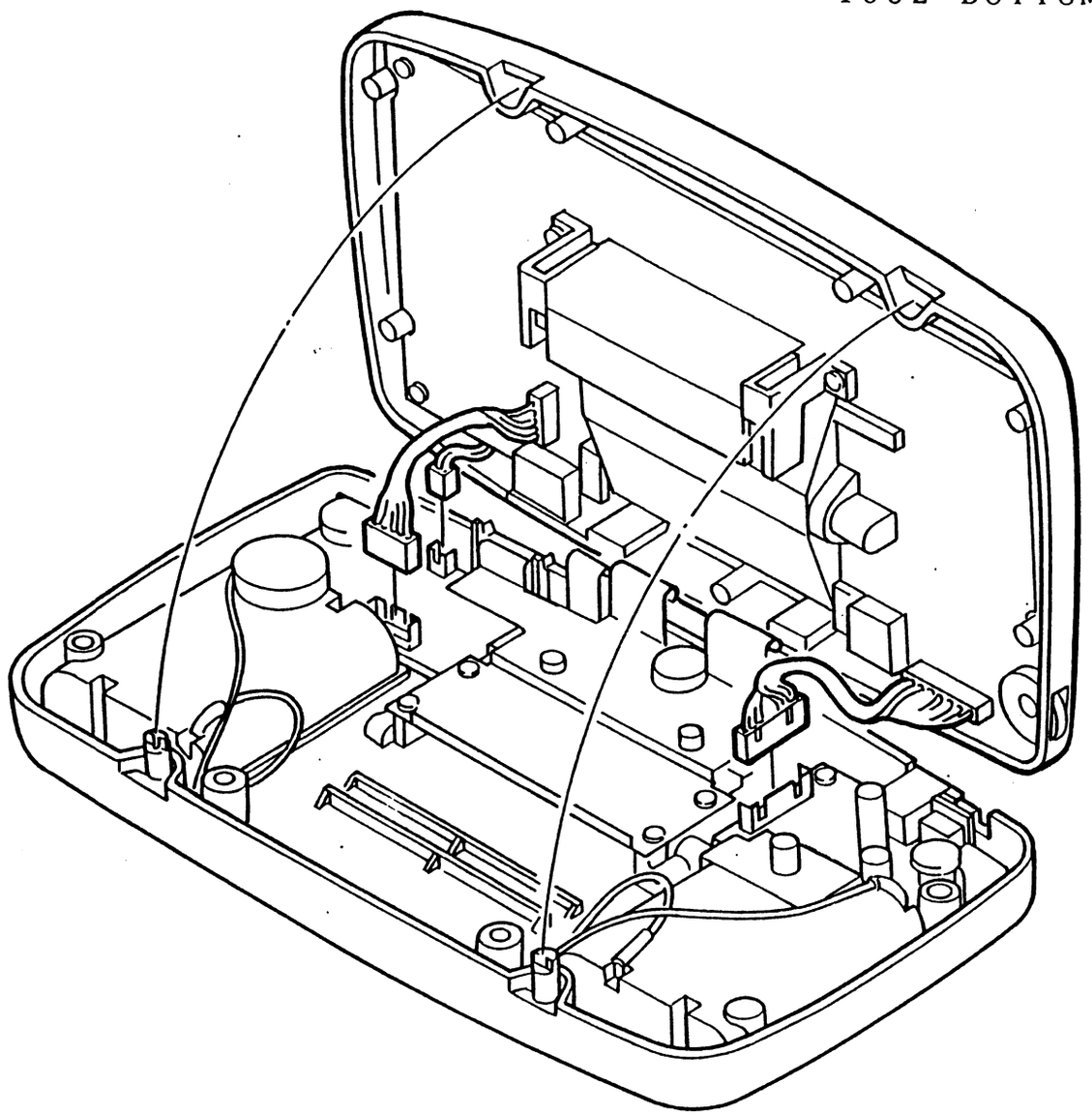


PARTS LIST FOR GAME GEAR EUROPE

1002 BOTTOM CASE ASSEMBLY 2

REF NO.	PART NO.	DESCRIPTION	QTY
NON PARTS ASSEMBLY.			

1002 BOTTOM CASE ASSEMBLY 2

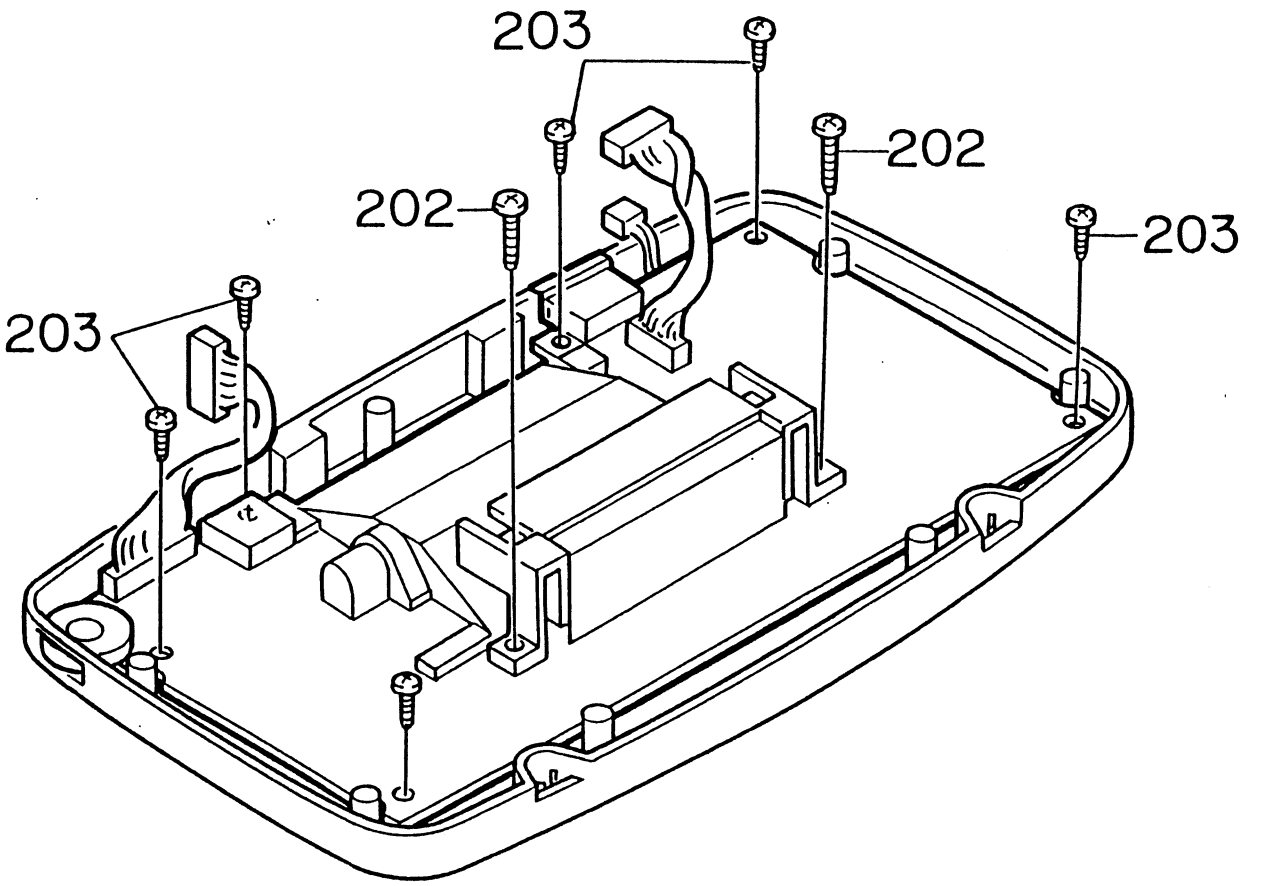


PARTS LIST FOR GAME GEAR EUROPE

1003 MAIN BOARD ASSEMBLY

REF NO.	PART NO.	DESCRIPTION	QTY
101	837-7994	ASSY IC BD GG EUROPE	(1)
	837-7994B	ASSY IC BD GG EUROPE B	(1)
202	012-0312	TAP SCR PH 3*12	2
203	012-0206	TAP SCR PH 2*6	6

1003 MAIN BOARD ASSEMBLY

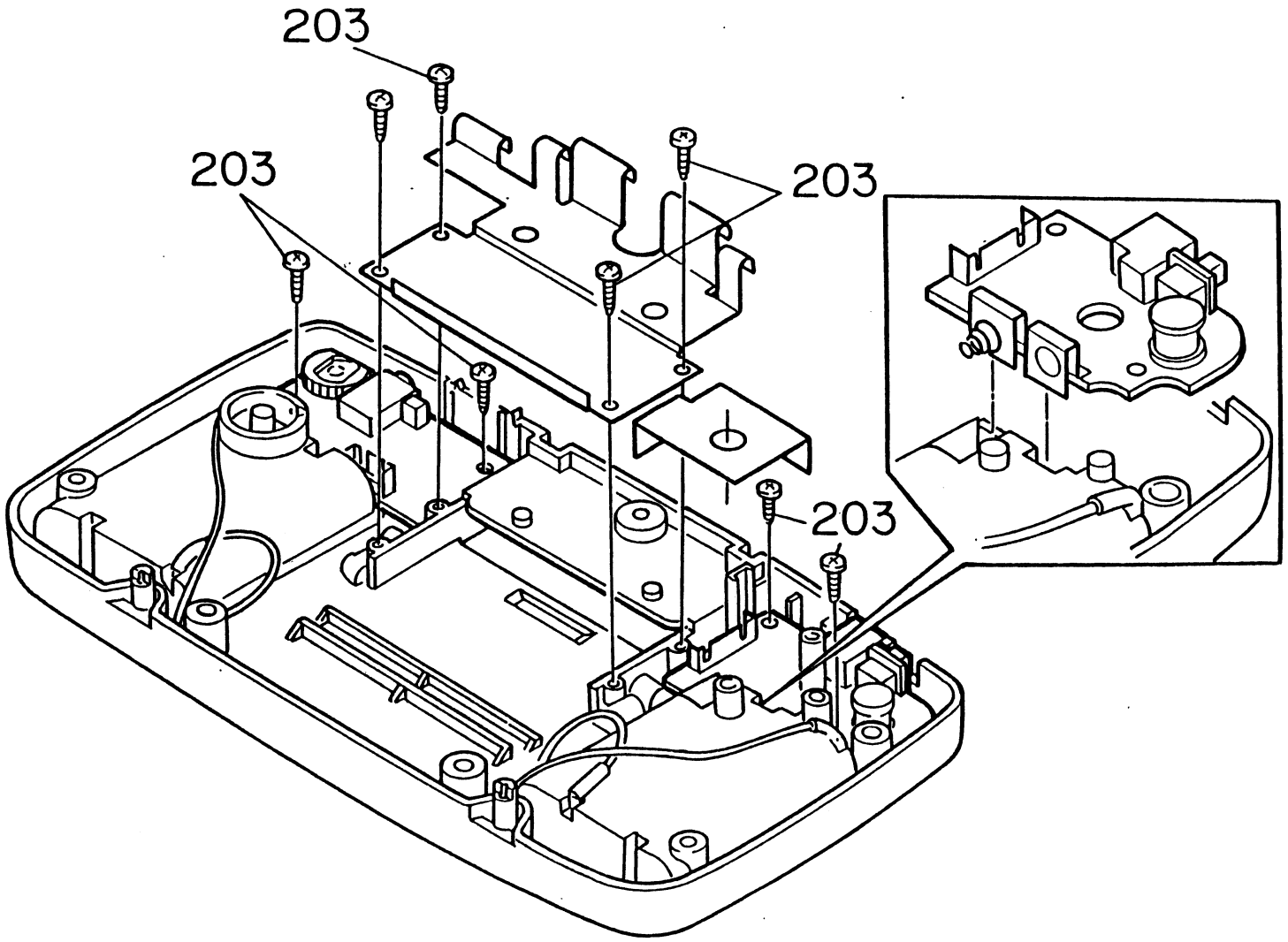


PARTS LIST FOR GAME GEAR EUROPE

1004 BOTTOM CASE ASSEMBLY 3

REF NO.	PART NO.	DESCRIPTION	QTY
002	610-5255	ASSY BOTTOM CASE GG MULTI	(1)
	610-5255-01	ASSY BOTTOM CASE GG MULTI 01	(1)
102	837-7997	IC BD GG DC-DC CONV.EUROPE	(1)
	837-7997B	IC BD GG DC-DC CONV.EUROPE B	(1)
103	837-7998	IC BD GG SOUND EUROPE	(1)
	837-7998B	IC BD GG SOUND EUROPE B	(1)
203	012-0206	TAP SCR PH 2*6	8
305	250-6243	SUPPORT PLATE GG 01	1

1004 BOTTOM CASE ASSEMBLY 3



PROCEDURE OF DISASSEMBLY AND ASSEMBLY OF GAME GEAR

1.DISASSEMBLY

PROCESS 1 : Removing screw from Bottom Case.
1) Upset the unit.
2) Remove Battery Lid.
3) Remove screws (201 and 204)
4) Remove a screw (204)

PROCESS 2 : Removing Bottom Case.
1) Hold up Bottom Case to the direction (A) and make the open condition.
2) Remove the connector of DC converter Board fixed on the Bottom Case.
3) Remove two connectors of Sound Board fixed as above.

PROCESS 3 : Removing the Main Board.
1) Remove the screws (two 202 and six 203) and Main Board from Top Case.

PROCESS 4 : Removing Support Plate, DC-DC Conv. Board and Sound Board.
1) Remove 4 screws (203).
2) Remove Support Plate from Bottom Case.
3) Remove 2 screws (203).
4) Remove DC-DC Conv. Board from Bottom Case.
5) Remove 2 screw (203).
6) Remove Sound Board as above.

2.ASSEMBLY

PROCESS 1 : Setting Support Plate, DC-DC Conv. Board and Sound Board.
1) Set the Sound Board, DC-DC Conv. Board and Support Plate to Bottom Case using 8 screws (203).

PROCESS 2 : Setting of Main Board.
1) Spray surface of inside clear plate with static proof liquid.
2) Carefully observe and take away dust inside clear plate and Top Case using air gun in clean place.
Set each Button and Rubber contact to normal position.
3) Set LCD cushion along to the place of Bosses in Top Case.
4) Lead Speaker Cable outside of Boss of Top Case.
5) Setting of Main Board.
Case 1 After exchange of LCD
Take off protection film of LCD.
Case 2 Others
Clean surface of LCD using air gun.
Set the Main Board inside and along to the Bosses of Top Case.

Note : At the setting of Main Board, it is important to set it as quick as possible to prevent the stick of dust on the surface of LCD and clear plate.

6) Fix screw 6 of 203 and 2 of 202.

PROCESS 3 : Setting of Bottom Case.

1) Correct 2 connectors from Main Board to Sound Board and 1 connector from Main Board to DC-DC Conv. Board.
2) Firmly set Bottom Case to Top Case taking care not to pinch cables in the edge of cases.

PROCESS 4 : Screwing Bottom Case.

1) Upset the unit.
2) Fix a screw (204).
3) Fix 6 screws (201).
4) Fix Battery Lids.

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SPARE PARTS LISTS

GAME GEAR SPARE PARTS LIST FOR EUROPE

No	PARTS No.	DESCRIPTION	R1	R2	R3	R4
1	610-5212	Assy Top Case GG USA	●		●	
	610-5212-01	Assy Top Case GG USA 01		●		●
2	610-5255	Assy Bottom Case GG MULTI	●		●	
	610-5255-01	Assy Bottom Case GG MULTI 01		●		●
3	253-6362	CLEAR PLATE GG	●	●		
	253-6434	CLEAR PLATE GG INMOLD	●	●	●	●
4	509-5334-01	RUBBE CONTACT 4P 01	●	●		
	509-5334	RUBBER CONTACT 4P			●	●
	509-5335	RUBBER CONTACT 1P	●	●	●	●
5	837-7994	ASSY IC BD GG EUROPE (837-7995)	●	●	●	●
	837-7994B	ASSY IC BD GG EUROPE (837-7995B SCA B)	●	●	●	●
6	837-7997	IC BD GG DC-DC CONV.EUROPE	●	●	●	●
7	837-7998	IC BD GG SOUND EUROPE	●	●	●	●

Note:
R1 : PARTS No.610-5224 ASSY GG MULTI
R2 : PARTS No.610-5224-01 ASSY GG MULTI 01
R3 : PARTS No.610-5358 ASSY GG MULTI CONTACT TYPE
R4 : PARTS No.610-5358-01 ASSY GG MULTI CONTACT TYPE 01

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ACCESSORIES LIST

GAME GEAR ACCESSORIES LIST FOR EUROPE

No	PARTS No.	DESCRIPTION
1	MK-2101-05	TV TUNER PAC (PAL-I:ENGLAND)
	MK-2101-18	TV TUNER PAC (PAL-B:ITALY/PAL-G:GERMANY)*ZZF APPROVAL
	MK-2101-20	TV TUNER PAC (PAL-B:ITALY/PAL-G:GERMANY)*ZZF NOT APPROVAL
2	MK-2102-50	GEAR TO GEAR CABLE
3	MK-2104-50	CAR ADAPTOR
4	MK-2105-50	BATTERY PAC
5	MK-2106-50	AV CABLE
6	400-5122A	AC ADAPTOR AC220V/DC10V 1.2A
	400-5122B	AC ADAPTOR AC220V/DC10V 1.2A
	400-5127	AC ADAPTOR AC240V/DC10V 1.2A
	400-5127A	AC ADAPTOR AC240V/DC10V 1.2A

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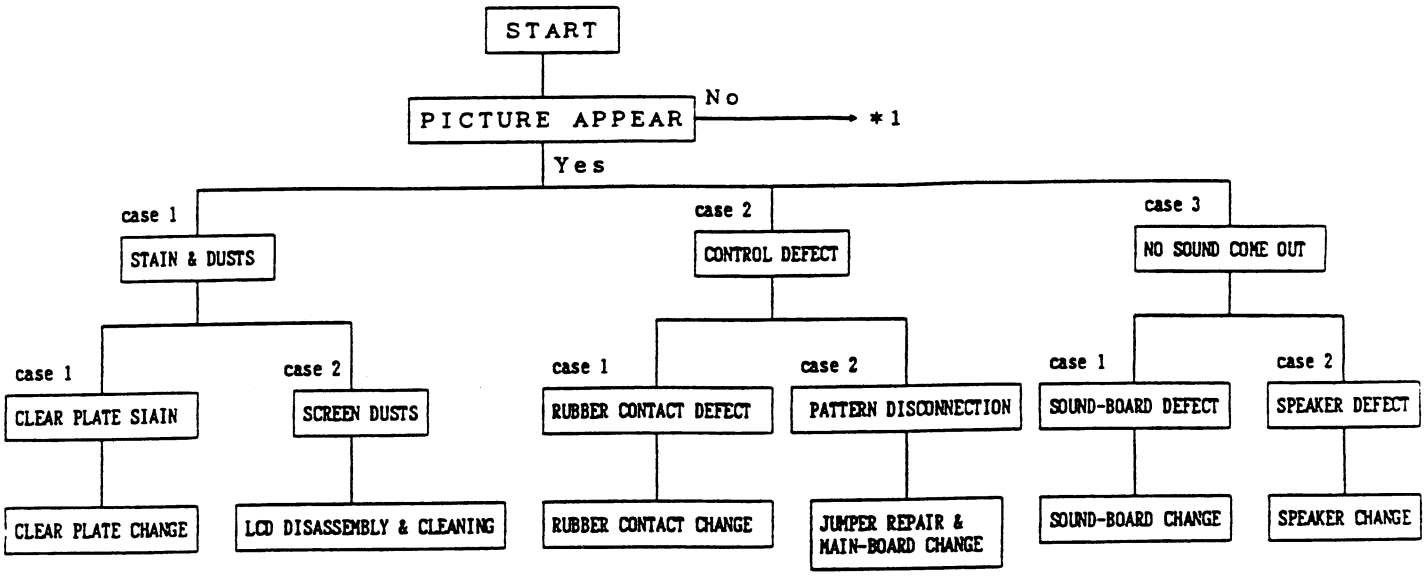
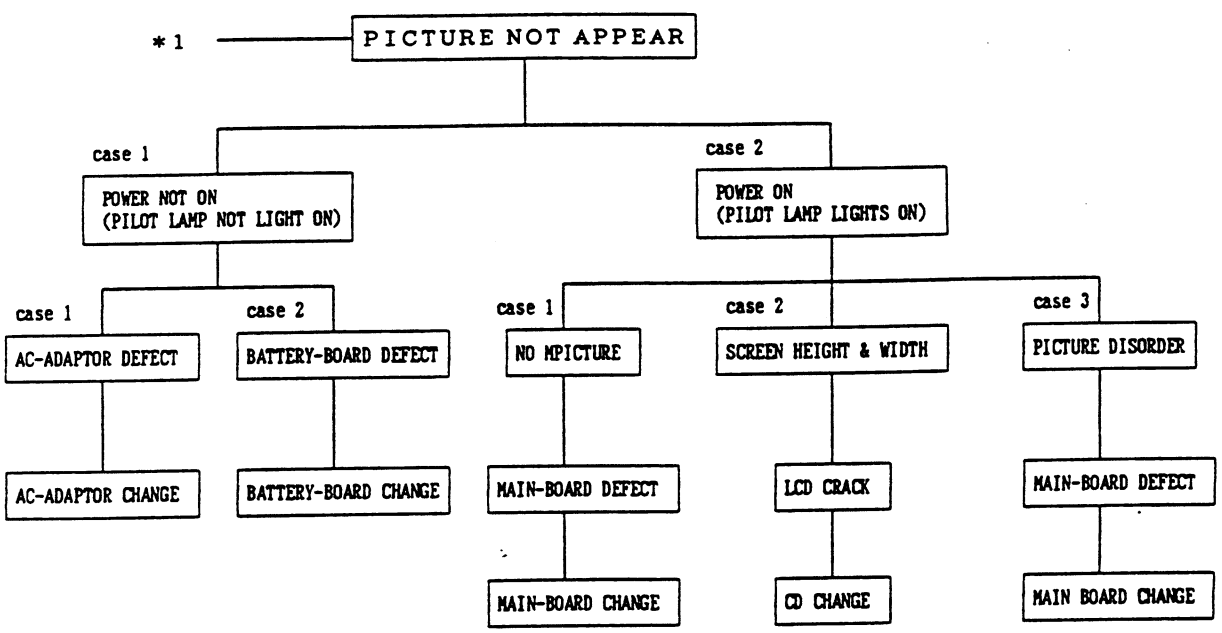
PCB REPAIR PROCEDURE

