

# SERVICE MANUAL & PARTS LIST (with price)

## SF-5300E (LX-551AQ)

JAN. 1995



SF-5300E

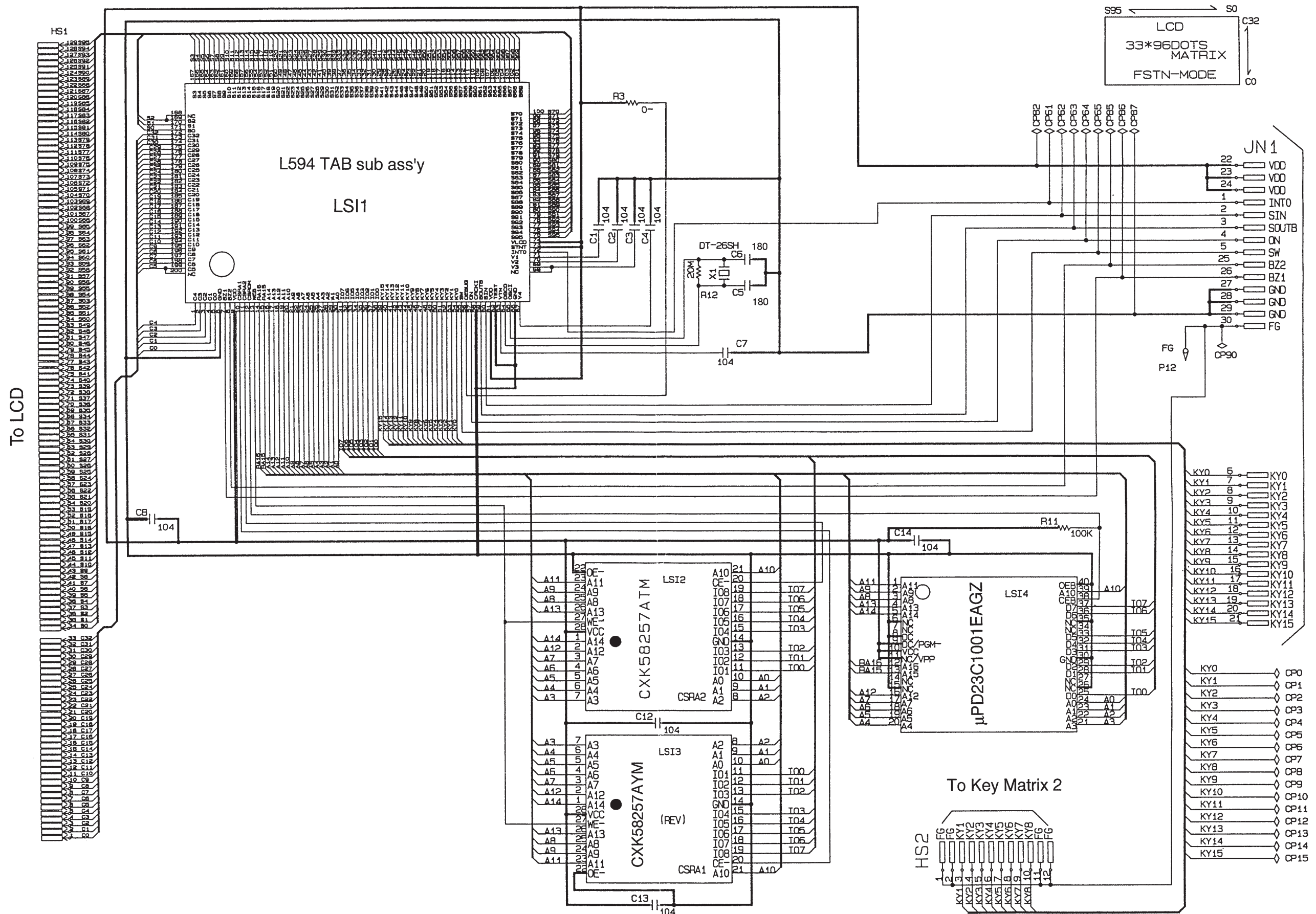
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# CASIO®

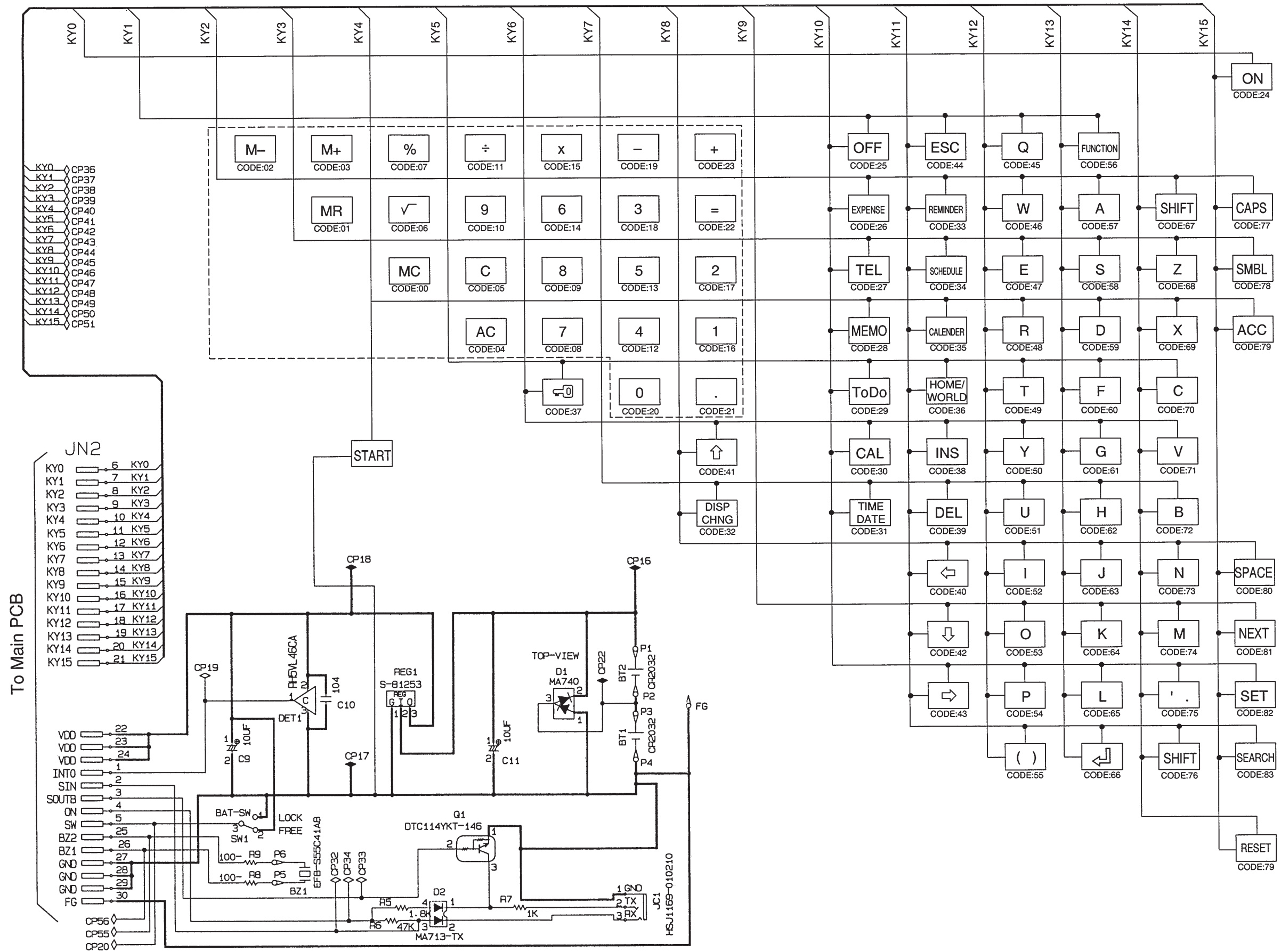
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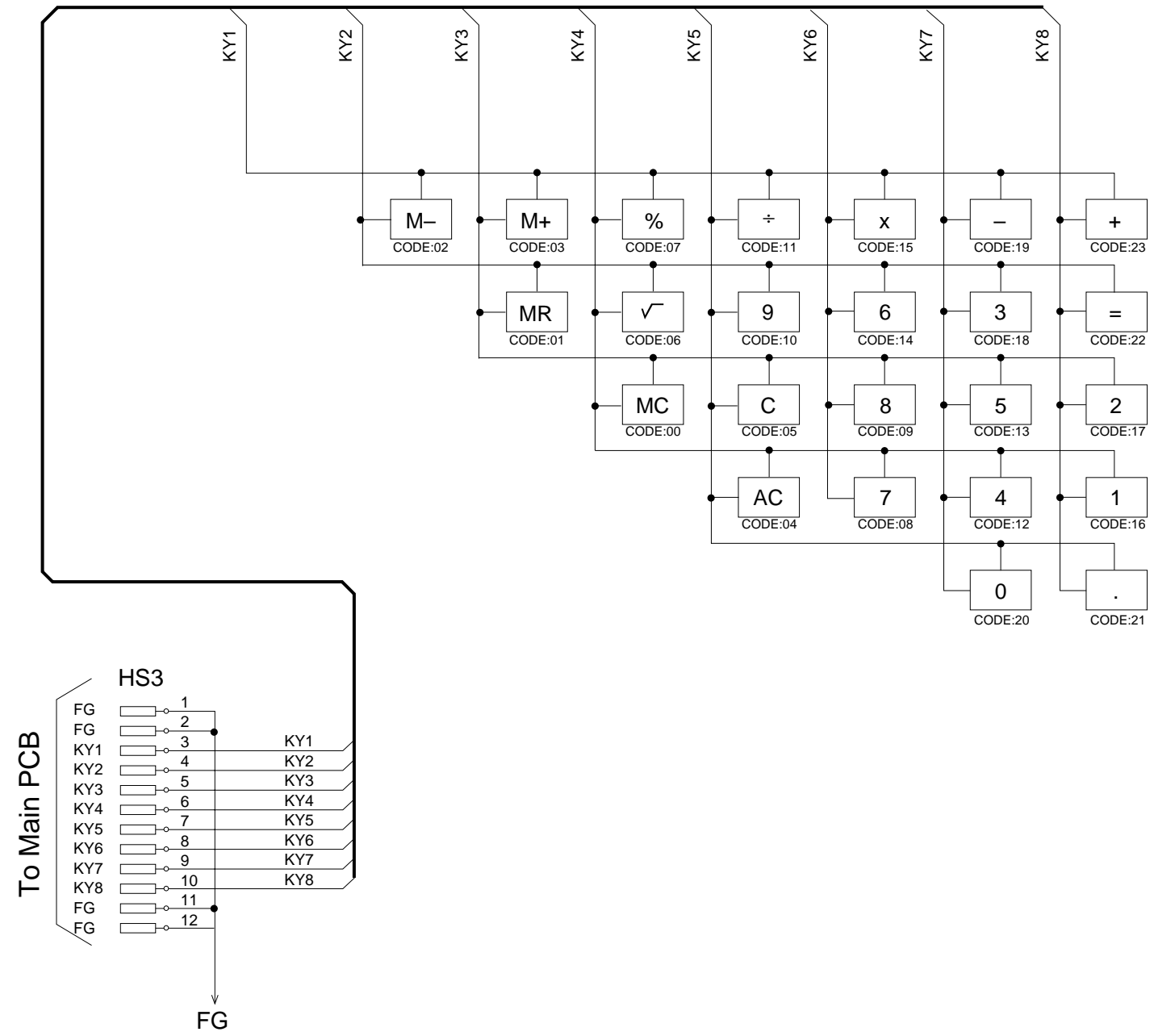
1. SCHEMATIC DIAGRAM  
1-1. MAIN PCB



