

SERVICE MANUAL & PARTS LIST (with price)

SF-5300B (LX-547)

SEP. 1994



SF-5300B

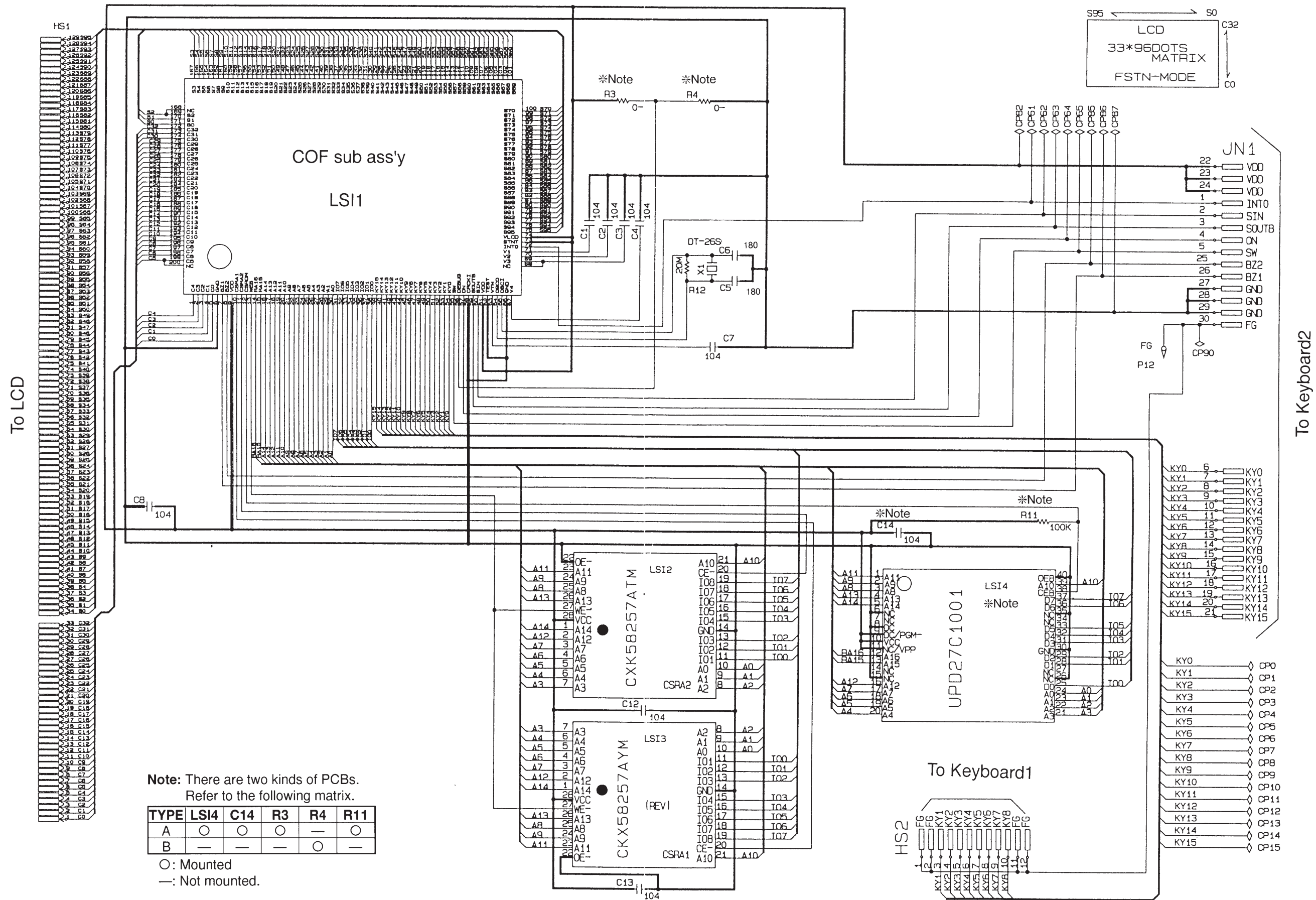
INDEX

CASIO®

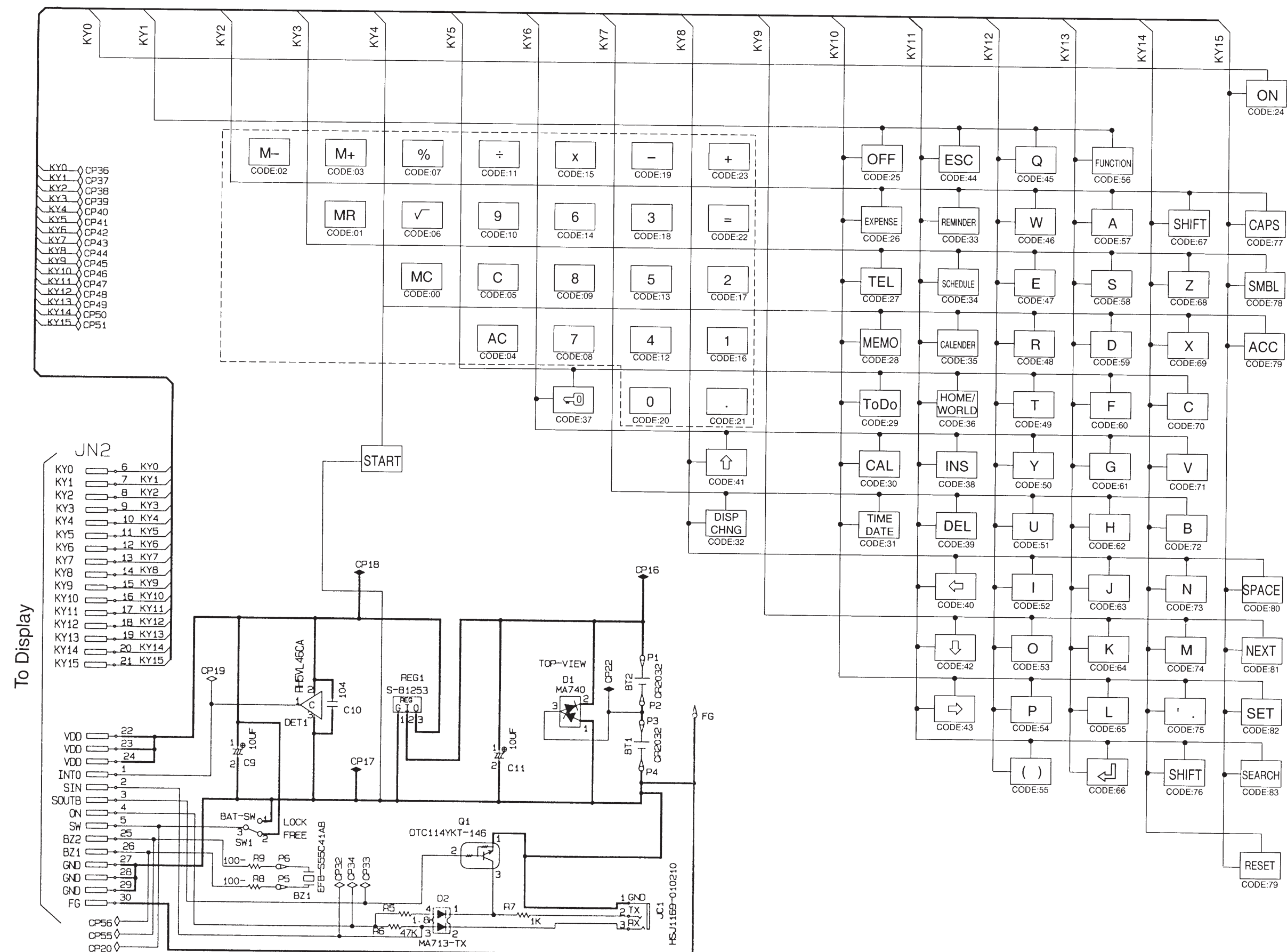
CONTENTS

1. SCHEMATIC DIAGRAM	
1-1. MAIN PCB	1
1-2. KEY MATRIX 1	2
1-3. KEY MATRIX 2	3
2. SPECIFICATIONS	5
3. REPLACING THE BATTERIES	6
4. RESETTING THE UNIT	7
5. SAVING DATA	8
6. LSI PIN FUNCTIONS	
6-1. CPU:LSI1	12
6-2. RAM:LSI2 AND LSI3 (CXK58257)	13
6-3. VOLTAGE REGULATOR:REG1 (S-81253)	14
6-4. VOLTAGE DETECTOR:DET1 (RH5VL46CA)	14
7. TROUBLESHOOTING	15
8. DIAGNOSTICS	18
9. ASSEMBLY VIEW	23
10. PARTS LIST	25

