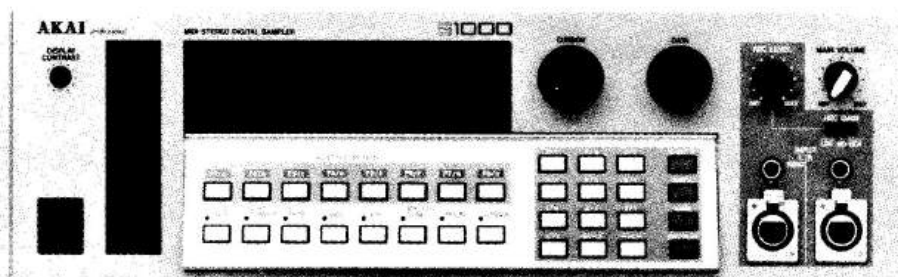


AKAI SERVICE MANUAL

S1000



MIDI STEREO DIGITAL SAMPLER

MODEL S1000

SPECIFICATIONS

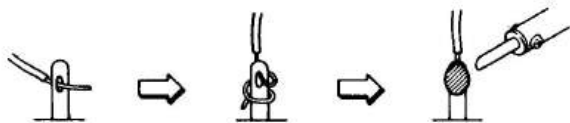
Sampling rate	44.1kHz/22.05kHz switchable	EFFECT SEND × 1
Sampling time	23.76 sec. (mono/sampling rate 44.1kHz)	Standard output level: -3dBv
	47.52 sec. (mono/sampling rate 22.05kHz)	Output impedance: 600ohms
	11.88 sec. (stereo/sampling rate 44.1kHz)	ASSIGNABLE MIX OUT × 8
	23.76 sec. (stereo/sampling rate 22.05kHz)	Standard output level: -3dBv
Frequency response	20Hz - 20kHz (sampling rate 44.1kHz)	Output impedance: 600ohms
	20Hz - 10kHz (sampling rate 22.05kHz)	STEREO HEADPHONE × 1
Data format	16 bit linear	EFFECT RETURN × 2 (L CH., R CH)
Filter	Digital moving low pass filter (-18dB/oct)	Input level: -3dBv
Max. No. of samples	200	Input impedance: 10k ohms
Max. No. of programs ...	100	FOOT SWITCH × 1
Envelope generator	2 sets/Digital algorithm	MIDI IN × 1
Pitch shift	Interpolation & decimation digital algorithm (24 bit algorithm custom LSI)	MIDI OUT × 1
	±2 octave changeable/1 cent step	MIDI THROUGH × 1
Display	320 Characters graphic large display	Dimensions
Disk drive	3.5 inch 2HD (2M bytes)	482.6(W) × 132.6(H) × 425(D) mm (EIA 3U Rack)
	3.5 inch 2DD (1M bytes) switchable	Weight
Connectors	Front panel	9.5kg
	REC IN CANNON × 2 (L CH., R CH)	Power req/consumption ...
	PHONE × 2 (L CH., R CH)	AC 120/220/240V/17W
	INPUT LEVEL	AC 100V/17W
	HI: -58dBm	Option
	MID: -38dBm	EXM005: MEMORY EXPANSION BOARD (2M bytes)
	LOW: -18dBm	IB-102: ATARI HARD DISK INTERFACE BOARD
	REAR PANEL	IB-103: SSI INTERFACE BOARD
	STEREO OUT/× 2 (L CH., R CH)	IB-104: DIGITAL AUDIO INTERFACE BOARD
	Standard output level: -3dBv	BL1000: 3.5 INCH. 2HD BLANK DISK
	Output impedance: 600ohms	SL1000-: SOUND LIBRARY FOR S1000

* For improvement purposes, specifications and design are subject to change without notice.

★ SAFETY INSTRUCTIONS

PRECAUTIONS DURING SERVICING

1. Parts identified by the Δ (*) symbol are critical for safety. Replace only with parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation. These must also be replaced only with specified replacements.
Examples: RF converters, tuner units, antenna selector switches, RF cables, noise blocking capacitors, noise blocking filters, etc.
3. Use specified internal wiring. Note especially:
 - 1) Wires covered with PVC tubing
 - 2) Double insulated wires
 - 3) High voltage leads
4. Use specified insulating materials for hazardous live parts. Note especially:
 - 1) Insulation Tape
 - 2) PVC tubing
 - 3) Spacers (Insulating Barriers)
 - 4) Insulation sheets for transistors
 - 5) Plastic screws for fixing microswitch (especially in turntable)
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap ends of wires securely about the terminals before soldering.



6. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).

7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locations.
9. Use care that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

SAFETY CHECK AFTER SERVICING

After servicing, make measurements of leakage-current or resistance in order to determine that exposed parts are acceptably insulated from the supply circuit.

The leakage-current measurement should be done between accessible metal parts (such as chassis, ground terminal, microphone jacks, signal-input/output connectors, etc.) and the earth ground through a resistor of 1500 ohms paralleled with a 0.15 μ F capacitor, under the unit's normal working conditions. The leakage-current should be less than 0.5 mA rms AC.

The resistance measurement should be done between accessible exposed metal parts and power cord plug prongs with the power switch (if included) "ON". The resistance should be more than 2.2 Mohms.

PRECAUTIONS FOR LITHIUM BATTERY

The lithium battery may explode when heated excessively. [OBSERVE THE FOLLOWING WHEN REPLACING]

- replace with the same make and type only.
- Use soldering iron in "recommended way" only.
- Place battery in correct polarity.
- Do not short the terminals.
- Do not recharge battery.
- Do not dispose of battery in fire.



[DANGER]



[RECOMMENDED WAY]

★ INFORMATION

SYMBOLS FOR PRIMARY DESTINATION

Alphabet indicates the destination of the units as listed below.

Symbols	Principal Destinations
A	USA
B	UK
C	Canada
E	Europe (except UK)
J	Japan
S	Australia
V	W. Germany only
U	Universal Area
Y*	Custom version

I. CONTROLS

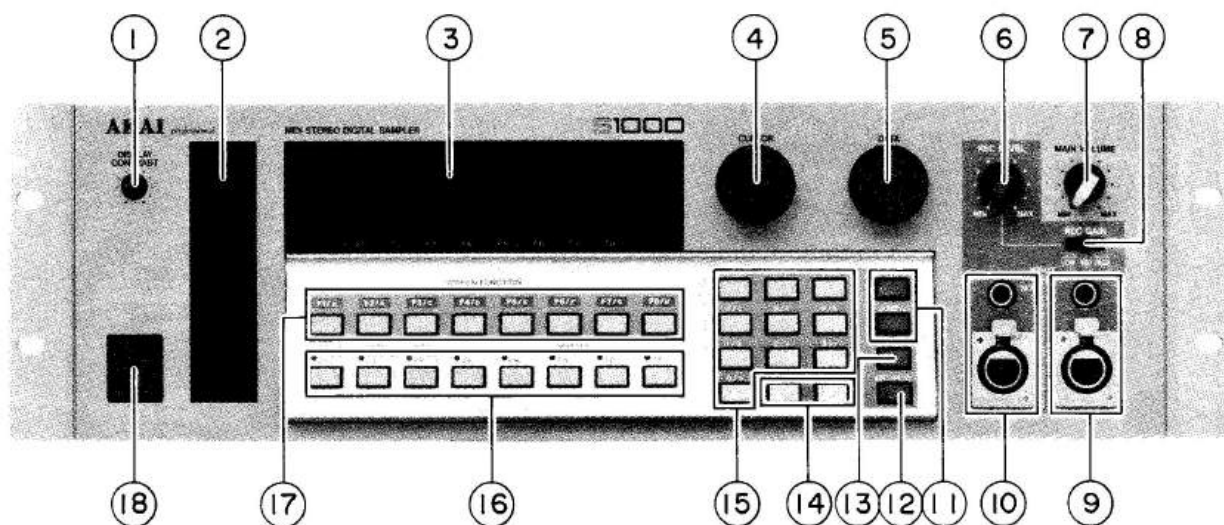


Fig. 1-1 Front panel

- ① DISPLAY CONTRAST volume
- ② FLOPPY DISK DRIVE
- ③ LCD screen
- ④ CURSOR control knob
- ⑤ DATA control knob
- ⑥ REC LEVEL volume knob
- ⑦ MAIN VOLUME knob
- ⑧ REC GAIN (LOW, MID, HIGH) selector
- ⑨ Rch. REC IN terminals

- ⑩ Lch. REC IN terminals
- ⑪ MARK and JUMP keys
- ⑫ ENT/PLAY key
- ⑬ NAME key
- ⑭ +/◀, -/▶ keys
- ⑮ Numeric data keys
- ⑯ Function keys
- ⑰ Soft keys
- ⑱ POWER switch

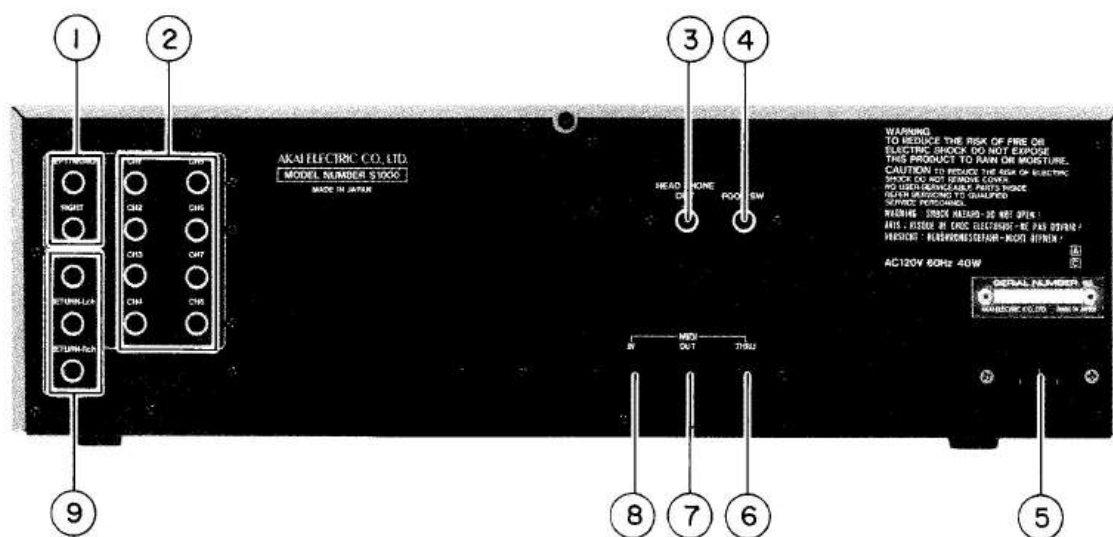


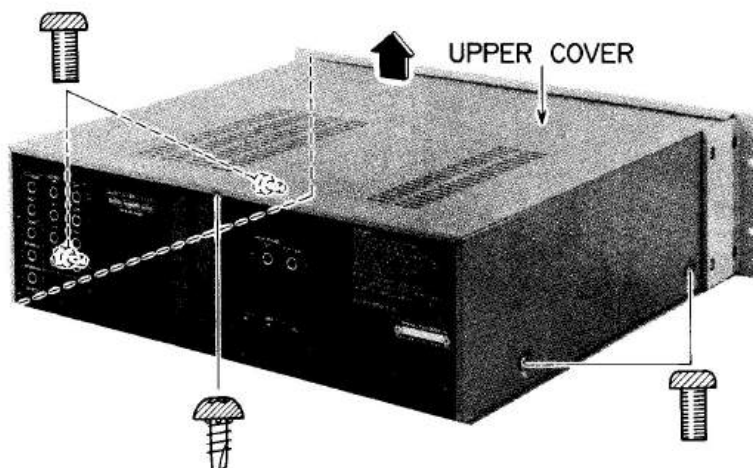
Fig. 1-2 Rear panel

- ① Stereo output terminal (L CH., R CH)
- ② Assignable output terminal (CH1 to CH8)
- ③ HEAD PHONE OUT terminal
- ④ FOOT SW terminal
- ⑤ AC inlet terminal
- ⑥ MIDI THRU (through) terminal
- ⑦ MIDI OUT terminal
- ⑧ MIDI IN terminal
- ⑨ EFFECT SEND and RETURN (L CH., R CH) terminal

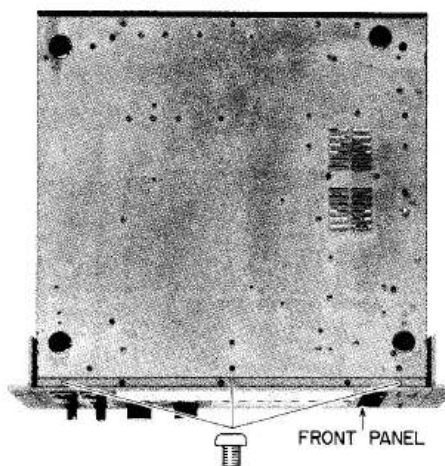
II. DISASSEMBLY

In case of trouble, etc., necessitating dismantling, please dismantle in the order shown in the photographs.
Reassemble in reverse order.

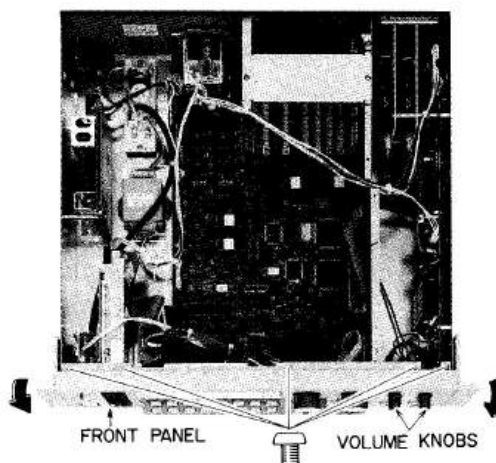
1. Removal of UPPER COVER



2. Removal of FRONT PANEL



3.



* Remove two volume knobs first, then remove the FRONT PANEL.

III. PRINCIPAL PARTS LOCATION

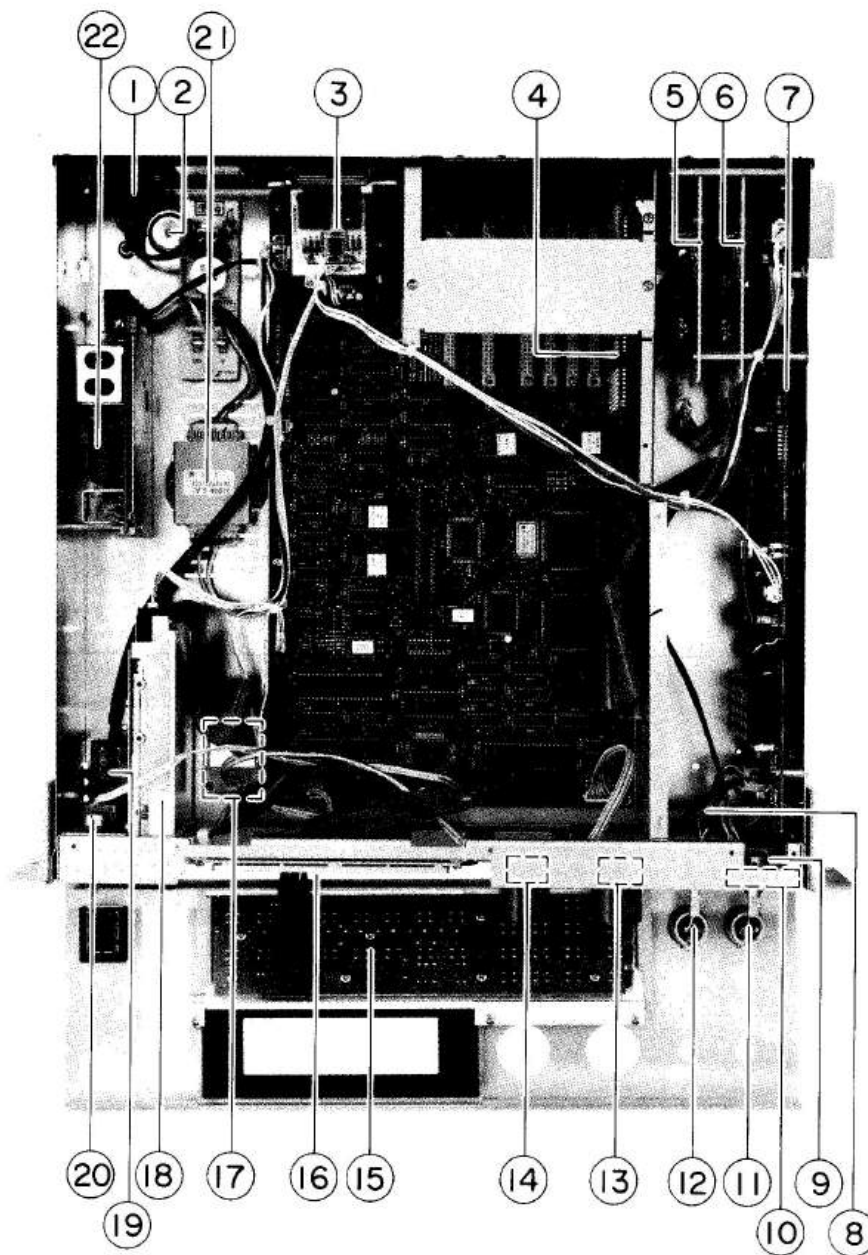


Fig. 3-1

- | | |
|---------------------------|---------------------------|
| ① AC INLET | ⑫ REC IN (LCH) CANON JACK |
| ② FILTER PCB | ⑬ ROTARY ENCODER (DATA) |
| ③ JACK(D) PCB | ⑭ ROTARY ENCODER (CURSOR) |
| ④ MEMORY PCB | ⑮ PANEL PCB |
| ⑤ JACK(B) PCB | ⑯ LCD BLK |
| ⑥ JACK(A) PCB | ⑰ EL INV PCB |
| ⑦ VOICE PCB | ⑱ FDD unit |
| ⑧ JACK(C) PCB | ⑲ CONTRAST VOLUME PCB |
| ⑨ VOLUME PCB | ⑳ POWER SW PCB |
| ⑩ GAIN SWITCH PCB | ㉑ POWER TRANSFORMER |
| ⑪ REC IN (RCH) CANON JACK | ㉒ SWITCHING REGULATOR BLK |

