

# SHARP SERVICE MANUAL

No. 00ZFO4MLCUSME

## FACSIMILE OPTION MEMORY UPGRADE PWB

**FO-4ML**  
**FO-8ML**  
**MODEL FO-12ML**

This machine is an Option Memory Unit applicable to the FO-6700.

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Parts marked with "△" is important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

## [1] General description

This machine is an Option Memory Unit applicable to the FO-6700. It enhances the memory-aided functions such as sequential simultaneous sending and through-memory substitute reception of facsimile.

## [2] Installation procedure (Pay attention to static electricity)

To install the Option Memory Unit, check the following in advance.

- 1) Make sure that the remaining memory capacity is 0%.  
If the remaining memory capacity is not 0%, this implies that any data remains in the image memory on the Main Control PWB.
- 2) Check that a sufficient quantity of paper exists. If there is no paper or paper is lacking, replenish the machine with paper, and print the data received and stored in the memory.
- 3) Then, check whether there is any confidentially received information, seeing the confidential reception data list ("FUNC" + "2" + "1" + "0").  
If any confidentially received information is found, input the ID No. of specific reception box, and print the confidentially received information.
- 4) After that, check whether there is timer sending information, seeing the timer sending information list ("FUNC" + "2" + "0" + "2"). It is required to teach users that any timer sending information, if exists, is cleared after the Option Memory Unit is installed and, accordingly, users have to set again the timer sending and do the timer sending.

Install the Option Memory Unit in the following procedure.

- 1) Remove the Rear Cabinet of facsimile.
- 2) Loose two screws on the Standard Memory PWB and remove two spacers. Then, remove the Standard Memory PWB from two locking spacers and the connector.
- 3) Connect the Option Memory PWB to the connector CNOP of Main Control PWB and insert two locking spacers into the holes on the board. Then, tighten two screws with each spacers. (Fig. 1)
- 4) Mount the Rear Cabinet.
- 5) After installation turn on power switch with pressing "START" + "STOP" key.

```
MEMORY CLEAR ?
1 = ALL, 2 = IMAGE, 3 = NO
```

appears.

Then, press "2" key to perform "IMAGE" clear.

```
PLEASE WAIT A MOMENT
```

appears.

Then, after several seconds,

```
SEP - 26 TUE 10 : 47 AM
M : 00 % STAND-BY AUTO
```

appears.

- The data initially registered will not be deleted by this operation.

## [3] Diagnostic mode

Successively input "FUNC" + "9" + "x" + "8" + "#" + "7". Then, appears.

```
ROM : F A B 0 * (x is ROM version.)
```

After that, press the "START" key.

Then, appears.

```
01 : SOFT SWITCH MODE
PRESS START KEY
```

Select the Flash Memory Test, using the one-touch key "12".

```
12 : FLASH MEMORY
PRESS START KEY
```

In the diagnostic mode perform the Image Memory (Standard, Option) write/read test, as well as complete erase test.

When the "START" key is pressed,

```
S - - E
TEST EXECUTING
```

appears, and the indication changes from "-" to "■" whenever data is written in the Flash Memory.

After completion of writing of data in all Flash Memories, the following indication appears.

```
S ■ ■ E
TEST EXECUTING
```

After that the long-tone buzzer (normal end) sounds, and at the same time the following indication appears.

```
13 : ALL FAX / TEL ENTRY
PRESS START KEY
```

Then, the result table (Fig. 3) is printed.

In case of mismatch, the buzzer emits 9 short tones .

After that, the result table (Fig. 4) is output.

- 1) If any error occurred, check connection of connector CNOP (check for bending and breakage of pin of connector), check that the Option Memory Unit has been mounted as specified, and then turn on again the power supply, and check.
- 2) If the same error occurs persistently after the measures stated in item 1 above were taken, replace the Option Memory Unit, and check.
- 3) If the same error occurs again after the measures stated in item 2) were taken, check the Main Control PWB.

