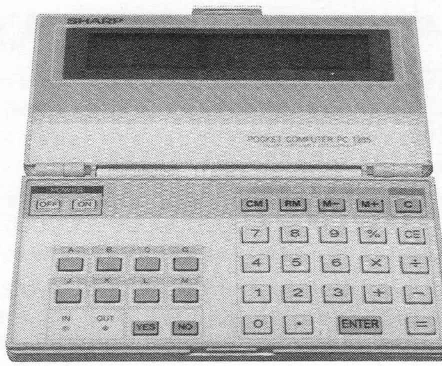
SHARP SERVICE MANUAL



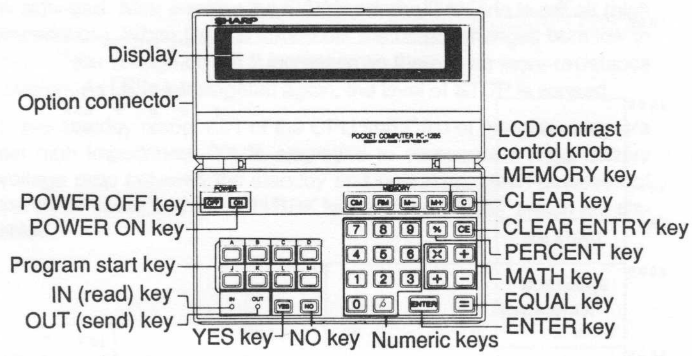
CODE: 00ZPC1285SM/E

POCKET COMPUTER

MODEL PC-1285

(APPLICATION ONLY)

Keyboard layout



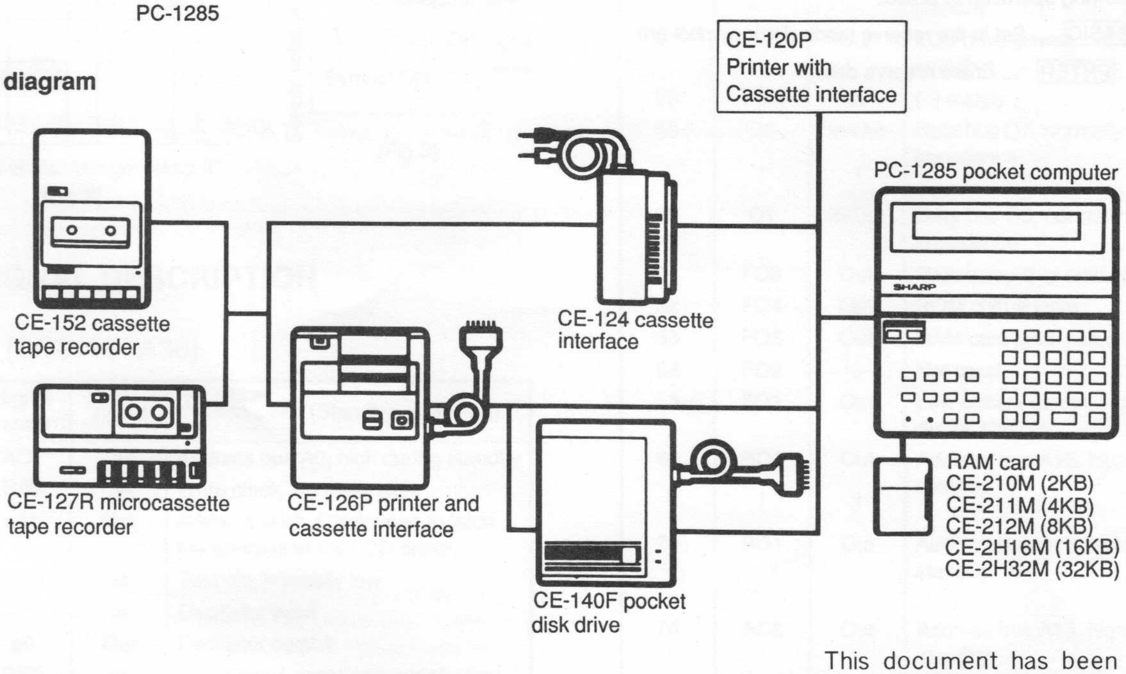
1. INTRODUCTION

The PC-1285 is an application only version of the PC-1280 which has a similar circuitries and functions as those of PC-1280. While the PC-1280 has an internal 8KB RAM, the PC-1285 is not and may not operate without a RAM card. An internal RAM backup battery and an internal RAM protect switch are therefore not used in the PC-1285.

2. SPECIFICATIONS

Model:	PC-1285
Display:	Dot matrix liquid crystal display (2-line 24-digits)
CPU:	8-bit CMOS CPU
Math operations:	Calculation capacity: 12 digits Calculator functions: Add, subtract, multiply, divide, constant, percentage, add-on, discount, power raising, reciprocation, memory calculation, etc.
Power supply:	6VDC, lithium battery cells (CR2032 x 2)
Power consumption:	0.03W
Battery life:	Approx. 120 hours of continuous use (with CE-212M) under normal conditions (based on 10 minutes of arithmetic operation or program execution and 50 minutes of display per hour at a temperature of 20°C). Life may vary depending on the operating conditions and the type of battery used.
Operating temperature:	0°C to 40°C
Dimensions:	135(W) x 141(D) x 9.6(H)mm (opened) 135(W) x 70.5(D) x 19.2(H)mm (closed)
Weight:	175g (batteries included)

System diagram



3. BATTERY LIFE AND CURRENT CONSUMPTION

PC-1285 power supply	Lithium battery CR-2032 x 2 pcs	Capacity: 170mAH	Terminal voltage: 6.0V

Current consumption

Current consumption when PC-1285 OFF	45μA max.
Current consumption when PC-1285 ON (with display on)	450μA max.

The above values are at the room temperature of 20°C and may vary depending on conditions.

(NOTE) Current should be measured with a RAM card loaded.

4. LOADING PROGRAM

A program created on the programmable unit can be loaded onto the PC-1285 in either of the following ways:

(1) Using the program stored RAM card

(2) To load program from the cassette tape or microcassette tape. In this case, the following option ① and ② are required.

① CE-126P printer/cassette interface or CE-124 cassette interface

② CE-152 cassette tape recorder or CE-127R microcassette tape recorder

(3) To load program from the 2.5" pocket disk. In this case, the following option is required.

CE-140F (pocket disk drive)

(4) To load program directly from another pocket computer. In this case, the following cable option is required.

EA-128C

NOTE:
Note the following when loading the RAM card with the program created or edited on the PC-1280.

(1) Set the PC-1280 in the MEM$="1" when creating or editing the program. (Execute SETMEM "1" [ENTER] .)

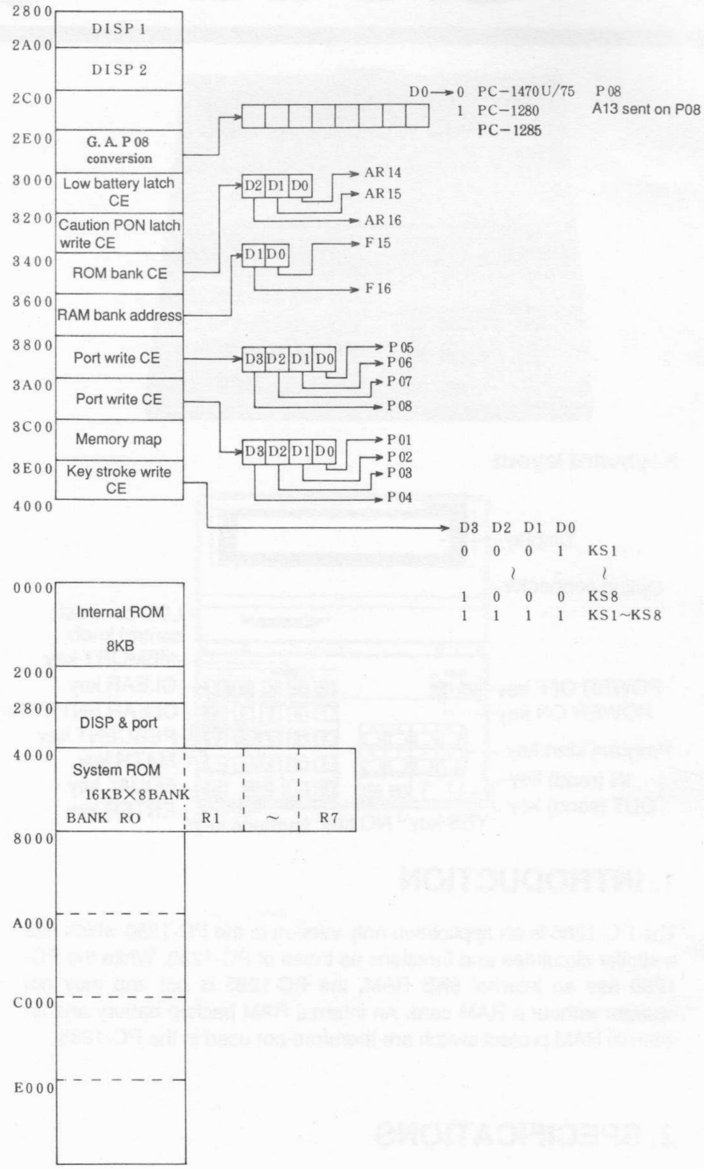
(2) Erase reserve data by PC-1280 before loading to PC-1285.