IV. ADJUSTMENT

4-1. INSTRUMENTS CONNECTION

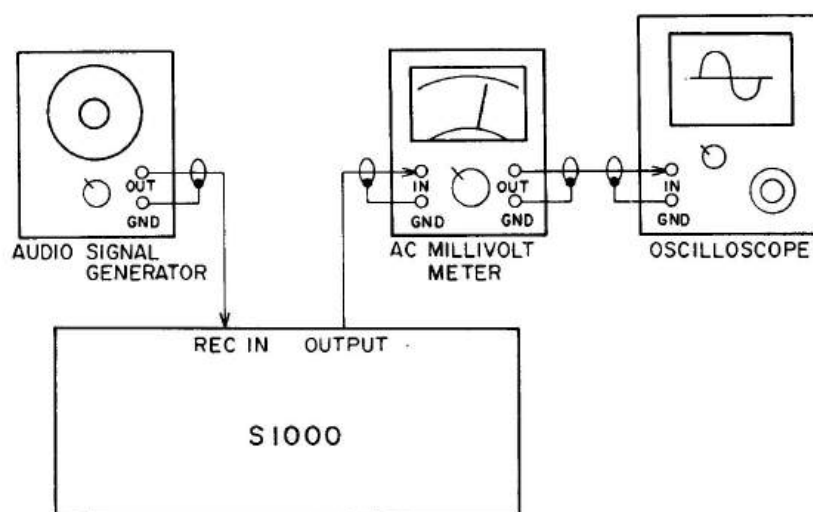
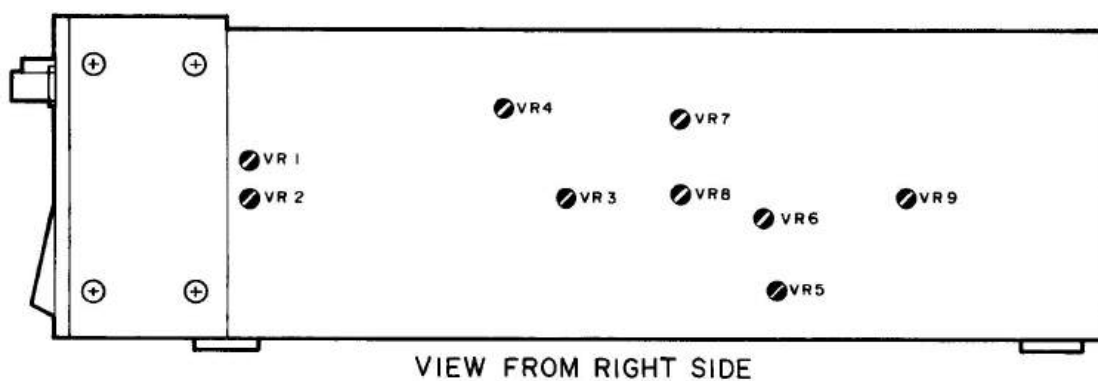


Fig. 4-1

4-2. LOCATION OF ADJUSTMENT POINT



VR1: L CH ADC OFF SET NULL
VR2: R CH ADC OFF SET NULL
VR3: ADC MSB TRIM
VR4: ADC CLOCK
VR5: DAC MSB TRIM

VR6: ADC OUTPUT OFF SET TRIM
VR7: LCH. OUTPUT OFF SET TRIM
VR8: RCH. OUTPUT OFF SET TRIM
VR9: ECHO OUTPUT OFF SET TRIM

Fig. 4-2 View from night side

4-3. HARDWARE ADJUSTMENT

ABOUT THE HARDWARE TEST MODE

* This test mode is used for adjusting and inspecting the Model S1000.

- 1) To set the S1000 to the **HARDWARE TEST** mode, first turn on the power and then, after pressing the "MARK/#" and "NAME" buttons at the same time (all red indicators will light), press the "+/<" button.
- 2) The following menu (Fig. 4-3) will appear on the LC-display when the model S1000 is set to the **HARDWARE TEST** mode.

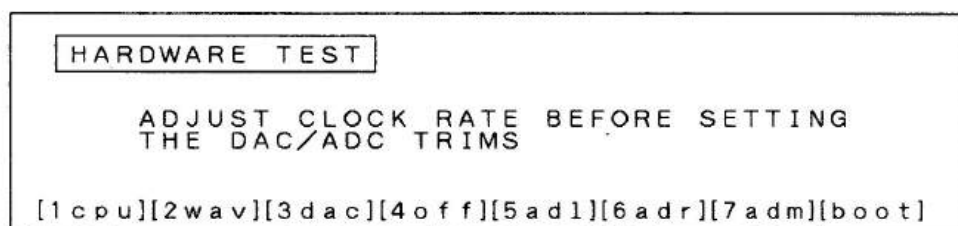


Fig. 4-3

- 3) If the model S1000 is unable to record, check and adjust the **CLOCK RATE** before carrying out the following adjustment.
- 4) During the **HARDWARE TEST** mode, press the F8/H (boot) button.
The model S1000 will be released from the **HARDWARE TEST** mode.
- 5) The Program names and corresponding VR Numbers for each hardware test are as follows.

S1000 HARDWARE TEST

PRG.NO.	VR No.	CONTENTS
1	—	CPU MEMORY TEST
2	—	WAVEFORM MEMORY TEST
3	VR 5	DAC MSB TRIM
4	VR 6	DAC OUTPUT OFF SET TRIM
	VR 7	LEFT OUTPUT OFF SET TRIM
	VR 8	RIGHT OUTPUT OFF SET TRIM
	VR 9	SEND OUTPUT OFF SET TRIM
5	VR 2	LEFT ADC OFF SET NULL
6	VR 1	RIGHT ADC OFF SET NULL
7	VR 4	ADC CLOCK
	VR 3	ADC MSB TRIM

Fig. 4-4

* During all adjustments, set the **MAIN VOLUME** to the maximum position.

4-3-1. CPU MEMORY TEST

- 1) During the HARDWARE TEST mode, press the "F1/A(1 cpu)" button. The following menu will appear on the LC-display (Fig. 4-5).

```
HARDWARE TEST 1. CPU MEMORY TEST
BANK DATA>1514131211109876543210 RESULT
  1      .....
  2      .....

[1cpu][2wav][3dac][4off][5ad1][6adr][7adm][boot]
```

Fig. 4-5

- 2) A few seconds later, the LC-display will show the message "UK" as in Fig. 4-6. If the message "UK" does not appear, this indicates a malfunction in the memory circuit. In this case check the memory circuit and LSI.

```
HARDWARE TEST 1. CPU MEMORY TEST
BANK DATA>1514131211109876543210 RESULT
  1      ..... OK
  2      ..... OK

[1cpu][2wav][3dac][4off][5ad1][6adr][7adm][boot]
```

Fig. 4-6

4-3-2. WAVEFORM MEMORY TEST

- 1) During the HARDWARE TEST mode, press the "F2/B(3adc)" button. The following menu will appear on the LC-display (Fig. 4-7).

```
HARDWARE TEST 2. WAVEFORM MEMORY TEST
BANK DATA>1514131211109876543210 RESULT
  1      ..... testing 35sec
  2      EEEEEEEEEEEEEEEEEEE
  3      EEEEEEEEEEEEEEEEEEE
  4      EEEEEEEEEEEEEEEEEEE

[1cpu][2wav][3dac][4off][5ad1][6adr][7adm][boot]
```

Fig. 4-7

- 2) After 35 seconds the LC-display will show the message as shown Fig. 4-8. If this message does not appear this indicates a malfunction in the memory circuit. In this case check the memory circuit and LSI.

```
HARDWARE TEST 2. WAVEFORM MEMORY TEST
BANK DATA>1514131211109876543210 RESULT
  1      ..... OK
  2      EEEEEEEEEEEEEEEEEEE NO CARD?
  3      EEEEEEEEEEEEEEEEEEE NO CARD?
  4      EEEEEEEEEEEEEEEEEEE NO CARD?

[1cpu][2wav][3dac][4off][5ad1][6adr][7adm][boot]
```

Fig. 4-8

4-3-3. ADJUSTMENT OF DAC MSB TRIM

- 1) During the HARDWARE TEST mode, press the "F3/C(3 adc)" button.

The following menu will appear on the LC-display (Fig. 4-9).

This indicates that the sinewave has been loaded and that the DAC MSB TRIM adjustment mode is set.

```
HARDWARE TEST 3. DAC MSB TRIM

ADJUST DAC MSB TRIM FOR PUREST
30HZ SINEWAVE AT OUTPUT 1

[1cpu][2wav][3dac][4off][5ad1][6adr][7adm][boot]
```

Fig. 4-9

- 2) Connect an AC milli-voltmeter to the OUTPUT 1 terminal on the rear panel, and connect an oscilloscope to the output terminal of the AC milli-voltmeter. Choose a range on the AC milli-voltmeter that does not cause clipping of the oscilloscope's waveform. (Refer to Fig. K4-10)

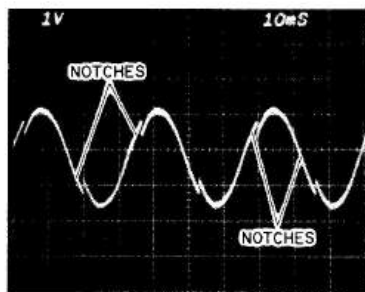


Fig. 4-10

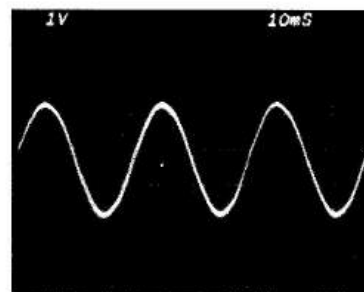


Fig. 4-11

- 3) If notches appear in the waveform displayed on the oscilloscope as shown in Fig. 4-10, adjust VR 5 on the VOICE PCB as shown in Fig. 4-11.

4-3-4. ADJUSTMENT OF OUTPUT OFF SET TRIM

- 1) During the HARDWARE TEST mode, press the "F4/D(4off)" button.

The following menu will appear on the LC-display (Fig. 4-12).

This indicates that the OUTPUT OFFSET TRIM adjustment mode is set.

```
HARDWARE TEST 4. OUTPUT OFFSET TRIM

ADJUST TRIMS FOR MINIMUM 500HZ TONE:-
a.   ADC OUTPUT OFFSET : OUTPUT 1
b.   LEFT OUTPUT OFFSET : LEFT OUTPUT
c.   RIGHT OUTPUT OFFSET : RIGHT OUTPUT
d.   ECHO OUTPUT OFFSET : ECHO OUTPUT

[1cpu][2wav][3dac][4off][5ad1][6adr][7adm][boot]
```

Fig. 4-12

- 2) Connect an AC milli-voltmeter to the OUTPUT 1 terminal, and connect an oscilloscope to the output terminal of the AC milli-voltmeter. Choose a range on the AC milli-voltmeter that does not cause clipping of the oscilloscope's waveform. (Refer to Fig. 4-13)

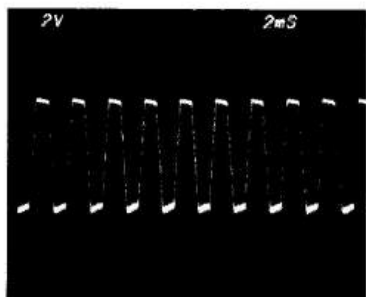


Fig. 4-13

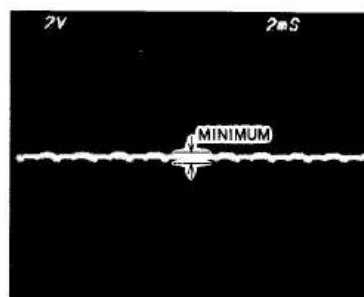


Fig. 4-14

- 3) Adjust VR 6 on the VOICE PCB so that the levels on the oscilloscope and AC milli-voltmeter are minimum. (Refer to Fig. 4-14)
- 4) Repeat the same adjustment for the VR 7, VR 8 and VR 9 on the VOICE PCB.
The corresponding test points for each VR are as follows.

VR No.	CONTENTS	TEST POINTS
VR 6	DAC OUTPUT OFFSET TRIM	CH. 1 OUTPUT
VR 7	LEFT OUTPUT OFFSET TRIM	LEFT CH./MONO OUTPUT
VR 8	RIGHT OUTPUT OFFSET TRIM	RIGHT CH. OUTPUT
VR 9	SEND OUTPUT OFFSET TRIM	EFFECT SEND OUTPUT

Fig. 4-15 ADC ADJUSTMENTS KEY

4-3-5. ADJUSTMENT OF ADC OFF SET NULL

- 1) During the **HARDWARE TEST** mode, press the "F5/E(5adr)" button.
The following menu will appear on the LC-display (Fig. 4-16).

```

HARDWARE TEST 5. LEFT ADC OFFSET NULL
SET MIN. REC. LEVEL, LOW GAIN, SHORT INPUTS
ADJUST LEFT INPUT OFFSET TRIM
TO ZERO THE OFFSET: - 0
                    +2  ↑
[1cpu][2wav][3dac][4off][5ad1][6adr][7adm][boot]
  
```

Fig. 4-16

- 2) Set the REC. LEVEL to the maximum position and the REC. GAIN to the low position.
- 3) Adjust VR 1 on the VOICE PCB so that the arrow (▲) on the LC-display is aligned with the "0" (center position).
- 4) Next, press the "F6/F(6adr)" button. The following menu will appear on the LC-display (Fig. 4-17).

```

HARDWARE TEST 6. RIGHT ADC OFFSET NULL
SET MIN. REC. LEVEL, LOW GAIN, SHORT INPUTS
ADJUST RIGHT INPUT OFFSET TRIM
TO ZERO THE OFFSET: - 0
                    +2  ↑
[1cpu][2wav][3dac][4off][5ad1][6adr][7adm][boot]
  
```

Fig. 4-17

- 5) Adjust VR 2 on the VOICE PCB so that the arrow (➡) on the LC-display is aligned with the "0" (center position).

4-3-6. ADJUSTMENT OF ADC MSB TRIM

- 1) During the HARDWARE TEST mode, press the "F7/G(7 adm)" button. The following menu will appear on the LC-display (Fig. 4-18).

```

HARDWARE TEST 7. ADC MSB TRIM
CONNECT 30HZ 40mV pp SINEWAVE TO
LEFT INPUT ON LOW GAIN
ADJUST REC. LEVEL FOR APPROX 1V pp
UNCLIPPED SINEWAVE AT OUTPUT 1.
SET ADC MSB TRIM FOR PUREST SINEWAVE
[1cpu][2wav][3dac][4off][5ad1][6adr][7adm][boot]
  
```

Fig. 4-18

- 2) Set the REC. LEVEL to the maximum position and the REC. GAIN to the LOW position.
- 3) Connect an audio signal generator (30Hz, 40 mVp-p, sinewave) to the LEFT/MONO INPUT terminal and the oscilloscope to the OUTPUT 1 terminal.
- 4) If a wave form like the one shown in Fig. 4-19 appears on the oscilloscope, adjust VR 4 on the VOICE PCB to correct the wave for as shown in Fig. 4-20.

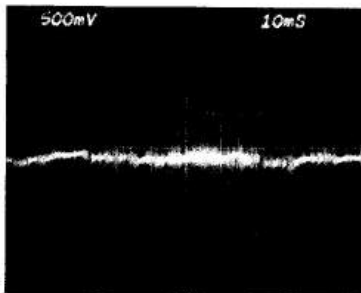


Fig. 4-19

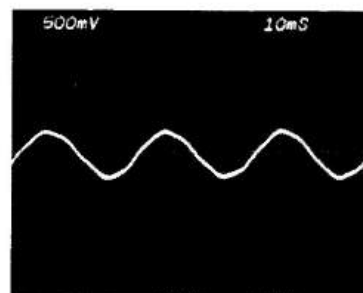


Fig. 4-20

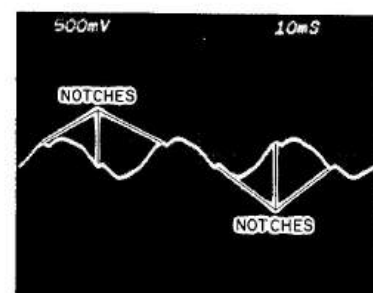


Fig. 4-21

- 5) If notches appear in the waveform on the oscilloscope as shown in Fig. 5-21, adjust VR 3 on the VOICE PCB to correct the waveform as shown in Fig. 4-20.

V. MIDI IMPLEMENTATION CHART

[MIDI DIGITAL SAMPLER]

Model S1000

MIDI Implementation Chart Version : 1.0

Function		Transmitted	Recognized	Remarks
Basic Channel	Default Changed	×	1	Without Disk
		×	1 - 16	Memorized (Disk)
Mode	Default	×	Mode 1	Without Disk
	Messaged	×	Mode 1 - 4	Memorized (Disk)
	Altered	*****	Omni on/off, P/M	
			×	
Note		×	×	
0 - 127				
Number	: True voice	*****	24 - 96	
Velocity	Note ON	×	○ 9n V=1=127	Used Velocity release
	Note OFF		○ 8n V=0=127	
After Touch	Key's	×	×	
	Ch's	×	○	
Pitch Bender		×	○	0 - 12: Harf tone step (7 bit)
Control Change	1	×	○	Modulation wheel
	7	×	○	
	64	×	○	
				Volume
				Sustain pedal
Prog Change	: True #	×	1=128	by Present number value
		*****	1=100	
System Exclusive		○	○	AKAI ID: 47H S1000 ID: 48H
System	: Song Pos	×	×	
	: Song Sel	×	×	
Common	: Tune	×	×	
System	: Clock	×	×	
Real Time	: Commands	×	×	
Aux	: Local ON/OFF	×	×	
	: All Notes OFF	×	○ (123)	
Messages	: Active Sense	×	×	
	: Reset	×	×	
Notes				

Mode 1 : OMNI ON, POLY Mode 2 : OMNI ON, MONO
Mode 3 : OMNI OFF, POLY Mode 4 : OMNI OFF, MONO

○ : Yes
× : No

VI. PARTS LIST

ATTENTION

1. When placing an order for parts, be sure to list Part No., Model No. and the description of each part. Otherwise, the non-delivery of the part or the delivery of a wrong part may result.
2. Please make sure that Part No. is correct when ordering.
If not, a part different from the one you ordered may be delivered.
3. Since the parts shown in Parts List of Preliminary Service Manual may have been the subject of changes, please use this Parts List for all future reference.