PCB REPAIR PROCEDURE

PCB REPAIR FLOW CHART





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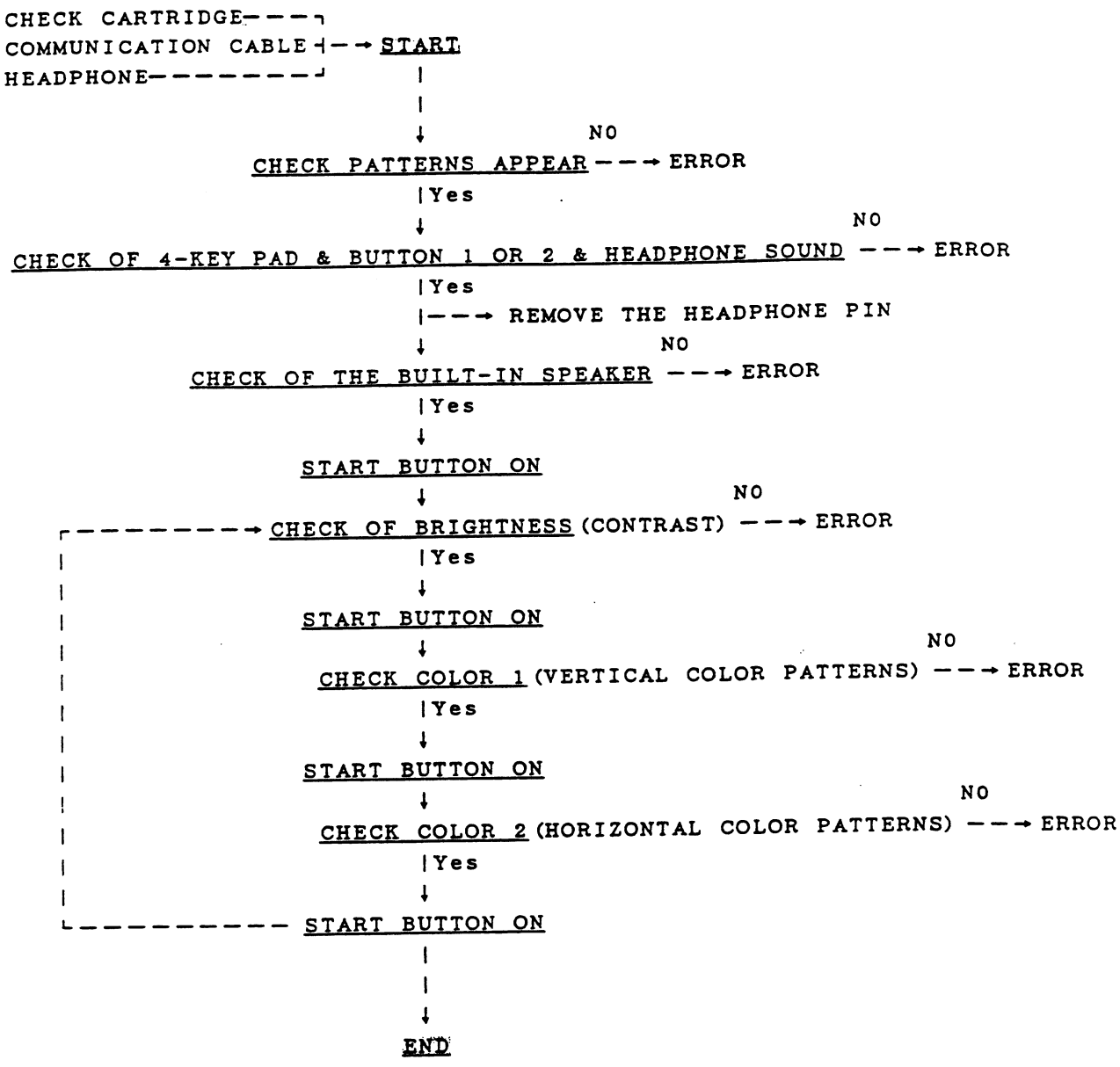
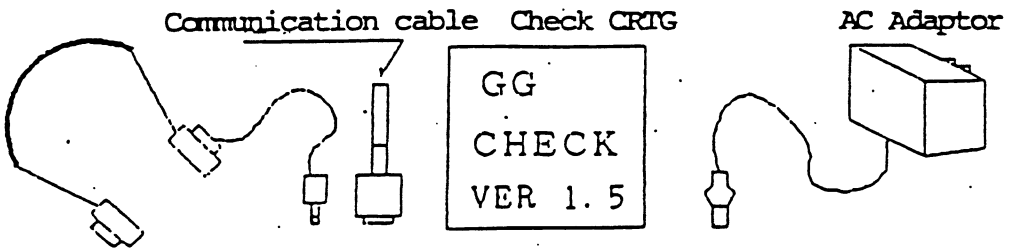
SOFT & HARD CHECK MANUAL

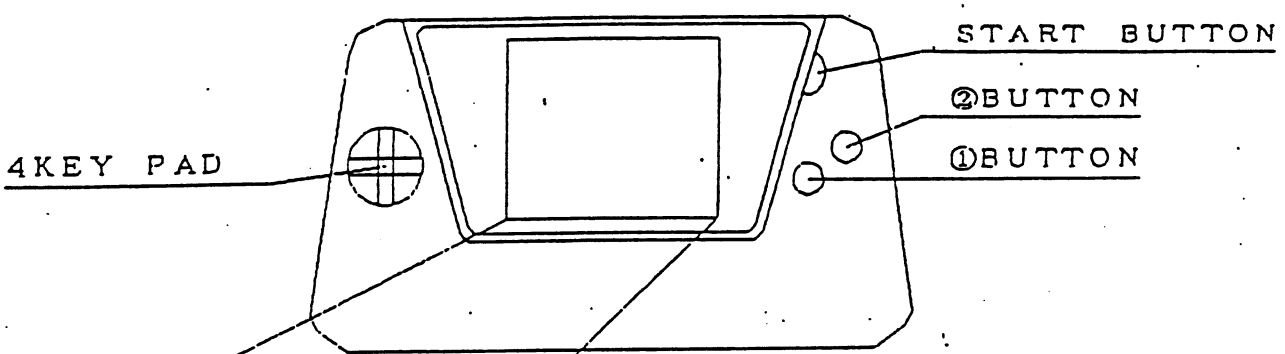
SOFT CHECK MANUAL

GAME GEAR SOFT CHECK FLOW

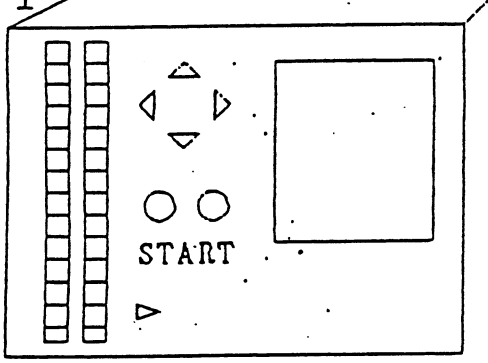


GAME GEAR SOFT CHECK MANUAL



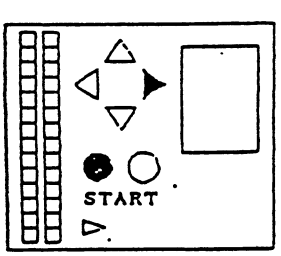


SCREEN 1

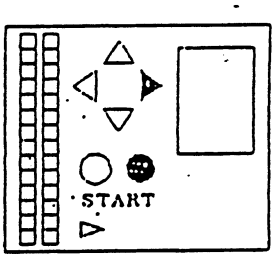


If the power is turned on, the screen shown on left is displayed.
Make sure that the LED location is correct and the LED is lit.
Be sure that the mark ▶ under START moves in the right direction.

Check 1. Check of 4-key pad & headphone sound

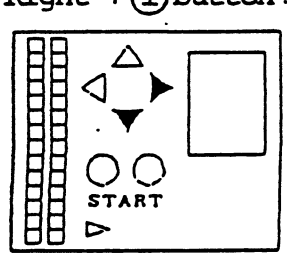


Right + ① button

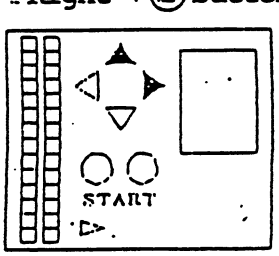


Right + ② button

Press button-1 while pressing an optional direction of the 4-key pad ; then, the sound is heard from the left of the headphone.
In the same manner, press button-2 ; then, the sound is heard from the right of the headphone.



Lower Right



Upper Right

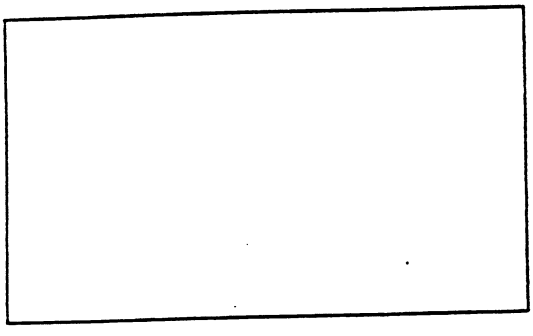
Operate "Right + Button ① ,②","Up + Button①, ②", "Left + Button ①, ②","Down + Button ①, ②" and check if the clicking feeling of the PAD button ①, ② is normal, if the headphone sound is heard from left and right respectively, and if the quality of the sound is normal, etc.
Go on the checking in the slant direction in the order of lower right, upper right, upper left and lower left.

CHECK 2. Check of the built-in speaker

Remove the headphone pin and perform the same manner as the check 1.
(Check in the slant direction canceled.)
Move the sound volume to the maximum and minimum and check if the sound is interlocked and the volume sound is smooth.

If there is no problem in the above check, switch to the next screen.
(Press START)
* At this point, check if there is any abnormality in the operation of the START button or in the click feeling.

SCREEN 2



If there is no problem in the above check, switch to the next screen. (Press START)

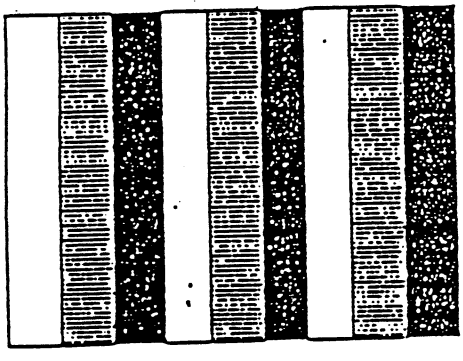
CHECK 3. Check of brightness (Contrast)

Move the brightness volume to the maximum and minimum and check if the light volume is interlocked to the movement and if there is any light unevenness, LCD stain, damage, spots, etc.
At this point, press the pad and buttons the respective colors and LCD (spot, dust, difference defects, etc.)

1. Red. 2. Yellow 1+2. Black

Upper: Green Lower: Green Left: Purple
Right: Pink

SCREEN 3



If there is no problem in the above check, switch to the next screen. (Press START)

CHECK 4. Color check ①

Vertical color patterns appear.
Check if the hues are normal, or if there is any LCD stain, scratch, and spot etc.

GG CHECK PROGRAM SPECIFICATION

CHECK PROGRAM AND ORDER

(I) Check the following 3 items in the state of black screen until the check screen (Fig.1) appears after turning on the power. If an error occurs, the error messages as shown in Table 1 appear in white characters on the red background. At this point, terminate the checking and stop further checking work.

① Scratch RAM R/W check
② V_RAM R/W check
③ Communication port check (Parallel & Serial)

(II) If the above check (I) is O.K., check the following 5 items as the check screen (Fig.1) appears.

④
- JOY port check
- Color RAM check
- Spright check
- Sound check
- Cross-talk check

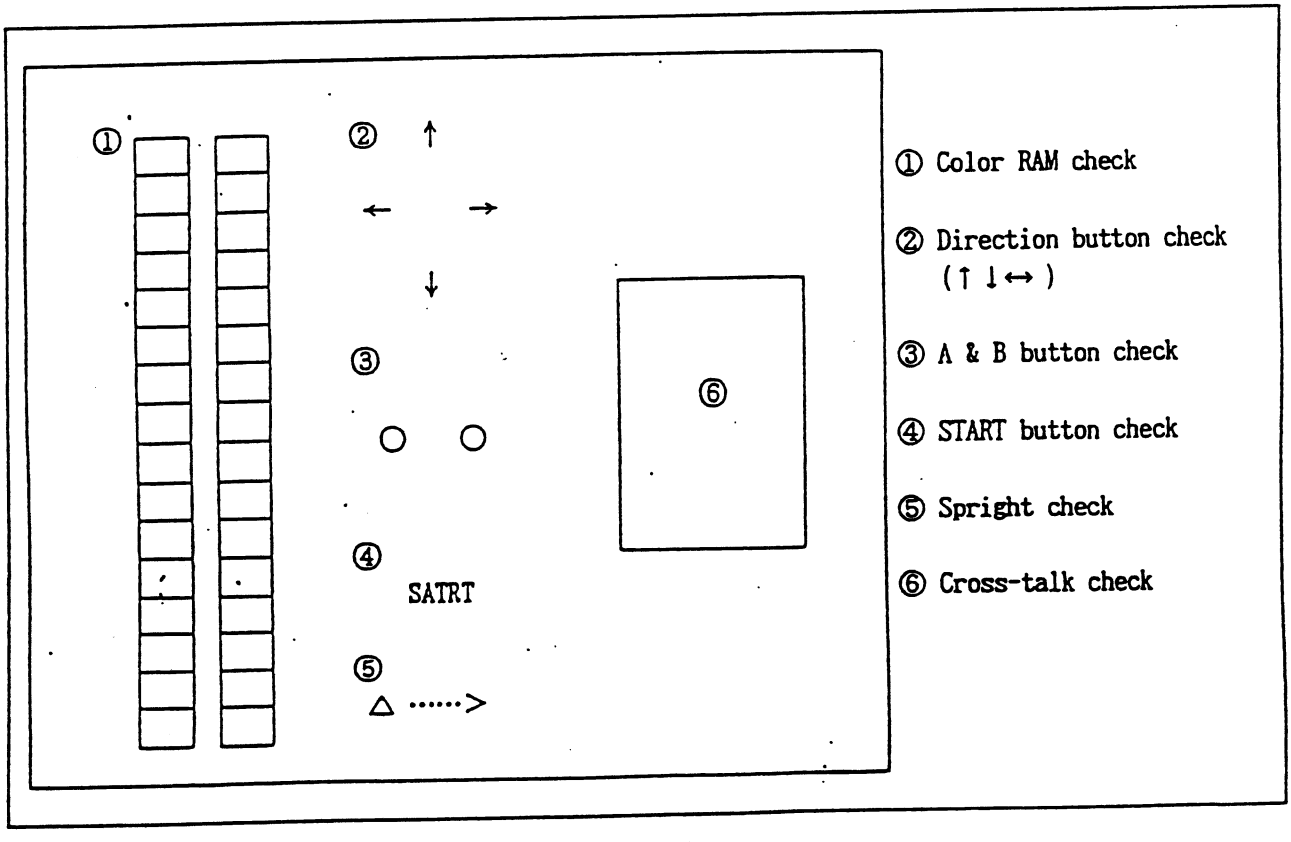


Fig. 1 Check sreen

[CHECK METHOD OF EACH ITEM]

SCRATCH RAM CHECK

① Read after writing all 55h to C000h~DFFFh.
② Read after writing all AAh to C000h~DFFFh.
③ Write 1FFFh to C000h and C001h.
Write 1FFEh to C002h and C003h.
↓
Write 1000h to DFFEh and DFFFh.
Read the above values respectively.

V_RAM CHECK

.....① Read after writing all 55h to 0000h~3FFFh.
② Read after writing all AAh to 0000h~3FFFh.
③ Write 3FFFh to 0000h and 0001h.
Write 3FFEh to 0002h and 0003h.
↓
Write 2000h to 3FFEh and 3FFFh.
Read the above values respectively.

COMMUNICATION PORT CHECK

.....① Serial communication check
② Parallel Communication check

{ The exclusive adaptor is required as checking is done by one(1) set.}

JOY PORT CHECK

.....① Checking of the direction button (↑ ↓ ↔), A&B buttons and START button (if the button is pressed, the corresponding porttion turns red.)

COLOR RAM CHECK

.....① Displaying of the 32 (colors) squares

SPRIGHT CHECK

.....① Move the arrow in right and left direction with spright definition.

SOUND CHECK

..... ① Check the (pseudo) stereo (left, right or left-right simultaneousl by using an earphone). Three tones and one noise are allocated to the direction buttons (↑ ↓ ↔) and the distribution to left/right by stereo is allocated to the A/B butons. For example, if the (↑)button is turned on while pressing the A button, the tone-1 is delivered to the left. (If the left-right button is pressed in this state, the output is made o the both sides.)

CROSS-TALK CHECK	.....①	The white square is displayed on the black background. Check the extent of the cross-talk at the upper/lower parts.

Table-1. ERROR MESSAGE

S-RAM 不良 (S-RAM DEFECT)	.....At the point of scratch RAM check
V-RAM 不良 (V-RAM DEFECT)	.....At the point of V - RAM check
通信不良 (COMMUNICASION DEFECT)	.....At the point of communication port check
ﾊﾟｯﾄﾞ不良 (PAD DEFECT)	..... At the point of JOY port check

Game Gear Hardware Checker

(Parts No. 610-5176)

Issued on: Aug. 4, 1992

SEGA JAPAN.

1. General

This checker is designed to check the Printed Circuit Board Assembly for Game Gear.

2. Operation Flow

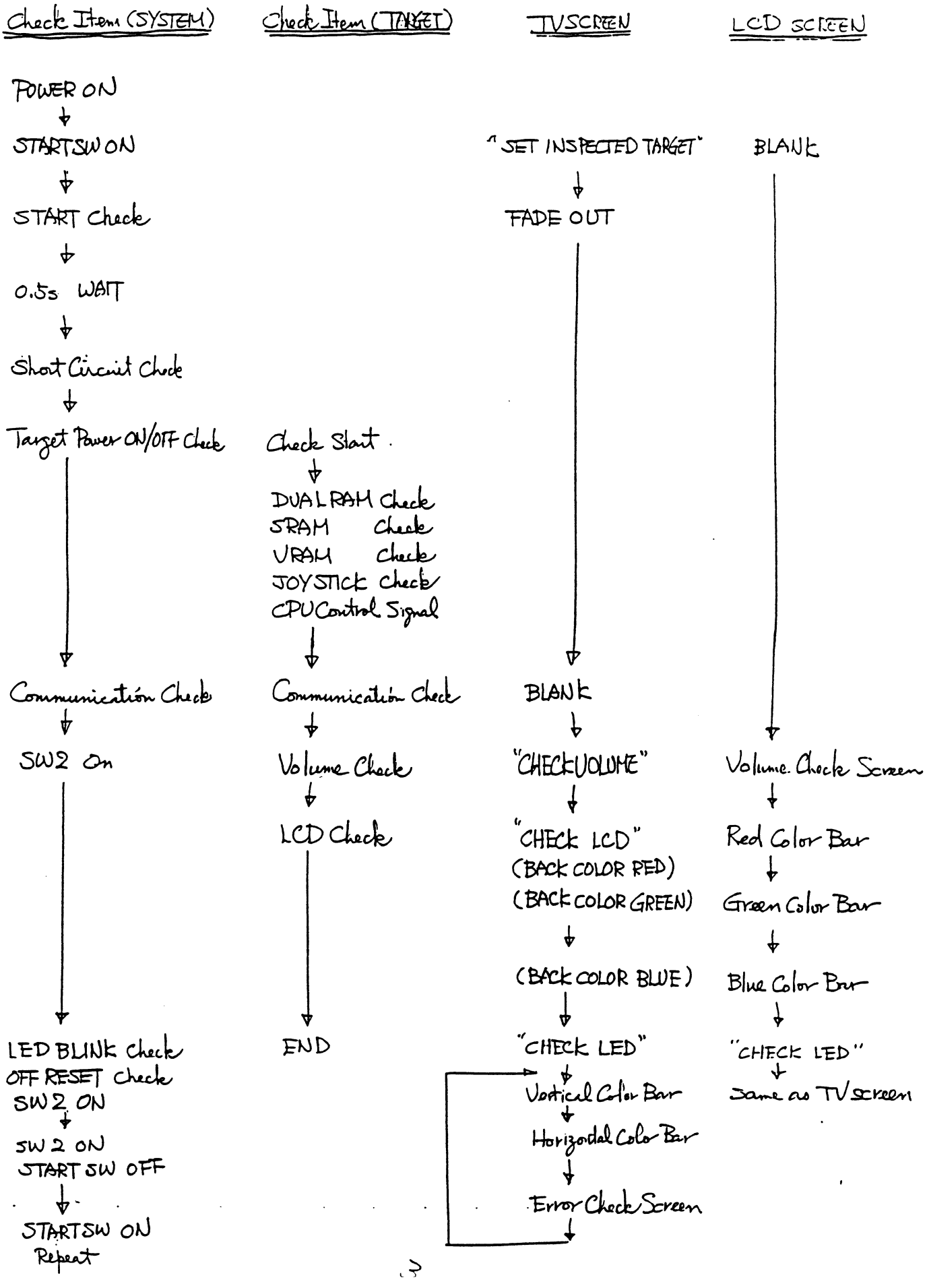
1. Connect the Checker to Pin Tool by using the connectors (14pin, 24pin, 36pin, 2pin, SUB PCB, START SW, SW2)
2. Connect the Checker to TV by using Video Cable
3. Connect the checker to 100V outlet.
4. Turn the Checker Power on.
("SET INSPECTED TARGET" is indicated on TV screen.)
5. Set the PCB Assy on Pin Tool.
6. Turn the "START SW" on
(Screen should be fade out and "CHECK VOLUME" is indicated on TV screen after about 2sec, then "VOLUME CHECK" is indicated on LCD screen)
7. Rotate the Volume Adjustment on PCB and check the "Level Gage" on Volume Screen adjusted between 0 – 8 and also confirm the Indication of color Bar change the color from white to black.
LED on PCB should be lit on.
8. By pressing "SW2", Finish the Volume Check function and "CHECK LCD" on TV and Red Color Bar on LCD are indicated.
Then color bar should be chang color from Red → Green → Blue by pressing "SW2"
9. Press "SW2" again and confirm the "CHECK LED" is indicated on both TV and LCD. In this condition, LED should blink.
10. After confirm the LED blinking, press "SW2" to change the screen for TV Mode Check. Confirm both LCD and TV has same indication in this condition. Then press "SW-2" again to change the TV screen to Error Check (Horizontal/Vertical Direction = Color Bar)
※ In case of no error "TEST 10k" and in case of error "ERR POINT" and Error Point should be indicated.

11. Turn "START SW" off and remove PCB from Pin Tool
12. Repeart above procedure ⑤ ~ ⑪.

Note

1. If turn the "START SW" on without setting or improper setting of PCB Assy on Pin Tool or POWER SHORT ERROR is found, Checker will stop inspection and indicate "WARNING POWER SHORT ERROR CHECK STOP" on TV screen
2. If "BUS ERR" is found, Checker do not execute item 7 and 8.
3. In case the Error other than "POWER SHORT ERROR" is found, all errors are indicated on Error Check Screen during TV Mode check. (As to Errors, Please refer to Error Message)
4. As to Volume Check, LCD Color Bar check, LED Check & TV Mode Screen Check shoud be visible inspection. (Item 7, 8, 9 & 10)
5. Checker program can not perfor the Visible Inspection.