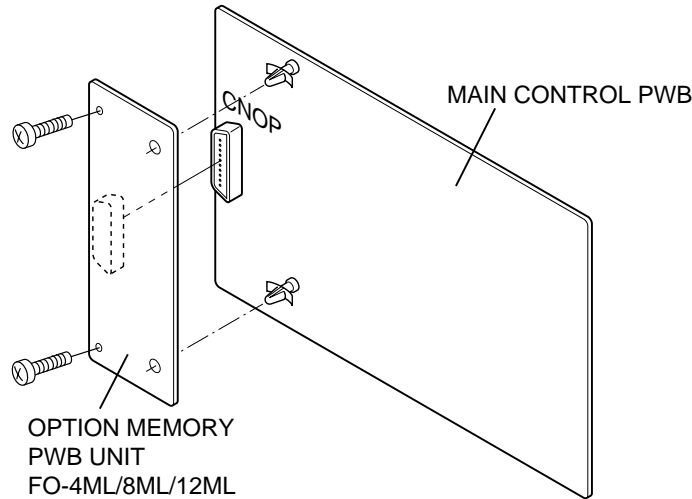


Fig. 1

```

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
X                                     ROM/RAM CHECK LIST                               X
X                                     SEP-25-2000 MON 10:43 AM                       X
X-----X
X   M A I N :   R O M   =OK      V E R.=FAB0X      S U M =DE0E      X
X               C P U   =OK      V E R.=FAB0A      S U M =1C86      X
X               S R A M =OK      X
X               D R A M =OK      X
X-----X
X   P C U :           M / C = 0 0      F / W = 4 1 2 2 5 0 G 0 0 1 J J 0      X
X-----X
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    
```

Fig. 2

```

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
X                                     FLASH MEMORY CHECK REPORT                       X
X                                     SEP-25-2000 MON 10:40 AM                       X
X-----X
X   S I Z E = 8MB (With Option Flash memory ### 4MBYTE ###)                       X
X   FLASH MEMORY = OK (10S, 26S, 23S, 30S, 24S)                                   X
X   BANK CHANGEOVER = OK                                                           X
X   B A N K = OK                                                                    X
X-----X
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    
```

Fig. 3 (FO-4ML)

```

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
X                                     FLASH MEMORY CHECK REPORT                       X
X                                     SEP-25-2000 MON 10:51 AM                       X
X-----X
X   S I Z E = 12MB (With Option Flash memory ### 8MBYTE ###)                       X
X   FLASH MEMORY = OK (11S, 23S, 22S, 25S, 21S, 22S, 24S)                         X
X   BANK CHANGEOVER = OK                                                           X
X   B A N K = OK                                                                    X
X-----X
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    
```

Fig. 3 (FO-8ML)

```

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
X                                     FLASH MEMORY CHECK REPORT                       X
X                                     SEP-25-2000 MON 11:08 AM                       X
X-----X
X   S I Z E = 16MB (With Option Flash memory ==== 12MBYTE ====)                   X
X   FLASH MEMORY = OK (16S, 22S, 24S, 36S, 37S, 23S, 25S, 23S, 22S)                 X
X   BANK CHANGEOVER = OK                                                           X
X   B A N K = OK                                                                    X
X-----X
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    
```