1-2. KEY MATRIX 1



1-3. KEY MATRIX 2



## 2. SPECIFICATIONS

### 2-1. General

**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

*\* The batteries that have been installed in this unit when user purchased it are for the factory test, so it will be impossible to fully satisfy the above specifications when these batteries are used.*

**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 (<sup>3</sup>/<sub>8</sub> x 5 <sup>1</sup>/<sub>2</sub> x 5 <sup>7</sup>/<sub>8</sub> inches)

Folded: 15.8 x 139 x 74 mm (<sup>5</sup>/<sub>8</sub> x 5 <sup>1</sup>/<sub>2</sub> x 2 <sup>7</sup>/<sub>8</sub> inches)

**Weight:** 115 g (4 oz)

**Current consumption:**

Power Switch	Maximum [μA]
OFF	11.0
ON	510

### 2-2. Function

**Main Modes:**

Telephone Directory, Memo, Schedule Keeper, To Do, Expense, Reminder, Calendar, Home Time, World Time and Calculator.

**Data storage:**

Storage and recall of telephone, memo, schedule, to do, expense, reminder data; calendar display; secret area; editing; memory status display

**Clock:**

World time; reminder alarm; schedule alarm; daily alarm; accuracy under normal temperatures; ±3 seconds average

**Calculation:**

10-digit arithmetic calculations; arithmetic constants (+, −, ×, ÷); independent memory; percentages; square roots; 20-digit approximations; date calculations; other mixed calculations


**Language Capability:**

English, German, French, Italian, Spanish.

**Keys:**

<b>Key Cap</b>	<b>Name</b>	<b>Function</b>
ACC	Accent key	Use this key to input accented characters.
CAL	Calculator Mode key	Press this key to enter the Calculator Mode.
CALENDAR	Calendar key	Press this key to enter the Calendar Mode.
CAPA	Capacity key	Hold down this key to display the current status of the memory.
CAPS	Caps key	Press this key to shift-lock the keyboard between upper-case and lower-case characters.
CONT	Contrast key	Press this key when you want to adjust the brightness of the display.
▷	Cursor Right key	Press this key to move the cursor to the right.
◁	Cursor Left key	Press this key to move the cursor to the left.
△	Cursor Up key	Press this key to move the cursor up, or to scroll the display.
▽	Cursor Down key	Press this key to move the cursor down, or to scroll the display.
DEL	Delete key	Press this key to delete the character at the current cursor position. Holding down this key deletes characters at high speed.
DISP CHNG	Display Change key	Press this key to switch between the index display format and the data display format.
ESC	Escape key	Press this key to interrupt any operation.
EXPENSE	Expense Mode key	Press this key to enter the Expense Mode.
FUNCTION	Function key	Press this key to display function menus.
HOME/WORLD	Home/World Time key	Press this key to display the current Home Time and World Time.
INS	Insert key	Press this key to open a space at the current cursor position. Holding down this key inserts spaces at high speed.
A~Z	Letter keys	Press these keys to enter the corresponding letter. Use the CAPS and SHIFT key to switch between upper-case and lower-case letters.
MEMO	Memo Mode key	Press this key to enter the Memo Mode.
↵	Newline key	Press this key to create a new line within a data entry.
NEXT	Next key	Press this key to complete input of a data entry and move to the next data entry.
1~0	Numeric keys	Press these keys to enter the corresponding number.



Key Cap	Name	Function
OFF	Off key	Press this key to switch power off.
ON CLEAR	Power On/Clear key	<ul style="list-style-type: none"> <li>• Press this key to switch power on.</li> <li>• Press this key to clear the display.</li> </ul>
REMINDER	Reminder Mode key	Press this key to enter the Reminder Mode.
SCHEDULE	Schedule Mode key	Press this key to enter the Schedule Keeper.
SEARCH	Search key	Press this key to start a search for data stored in memory.
	Secret key	Use this key to register a password, to access the secret memory area, and to exit the secret memory area.
SET	Set key	Press this key to store input data into memory.
SHIFT	Shift key	Press this key to temporarily shift the keyboard for one character.
SPACE	Space key	Press this key to input a space.
SMBL	Symbol key	Press this key to display a menu of symbols on the display.
TEL	Telephone Directory key	Press this key to enter the Telephone Directory.
TIME/DATE	Time/Date key	Press this key to enter values that represent hours, minutes, years, months, or dates.
To Do	To Do Mode key	Press this key to enter the To Do Mode.



**Auto Sort Sequence:**

Telephone Directory data items are automatically sorted in alphabetical order according to the first letter in the NAME entry. The following table shows the sequence used for data sorts.

1	§	31	=	61	[	91	{	121	â	151	ij
2	(space)	32	>	62	\	92		122	ê	152	æ
3	!	33	?	63	]	93	}	123	î	153	ç
4	"	34	@	64	^	94	~	124	ô	154	â
5	#	35	A	65	a	95	Á	125	û	155	ø
6	\$	36	B	66	b	96	É	126	¿	156	£
7	%	37	C	67	c	97	Í	127	Ä	157	¥
8	&	38	D	68	d	98	Ó	128	Ë	158	Ω
9	'	39	E	69	e	99	Ú	129	Ï	159	a
10	(	40	F	70	f	100	À	130	Ö	160	o
11	)	41	G	71	g	101	È	131	Ü	161	×
12	*	42	H	72	h	102	Ì	132	Ã	162	÷
13	+	43	I	73	i	103	Ò	133	Õ	163	±
14	,	44	J	74	j	104	Ù	134	Ñ	164	°
15	—	45	K	75	k	105	Â	135	IJ	165	²
16	.	46	L	76	l	106	Ê	136	Æ	166	³
17	/	47	M	77	m	107	Î	137	Ç	167	μ
18	0	48	N	78	n	108	Ô	138	Å	168	$\frac{1}{2}$
19	1	49	O	79	o	109	Û	139	Φ	169	$\frac{1}{4}$
20	2	50	P	80	p	110	ı	140	Β	170	$\frac{3}{4}$
21	3	51	Q	81	q	111	á	141	¶	171	f
22	4	52	R	82	r	112	é	142	¢	172	
23	5	53	S	83	s	113	í	143	ä	173	Fr
24	6	54	T	84	t	114	ó	144	ë	174	←
25	7	55	U	85	u	115	ú	145	ï	175	→
26	8	56	V	86	v	116	à	146	ö	176	√
27	9	57	W	87	w	117	è	147	ü		
28	:	58	X	88	x	118	ì	148	ã		
29	;	59	Y	89	y	119	ò	149	õ		
30	<	60	Z	90	z	120	ù	150	ñ		

## 2-3. Storage Capacity

The 64K bytes memory capacity includes a 60972 bytes user area. The following shows examples of what this means for the storage of data in each mode.