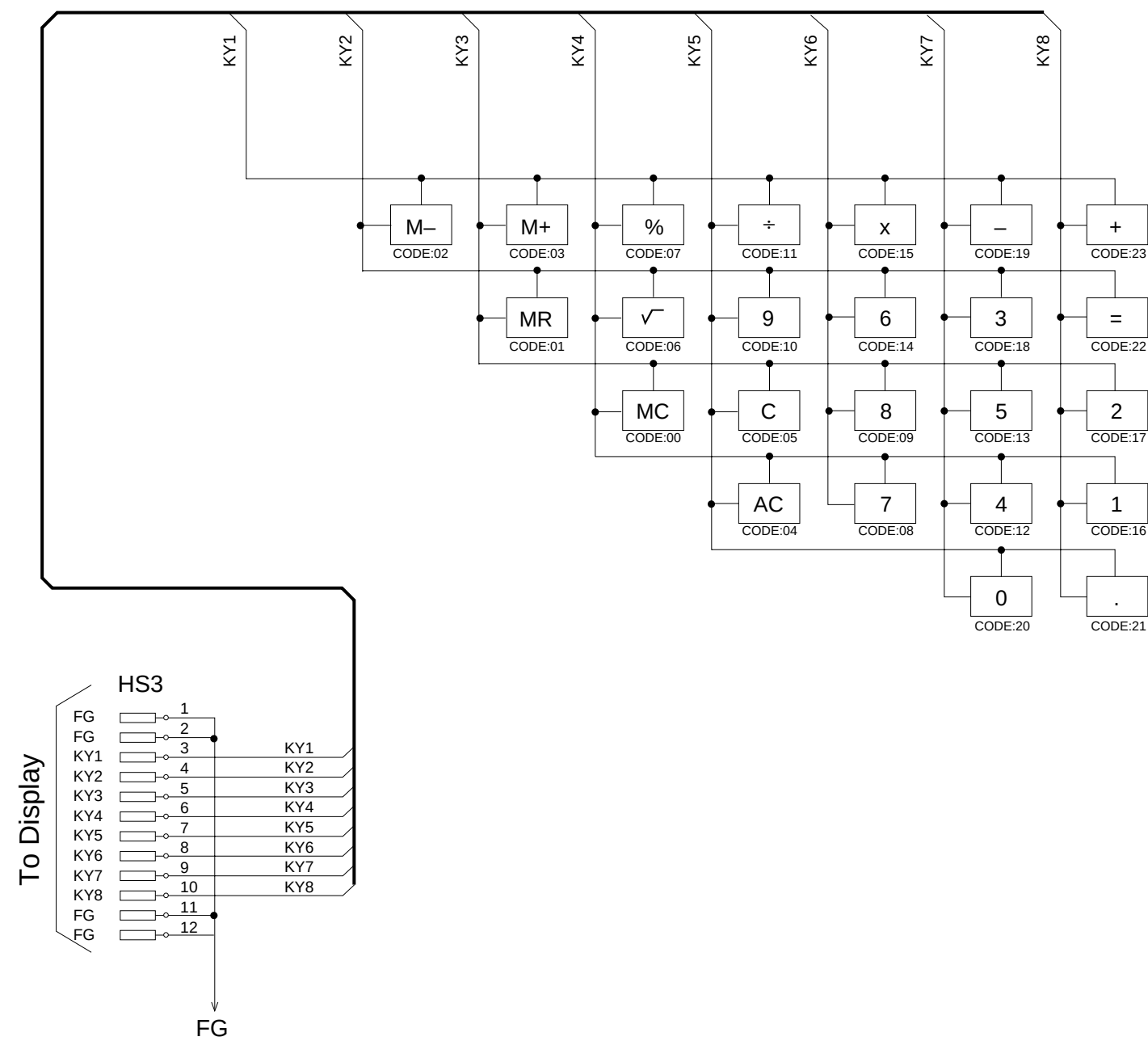
1. SCHEMATIC DIAGRAM
1-1. MAIN PCB



1-2. KEY MATRIX 1



1-3. KEY MATRIX 2



2. SPECIFICATIONS

Display element: 16-column × 4-line LCD
Memory capacity: 64 kB (60972 bytes)
Main component: LSI
Power supply: 2 lithium batteries (CR2032)
Power consumption: 0.05 W

Battery life:

Approximately 400 hours continuous operation in Telephone Directory

Approximately 350 hours repeating one minute of input and 10 minutes of display in Telephone Directory

Approximately 12 months for memory backup

Auto power off: Approximately 6 minutes after last key operation

Ambient

temperature range: 0°C ~ 40°C (32°F ~ 104°F)

Dimensions (HWD):

Unfolded: 8.4 x 139 x 148 mm ($\frac{3}{8}$ x 5 $\frac{1}{2}$ x 5 $\frac{7}{8}$ inches)

Folded: 15.8 x 139 x 74 mm ($\frac{5}{8}$ x 5 $\frac{1}{2}$ x 2 $\frac{7}{8}$ inches)

Weight: 98.2 g (3.5 oz)

Current consumption:

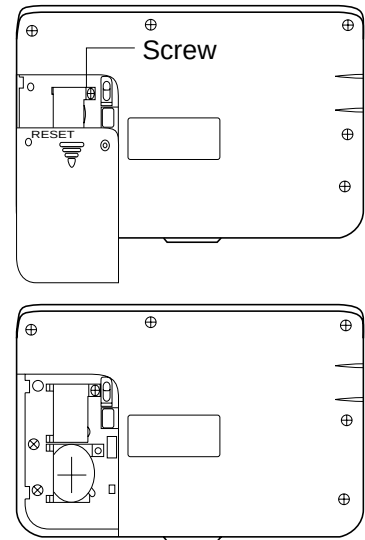
Power Switch	Maximum [μA]
OFF	11.0
ON	510

3. REPLACING THE BATTERIES

1. Loosen the screw on the back of the SF-5300B that holds the battery compartment cover in place, and remove the cover.
2. Loosen the screw that secures one of the two battery holders in place and remove the battery holder.

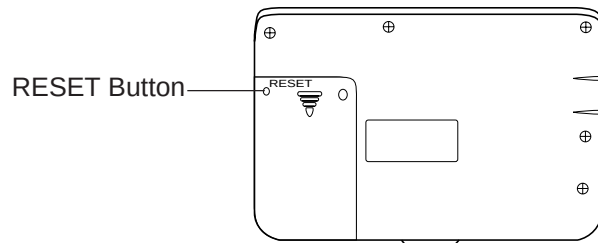
Caution: Be sure to remove only one battery at a time. Otherwise, you will lose all data stored in memory.