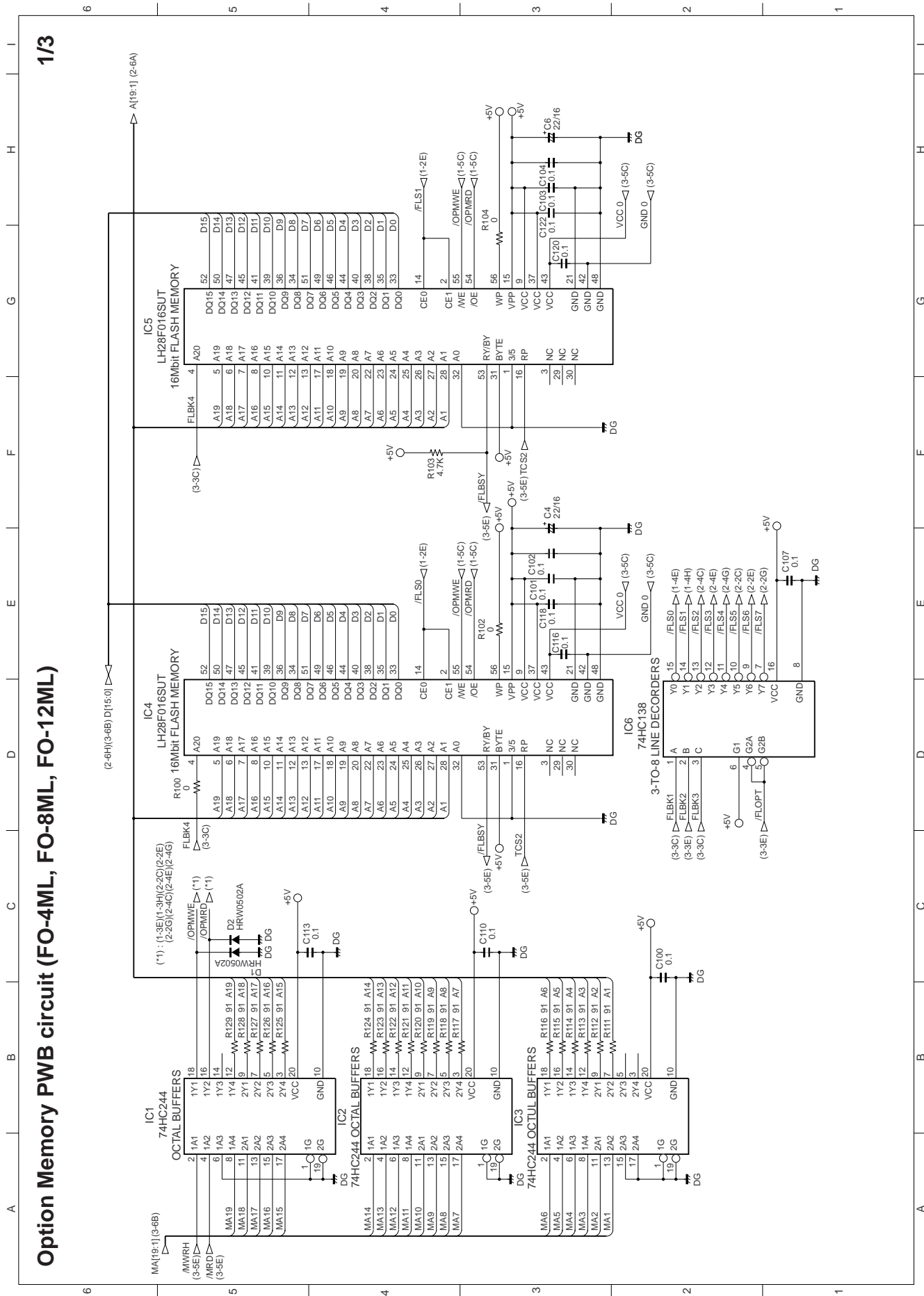
Fig. 3 (FO-12ML)

```

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
X                                     FLASH MEMORY CHECK REPORT                       X
X                                     SEP-25-2000 MON 10:45 AM                       X
X-----X
X   S I Z E = 5MB (With Option Flash memory)                                       X
X   FLASH MEMORY = OK (15S, 24S, 27S)                                             X
X   BANK CHANGEOVER = OK                                                           X
X   B A N K = OK                                                                    X
X-----X
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
    
```