### Telephone Directory

Approximately 2903, under the following conditions:

- 8-character name
- 10- character telephone number

Approximately 1451, under the following conditions:

- 8-character name
- 10- character telephone number
- 20-character address

### Memo

Approximately 2771, 20-character memos.

### Schedule Keeper

Approximately 1905, under the following conditions:

- 1 item per day, 20 characters per item
- 30 days per month
- Starting time specified, alarm time set

Approximately 2177, under the following conditions:

- 1 item per day, 20 characters per item
- 30 days per month
- Starting time specified, no alarm time

### To Do

Approximately 2258, 20-character items.

### Expense

Approximately 2102, under the following conditions:

- 4 items per day, 30 days per month
- up to \$999.99 per amount item
- 8-character payment type
- 8-character expense type

### Reminder

Approximately 3586, under the following conditions:

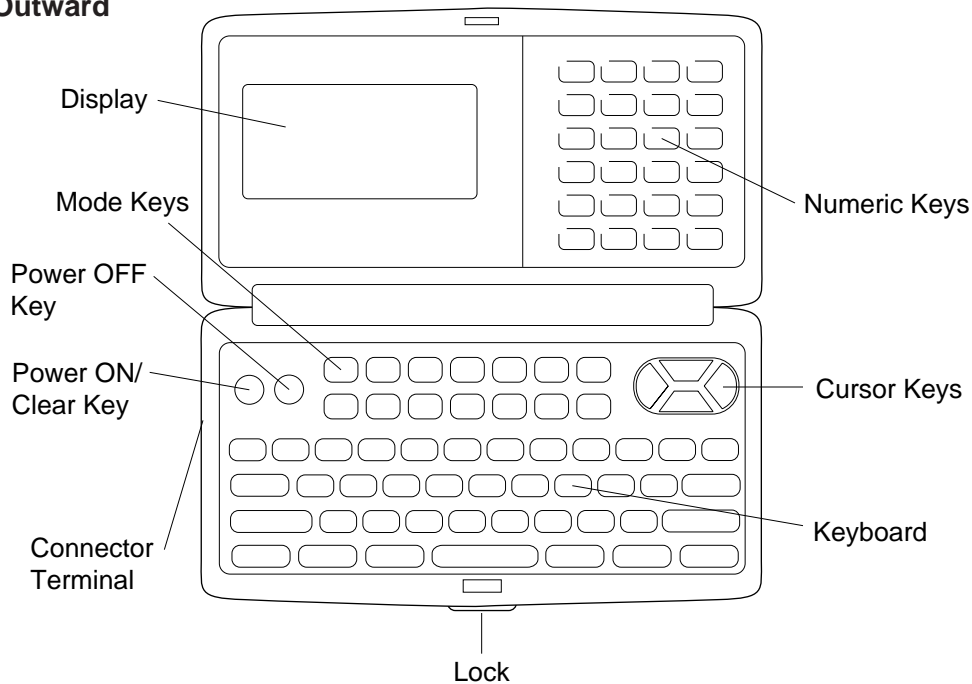
- 10 characters per item
- Alarm time set

Approximately 4064, under the following conditions:

- 10 characters per item
- No alarm time

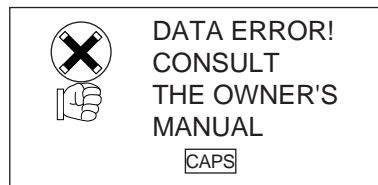
### 3. GENERAL GUIDE

#### 3-1. Outward



#### 3-2. About data errors

Whenever you switch on the power of the SF Unit, it performs a self-check before beginning operation. If the SF Unit detects a problem with the data stored in memory, it displays the following message.



Note that once data is lost it cannot be recovered. Such data errors are generally caused by one of the following problems.

- Interruption of battery power.
- Severe electrostatic charge, impact, change in temperature, or change in humidity.
- Hardware problem.

Once the Data Error display appears, you will not be able to input or edit data, though you will be able to recall data after pressing CLEAR to clear the error message. In order to return memory to normal (allowing further input and editing of data), you must perform the RESET operation to clear the memory of all data. Before doing so, you may want to recall important data and write it down (if you don't already have a copy). You can then re-input the data after clearing the memory.

#### 3-3. About the memory overflow message

The memory overflow message appears on the display when the data you are trying to store exceeds memory capacity.

When this happens, perform the two following operations.

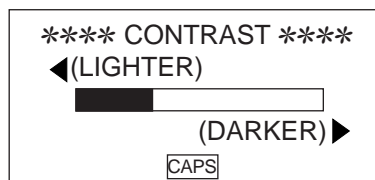
- Press ◀ or ▶ to display the data you are trying to input, and reduce the number of characters. If the memory overflow message appears again when you try to store the data, try the next operation below.
- Press CLEAR to display the input prompt for the mode you are in ("NAME?" "MEMO?"). Next, delete data items you no longer need to make room for the new data.

### 3-4. Message Table

Message	Meaning	Action
NO DATA!	Search operation attempted when no data is stored in memory.	Current search operation cannot be performed.
NOT FOUND!	Data specified in search operation does not exist in memory.	Change specification or cancel search.
MEMORY FULL!	No more room in memory for storage of data.	Delete unnecessary data items from memory.
ALARM TIME ALREADY USED!	Attempt to set a Schedule Keeper or a Reminder Mode alarm time that is already used for another entry.	Set a different alarm time or change the existing alarm time to another one.
ALARM TIME ALREADY PASSED!	Attempt to set a Schedule Keeper alarm time for a time/data that is already passed.	Set a different alarm time (for a future time/date).
SECRET DATA!	Alarm for a secret memory area data item is sounding.	Enter the secret memory area to view details of the alarm.
PASSWORD MISMATCH!	Attempt to enter the secret memory area using a password that does not match the one preset for the secret area.	Use the correct password.
TRANSMIT ERROR!	Error during data communications.	Cancel the data communications operation and try again.
DATA ERROR! CONSULT THE OWNER'S MANUAL!	Data corrupted by strong impact, electrostatic charge, etc.	See page 12 of this manual.
SAME TYPE ALREADY USED!	Attempt to store a label that is identical to one already stored.	Use a different label.

### 3-5. To adjust the display contrast










1. Enter the Telephone Directory Mode.
  - You could enter any mode except the Calculator mode here.
2. Press CONT.
3. Use the ◀ and ▶ keys to adjust the contrast.



4. After you are finished, press ESC to clear the contrast adjustment display.

### 3-6. To select a mode

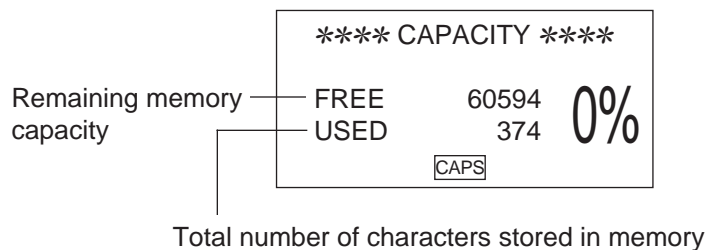
Press one of the mode keys to select the mode you want.

-  EXPENSE      The Expense Mode lets you store expense data, including payment date, payment method, description, etc. You can also produce total for a specific period of time.
-  TEL      Telephone Directory Mode for storage of telephone numbers, names, addresses, and six user-definable entries.
-  To Do      To Do Mode for storage of reminders of things to do. You can affix a check mark to items as you complete them, and even note the date that you check them.
-  MEMO      Memo Mode for storage of unformatted data in a kind of electronic notebook.
-  SCHEDULE      Schedule Keeper Mode for storage of appointments scheduled for specific dates and times, and setting of Schedule Alarms to remind you of your appointments.
-  CALENDAR      Displays any monthly calendar from January 1901 through December 2099.
-  HOME/WORLD      Home Time/World Time Modes for display of the current time in your hometown and other locations around the globe. For example, you can set New York as your home time and London as the world time.
-  REMINDER      Reminder Mode to create reminders and alarms for annual, monthly, and daily events.
-  CAL      Calculator Mode for basic calculations with the touch of a key.

### 3-7. To check the memory status

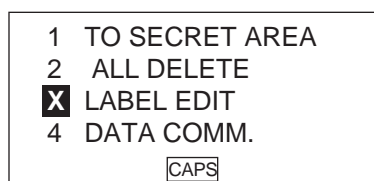
Hold down CAPA to display a screen that shows the current memory status. To clear the memory status display, release CAPA.

You can enter any mode except the Calculator Mode and Home/World Time Mode here.