Do the following operation to erase.

[SHIFT] [BASIC] ... Set in the reserve mode (RSV symbol on)

[N] [E] [W] [ENTER] ... Erase reserve data.

5. MEMORY MAP



6. LOW BATTERY DETECT CIRCUIT

As the PC-1285 is provided with a low battery detect circuit like the PC-1280, this section describes about its function.

(Note that the parts location numbers do not always coincide with those in the actual circuit diagram.)

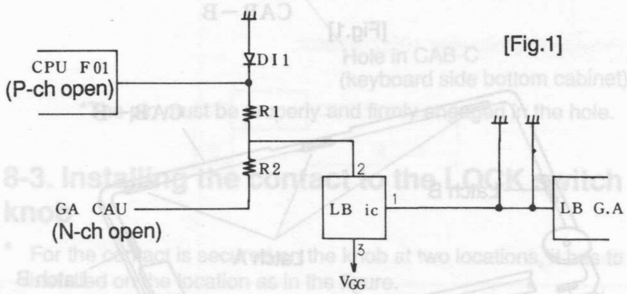
As shown in the figure below, the output from the low battery detect IC, LBIC (MN1280) turns high when the input voltage VIN rises above the detect voltage level VD, or turns to low when VIN drops below VD.

For both signal levels of CAU and STOP are monitored by a single IC, LBIC (MN1280), the pin 2 input is divided by R1 and R2, and R2 is turned on and off with gate array CAU.

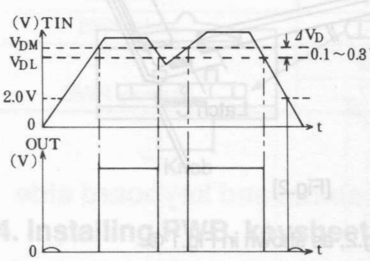
As Fig.3 shows, when the supply voltage goes below the level of the CAU signal, the BATT symbol is set active. When it goes further down below the level of the signal STOP, the symbol is turned off.

To check the level of the signal CAU, the state of the line $\overline{LB}$ is interrogated by setting CAU low (active). If $\overline{LB}$ is at a low level, the symbol is activated. After sensing the CAN level, the CAN line is set off (high impedance). When CAU is turned off, the output changes from low to high as the voltage on pin 2 increases as there is no more resistance division. As $\overline{LB}$ is interrogated again, the level of STOP is sensed.

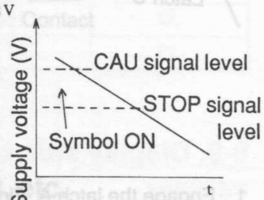
In the standby mode, F01 of the CPU and CAU of the gate array are set high impedance. DI1 is employed to compensate for a battery voltage drop between the standby and operating. Upon detection of the STOP level, both the ON/BRK key and the RESET switch are disabled.



[Fig.1]



Action of the voltage detect IC
[Fig.2]



[Fig.3]

7. LSI SIGNAL DESCRIPTION

7-1. CPU (SC61860A38)

Pin No.	Signal name	In/Out	Description (Standby=power off)
1	AO1	Out	Address bus A0, high during standby
2	R/$\overline{W}$	Out	Write clock, normally high
3	φAL	Out	Address latch. Clock used to latch the address of the LCD driver.
4	TES	In	Test pin, normally low
5	φ1	In	Oscillator input
6	φ0	Out	Oscillator output
7	RES	In	Reset input, reset with a high state of signal.
8	XIN	In	Cassette signal input
9	XON	In	ON/BRK key input, normally pulled down low.
10	XOUT	Out	Cassette signal and buzzer signal output
11	DIS	Out	LCD driver control signal, high during displaying
12	HA	Out	LCD driver sync clock
13	IA8	In/Out	Key input/key strobe
14	IA7	In/Out	Key input/key strobe, low during standby
~	~	~	~
20	IA1	In/Out	Key input/key strobe, low during standby
21	IB8	—	Not used
22	IB7		Not used
23	IB6	—	Not used
24	IB5	In	11 pin ACK (acknowledge on 11 pin interface)
25	IB4	In	11-pin DIN (data input on 11-pin interface)
26	IB3	In	11-pin DOUT (data input on 11-pin interface)
27	IB2	In	11-pin IO2 (data input on 11-pin interface)
28	IB1	In	11-pin IO1 (data input on 11-pin interface)
29	VM	In	LCD drive power
30	VA	In	LCD drive power
31	GND	In	(+) supply
32	H1	Out	LCD backplate signal, 4-level pulse during displaying (1/14 duty)
~	~	~	~
45	H14	Out	LCD backplate signal, 4-level pulse during displaying (1/14 duty)
46,47	H15,H16	—	Not used (because of 1/14 duty)
48	VB	In	LCD drive power, high during standby
49	VDIS	In	LCD drive power, high during standby
50	VCC	In	LCD drive power, high during standby
51	VDC	Out	LCD drive power, high during standby
52	VGG	In	(−) supply
53	O8	In/Out	Data bus D7, normally high impedance
~	~	~	~
60	O1	In/Out	Data bus D0, normally high impedance
61	FO5	Out	Gate array chip enable (CF)
62	FO4	Out	ROM chip enable
63	FO3	Out	RAM card bank select (BA)
64	FO2	—	Not used
65	FO1	Out	Low battery detect, high impedance during standby
66	BO8	Out	Address bus A15, high during standby
~	~	~	~
73	BO1	Out	Address bus A15, high during standby
74	AO8	Out	Address bus A15, high during standby
~	~	~	~
80	AO2	Out	Address bus A1, high during standby

7-2. Gate array (LZ92K41)

Pin No.	Signal name	In/Out	Description
1	BA	In	Bank select
2	CE	In	Chip enable
3	DC0	In	Data bus
≀	≀		≀
6	DO3	In	Data bus
7	GND	In	(−) supply
8	PO1	Out	11-pin IO1 (P-channel open output)
9	PO2	Out	11-pin IO2 (P-channel open output)
10	PO3	Out	11-pin DOUT (P-channel open output)
11	PO4	Out	11-pin DIN (P-channel open output)
12	PO5	Out	11-pin BUSY (P-channel open output)
13	NC	—	Not used
14	SLTB	Out	Not used
15	AS3B	Out	Not used
16	AS1	Out	System ROM A14 and RAM A11
17	AS2	Out	System ROM A15 and RAM A12
18	AS3	Out	System ROM A16 and RAM A13
19	AF15	Out	RAM card slot A15
20	AF16	Out	RAM card A16
21	SLT1	Out	RAM card slot chip enable
22	SLT2	Out	Internal RAM chip enable
23	DSP1	Out	DISPCHIP1 chip enable
24	DSP2	Out	DISPCHIP2 chip enable
25	RESO	Out	Reset output to CPU RESET line, normally low
26	KON	Out	ON/BRK output to CPU KON line, normally low
27	LB	In	Low battery detect, low at low battery
28	RES1	In	Reset input, normally pulled down
29	BRK	In	ON/BRK key input, normally pulled down
30	VDD	In	(+) supply
31	GND	In	(−) supply
32	CAU	Out	Low battery symbol activating voltage detect line, high impedance after activation of symbol.
33	KS1	Out	Key strobe (P-channel open output)
≀	≀	≀	≀
40	KS8	Out	Key strobe (P-channel open output)
41	R/W	In	Write clock
42	A9	In	Address bus
≀			≀
48	A15	In	Address bus