Fig. 4

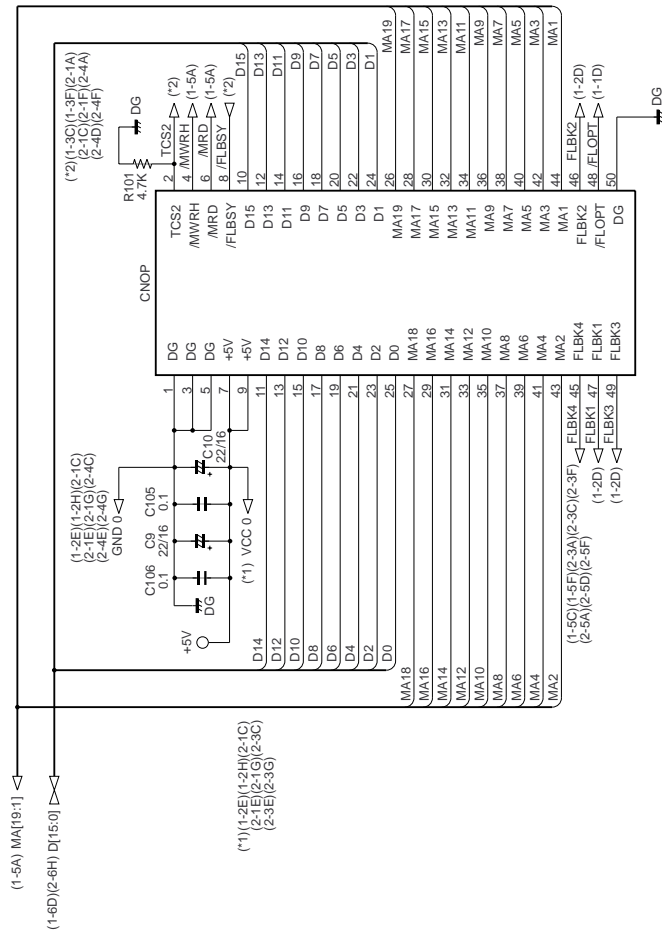
[4] Circuit schematics and parts layout



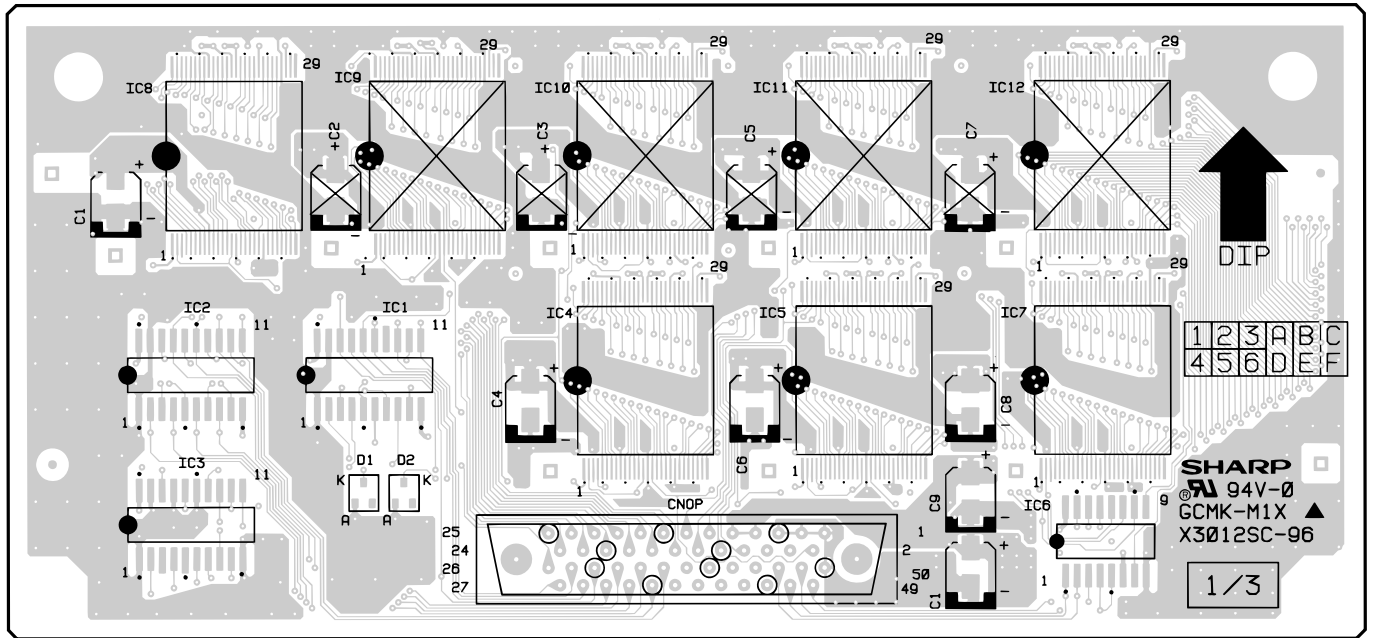


Option Memory PWB circuit (FO-4ML, FO-8ML, FO-12ML)