### 3-8. To use the FUNCTION key

Press the FUNCTION key to display a function menu that makes it possible to perform functions that are not marked on the unit's keys.



Just like in the above example display, all of the functions included in a function menu have a number at the beginning. Press the number key that corresponds to the function you want to perform. Whenever a function menu item's leading number is replaced by "X", it means you can't select that menu item in the operation you are performing.

### 3-9. To switch the key input and alarm tones on and off

1. Press FUNCTION once to display the first function menu.
  - In the Expense Mode, you should press the FUNCTION key twice.
  - You cannot perform this operation in the Calculator Mode.
2. Press 4 to select the SOUND menu item.
3. Use the  $\triangle$  and  $\nabla$  keys to move the dot to the item you want to change.
4. Use  $\triangleleft$  and  $\triangleright$  to switch the key input tone or an alarm tone on and off.
5. Repeat steps 3 and 4 to change other items if you want.
6. Press SET to store your setting and clear the SOUND menu.

### 3-10. To select the system language

1. Press ON to switch power on.
2. Enter the Telephone Directory Mode.
  - You could enter Memo, Reminder, Schedule Keeper, To Do, Expense, Calendar, Home Time or World Time here.
3. Press FUNCTION three times to display the third function menu.
  - In the Calendar, Home Time, or World Time mode, press FUNCTION twice.
  - In the Expense mode, press FUNCTION four times.
4. Press 1 to select "LANGUAGE".
  - The above operation causes a list of five languages to appear on the display. The language that is currently selected is highlighted on the display.
5. Select the language you want to use.
  - You can directly specify a language by pressing the number key that corresponds to the language you want to use.

```
*LANGUAGE (1-5) **
1  DEUTSCH
2  ENGLISH
3  ↓ESPANOL
    CAPS
```

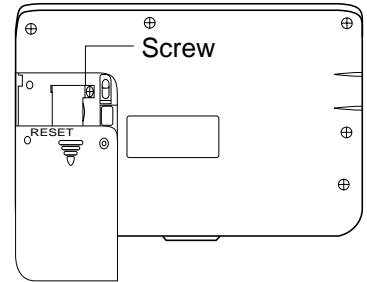
```
*LANGUAGE (1-5) **
4  ↑FRANÇAIS
5  ITALIANO
    CAPS
```

- You can also select a language by using  $\triangle$  or  $\nabla$  , to move the highlighting around the menu until the language you want to use is highlighted. Each time you move the highlighting, the title LANGUAGE (1-5) at the top of the screen changes to the language that is currently highlighted.
6. While the language you want to use is selected (highlighted), press SET.
    - To exit the language-selection menu without changing the current language, press ESC.
    - The system language automatically changes to English whenever you perform the RESET operation.

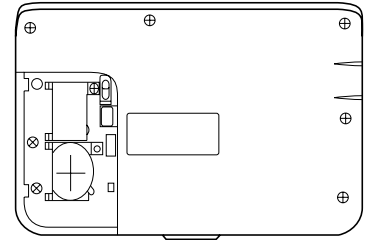
## 4. REPLACING THE BATTERIES

1. Loosen the screw on the back of the unit 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.



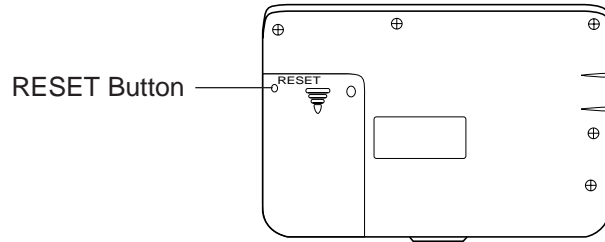
3. Replace the old battery with a new one. Be sure that the positive (+) side of the new battery is facing up (so you can see it).
4. Replace the battery holder and secure it by tightening its screw.
  - Be careful that you do not overtighten the screw.
5. Repeat Steps 2 through 4 for another battery.
  - 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.



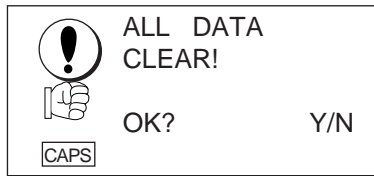


## 5. RESETTING THE UNIT

The following procedures erase all data stored in the memory of the unit.



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.

\*Note that the letter key you press to indicate "yes" depends on the system language, as noted below.

English: Y	Spanish: S	German: J
French: O	Italian: S	

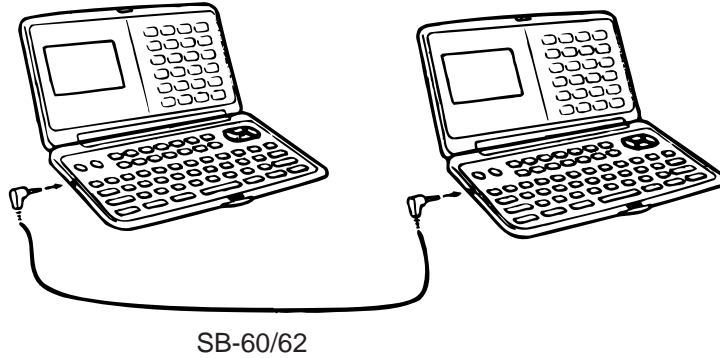
Following the reset operation described above, the Home Time display appears and the unit settings are initialized as noted below.

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

## 6. SAVING DATA

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

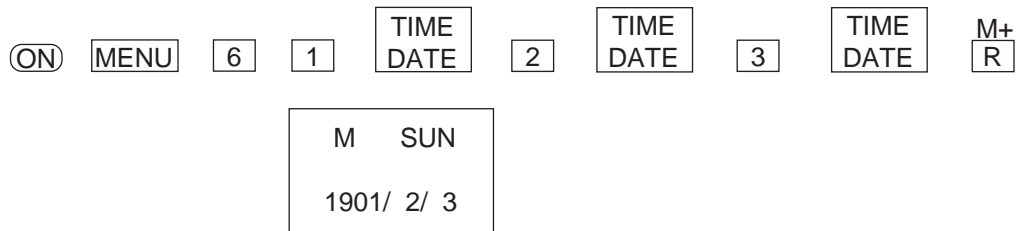
- Turn off both the transmitting and receiving units and connect them using the SB-60/62 cable.



### ① Setting up the receiving unit:

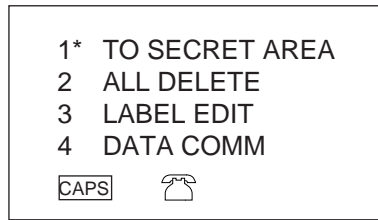
1. Do the reset operation.
2. Enter the calculator mode. Set the date of receiving unit to February 3rd, 1901.

Operation:



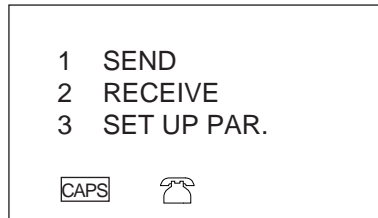
**Note:** The customer may have created a password to protect confidential information from unauthorized access. To be sure this password is transferred to the receiving unit, be sure to set the date as described above.

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



\* If the password isn't registered in the SF-5300E, 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 [phone icon]
```

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

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

```
1 SEND
2 RECEIVE
3 SET UP PAR.
CAPS [phone icon]
```

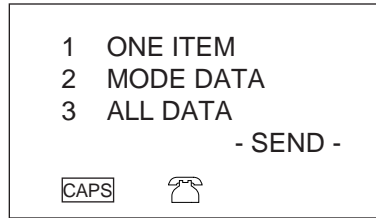
4. Press **3** to select SET UP.

```
** SET UP PAR. ***
PARITY E O N
BIT LENGTH 7 8
BPS 4800 9600
CAPS [phone icon]
```

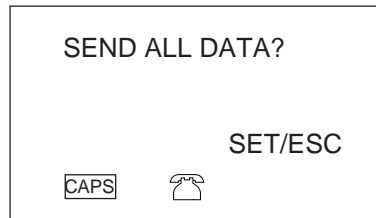
5. Use **△**, **▽**, **▷**, or **◁** to select "N," "7," and "9600" and press **SET**.