HOW TO USE THIS PARTS LIST

1. This Parts List lists those parts which are considered necessary for repairs. Other common parts, such as resistors and capacitors, are listed in the "Common List for Service Parts" from which these parts should be selected and stocked.
2. The Recommended Spare Parts List shows those parts in the Parts List which are considered particularly important for service.
3. Parts not shown in the Parts List and "Common List for Service Parts" will not in principle be supplied.
4. How to read the Parts List.
 - a) Mechanism Block
 - b) PC Board

2. HEAD BASE BLOCK

REF. NO.	PART NO.	DESCRIPTION
1	BH-T2023A320A	HEAD BASE BLOCK
2	HP-H2206A010A	HEAD R/P PR4-8FU C
3	ZS-477876	PAN20×03STL CMT
4	ZS-536488	BID20×08STL CMT
5	ZG-402895	SP CS ANGLE ADJUST

SP (Service Parts) Classification

This number corresponds with the individual parts index number in that figure.

6. MAIN PC BOARD

REF. NO.	PART NO.	DESCRIPTION
IC1	EI-324536	IC HD14049BP
IC2	EI-336801	IC MB8841-564M
C1A	EC-338399	C MMY V 223M 250AC [U,E,B,S]
C1B	EC-350949	C MMY V 223M 250DC [J]
C1C	EC-338397	C MMY V 223M 125AC [C,A]
X1	EI-318384	OSC X'TAL NC-18C

Symbols for primary destination

[A] : AAL (U.S.A) [S] : SAA (Australia)
[B] : BEAB (England) [U] : U/T (Universa Area)
[C] : CSA (Canada) [V] : VDE (W. Germany)
[E] : CEE (Europe) [J] : JPN (Japan) [Y] : Custom Version

SP (Service Parts) Classification

These reference symbols correspond with component symbols in the Schematic Diagrams.

The available PC Board Blocks are listed separately.

5. When Part No. is known, Parts Index at end of Parts List can be used to locate where that part is shown in Parts List by its Reference No. listed at right of Part No.

WARNING

△ (*) INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURE'S RECOMMENDED PARTS.

AVERTISSEMENT

△ (*) IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT.

1. RECOMMENDED SPARE PARTS

We suggest you to stock the following Recommended Spare Part items listed below since they can cover most of the routine service.

Ref. No.	Part No.	Description
1	*BP-384743J	SW REGULATOR P30-5 [J,C,A,Y1]
2	*BP-385639J	SW REGULATOR P30-5-XAKI [E,V,B,S]
3	*BT-384745J	TRANS POW S1000(C,A) [C,A]
4	*BT-384746J	TRANS POW S1000(E,V,B,S) [E,V,B,S]
5	*BT-384744J	TRANS POW S1000(J) [J]
6	*BT-383935J	TRANS PULSE 2E16-1001-01
7	ED-359863	D LED LN81CV-(LF) AK ORANGE
8	*ED-330319	D SILICON DBA10B 100/1.0A
9	ED-301911	D SILICON H DS448
10	ED-344280	D SILICON H GMA-01-FY2 F05
11	*ED-370990	D SILICON 1SR35-100AHS F10
12	ED-378219	DETECTOR PC 6N137
13	*EF-355226	FUSE BET T 250V 1.00A [B]
14	*EF-355374	FUSE BET T 250V 500MA [B]
15	*EF-623103	FUSE SEMKO T 250V 1.00A [E,V,S]
16	*EF-593706	FUSE SEMKO T 250V 500MA [E,V,S]
17	*EF-309387	FUSE TSC A 250V 1.00A [J]
18	*EF-310229	FUSE TSC 125V 1.00A [C,A,Y1]
19	EH-384795J	FILTER LC LP BL-21TS 20KHZ
20	EH-384796J	FILTER LC LP BL-21TT 20KHZ
21	EH-384797J	FILTER LC LP BL-21TU 20KHZ
22	EH-384792J	FILTER LC LP BL-21TY 10KHZ
23	EH-384793J	FILTER LC LP BL-21TZ 10KHZ
24	EH-384794J	FILTER LC LP BL-21UA 10KHZ
25	EH-384798J	FILTER LC LP BL-21UB 20KHZ
26	EH-384799J	FILTER LC LP BL-21UC 20KHZ
27	EI-389144J	IC CD74ACT573E
28	EI-389146J	IC CD74AC00E
29	EI-389143J	IC CD74AC04E
30	EI-389149J	IC CD74AC139E
31	EI-389150J	IC CD74AC158E
32	EI-389148J	IC CD74AC32E
33	EI-389142J	IC CD74AC541E
34	EI-379585	IC CD74HC4053
35	EI-369660	IC CXK5816PN-12L
36	EI-384770J	IC FLR-L6009
37	EI-384771J	IC ITP-L6009
38	EI-378276	IC LC7981
39	EI-379657J	IC MB89255A-P-G
40	EI-375346	IC MM74HCO4N
41	EI-375347	IC MM74HC14N
42	EI-362553	IC MN41464-12
43	EI-356160	IC M5216P
44	EI-360043	IC M5220P
45	EI-362588	IC M5238P
46	*EI-336995	IC NJM78L05A
47	*EI-326702	IC NJM78M05A
48	*EI-375441	IC NJM78M12A
49	*EI-356299	IC NJM79M05A
50	*EI-375442	IC NJM79M12A
51	EI-388409J	IC OPA602AM
52	EI-378297	IC PCM54HP
53	EI-382368J	IC PCM78P-J
54	EI-364253	IC PST520D-2
55	EI-384791J	IC TC511000AP-10
56	EI-360037	IC TC74HC00P
57	EI-360039	IC TC74HC08P
58	EI-384789J	IC TC74HC10P
59	EI-360025	IC TC74HC138P
60	EI-356049	IC TC74HC139P
61	EI-360054	IC TC74HC174P

Ref. No.	Part No.	Description
62	EI-365101	IC TC74HC195P
63	EI-360042	IC TC74HC259P
64	EI-366117	IC TC74HC279P
65	EI-360036	IC TC74HC32P
66	EI-384782J	IC TC74HC365P
67	EI-365831	IC TC74HC393P
68	EI-384807J	IC TC74HC4051AP
69	EI-375205	IC TC74HC541P
70	EI-371361	IC TC74HC573P
71	EI-376387	IC TC74HC595P
72	EI-360028	IC TC74HC74P
73	EI-360027	IC TC74HC86P
74	EI-384769J	IC TE7730
75	EI-384804J	IC UPD5201C
76	EI-384768J	IC UPD70216G-8
77	EI-384773J	IC UPD71065G
78	EI-378275	IC UPD72066C
79	EI-384774J	IC.TC57512AD-15 S1000 V1.0-A
80	EI-384775J	IC.TC57512AD-15 S1000 V1.0-B
81	EI-384776J	IC.TC57512AD-15 S1000 V1.0-C
82	EI-384778J	IC.TC57512AD-15 S1000 V1.0-D
83	EI-365811	OSC X'TAL NR18 16.000MHZ
84	EI-384779J	OSC X'TAL TD308C 33.8668MHZ
85	EJ-364256	DIN J M1704 3P [MIDI IN/OUT THRU]
86	EJ-364322	PHONE J 2P HLJ0520-110 W/NUT [CH 5]
87	*EJ-358632	SOCKET INLET SOT-16 3P [C,A,E,V,B,S]
88	*EJ-358633	SOCKET INLET SOT-17 2P [J]
89	*EO-360068	COIL LF LF-2 B [J,C,A,Y1]
90	*EO-389172J	COIL LF LF-4N 502 [E,V,B,S]
91	*ER-325114	R CB H S10 FS RDS 1/4W 330J
92	*ER-302241	R CB H S10 FS RDS 1/4W 4R7J
93	*ER-382385J	R CB H S12 FS RDS 1/2W 100J
94	*ER-321619	R OMF H S15 FS 1W 101J
95	*ES-384812J	SW PUSH SDDSA3 02-1 [E,V,B,S]
96	*ES-337902	SW PUSH SDLD1P 01-1 [J,C,A,Y1] [POWER SW]
97	ES-384811J	SW SLIDE ESD-32243 [J,E] [GAIN SW]
98	ES-349474	SW TACT SKHHAM004A [SEL PROG]
99	EV-384810J	VR ROTARY EVH-CCA363B53 B502 [CONTRAST VR]
100	EV-384809J	VR ROTARY EWK-EPA027B14 B103X2 [OUT PUT VR]
101	EV-384808J	VR ROTARY EWK-E9A027A14 A103X2 [REC VR]

2. P.C BOARD BLOCK

Ref. No.	Part No.	Description
1	BA-L6009A060A	PC CPU BLK S1000
2	BA-L6009A030A	PC VOICE BLK S1000
3	BA-L6009A050A	PC PANEL BLK S1000
4	BA-L6009A020A	PC MEMORY BLK S1000
5A	BA-L6009A040A	PC(#) JACK BLK S1000(J) [J,C,A,Y1]
5B	BA-L6009A040B	PC(#) JACK BLK S1000(E) [E,V,B,S]

3. CPU P.C BOARD

Ref. No.	Part No.	Description
C72	EC-365619	C EC V CUT AS1 102M 25.0DC
C73	EC-365619	C EC V CUT AS1 102M 25.0DC
D1	ED-344280	D SILICON H GMA-01-FY2 F05
D2	*ED-330319	D SILICON DBA10B 100/1.0A
D3	*ED-370990	D SILICON 1SR35-100AHS F10
D4	*ED-370990	D SILICON 1SR35-100AHS F10
D5	*ED-370990	D SILICON 1SR35-100AHS F10
D6	*ED-370990	D SILICON 1SR35-100AHS F10
IC1	EI-384768J	IC UPD70216G-8
IC2	EI-384769J	IC TE7730
IC3	EI-384770J	IC FLR-L6009
IC4	EI-384771J	IC ITP-L6009
IC5	EI-378276	IC LC7981
IC6	EI-378275	IC UPD72066C
IC7	EI-384773J	IC UPD71065G
IC8	EI-379657J	IC MB89255A-P-G
IC9	EI-384774J	IC.TC57512AD-15 S1000 V1.0-A
IC10	EI-384775J	IC.TC57512AD-15 S1000 V1.0-B
IC11	EI-384776J	IC.TC57512AD-15 S1000 V1.0-C
IC12	EI-384778J	IC.TC57512AD-15 S1000 V1.0-D
IC13	EI-369660	IC CXK5816PN-12L
IC14	EI-362553	IC MN41464-12
IC15	EI-362553	IC MN41464-12
IC16	EI-362553	IC MN41464-12
IC17	EI-362553	IC MN41464-12
IC18	EI-389150J	IC CD74AC158E
IC19	EI-389150J	IC CD74AC158E
IC20	EI-360025	IC TC74HC138P
IC21	EI-360042	IC TC74HC259P
IC22	EI-384782J	IC TC74HC365P
IC23	EI-365831	IC TC74HC393P
IC24	EI-365101	IC TC74HC195P
IC25	EI-366117	IC TC74HC279P
IC26	EI-356049	IC TC74HC139P
IC27	EI-360028	IC TC74HC74P
IC28	EI-376387	IC TC74HC595P
IC29	EI-376387	IC TC74HC595P
IC30	EI-371361	IC TC74HC573P
IC31	EI-371361	IC TC74HC573P
IC32	EI-389144J	IC CD74ACT573E
IC33	EI-389149J	IC CD74AC139E
IC34	EI-389142J	IC CD74AC541E
IC35	EI-389142J	IC CD74AC541E
IC36	EI-375347	IC MM74HC14N
IC37	EI-375346	IC MM74HCO4N
IC38	EI-360039	IC TC74HC08P
IC39	EI-389143J	IC CD74AC04E
IC40	EI-389146J	IC CD74AC00E
IC41	EI-389148J	IC CD74AC32E
IC42	EI-384789J	IC TC74HC10P
IC43	EI-375346	IC MM74HCO4N
IC44	EI-360037	IC TC74HC00P
IC45	EI-360036	IC TC74HC32P
IC46	EI-360039	IC TC74HC08P
IC47	EI-364253	IC PST520D-2
IC48	*EI-375441	IC NJM78M12A
IC49	*EI-375442	IC NJM79M12A
IC50	EI-362553	IC MN41464-12
IC51	EI-362553	IC MN41464-12
IC52	EI-362553	IC MN41464-12
IC53	EI-362553	IC MN41464-12
IC54	EI-389149J	IC CD74AC139E
IC55	EI-360036	IC TC74HC32P
J101	EJ-364256	DIN J M1704 3P [MIDI IN/OUT THRU]
PH1	ED-378219	DETECTOR PC 6N137
P101	EJ-384780J	SOCKET 64S-6033-0431-2 64P
P102	EJ-384780J	SOCKET 64S-6033-0431-2 64P
P103	EJ-384780J	SOCKET 64S-6033-0431-2 64P
P104	EJ-384780J	SOCKET 64S-6033-0431-2 64P
P105	EJ-384780J	SOCKET 64S-6033-0431-2 64P
P106	EJ-384780J	SOCKET 64S-6033-0431-2 64P
P107	EJ-384780J	SOCKET 64S-6033-0431-2 64P
P108	EJ-365834	PLUG RK-H341TD-0190 34P
P109	EJ-384818J	PLUG RF-H262TD-1190 26P
P110	EJ-378280	PLUG RA-H502TD-1190 50P

Ref. No.	Part No.	Description
R53	*ER-325114	R CB H S10 FS RDS 1/4W 330J
R54	*ER-382385J	R CB H S12 FS RDS 1/2W 100J
X1	EI-365811	OSC X'TAL NR18 16.000MHZ
X2	EI-365811	OSC X'TAL NR18 16.000MHZ
X3	EI-384779J	OSC X'TAL TD308C 33.8688MHZ
F2A	*EF-309387	FUSE TSC A 250V 1.00A [J]
F3A	*EF-309387	FUSE TSC A 250V 1.00A [J]
F2B	*EF-310229	FUSE TSC 125V 1.00A [C,A,Y1]
F3B	*EF-310229	FUSE TSC 125V 1.00A [C,A,Y1]
F2C	*EF-623103	FUSE SEMKO T 250V 1.00A [E,V,S]
F3C	*EF-623103	FUSE SEMKO T 250V 1.00A [E,V,S]
F2D	*EF-355226	FUSE BET T 250V 1.00A [B]
F3D	*EF-355226	FUSE BET T 250V 1.00A [B]
1	EZ-200473	SILICON RUBBER SHEET TC-30
2	ZW-632226	WASHER INSULATOR (BUSH M)
3	ZS-421806	PAN30X08STL CMT

4. VOICE P.C BOARD

Ref. No.	Part No.	Description
C29	EC-305429	C TT V DN 105M 25.0DC
C30	EC-305429	C TT V DN 105M 25.0DC
C31	EC-305429	C TT V DN 105M 25.0DC
C34	EC-303031	C TT V DN 335M 25.0DC
C35	EC-371580	C TT V DN 225M 25.0DC
C36	EC-303031	C TT V DN 335M 25.0DC
C37	EC-305429	C TT V DN 105M 25.0DC
C89	EC-305522	C TT V DN 106M 25.0DC
C91	EC-305522	C TT V DN 106M 25.0DC
C93	EC-305522	C TT V DN 106M 25.0DC
C95	EC-305522	C TT V DN 106M 25.0DC
C98	EC-305522	C TT V DN 106M 25.0DC
C99	EC-305522	C TT V DN 106M 25.0DC
C114	EC-347371	C MC V F05 FE92 180J 500DC
C115	EC-347371	C MC V F05 FE92 180J 500DC
C116	EC-347371	C MC V F05 FE92 180J 500DC
D1	ED-301911	D SILICON H DS448
F1	EH-384792J	FILTER LC LP BL-21TY 10KHZ
F2	EH-384792J	FILTER LC LP BL-21TY 10KHZ
F3	EH-384793J	FILTER LC LP BL-21TZ 10KHZ
F4	EH-384793J	FILTER LC LP BL-21TZ 10KHZ
F5	EH-384794J	FILTER LC LP BL-21UA 10KHZ
F6	EH-384794J	FILTER LC LP BL-21UA 10KHZ
F7	EH-384795J	FILTER LC LP BL-21TS 20KHZ
F8	EH-384795J	FILTER LC LP BL-21TS 20KHZ
F9	EH-384796J	FILTER LC LP BL-21TT 20KHZ
F10	EH-384796J	FILTER LC LP BL-21TT 20KHZ
F11	EH-384797J	FILTER LC LP BL-21TU 20KHZ
F12	EH-384797J	FILTER LC LP BL-21TU 20KHZ
F13	EH-384798J	FILTER LC LP BL-21UB 20KHZ
F14	EH-384798J	FILTER LC LP BL-21UB 20KHZ
F15	EH-384798J	FILTER LC LP BL-21UB 20KHZ
F16	EH-384799J	FILTER LC LP BL-21UC 20KHZ
F17	EH-384799J	FILTER LC LP BL-21UC 20KHZ
F18	EH-384799J	FILTER LC LP BL-21UC 20KHZ
IC1	EI-360043	IC M5220P
IC2	EI-360043	IC M5220P
IC3	EI-360043	IC M5220P
IC4	EI-360043	IC M5220P
IC5	EI-384804J	IC UPD5201C
IC6	EI-384804J	IC UPD5201C
IC7	EI-362588	IC M5238P