3. Replace the old battery with a new one. Be sure that the positive (+) side of the new battery is facing up (so you can see it).
4. Replace the battery holder and secure it by tightening its screw.
 - Be careful that you do not overtighten the screw.
5. Repeat Steps 2 through 4 for the other battery.
 - Be sure to replace both batteries. Never mix old batteries with new ones, and be sure to use CR2032 lithium batteries only.
6. After you replace both batteries, replace the battery compartment cover and secure it by tightening its screw.
 - Be careful that you do not overtighten the screw.

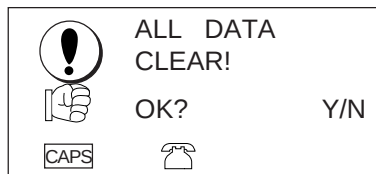


4. RESETTING THE UNIT

The following procedures erase all data stored in the memory of the SF-5300B.



1. Turn on the unit and press the RESET button with a thin, pointed object.



2. Press **Y** to reset the memory and delete all data, or **N** to abort the reset operation without deleting anything.

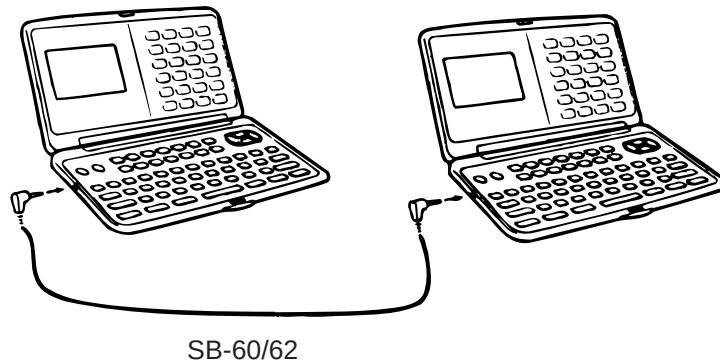
Following the reset operation described above, the Home Time display appears and the SF-5300B settings are initialized as noted below.

Home Time:	12-hour format	Sound:	Schedule alarm → ON
	JAN/1/1995		Reminder alarm → ON
	AM/12:00 00		Daily alarm → OFF
Zone:	London(LON)		Key → ON
World Time:	New York(NYC)	Character Input:	CAPS
Daily Alarm:	12:00 PM		

5. SAVING DATA

The SF-5300B can transfer the customer's data (both the open and secret areas) to another SF-5300B.

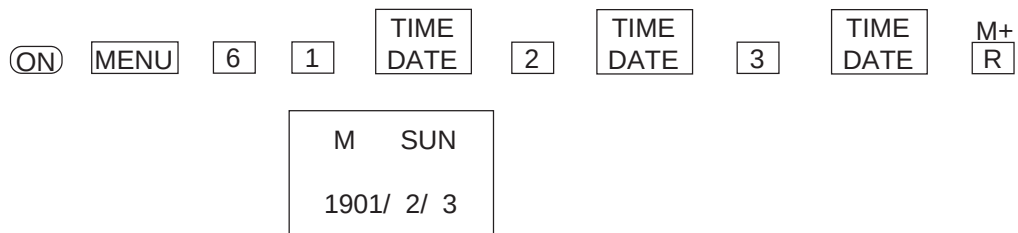
- Turn off both the transmitting and receiving units and connect them using the SB-60/62 cable.



① Setting up the receiving unit:

1. Do the reset operation.
2. Enter the calculator mode. Set the date of receiving unit to February 3rd, 1901.

Operation:



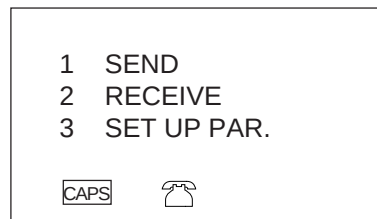
Note: The customer may have created a password to protect confidential information from unauthorized access. To be sure this password is transferred to the receiving unit, be sure to set the date as described above.

3. Press **MENU** , **1** , and **FUNC** twice.



* If the password isn't registered in the SF-5300B, the display shows **X** instead of "1."

4. Press **4** to select DATA COMM.



5. Press **2** to select RECEIVE.



② Setting up the transmitting unit:

Set the hardware parameters as follows:

Parity: None

Bit length: 7

BPS: 9600

1. Press **ON** , **MENU** , and **1** .
2. Press **FUNC** twice.

1* TO SECRET AREA
2 ALL DELETE
3 LABEL EDIT
4 DATA COMM

CAPS



* If the password isn't registered in the SF-5300B, the display shows **X** instead of "1."

3. Press **4** to select DATA COMM.

1 SEND
2 RECEIVE
3 SET UP PAR.

CAPS



4. Press **3** to select SET UP.

** SET UP PAR. ***
PARITY E O **N**
BIT LENGTH **7** 8
BPS 4800 **9600**

CAPS



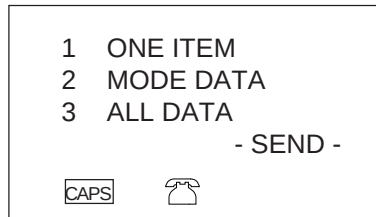
5. Use **△** , **▽** , **▷** , or **◁** to select "N," "7," and "9600" and press **SET** .

1 SEND
2 RECEIVE
3 SET UP

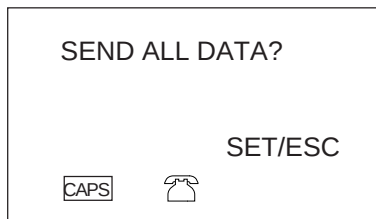
CAPS



6. Press **1** to select SEND.



7. Press **3** to select ALL DATA.



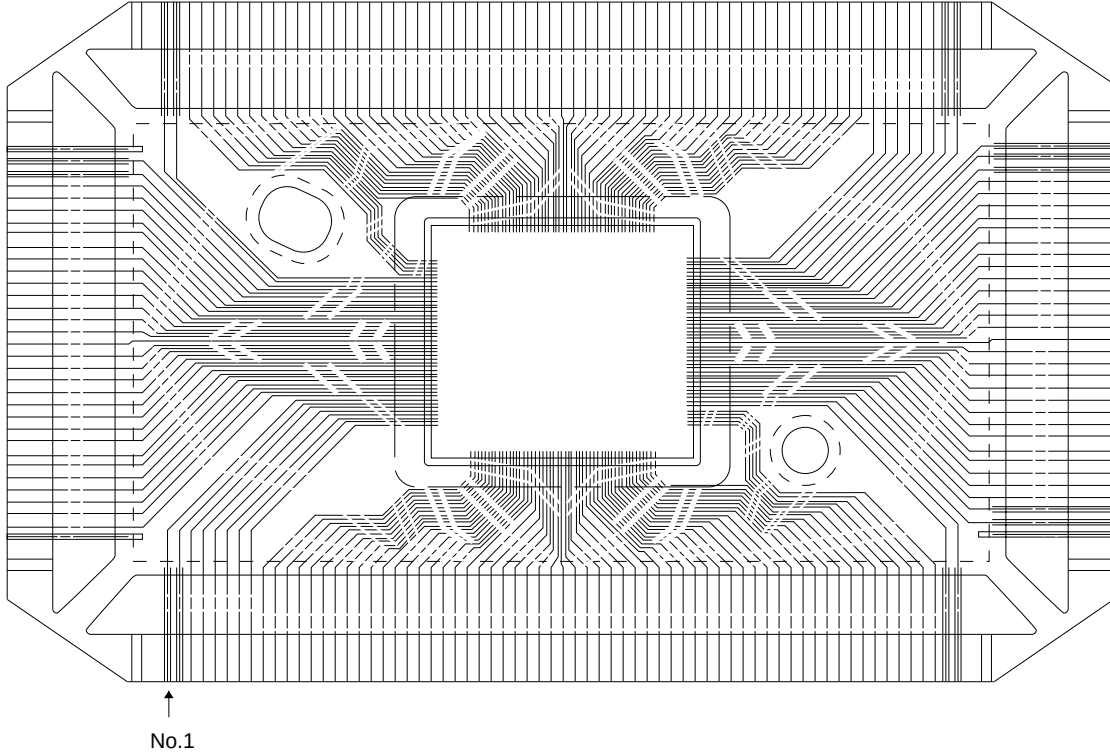
8. Press **SET** to start data transmission or **ESC** to abort the operation without sending anything.