8. SERVICE PRECAUTIONS

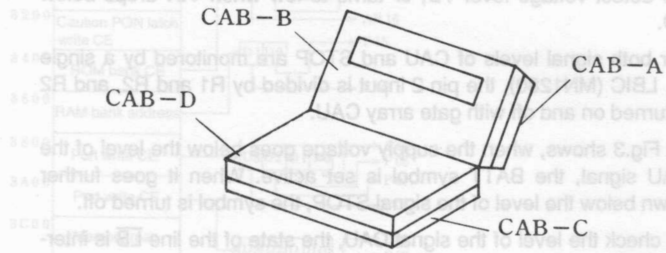
Each cabinet is called as follows:

Display side bottom cabinet: CAB-A

Display side top cabinet: CAB-B

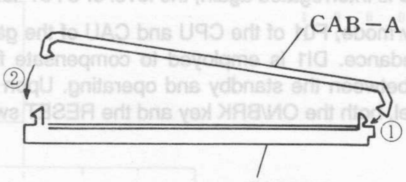
Keyboard side bottom cabinet: CAB-C

Keyboard side top cabinet: CAB-D

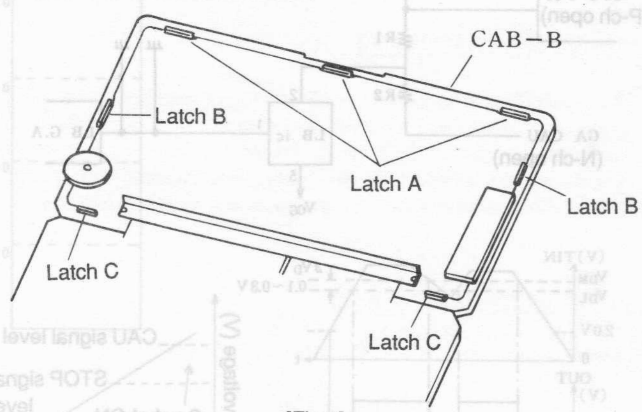


8-1.Removal and installation of CAB-A

Hints to latch CAB-A with CAB-B



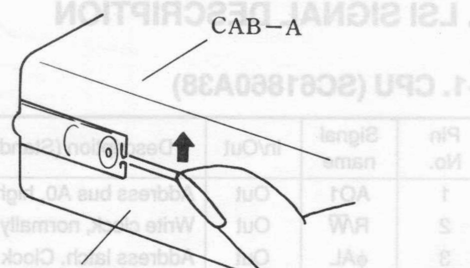
[Fig.1]



[Fig.2]

1. Engage the latch A, Fig.2, as shown in Fig.1 ①
2. Engage the latch B, Fig.2.
3. Engage the latch C, Fig.2, as shown in Fig.1 ②

How to remove CAB-A



1. As shown in the figure above, insert your nail in the clearance between CAB-A and CAB-C near the hinge and push it down in the arrow direction to disengage the latch C at two locations (Fig.2).

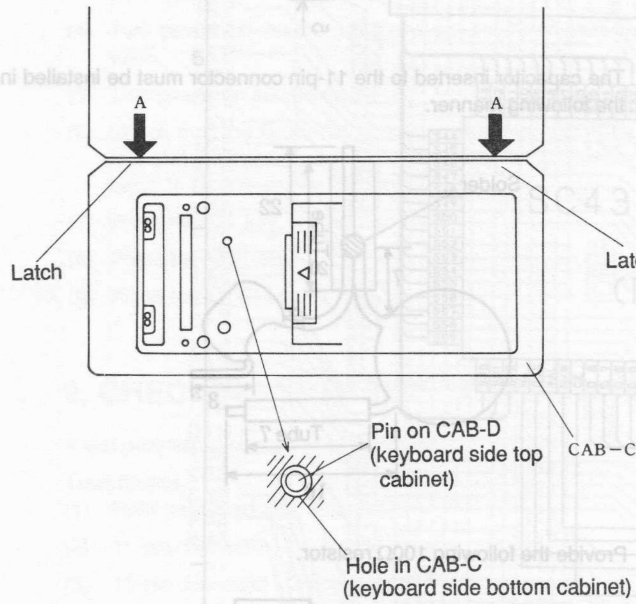
2. Do the reverse sequence to remove the latches.

CAUTION: When removing CAB-A, be careful not to separate the static tape.

8-2. Installing CAB-C

* Make sure that the pin is properly engaged in the hole.

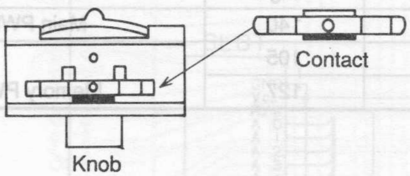
* When latching CAB-C with CAB-D, push CAB-C all the way in the arrowhead A to achieve firm engagement. Use the special tool to tighten the screws.



*The pin must be properly and firmly engaged in the hole.

8-3. Installing the contact to the LOCK switch knob

* For the contact is secured on the knob at two locations, it has to be installed on the location as in the figure.



8-4. Installing PWB, keysheet, etc.

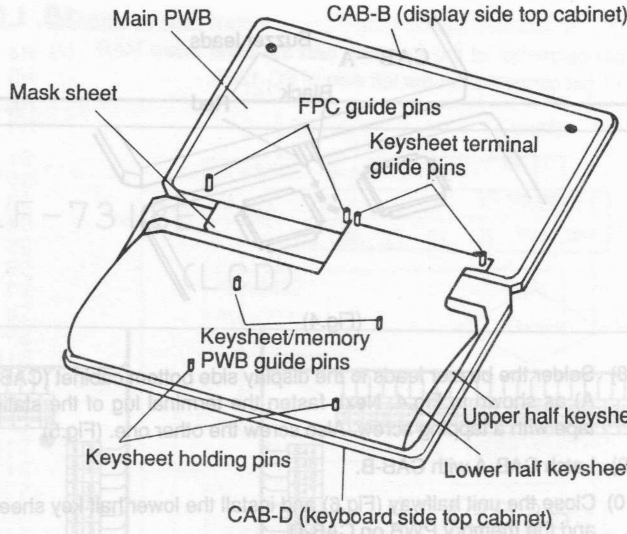
(1) Assemble the mask sheet, then the main PWB onto CAB-B.

(2) Insert the rubber key in CAB-D, then install the upper half of the key sheet. Position the sheet onto the guide pins and key sheet holding pins.

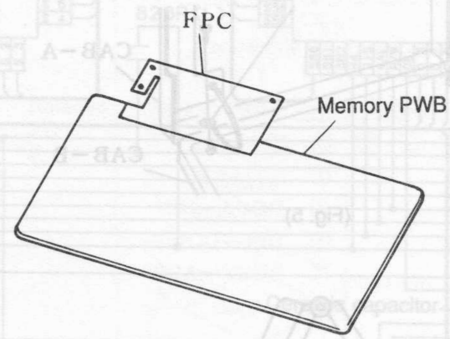
(3) Insert the key spacer by positioning it to the guide pins.

(4) Fold back the lower half of the key sheet and fit the terminal onto the guide pins on CAB-B.

NOTE: At this point, the lower half of the key sheet should not yet be on the guide pins or holding pins, and the fold line should be left loose.



(Fig.1)



(Fig.2)

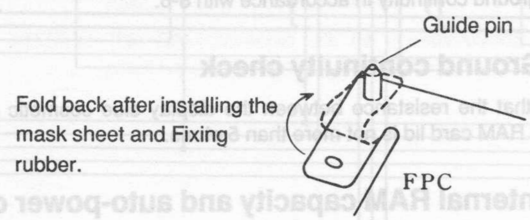
(5) Install the memory PWB unit, Fig.2, over the keysheet and insert the FPC terminal onto the guide pins on CAB-B.

NOTE: Do not install the memory PWB onto the guide pins yet.

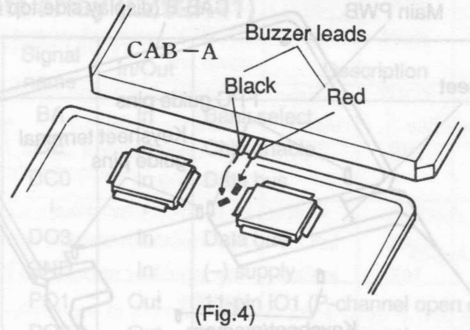
(6) Install the mask sheet, then the fixing rubber on the face of the cabinet, after which fold back the ear of the FPC to fit it on the guide pin (Fig.3.)

(7) Position the sealing angle to the guide pins on CAB-B and secure it with four screws.

NOTE: Tighten the two inner screws first, then two other screws.