3) Check Flow


Check Item (SYSTEM)
Check Item (TARGET)
TV SCREEN
LCD SCREEN
POWER ON
START SW ON
START Check
0.5s WAIT
Short Circuit Check
Target Power ON/OFF Check
Communication Check
SW2 On
LED BLINK Check
OFF RESET Check
SW2 ON
SW 2 ON
START SW OFF
START SW ON
Repeat
Check Start
DUAL RAM Check
SRAM Check
VRAM Check
JOYSTICK Check
CPU Control Signal
Communication Check
Volume Check
LCD Check
END
"SET INSPECTED TARGET"
FADE OUT
BLANK
"CHECK VOLUME"
"CHECK LCD"
(BACK COLOR RED)
(BACK COLOR GREEN)
(BACK COLOR BLUE)
"CHECK LED"
Vertical Color Bar
Horizontal Color Bar
Error Check Screen
BLANK
Volume Check Screen
Red Color Bar
Green Color Bar
Blue Color Bar
"CHECK LED"
Same as TV screen

4) Error Message

Errors except for "POWER SHORT ERROR" are discovered during inspection shall be indicated on TV screen as "ERR POINT" after inspection. (If there is no error, "TEST 1 OK shall be indicated)
Error message is constructed from Main Error Message (Error Potion) and Sub Error Message (Error statues or Futher to define error potion)

(1) Error Indication

I. Standard Error Indication

ERR POINT

Main Error Message ↖ ↗ Sub Error Message

POWER	H	S-RAM
T5V	L	V-RAM
T2.5V	H	JOYSTICK ~ Main Error Message
VREF	L	012345 ~ Sub Error Message
VRES	H	CPUSIGNAL
VONF	L	012345
T34V	H	COMM
FL-H	L	VOL OVER
CURNT	L	ON RST FST
		OFFSET SLW

↳ Sub Error Message

→ Main Error Message

CHECK ERRORS = * * ~ Total Error

II Bus Error Indication

ERR (Main Error Message)	POINT (Sub Error Message)	
POWER	H	BUS ~ BUS ERROR
+5V	L	
+2.5V	H	
VREF	L	ERR
VRES	H	
VONF	L	
+34V	H	
FL-F	L	
FL-V	H	
CURNT	L	ON RST FST
		OFF RST SLW

→ Sub Error Message

→ Main Error Message

CHECK ERRORS = ** ~ TOTAL ERROR

In case of short "circuit of Address, Data Bus and/or CN1", "Wire disconnection", "Pin Tool or Sub PCB Assy missetting" or "Defective C function check of PCB Assy shall not be executed to eliminate the uncontrolled program run. (Therefor, inspection between DUAL RAM check and LCD check shall not be performed.)

2) . Power Short Error Indication .

In case of short circuit on PCB Assy or improper setting of PCB Assy, stop inspection to protect the PCB damage and indicate the following message

WARNING

POWER SHORT ERROR

CHECK STOP

If turn "START SW" off, screen returns to original ("SET INSPECTION TARGET").

(3) Error Message and Defective Portion.

No.	Main Error	Sub Error	Defective Portion	Note.
Ⓐ	POWER	H or L	Short Circuit or Improper setting	Due to POWER SHORT ERROR, this is not indicated as long as program runs correctly.
Ⓑ	T5V	H or L	Battery Board (837-7399-01)	ANALOG 5V signal is not within Standard Voltage.
Ⓒ	+2.5V	H or L	R48, R49, C48 Battery Board	+2.5V is not within Standard Voltage
Ⓓ	VREF	H or L	IC3-PIN30 Battery Board	Vref signal is not within Standard Voltage.
Ⓔ	VRES	H or L	IC3-PIN32, R50, R51, R52 D4, C49 Battery Board	Vres signal is not within Standard Voltage
Ⓔ	VONF	H or L	IC3-PIN31, R50, R51, R52 D4, C49.	Vonf signal is not within standard Voltage
Ⓖ	T34V	H or L	Battery	T34V signal is not within standard Voltage.
Ⓗ	FL-F	H or L	Around T1, Q3, Q4	FL Frequency is out of spec.
Ⓘ	FL-V	H or L	"	FL Voltage is out of spec.
Ⓙ	CURNT	H or L	IC2, IC5, Resistor, Capacitor, Soldering of IC, Missetting.	Current is out of spec
Ⓚ	S-RAM	Non	IC4, IC2, IC1	Internal RAM Operate correctly?
Ⓛ	V-RAM	Non	IC5, IC2, IC1.	V-RAM Operate correctly?
Ⓜ	JOYSTICK	0-5	IC3, Pattern on PCB	Data can transfer to JOYSTICK PORT ※1
Ⓝ	CPU SIGNAL	0-5	IC1, IC3. X1 Miscontact on Pin Tool	Check CPU Signal ※1
Ⓞ	COMM	0~6	IC3, CN2, EM1~EM8. X1	Communication done in proper way. ※1.

ⓟ	VOL OVER	Non	IC3, IC6, IC2 SOUNDBOARD (837-7400-01)	SOUND output is more than spec. ("LEVEL OVER" is indicated on Volume check screen)
ⓠ	ON RST	FST or SLW	IC3, Battery Board RD~52, D4, C49 inspection did not execute correctly	Reset signal is not generated for required period during power on stage.
ⓡ	OFF-RST	FST or SLW	IC3, Battery Board RD~52, D4, C49 inspection did not execute correctly.	

(4) Sub Error Message

I. H or L (Ⓐ~Ⓣ)

H: Inspected Value is higher than spec. (High)

L: Inspected Value is Lower than spec. (Low)

II. FST or SLW (Ⓠ, Ⓡ)

FST: During Power On or off stage, Reset signal raises or drops earier than spec. (FaST)

SLW: During Power on or off stage, Reset signal raises or drops slower than spec. (SLoW)

III JOYSTICK 0~5 (Ⓜ)

SUB ERROR	Deflective Patton	Note.
0	IC3, Patter on PCB	PADSW donot became all on condition
1	IC3, Pattern on PCB	PAD SW do not became all off condition
2	IC3, Pattern on PCB	Upper, Right, SW1 donot became on
3	IC3. Patter on PCB	Lower, Left, SW 2 donot became on.
4	=	PAUSE/START SW donot became on
5	=	PAUSE/START SW donot became off.

▽ CPU SIGNAL 0~5 (Ⓝ)

SUB ERROR	Deffective Portion	Note.
0	IC1 - PIN20	IORQ does not generate correctly.
1	IC1 - PIN27	M1 does not generate correctly.
2.	IC1 - PIN28	RFSH does not generate correctly.
3.	IC3 - PIN35, X1	CCLK does not generate correctly.
4	IC1 - PIN24, R2	WAIT does not generate correctly
5.	IC1 - PIN24, R1	BUSRQ does not generate correctly.

· Communication 1~6 (Ⓞ)

SUB ERROR	Deffective Portion	Note.
0	IC3. CN2, EM1~EM8	Input data does not match with instructed value
1	IC3, CN2, EM1~EM8	Cannot input data.
2	IC3. CN2. EM1~EM8	Output data does not match with instructed value.
3	IC3. CN2. EM1~EM8	Cannot output data
4	IC3. CN2. X1	Cannot output 4800 BPS.
5	IC3, CN2, X1	Cannot output 2400 BPS.
6	IC3, CN2. X1.	Cannot output the data with 2400 BPS.

Note.
In case 0~3 and 4 error is indicated, 0~3 sub error is happened during data input/output with 4800 BPS

⑤ Note about sub Error.

I. H and L. Sub Error does not generate at the same time for 1 Main Error.

II. FST and SLW Sub Error does not generate at the same time for 1 Main Error

III Ⓐ ~ Ⓙ, Ⓠ and Ⓡ error is generated, H or L, FST or SLW Sub Error should be generated after Main Error. So, these error is making 1 error with the combination of Sub and Main Error.
Therefor, if SUB Error is not generated after Main Error, there may be some chance program does not run properly.

IV 0~6 Sub Error generate for Ⓜ, Ⓝ and Ⓞ Main Error, 1 mnemonic is match for 1 Error. Therefor, there is possibility more than 1 mnemonic is generated. And as explained in above item III, Sub Error and Main Error is always making pair.

) Visual Check.

Please perform the Visual Check on the following 4 items. And, Visual Check portions are "LCD Screen on Checker" and "LED on Checking PCB"

Checker program did not have this function.

No	Visual Check Point	Check Item	Deffective Portion
ⓐ	LCD Screen (Volume Check)	When turn the VOL adjustment on PCB, check the level gage in "VOLUME CHECK" screen moves 0-8/8-0.	SOUND BOARD (837-7400-01, IC6, IC3, IC2, R3~R10, C8~C11.
ⓑ	LCD Screen (LCD Check)	Check the color-bar changes the color Red → Green → Blue by pressing SW2. (Specially on Red Color Bar, Black line at color changing portion should not be observed)	IC3. IC2. IC5
ⓒ	LED (LED CHECK)	Check LED blinking on PCB at "CHECK LED" screen	LD1, IC3, R11 Battery PCB (837-7399-01)
ⓓ	LCD Screen (TV MODE CHECK)	Check there is no difference between LCD screen and TV screen in TV mode	IC3. CN1

5) Others

① Meter Relay.

Meter Relay observes the power consumption of GG.
Setting Value should be in between "LOW side = +0360" and "HI SIDE = +0430".
This setting has enough allowance even if parts specification value maybe fluctuated. So, please try to set above gap as much as narrow.
This error is indicated as ⓉCURNT on screen.

② CN2

Inspection starts as soon as CN2 is activated. Please make sure CN2 is activated after "Cam SW makes contact" and "Pins on Pin Tool contact to points completely"

③ CN4

Please connect the Push SW which is used at Inspection. And Pin # 1 and # 3 should be used.
Moment Type Switch should be used also.

④ Radiator for IC2 & IC9

Please mount the proper radiator on IC2 (uPC 8171), IC9 is not required to mount any radiator.
Please do not use the radiator jointly between IC2 & IC9.

⑥ Patter Correction

The following pattern layout modifications should be required on 837-7617 Board.

a. ÷V of AC/12VDC and AC/5VDC should be jumpered at both side of PCB
b 10pin of IC5, IC8 and IC12, should be disconnected and connected to pin # 11
c Add 74HC4066 and connect the pin # 1 to Pin # 1 of IC36, Pin # 2 to Pin # 24 of CN3 and pin # 13 to Pin # 1 of IC 38.
d. Cut the pattern between Pin # 1 of IC37 and Pin # 24 of CN3
e Disconnect pin # 64 of IC28 and jumper to pin # 65 line.
f Jumper the pin # 14 of IC44 to GND
g Disconnect Pin # 3 and # 45 of IC41 and those disconnected lines should be connected to Pin # 48 through 1 KΩ Resistors.
And disconnected Pin # 3 should be connected to the line used to connect with Pin # 45 through 120Ω Resistor.

Disconnected Pin #45 should be connected to the line used to connecte with Pin #3 through 120Ω Resistor.

) Caution

1. Since more than 300 V high Voltage line on 837-7619 PCB Assy (ASSY GG CHECKER LCD). Please handle very carefully.
2. 36 wire cable length for Pin Tool should be minimized. If cable is too long, you may observe LCD screen interference.
3. Please turn on the checker 10 minute before inspection.

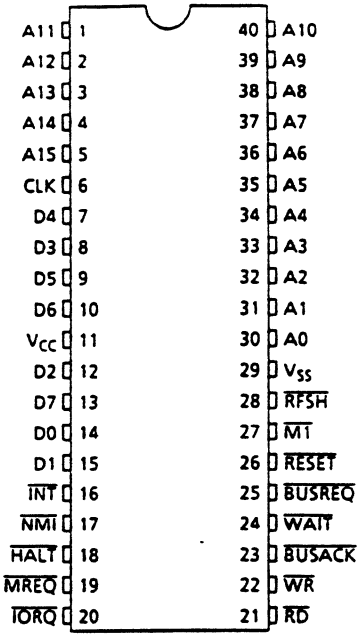
GAME GEAR

EUROPE

PARTS SPECIFICATION

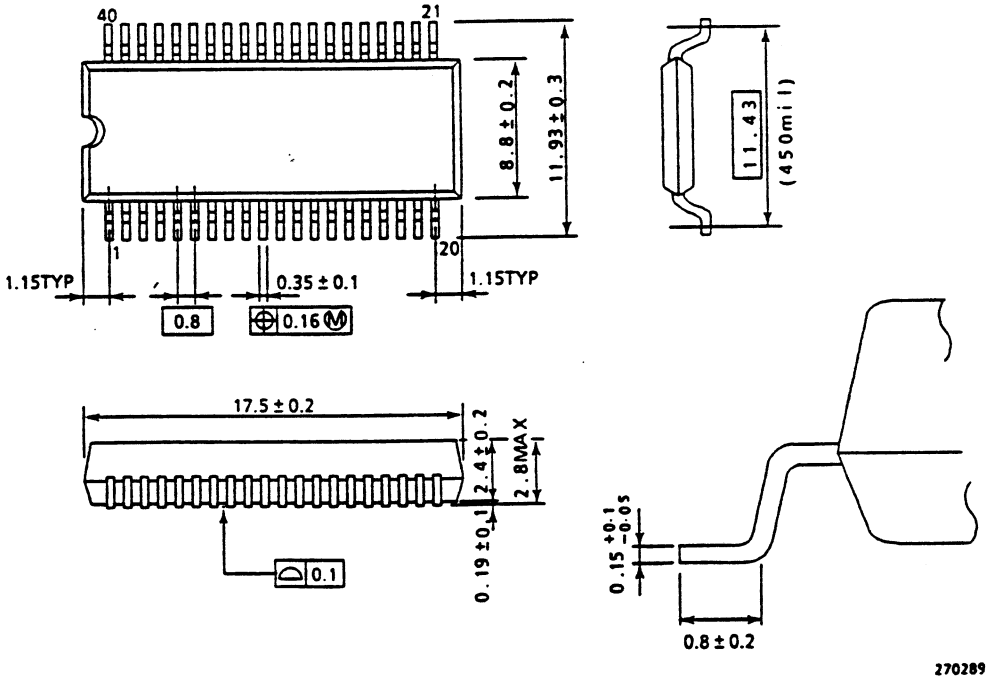
IC Z80A TMP84C00AM-6

ピン配置図(上面図)



SSOP40-P-450

単位：mm



MAIN BOARD IC1 2／2

IC Z80A TMP84C00AM-6

ピン名称と機能

ピン名称	ピン数	入/出力 3ステート	機能
A0~A15	16	出力 3ステート	16ビットのアドレスバス。 アクセスするメモリや入出力ポートのアドレス指定を行います。リフレッシュ期間中はリフレッシュ用アドレスが出力されます。
CLK	1	入力	単相のクロック入力。 クロック入力がDC状態("1"レベルまたは"0"レベル継続)になるとMPUは動作を停止し、そのときの状態を保持します。
D0~D7	8	入出力 3ステート	8ビットの双方向性データバス。
$\overline{INT}$	1	入力	マスカブル割込み要求信号。 割込みは周辺LSIから起動されます。ソフトウェアによって、割込み許可用フリップフロップ(IFF)が"1"にセットされていれば受付けられます。$\overline{INT}$は通常ワイヤードオアで使用され、その場合はプルアップ抵抗を外部に付加します。
$\overline{NMI}$	1	入力	ノンマスカブル割込み要求信号。 この割込み要求は、マスカブル割込みより優先度が高く、割込み許可用フリップフロップ(IFF)の状態に依存しません。
$\overline{HALT}$	1	出力	ホールト信号。 MPUがHALT命令を実行し、ホールト状態になると"0"が出力されます。
$\overline{MREQ}$	1	出力 3ステート	メモリリクエスト信号。 メモリアクセスのための実効アドレスがアドレスバスに乗っているときに"0"が出力されます。また、メモリリフレッシュ期間中も$\overline{RFSH}$信号とともに"0"となります。
$\overline{IORQ}$	1	出力 3ステート	入出力リクエスト信号。 入出力動作で入出力のためのアドレスがアドレスバスの下位8ビット(A0~A7)に乗っているときに"0"が出力されます。また、$\overline{IORQ}$信号は割込みアクノリッジ時に$\overline{M1}$信号とともに出力され、割込み応答ベクトルをデータバス上に乗せてもよいことを周辺LSIに知らせます。
$\overline{RFSH}$	1	出力	リフレッシュ信号。 ダイナミックメモリのリフレッシュ用アドレスがアドレスバスの下位7ビットに乗っているとき"0"が出力されます。このとき、$\overline{MREQ}$信号もアクティブ状態("0")になります。
$\overline{M1}$	1	出力	マシンサイクル1を示す信号。 命令のオペコードフェッチサイクルで$\overline{MREQ}$とともに"0"が出力されます。2バイトのオペコード実行時には、オペコードフェッチごとに出力されます。マスカブル割込みアクノリッジサイクルでは$\overline{IORQ}$信号とともに出力されます。
$\overline{RESET}$	1	入力	リセット信号。 $\overline{RESET}$信号は、MPUの初期化を行う信号で少なくとも3クロック期間アクティブ状態("0")にしなければなりません。
$\overline{BUSREQ}$	1	入力	バスリクエスト信号。 $\overline{BUSREQ}$信号はMPUのアドレスバス,データバス, $\overline{MREQ}$, $\overline{IORQ}$, $\overline{RD}$, $\overline{WR}$を高インピーダンス状態にすることを要求する信号です。 $\overline{BUSREQ}$信号は通常ワイヤードオアで使用され、その場合はプルアップ抵抗を外部に付加します。
$\overline{WAIT}$	1	入力	ウェイト信号。 $\overline{WAIT}$信号は、MPUに対して指定されたメモリあるいは周辺LSIがデータ転送準備ができていないことを知らせます。 $\overline{WAIT}$信号が"0"である限り、MPUはウェイト状態を継続します。
$\overline{BUSACK}$	1	出力	バスアクノリッジ信号。 $\overline{BUSREQ}$信号を受付けて、周辺LSIに対して、MPUのアドレスバス,データバス, $\overline{MREQ}$, $\overline{IORQ}$, $\overline{RD}$, $\overline{WR}$が高インピーダンス状態になったことを知らせます。
$\overline{WR}$	1	出力 3ステート	ライト信号。 指定したメモリあるいは周辺LSIに格納すべきデータがMPUデータバス上に乗っているとき出力されます。
$\overline{RD}$	1	出力 3ステート	リード信号。 MPUがメモリまたは周辺LSIからデータを受入れ可能な期間、"0"が出力されます。指定された周辺LSIあるいはメモリのデータをこの信号でゲートし、MPUのデータバスに乗せることができます。
NC (PLCCのみ)	4	−	内部には接続されていません。 オープンで使用して下さい。
V_{CC}	1	電源	+5V
V_{SS}	1	電源	0V

PARTS LIST

PART NO. : 837-7996B

DESCRIPTION : IC BD GG MAIN EUROPE B

INE	LOCATE		DNO OR	PART NO.	DESCRIPTION
61.00	R14		126	476-2201-J-10	RES CHIP 200 OHM 1/10W 5%
62.00	R17		133	476-2472-J-10	RES CHIP 4.7KOHM 1/10W 5%
63.00	R18		134	476-2103-J-10	RES CHIP 10KOHM 1/10W 5%
64.00	R20	(SOLDER)	129	476-2102-J-10	RES CHIP 1KOHM 1/10W 5%
65.00	R21	(SOLDER)	129	476-2102-J-10	RES CHIP 1KOHM 1/10W 5%
66.00	R22	(SOLDER)	134	476-2103-J-10	RES CHIP 10KOHM 1/10W 5%
67.00	R23	(SOLDER)	129	476-2102-J-10	RES CHIP 1KOHM 1/10W 5%
68.00	R24	(SOLDER)	129	476-2102-J-10	RES CHIP 1KOHM 1/10W 5%
69.00	R25	(SOLDER)	134	476-2103-J-10	RES CHIP 10KOHM 1/10W 5%
70.00	R26		138	476-2473-J-10	RES CHIP 47KOHM 1/10W 5%
71.00	R27		138	476-2473-J-10	RES CHIP 47KOHM 1/10W 5%
72.00	R28		910	NOT USED	NOT USED
73.00	R29		130	476-2182-J-10	RES CHIP 1.8KOHM 1/10W 5%
74.00	R30		130	476-2182-J-10	RES CHIP 1.8KOHM 1/10W 5%
75.00	R31		139	476-2104-J-10	RES CHIP 100KOHM 1/10W 5%
76.00	R32		139	476-2104-J-10	RES CHIP 100KOHM 1/10W 5%
77.00	R33		172	476-2303-J-10	RES CHIP 30KOHM 1/10W 5%
78.00	R34		135	476-2203-J-10	RES CHIP 20KOHM 1/10W 5%
79.00	R35		125	476-2510-J-10	RES CHIP 51 OHM 1/10W 5%
80.00	R36		148	476-2563-F-10	RES CHIP 56KOHM 1/10W 1%
81.00	R37		146	476-2303-F-10	RES CHIP 30KOHM 1/10W 1%
82.00	R38		125	476-2510-J-10	RES CHIP 51 OHM 1/10W 5%
83.00	R39		143	476-2471-F-10	RES CHIP 470 OHM 1/10W 1%
84.00	R40		143	476-2471-F-10	RES CHIP 470 OHM 1/10W 1%
85.00	R41		131	476-2222-J-10	RES CHIP 2.2KOHM 1/10W 5%
86.00	R42		140	476-2244-J-10	RES CHIP 240KOHM 1/10W 5%
87.00	R43		136	476-2223-J-10	RES CHIP 22KOHM 1/10W 5%
88.00	R44		136	476-2223-J-10	RES CHIP 22KOHM 1/10W 5%
89.00	R45		142	476-2105-J-10	RES CHIP 1MOHM 1/10W 5%
90.00	R46		136	476-2223-J-10	RES CHIP 22KOHM 1/10W 5%
91.00	R47		136	476-2223-J-10	RES CHIP 22KOHM 1/10W 5%
92.00	R48	(SOLDER)	134	476-2103-J-10	RES CHIP 10KOHM 1/10W 5%
93.00	R49	(SOLDER)	134	476-2103-J-10	RES CHIP 10KOHM 1/10W 5%
94.00	R50		174	476-2912-F-10	RES CHIP 9.1KOHM 1/10W 1%
95.00	R51		173	476-2112-F-10	RES CHIP 1.1KOHM 1/10W 1%
96.00	R52		175	476-2302-F-10	RES CHIP 3KOHM 1/10W 1%
97.00	R53	(SOLDER)	171	476-2122-J-10	RES CHIP 1.2KOHM 1/10W 5%
98.00	R54		127	476-2221-J-10	RES CHIP 220 OHM 1/10W 5%
99.00	R55		127	476-2221-J-10	RES CHIP 220 OHM 1/10W 5%
100.00	R56		127	476-2221-J-10	RES CHIP 220 OHM 1/10W 5%
101.00	R57		127	476-2221-J-10	RES CHIP 220 OHM 1/10W 5%
102.00	R58		127	476-2221-J-10	RES CHIP 220 OHM 1/10W 5%
103.00	R59		127	476-2221-J-10	RES CHIP 220 OHM 1/10W 5%
104.00	R60	(SOLDER)	127	476-2221-J-10	RES CHIP 220 OHM 1/10W 5%
105.00	R61	(SOLDER)	127	476-2221-J-10	RES CHIP 220 OHM 1/10W 5%
106.00	R62	(SOLDER)	127	476-2221-J-10	RES CHIP 220 OHM 1/10W 5%
107.00	R63	(SOLDER)	127	476-2221-J-10	RES CHIP 220 OHM 1/10W 5%
108.00	R64		910	NOT USED	NOT USED
109.00	C1		165	150-0311	CAP E CHIP 33UF 6.3V M
110.00	C3		163	150-0308	CAP E CHIP 10UF 6.3V M
111.00	C4		157	151-0265	CAP CER CP 0.1UF 25V ZF 2125
112.00	C5		157	151-0265	CAP CER CP 0.1UF 25V ZF 2125
113.00	C6		163	150-0308	CAP E CHIP 10UF 6.3V M
114.00	C7		157	151-0265	CAP CER CP 0.1UF 25V ZF 2125
115.00	C8	(SOLDER)	158	151-0266	CAP CER CP 0.33UF 25V Z F 3216
116.00	C9	(SOLDER)	158	151-0266	CAP CER CP 0.33UF 25V Z F 3216
117.00	C10	(SOLDER)	158	151-0266	CAP CER CP 0.33UF 25V Z F 3216
118.00	C11	(SOLDER)	158	151-0266	CAP CER CP 0.33UF 25V Z F 3216
119.00	C12	(SOLDER)	157	151-0265	CAP CER CP 0.1UF 25V ZF 2125
120.00	C14		157	151-0265	CAP CER CP 0.1UF 25V ZF 2125