- If an error occurs during data transmission, the message "TRANSMIT ERROR!" appears on the display. Press **ESC** to clear the error message.
9. After data transmission is complete, the display returns to the initial screen of the telephone mode.

6. LSI PIN FUNCTIONS

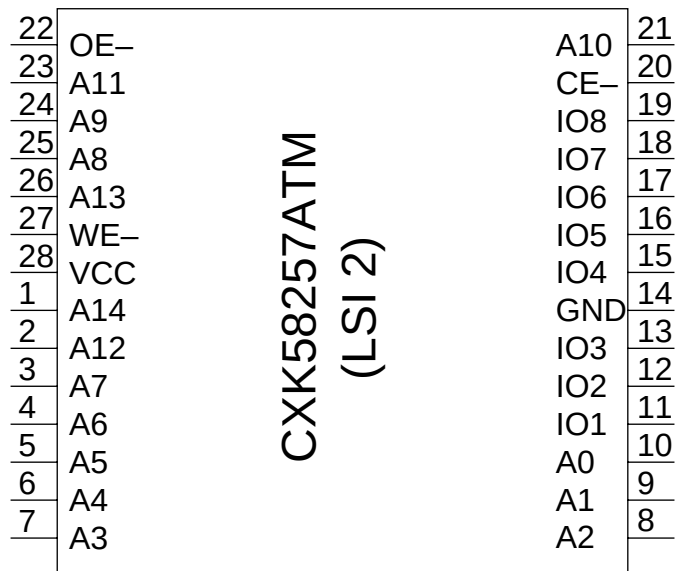
6-1. CPU: LSI1



Pin No.	Name	I/O	Description
1 ~ 5	C0 ~ 4	Out	Common signal for display
6	GND	In	GND 0 V
7,8	BZ1,2	Out	Buzzer terminal
9	VDD	In	Power supply terminal (+5.3 V)
10	CSRA1	Out	Chip enable signal for LSI2
11	CSRA2	Out	Chip enable signal for LSI3
12	CSROM	Out	Chip enable signal (Not used)
13	WEB	Out	Write enable signal for LSI2 and LSI3
14,15	RA15,16	Out	Address bus (Not used)
16 ~ 30	A0 ~ 14	Out	Address bus
31 ~ 38	IO0 ~ 7	I/O	Data bus
39 ~ 54	KY0 ~ 15	I/O	Key signal
55	SW	In	Battery switch Power on: 0 V off: 6 V
56	DEBUG	-	Not used
57	ON	Out	Data communication enable signal
58	CRCKI	In	GND 0 V
59	SOUTB	Out	Transmission data output
60	SIN	In	Receiving data input
61	VDD	In	Power supply terminal (+5.3 V)
62	TEST	-	Not used
63	VTM	-	Not used

Pin No.	Name	I/O	Description
64,65	OSC I/O	I/O	Clock terminal
67,69~71	V1 ~ 4		Voltage for LCD drive OFF: 0 V ON-V1: 0.64 Minimum ~ 1.29 Maximum V V2: 1.29 Minimum ~ 2.56 Maximum V V3: 3.99 Minimum ~ 2.71 Maximum V V4: 4.64 Minimum ~ 3.99 Maximum V
68	NC	-	Not used
72	INTO	In	Low battery detection INTO < 5.2 V => No power on
73	STNT	-	GND 0 V
74	VLCD	In	Power supply terminal (+5.3 V)
75 ~ 171	S0 ~ 95	Out	Segment signal for display
172 ~199	C5 ~ 32	Out	Common signal for display
168,200	NC	-	Not used

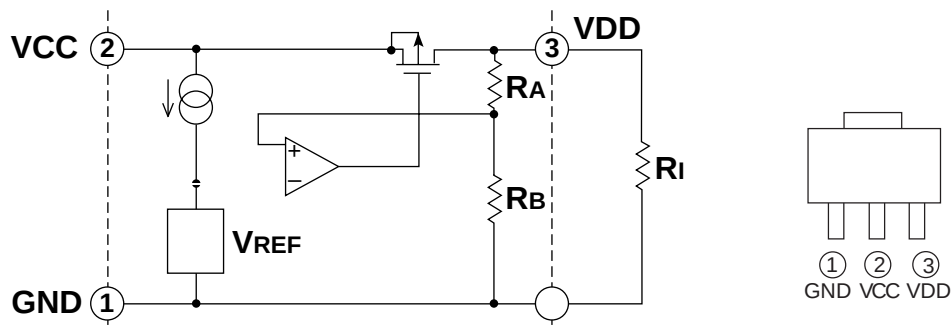
6-2. RAM: LSI2 and LSI3 (CXK58257)



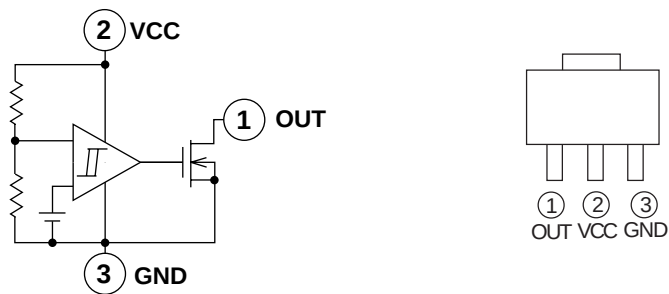
Pin No.	Name	I/O	Description
1~10,21,23~26	A0 ~ 14	In	Address bus
11~13,15~19	IO1 ~ IO8	I/O	Data bus
14	GND	In	GND 0 V
20	CE	In	Chip select signal from LSI1
22	OE	In	0 V
27	WE	In	Write enable signal from LSI1
28	VCC	In	Power supply terminal (+ 5.3 V)

6-3. VOLTAGE REGULATOR: REG1 (S-81253)