(Fig.3)



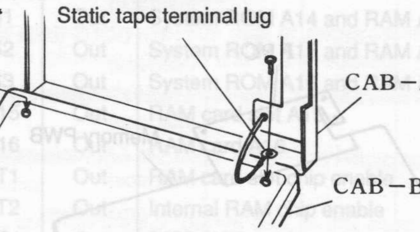
(Fig.4)

(8) Solder the buzzer leads to the display side bottom cabinet (CAB-A) as shown in Fig.4. Next, fasten the terminal lug of the static tape with a tapping screw. Also screw the other one. (Fig.5)

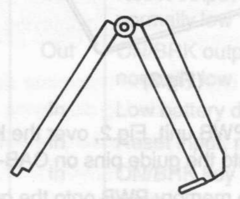
(9) Latch CAB-A with CAB-B.

(10) Close the unit halfway (Fig.6) and install the lower half key sheet and the memory PWB on CAB-D.

(11) Install CAB-C.



(Fig. 5)


(Fig. 6)

8-5. Replacing the static tape

The static tape, once separated from the aluminum panel, should not be used again. A new one must be used. Wipe residual glue off the panel before attaching a new static tape. After the replacement, check ground continuity in accordance with 8-6.

8-6. Ground continuity check

Check that the resistance between the display side cosmetic panel and the RAM card lid is not more than 5 ohms.

8-7. Internal RAM capacity and auto-power off functional checks

The contents of the memory will be erased with the following procedure.

(1) Insert the RAM card.

(2) Press the RESET switch.

(3) Press the YES key. (Normally, the YES key may not be pressed, but the YES key ON prompt may appear depending on the contents of the RAM card.)

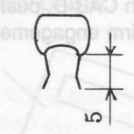
(4) Key in $\boxed{5}\boxed{\div}\boxed{9}\boxed{=}$.

(5) The display will show 0.55555555555.

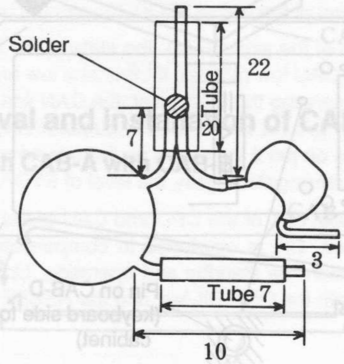
(6) After leaving the unit in the above state for more than 14 minutes, check that the power has been out.

8-8. Hints and tips

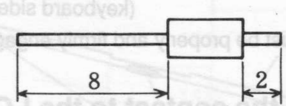
- Any parts must be closely attached on the PWB with solder.
- When replacing LSIs, use the ALUMIT KR19RAM solder. (See Service Information PS-009.)
- See the figure below for the installation of a 0.1uF inserted across the KON (pin 26) of the gate array and the VGG side of a 0.033uF.



- The capacitor inserted to the 11-pin connector must be installed in the following manner.



- Provide the following 100Ω resistor.



- Providing jumper

	Length	PWB unit
J1	140	Main PWB
J2	105	
J3	127	Memory PWB

8-9. Display side cabinet and keyboard side cabinet

These two cabinets are held together with a spring pin. To replace either one only, it may be possible to scrape the cabinet with the cutter and to remove the spring pin with a pair of pliers, but the pin, once pulled out, cannot be re-used.

8-10. Display test

Items required for display check:
- PC-1280 (for program entry)
- Half-size RAM card (for test)
- PC-1285 to be tested

The contents of both PC-1280 and the RAM card will be lost during the test.

(1) Set the RAM card in the PC-1280 and do ALL RESET.

(2) Enter SETMEM"1" $\boxed{\text{↵}}$.

(3) Enter the following program. (On the line 40, enter 23 digits of "8".)

```
10 : "A"
20 : WAIT20
30 : BEEP1
35 : IF INKEY$="0"THEN60
40 : PRINT"8~8";
50 : IF INKEY$<>"0"THEN30
60 : POKE&237c,255,255
70 : POKE&283c,255,255
80 : GOTO 80
```

(4) Turn power off the PC-1280 and set the RAM card in the PC-1285.

(5) Turn power on and press the [A] key.

(6) Check that the figure "8" is displayed in every digit on the first row and the second row. Make sure that "8" on the second row begin to disappear one by one.

(7) Press the [0] key. (About 1 second)

(8) Press the [ON] key.

(9) Press the [OFF] key.

9. CHECKING WITH THE TEST PROGRAM

A test program is contained in the ROM.

Test items

(1) RAM card read after write test

(2) 11-pin connector I/O line test

(3) 15-pin connector I/O line test

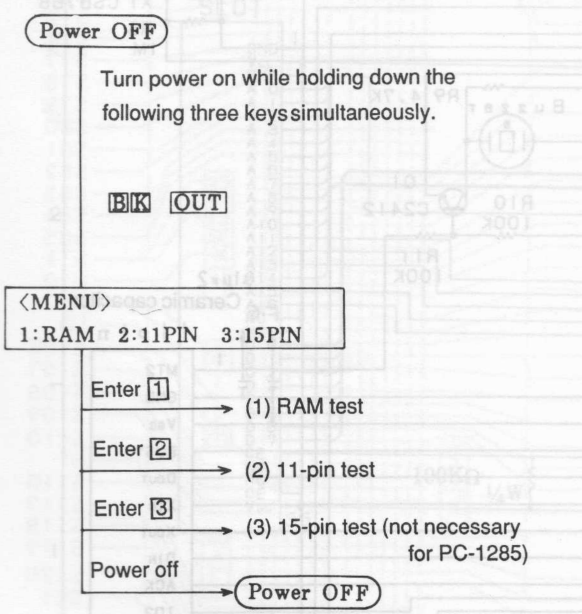
NOTE: The item (3) is not used for PC-1285.

Tool required

The PC-1360 special tool UKOGC3020CSZZ (price rank: BC) is used for (2) and (3).

Description

The RAM contents will be erased in the progress of the test item (1). Necessary program and data must be saved on on tape or other device before starting the test.

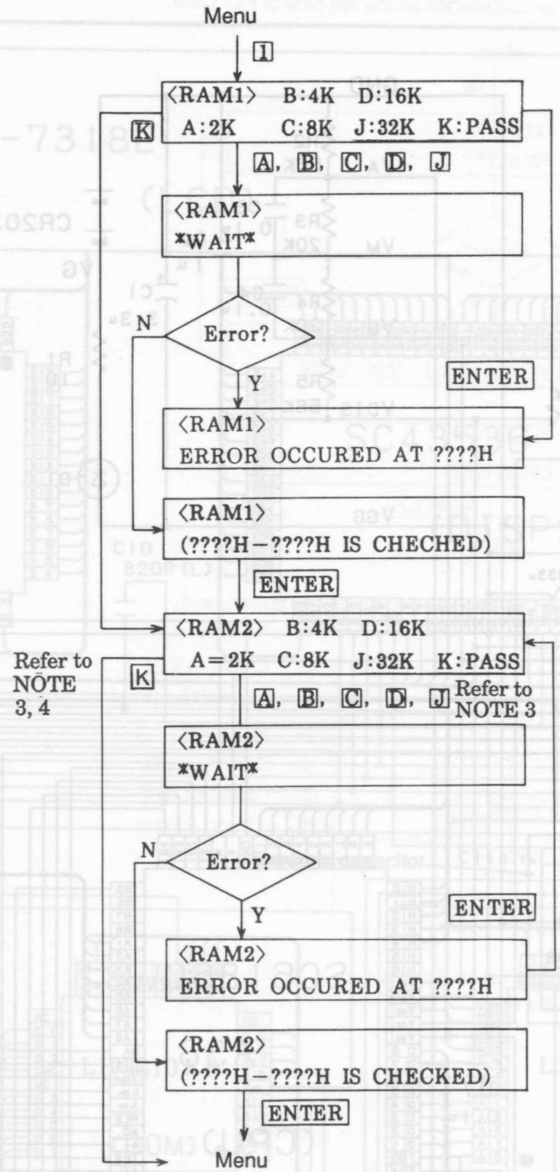


NOTE 1: Power can be turned off only when the above menu is on the display.

NOTE 2: If the test program fails to start, check the keyboard first.

Details of test items

(1) RAM test

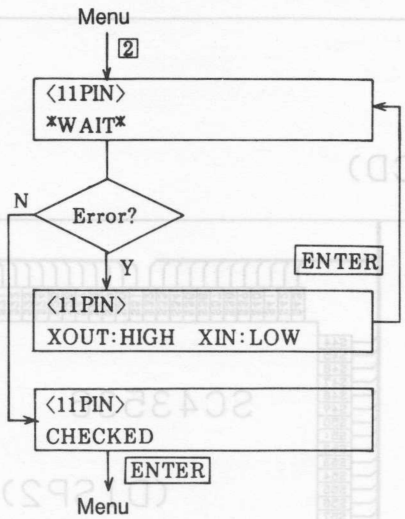


NOTE 3: For PC-1285, enter [K] to pass the test item AM2.