PARTS LIST

PART NO. : 837-7996B

DESCRIPTION : IC BD GG MAIN EUROPE B

LINE	LOCATE		DNO	OR	PART NO.	DESCRIPTION
1.00			1		171-6101A	PC BD GG MAIN EUROPE
2.00	IC1		101		315-0545	IC Z80A C-MOS SOP TMP84C00AM-6
3.00	IC2		102		315-5377	IC CUSTOM CHIP VDP GG QFP
4.00	IC3		103		315-5378B	IC CUSTOM CHIP SCA GG QFP
5.00	IC4		104	1	315-0546	IC UPD4364G-15L SOP 28P
6.00	IC4		104	2	315-0611	IC FCB61C65L-70T SOP 28P
7.00	IC5	(SOLDER)	105		315-0547	IC HM65256BLFP-12 SOP 28P
8.00	IC6	(SOLDER)	106		313-5134	IC UPC358G2 SOP 8P
9.00	Q1		108		482-5126	XSTR 2SC1623 L5..7 CHIP
10.00	Q2		910		NOT USED	NOT USED
11.00	Q3	(SOLDER)	109		482-5127	XSTR 2SD1614 CHIP
12.00	Q4	(SOLDER)	109		482-5127	XSTR 2SD1614 CHIP
13.00	Q5		108		482-5126	XSTR 2SC1623 L5..7 CHIP
14.00	Q6		108		482-5126	XSTR 2SC1623 L5..7 CHIP
15.00	Q7		108		482-5126	XSTR 2SC1623 L5..7 CHIP
16.00	Q8		107		482-5125	XSTR 2SA812 M5..7 CHIP
17.00	Q9		108		482-5126	XSTR 2SC1623 L5..7 CHIP
18.00	Q10		107		482-5125	XSTR 2SA812 M5..7 CHIP
19.00	Q11		108		482-5126	XSTR 2SC1623 L5..7 CHIP
20.00	FB1		910		NOT USED	NOT USED
21.00	LD1	(SOLDER)	110		390-5308	LED SLR 34-VT3F
22.00	D1		111		481-5072	DIODE 1SS184 CHIP
23.00	D2		111		481-5072	DIODE 1SS184 CHIP
24.00	D3		111		481-5072	DIODE 1SS184 CHIP
25.00	D4		111		481-5072	DIODE 1SS184 CHIP
26.00	X1		112		230-5066	XTAL OSC 32.215905M 100PPM
~~27.00~~	~~CN1~~		~~113~~		~~209-5037~~	~~CONN 45P FOR GG 0-176914-1~~
27.10	CN1		113		209-5037-01	CONN 45P FOR GG 01
28.00	CN2		114		209-5038	CONN 10P FOR GG HDC-0492
29.00	CN3		115		212-5304	CONN 6P FOR GG 178094-6
30.00	CN4		116		212-5305	CONN 9P FOR GG 178094-9
31.00	FU1		117		514-5040	FUSE THERMAL SM095B0
32.00	FU2		117		514-5040	FUSE THERMAL SM095B0
33.00	1		118		048-0001	EYLET 3.5*7
34.00	2		118		048-0001	EYLET 3.5*7
35.00	EM1		119		271-0007	EMI FILTER STX222MB
36.00	EM2		119		271-0007	EMI FILTER STX222MB
37.00	EM3		119		271-0007	EMI FILTER STX222MB
38.00	EM4		119		271-0007	EMI FILTER STX222MB
39.00	EM5		119		271-0007	EMI FILTER STX222MB
40.00	EM6		119		271-0007	EMI FILTER STX222MB
41.00	EM7		119		271-0007	EMI FILTER STX222MB
42.00	EM8		119		271-0007	EMI FILTER STX222MB
43.00	L1		120		271-0017	BEADS INDUCTOR FBA04VA900AB-00
44.00	L3		121		180-5073	P.COIL CHIP 100UH LEM4532T101K
45.00	L2		122		180-5077	CHOKE COIL 105UH KI-1589
46.00	T1		123		560-5172	INVERTER XFMR KI-1588
47.00	VR1		124		220-5339	VOL CONT 20KB RK09J11T0
48.00	R1		133		476-2472-J-10	RES CHIP 4.7KOHM 1/10W 5%
49.00	R2		133		476-2472-J-10	RES CHIP 4.7KOHM 1/10W 5%
50.00	R3	(SOLDER)	133		476-2472-J-10	RES CHIP 4.7KOHM 1/10W 5%
51.00	R4	(SOLDER)	133		476-2472-J-10	RES CHIP 4.7KOHM 1/10W 5%
52.00	R5	(SOLDER)	133		476-2472-J-10	RES CHIP 4.7KOHM 1/10W 5%
53.00	R6	(SOLDER)	133		476-2472-J-10	RES CHIP 4.7KOHM 1/10W 5%
54.00	R7	(SOLDER)	141		476-2474-J-10	RES CHIP 470KOHM 1/10W 5%
55.00	R8	(SOLDER)	141		476-2474-J-10	RES CHIP 470KOHM 1/10W 5%
56.00	R9	(SOLDER)	141		476-2474-J-10	RES CHIP 470KOHM 1/10W 5%
57.00	R10	(SOLDER)	141		476-2474-J-10	RES CHIP 470KOHM 1/10W 5%
58.00	R11		128		476-2471-J-10	RES CHIP 470 OHM 1/10W 5%
59.00	R12	(SOLDER)	133		476-2472-J-10	RES CHIP 4.7KOHM 1/10W 5%
60.00	R13		132		476-2302-J-10	RES CHIP 3KOHM 1/10W 5%

PARTS LIST

PART NO. : 837-7996B

DESCRIPTION : IC BD GG MAIN EUROPE B

LINE	LOCATE	DNO	OR PART NO.	DESCRIPTION
176.00	C70	151	151-0291	CAP CER CP 39PF 50V K SL 160
177.00	C71	151	151-0291	CAP CER CP 39PF 50V K SL 160
178.00	C72	151	151-0291	CAP CER CP 39PF 50V K SL 160
179.00	C73	151	151-0291	CAP CER CP 39PF 50V K SL 160
180.00	C74	151	151-0291	CAP CER CP 39PF 50V K SL 160
181.00	C75	910	NOT USED	NOT USED
182.00	C76	177	151-0307	CAP CER CP 0.022UF 50V ZF212
183.00	C77	177	151-0307	CAP CER CP 0.022UF 50V ZF212
184.00	C78	178	151-0298	CAP CER CP 100PF 50V J SL 212
185.00	C79	910	NOT USED	NOT USED
186.00	C80	157	151-0265	CAP CER CP 0.1UF 25V ZF 212
187.00	C81	177	151-0307	CAP CER CP 0.022UF 50V ZF212
188.00	C82	179	151-0320	CAP CER CP 68PF 50V J CH 212
189.00	C83	181	151-0323	CAP CER CP 33PF 50V K SL 212
190.00	C84	182	151-0340	CAP CER CP 5PF 50V D CH 212
191.00	C85	181	151-0323	CAP CER CP 33PF 50V K SL "
192.00		930	NOTE#1	NOTE LINE
193.00		931	NOTE#2	NOTE LINE
194.00		932	NOTE#3	NOTE LINE

PARTS LIST

PART NO. : 837-7996B

DESCRIPTION : IC BD GG MAIN EUROPE B

LINE	LOCATE		DNO	OR	PART NO.	DESCRIPTION
121.00	C15	(SOLDER)	149		151-0289	CAP CER CP 10PF 50V D CH 212
122.00	C16	(SOLDER)	149		151-0289	CAP CER CP 10PF 50V D CH 212
123.00	C17		170	1	153-0090	CAP TANT CHIP 1UF 10V
124.00	C17		170	2	153-0086	CAP TANT CHIP 1UF 16V
125.00	C18		155		151-0264	CAP CER CP 8200PF 50V K B 212
126.00	C19	(SOLDER)	157		151-0265	CAP CER CP 0.1UF 25V ZF 212
127.00	C20	(SOLDER)	170	1	153-0090	CAP TANT CHIP 1UF 10V
128.00	C20	(SOLDER)	170	2	153-0086	CAP TANT CHIP 1UF 16V
129.00	C21		170	1	153-0090	CAP TANT CHIP 1UF 10V
130.00	C21		170	2	153-0086	CAP TANT CHIP 1UF 16V
131.00	C22		155		151-0264	CAP CER CP 8200PF 50V K B 212
132.00	C23	(SOLDER)	170	1	153-0090	CAP TANT CHIP 1UF 10V
133.00	C23	(SOLDER)	170	2	153-0086	CAP TANT CHIP 1UF 16V
134.00	C24		154		151-0263	CAP CER CP 2200PF 50V K B 212
135.00	C25		154		151-0263	CAP CER CP 2200PF 50V K B 212
136.00	C26		154		151-0263	CAP CER CP 2200PF 50V K B 212
137.00	C27		154		151-0263	CAP CER CP 2200PF 50V K B 212
138.00	C28		154		151-0263	CAP CER CP 2200PF 50V K B 212
139.00	C29		154		151-0263	CAP CER CP 2200PF 50V K B 212
140.00	C30		154		151-0263	CAP CER CP 2200PF 50V K B 212
141.00	C31		167		150-0313	CAP E CHIP 100UF 6.3V M
142.00	C32		169		152-0177	CAP MP 0.1UF 100V 10%
143.00	C33		159		151-0272	CAP CER 270PF 2KV SL
144.00	C34		157		151-0265	CAP CER CP 0.1UF 25V ZF 212
145.00	C35		162		150-0307	CAP E CHIP 4.7UF 35V
146.00	C36		157		151-0265	CAP CER CP 0.1UF 25V ZF 212
147.00	C37		166		150-0318	CAP E CHIP 68UF 6.3V
148.00	C38		157		151-0265	CAP CER CP 0.1UF 25V ZF 212
149.00	C39		168		150-0319	CAP E CHIP 100UF 4V
150.00	C40		157		151-0265	CAP CER CP 0.1UF 25V ZF 212
151.00	C41		157		151-0265	CAP CER CP 0.1UF 25V ZF 212
152.00	C42		156		151-0271	CAP CER CP 0.01UF 50V ZF 212
153.00	C43		156		151-0271	CAP CER CP 0.01UF 50V ZF 212
154.00	C44		161		150-0317	CAP E CHIP 0.47UF 50V
155.00	C45		161		150-0317	CAP E CHIP 0.47UF 50V
156.00	C46		152		151-0270	CAP CER CP 47PF 50V K SL 212
157.00	C47		152		151-0270	CAP CER CP 47PF 50V K SL 212
158.00	C48		163		150-0308	CAP E CHIP 10UF 6.3V M
159.00	C49		164		150-0309	CAP E CHIP 22UF 6.3V M
160.00	C50		157		151-0265	CAP CER CP 0.1UF 25V ZF 212
161.00	C51		157		151-0265	CAP CER CP 0.1UF 25V ZF 212
162.00	C52		160		151-0286	CAP CER CHIP 0.47UF 16V Z F
163.00	C53		160		151-0286	CAP CER CHIP 0.47UF 16V Z F
164.00	C58	(SOLDER)	153		151-0290	CAP CER CP 1200PF 50V K B 212
165.00	C59		151		151-0291	CAP CER CP 39PF 50V K SL 160
166.00	C60		151		151-0291	CAP CER CP 39PF 50V K SL 160
167.00	C61		151		151-0291	CAP CER CP 39PF 50V K SL 160
168.00	C62		151		151-0291	CAP CER CP 39PF 50V K SL 160
169.00	C63		151		151-0291	CAP CER CP 39PF 50V K SL 160
170.00	C64		151		151-0291	CAP CER CP 39PF 50V K SL 160
171.00	C65		151		151-0291	CAP CER CP 39PF 50V K SL 160
172.00	C66		151		151-0291	CAP CER CP 39PF 50V K SL 160
173.00	C67		151		151-0291	CAP CER CP 39PF 50V K SL 160
174.00	C68		151		151-0291	CAP CER CP 39PF 50V K SL 160
175.00	C69	(SOLDER)	150		151-0288	CAP CER CP 39PF 50V K SL 212

PARTS LIST

PART NO. : 837-7996
DESCRIPTION : IC BD GG MAIN EUROPE

LINE	LOCATE		DNO OR PART NO.	DESCRIPTION
173.00	C67		151 151-0291	CAP CER CP 39PF 50V K SL 160
174.00	C68		151 151-0291	CAP CER CP 39PF 50V K SL 160
175.00	C69	(SOLDER)	150 151-0288	CAP CER CP 39PF 50V K SL 212
176.00	C70		151 151-0291	CAP CER CP 39PF 50V K SL 160
177.00	C71		151 151-0291	CAP CER CP 39PF 50V K SL 160
178.00	C72		151 151-0291	CAP CER CP 39PF 50V K SL 160
179.00	C73		151 151-0291	CAP CER CP 39PF 50V K SL 160
180.00	C74		151 151-0291	CAP CER CP 39PF 50V K SL 160
181.00	C75		180 151-0322	CAP CER CP 120PF 50V J CH 160
182.00	C76		177 151-0307	CAP CER CP 0.022UF 50V ZF212
183.00	C77		177 151-0307	CAP CER CP 0.022UF 50V ZF212
184.00	C78		178 151-0298	CAP CER CP 100PF 50V J SL 212
185.00	C79		178 NOT USED	NOT USED
186.00	C80		157 151-0265	CAP CER CP 0.1UF 25V ZF 212
187.00	C81		177 151-0307	CAP CER CP 0.022UF 50V ZF212
188.00	C82		179 151-0320	CAP CER CP 68PF 50V J CH 2[illegible]
189.00	C83		181 151-0323	CAP CER CP 33PF 50V K SL [illegible]
190.00	C84		182 151-0340	CAP CER CP 5PF 50V D CH 212
191.00	C85		181 151-0323	CAP CER CP 33PF 50V K SL 212
192.00			930 NOTE#1	NOTE LINE
193.00			931 NOTE#2	NOTE LINE
194.00			932 NOTE#3	NOTE LINE

PARTS LIST

PART NO. : 837-7996

DESCRIPTION : IC BD GG MAIN EUROPE

LINE	LOCATE	DNO OR PART NO.		DESCRIPTION
116.00	C9 (SOLDER)	158	151-0266	CAP CER CP 0.33UF 25V Z F 3216
117.00	C10 (SOLDER)	158	151-0266	CAP CER CP 0.33UF 25V Z F 3216
118.00	C11 (SOLDER)	158	151-0266	CAP CER CP 0.33UF 25V Z F 3216
119.00	C12 (SOLDER)	157	151-0265	CAP CER CP 0.1UF 25V ZF 2125
120.00	C14	157	151-0265	CAP CER CP 0.1UF 25V ZF 2125
121.00	C15 (SOLDER)	149	151-0289	CAP CER CP 10PF 50V D CH 2125
121.10	C16 (SOLDER)	149	151-0289	CAP CER CP 10PF 50V D CH 2125
~~122.00~~	~~C16 (SOLDER)~~	~~176~~	~~151-0316~~	~~CAP CER CP 20PF 50V J CH 2125~~
123.00	C17	170 1	153-0090	CAP TANT CHIP 1UF 10V
124.00	C17	170 2	153-0086	CAP TANT CHIP 1UF 16V
125.00	C18	155	151-0264	CAP CER CP 8200PF 50V K B 2125
126.00	C19 (SOLDER)	157	151-0265	CAP CER CP 0.1UF 25V ZF 2125
127.00	C20 (SOLDER)	170 1	153-0090	CAP TANT CHIP 1UF 10V
128.00	C20 (SOLDER)	170 2	153-0086	CAP TANT CHIP 1UF 16V
129.00	C21	170 1	153-0090	CAP TANT CHIP 1UF 10V
130.00	C21	170 2	153-0086	CAP TANT CHIP 1UF 16V
31.00	C22	155	151-0264	CAP CER CP 8200PF 50V K B 2125
132.00	C23 (SOLDER)	170 1	153-0090	CAP TANT CHIP 1UF 10V
133.00	C23 (SOLDER)	170 2	153-0086	CAP TANT CHIP 1UF 16V
134.00	C24	154	151-0263	CAP CER CP 2200PF 50V K B 2125
135.00	C25	154	151-0263	CAP CER CP 2200PF 50V K B 2125
136.00	C26	154	151-0263	CAP CER CP 2200PF 50V K B 2125
137.00	C27	154	151-0263	CAP CER CP 2200PF 50V K B 2125
138.00	C28	154	151-0263	CAP CER CP 2200PF 50V K B 2125
139.00	C29	154	151-0263	CAP CER CP 2200PF 50V K B 2125
140.00	C30	154	151-0263	CAP CER CP 2200PF 50V K B 2125
141.00	C31	167	150-0313	CAP E CHIP 100UF 6.3V M
142.00	C32	169	152-0177	CAP MP 0.1UF 100V 10%
143.00	C33	159	151-0272	CAP CER 270PF 2KV SL
144.00	C34	157	151-0265	CAP CER CP 0.1UF 25V ZF 2125
145.00	C35	162	150-0307	CAP E CHIP 4.7UF 35V
146.00	C36	157	151-0265	CAP CER CP 0.1UF 25V ZF 2125
147.00	C37	166	150-0318	CAP E CHIP 68UF 6.3V
148.00	C38	157	151-0265	CAP CER CP 0.1UF 25V ZF 2125
149.00	C39	168	150-0319	CAP E CHIP 100UF 4V
50.00	C40	157	151-0265	CAP CER CP 0.1UF 25V ZF 2125
151.00	C41	157	151-0265	CAP CER CP 0.1UF 25V ZF 2125
152.00	C42	156	151-0271	CAP CER CP 0.01UF 50V ZF 2125
153.00	C43	156	151-0271	CAP CER CP 0.01UF 50V ZF 2125
154.00	C44	161	150-0317	CAP E CHIP 0.47UF 50V
155.00	C45	161	150-0317	CAP E CHIP 0.47UF 50V
156.00	C46	152	151-0270	CAP CER CP 47PF 50V K SL 2125
157.00	C47	152	151-0270	CAP CER CP 47PF 50V K SL 2125
158.00	C48	163	150-0308	CAP E CHIP 10UF 6.3V M
159.00	C49	164	150-0309	CAP E CHIP 22UF 6.3V M
160.00	C50	157	151-0265	CAP CER CP 0.1UF 25V ZF 2125
161.00	C51	157	151-0265	CAP CER CP 0.1UF 25V ZF 2125
162.00	C52	160	151-0286	CAP CER CHIP 0.47UF 16V Z F
163.00	C53	160	151-0286	CAP CER CHIP 0.47UF 16V Z F
164.00	C58 (SOLDER)	153	151-0290	CAP CER CP 1200PF 50V K B 2125
165.00	C59	151	151-0291	CAP CER CP 39PF 50V K SL 1608
166.00	C60	151	151-0291	CAP CER CP 39PF 50V K SL 1608
167.00	C61	151	151-0291	CAP CER CP 39PF 50V K SL 1608
168.00	C62	151	151-0291	CAP CER CP 39PF 50V K SL 1608
169.00	C63	151	151-0291	CAP CER CP 39PF 50V K SL 1608
170.00	C64	151	151-0291	CAP CER CP 39PF 50V K SL 1608
171.00	C65	151	151-0291	CAP CER CP 39PF 50V K SL 1608
172.00	C66	151	151-0291	CAP CER CP 39PF 50V K SL 1608

PART NO. : 837-7996

DESCRIPTION : IC BD GG MAIN EUROPE

LINE	LOCATE		DNO	OR PART NO.	DESCRIPTION
56.00	R9	(SOLDER)	141	476-2474-J-10	RES CHIP 470KOHM 1/10W 5%
57.00	R10	(SOLDER)	141	476-2474-J-10	RES CHIP 470KOHM 1/10W 5%
58.00	R11		128	476-2471-J-10	RES CHIP 470 OHM 1/10W 5%
59.00	R12	(SOLDER)	133	476-2472-J-10	RES CHIP 4.7KOHM 1/10W 5%
60.00	R13		132	476-2302-J-10	RES CHIP 3KOHM 1/10W 5%
61.00	R14		126	476-2201-J-10	RES CHIP 200 OHM 1/10W 5%
62.00	R17		133	476-2472-J-10	RES CHIP 4.7KOHM 1/10W 5%
63.00	R18		134	476-2103-J-10	RES CHIP 10KOHM 1/10W 5%
64.00	R20	(SOLDER)	129	476-2102-J-10	RES CHIP 1KOHM 1/10W 5%
65.00	R21	(SOLDER)	129	476-2102-J-10	RES CHIP 1KOHM 1/10W 5%
66.00	R22	(SOLDER)	134	476-2103-J-10	RES CHIP 10KOHM 1/10W 5%
67.00	R23	(SOLDER)	129	476-2102-J-10	RES CHIP 1KOHM 1/10W 5%
68.00	R24	(SOLDER)	129	476-2102-J-10	RES CHIP 1KOHM 1/10W 5%
69.00	R25	(SOLDER)	134	476-2103-J-10	RES CHIP 10KOHM 1/10W 5%
70.00	R26		138	476-2473-J-10	RES CHIP 47KOHM 1/10W 5%
71.00	R27		138	476-2473-J-10	RES CHIP 47KOHM 1/10W 5%
72.00	R28		910	NOT USED	NOT USED
73.00	R29		130	476-2182-J-10	RES CHIP 1.8KOHM 1/10W 5%
74.00	R30		130	476-2182-J-10	RES CHIP 1.8KOHM 1/10W 5%
75.00	R31		139	476-2104-J-10	RES CHIP 100KOHM 1/10W 5%
76.00	R32		139	476-2104-J-10	RES CHIP 100KOHM 1/10W 5%
77.00	R33		172	476-2303-J-10	RES CHIP 30KOHM 1/10W 5%
78.00	R34		135	476-2203-J-10	RES CHIP 20KOHM 1/10W 5%
79.00	R35		125	476-2510-J-10	RES CHIP 51 OHM 1/10W 5%
80.00	R36		148	476-2563-F-10	RES CHIP 56KOHM 1/10W 1%
81.00	R37		146	476-2303-F-10	RES CHIP 30KOHM 1/10W 1%
82.00	R38		125	476-2510-J-10	RES CHIP 51 OHM 1/10W 5%
83.00	R39		143	476-2471-F-10	RES CHIP 470 OHM 1/10W 1%
84.00	R40		143	476-2471-F-10	RES CHIP 470 OHM 1/10W 1%
85.00	R41		131	476-2222-J-10	RES CHIP 2.2KOHM 1/10W 5%
86.00	R42		140	476-2244-J-10	RES CHIP 240KOHM 1/10W 5%
87.00	R43		136	476-2223-J-10	RES CHIP 22KOHM 1/10W 5%
88.00	R44		136	476-2223-J-10	RES CHIP 22KOHM 1/10W 5%
89.00	R45		142	476-2105-J-10	RES CHIP 1MOHM 1/10W 5%
90.00	R46		136	476-2223-J-10	RES CHIP 22KOHM 1/10W 5%
91.00	R47		136	476-2223-J-10	RES CHIP 22KOHM 1/10W 5%
92.00	R48	(SOLDER)	134	476-2103-J-10	RES CHIP 10KOHM 1/10W 5%
93.00	R49	(SOLDER)	134	476-2103-J-10	RES CHIP 10KOHM 1/10W 5%
94.00	R50		174	476-2912-F-10	RES CHIP 9.1KOHM 1/10W 1%
95.00	R51		173	476-2112-F-10	RES CHIP 1.1KOHM 1/10W 1%
96.00	R52		175	476-2302-F-10	RES CHIP 3KOHM 1/10W 1%
97.00	R53	(SOLDER)	171	476-2122-J-10	RES CHIP 1.2KOHM 1/10W 5%
98.00	R54		127	476-2221-J-10	RES CHIP 220 OHM 1/10W 5%
99.00	R55		127	476-2221-J-10	RES CHIP 220 OHM 1/10W 5%
100.00	R56		127	476-2221-J-10	RES CHIP 220 OHM 1/10W 5%
101.00	R57		127	476-2221-J-10	RES CHIP 220 OHM 1/10W 5%
102.00	R58		127	476-2221-J-10	RES CHIP 220 OHM 1/10W 5%
103.00	R59		127	476-2221-J-10	RES CHIP 220 OHM 1/10W 5%
104.00	R60	(SOLDER)	127	476-2221-J-10	RES CHIP 220 OHM 1/10W 5%
105.00	R61	(SOLDER)	127	476-2221-J-10	RES CHIP 220 OHM 1/10W 5%
106.00	R62	(SOLDER)	127	476-2221-J-10	RES CHIP 220 OHM 1/10W 5%
107.00	R63	(SOLDER)	127	476-2221-J-10	RES CHIP 220 OHM 1/10W 5%
108.00	R64		910	NOT USED	NOT USED
109.00	C1		165	150-0311	CAP E CHIP 33UF 6.3V M
110.00	C3		163	150-0308	CAP E CHIP 10UF 6.3V M
111.00	C4		157	151-0265	CAP CER CP 0.1UF 25V ZF 21
112.00	C5		157	151-0265	CAP CER CP 0.1UF 25V ZF 21
113.00	C6		163	150-0308	CAP E CHIP 10UF 6.3V M
114.00	C7		157	151-0265	CAP CER CP 0.1UF 25V ZF 21
115.00	C8	(SOLDER)	158	151-0266	CAP CER CP 0.33UF 25V Z F 321