Output Voltage (VDD): 5.3 V ± 5%



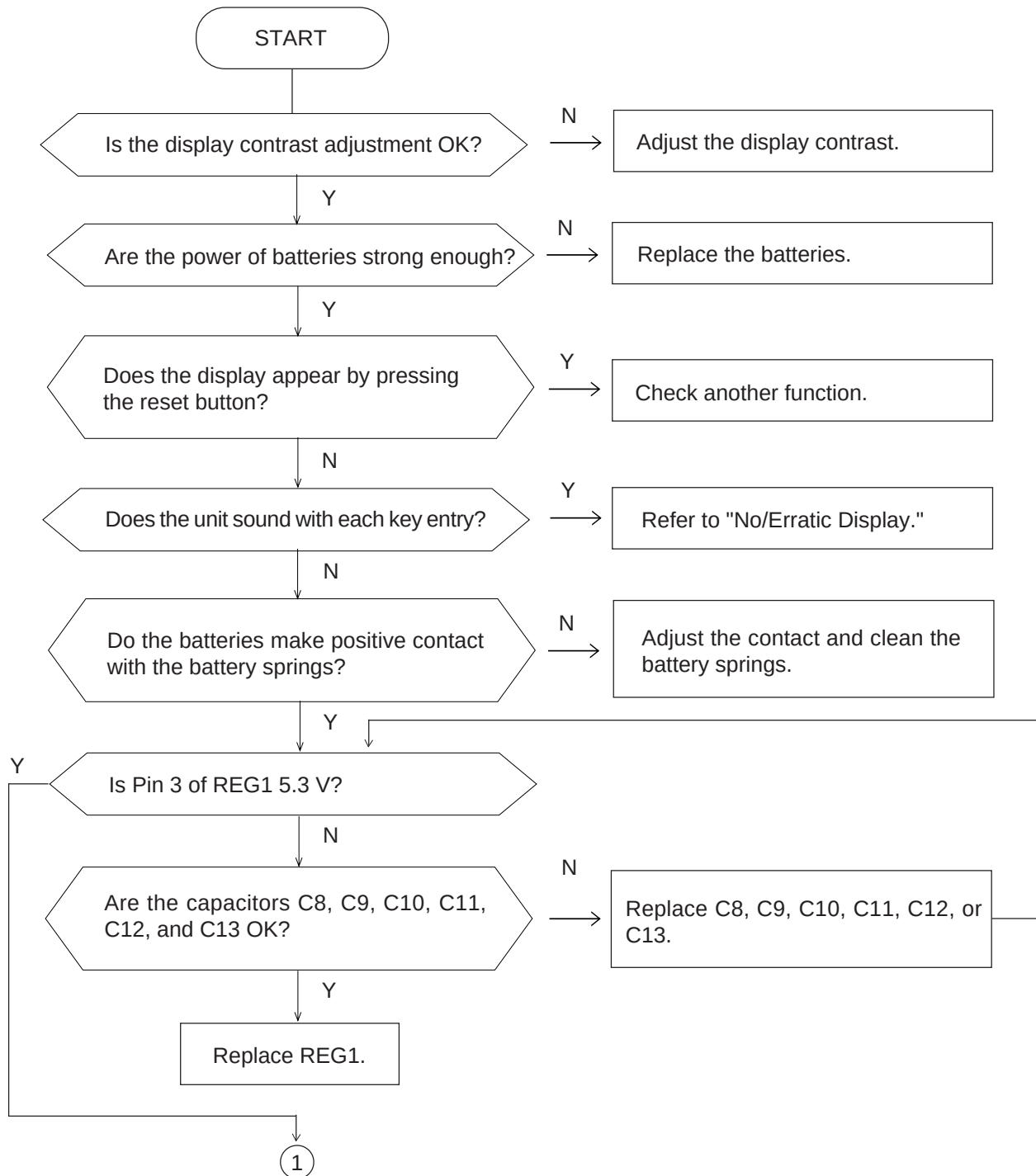
6-4. VOLTAGE DETECTOR: DET1 (RH5VL46CA)