```
1 SEND
2 RECEIVE
3 SET UP
CAPS [phone icon]
```

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.

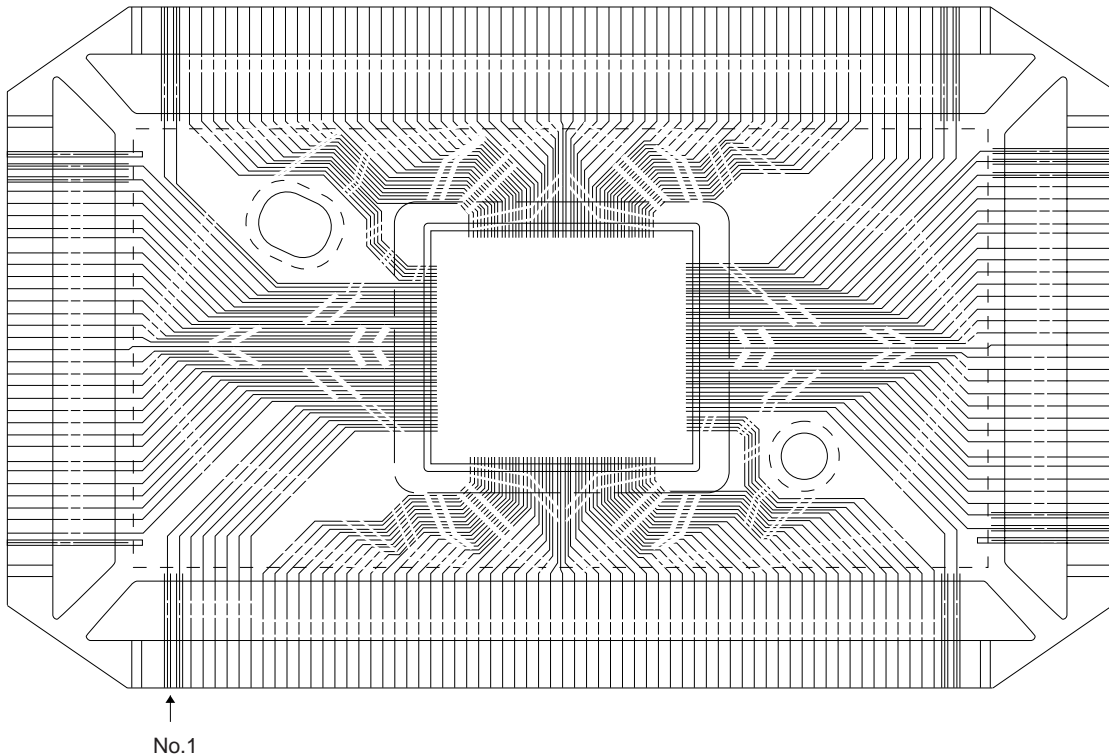


- If an error occurs during data transmission, the message "TRANSMIT ERROR!" appears on the display. Press **ESC** to clear the error message.

9. After data transmission is complete, the display returns to the initial screen of the telephone mode.

## 7. LSI PIN FUNCTIONS

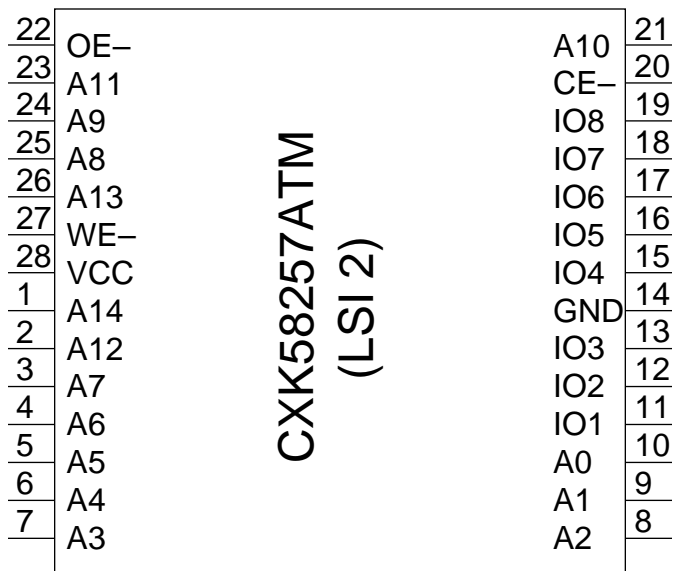
### 7-1. CPU: LSI1



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 LSI3
11	CSRA2	Out	Chip enable signal for LSI2
12	CSROM	Out	Chip enable signal for LSI4
13	WEB	Out	Write enable signal for LSI2 and LSI3
14,15	RA15,16	Out	Address bus
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	-	Test for manufacturer
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	-	Test for manufacturer
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	In	Power supply terminal (+5.3 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

## 7-2. 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)



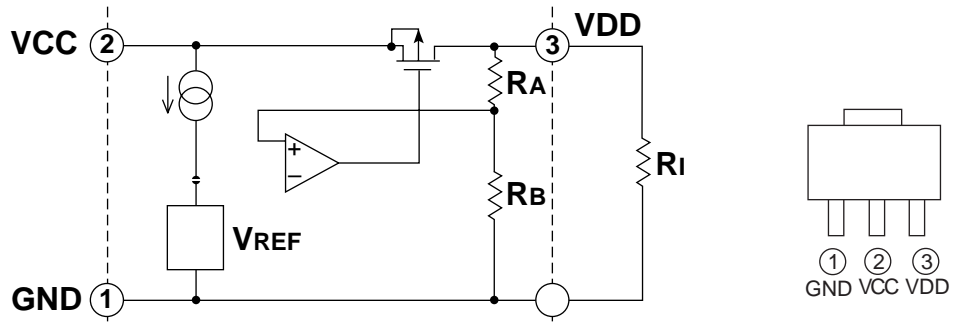
### 7-3. ROM: LSI4 ( $\mu$ PD23C1001EAGZ)

1	A11	$\mu$ PD23C1001EAGZ (LSI4)	OEB	40
2	A9		A10	39
3	A8		CEB	38
4	A13		D7	37
5	A14		D6	36
6	NC		NC	35
7	NC		NC	34
8	DC		D5	33
9	DC/PGM_		D4	32
10	VCC		D3	31
11	NC/VPP		GND	30
12	A16		D2	29
13	A15		D1	28
14	NC		NC	27
15	NC		NC	26
16	A12		D0	25
17	A7		A0	24
18	A6		A1	23
19	A5		A2	22
20	A4		A3	21

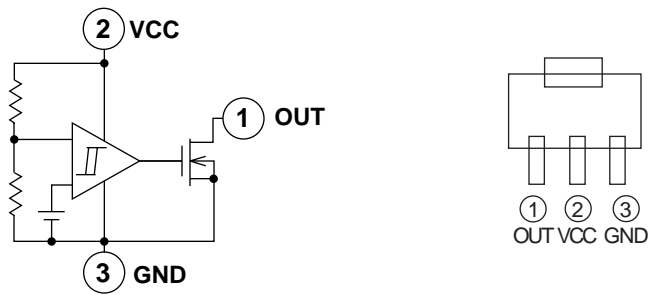
Pin No.	Name	I/O	Description
1~5,12,13,16~24,39	A0~16	In	Address bus
25,28,29,31~33,36,37	D0~7	I/O	Data bus
6,15,26,35	NC	In	0 V
7,14,27,34	NC	-	Not used
8	DC	In	0 V
9~11	DC/PGM_,VCC,NC/VPP	In	Power supply terminal (+5.3 V)
30	GND	In	GND 0 V
38	CEB	In	Chip enable signal from LSI1
40	OEB	In	0 V

#### 7-4. VOLTAGE REGULATOR: REG1 (S-81253)

Output Voltage (VDD):  $5.3 \text{ V} \pm 5\%$



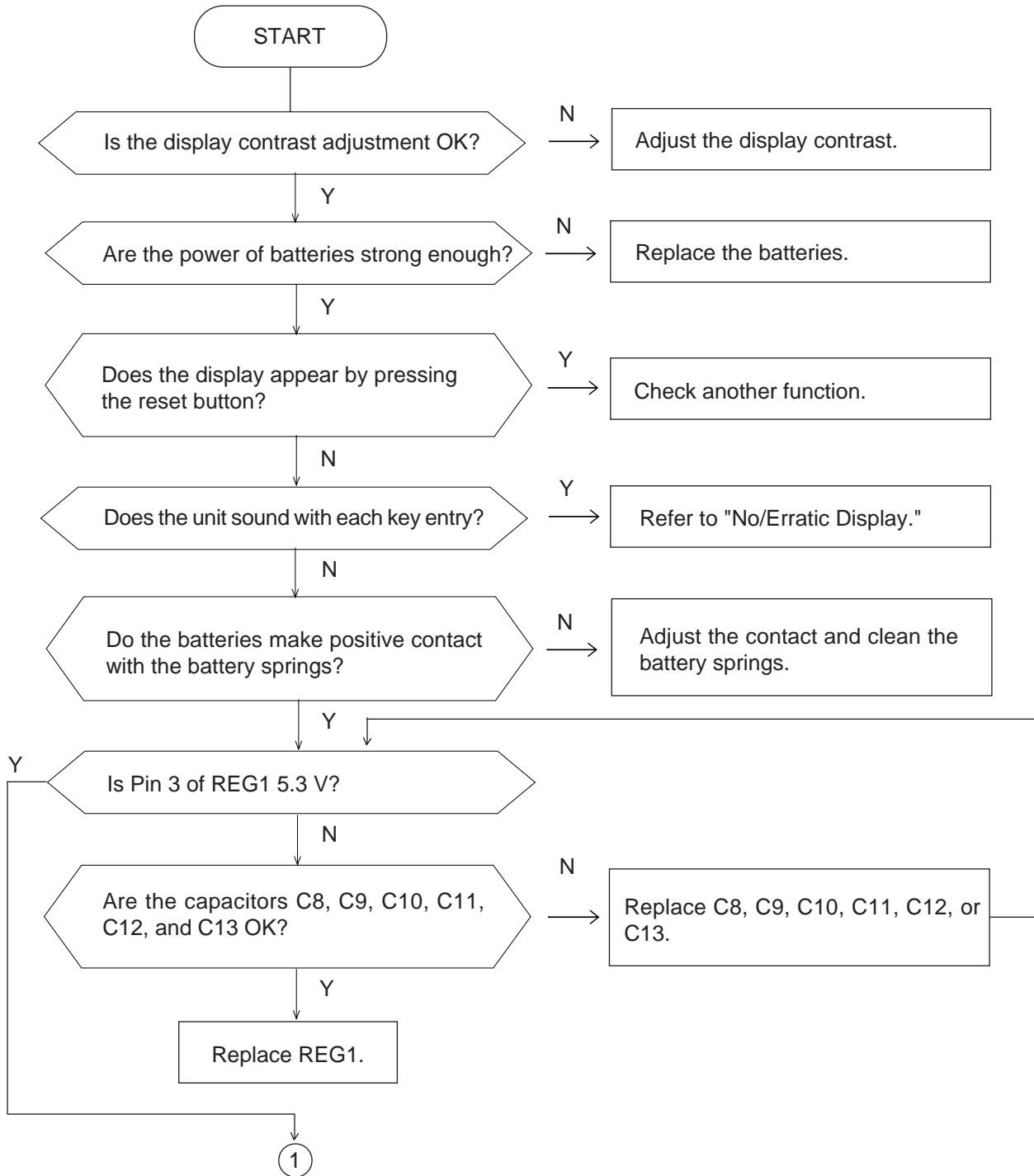
#### 7-5. VOLTAGE DETECTOR: DET1 (RH5VL46CA)

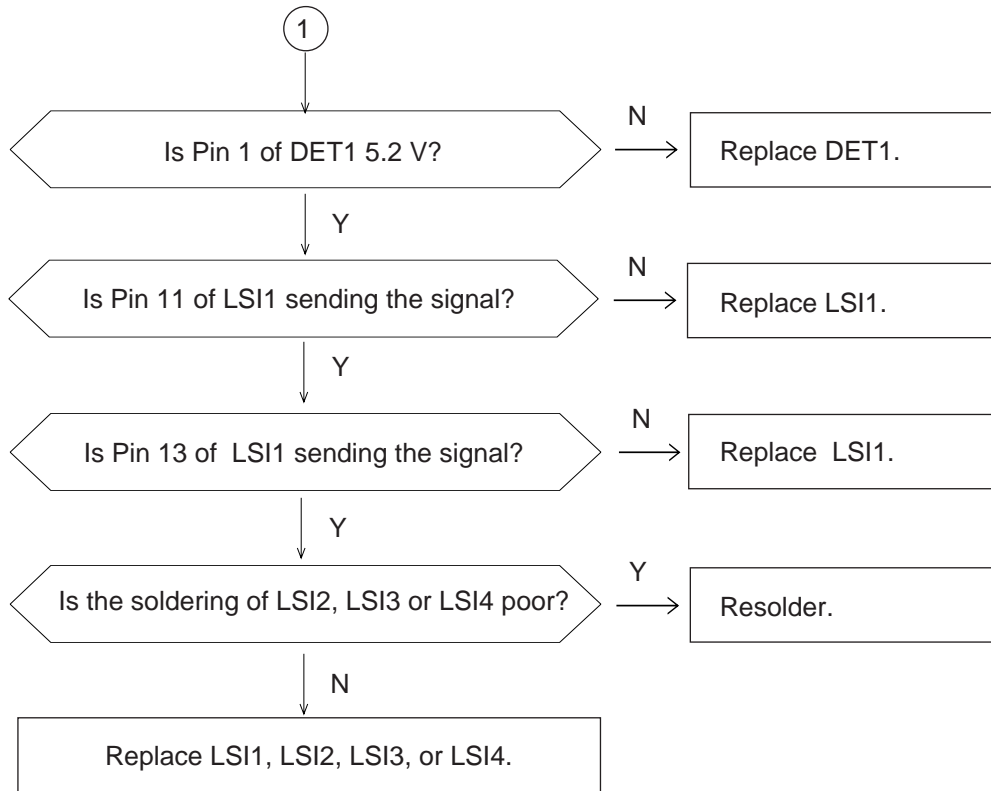


Input Voltage (VCC)	Output Voltage (OUT)
$VCC > 5.2 \text{ V}$	5.2 V
$VCC < 5.2 \text{ V}$	0 V

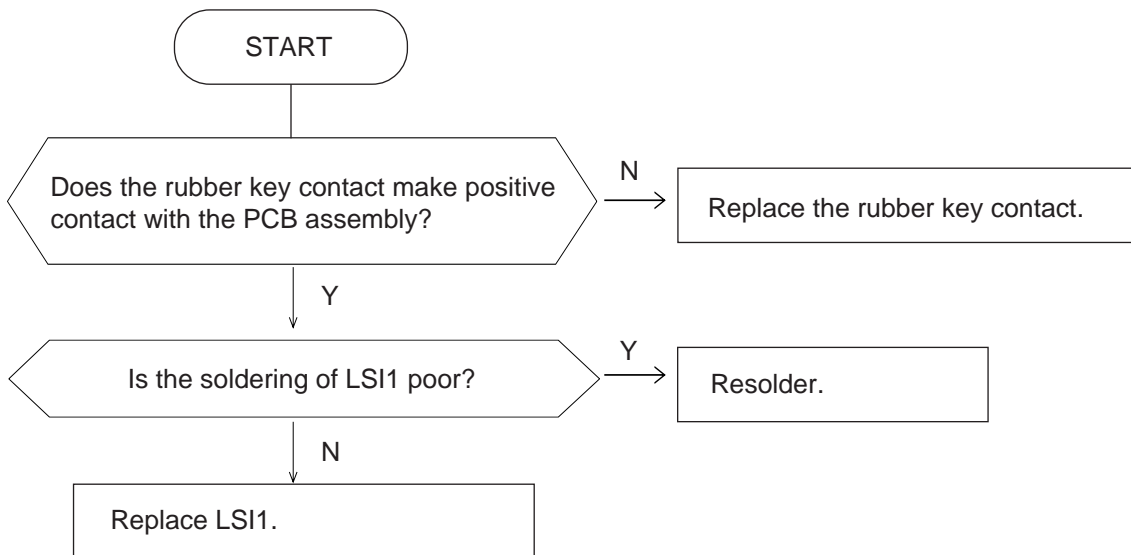
## 8. TROUBLESHOOTING

### No power on

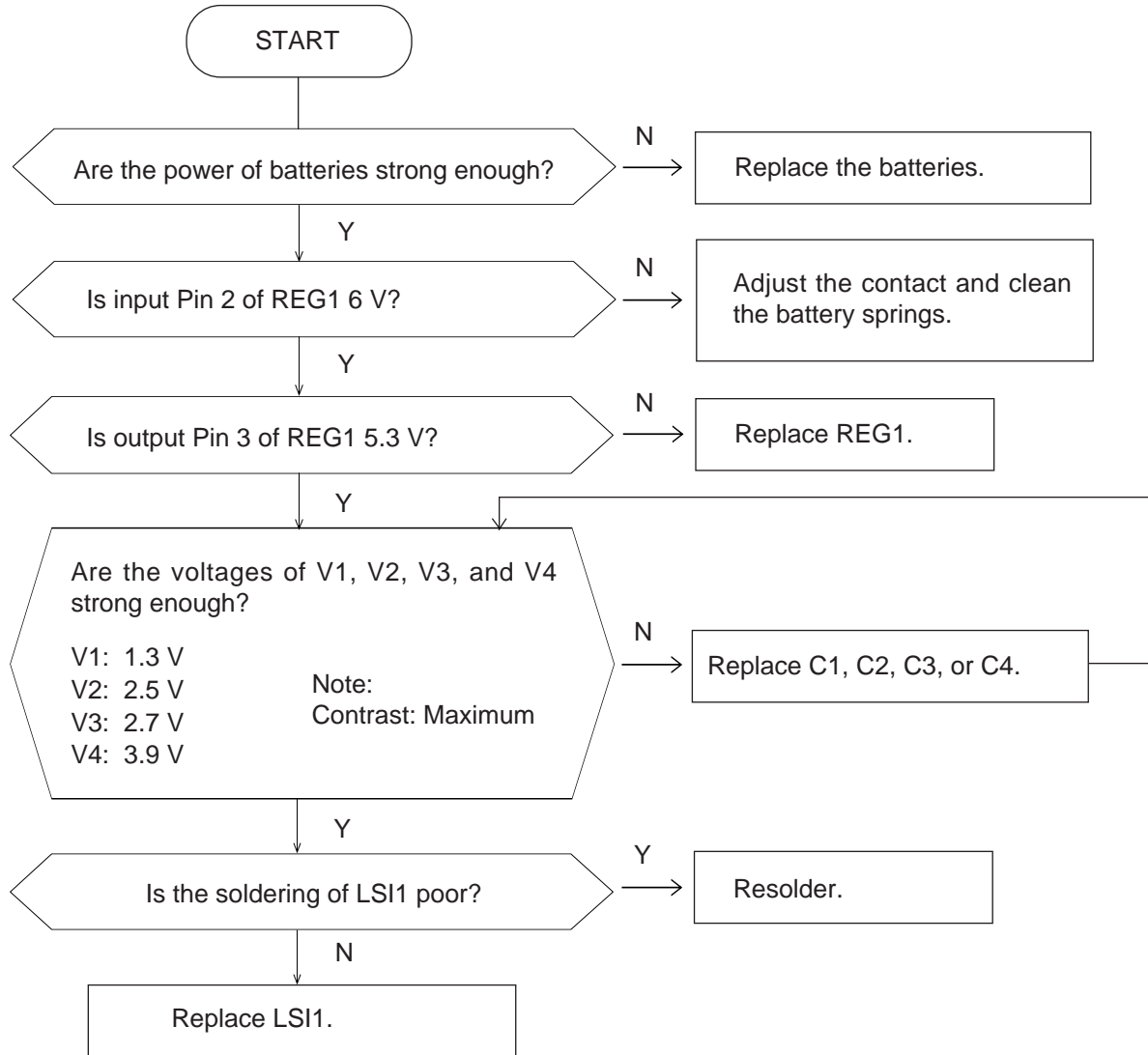




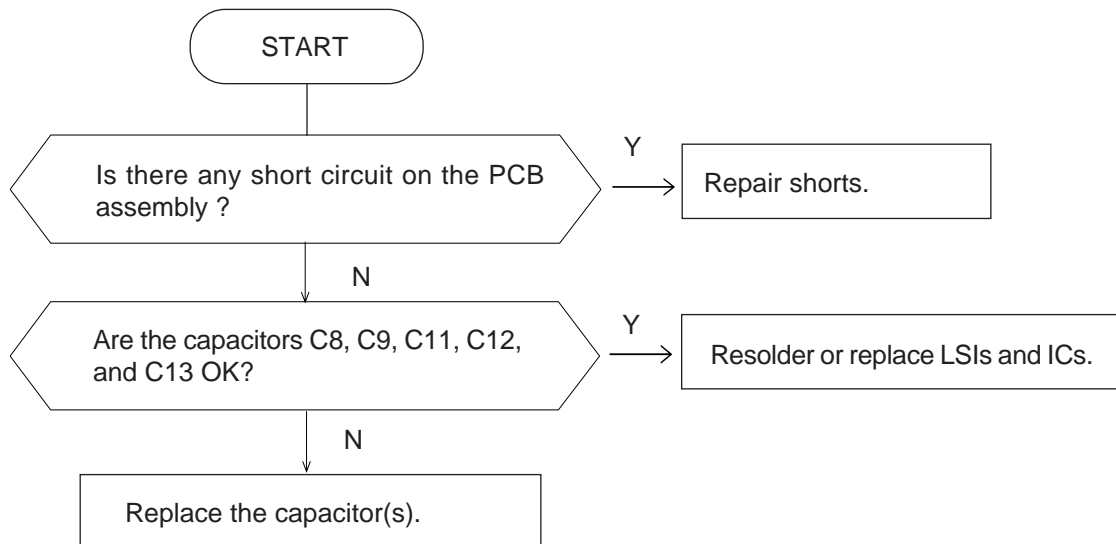
**No key input**



### No/Erratic display

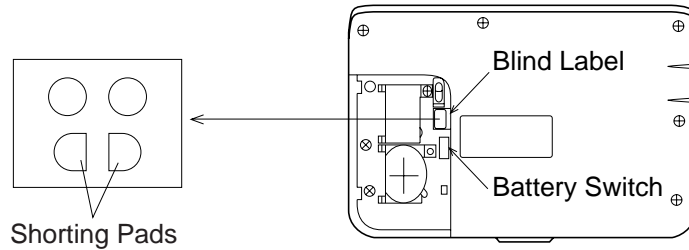


### High current consumption



## 9. DIAGNOSTICS

- Notes:**