PART NO. : 837-7996

DESCRIPTION : IC BD GG MAIN EUROPE

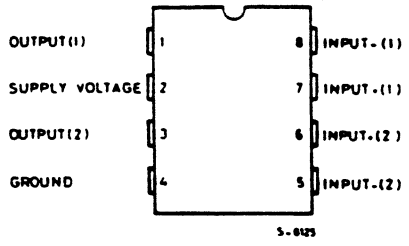
LINE	LOCATE		DNO	OR	PART NO.	DESCRIPTION
1.00			1		171-6101A	PC BD GG MAIN EUROPE
2.00	IC1		101		315-0545	IC Z80A C-MOS SOP TMP84C00AM
3.00	IC2		102		315-5377	IC CUSTOM CHIP VDP GG QFP
4.00	IC3		103		315-5378A	IC CUSTOM CHIP SCA GG QFP
5.00	IC4		104	1	315-0546	IC UPD4364G-15L SOP 28P
6.00	IC4		104	2	315-0611	IC FCB61C65L-70T SOP 28P
7.00	IC5	(SOLDER)	105		315-0547	IC HM65256BLFP-12 SOP 28P
8.00	IC6	(SOLDER)	106		313-5134	IC UPC358G2 SOP 8P
9.00	Q1		108		482-5126	XSTR 2SC1623 L5..7 CHIP
10.00	Q2		910		NOT USED	NOT USED
11.00	Q3	(SOLDER)	109		482-5127	XSTR 2SD1614 CHIP
12.00	Q4	(SOLDER)	109		482-5127	XSTR 2SD1614 CHIP
13.00	Q5		108		482-5126	XSTR 2SC1623 L5..7 CHIP
14.00	Q6		108		482-5126	XSTR 2SC1623 L5..7 CHIP
15.00	Q7		108		482-5126	XSTR 2SC1623 L5..7 CHIP
16.00	Q8		107		482-5125	XSTR 2SA812 M5..7 CHIP
17.00	Q9		108		482-5126	XSTR 2SC1623 L5..7 CHIP
18.00	Q10		107		482-5125	XSTR 2SA812 M5..7 CHIP
19.00	Q11		108		482-5126	XSTR 2SC1623 L5..7 CHIP
20.00	FB1		910		NOT USED	NOT USED
21.00	LD1	(SOLDER)	110		390-5308	LED SLR 34-VT3F
22.00	D1		111		481-5072	DIODE 1SS184 CHIP
23.00	D2		111		481-5072	DIODE 1SS184 CHIP
24.00	D3		111		481-5072	DIODE 1SS184 CHIP
25.00	D4		111		481-5072	DIODE 1SS184 CHIP
26.00	X1		112		230-5066	XTAL OSC 32.215905M 100PPM
~~27.00~~	~~CN1~~		~~113~~		~~209-5037~~	~~CONN 45P FOR GG 0-176914-1~~
27.10	CN1		113		209-5037-01	CONN 45P FOR GG 01
28.00	CN2		114		209-5038	CONN 10P FOR GG HDC-0492
~~29.00~~	~~CN3~~		~~115~~		~~209-5039~~	~~CHANGE TO 212-5304~~
~~30.00~~	~~CN4~~		~~116~~		~~209-5041~~	~~CHANGE TO 212-5305~~
30.10	CN3		115		212-5304	CONN 6P FOR GG 178094-6
30.20	CN4		116		212-5305	CONN 9P FOR GG 178094-9
31.00	FU1		117		514-5040	FUSE THERMAL SM095BO
32.00	FU2		117		514-5040	FUSE THERMAL SM095BO
33.00	1		118		048-0001	EYLET 3.5*7
34.00	2		118		048-0001	EYLET 3.5*7
35.00	EM1		119		271-0007	EMI FILTER STX222MB
36.00	EM2		119		271-0007	EMI FILTER STX222MB
37.00	EM3		119		271-0007	EMI FILTER STX222MB
38.00	EM4		119		271-0007	EMI FILTER STX222MB
39.00	EM5		119		271-0007	EMI FILTER STX222MB
40.00	EM6		119		271-0007	EMI FILTER STX222MB
41.00	EM7		119		271-0007	EMI FILTER STX222MB
42.00	EM8		119		271-0007	EMI FILTER STX222MB
43.00	L1		120		271-0017	BEADS INDUCTOR FBA04VA900AB-(
44.00	L3		121		180-5073	P.COIL CHIP 100UH LEM4532T10
45.00	L2		122		180-5077	CHOKE COIL 105UH K1-1589
46.00	T1		123		560-5172	INVERTER XFMR K1-1588
47.00	VR1		124		220-5339	VOL CONT 20KB RK09J11T0
48.00	R1		133		476-2472-J-10	RES CHIP 4.7KOHM 1/10W 5%
49.00	R2		133		476-2472-J-10	RES CHIP 4.7KOHM 1/10W 5%
50.00	R3	(SOLDER)	133		476-2472-J-10	RES CHIP 4.7KOHM 1/10W 5%
51.00	R4	(SOLDER)	133		476-2472-J-10	RES CHIP 4.7KOHM 1/10W 5%
52.00	R5	(SOLDER)	133		476-2472-J-10	RES CHIP 4.7KOHM 1/10W 5%
53.00	R6	(SOLDER)	133		476-2472-J-10	RES CHIP 4.7KOHM 1/10W 5%
54.00	R7	(SOLDER)	141		476-2474-J-10	RES CHIP 470KOHM 1/10W 5%
55.00	R8	(SOLDER)	141		476-2474-J-10	RES CHIP 470KOHM 1/10W 5%

GAME GEAR

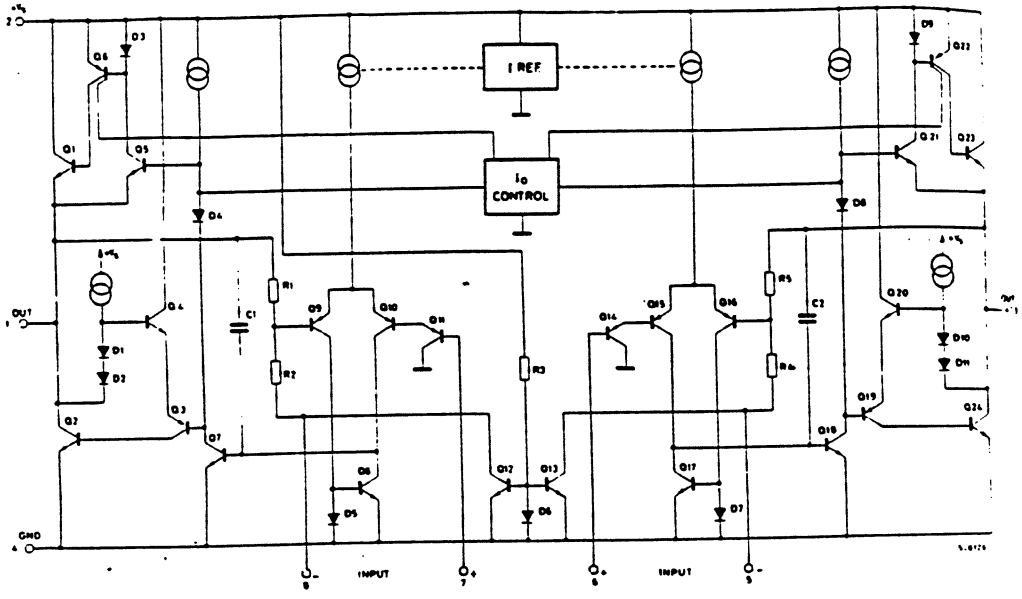
EUROPE

PARTS LIST OF PCB

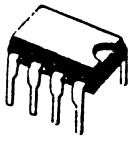
TDA2822M

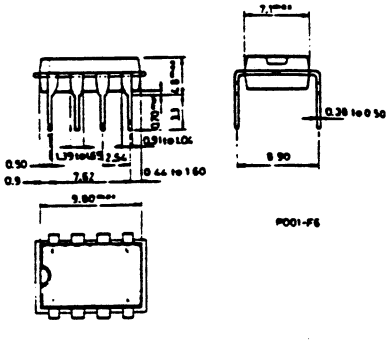


SCHEMATIC DIAGRAM

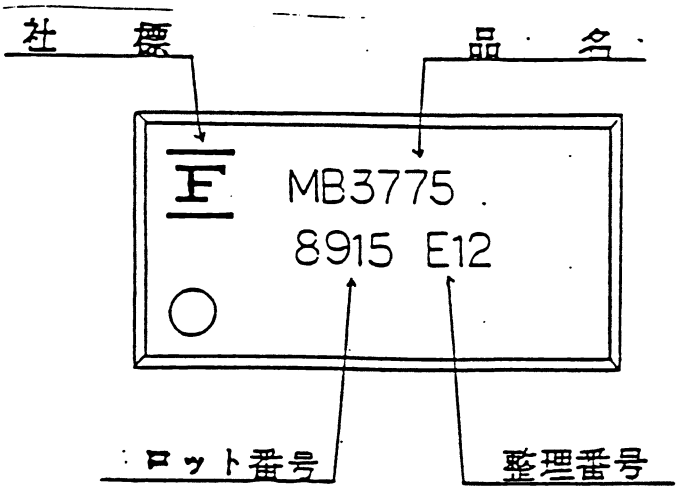


8 lead Plastic Minidip
4 + 4 lead Powerdip

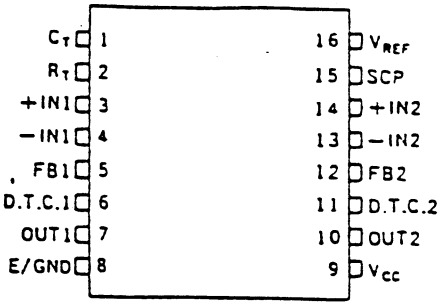


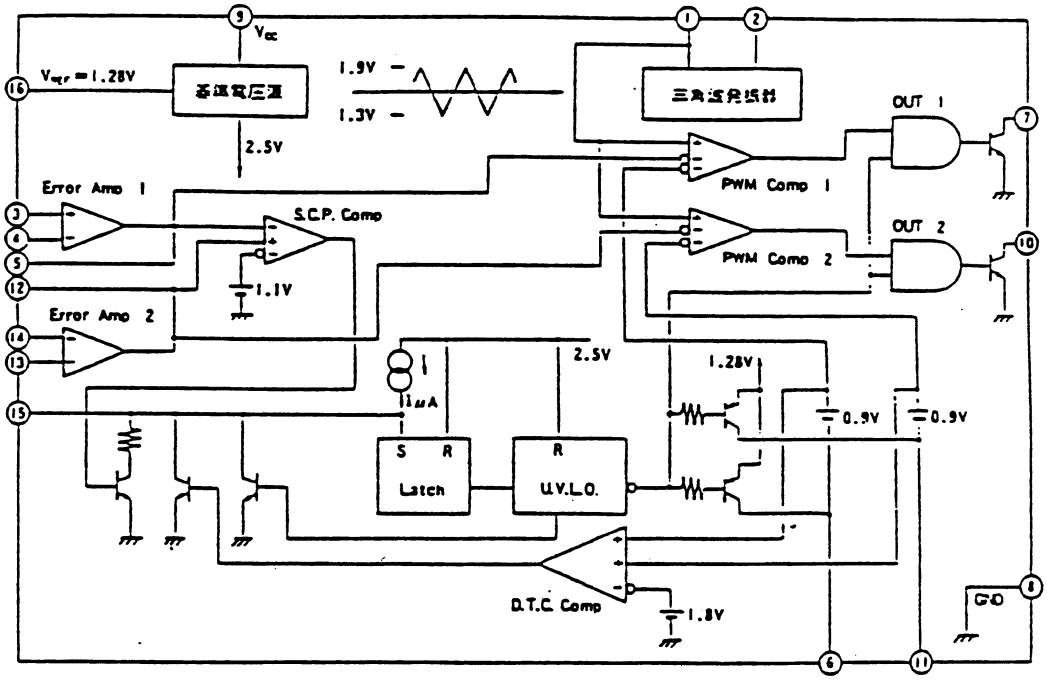


IC MB3775FP-G-BND

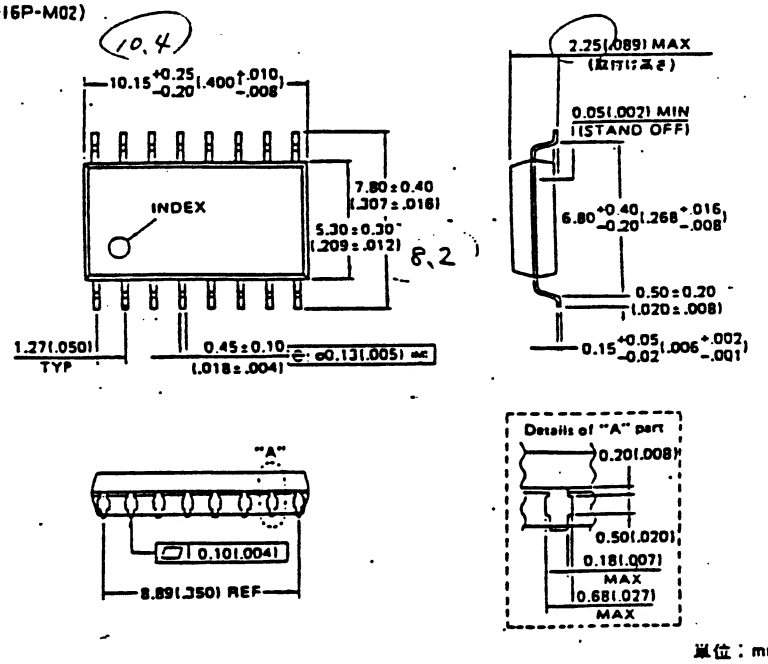


(TOP VIEW)





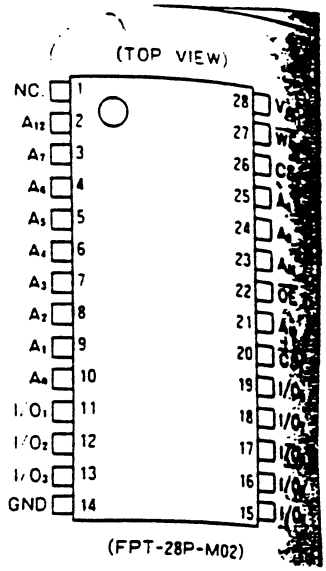
プラスチック・SOP, 16ピン
(FPT-16P-M02)

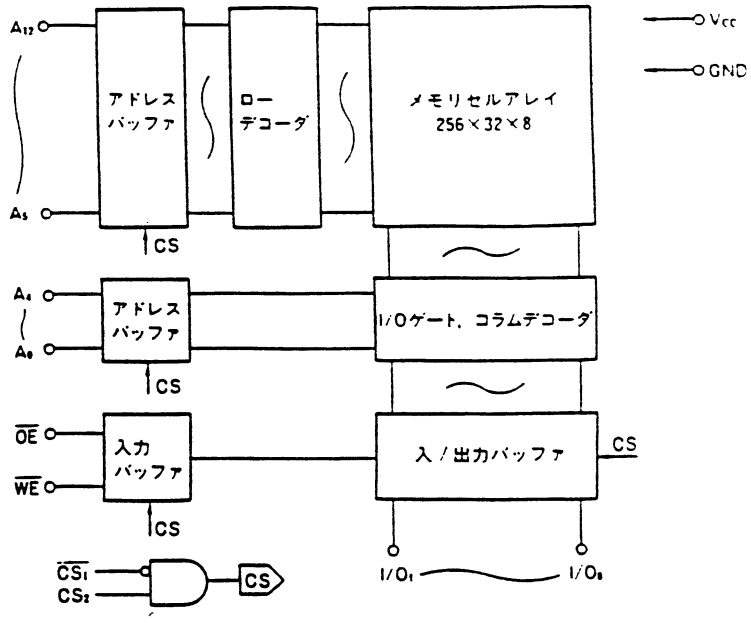


単位：mm (inches)

MAIN BOARD IC4 1/1

IC uPD4364G-15L

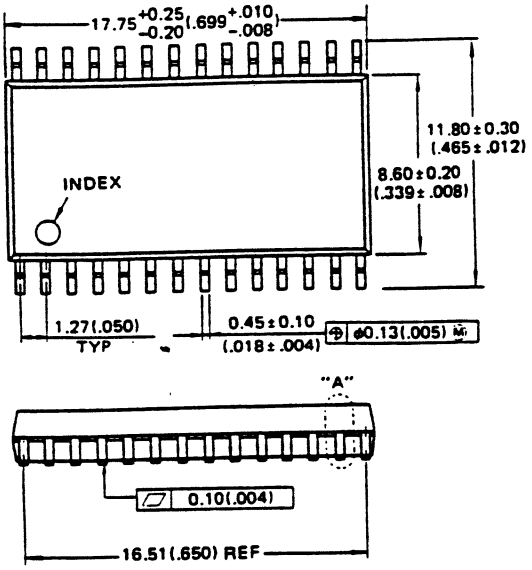


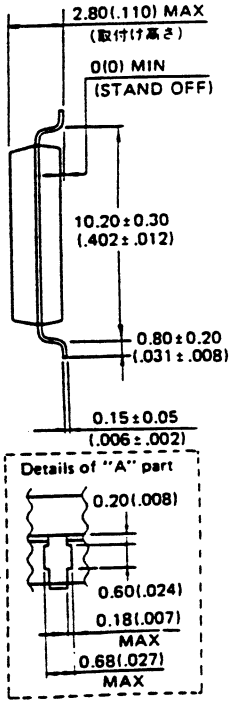


(FPT-28P-M02)

プラスチック・SOP, 28ピン

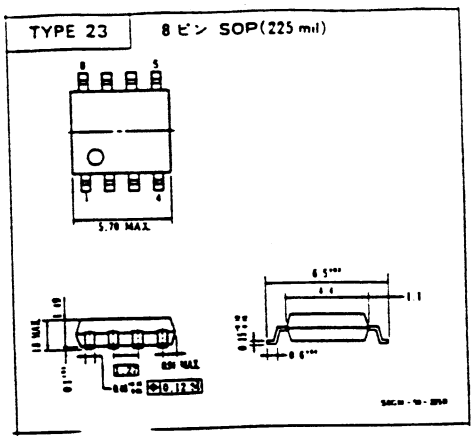
(FPT-28P-M02)



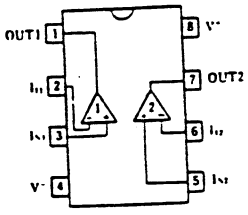


単位：mm (inches)

μPC1251/358

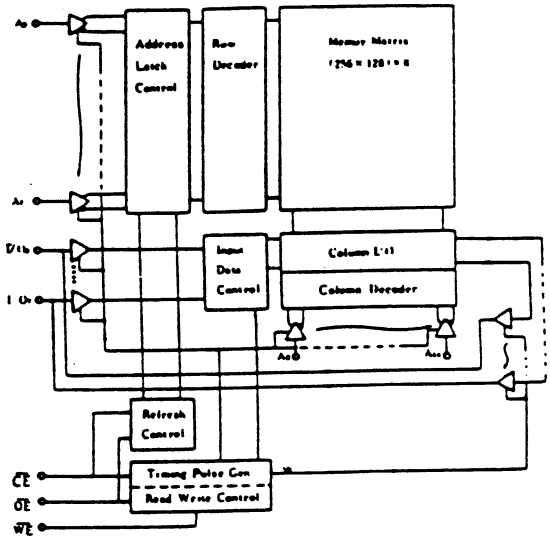


端子接続(Top View)
μPC1251D. 1251C. 1251G
μPC358C. 358G

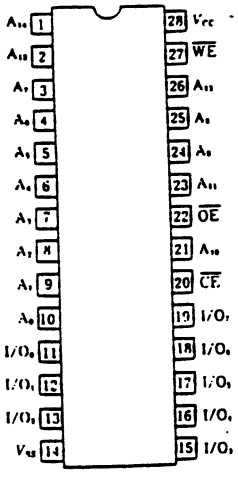


MAIN BOARD IC5 1/1
IC HM6256BLFP-12

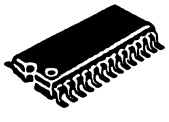
■ブロックダイアグラム

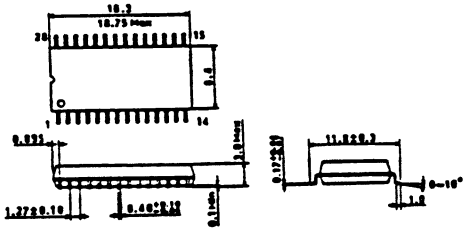


■ピン配置



FP-28DA





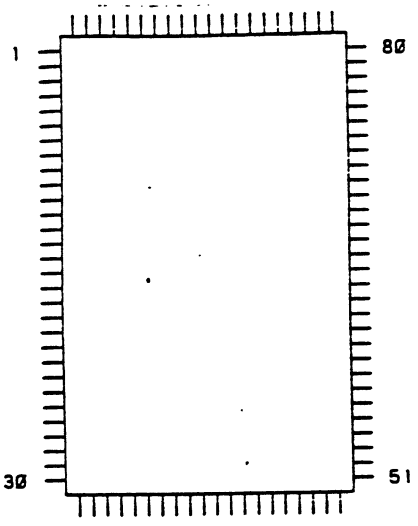
マーキング方法

SEGA

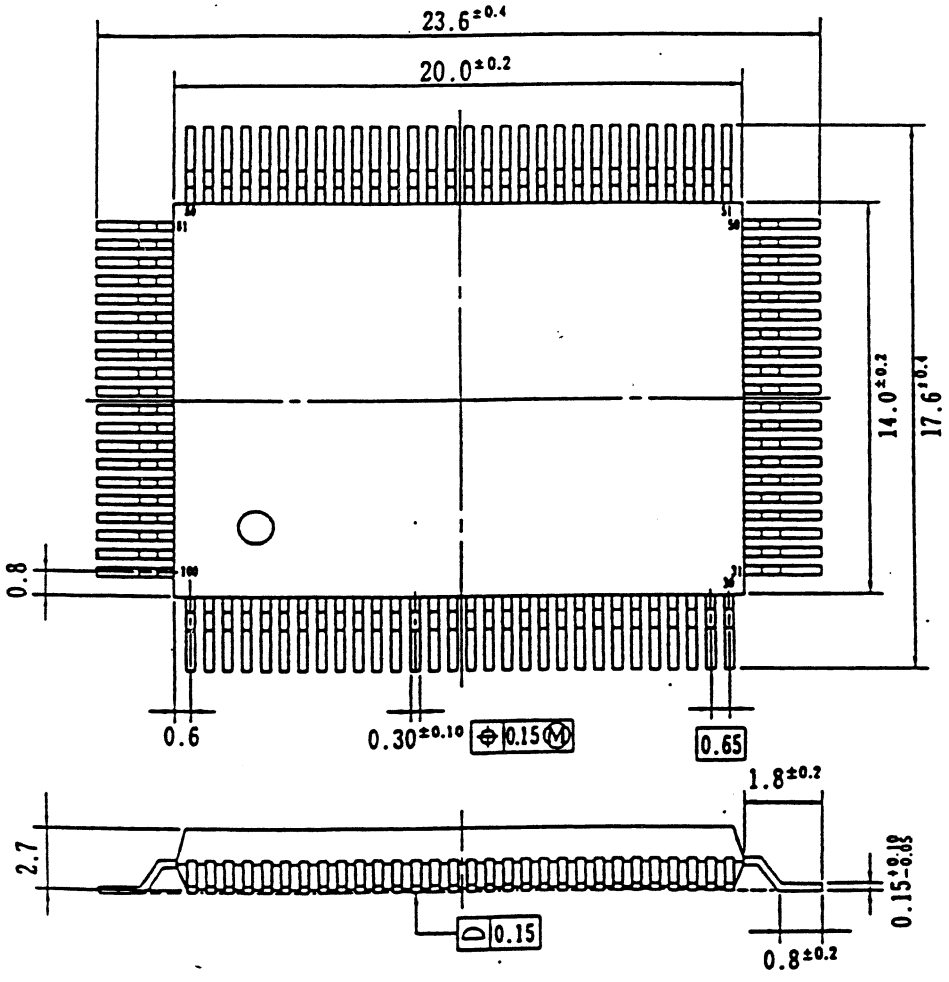
315-5378B

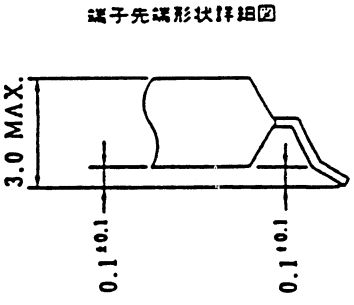
ロットNo.