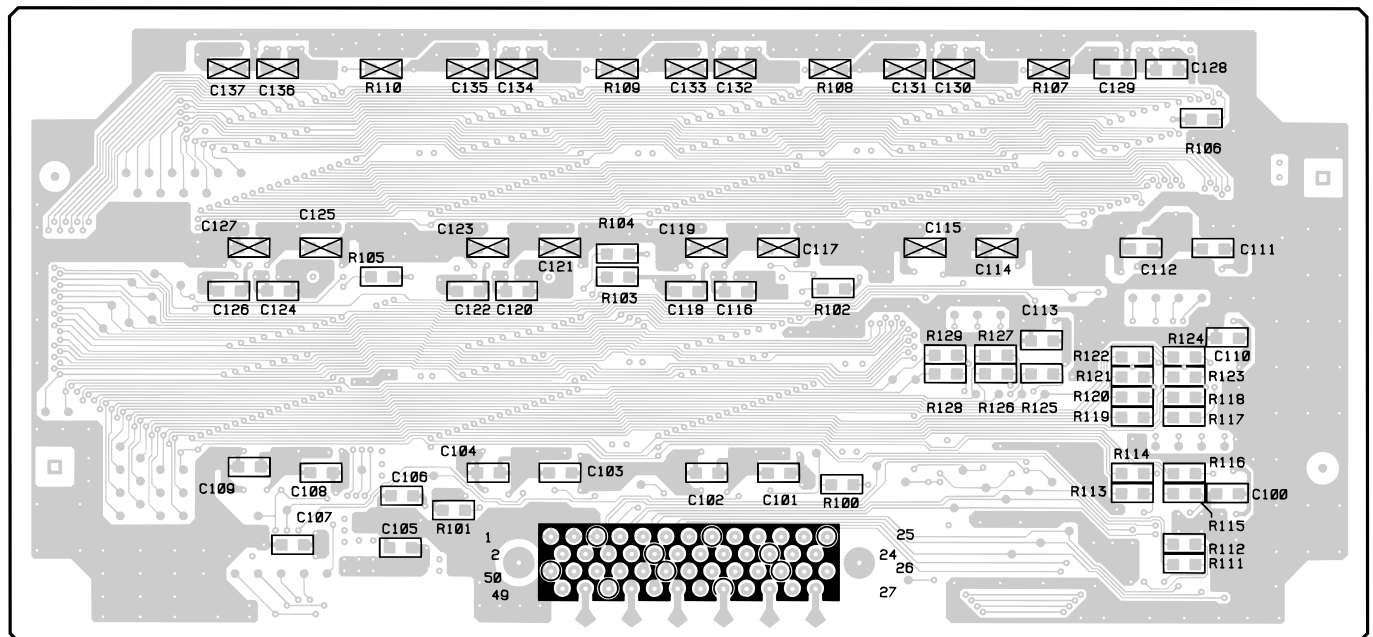
3/3



FO-4ML Option Memory PWB parts layout (Top side)