1. Be sure to transfer data to another SF-5300E 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.





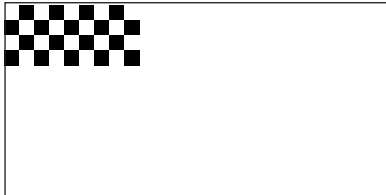

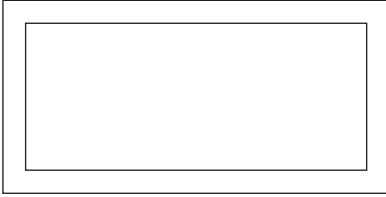
SELF TEST PROG.  
PRESS SEARCH  
QUIT BY OFF  
CASIO APR 1994

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 <b>1</b> 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 <b>ESC</b> .
<b>1</b>		No display
<b>2</b>		All dots displayed
<b>3</b>	 	Checker displayed
<b>4</b>	 	Reverse checker display
<b>5</b>		Frame display



Operation	Display	Note
[6]		Shows dots at corners.
[7]	TIME DISPLAY 00:00:XX	Check timer.
[ESC]	TEST            2 MEMORY MENU           3 KEY 4 BUZZER 1 DISP         5 I/F	

## Memory Check

The functions of the numbered items on the display include:

1. Writes the test pattern in the ROM to the RAM area. (Test pattern1: Incremental order 00, 01, and so on)
2. Compares the test pattern with the write data (WRITE1) of the RAM and displays the results.
3. Writes the test pattern in the ROM to the RAM area. (Test pattern2: Decremental order FF, FE, and so on)
4. 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].
[1] (or [3])	WRITE1 (or WRITE2)	Test patten1 (or 2) is written into RAM.

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	Normal
	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	
[5]	\$ 00001,00002,00004,00008,00010, 00020,00040,00080,00100,00200, 00400,00800,01000,02000,04000, 08000,10000	Address of ROM (LSI4) is display.
[ESC]	MEMORY    3 WR2 4 READ2 1 WR1     5 DUMP 2 READ1   6 CHKSUM	
[6]	TY SZ SUM XOR FE 0 128 E290 XXX C3 A 64 XXXX XXX	Check sum and XOR of ROM (LSI4) is displayed.
[ESC]	MEMORY    3 WR2 4 READ2 1 WR1     5 DUMP 2 READ1   6 CHKSUM	
[ESC]	TEST       2 MEMORY MENU       3 KEY 4 BUZZER 1 DISP     5 I/F	

## 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.)

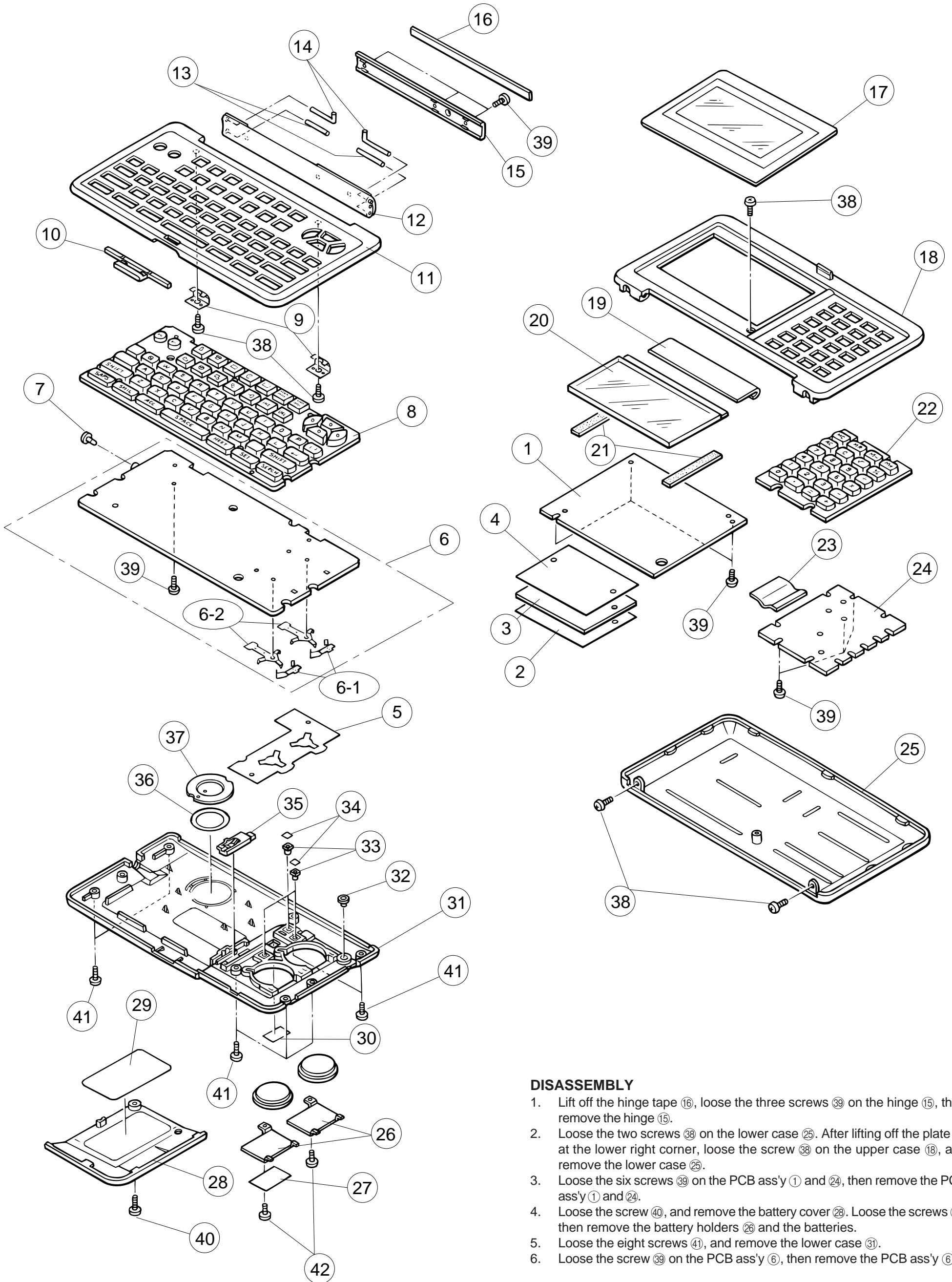
In the auto mode, the key input sequence is limited so that the keys must be pressed in the order of the key code as mentioned below. If a key is pressed in the wrong order, the SF-5300E beeps.

Operation	Display	Note
Press <b>3</b> on the TEST MENU.	KEY 1 RANDOM 2 AUTO	Key check  To return to the TEST MENU, press <b>ESC</b> .
<b>2</b>	No display	