PIN ASSIGN (TOP VIEW)



PIN NO.	PIN NAME	PIN NO.	PIN NAME	PIN NO.	PIN NAME	PIN NO.	PIN NAME
1	GND	26	RESO	51	DW	76	PC4
2	VDD	27	NLED	52	VDD	77	PC5
3	XTL1	28	GND	53	GND	78	PC6
4	XTL2	29	VDD	54	CLB1	79	VDD
5	CCLK	30	VREF	55	CLA1	80	GND
6	VCLK	31	VONF	56	CLB2	81	D7D
7	NUP	32	VRES	57	CLA2	82	D6D
8	NDW	33	SNDN	58	CLB3	83	D5C
9	NLE	34	SND3	59	CLA3	84	D4P
10	NR1	35	SND2	60	TPR1	85	D3P
11	NTL	36	SND1	61	TPR2	86	D2P
12	NTR	37	SNDL	62	A	87	D1P
13	NPS	38	SNDR	63	SAMP	88	D0D
14	CPA0	39	TEST	64	NLCD	89	AAR2
15	CPA1	40	GND	65	NTV	90	A9R1
16	CPA2	41	DB	66	NGG	91	A8A3
17	CPA3	42	P3	67	NNMI	92	A7B3
18	CPB	43	P2	68	NM1	93	A6A2
19	NTSC	44	P4	69	IORQ	94	A5B2
20	H488	45	P1	70	NWR	95	A4A1
21	HBNK	46	CL2	71	NRD	96	A3B1
22	VBNK	47	DO2	72	PC0	97	A2DW
23	NHL	48	DO4	73	PC1	98	A1D3
24	NJAP	49	DO1	74	PC2	99	A0D1
25	SPON	50	DO3	75	PC3	100	XCLK

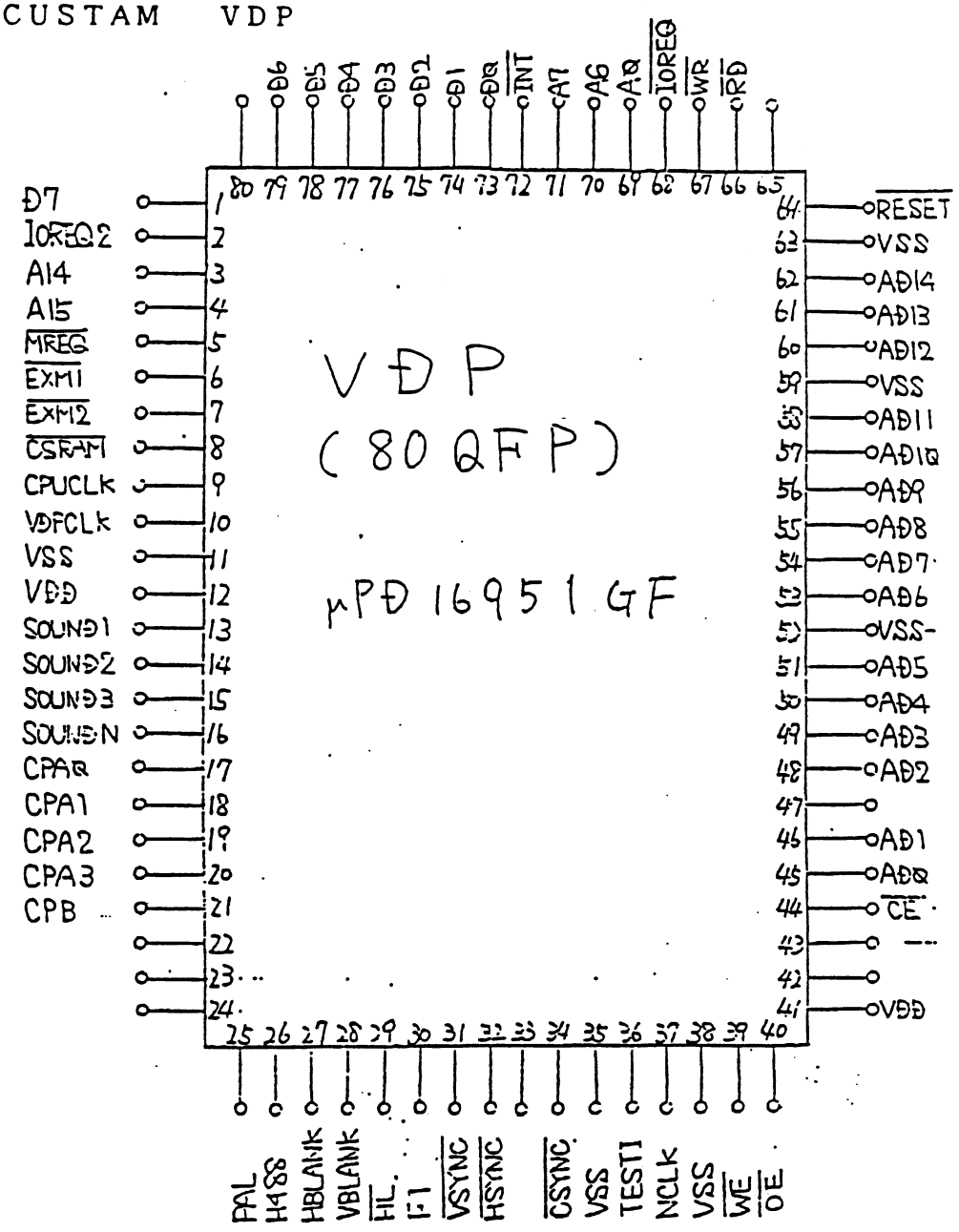




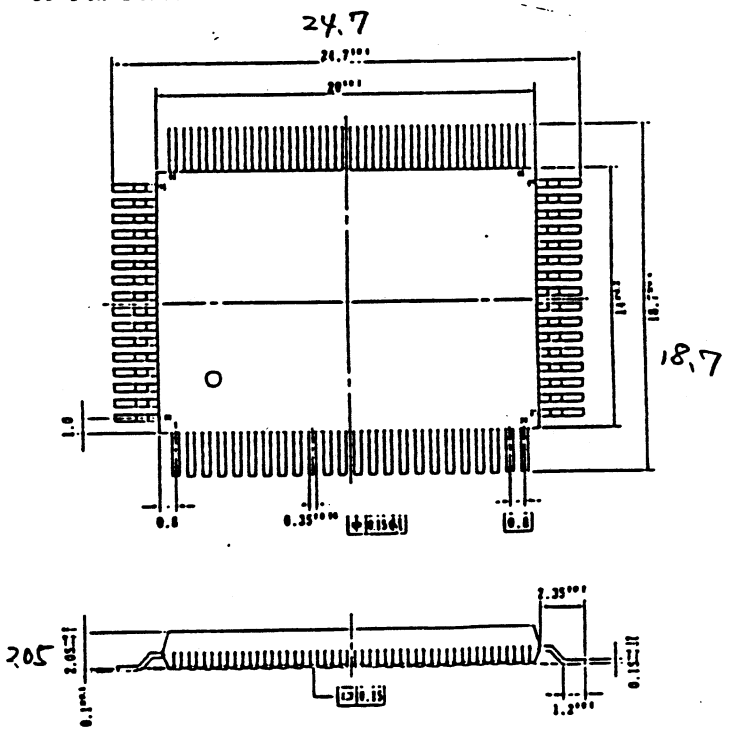
MAIN BOARD IC3 1/1

IC CUSTAM SCA

IC CUSTAM VDP



80 Pin Plastic FLAT

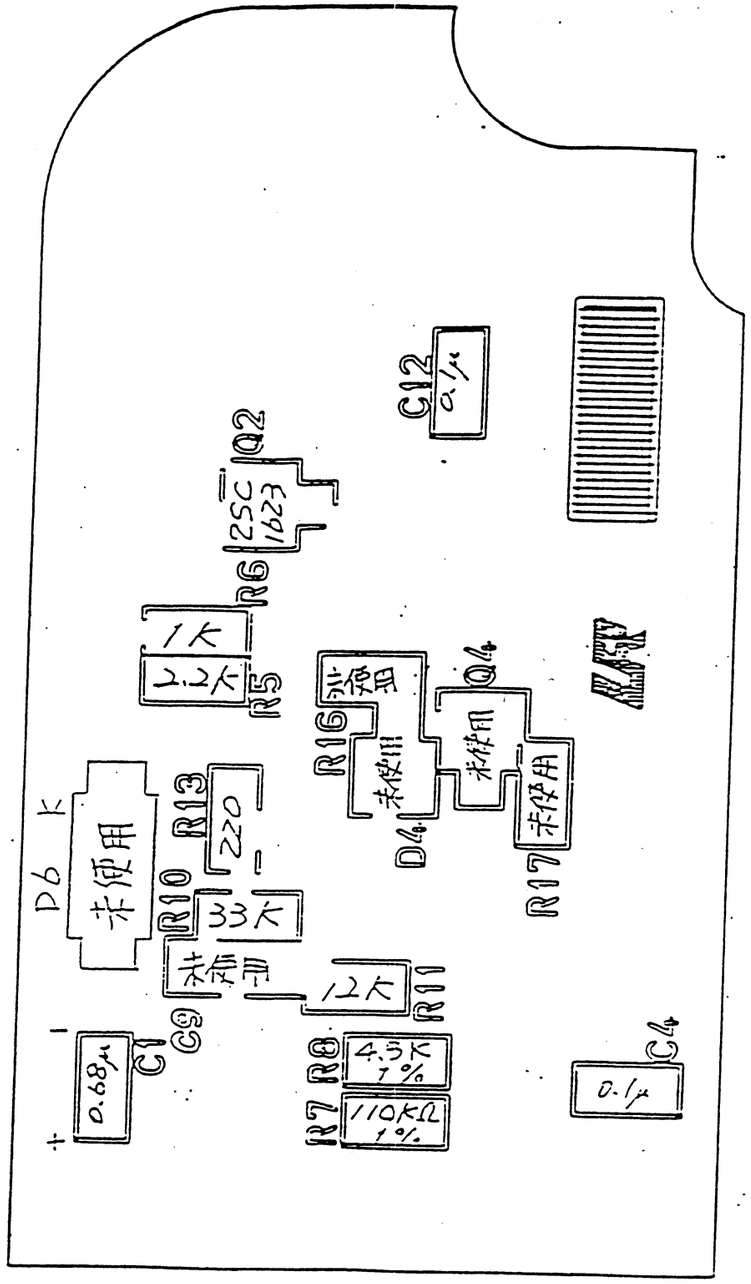


PARTS LIST

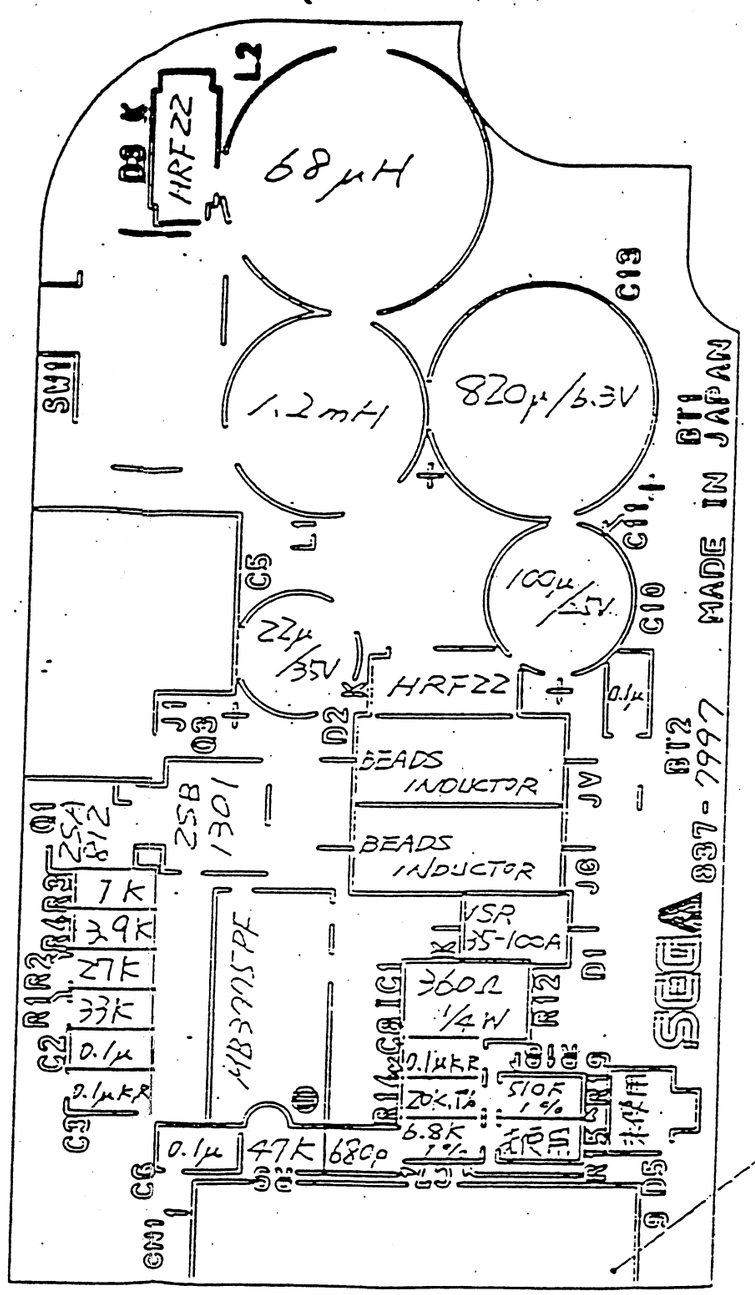
PART NO. : 837-7998
DESCRIPTION : IC BD GG SOUND EUROPE

LINE	LOCATE	DNO	OR PART NO.	DESCRIPTION
1.00		1	171-6103A	PC BD GG SOUND EUROPE
2.00	J1	102	210-5061	CONN MINI JACK HSJ0873-01-140
3.00	CN1	103	600-5910	WIRE HARN 6P FOR GG 60MM
~~4.00~~	~~CN2~~	~~104~~	~~209-5040~~	~~CHANGE TO 212-5301-02~~
4.10	CN2	104	212-5301-02	CONN M MT AMP CT 2P 173981-2
5.00	VR1	105	220-5343	SW VOL CONT 10KOHM K102J0Z25
6.00	IC1	101	313-5141	IC TDA2822M
7.00	R1	108	476-2563-J-10	RES CHIP 56KOHM 1/10W 5%
8.00	R2	108	476-2563-J-10	RES CHIP 56KOHM 1/10W 5%
9.00	R3	106	476-24R7-J-10	RES CHIP 4.7 OHM 1/10W 5%
10.00	R4	106	476-24R7-J-10	RES CHIP 4.7 OHM 1/10W 5%
11.00	R5	107	476-2101-J-10	RES CHIP 100 OHM 1/10W 5%
12.00	R6	107	476-2101-J-10	RES CHIP 100 OHM 1/10W 5%
13.00	C1	111	150-0313-01	CAP E CP 100UF 6.3V MV6.3VC10
14.00	C2	111	150-0313-01	CAP E CP 100UF 6.3V MV6.3VC10
15.00	C3	111	150-0313-01	CAP E CP 100UF 6.3V MV6.3VC10
16.00	C4	109	151-0265	CAP CER CP 0.1UF 25V ZF 212
17.00	C5	110	150-0312-01	CAP E CP 47UF 4V MV4VC47
18.00	C6	109	151-0265	CAP CER CP 0.1UF 25V ZF 212
19.00	C7	110	150-0312-01	CAP E CP 47UF 4V MV4VC47
20.00	C8	109	151-0265	CAP CER CP 0.1UF 25V ZF 212
21.00	LF1	112	270-5044	LINE FILTER(SDP-103C)

MACHINE 機械名	SUB-ASS'Y 組図番
	837-7997B
ALTERATIONS 改訂	



Sold Side 部品面視半田面

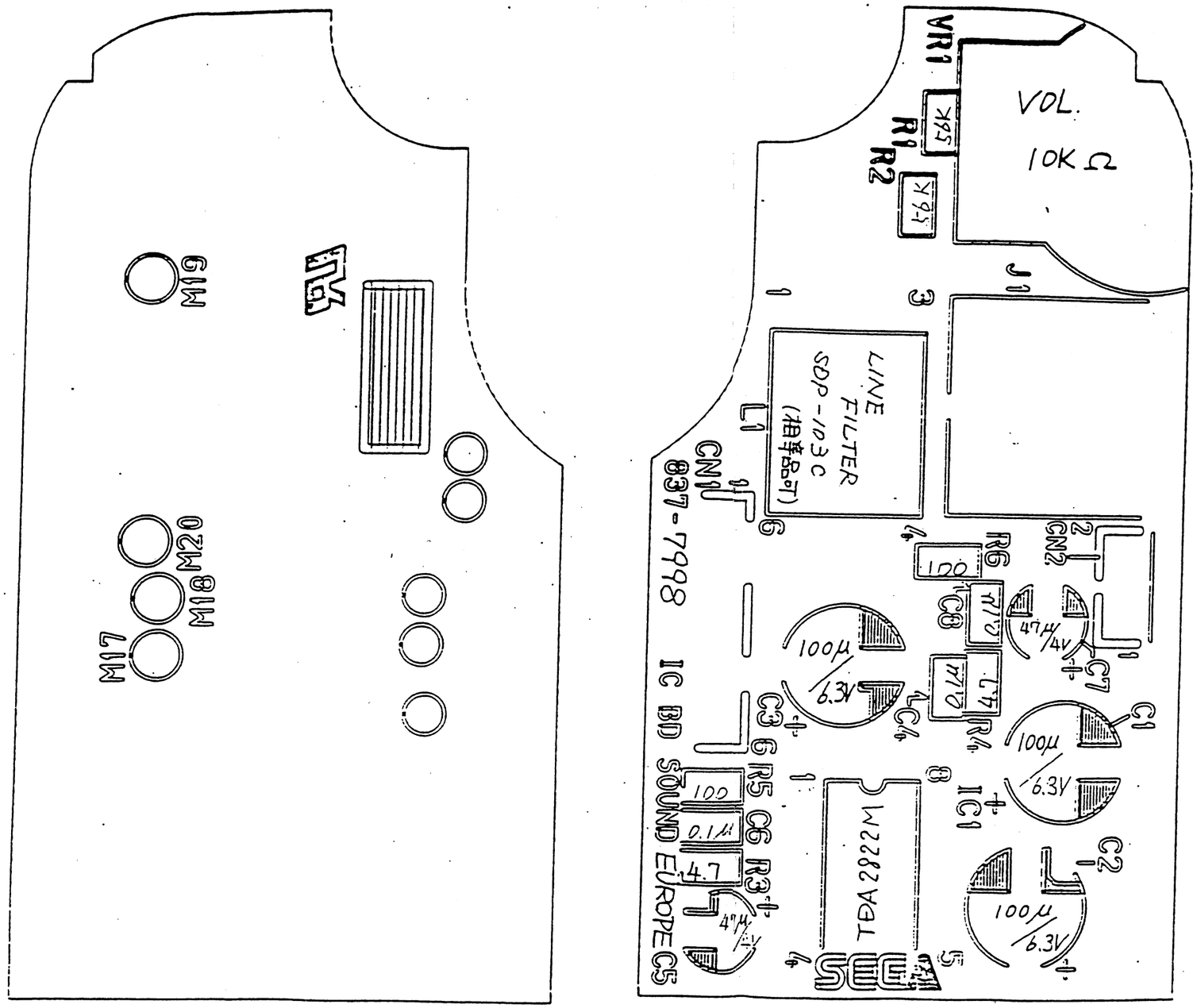


部品面視実装面 Comp Side

SEGA SEGA ENTERPRISES, LTD.	THIS DRAWING WILL IN NO WAY BE COPIED. TO BE RETURNED ON DEMAND.	許可ナク複写複製等厳禁			
LIMITS UNLESS OTHERWISE SPECIFIED 一般公差	3RD QUAT. PROJ. DRAWING 第三角法	設計・製図	検図	検認	承認
	SCALE 尺度 ×	松本			
	DIM. IN 単位 mm				
MATERIAL 材料	HEAT TREAT. 熱処理	FINISH 表面処理	REMARK 特殊指示	REV.	
IC BD 68A DC-DC CONV. EUROPE(A,B)			837-7997B (3/3)		
DESCRIPTION 名称			PART NO. 図番・部品番号		

837-7997B(3/3)