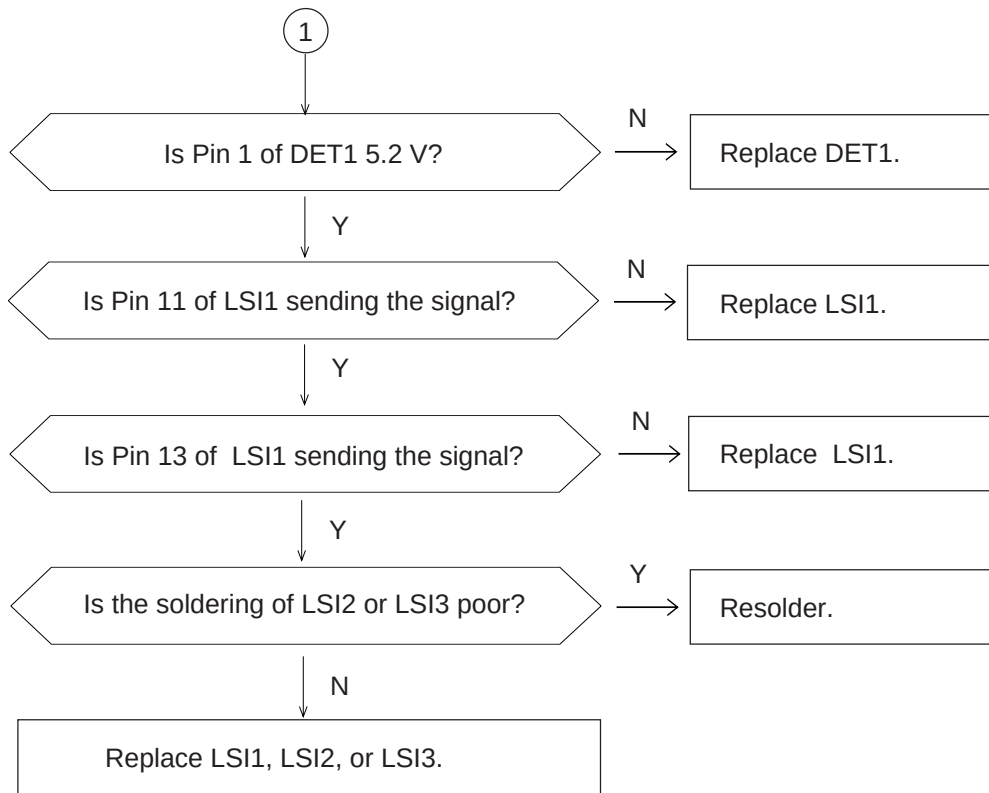


Input Voltage (VCC)	Output Voltage (OUT)
VCC > 5.2 V	5.2 V
VCC < 5.2 V	0 V

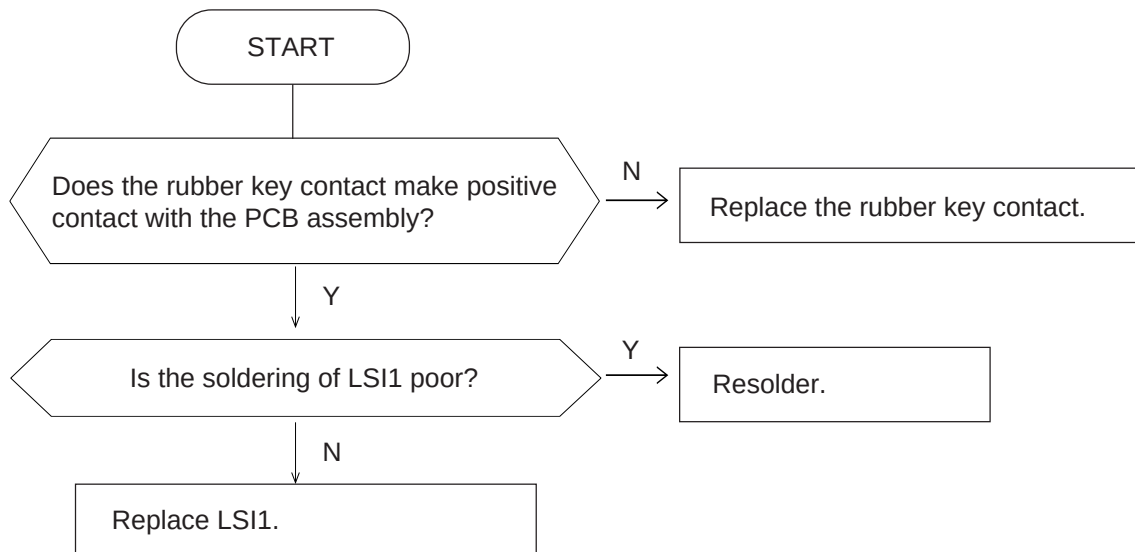
7. TROUBLESHOOTING

No power on

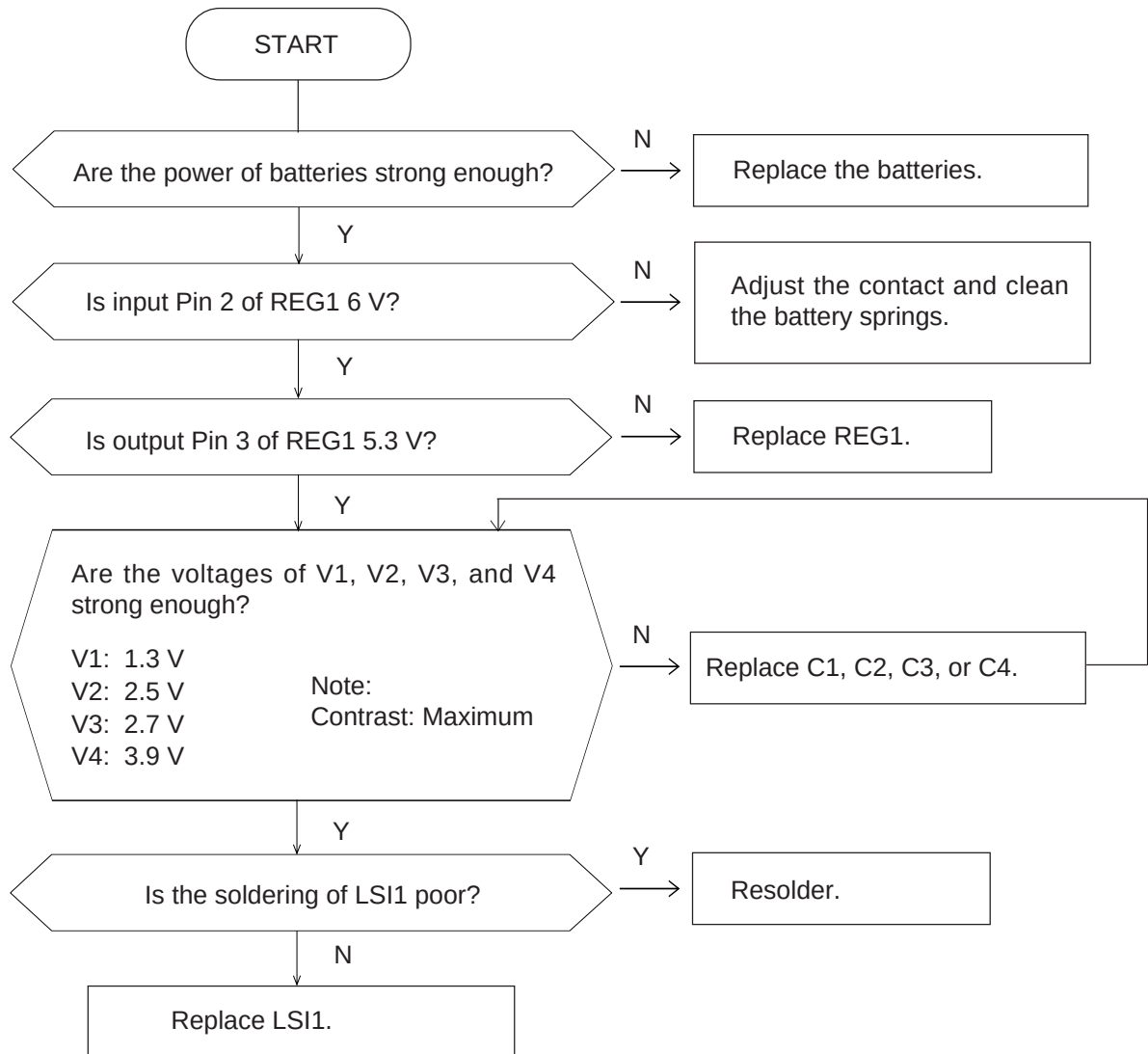




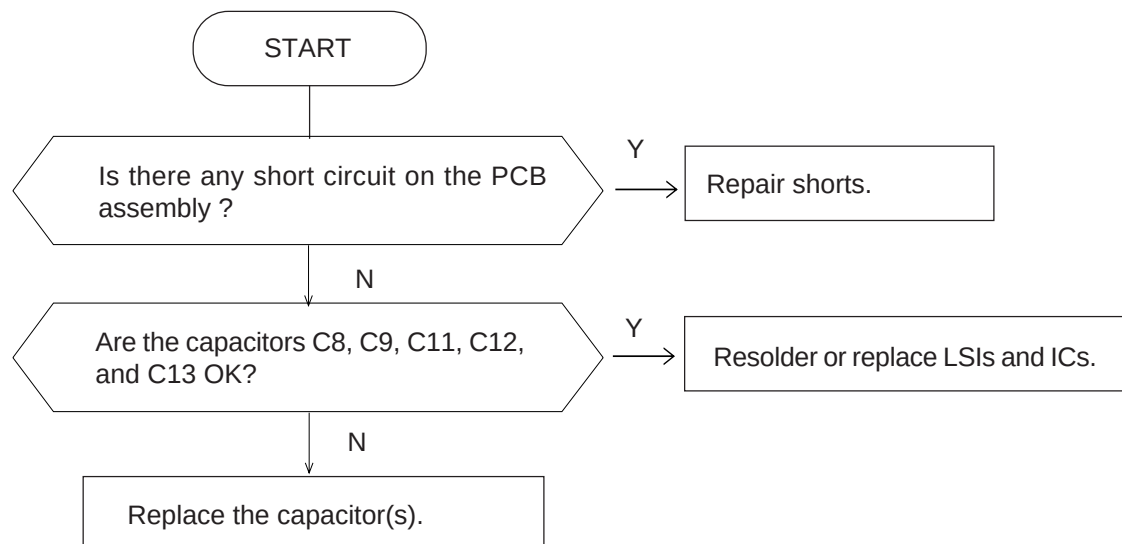
No key input



No/Erratic display

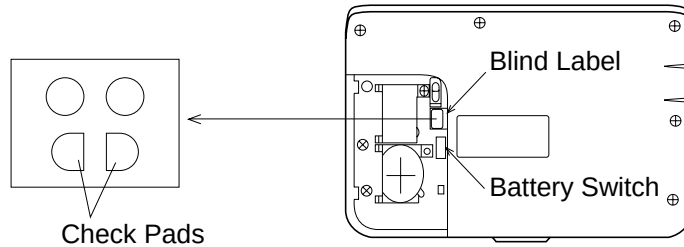


High current consumption



8. DIAGNOSTICS

- Notes:**
1. Be sure to transfer data to another SF-5300B unit before entering the diagnostic mode, because the data will be changed by entering the diagnostic mode.
 2. The shorting pads shown in the following illustration are covered by a blind label.



3. To exit the diagnostic mode, press the reset button.

To enter the diagnostic mode:

1. Slide the battery switch to the up position.
2. Press **ON** while shorting the shorting pads.

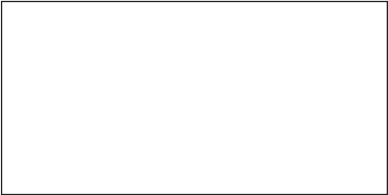
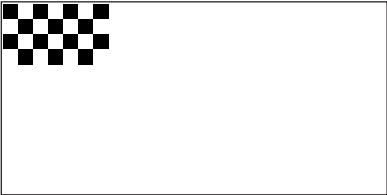
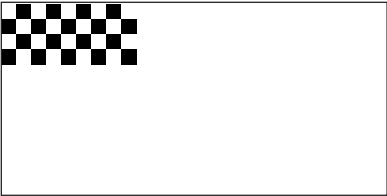
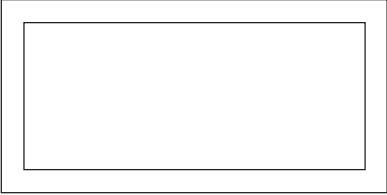
SELF TEST PROG.
PRESS SEARCH
QUIT BY OFF
CASIO APR 1994

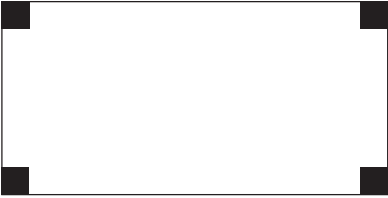
3. Press **SEARCH**.