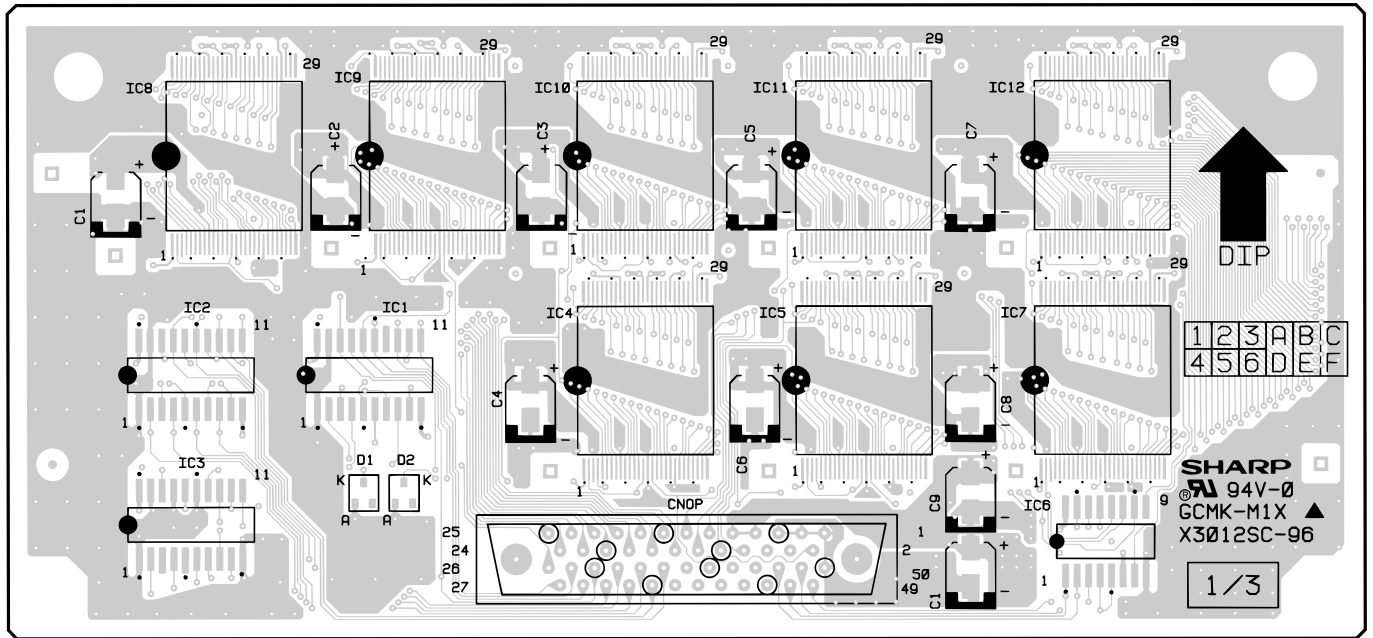


FO-4ML Option Memory PWB parts layout (Bottom side)

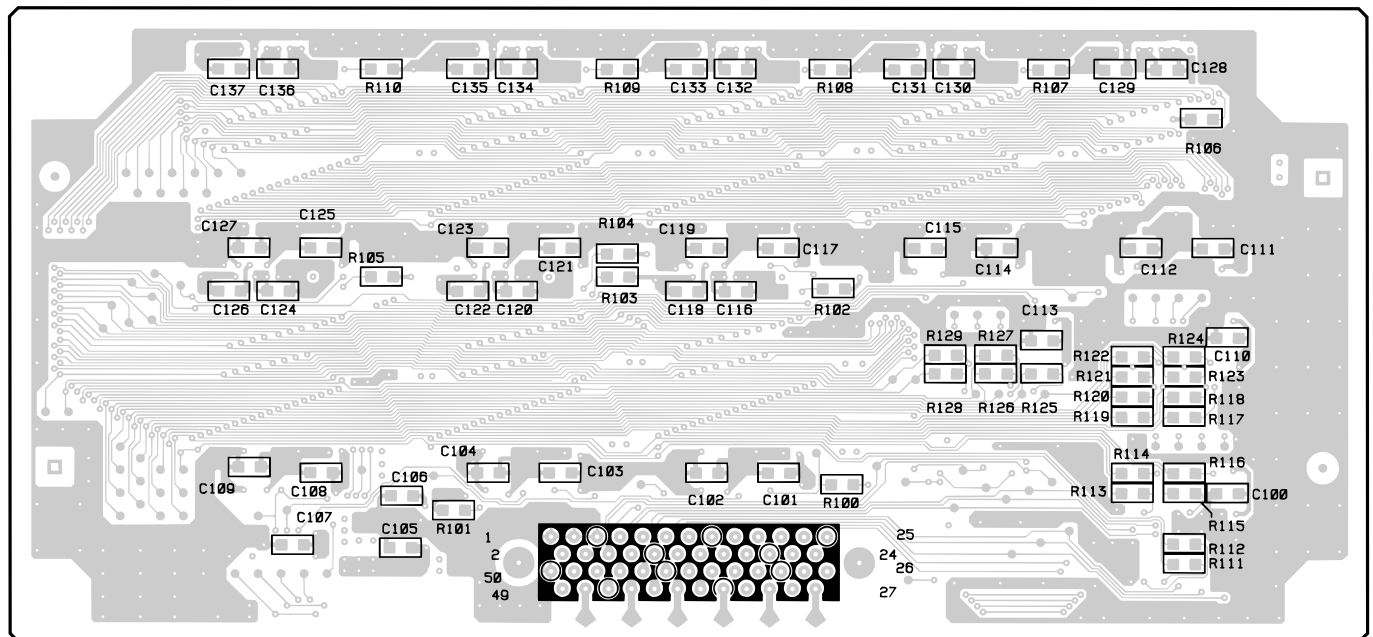




FO-12ML Option Memory PWB parts layout (Top side)



FO-12ML Option Memory PWB parts layout (Bottom side)



**M E M O**

# SHARP PARTS GUIDE

**FO-4ML**  
**FO-8ML**  
**MODEL FO-12ML**

## CONTENTS

- 1 Packing Parts
- 2 Option Memory PWB Unit

Because parts marked with "⚠" is indispensable for the machine safety maintenance and operation, it must be replaced with the parts specified in the product specification.