MACHINE 機械名	SUB-ASS'Y. 組図番
	837-7998
ALTERATIONS 改訂	



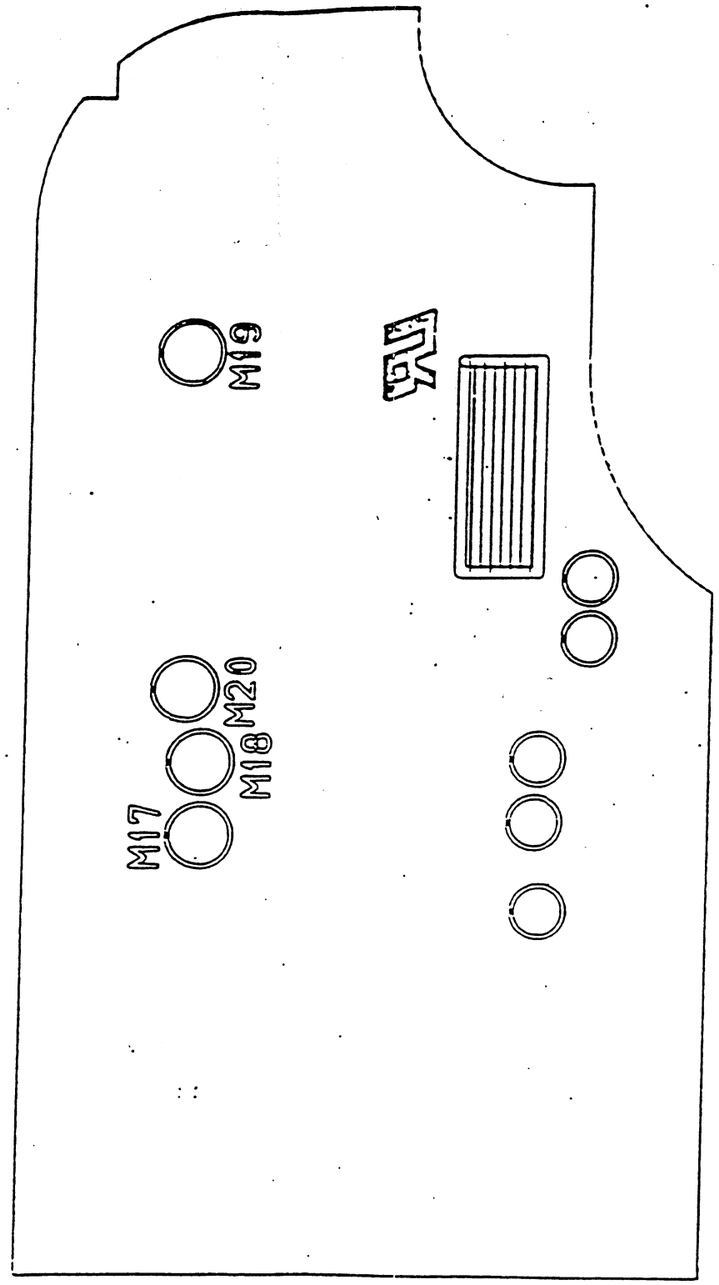
Sold Side 半田面視半田面

部品面視部品面 Comp Side

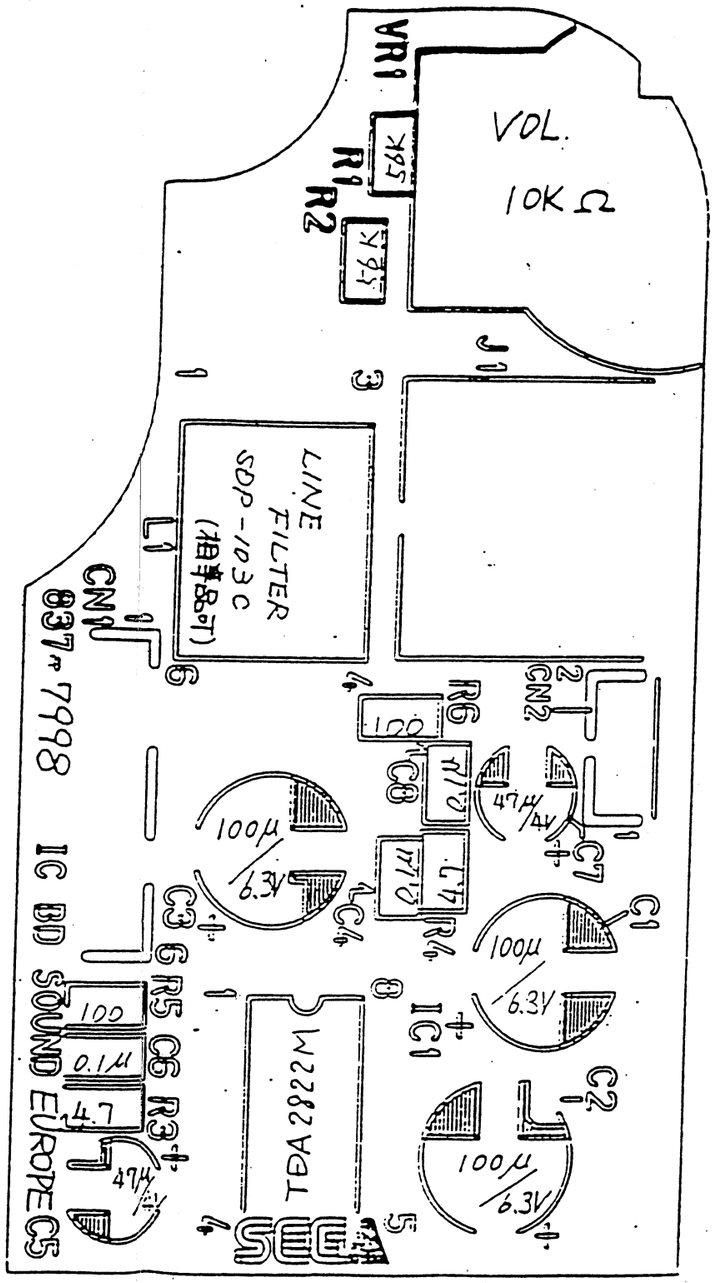
SEGA SEGA ENTERPRISES, LTD.	THIS DRAWING WILL IN NO WAY BE COPIED. TO BE RETURNED ON DEMAND. 許可ナク複写 複製等禁示			
LIMITS UNLESS OTHERWISE SPECIFIED 一般公差	3RD OUAT PROJ. DRAWING 第三角法	設計・製図	承図	承認	承認
	SCALE 尺度 ×	松本	大場		永
	DIM. IN 単位 mm	5/8-'91	5/9-'91		5/9'91
MATERIAL 材料	HEAT TREAT. 熱処理	FINISH 表面処理	REMARK 特殊指示		REV.
IC BD 8A SOUND EUROPE			837-7998 (2/3)		
DESCRIPTION 名称			PART NO. 図番・部品番号		

837-7998 (3)

MACHINE 機械名	SUB-ASS'Y. 組図番
	837-7998 B
ALTERATIONS 改訂	



Sold Side 半田面視半田面



Comp Side 部品面視部品面

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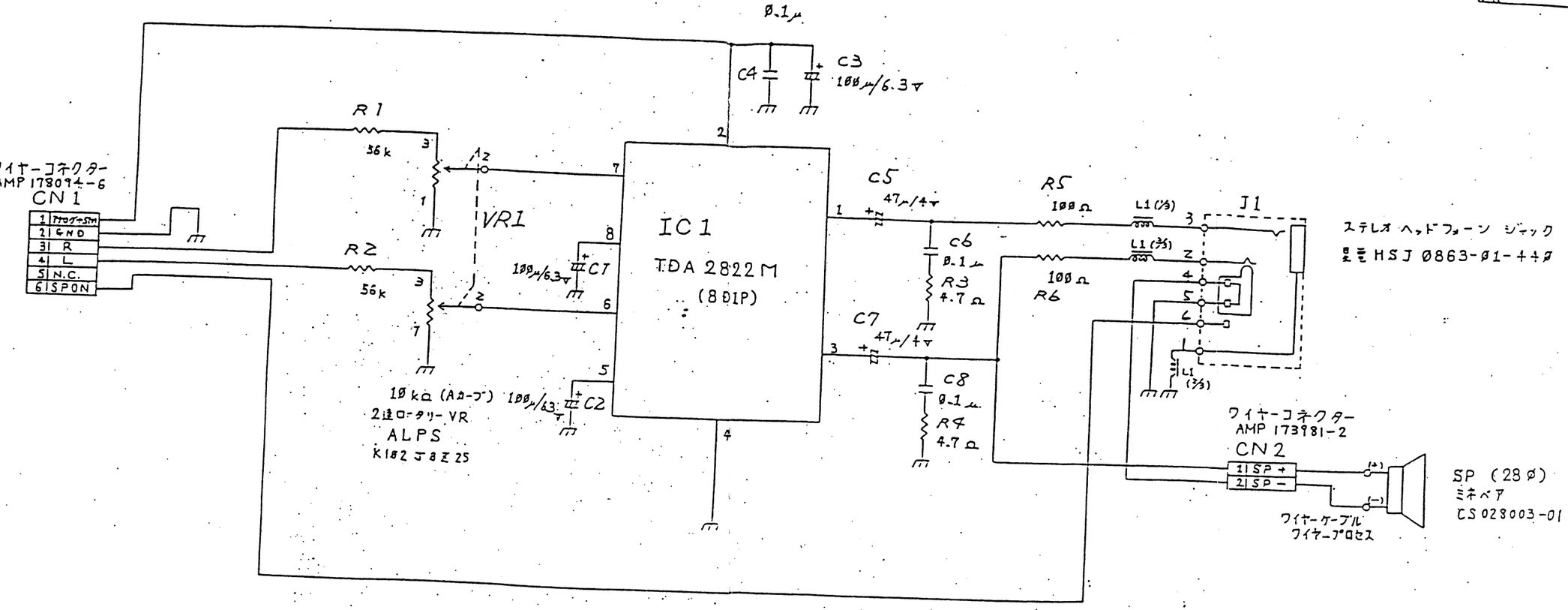
LIMITS UNLESS OTHERWISE SPECIFIED 一般公差	3RD QUAT. PROJ. DRAWING 第三角法		設計・製図	検図	検認	承認
	SCALE 尺度	X				
	DIM. IN 単位	mm	松本			
MATERIAL 材料	HEAT TREAT. 熱処理	FINISH 表面処理	REMARK 特殊指示		REV.	
IC BD 8A SOUND EUROPE (SCA B)			837-7998 B (2/3)			
DESCRIPTION 名称			PART NO. 図番・部品番号			

837-7998(2/3)



IC BD 609 SOUND EUROPE B 837-7998 (315-5373B)
IC BD 609 SOUND EUROPE 837-7998 (315-5373A)

SEGA SEGA ENTERPRISES,LTD.	APP'L
	ASSY
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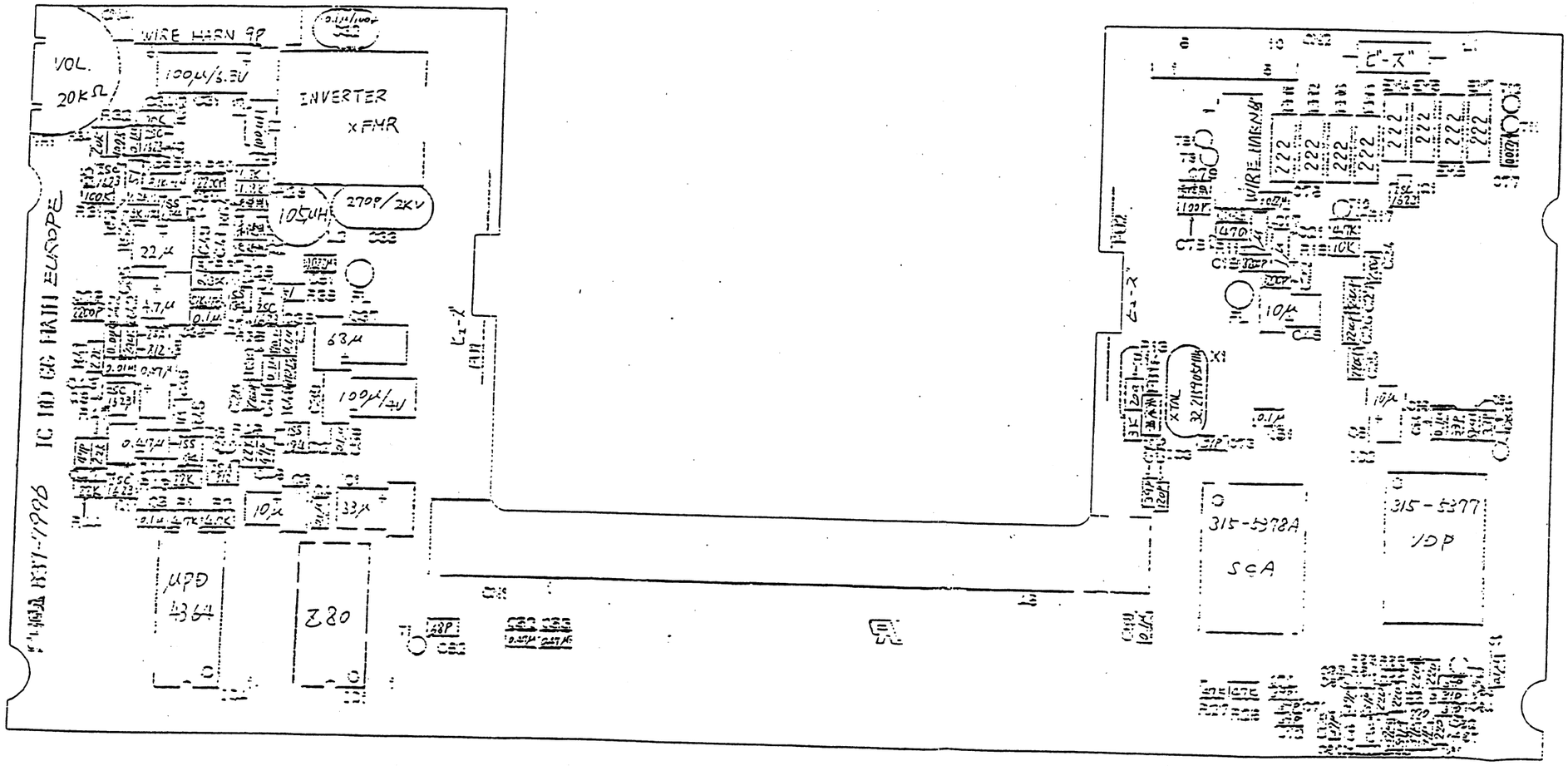
	DRW.
PC BD 609 SOUND EUROPE	REV
	171-6107A
DESCRIPTION	PART
	SHEET

MACHINE	SUB-ASS'Y
	837-7995
ALTERATIONS	

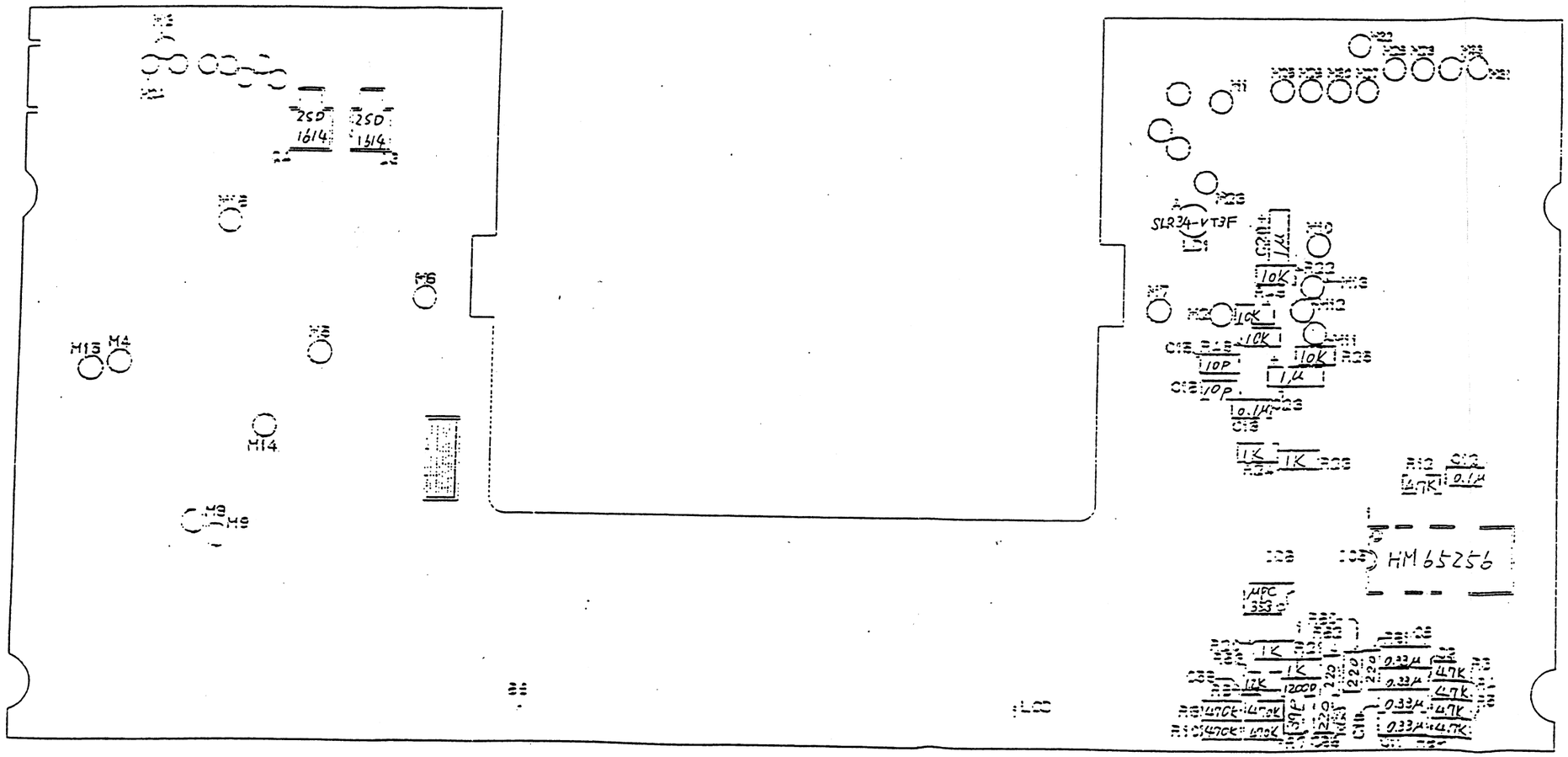


基板部品面

Comp Side

SEGA ENTERPRISES, LTD.		
SCALE		
DIMENSION : mm		
MATERIAL	HEAT TREAT.	FINISH
REMARK		REV
IC BD GG MAIN EUROPE		837-7995 (B)
DESCRIPTION		PART NO.

MACHINE	SUB-ASS'Y
	837-7995
ALTERATIONS	

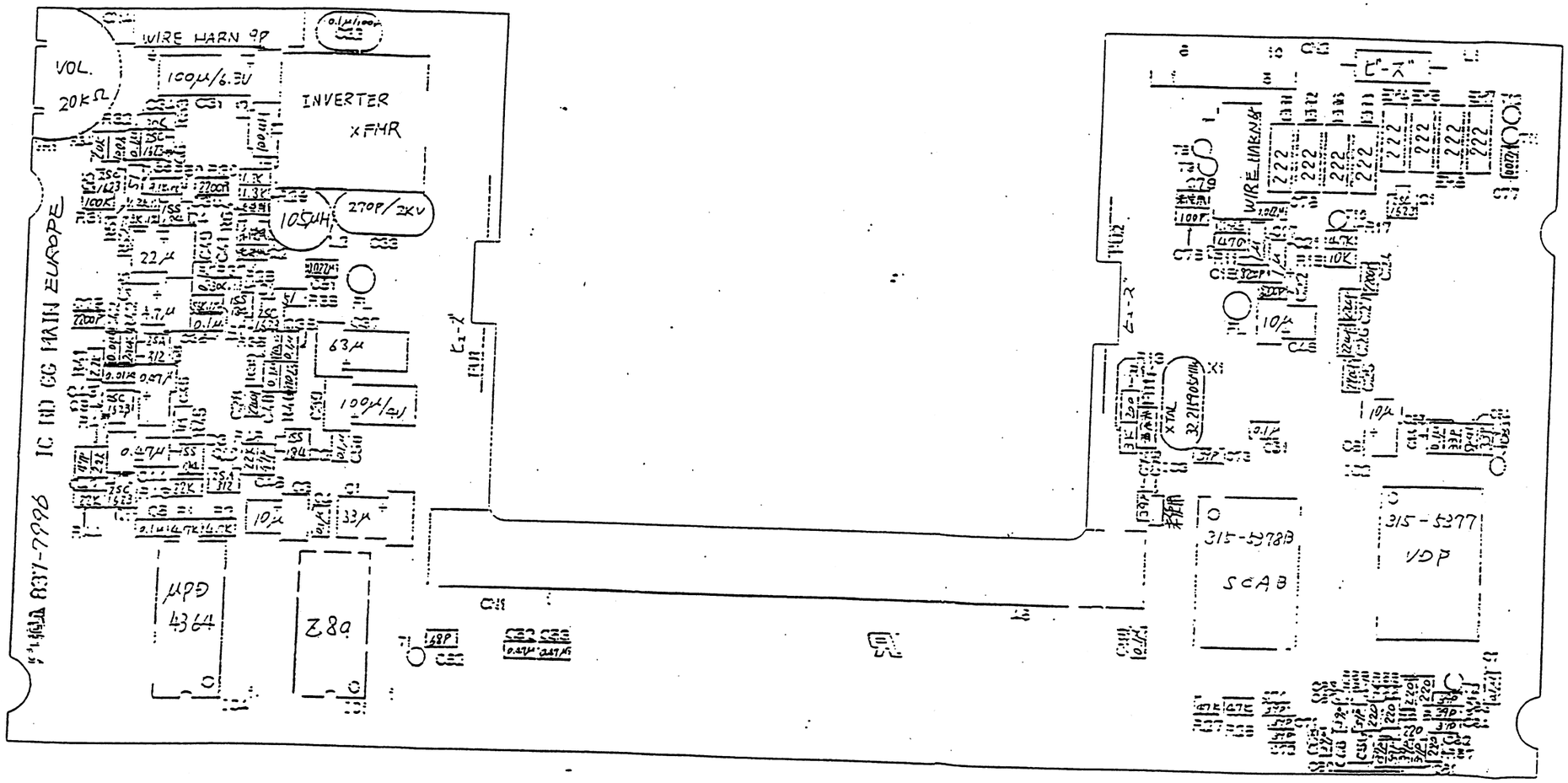


半田面視 半田面

Sold Side

SEGA ENTERPRISES, LTD.	THIS DRAWING WILL IN NO WAY BE COPIED. TO BE RETURNED ON DEMAND.
LIMITS UNLESS OTHERWISE SPECIFIED	3RD QUAT PROJ DRAWING
	SCALE N
	DIM IN mm
MATERIAL	HEAT TREAT.
FINISH	REMARK
IC BD SG MAIN EUROPE	837-7996 (3/4)
DESCRIPTION	PART NO.