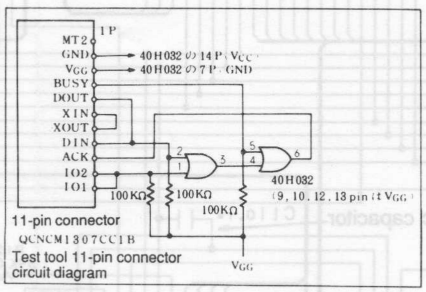
NOTE 4: The RAM contents will be erased during the test. (To preserve the contents, enter [K] to pass.

(2) 11-pin test

Fasten the 11-pin connector of the test tool, with the parts side face up, to the 11-pin connector on the left side of PC-1285.



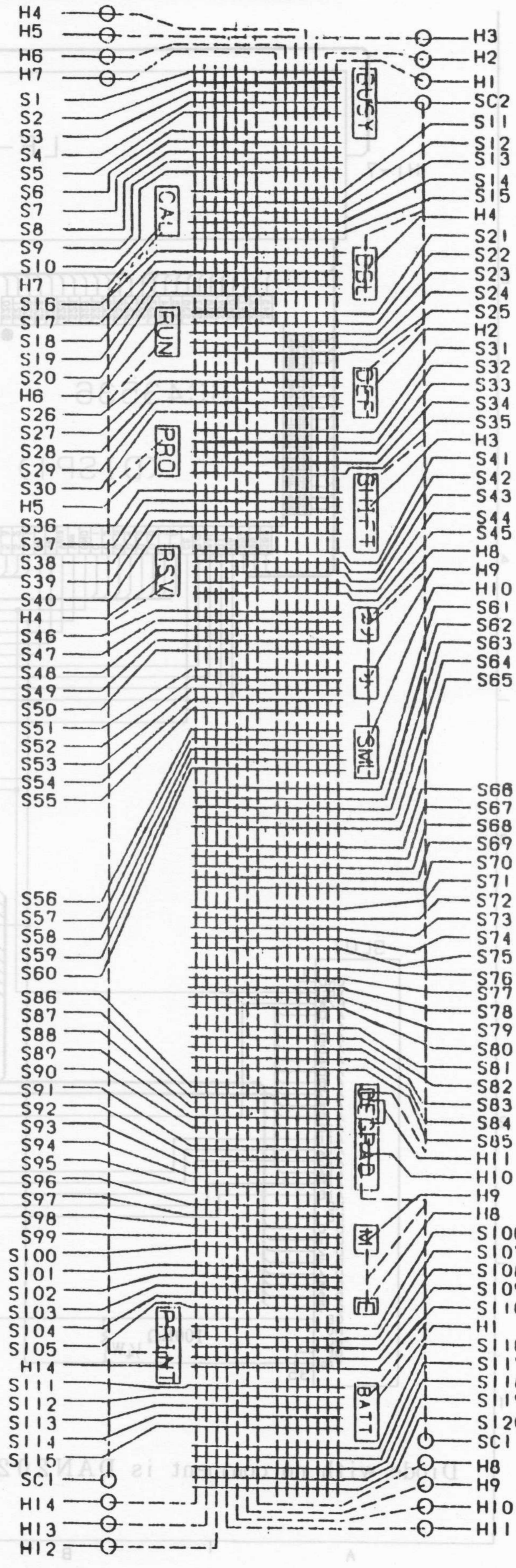
NOTE 1: The test pins and the test sequence are shown next.



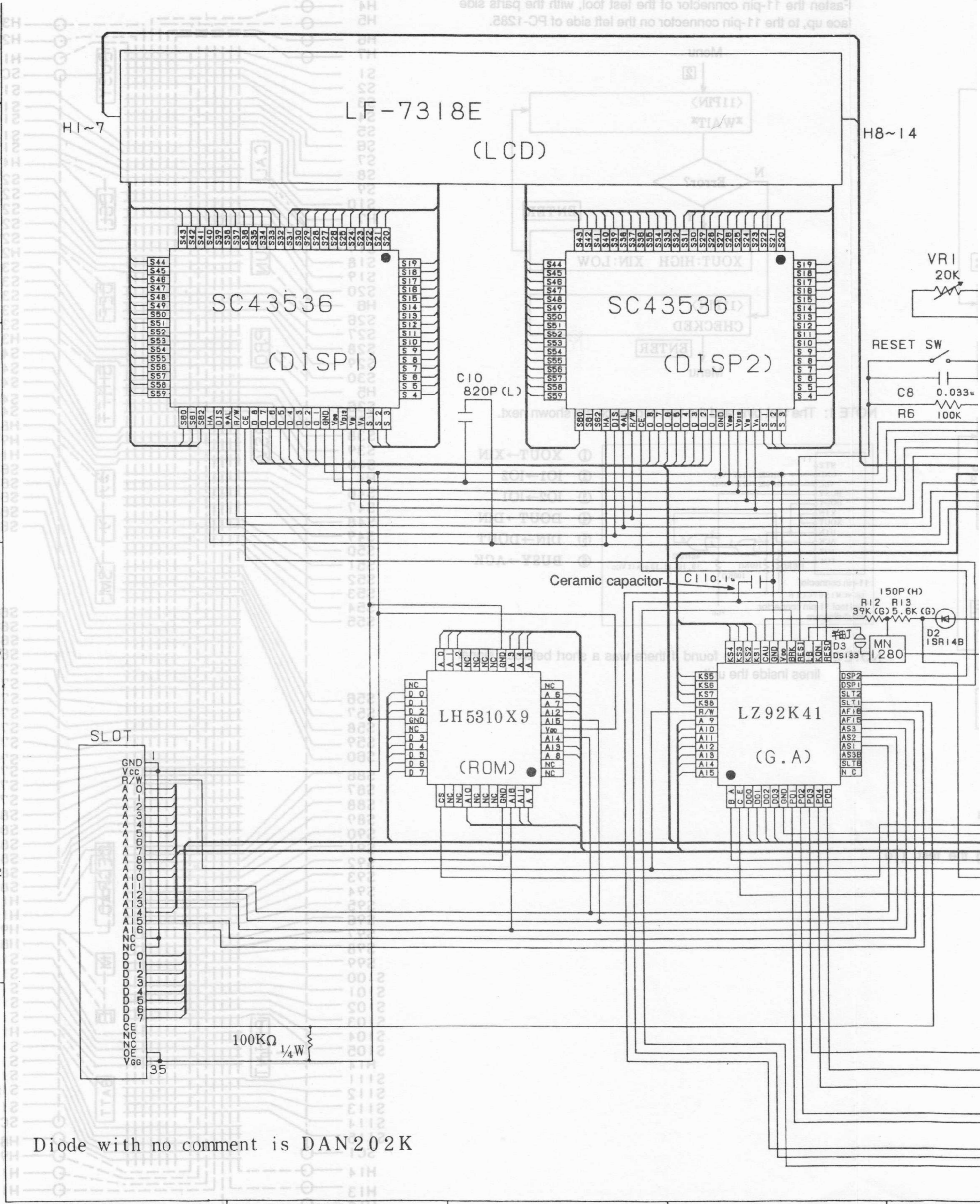
① XOUT→XIN
② IO1→IO2
③ IO2→IO1
④ DOUT→DIN
⑤ DIN→DOUT
⑥ BUSY→ACK

NOTE 2: No error will be found if there was a short between signal lines inside the unit.