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
<b>[1] Packing Parts</b>					
1	LSTY-0057AFZZ	AC		C	Spacer
2	PSHEM3490XHZZ	AC		D	Aluminum fold
3	SPAKA110BXHZZ	AB		D	Vinyl bag,PWB
4	SPAKC236CXHTZ	AH	N	D	Packing case [4ML]
	SPAKC238CXHTZ	AH	N	D	Packing case [8ML]
	SPAKC240CXHTZ	AH	N	D	Packing case [12ML]
5	SSAKA0006UCZZ	AA		D	Vinyl bag,screw
<b>[2] Option Memory PWB Unit</b>					
1	VCEAPS226AF1C	AC		C	Capacitor(16WV 22μF) [C1]
2	VCEAPS226AF1C	AC		C	Capacitor(16WV 22μF) [C2][8ML/12ML]
3	VCEAPS226AF1C	AC		C	Capacitor(16WV 22μF) [C3][8ML/12ML]
4	VCEAPS226AF1C	AC		C	Capacitor(16WV 22μF) [C4]
5	VCEAPS226AF1C	AC		C	Capacitor(16WV 22μF) [C5][12ML]
6	VCEAPS226AF1C	AC		C	Capacitor(16WV 22μF) [C6]
7	VCEAPS226AF1C	AC		C	Capacitor(16WV 22μF) [C7][12ML]
8	VCEAPS226AF1C	AC		C	Capacitor(16WV 22μF) [C8]
9	VCEAPS226AF1C	AC		C	Capacitor(16WV 22μF) [C9]
10	VCEAPS226AF1C	AC		C	Capacitor(16WV 22μF) [C10]
11	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF) [C100]
12	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF) [C101]
13	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF) [C102]
14	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF) [C103]
15	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF) [C104]
16	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF) [C105]
17	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF) [C106]
18	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF) [C107]
19	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF) [C108]
20	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF) [C109]
21	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF) [C110]
22	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF) [C111]
23	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF) [C112]
24	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF) [C113]
25	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF) [C114][8ML/12ML]
26	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF) [C115][8ML/12ML]
27	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF) [C116]
28	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF) [C117][8ML/12ML]
29	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF) [C118]
30	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF) [C119][8ML/12ML]
31	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF) [C120]
32	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF) [C121][12ML]
33	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF) [C122]
34	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF) [C123][12ML]
35	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF) [C124]
36	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF) [C125][12ML]
37	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF) [C126]
38	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF) [C127][12ML]
39	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF) [C128]
40	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF) [C129]
41	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF) [C130][8ML/12ML]
42	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF) [C131][8ML/12ML]
43	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF) [C132][8ML/12ML]
44	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF) [C133][8ML/12ML]
45	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF) [C134][12ML]
46	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF) [C135][12ML]
47	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF) [C136][12ML]
48	VCKYTV1EF104Z	AA		C	Capacitor(25WV 0.1μF) [C137][12ML]
49	QCNCW2590SC5J	AM		C	Connector(50pin) [CNOPI]
50	VHDHRW0502A-1	AD		B	Diode(HRW0502A) [D1]
51	VHDHRW0502A-1	AD		B	Diode(HRW0502A) [D2]
52	VHIHD74HC244F	AE		B	IC,Octal buffers(74HC244) [IC1]
53	VHIHD74HC244F	AE		B	IC,Octal buffers(74HC244) [IC2]
54	VHIHD74HC244F	AE		B	IC,Octal buffers(74HC244) [IC3]
55	VHILH28F016SU	BR		B	IC,16Mbit flash memory(LH28F016SUT) [IC4]
56	VHILH28F016SU	BR		B	IC,16Mbit flash memory(LH28F016SUT) [IC5]
57	VHIHD74HC138F	AE		B	IC,3-to-8 line decoders(74HC138) [IC6]
58	VHILH28F016SU	BR		B	IC,16Mbit flash memory(LH28F016SUT) [IC7]
59	VHILH28F016SU	BR		B	IC,16Mbit flash memory(LH28F016SUT) [IC8]
60	VHILH28F016SU	BR		B	IC,16Mbit flash memory(LH28F016SUT) [IC9][8ML/12ML]
61	VHILH28F016SU	BR		B	IC,16Mbit flash memory(LH28F016SUT) [IC10][8ML/12ML]
62	VHILH28F016SU	BR		B	IC,16Mbit flash memory(LH28F016SUT) [IC11][12ML]
63	VHILH28F016SU	BR		B	IC,16Mbit flash memory(LH28F016SUT) [IC12][12ML]
64	VRS-TS2AD000J	AA		C	Resistor(1/10W 0Ω ±5%) [R100]
65	VRS-TS2AD472J	AA		C	Resistor(1/10W 4.7KΩ ±5%) [R101]
66	VRS-TS2AD000J	AA		C	Resistor(1/10W 0Ω ±5%) [R102]
67	VRS-TS2AD472J	AA		C	Resistor(1/10W 4.7KΩ ±5%) [R103]