MACHINE	SUB-ASS'Y
	837-7996B
ALTERATIONS	

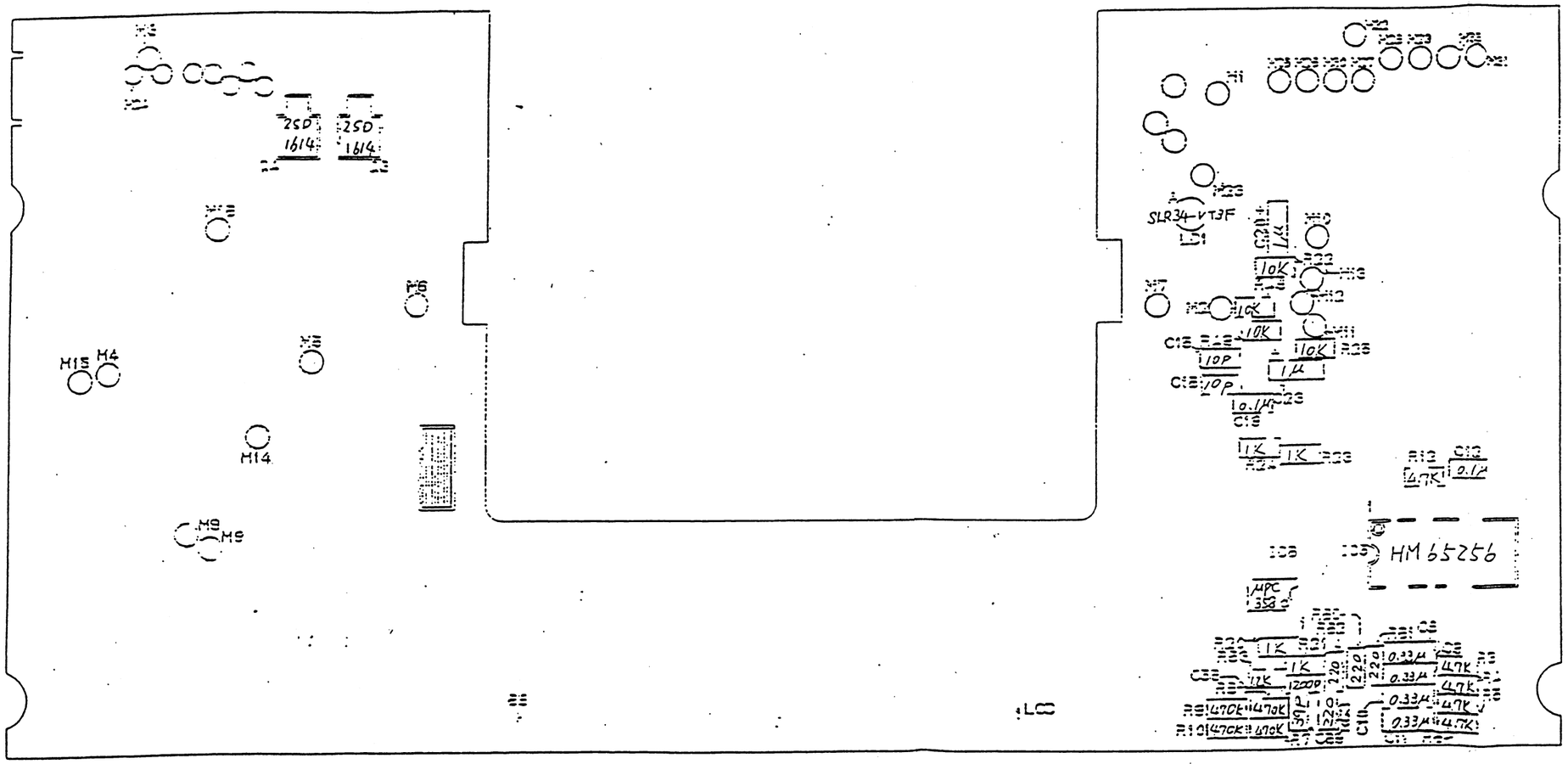


部品面

Comp Side

SEGA ENTERPRISES, LTD.	THIS DRAWING WILL IN NO WAY BE COPIED. TO BE RETURNED ON DEMAND.
LIMITS UNLESS OTHERWISE SPECIFIED	3RD QUAT PROJ. DRAWING / SCALE 1/1 / DIM. IN mm / 木
MATERIAL	HEAT TREAT. / FINISH / REMARK / REV.
IC BD GA MAIN EUROPE (SCAB)	837-7996B(3/4)
DESCRIPTION	PART NO.

MACHINE	SUB-ASS'Y
	837-7995B
ALTERATIONS	



半田面視 半田面

Sold Side

SEGA SEGA ENTERPRISES, LTD.	THIS DRAWING SHALL IN NO WAY BE COPIED. IT IS TO BE RETURNED ON DEMAND.	許可なく複写・複製等禁止
LIMITS UNLESS OTHERWISE SPECIFIED	3RD QUAT PROJ DRAWING	設計・製図 / 承認 / 年月日
	SCALE ×	松本
	DIM. IN mm	
MATERIAL	HEAT TREAT.	REMARK / REV.
FINISH		
IC BD 68 MAIN EUROPE (SCA2)		837-7996B(3/4)
DESCRIPTION		PART NO.

837-7996 ANA11

PARTS LIST

PART NO. : 837-7997

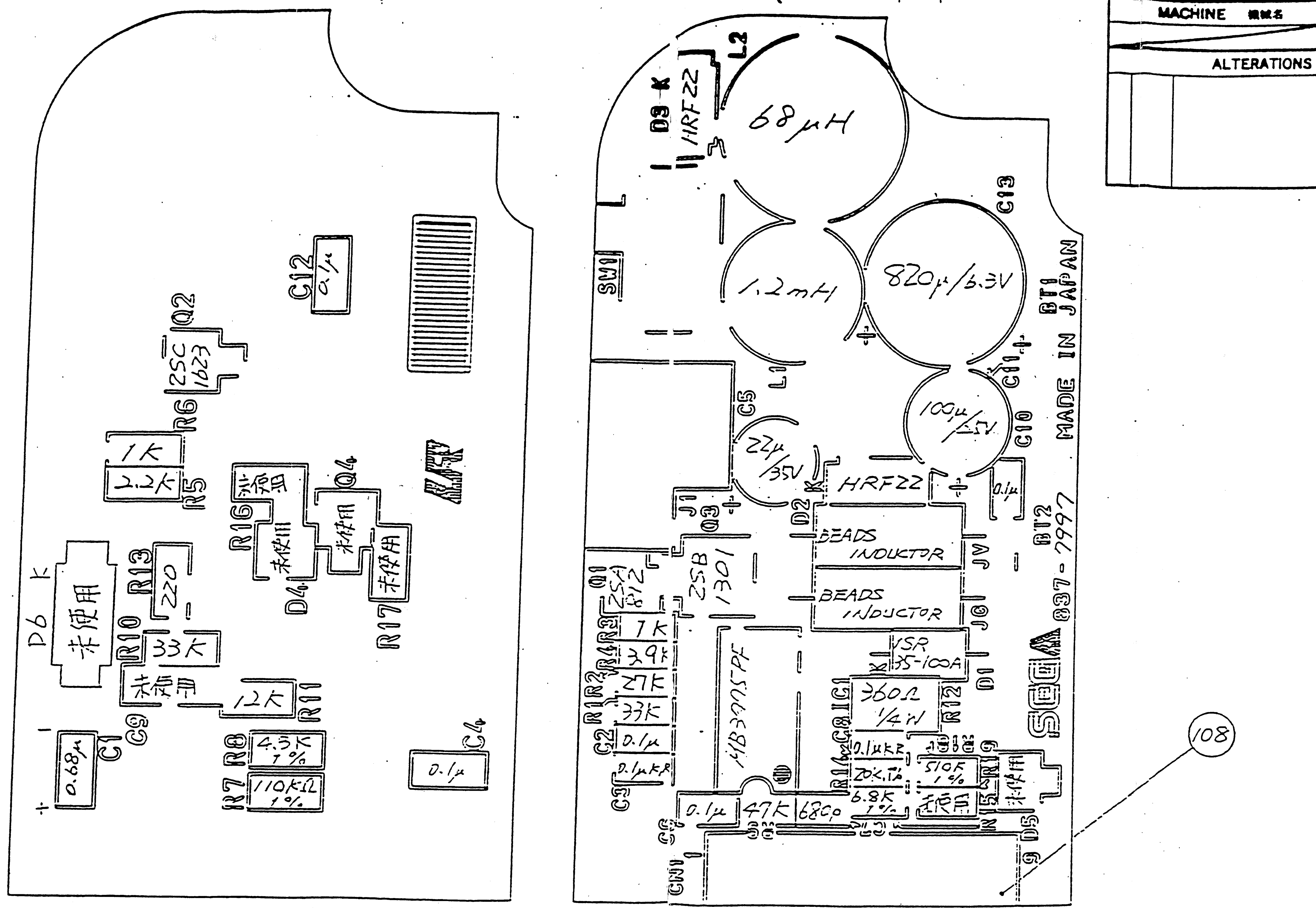
DESCRIPTION : IC BD GG DC-DC CONV. EUROPE

LINE	LOCATE		DNO	OR	PART NO.	DESCRIPTION
1.00			1		171-6102A	PC BD GG DC-DC CONV.EUROPE
2.00	J1		111		210-5062	CONN DC JACK W/SW LGP1031-0300
3.00	CN1		108		600-5911	WIRE HARN 9P FOR GG 60MM
4.00	SW1		112		510-5028	SLIDE SW HSW1805-010010
5.00	IC1		101		313-5140	IC MB3775PF-G-BND SOP
6.00	Q1		102		482-5125	XSTR 2SA812 M5..7 CHIP
7.00	Q2	(SOLDER)	103		482-5126	XSTR 2SC1623 L5..7 CHIP
8.00	Q3		104		482-5130	XSTR 2SB1301 ZQ OR ZP CHIP
9.00	Q4	(SOLDER)	910		NOT USED	NOT USED
10.00	D1		106		481-5038	DIODE 1SR-35-100A AXIAL
11.00	D2		105		481-5071	DIODE HRF 22 CHIP
12.00	D3		105		481-5071	DIODE HRF 22 CHIP
13.00	D4	(SOLDER)	910		NOT USED	NOT USED
14.00	D5		910		NOT USED	NOT USED
15.00	D6	(SOLDER)	910		NOT USED	NOT USED
16.00	L1		113		180-5071	CHOKE COIL 1.2MH FL7H122J
17.00	L2		114	1	180-5072	CHOKE COIL 68UH TSL1110680K1R
18.00	L2		114	2	180-5083	CHOKE COIL 68UH A90-870-0
19.00	JV		115		271-0017	BEADS INDUCTOR FBA04VA900AB-0(
20.00	JG		115		271-0017	BEADS INDUCTOR FBA04VA900AB-00
21.00	R1		122		476-2333-J-10	RES CHIP 33KOHM 1/10W 5%
22.00	R2		121		476-2273-J-10	RES CHIP 27KOHM 1/10W 5%
23.00	R3		117		476-2102-J-10	RES CHIP 1KOHM 1/10W 5%
24.00	R4		119		476-2392-J-10	RES CHIP 3.9KOHM 1/10W 5%
25.00	R5	(SOLDER)	118		476-2222-J-10	RES CHIP 2.2KOHM 1/10W 5%
26.00	R6	(SOLDER)	117		476-2102-J-10	RES CHIP 1KOHM 1/10W 5%
27.00	R7	(SOLDER)	129		476-2114-F-10	RES CHIP 110KOHM 1/10W 1%
28.00	R8	(SOLDER)	126		476-2432-F-10	RES CHIP 4.3KOHM 1/10W 1%
29.00	R9		123		476-2473-J-10	RES CHIP 47KOHM 1/10W 5%
30.00	R10	(SOLDER)	122		476-2333-J-10	RES CHIP 33KOHM 1/10W 5%
31.00	R11	(SOLDER)	120		476-2123-J-10	RES CHIP 12KOHM 1/10W 5%
32.00	R12		130		476-0361-J-04	RES CHIP 360 OHM 1/4W 5%
33.00	R13	(SOLDER)	116		476-2221-J-10	RES CHIP 220 OHM 1/10W 5%
34.00	R14		128		476-2203-F-10	RES CHIP 20KOHM 1/10W 1%
35.00	R15		127		476-2682-F-10	RES CHIP 6.8KOHM 1/10W 1%
36.00	R16	(SOLDER)	910		NOT USED	NOT USED
37.00	R17	(SOLDER)	910		NOT USED	NOT USED
38.00	R18		125		476-2514-F-10	RES CHIP 510KOHM 1/10W 1%
39.00	R19		910		NOT USED	NOT USED
40.00	C1	(SOLDER)	139		153-0088	CAP TANT CP 0.68UF 16V 3216
41.00	C2		133		151-0265	CAP CER CP 0.1UF 25V ZF 2125
42.00	C3		134		151-0269	CAP CER CP 0.1UF 25V K 2125
43.00	C4	(SOLDER)	133		151-0265	CAP CER CP 0.1UF 25V ZF 2125
44.00	C5		135		150-0314	CAP E 22UF 35V M 35SP(X)22
45.00	C6		133		151-0265	CAP CER CP 0.1UF 25V ZF 2125
46.00	C7		131		151-0268	CAP CER CHIP 680PF K B 2125
47.00	C8		134		151-0269	CAP CER CP 0.1UF 25V K 2125
48.00	C9	(SOLDER)	132		NOT USED	NOT USED
49.00	C10		133		151-0265	CAP CER CP 0.1UF 25V ZF 2125
50.00	C11		136		150-0315	CAP E 100UF 25V M 25SP(X)10(
51.00	C12	(SOLDER)	133		151-0265	CAP CER CP 0.1UF 25V ZF 2125
52.00	C13		137		150-0316	CAP E 820UF 6.3V M 6.3SP(X)82(

PARTS LIST

PART NO. : 837-7997B
DESCRIPTION : IC BD GG DC-DC CONV. EUROPE B

NE	LOCATE	DNO	OR	PART NO.	DESCRIPTION
1.00		1		171-6102A	PC BD GG DC-DC CONV.EUROPE
2.00	J1	111		210-5062	CONN DC JACK W/SW LGP4031-03
3.00	CN1	108		600-5911	WIRE HARN 9P FOR GG 60MM
4.00	SW1	112		510-5028	SLIDE SW HSW1805-010010
5.00	IC1	101		313-5140	IC MB3775PF-G-BND SOP
6.00	Q1	102		482-5125	XSTR 2SA812 M5..7 CHIP
7.00	Q2 (SOLDER)	103		482-5126	XSTR 2SC1623 L5..7 CHIP
8.00	Q3	104		482-5130	XSTR 2SB1301 ZQ OR ZP CHIP
9.00	Q4 (SOLDER)	910		NOT USED	NOT USED
10.00	D1	106		481-5038	DIODE 1SR-35-100A AXIAL
11.00	D2	105		481-5071	DIODE HRF 22 CHIP
12.00	D3	105		481-5071	DIODE HRF 22 CHIP
13.00	D4 (SOLDER)	910		NOT USED	NOT USED
14.00	D5	910		NOT USED	NOT USED
15.00	D6 (SOLDER)	910		NOT USED	NOT USED
16.00	L1	113		180-5071	CHOKE COIL 1.2MH FL7H122J
17.00	L2	114	1	180-5072	CHOKE COIL 68UH TSL1110680K11
18.00	L2	114	2	180-5083	CHOKE COIL 68UH A90-870-0
19.00	JV	115		271-0017	BEADS INDUCTOR FBA04VA900AB-0
20.00	JG	115		271-0017	BEADS INDUCTOR FBA04VA900AB-0
21.00	R1	122		476-2333-J-10	RES CHIP 33KOHM 1/10W 5%
22.00	R2	121		476-2273-J-10	RES CHIP 27KOHM 1/10W 5%
23.00	R3	117		476-2102-J-10	RES CHIP 1KOHM 1/10W 5%
24.00	R4	119		476-2392-J-10	RES CHIP 3.9KOHM 1/10W 5%
25.00	R5 (SOLDER)	118		476-2222-J-10	RES CHIP 2.2KOHM 1/10W 5%
26.00	R6 (SOLDER)	117		476-2102-J-10	RES CHIP 1KOHM 1/10W 5%
27.00	R7 (SOLDER)	129		476-2114-F-10	RES CHIP 110KOHM 1/10W 1%
28.00	R8 (SOLDER)	126		476-2432-F-10	RES CHIP 4.3KOHM 1/10W 1%
29.00	R9	123		476-2473-J-10	RES CHIP 47KOHM 1/10W 5%
30.00	R10 (SOLDER)	122		476-2333-J-10	RES CHIP 33KOHM 1/10W 5%
31.00	R11 (SOLDER)	120		476-2123-J-10	RES CHIP 12KOHM 1/10W 5%
32.00	R12	130		476-0361-J-01	RES CHIP 360 OHM 1/4W 5%
33.00	R13 (SOLDER)	116		476-2221-J-10	RES CHIP 220 OHM 1/10W 5%
34.00	R14	128		476-2203-F-10	RES CHIP 20KOHM 1/10W 1%
35.00	R15	127		476-2682-F-10	RES CHIP 6.8KOHM 1/10W 1%
36.00	R16 (SOLDER)	910		NOT USED	NOT USED
37.00	R17 (SOLDER)	910		NOT USED	NOT USED
38.00	R18	125		476-2514-F-10	RES CHIP 510KOHM 1/10W 1%
39.00	R19	910		NOT USED	NOT USED
10.00	C1 (SOLDER)	139		153-0088	CAP TANT CP 0.68UF 16V 3216
11.00	C2	133		151-0265	CAP CER CP 0.1UF 25V ZF 2125
12.00	C3	134		151-0269	CAP CER CP 0.1UF 25V K 2125
13.00	C4 (SOLDER)	133		151-0265	CAP CER CP 0.1UF 25V ZF 2125
14.00	C5	135		150-0314	CAP E 22UF 35V M 35SP(X)22
15.00	C6	133		151-0265	CAP CER CP 0.1UF 25V ZF 2125
16.00	C7	131		151-0268	CAP CER CHIP 680PF K B 2125
17.00	C8	134		151-0269	CAP CER CP 0.1UF 25V K 2125
8.00	C9 (SOLDER)	132		NOT USED	NOT USED
9.00	C10	133		151-0265	CAP CER CP 0.1UF 25V ZF 2125
0.00	C11	136		150-0315	CAP E 100UF 25V M 25SP(X)100
1.00	C12 (SOLDER)	133		151-0265	CAP CER CP 0.1UF 25V ZF 2125
2.00	C13	137		150-0316	CAP E 820UF 6.3V M 6.3SP(X)820



Sold Side 部品面視 半田面

部品面視 部品面 Comp Side

MACHINE 機械名	SUB-ASS'Y 組図番
	837-7995

ALTERATIONS 改訂

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LIMITS UNLESS OTHERWISE SPECIFIED 一般公差	3RD QUAT. PROJ. DRAWING 第三角法	設計・製図	検図	検認	承認
	SCALE 尺度 ✕	松本	大場		水永
	DIM. IN 単位 mm	5/8-'91	5/9-'91		5/9 '91
MATERIAL 材料	HEAT TREAT. 熱処理	FINISH 表面処理	REMARK 特殊指示		REV.

DESCRIPTION 名称	PART NO. 図番・部品番号
IC BD GG DC-DC CONV. EUROPE	837-7997 (2/3)

837-7997 (2/3)

J1
SMK
LGP4031-0300
D1
1SR35-100A
電池ブレード
BT1
BT2
ワイヤーケーブル
単3 × 6
ワイヤーケーブル
JV
FBA04VA900AB-00
JG
FBA04VA900AB-00
SW1
HSW1805-010010
(一回路二接点ノンショーティング 1A)
C6
0.1μ
C2
0.1μ
R1
33K
R3
1k
R4
3.9k
Q1
2SA812
(M5~M7)
L1
1.2mH
チョークコイル
FL7H122J
D2
HRF22
Q2
2SC1623
(L5~L7)
2.2k
R5
1k
R6
C4
0.1μ
C5
22μ 35V
(低ESR)
R7
110k
±1%
R8
4.3k
±1%
C1
0.68μ /16V
C3
0.1μ
(Kランク R特性)
R2
27K
R16
未使用
D4
未使用
Q4
未使用
R17
未使用
IC1
MB3775PF
16
15
14
13
12
11
10
9
C10
0.1μ
C11
100μ/25V
(低ESR)
ワイヤーコネクター
CN1
1 +5(V)
2 +5(V)
3 GND
4 GND
5 GND
6 VBRE
7 VBAT
8 NC
9 +3.4(V)
ワイヤープロセス
WIRE HARN 9P
FOR GG
1
2
3
4
5
6
7
8
C7
680P
(Kランク B特性)
R9
47k
C8
0.1μ
(Kランク R特性)
R10
33k
C9
0.33μ
(Kランク F特性)
R11
12k
R12
360Ω
(1/4W)
R13
220Ω
Q3
2SB1301 (EQ-EP)
L2
68μH
チョークコイル
TSL1110-680K
D3
HRF22
C12
0.1μ
C13
820μ 6.3V
(低ESR)
R14
20k
±1%
R15
6.8K
±1%
R18
510k
±1%
R19
未使用
D5
(1/2)
未使用
D5
(1/2)
未使用

(315-5708B使用)
IC BD 68 DC-DC CONV. EUROPE B 837-7997B
IC BD 68 DC-DC CONV. EUROPE 837-7997 (315-5708A使用)

SEGA SEGA ENTERPRISES,LTD.	APVD.
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	DRW.
PC BD 68 DC-DC CONV. EUROPE	REV
	171-6102A
DESCRIPTION	SHEET NO.
	SHEET 1 OF 1

IC1
Z80 C-MOS
(40SOP)
315-0545

IC2
VDP
(80QFP)
315-5377

IC3
SCA
(100QFP)
315-5378A

※ IC3において、315-5378Bを使用の場合、C75は未使用とする。

IC4
SRAM
8K x 8 bit
(28SOP)
315-0546

IC5
VRAM
32K x 8 bit
(28SOP)
315-0547

HM65256 BLFP-12

DATA BUS

ADDRES BUS

CONTROL PAD

IC BD for MAIN EUROPE B 837-7206B

IC BD for MAIN EUROPE 837-7206-01

SEGA SEGA ENTERPRISES,LTD.

REV

PC BD for MAIN EUROPE

DESCRIPTION

インバーター +5(V)
専用
C31
100μ/16V
LCD
Q2
未使用
R28
未使用
L2 105μH
C81
0.022μ
Q3
2SD
1614
X 2
C32
0.1μ/50V
(MP)
R29
13k
R30
13k
Q4
R64
未使用
高耐圧ヒモ(SLeve)
22pF/2KV
C33
FU1
FU2
蛍光管
FL 3Φ T9 AD IPT
インバーター
専用 GND

LCD PANEL 3.2 INCH
480 × 146

FPC 1

LCD ｺﾝﾄﾛｰﾙ
SCA
DB
P3
P2
P4
P1
CL2
DO2
DO4
DO5
DO3
DW
CLB1
CLA1
CLB2
CLA2
CLB3
CLA3
TPR1
TPR2

+5(V)
+34.5V
6V

2SC1623
Q6
R35 51
R38 51
R33 30k
R36 56K (1%)
R37 30K (1%)
R39
R40 470 (1%)
C34 3.3μ
C35
C36 470
C37 0.1μ
C38 100μ/16V
C39 0.1μ
C40
C41 0.01μ
C42 0.01μ
C43 0.01μ
R41 2.2K
R42 240K
R45 1M
C44 0.47μ/50V
C45 0.47μ/50V
R47
C47 47P
R46
C46 47P
D1 1SS184
D2 1SS184
D3 1SS184
C10
Q8 2SA 812
Q9 2SA 812
Q11 2SA 812
2SC1623
R43 22K
R44 22K
FOR BRIGHT
VR1. 20K
ALPS
RK89J110
(B-7)
R32 100K
R34 20K
R31 100Ω
Q5 2SC 1623
K779 SL特注
VDD
VSS
TPR1
TPR2
VH

IC BD 837 MAIN EUROPE B 837-7996B(315-5378B)
IC BD 837 MAIN EUROPE 837-7996(315-5378A)

SEGA SEGA ENTERPRISES,LTD.	APPD.
THIS DRAWING WILL IN NO WAY BE COPIED, NOR BE RETURNED ON DEMAND.	DRWN.
PC BD 837 MAIN EUROPE	REV
DESCRIPTION	171-5101A
	SHEET 2 OF 2