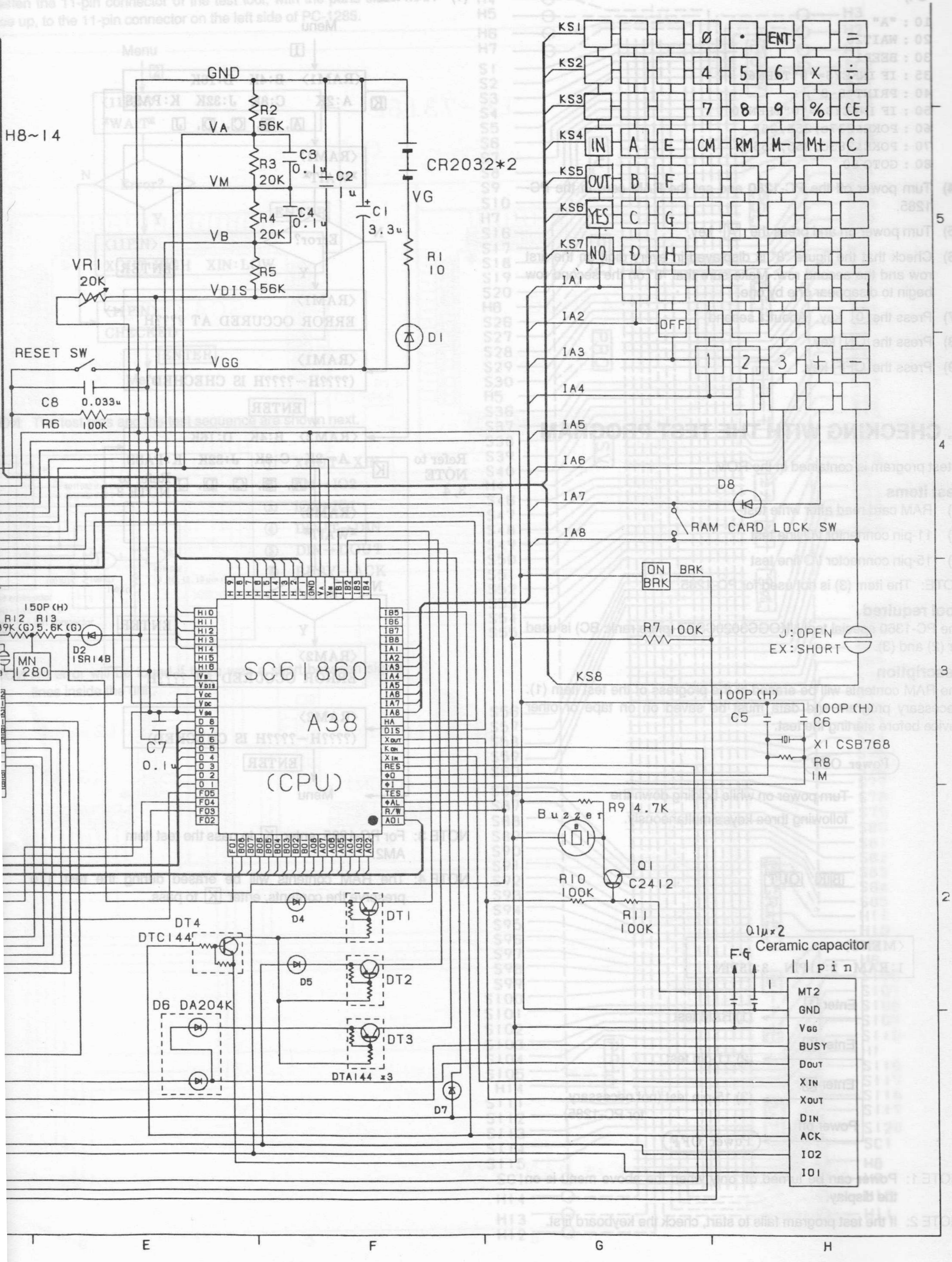
10. LCD WIRING SCHEMATICS



11. CIRCUIT DIAGRAM



Diode with no comment is DAN202K


H8~14
GND
R2 56K
VA
R3 20K
C3 0.1u
C2 1u
CR2032*2
VM
VG
R4 20K
C4 0.1u
C1 3.3u
VB
R5 56K
R1 10
VR1 20K
VDIS
RESET SW
D1
VGG
C8 0.033u
R6 100K
KS1
KS2
KS3
KS4
KS5
KS6
KS7
KS8
IA1
IA2
IA3
IA4
IA5
IA6
IA7
IA8
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ENT
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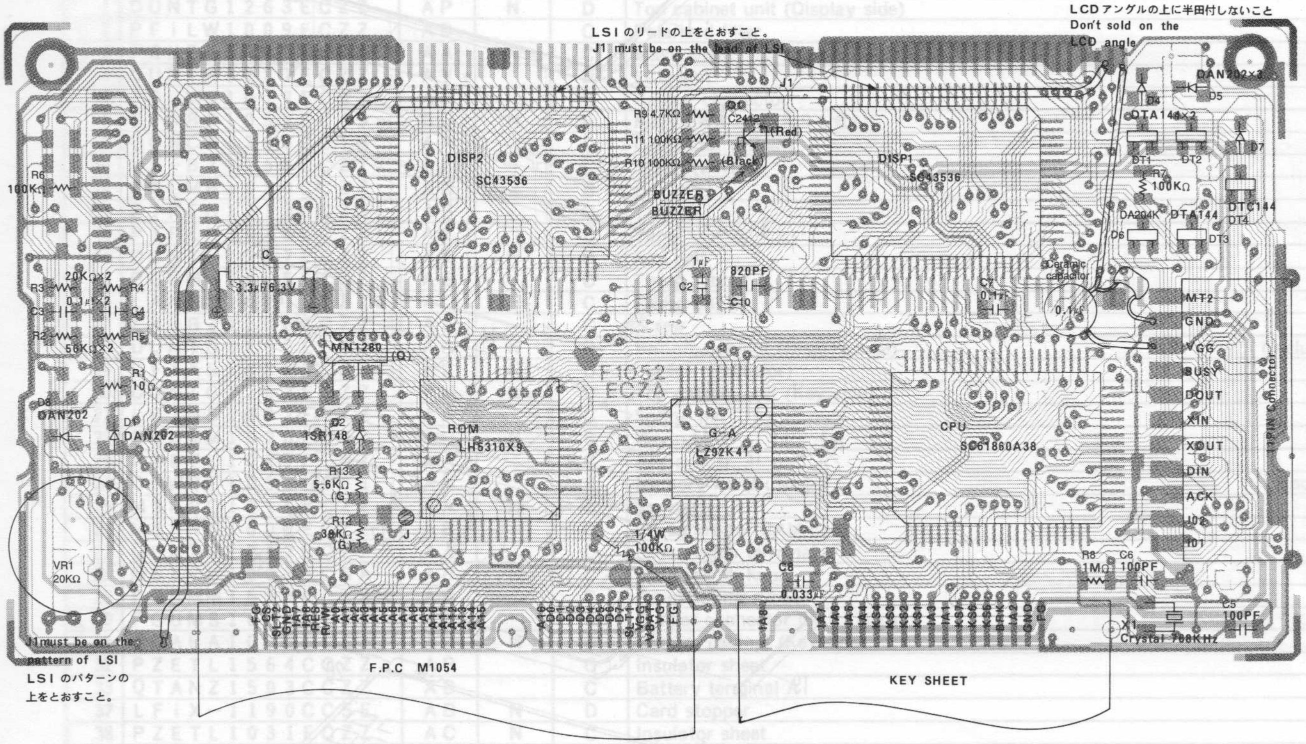
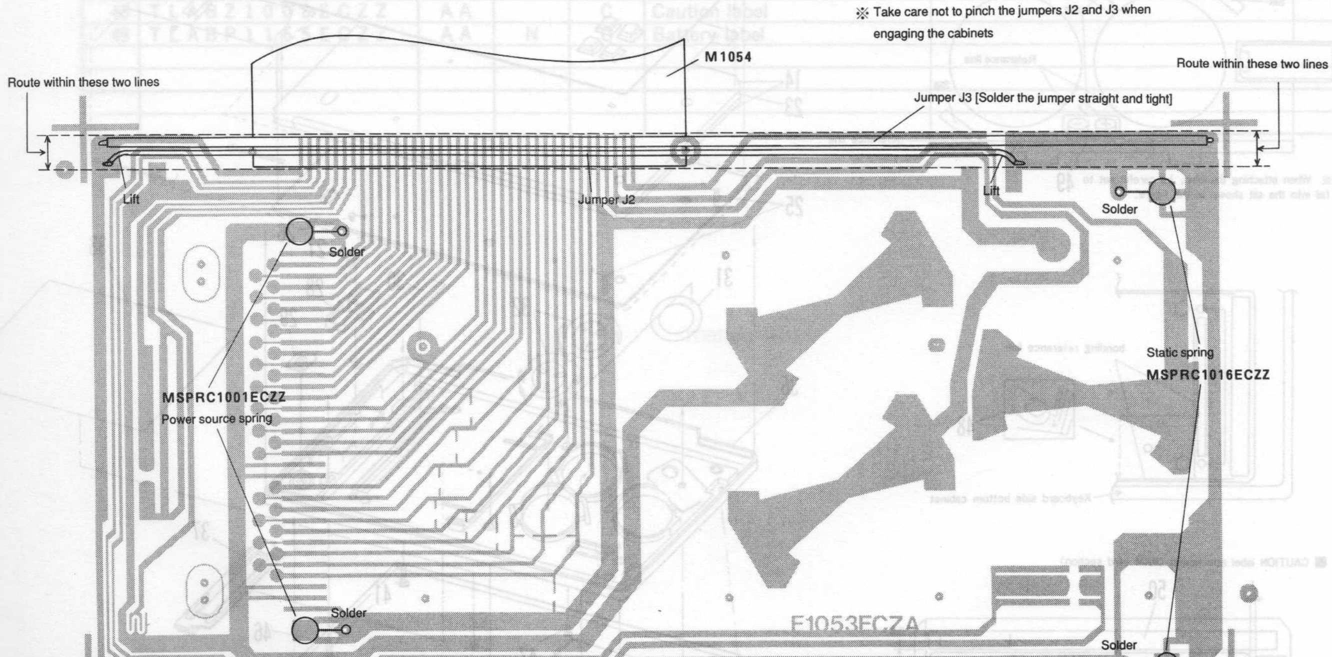
9
%
CE
IN
A
E
CM
RM
M-
M+
C
OUT
B
F
YES
C
G
NO
D
H
OFF
1
2
3
+
-
D8
RAM CARD LOCK SW
ON BRK
BRK
R7 100K
J:OPEN
EX:SHORT
150P (H)
R12
R13
5.6K (G)
D2
1SR14B
MN 1280
SC6 860
A38
(CPU)
C7 0.1u
100P (H)
C5
100P (H)
C6
X1 CSB768
R8 1M
R9 4.7K
Buzzer
Q1
C2412
R10 100K
R11 100K
D4
DT1
DT4
DTC144
D5
DT2
D6 DA204K
DT3
DTA144 x3
D7
0.1μ×2
Ceramic capacitor
F.G
Pin
MT2
GND
VGG
BUSY
DOUT
XIN
XOUT
DIN
ACK
IO2
IO1
5
4
3
2
E
F
G
H