<b>MC</b> <b>MR</b> <b>M-</b> <b>M+</b> <b>AC</b> , ... <b>%</b> <b>7</b> , ... <b>÷</b> <b>4</b> , ... <b>×</b> <b>1</b> , ... <b>=</b> <b>0</b> , ... <b>+</b> <b>ON</b> <b>OFF</b> <b>EXPENSE</b> , ... <b>DISP CHNG</b> <b>REMINDER</b> , ... <b>DEL</b> <b>←</b> <b>↑</b> <b>↓</b> <b>→</b> <b>ESC</b> , ... <b>()</b> <b>FUNCTION</b> , ... <b>↵</b> <b>SHIFT</b> , ... <b>SHIFT</b> <b>CAPS</b> , ... <b>SET</b>	00 01 02 03 04 .....  ..... 56 57	Check that the key number appears on the display.  To return to the TEST MENU, enter <b>SEARCH</b> .
<b>SEARCH</b>	TEST MENU 1 DISP 2 MEMORY 3 KEY 4 BUZZER 5 I/F	

**Buzzer Check**

Operation	Display	Note
Press <span style="border: 1px solid black; padding: 0 2px;">4</span> on the TEST MENU.	BUZZER      1 BEEP 2 ALARM1 3 ALARM2	Buzzer check  To return to the TEST MENU, press <span style="border: 1px solid black; padding: 0 2px;">ESC</span> .
<span style="border: 1px solid black; padding: 0 2px;">1</span> ( or <span style="border: 1px solid black; padding: 0 2px;">2</span> , <span style="border: 1px solid black; padding: 0 2px;">3</span> )	EXECUTING!!	Check the sound.  To return to the BUZZER menu, press any key.
	BUZZER      1 BEEP 2 ALARM1 3 ALARM2	
<span style="border: 1px solid black; padding: 0 2px;">ESC</span>	TEST MENU      2 MEMORY 3 KEY 4 BUZZER 1 DISP          5 I/F	

## 10. ASSEMBLY VIEW



### DISASSEMBLY

1. Lift off the hinge tape ⑩, loose the three screws ⑳ on the hinge ⑮, then remove the hinge ⑮.
2. Loose the two screws ㉑ on the lower case ㉕. After lifting off the plate ⑰ at the lower right corner, loose the screw ㉒ on the upper case ⑱, and remove the lower case ㉕.
3. Loose the six screws ㉓ on the PCB ass'y ① and ㉔, then remove the PCB ass'y ① and ㉔.
4. Loose the screw ㉔, and remove the battery cover ㉖. Loose the screws ㉕, then remove the battery holders ㉖ and the batteries.
5. Loose the eight screws ㉗, and remove the lower case ㉙.
6. Loose the screw ㉓ on the PCB ass'y ⑥, then remove the PCB ass'y ⑥.

## 11. PARTS LIST

N	Item	Code No.	Parts Name	Specification	Q	M	FOB Japan N.R.Yen Unit Price	R
<b>CHIP ON BOARD BONDIN</b>								
	1	6413 3720	Chip on board bondin	DB22AX3F00U*1	1	1	2,750	B
<b>(This assembly contains the following available elements.)</b>								
N	C1~4,7,8,12~14	6511 7560	Chip capacitor	CP001A432T8	9	20	7	C
	C5,6	6511 7510	Chip capacitor	CP018F602A7	2	20	11	C
	LSI1	6411 2051	L594TAB ass'y	C312133A*2	1	1	970	B
	LSI2	2011 8267	LSI (RAM)	CXK58257ATM-10/12L	1	1	580	B
	LSI3	2011 8274	LSI (RAM)	CXK58257AYM-10/12L	1	1	580	B
N	LSI4	2011 9268	LSI (ROM)	uPD23C1001EAGZ-M05	1	1	370	B