TEST	2	MEMORY
MENU	3	KEY
	4	BUZZER
1 DISP	5	I/F

5 I/F: Not used

Display Check

Operation	Display	Note
Press 1 on the TEST MENU.	DISP 4 RVS. 1 WHITE 5 FRAME 2 BLACK 6 DOT4 3 CHECK. 7 TIME	Display check To return to the TEST MENU, press ESC .
1		No display
2		All dots displayed
3	 	Checker displayed
4	 	Reverse checker display
5		Frame display

Operation	Display	Note
6		Shows dots at corners.
7	TIME DISPLAY 00:00:XX	Check to see if timer is working.
ESC	TEST 2 MEMORY MENU 3 KEY 4 BUZZER 1 DISP 5 EXT	

Memory Check

The functions of the numbered items on the display include:

- Writes the test pattern in the ROM to the RAM area. (Test pattern: Incremental order 00, 01, and so on)
- Compares the test pattern with the write data (WRITE1) of the RAM and displays the results.
- Writes the test pattern in the ROM to the RAM area. (Test pattern: Decremental order FF, FE, and so on)
- Compares the test pattern with the write data (WRITE2) of the RAM and displays the results.

Operation	Display	Note
2	MEMORY 3 WR2 4 READ2 1 WR1 5 DUMP 2 READ1 6 CHKSUM	RAM check To return to the TEST MENU, press ESC . 5: Not used 6: Not used
1 (or 3)	WRITE1 (or WRITE2)	

Operation	Display	Note
(After a few seconds)	MEMORY 3 WR2 4 READ2 1 WR1 5 DUMP 2 READ1 6 CHKSUM	
[2] (or [4])	EXECUTING!!	
	COMPLETE!! 64KB	
	DATA ERROR!! ADDRESS CORR RAM XXXX XX XX	RAM error If the displayed address is within 0000-7FFF, check LSI3. If the displayed address is within 8000-FFFF, check LSI2.
[ESC]	MEMORY 3 WR2 4 READ2 1 WR1 5 DUMP 2 READ1 6 CHKSUM	

Key Check

Each key has its own key code. The key codes are assigned incrementally from left to right on the key board. (Refer to the keyboard in the schematic diagrams.)

In the auto mode, the key input sequence is limited so that the keys must be pressed in the order of the key code as mentioned above. If a key is pressed in the wrong order, the SF-5300B beeps.

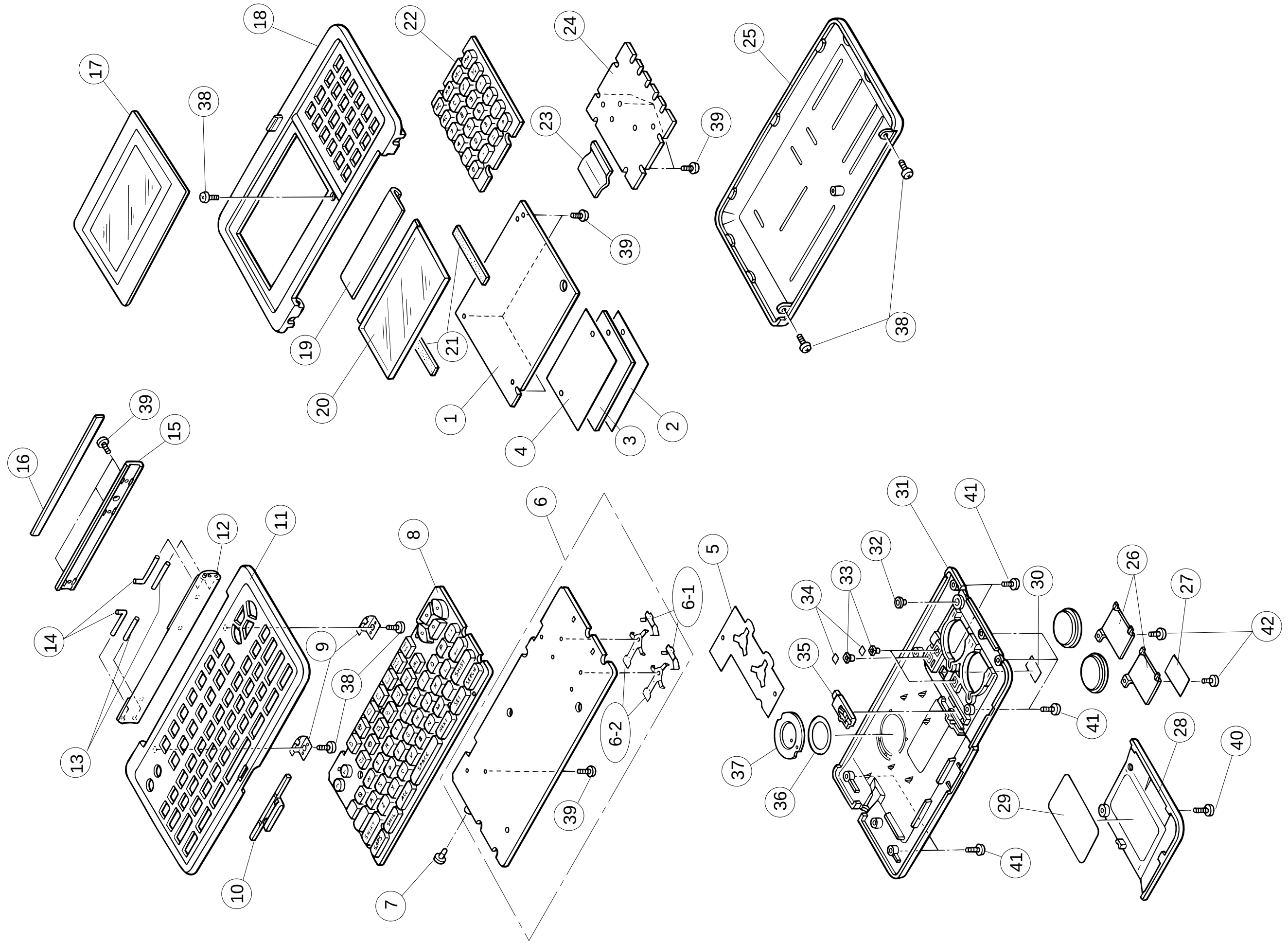
Operation	Display	Note
Press [3] on the TEST MENU.	KEY 1 RANDOM 2 AUTO	Key check To return to the TEST MENU, press [ESC].
[2]	No display	

Operation	Display	Note
MC MR M- M+ AC , ... % 7 , ... ÷ 4 , ... x 1 , ... - 0 , ... + ON OFF EXPENSE , ... DISP CHNG REMINDER , ... DEL ← ↑ ↓ → ESC , ... () FUNCTION , ... ← SHIFT , ... SHIFT CAPS , ... SET	00 01 02 03 04 56 57	Check that the key number appears on the display. To return to the TEST MENU, enter SEARCH.
SEARCH	TEST 2 MEMORY MENU 3 KEY 4 BUZZER 1 DISP 5 EXT	