12. PARTS SIGNAL LAYOUT

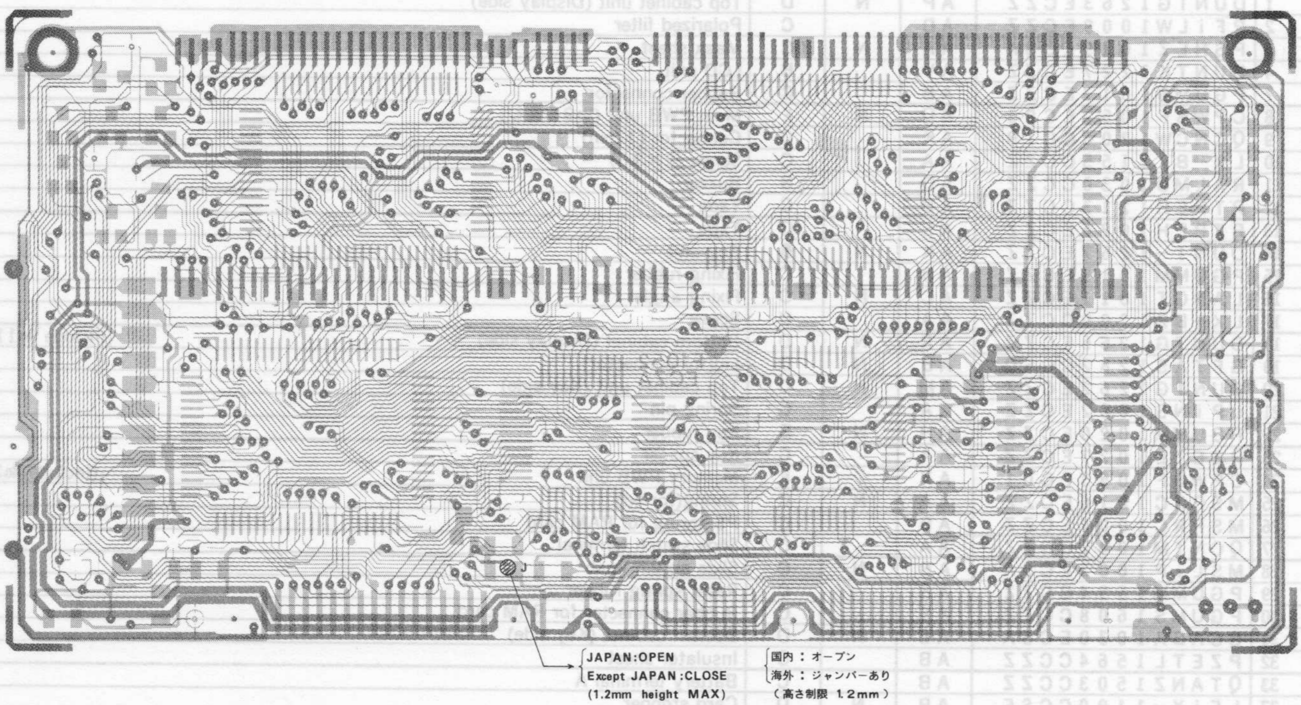
Main PWB parts side



RAM slot PWB parts side



Main PWB LCD side



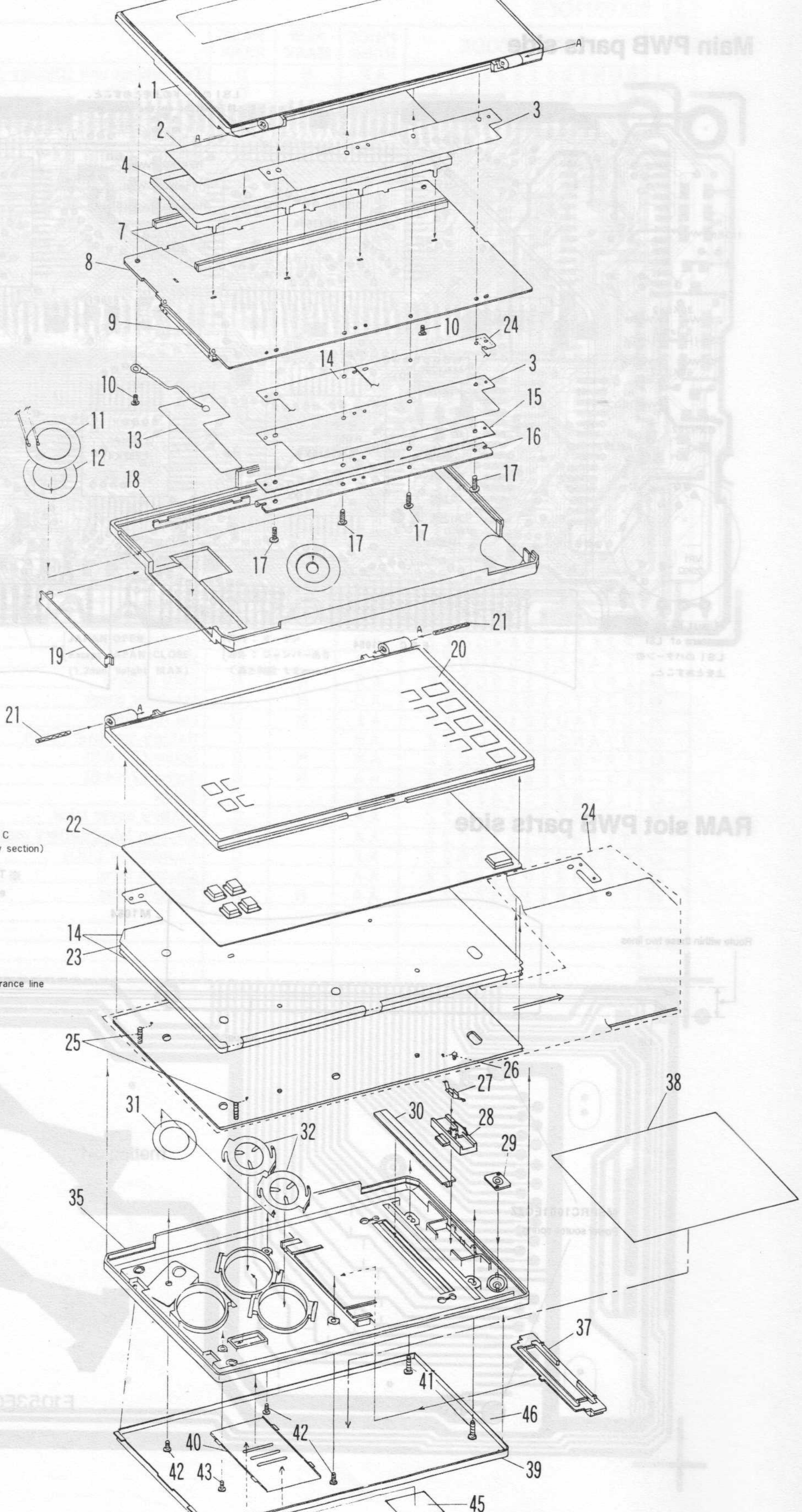
RAM slot PWB key side

No pattern

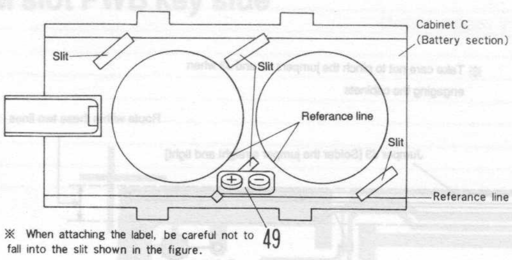
13. PARTS LIST & GUIDE

1 Exteriors

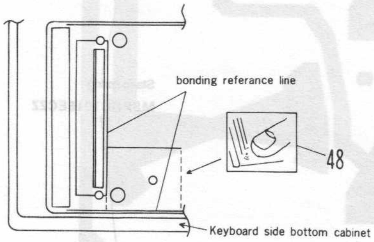
NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
1	DUNTG1263ECZZ	AP	N	D	Top cabinet unit (Display side)
2	PFiLW1009ECZZ	AD		C	Polarized filter
3	PSHEZ1019ECSA	AA	N	C	Mask sheet
4	DUNTK1227ECZZ	AV		B	LCD unit
7	PGUMS1017ECZZ	AB		C	Rubber connector
8	CPWBF1052EC03	BQ	N	E	Main PWB unit (№9を含む)
9	QCNCW1306CC1B	AK		C	Connector (12pin)
10	LX-BZ1155CCZZ	AA		C	Screw (2×3.5)
11	RALMB1030CCZZ	AD		B	Buzzer
12	PTPEH1213CCZZ	AB		C	Tape
13	PTPEH1026ECZZ	AE		C	Tape
14	DUNT-1267ECZZ	AK	N	B	Key unit
15	PGUMM1015ECZZ	AB		C	Fixing rubber
16	LANGT1011ECZZ	AC	N	C	Fixing angle
17	LX-BZ1200CCZZ	AA		C	Screw
18	DUNTG1265ECZZ	AR	N	D	Bottom cabinet (Display side) (Include №11~13)
19	GFTAS1282CCSD	AB	N	D	Lid(for connector)
20	DUNTG1262ECZZ	AM	N	D	Top cabinet unit (Key side)
21	LPiNS1002ECZZ	AA		C	Spring pin
22	PGUMM1020ECZZ	AH	N	B	Key rubber
23	PZETL1027ECZZ	AA		C	Key spacer
24	CPWBF1053EC01	AX		E	Memory PWB unit (Include №25,26)
25	MSPRC1016ECZZ	AA	N	C	Spring(for lid)
26	MSPRC1001ECZZ	AB		C	PS spring for RAM card
27	QCNTM1042CCZZ	AA		C	Slide switch terminal
28	MSLiP1003ECSA	AB	N	C	Slide switch knob
29	PGUMM1594CCZZ	AB		C	Reset spring rubber
30	PGUMS1608CCZZ	AE		C	Rubber connector for RAM card
31	GCABA1030ECSA	AE	N	D	Bottom cabinet (Key side)
32	PZETL1564CCZZ	AB		C	Insulator sheet
33	QTANZ1503CCZZ	AB		C	Battery terminal A
37	LFiX-1190CCSE	AB	N	D	Card stopper
38	PZETL1031ECZZ	AC	N	C	Insulator sheet
39	GFTAU1012ECSA	AE	N	D	Lid for card
40	QTANZ1406CCZZ	AB		C	Battery terminal (⊕⊖)
41	LX-BZ1030ECZZ	AA	N	C	Screw (2×6.8)
42	LX-BZ1029ECZZ	AA	N	C	Screw (2×4.8)
43	LX-BZ1140ECZZ	AA		C	Screw
45	TLABZ2240CCZZ	AA		C	Battery cover label
46	TLABH1161ECZZ	AA		C	Caution label(Battery replacement)
47	PGUMS1021ECZZ	AA		C	Cushion(for LCD)
48	TLABZ1008ECZZ	AA		C	Caution label
49	TLABP1165ECZZ	AA	N	C	Battery label



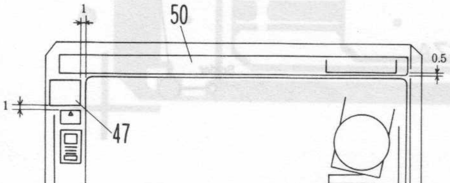
■ Battery ⊕⊖ indication label position