N	R11	6512 1420	Chip resistor	CC0015D11T0	1	20	3	C
N	R12	6410 9820	Chip resistor	CC2005D11E5	1	20	28	C
N	R3	6411 6130	Chip resistor	CC0000D11E9	1	20	3	C
	X1	6510 4550	Crystal	BD0063P2509	1	5	55	B
<b>MAIN KEY BOARD ASS'Y</b>								
	6	6412 2730	Main key board ass'y	DB22XX3100U*1	1	1	790	B
<b>(This assembly contains the following available elements.)</b>								
	6-1	6409 6300	Battery plate (+)	EF01DB20102	2	20	16	X
	6-2	6409 6310	Battery plate (-)	EF02DB10100	2	20	16	X
	C10	6511 7560	Chip capacitor	CP001A432T8	1	20	7	C
	C9,11	2803 6813	Capacitor	CB0011341R3	2	20	22	C
	D1	2390 2135	Diode	BC20MA740T0	1	10	50	C
	D2	6510 4940	Diode	BC10MA71307	1	5	53	C
	DET1	2105 3864	CMOS IC	RH5VL46CA-T1	1	10	45	C
	JC1	3501 6538	Jack	HSJ1169-012010	1	5	56	C
	Q1	6510 4760	Transistor	BBX114YT103	1	20	27	C
	R5	6512 1380	Chip resistor	CC1801D11E7	1	20	3	C
	R6	6512 1410	Chip resistor	CC0473D11T3	1	20	3	C
N	R7	6512 1370	Chip resistor	CC0013D11T1	1	20	3	C
	R8,9	6512 1360	Chip resistor	CC0012D11T6	2	20	3	C
	REG1	2105 3290	Regulator	S-81253SGUP-DIJ-T1	1	5	60	C
<b>COMPONENTS</b>								
N	2	6413 3730	Mylar sheet	ELBDB222003	1	20	28	B
	3	6412 3140	Heat seal	FX21P250016	1	5	53	A
N	4	6413 3710	Hot melt film tape	HGJ00008414	1	20	27	B
	5	6412 2920	Overlay mylar	EL4J0002102	1	10	29	X
	7	6511 7160	Rubber insert	LC120000102	1	20	17	B
	8	6412 2890	Rubber key sheet	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
	15	6412 2910	Hinge (B)	FC0DB222002	1	20	22	X
	16	6412 2990	Hinge tape	HGJ00008309	1	20	22	B
N	17	6413 3670	Display plate	EL5J0005502	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
N	21	6412 8000	Sponge cushion	FH100029402	2	20	15	C
	22	6412 2900	Rubber key sheet	LADB2220005	1	1	103	C

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	23	6412 3160	Heat seal	FX201P50209	1	5	90	A
	24	6412 3150	PCB	DADB22XX309	1	5	60	X
	25	6413 3640	Lower case (DIS)	FABDB222044	1	1	120	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
N	30	6412 2980	Mask tape	HGJ00008104	1	20	7	X
	31	6413 3690	Lower case (KB)	FABDB221048	1	1	130	X
	32	6511 8400	Rubber sheet	LADB0220105	1	20	10	B
	33	6512 1080	Nut	MD100000602	3	20	13	X
	34	6510 4440	Nut tape	HGFC0001206	3	20	6	X
	35	6408 5920	Switch knob 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	11	20	3	B
	40	6510 4350	Screw	MAA80006302	1	20	2	B
	41	6512 0980	Screw	MAB20086306	8	20	2	B
	42	6510 4310	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