Ref. No.	Part No.	Description
IC8	EI-362588	IC M5238P
IC10	EI-382368J	IC PCM78P-J
IC11	EI-360027	IC TC74HC86P
IC12	EI-360037	IC TC74HC00P
IC13	EI-378297	IC PCM54HP
IC14	EI-388409J	IC OPA602AM
IC15	EI-360054	IC TC74HC174P
IC16	EI-360054	IC TC74HC174P
IC17	EI-360054	IC TC74HC174P
IC18	EI-360054	IC TC74HC174P
IC19	EI-360054	IC TC74HC174P
IC20	EI-360054	IC TC74HC174P
IC21	EI-379585	IC CD74HC4053
IC22	EI-379585	IC CD74HC4053
IC23	EI-379585	IC CD74HC4053
IC24	EI-379585	IC CD74HC4053
IC25	EI-384807J	IC TC74HC4051AP
IC26	EI-384807J	IC TC74HC4051AP
IC27	EI-384804J	IC UPD5201C
IC28	EI-360043	IC M5220P
IC29	EI-360043	IC M5220P
IC30	EI-360043	IC M5220P
IC31	EI-360043	IC M5220P
IC32	*EI-326702	IC NJM78M05A
IC33	*EI-356299	IC NJM79M05A
IC34	*EI-336995	IC NJM78L05A
J301	EJ-364322	PHONE J 2P HLJ0520-110 W/NUT [L-RETURN]
J302	EJ-364322	PHONE J 2P HLJ0520-110 W/NUT [LEFT/MONO]
J303	EJ-354105	PHONE J 2P HLJ0520-110 6.3 [R-RETURN]
J304	EJ-354105	PHONE J 2P HLJ0520-110 6.3 [RIGHT]
J305	EJ-354105	PHONE J 2P HLJ0520-110 6.3 [ECHO SEND]
L1	EO-379607	COIL FIX 2 8RBS 151K
L2	EO-379607	COIL FIX 2 8RBS 151K
R47	*ER-325114	R CB H S10 FS RDS 1/4W 330J
R48	*ER-325114	R CB H S10 FS RDS 1/4W 330J
R49	*ER-325114	R CB H S10 FS RDS 1/4W 330J
R50	*ER-325114	R CB H S10 FS RDS 1/4W 330J
VR1	EV-378357	R S-FIX H RH0645C 0.30W 104
VR2	EV-378357	R S-FIX H RH0645C 0.30W 104
VR3	EV-378359	R S-FIX H RH0645C P0.30W 224
VR4	EV-380457J	R S-FIX H RH0645C 0.30W 472
VR5	EV-386660J	R S-FIX H RH0645C 0.30W 105
VR6	EV-378357	R S-FIX H RH0645C 0.30W 104
VR7	EV-380457J	R S-FIX H RH0645C 0.30W 472
VR8	EV-380457J	R S-FIX H RH0645C 0.30W 472
VR9	EV-380457J	R S-FIX H RH0645C 0.30W 472
W304	EW-384803J	WIRE ASSY S1000 W304 50P

5. PANEL P.C BOARD

Ref. No.	Part No.	Description
D1	ED-359863	D LED LN81CV-(LF) AK ORANGE
D2	ED-359863	D LED LN81CV-(LF) AK ORANGE
D3	ED-359863	D LED LN81CV-(LF) AK ORANGE
D4	ED-359863	D LED LN81CV-(LF) AK ORANGE
D5	ED-359863	D LED LN81CV-(LF) AK ORANGE
D6	ED-359863	D LED LN81CV-(LF) AK ORANGE
D7	ED-359863	D LED LN81CV-(LF) AK ORANGE
D8	ED-359863	D LED LN81CV-(LF) AK ORANGE
SR1	EH-384815J	COMP R RKC1/8B12 103J
SR2	EH-384817J	COMP R RKC1/8B8 102J
SW1	ES-349474	SW TACT SKHHAM004A [SEL PROG]
SW2	ES-349474	SW TACT SKHHAM004A [F1]
SW3	ES-349474	SW TACT SKHHAM004A [3]
SW4	ES-349474	SW TACT SKHHAM004A [-]
SW5	ES-349474	SW TACT SKHHAM004A [ED SAMPLE]
SW6	ES-349474	SW TACT SKHHAM004A [F2]
SW7	ES-349474	SW TACT SKHHAM004A [NAME]
SW8	ES-349474	SW TACT SKHHAM004A [ENT/PLAY]
SW9	ES-349474	SW TACT SKHHAM004A [ED PROG]
SW10	ES-349474	SW TACT SKHHAM004A [F3]
SW11	ES-349474	SW TACT SKHHAM004A [7]
SW12	ES-349474	SW TACT SKHHAM004A [4]
SW13	ES-349474	SW TACT SKHHAM004A [MIDI]
SW14	ES-349474	SW TACT SKHHAM004A [F4]
SW15	ES-349474	SW TACT SKHHAM004A [8]
SW16	ES-349474	SW TACT SKHHAM004A [5]
SW17	ES-349474	SW TACT SKHHAM004A [DISK]
SW18	ES-349474	SW TACT SKHHAM004A [F5]
SW19	ES-349474	SW TACT SKHHAM004A [9]
SW20	ES-349474	SW TACT SKHHAM004A [6]
SW21	ES-349474	SW TACT SKHHAM004A [TUNE]
SW22	ES-349474	SW TACT SKHHAM004A [F6]
SW23	ES-349474	SW TACT SKHHAM004A [MARK/#]
SW24	ES-349474	SW TACT SKHHAM004A [JAMP/O]
SW25	ES-349474	SW TACT SKHHAM004A [DRUM]
SW26	ES-349474	SW TACT SKHHAM004A [F7]
SW27	ES-349474	SW TACT SKHHAM004A [2]
SW28	ES-349474	SW TACT SKHHAM004A [+]
SW29	ES-349474	SW TACT SKHHAM004A [OPTION]
SW30	ES-349474	SW TACT SKHHAM004A [F8]
SW31	ES-349474	SW TACT SKHHAM004A [1]
SW32	ES-349474	SW TACT SKHHAM004A [0]
W501	EW-384767J	WIRE ASSY S1000 W501 26P

6. MEMORY P.C BOARD

Ref. No.	Part No.	Description
IC1	EI-384791J	IC TC511000AP-10
IC2	EI-384791J	IC TC511000AP-10
IC3	EI-384791J	IC TC511000AP-10
IC4	EI-384791J	IC TC511000AP-10
IC5	EI-384791J	IC TC511000AP-10
IC6	EI-384791J	IC TC511000AP-10
IC7	EI-384791J	IC TC511000AP-10
IC8	EI-384791J	IC TC511000AP-10
IC9	EI-384791J	IC TC511000AP-10
IC10	EI-384791J	IC TC511000AP-10
IC11	EI-384791J	IC TC511000AP-10
IC12	EI-384791J	IC TC511000AP-10
IC13	EI-384791J	IC TC511000AP-10
IC14	EI-384791J	IC TC511000AP-10
IC15	EI-384791J	IC TC511000AP-10
IC16	EI-384791J	IC TC511000AP-10
IS17	EI-389142J	IC CD74AC541E
IC18	EI-389142J	IC CD74AC541E
IC19	EI-375205	IC TC74HC541P
IC20	EI-375205	IC TC74HC541P
J201	EJ-384790J	PLUG 64P-6033-0431-0 64P

7. JACK (A) P.C BOARD

Ref. No.	Part No.	Description
F1	EH-384798J	FILTER LC LP BL-21UB 20KHZ
F2	EH-384798J	FILTER LC LP BL-21UB 20KHZ
F3	EH-384798J	FILTER LC LP BL-21UB 20KHZ
F4	EH-384798J	FILTER LC LP BL-21UB 20KHZ
F5	EH-384799J	FILTER LC LP BL-21UC 20KHZ
F6	EH-384799J	FILTER LC LP BL-21UC 20KHZ
F7	EH-384799J	FILTER LC LP BL-21UC 20KHZ
F8	EH-384799J	FILTER LC LP BL-21UC 20KHZ
IC1	EI-360043	IC M5220P
IC2	EI-360043	IC M5220P
J401	EJ-364322	PHONE J 2P HLJ0520-110 W/NUT [CH 1]
J402	EJ-364322	PHONE J 2P HLJ0520-110 W/NUT [CH 2]
J403	EJ-354105	PHONE J 2P HLJ0520-110 6.3 [CH 3]
J404	EJ-354105	PHONE J 2P HLJ0520-110 6.3 [CH 4]

8. JACK (B) P.C BOARD

Ref. No.	Part No.	Description
F1	EH-384798J	FILTER LC LP BL-21UB 20KHZ
F2	EH-384798J	FILTER LC LP BL-21UB 20KHZ
F3	EH-384798J	FILTER LC LP BL-21UB 20KHZ
F4	EH-384798J	FILTER LC LP BL-21UB 20KHZ
F5	EH-384799J	FILTER LC LP BL-21UC 20KHZ
F6	EH-384799J	FILTER LC LP BL-21UC 20KHZ
F7	EH-384799J	FILTER LC LP BL-21UC 20KHZ
F8	EH-384799J	FILTER LC LP BL-21UC 20KHZ
IC1	EI-360043	IC M5220P
IC2	EI-360043	IC M5220P
J405	EJ-364322	PHONE J 2P HLJ0520-110 W/NUT [CH 5]
J406	EJ-364322	PHONE J 2P HLJ0520-110 W/NUT [CH 6]
J407	EJ-354105	PHONE J 2P HLJ0520-110 6.3 [CH 7]
J408	EJ-354105	PHONE J 2P HLJ0520-110 6.3 [CH 8]

9. JACK (C) P.C BOARD

Ref. No.	Part No.	Description
J409	EJ-379523	PHONE J 3P HLJ4305-3080 S.NUT [REC IN L]
J410	EJ-379523	PHONE J 3P HLJ4305-3080 S.NUT [REC IN R]

10. JACK (D) P.C BOARD

Ref. No.	Part No.	Description
IC1	EI-356160	IC M5216P
J411	EJ-353031	PHONE J 3P HLJ0520-010 [HEAD PHONE]
J412	EJ-379523	PHONE J 3P HLJ4305-3080 S.NUT [FOOT SW]
R5	*ER-321619	R OMF H S15 FS 1W 101J
R6	*ER-321619	R OMF H S15 FS 1W 101J

11. VR P.C BOARD

Ref. No.	Part No.	Description
VR401	EV-384808J	VR ROTARY EWK-E9A027A14 A103X2 [REC VR]
VR402	EV-384809J	VR ROTARY EWK-EPA027B14 B103X2 [OUT PUT VR]

12. GAIN SW P.CBOARD

Ref. No.	Part No.	Description
SW401	ES-384811J	SW SLIDE ESD-32243 [J,E] [GAIN SW]

13. CONTRAST VR P.C BOARD

Ref. No.	Part No.	Description
VR403	EV-384810J	VR ROTARY EVH-CCA363B53 B502 [CONTRAST VR]

14. FILTER P.C BOARD

Ref. No.	Part No.	Description
C1	*EC-369670	C MMY V XE 683M 250AC
C2	*EC-358450	C CE V DNS102MBE B 102M 400AC
C3	*EC-358450	C CE V DNS102MBE B 102M 400AC
C4	*EC-358450	C CE V DNS102MBE B 102M 400AC [E,V,B,S]
FL1A	*EO-360068	COIL LF LF-2 B [J,C,A,Y1]
FL1B	*EO-389172J	COIL LF LF-4N 502 [E,V,B,S]
F1A	*EF-309387	FUSE TSC A 250V 1.00A [J]
F1B	*EF-310229	FUSE TSC 125V 1.00A [C,A,Y1]
F1C	*EF-593706	FUSE SEMKO T 250V 500MA [E,V,S]
F1D	*EF-355374	FUSE BET T 250V 500MA [B]

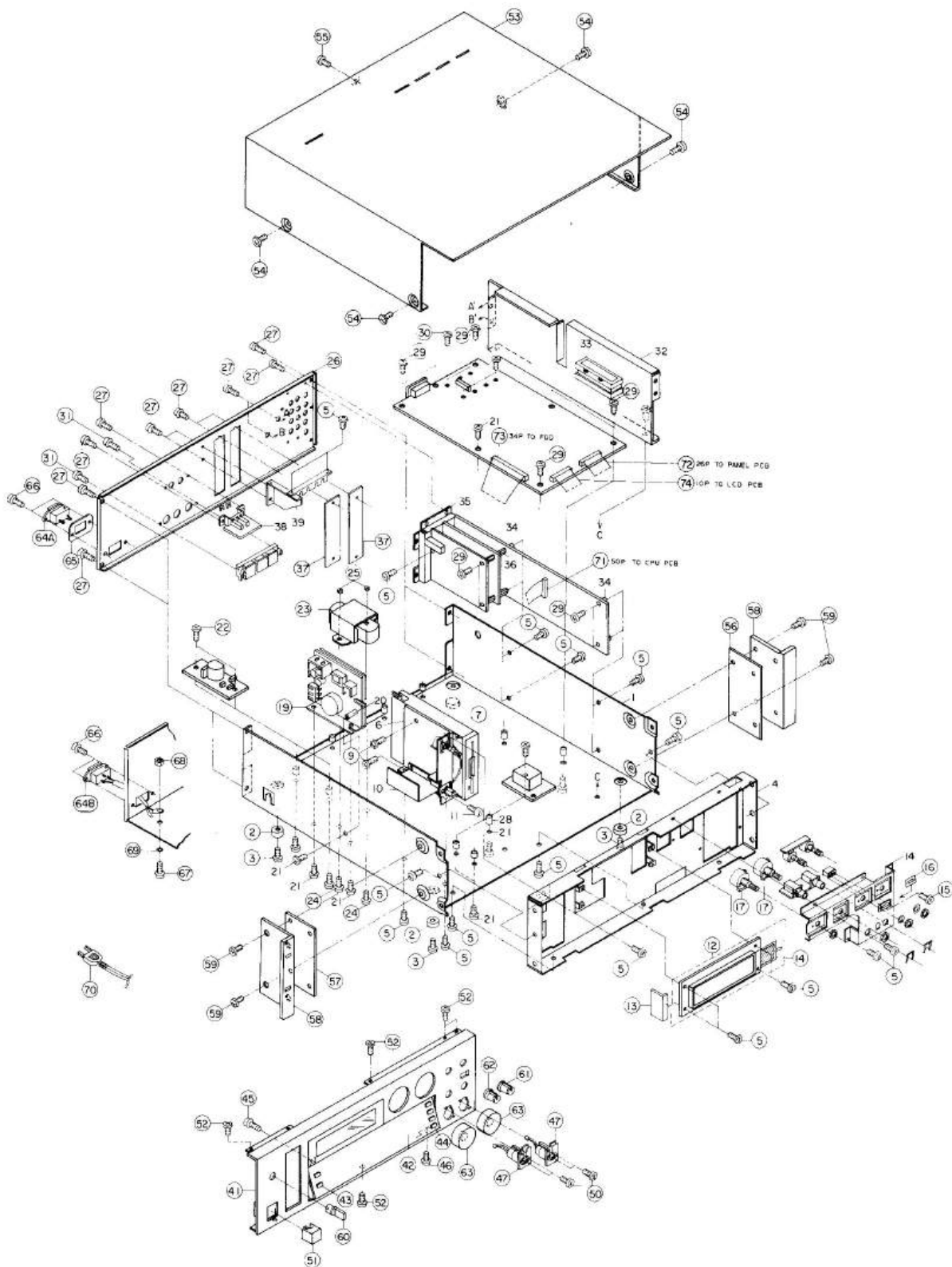
15. POWER SW P.C BOARD

Ref. No.	Part No.	Description
C1	*EC-361942	C CE V DNS103ZV V 103Z 400AC [E,V,B,S]
C2	*EC-361942	C CE V DNS103ZV V 103Z 400AC [E,V,B,S]
SWA	*ES-337902	SW PUSH SDLD1P 01-1 [J,C,A,Y1] [POWER SW]
SWB	*ES-384812J	SW PUSH SDDSA3 02-1 [E,V,B,S]

16. EL INV P.C BOARD

Ref. No.	Part No.	Description
R1	*ER-302241	R CB H S10 FS RDS 1/4W 4R7J
TR1	ET-306977	TR 2SC2274K F F05
T1	*BT-383935J	TRANS PULSE 2E16-1001-01