# Index

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
[D]				
DCEKM473BXH06	2-901	CE	N	E
DCEKM473BXH07	2-901	CM	N	E
DCEKM473BXH08	2-901	CR	N	E
[L]				
LSTY-0057AFZZ	1-1	AC		C
[P]				
PSHEM3490XHZZ	1-2	AC		D
[Q]				
QCNCW2590SC5J	2-49	AM		C
[S]				
SPAKA110BXHZZ	1-3	AB		D
SPAKC236CXHTZ	1-4	AH	N	D
SPAKC238CXHTZ	1-4	AH	N	D
SPAKC240CXHTZ	1-4	AH	N	D
SSAKA0006UCZZ	1-5	AA		D
[V]				
VCEAPS226AF1C	2-1	AC		C
"	2-2	AC		C
"	2-3	AC		C
"	2-4	AC		C
"	2-5	AC		C
"	2-6	AC		C
"	2-7	AC		C
"	2-8	AC		C
"	2-9	AC		C
"	2-10	AC		C
VCKYTV1EF104Z	2-11	AA		C
"	2-12	AA		C
"	2-13	AA		C
"	2-14	AA		C
"	2-15	AA		C
"	2-16	AA		C
"	2-17	AA		C
"	2-18	AA		C
"	2-19	AA		C
"	2-20	AA		C

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
VCKYTV1EF104Z	2-21	AA		C
"	2-22	AA		C
"	2-23	AA		C
"	2-24	AA		C
"	2-25	AA		C
"	2-26	AA		C
"	2-27	AA		C
"	2-28	AA		C
"	2-29	AA		C
"	2-30	AA		C
"	2-31	AA		C
"	2-32	AA		C
"	2-33	AA		C
"	2-34	AA		C
"	2-35	AA		C
"	2-36	AA		C
"	2-37	AA		C
"	2-38	AA		C
"	2-39	AA		C
"	2-40	AA		C
"	2-41	AA		C
"	2-42	AA		C
"	2-43	AA		C
"	2-44	AA		C
"	2-45	AA		C
"	2-46	AA		C
"	2-47	AA		C
"	2-48	AA		C
VHDHRW0502A-1	2-50	AD		B
"	2-51	AD		B
VHIHD74HC138F	2-57	AE		B
VHIHD74HC244F	2-52	AE		B
"	2-53	AE		B
"	2-54	AE		B
VHILH28F016SU	2-55	BR		B
"	2-56	BR		B
"	2-58	BR		B

PARTS CODE	No.	PRICE RANK	NEW MARK	PART RANK
VHILH28F016SU	2-59	BR		B
"	2-60	BR		B
"	2-61	BR		B
"	2-62	BR		B
"	2-63	BR		B
VRS-TS2AD000J	2-64	AA		C
VRS-TS2AD000J	2-66	AA		C
"	2-68	AA		C
"	2-69	AA		C
"	2-70	AA		C
"	2-71	AA		C
"	2-72	AA		C
"	2-73	AA		C
"	2-74	AA		C
VRS-TS2AD472J	2-65	AA		C
"	2-67	AA		C
VRS-TS2AD910J	2-75	AA		C
"	2-76	AA		C
"	2-77	AA		C
"	2-78	AA		C
"	2-79	AA		C
"	2-80	AA		C
"	2-81	AA		C
"	2-82	AA		C
"	2-83	AA		C
"	2-84	AA		C
"	2-85	AA		C
"	2-86	AA		C
"	2-87	AA		C
"	2-88	AA		C
"	2-89	AA		C
"	2-90	AA		C
"	2-91	AA		C
"	2-92	AA		C
"	2-93	AA		C

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