Buzzer Check

Operation	Display	Note
Press 4 on the TEST MENU.	BUZZER 1 BEEP 2 ALARM1 3 ALARM2	Buzzer check To return to the TEST MENU, press ESC.
1 (or 2 , 3)	EXECUTING!!	Check the sound. To return to the BUZZER menu, press any key.
	BUZZER 1 BEEP 2 ALARM1 3 ALARM2	
ESC	TEST 2 MEMORY MENU 3 KEY 4 BUZZER 1 DISP 5 EXT	

9. ASSEMBLY VIEW



10. PARTS LIST

N	Item	Code No.	Parts Name	Specification	Q	M	FOB Japan N.R.Yen Unit Price	R
DISPLAY PCB ASS'Y								
N	1	6412 2750	Display PCB ass'y (Consists of the following:)	DB22XX3F01M	1	1	2,730	B
	C1~4,7,8,12,13,14	2845 1540	Chip capacitor	MCH212F104ZK	8	20	4	C
	C5,6	2845 1652	Chip capacitor	MCH215A180JK	1	20	3	C
N	LSI1	6411 6351	COF sub ass'y	C312133*3	1	1	970	B
N	LSI2	2011 8267	LSI	CXK58257ATM-10/12L	1	1	580	B
N	LSI3	2011 8274	LSI	CXK58257AYM-10/12L	1	1	580	B
N	LSI4	2011 9149	LSI	μPD23C1001EAGZ-M04	1	1	370	B
	X1	7110 0642	Crystal oscillator	DT-26S	1	5	57	B
N	R3	2797 3752	Chip resistor	ERJ-6GEYJ000	1	20	2	C
N	R4	2797 3752	Chip resistor	ERJ-6GEYJ000	1	20	2	C
	R11	2791 0777	Chip resistor	ERJ-6GEYJ104	1	20	5	C
N	R12	2797 3857	Chip resistor	ERJ-6GEAK206	1	20	2	C
KEYBOARD PCB ASS'Y								
N	6	6412 2730	Keyboard PCB ass'y (Consists of the following:)	DB22XX3100U	1	1	790	B
	C9,11	2803 6806	Electrolytic capacitor	10MS510M-MW	2	20	13	C
	C10	2845 1540	Chip capacitor	MCH212F104ZK	1	20	4	C
	D1	2390 2128	Chip diode	MA740-(TX)	1	10	50	C
	D2	2390 0364	Schottky diode	MA713-(TX)	1	10	33	C
	DET1	2105 3864	CMOS IC	RH5VL46CA-T1	1	10	45	C
	REG1	2105 3290	CMOS IC	S-81253SGUP-DIJ-T1	1	5	60	C
	J1	3501 6538	Jack	HSJ1169-012010	1	5	56	C
N	R5	2797 3759	Chip resistor	ERJ-6GEYJ182	1	20	2	C
	R6	2797 0637	Chip resistor	ERJ-6GEYJ473	1	20	2	C
	R7	2797 1309	Chip resistor	ERJ-6GEYJ102	1	20	3	C
	R8,9	2797 1078	Chip resistor	ERJ-6GEYJ101	2	20	3	C
N	R20	2797 3752	Chip resistor	ERJ-6GEYJ000	1	20	2	C
	Q1	2259 0959	Chip digital transistor	DTC114YKT-146	1	20	12	C
	6-1	6409 6300	Spring Battry (+)	EF01DB20102	2	20	16	X
	6-2	6409 6310	Spring Battry (-)	EF02DB10100	2	20	16	X
COMPONENT								
N	2	6412 3110	Protection tape	HGJ00008406	1	20	19	B
	3	6412 3140	Heat seal	FX21P250016	1	5	53	A
N	4	6412 3120	Protection tape	HGJ00008201	1	20	26	B
N	5	6412 2920	Insulation plate	EL4J0002102	1	10	29	X
	7	6511 7160	Cap	LC120000102	1	20	17	B
	8	6412 2890	Key contact rubber	LADB2210000	1	1	260	C
	9	6512 0730	Hinge stopper	EF15DB06102	2	20	27	X
	10	6412 2880	Push button	FB3DB221002	1	20	13	C
	11	6412 3020	Upper case (KB)	FAADB221009	1	1	130	X
N	12	6412 3050	Hinge (A)	FC0DB281006	1	20	26	X
	13	6512 1210	Pin	FC002870000	2	20	9	X
	14	6512 1220	Pin (L)	FC002870018	2	20	16	X
N	15	6412 2910	Hinge (B)	FC0DB222002	1	20	22	X
N	16	6412 2990	Hinge blind tape	HGJ00008309	1	20	22	B
N	17	6412 2940	Display plate	EL5J0005103	1	1	120	B
N	17	6412 2950	Display plate (for B.O.S.S.)	EL5J0005201	1	1	120	B
	18	6412 3040	Upper case (DIS)	FAADB222005	1	1	110	X
	19	6412 3130	Heat seal	FX200P40064	1	1	100	A
	20	3335 5264	LCD	CD792-TS	1	1	790	A

Notes: N – New parts

M – Minimum order/supply quantity

R – Rank

Q – Quantity used per unit

R – A : Essential

B : Stock recommended

C : Others

X : No stock recommended

N	Item	Code No.	Parts Name	Specification	Q	M	FOB Japan N.R.Yen Unit Price	R
N	21	6411 8460	Cushion	FH100027205	2	5	65	C
	22	6412 2900	Key contact rubber	LADB2220005	1	1	103	C
	23	6412 3160	Heat seal	FX201P50209	1	5	90	A
	24	6412 3150	PCB	DADB22XX309	1	5	63	X
	25	6412 2840	Lower case (DIS)	FABDB222001	1	1	110	X
	25	6412 2850	Lower case (DIS) (for B.O.S.S.)	FABDB222010	1	1	110	X
	26	6409 6120	Battery holder	ECDB1011108	2	20	26	X
	27	6409 6210	Battery change label	HGC00001102	1	20	7	X
	28	6412 3060	Battery cover	FADDB221001	1	20	29	X
	29	6409 6230	Battery cover label	HGC00001200	1	20	16	X
	30	6412 2980	Blind tape	HGJ00008104	1	20	7	X
	31	6412 3070	Lower case (KB)	FABDB221005	1	5	82	X
	31	6412 3080	Lower case (KB) (for B.O.S.S.)	FABDB221013	1	5	82	X
	32	6511 8400	Key rubber for reset	LADB0220105	1	20	10	B
	33	6512 1080	Nut	MD100000602	3	20	13	X
	34	6510 4440	Blind tape	HGFC0001206	3	20	6	X
	35	6408 5920	Switch ass'y	DB2AXX4A00M*1	1	20	30	C
	36	6510 4500	Buzzer tape	HGFC0000501	1	20	17	X
	37	3122 2380	Buzzer	EFB-S55C41A8	1	10	36	X
	38	6406 1610	Screw	MAB20091300	5	20	5	B
	39	6512 1000	Screw	MABA0004207	10	20	3	B
	40	6510 4350	Decoration screw	MAA80006302	1	20	2	B
N	41	6512 0980	Screw	MAB20086306	8	20	2	B
	42	6510 4310	Decoration screw	MAA80006311	2	20	3	B

Notes: N – New parts
M – Minimum order/supply quantity
R – Rank
Q – Quantity used per unit

R – A : Essential
B : Stock recommended
C : Others
X : No stock recommended

CASIO COMPUTER CO.,LTD.
Service Division

8-11-10, Nishi-Shinjuku
Shinjuku-ku, Tokyo 160, Japan
Telephone: 03-3347-4926