FINAL ASSEMBLY BLOCK



PARTS LIST

17. FINAL ASSEMBLY BLOCK

Ref. No.	Part No.	Description
2	SA-349332	FOOT
3	ZS-344754	ST PAN30X06STL CMT C080
5	ZS-320906	ST BR30X06STL CMT
7	BB-384741J	FLOPPY DISK DFP723F
9	ZS-323728	BID30X05STL CMT
11	ZS-422076	PAN30X05STL CMT
12	EM-382317J	IND LCD EDMIG245633B
13	EJ-378269	PLUG B10P-ER 10P
14	EL-728382J	EDMIG 245633BEL BACK LIGHT
15	ZS-608095	PAN20X05STL CMT
16	SZ-388412J	MASK SLIDE SW
17	EL-365943	SW EWT-XDFK2550B
19A	*BP-384743J	SW REGULATOR P30-5 [J,C,A,Y1]
19B	*BP-385639J	SW REGULATOR P30-5-XAKI [E,V,B,S]
21	ZS-379405	BID30X06STL CMT
22	ZS-608321	PAN30X06STL CMT PW080
23A	*BT-384744J	TRANS POW S1000(J) [J]
23B	*BT-384745J	TRANS POW S1000(C,A) [C,A]
23C	*BT-384746J	TRANS POW S1000(E,V,B,S) [E,V,B,S]
24	ZS-345530	ST BID30X08STL CMT
25	ZW-516993	N30STL CMT 1
26	SP-384710J	PANEL REAR S1000
27	ZS-345272	ST BR30X06STL BNI
29	ZS-608321	PAN30X06STL CMT PW080
30	ZS-421806	PAN30X08STL CMT
31	ZS-350934	PT BR30X08STL BNI
37	EL-384696J	COVER CONNECTOR (A)
41	BD-384733J	PANEL FRONT PART
42	BD-384734J	PANEL FUNCTION PART
43	SK-382418J	KNOB PUSH(A)
44	SK-382419J	KNOB PUSH(B)
45	ZS-323728	BID30X05STL CMT
46	ZS-325495	T2BR30X06STL CMT
47	EJ-384747J	SOCKET RECEPTACLE XLR-31-F77
50	ZS-355590	CTS26X06STL NI3
51	SK-343017J	KNOB POWER (C)
52	ZS-345530	ST BID30X08STL CMT
53	SP-384716J	COVER UPPER
54	ZS-341959	ST BID40X06STL NI3
55	ZS-319460	T2BR30X06STL BZN PROJECTION
56	SC-384717J	COVER MOUNT(R)
57	SC-384718J	COVER MOUNT(L)
58	SH-362361	HANDLE RACK
59	ZS-322570	ST BID40X08STL NI3
60	SK-384814J	KNOB VOL-C
61	SK-386675J	KNOB SINGLE(2)PART
62	SK-386676J	KNOB SINGLE(3)PART
63	SK-384714J	KNOB CONTROL PART
64A	*EJ-358633	SOCKET INLET SOT-17 2P [J]
64B	*EJ-358632	SOCKET INLET SOT-16 3P [C,A,E,V,B,S]
65	MZ-385430J	HOLDER INLET
66	ZS-362534	T2CTS30X10STL BNI
67	ZS-322580	ST BID40X08STL BNI
68	ZW-413267	N FRANGE 40STL CMT
69	ZW-273892	TW40
70A	*EW-365947	AC CORD 250 SKP210KS17B A [J]
70B	*EW-368420	AC CORD200SKP30KS16 B AC [C,A]
70C	*EW-368421	AC CORD200SKP4819DKS16 B E
70D	*EW-368422	AC CORD200 KS-116AGTBS
70E	*EW-368418	AC CORD200SKP550KS16 B S
71	EW-384803J	WIRE ASSY S1000 W304 50P
72	EW-384767J	WIRE ASSY S1000 W501 26P
73	EW-384754J	WIRE ASSY S1000 W904 34P
74	EW-384755J	WIRE ASSY S1000 W905 10P

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ABBREVIATIONS FOR THE SERVICE MANUAL

ABBREVIATION	EXPLANATION	ABBREVIATION	EXPLANATION
ADC	Analogue to Digital Converter	MIDI	Musical Instrument Digital Interface
AMP (Amp)	AMPlifier	MINI	MINImum
BBD	Backet Brigade Diode	MIX	MIXer
BCD	Binary Code Decimal	MOD	MODulation
B.DOWN	Brak DOWN	M.WHEEL	Modulation WHEEL
B.UP	Back UP	OSC	OSCillator
CE	Chip Enable	RAM	Random Access Memory
CH	CHannel	RD	ReaD
COMP	COMParator	REG	REGulator
CONT	CONTrol	RESO	RESOnance
CV	Control Voltage	RL	ReLay
DAC	Digital to Analogue Converter	ROM	Read Only Memory
EG	Envelope Generator	S/H	Sample and Hold
EXT	EXTernal	SW	SWitch
FREQ	FREQuency	THRU	THRoUgh
HPF	High Pass Filter	TRANS	TRANSpose
INH	INHibit	U	Upper
INT	INTerrupt	VA	Voltage Analog
INV	INVerter	VCA	Voltage Controlled Amplifier
L	Lower	VCF	Voltage Controlled Filter
LFO	Low Frequency Oscillator	VR	Variable Resistor
MAX	MAXimum	VREF	REference Voltage
MEMO	MEMOry	WR	WRite

AKAI ELECTRIC CO., LTD.

12-14, 2-Chome, Higashi-Kojiya, Ohta-ku, Tokyo, Japan
 SERVICE DEPARTMENT TEL: Tokyo (745) 9884 TELEX: J26261
 Printed No. 891108-G1-400 Printed Date: February 28, 1989

900 Printed in Japan

AKAI

MODEL **S1000**

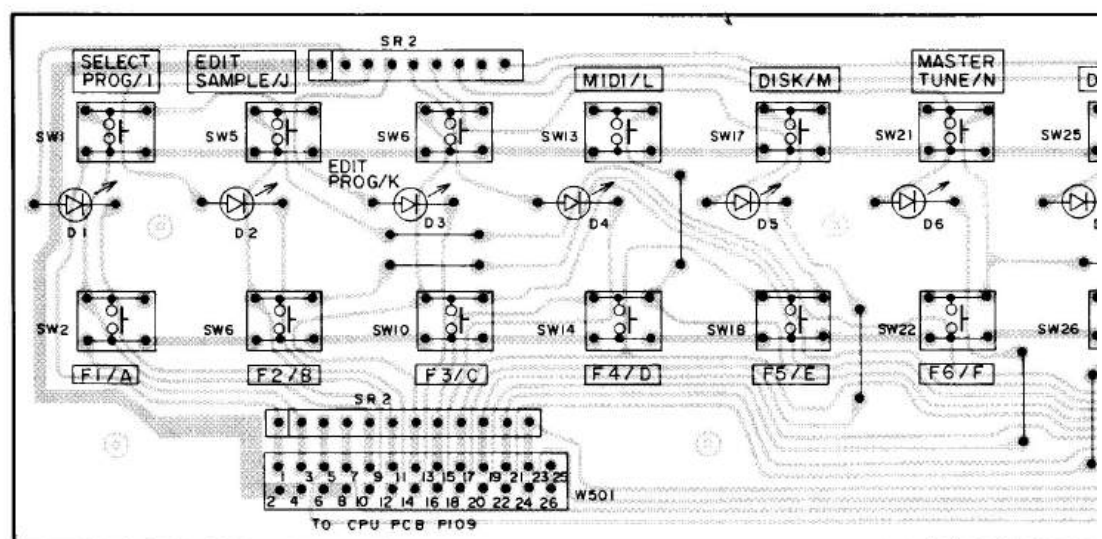
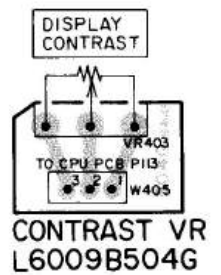
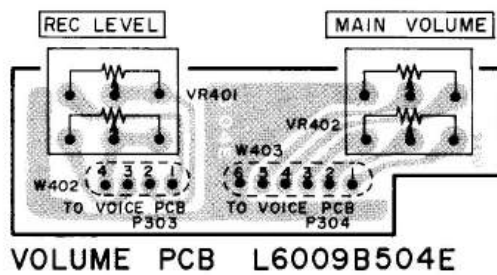
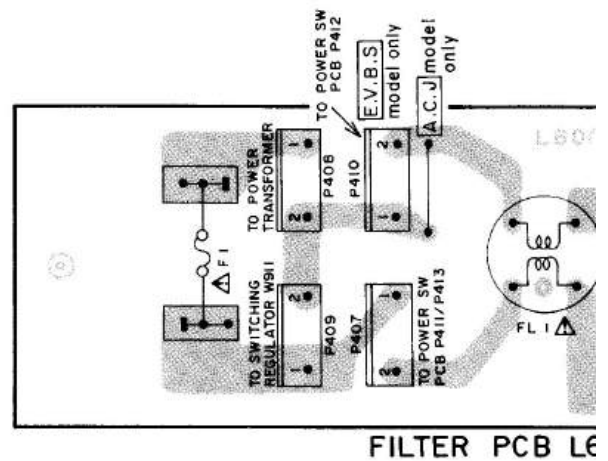
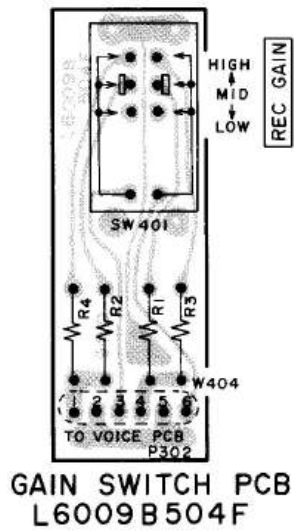
SCHEMATIC DIAGRAM AND PC BOARDS

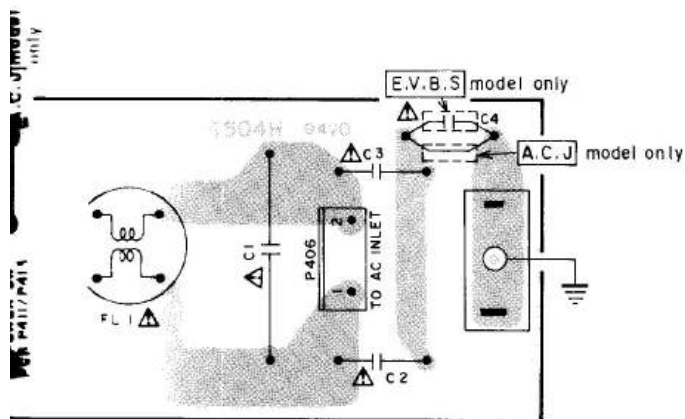
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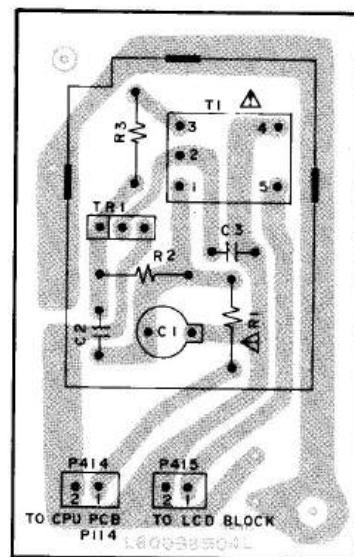
Information of ICs

NAME OF IC	FUNCTION
LC7981	LCD. DOT MATRIX GRAPHIC GENERATOR
MB89251AP-G	PROGRAMMABLE COMMUNICATION INTERFACE
MB89255A-P-G	PROGRAMMABLE PERIPHERAL INTERFACE
TC74HC14P	HEX SCHMITT TRIGGER INVERTER
TC74HC21P	DUAL 4-INPUT POSITIVE AND GATE
TC74HC32P	QUAD 2-INPUT POSITIVE OR GATE
TC74HC42P	BCD TO DECIMAL DECODER
TC74HC138P	3 TO 8 LINE DECODER/DEMULTIPLEXER
TC74HC244P	OCTAL BUFFER/LINE DRIVER/LINE RECEIVER WITH 3-STATE OUTPUT
TC74HC245P	OCTAL BUS TRANSCEIVER WITH 3-STATE OUTPUT
TC74HC373P	OCTAL D-TYPE TRANSPARENT LATCH
TC74HC4040P	12 BIT RIPPLE-CARRY BINARY COUNTER
PST520D-Z	RESET PULSE GENERATOR

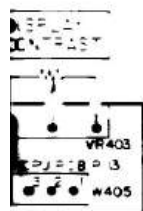




TER PCB L6009B504H



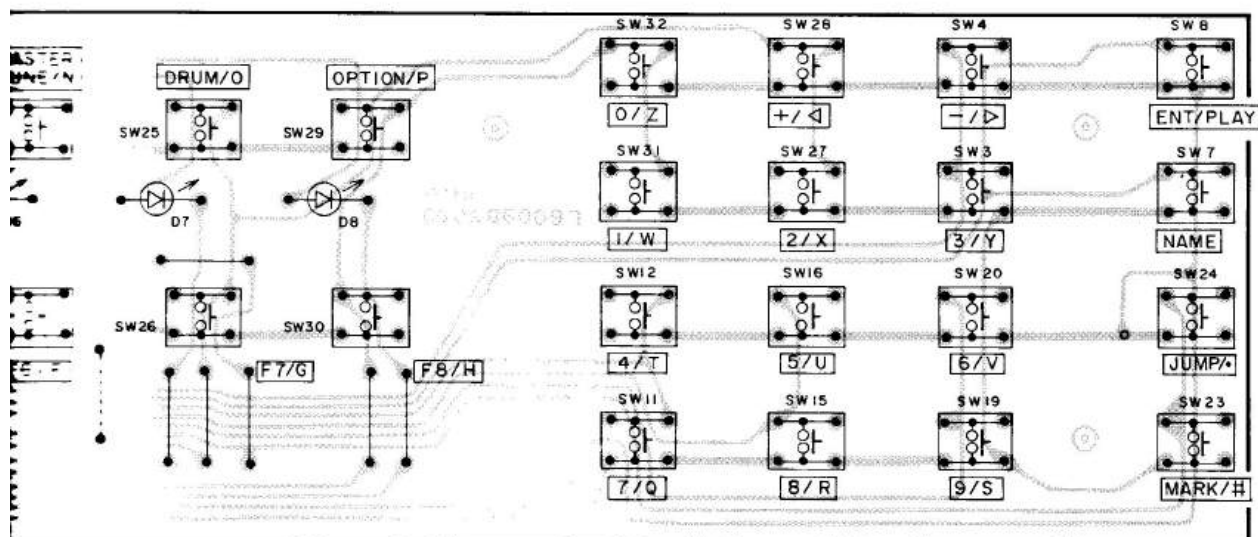
EL INV PCB
L6009B504L



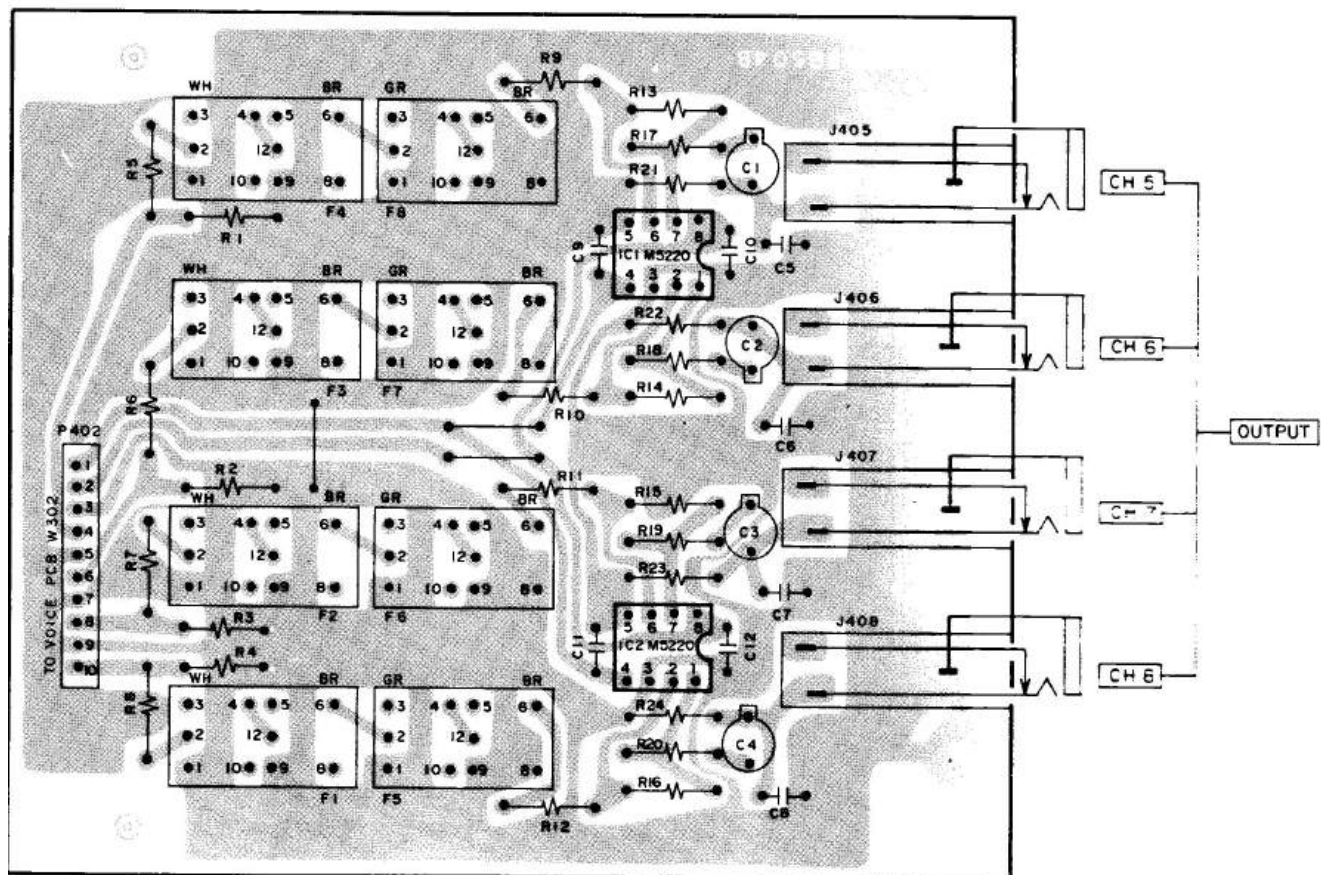
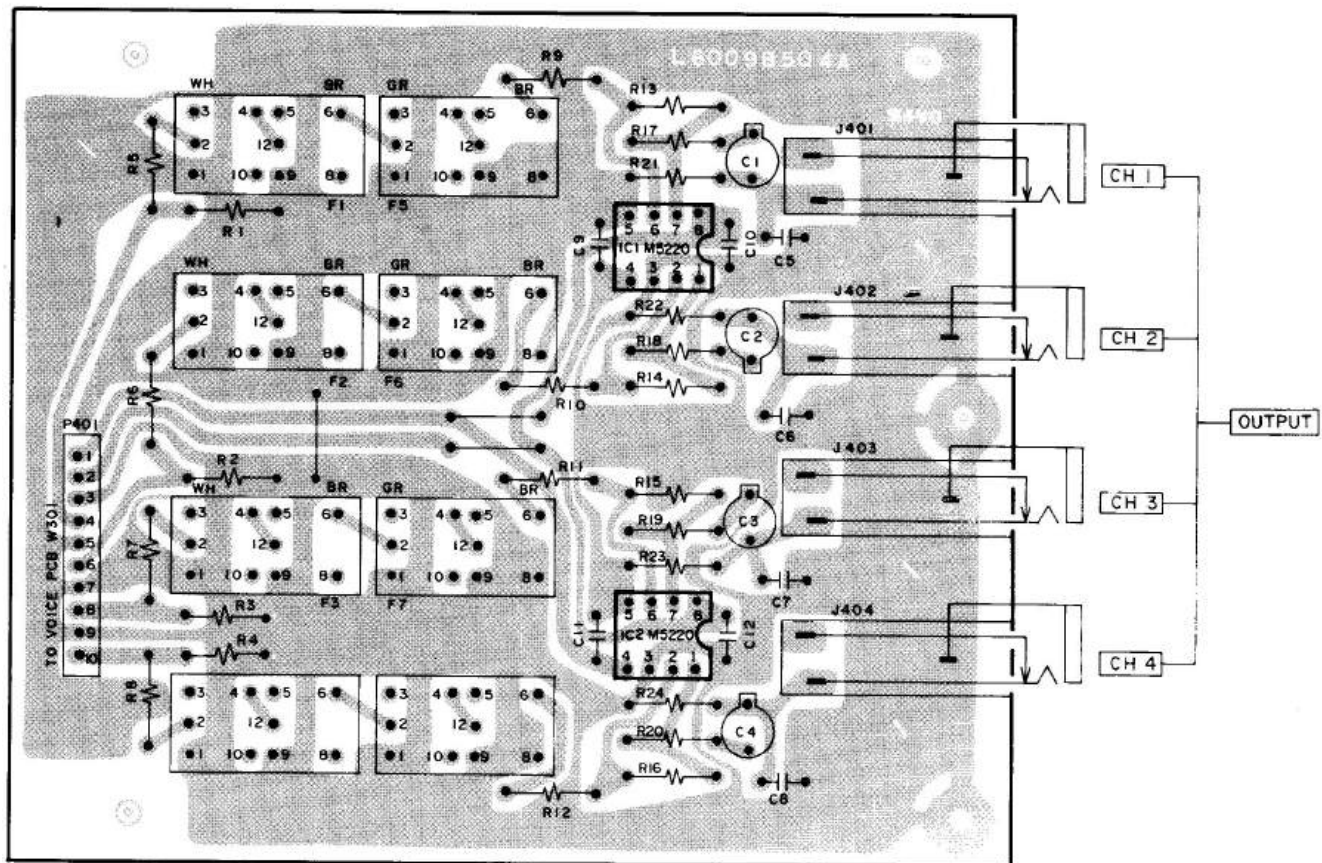
CONTRAST VR PCB
L6009B504G