※ When attaching the label, be careful not to fall into the slit shown in the figure.



■ CAUTION label attachment (RAM card section)



2 Main PWB unit

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
1	QCNCW1306CC1B	AK		C	Connector (12pin)
2	RC−CZD105ECZZ	AC		C	Capacitor (1μF) [C2]
3	RC−CZ1047CCZZ	AB		C	Capacitor (0.033μF) [C8]
4	RC−EZ335BEC0J	AB		C	Capacitor (6.3WV 3.3μF) [C1]
6	RC−KZ1054CCZZ	AB		C	Capacitor (50WV 0.1μF)
8	RCRSZ1063CCZZ	AF		B	Crystal (768KHz) [X1]
9	RH−DZ1001ECN1	AD		B	Diode (1SR148) [D2]
10	RVR−Z2400QCZZ	AF		B	Variable resistor (20KΩ) [VR1]
11	VCCCTP1HH101J	AA		C	Capacitor (50WV 100PF) [C5,6]
12	VCKYTP1EF104Z	AA		C	Capacitor (25WV 0.10μF) [C3,4,7]
13	VCKYTP1HB821K	AA		C	Capacitor (50WV 820PF) [C10]
14	VHDDAN202K/−1	AB		B	Diode (DAN202K) [D1,4,5,7,8]
15	VHDDA204K//−1	AC		B	Diode (DA204K) [D6]
16	VHiLH5310X9−1	AW	N	B	IC (LH5310X9) [ROM]
17	VHiLZ92K41/−1	AN	N	B	IC (LZ92K41) [G·A]
18	VHiMN1280Q/−1	AE		B	IC (MN1280Q)
19	VHiSC43536/−1	AX		B	IC (SC43536) [DISP1,2]
20	VHiSC61860A38	AX		B	IC (SC6180A38) [CPU]
21	VRD−HT2EY104J	AA		C	Resistor (1/4W 100KΩ ±5%)
22	VRS−TP2BD100J	AA		C	Resistor (1/8W 10Ω ±5%) [R1]
23	VRS−TP2BD104J	AA		C	Resistor (1/8W 100KΩ ±5%) [R6,7,10,11]
24	VRS−TP2BD105J	AA		C	Resistor (1/8W 1.0MΩ ±5%) [R8]
25	VRS−TP2BD203J	AA		C	Resistor (1/8W 20KΩ ±5%) [R3,4]
26	VRS−TP2BD393G	AA		C	Resistor (1/8W 39KΩ ±2%) [R12]
27	VRS−TP2BD472J	AA		C	Resistor (1/8W 4.7KΩ ±5%) [R9]
28	VRS−TP2BD562G	AA		C	Resistor (1/8W 5.6KΩ ±2%) [R13]
29	VRS−TP2BD563J	AA		C	Resistor (1/8W 56KΩ ±5%) [R2,5]
30	VSDTA144EK/−1	AC		B	Transistor (DTA144EK) [DT1~3]
31	VSDTC144EK/−1	AC		B	Transistor (DTC144EK) [DT4]
32	VS2SC2412K/−1	AB		B	Transistor (2SC2412K) [Q1]
	(Unit)				
901	CPWBF1052EC03	BQ	N	E	Main PWB unit

3 Packing material & Accessories

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
1	LPLTP1008ECZZ	AD		D	Template
2	PHŌG−1001ECZZ	AA		D	Cushion paper
3	TiNSE1146ECZZ	AQ	N	D	Instruction book (for U.S.A.)
	TiNSE1135ECZZ	AU	N	D	Instruction book (for Germany)
	TiNSE1136ECZZ	AU	N	D	Instruction book (for Other countries)
5	TLABZ1153ECZZ	AA		C	Label
6	SPAKC0316ECZZ	AG	N	D	Packing case
7	SSAKH3013CCZZ	AA		D	Vinyl bag

SHARP

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