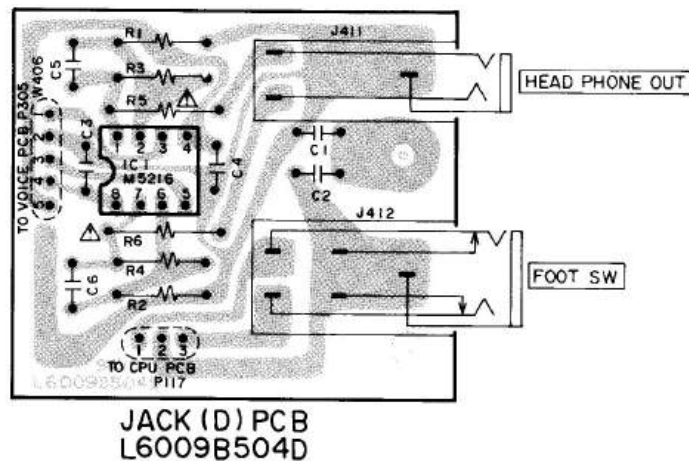
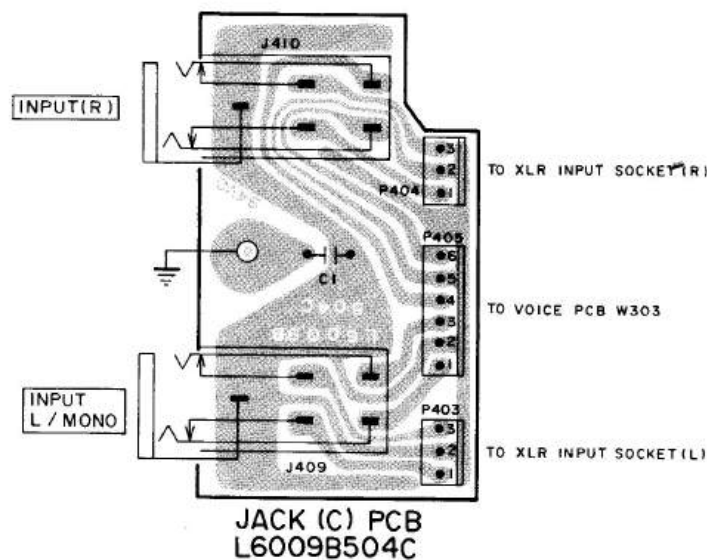
WARNING: Δ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

AVERTISSEMENT: Δ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT.



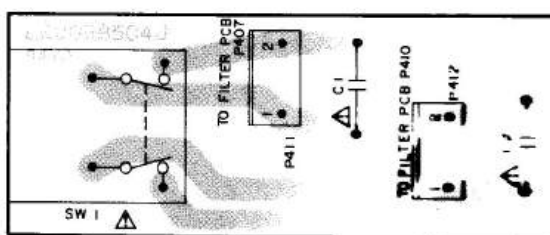
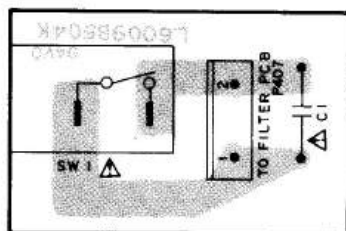
PANEL PCB L6009B5050

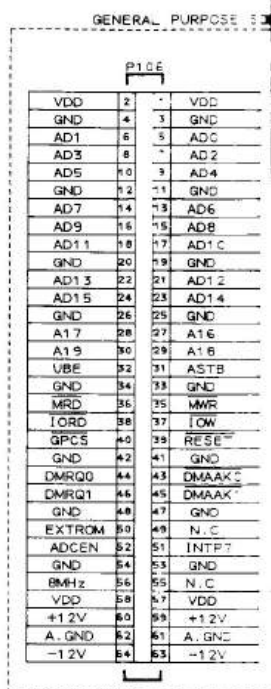
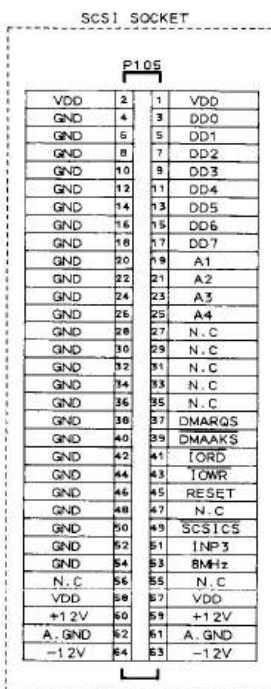
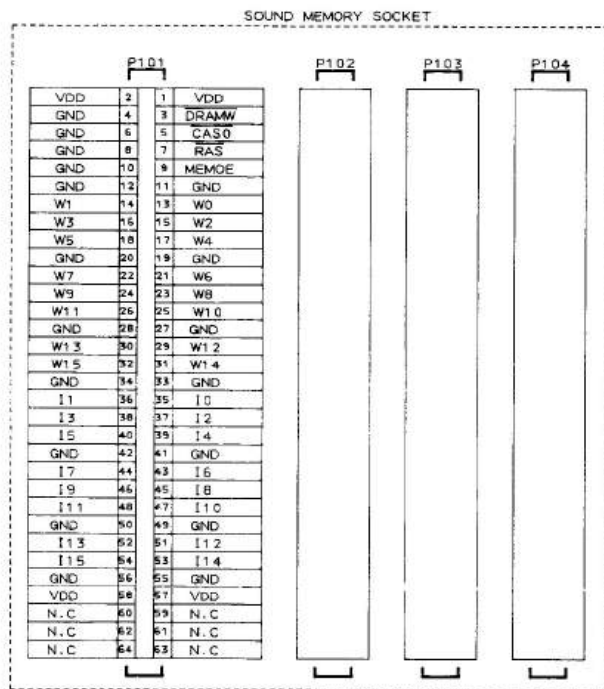
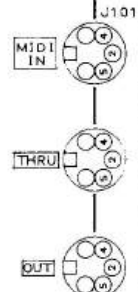




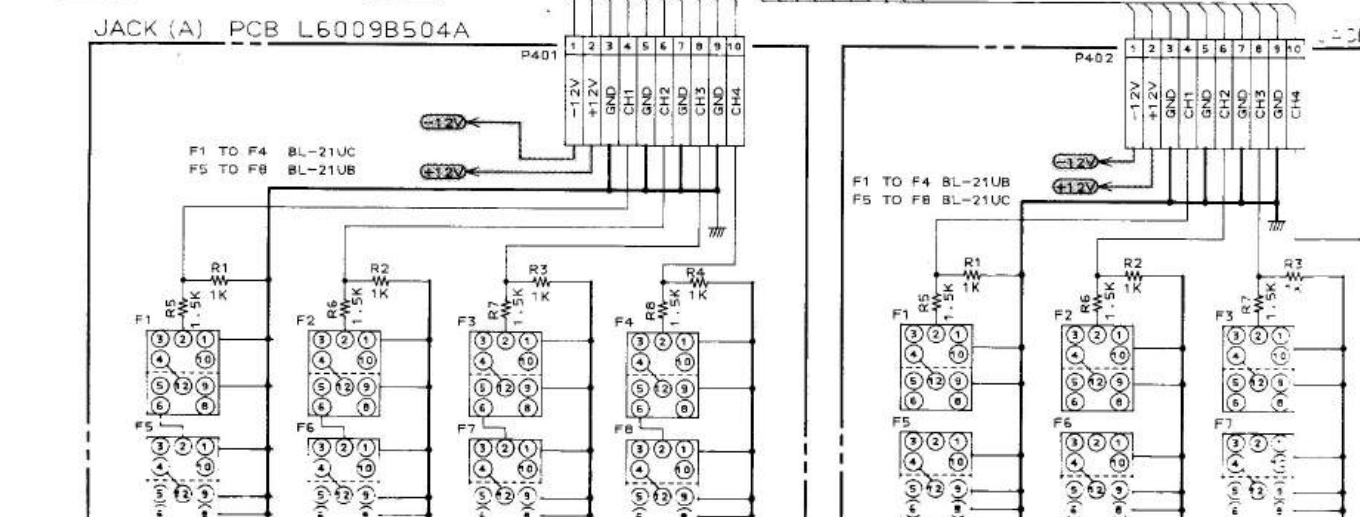
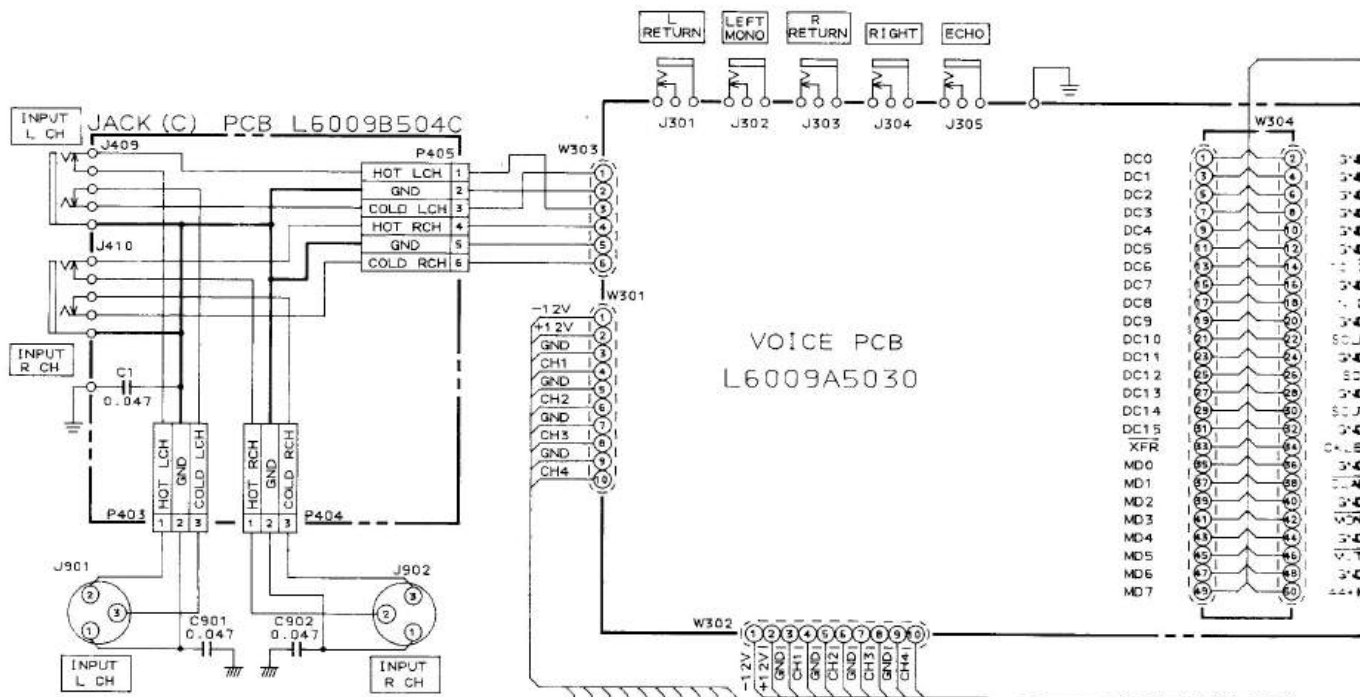
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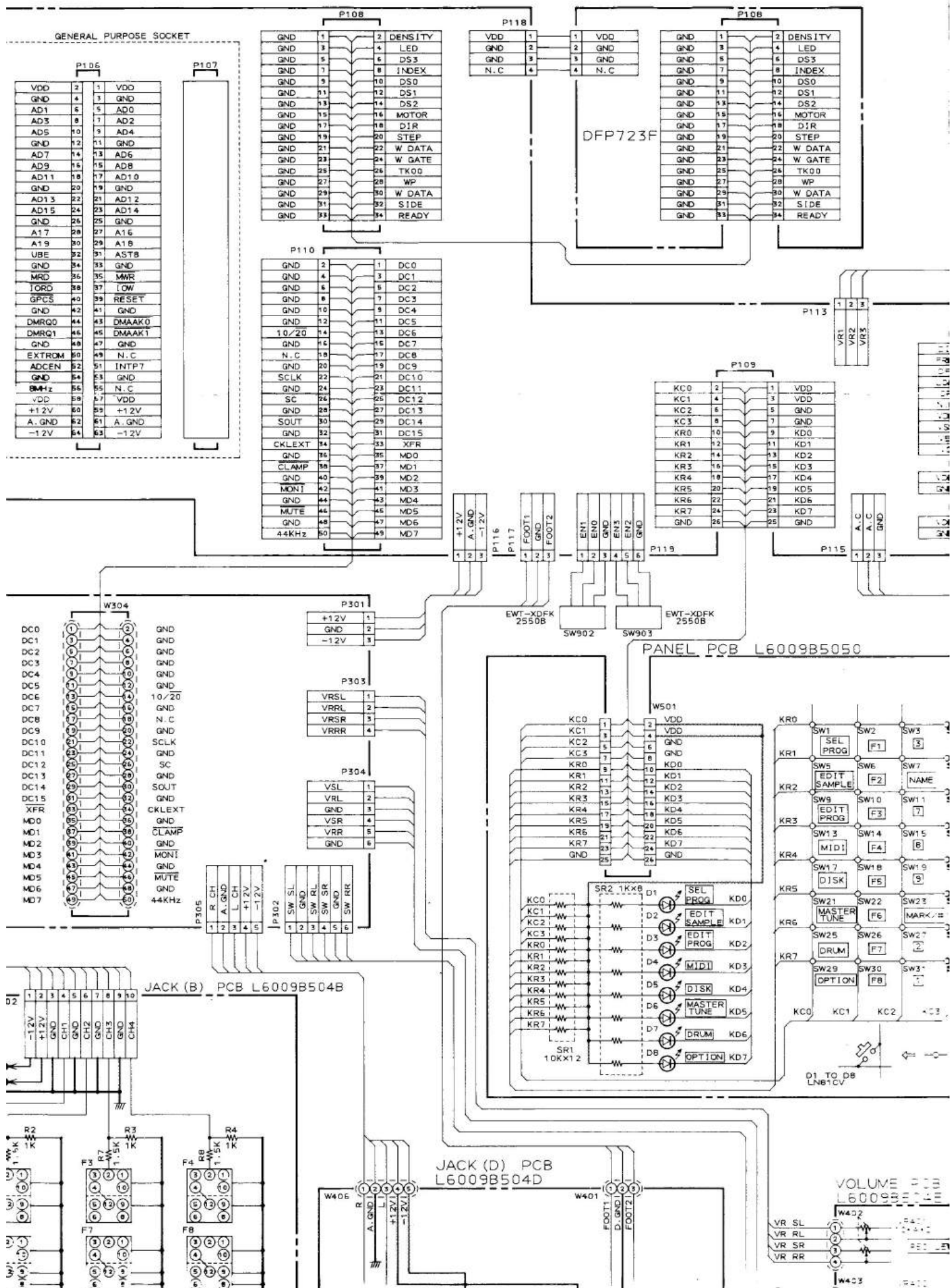
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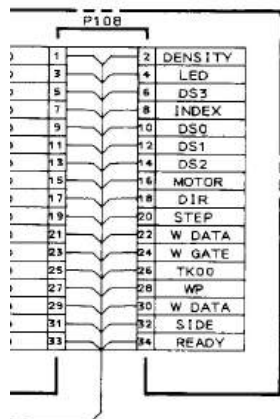




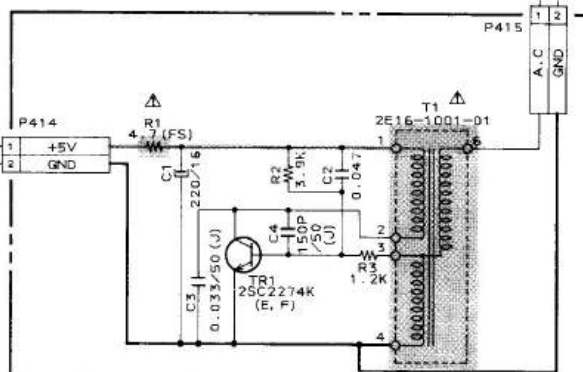
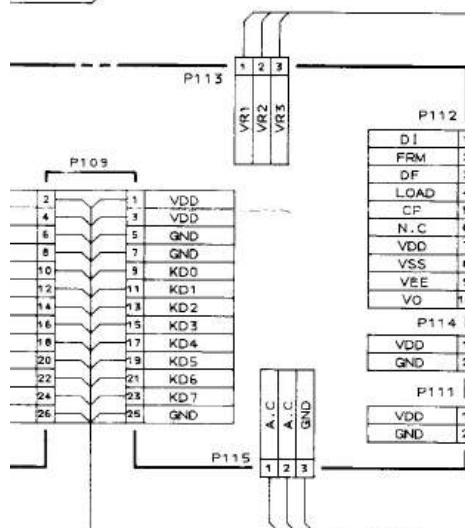
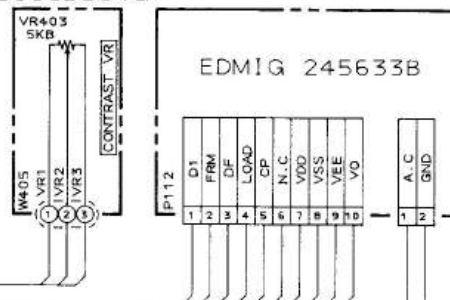
CPU PCB L6009A5010



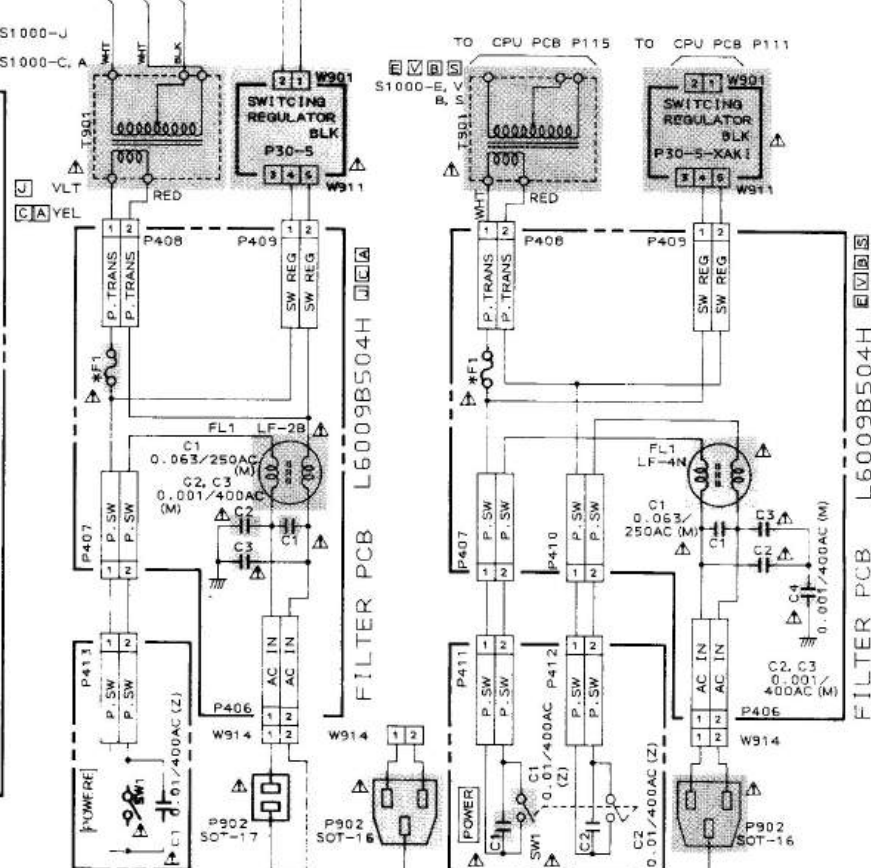
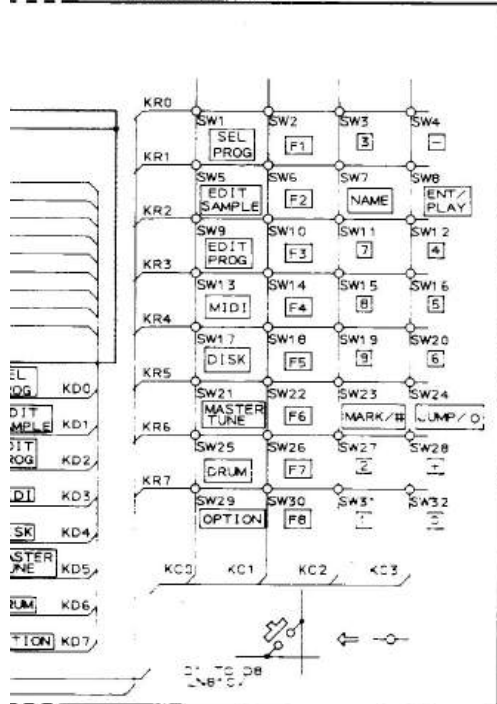




CONTRAST VR PCB
L6009B504G

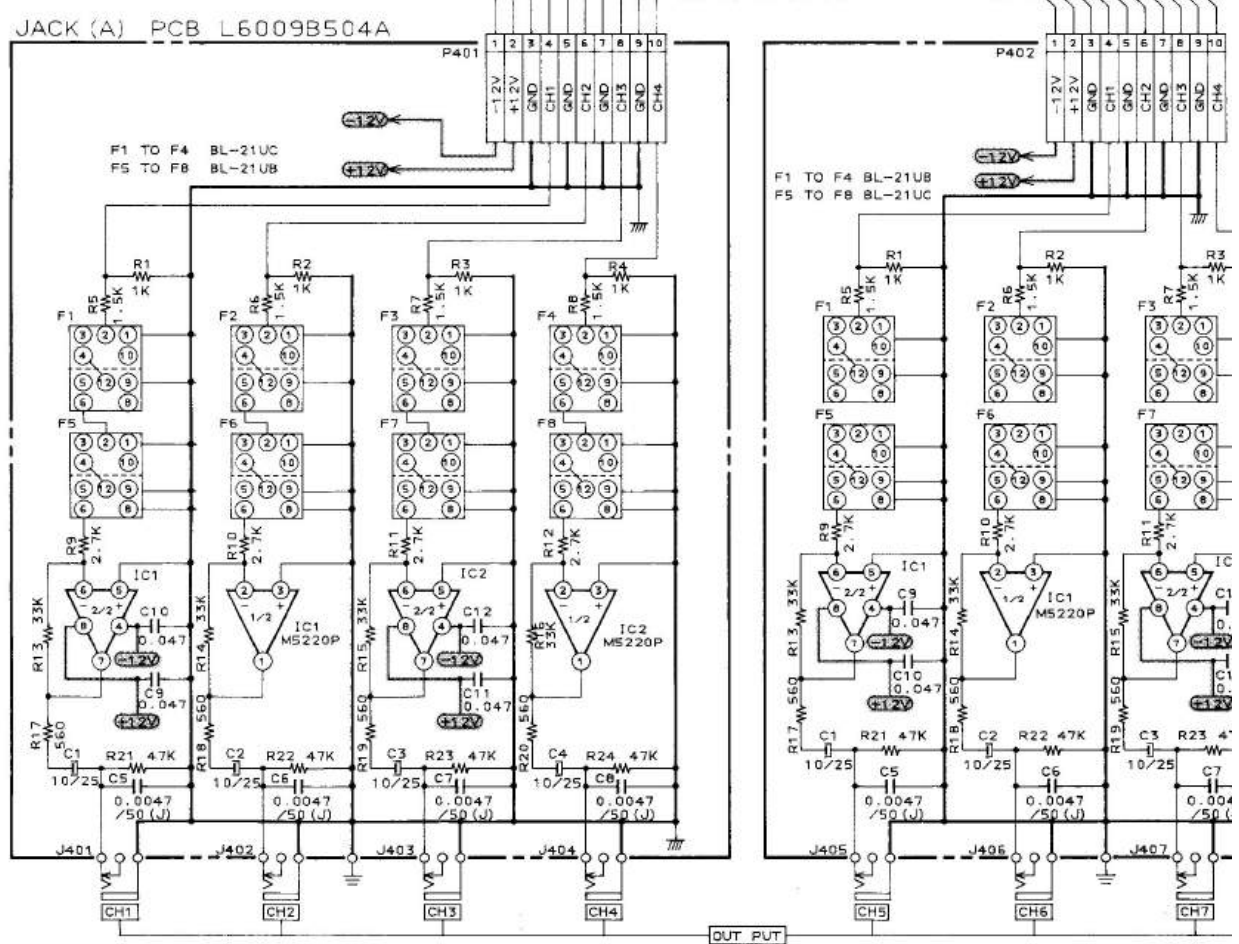
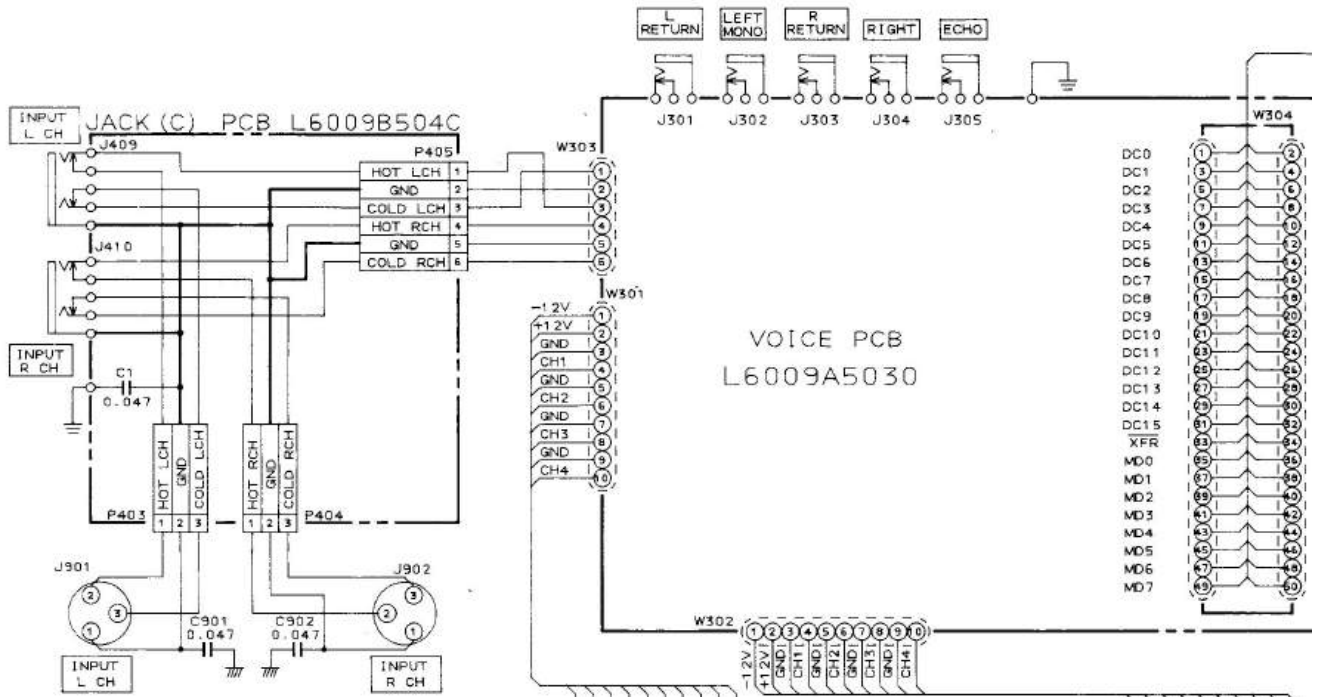
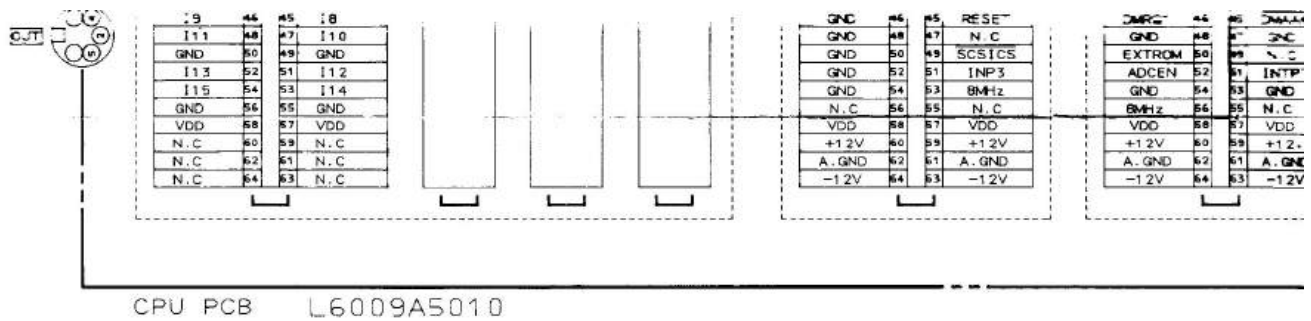


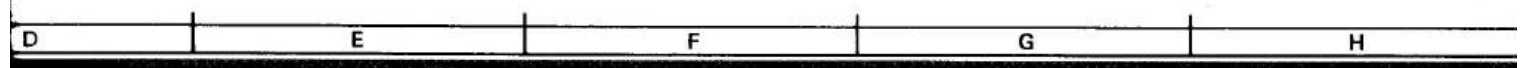
PCB L6009B5050

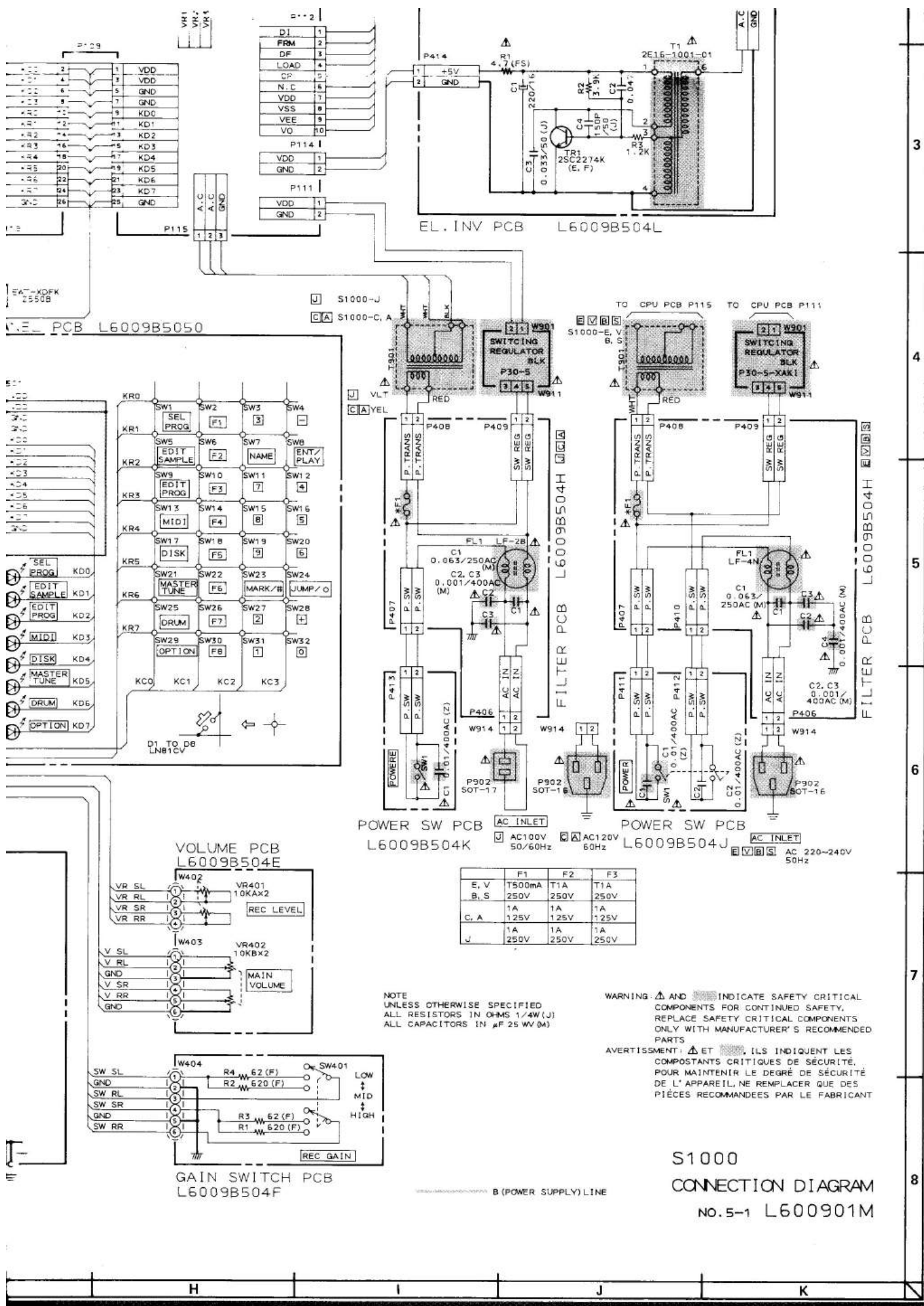


POWER SW PCB L6009B504J
AC INLET
AC 100V 50/60HZ
AC 120V 60HZ
AC 220-240V 50HZ

	F1	F2	F3
E. .	250mA	250mA	250mA
B. S	250V	250V	250V
C. A	25A	25A	25A
D. S	250V	250V	250V







	F1	F2	F3
E, V	1500mA	T1A	T1A
B, S	250V	250V	250V
C, A	1A	1A	1A
J	250V	250V	250V

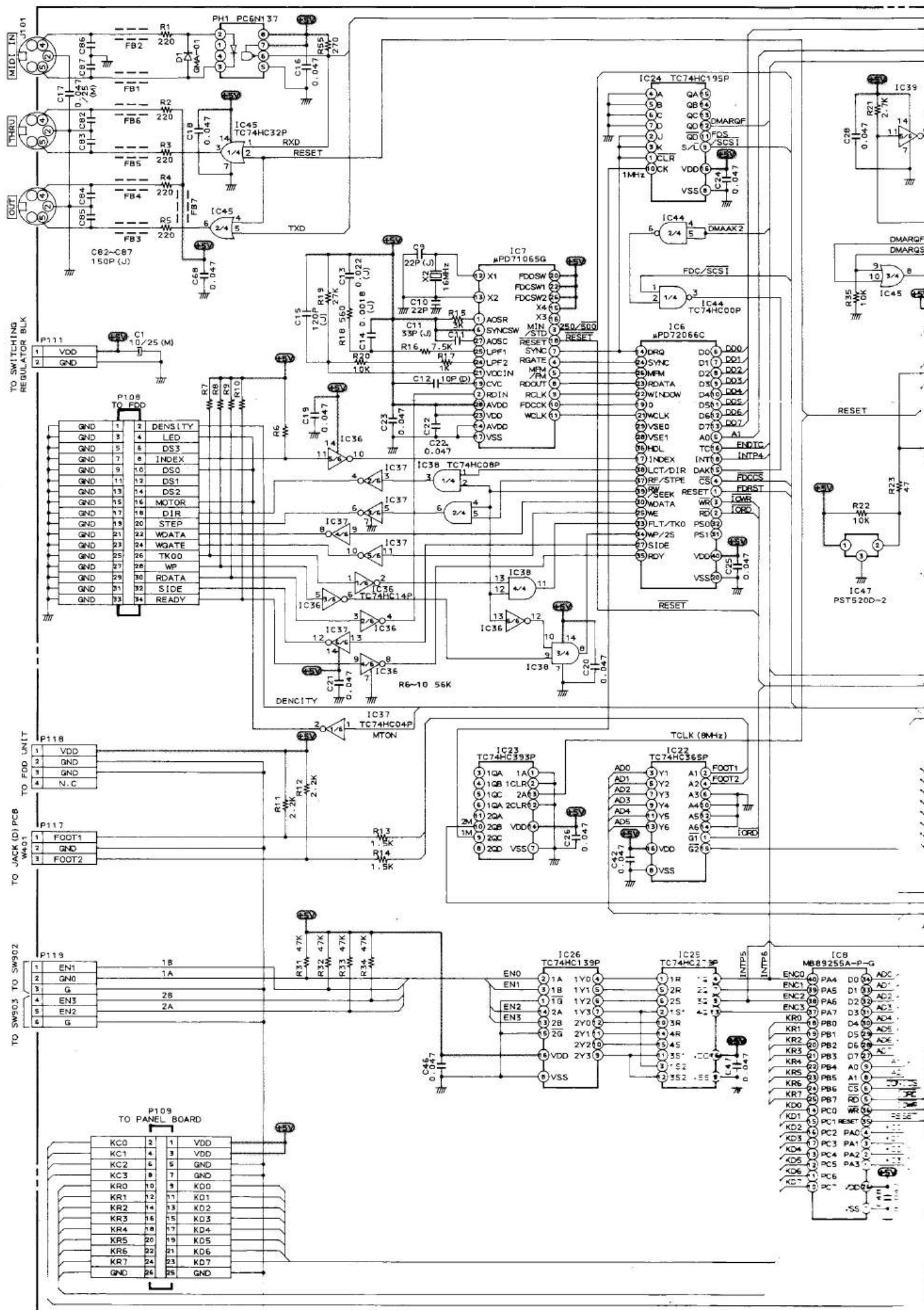
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W (J)
ALL CAPACITORS IN μ F 25 WV (M)

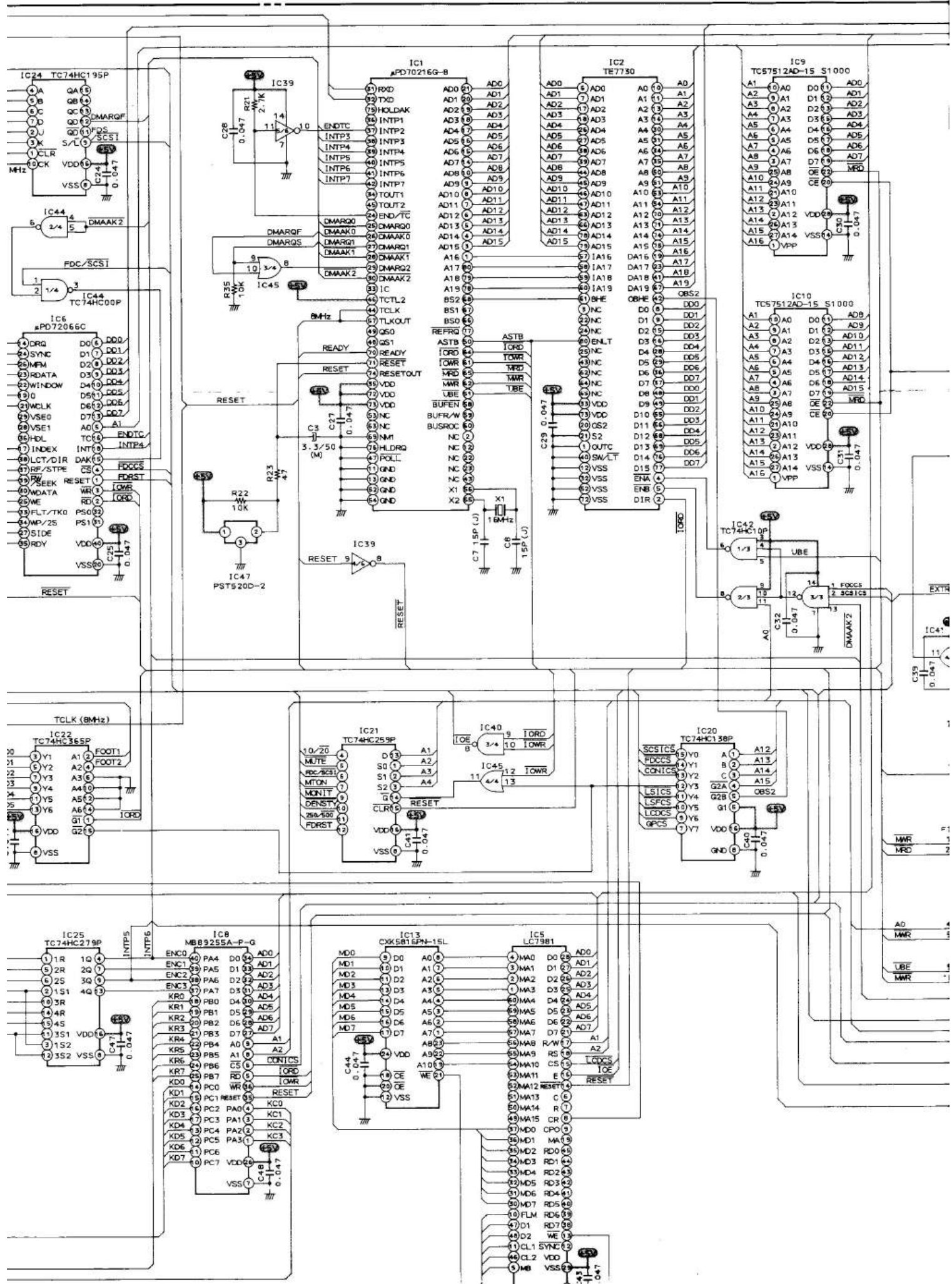
WARNING: Δ AND $\square$ INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

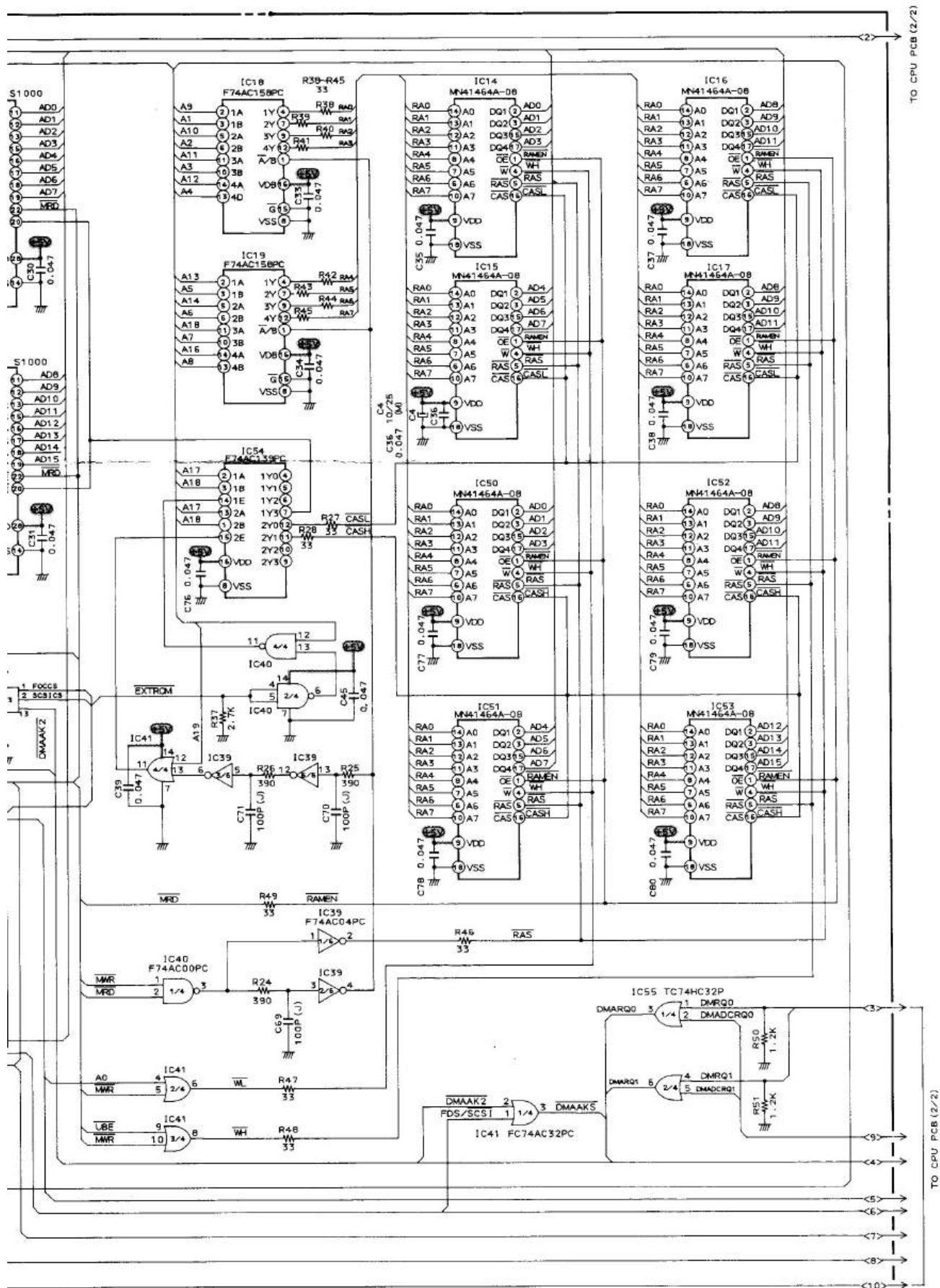
AVERTISSEMENT: Δ ET $\square$ ILS INDIQUENT LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT

S1000
CONNECTION DIAGRAM
NO.5-1 L600901M

B (POWER SUPPLY) LINE







1

2

3

4

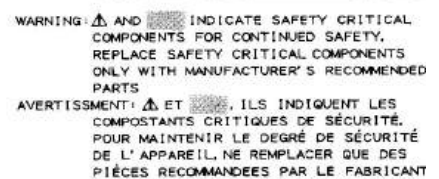
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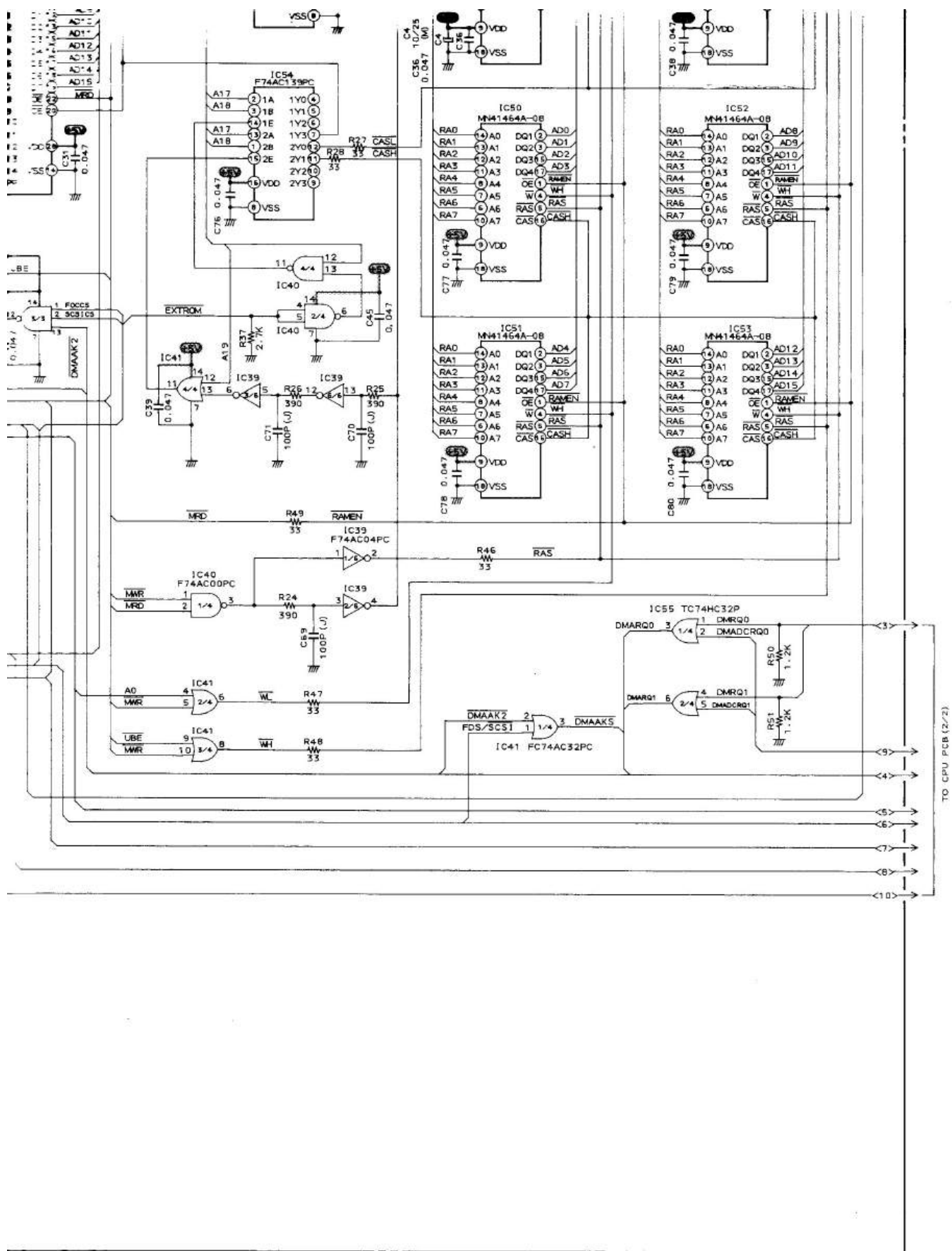
TO CPU PCB (2/2)

TO CPU PCB (2/2)





H



INDICATE SAFETY CRITICAL
FOR CONTINUED SAFETY,
FETY CRITICAL COMPONENTS
MANUFACTURER'S RECOMMENDED

ILS INDIQUENT LES
B CRITIQUES DE SÉCURITÉ,
EN LE DEGRÉ DE SÉCURITÉ
E NE REMPLACER QUE DES
MANDEES PAR LE FABRICANT

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/8W(1)
ALL CAPACITORS IN μ F 50WV(2)

S1000
CPU (1/2) PCB
SCHEMATIC DIAGRAM
NO.5-2 L600902M
3

TO CPU PCB (1/2)

OPTION SOCKET FOR GENERAL PURPOSE

#4 P107		#5 P106	
VDD	2	1	VDD
GND	4	3	GND
AD1	6	5	AD0
AD3	8	7	AD2
AD5	10	9	AD4
GND	12	11	GND
AD7	14	13	AD6
AD9	16	15	AD8
AD11	18	17	AD10
GND	20	19	GND
AD13	22	21	AD12
AD15	24	23	AD14
GND	26	25	GND
A17	28	27	A16
A19	30	29	A18
UBF	32	31	ASTB
GND	34	33	GND
MWD	36	35	MWR
TORD	38	37	TOW
GPCS	40	39	RESET
GND	42	41	GND
DMRQ0	44	43	DMAAK0
DMRQ1	46	45	DMAAK1
GND	48	47	GND
EXTROM	50	49	N.C
ADCEM	52	51	INTP7
GND	54	53	GND
BMHz	56	55	N.C
VDD	58	57	VDD
+12V	60	59	+12V
A.G	62	61	A.G
-12V	64	63	-12V

OPTION SOCKET FOR GENERAL PURPOSE

#5 P106		#6 P105	
VDD	2	1	VDD
GND	4	3	GND
AD1	6	5	AD0
AD3	8	7	AD2
AD5	10	9	AD4
GND	12	11	GND
AD7	14	13	AD6
AD9	16	15	AD8
AD11	18	17	AD10
GND	20	19	GND
AD13	22	21	AD12
AD15	24	23	AD14
GND	26	25	GND
A17	28	27	A16
A19	30	29	A18
UBF	32	31	ASTB
GND	34	33	GND
MWD	36	35	MWR
TORD	38	37	TOW
GPCS	40	39	RESET
GND	42	41	GND
DMRQ0	44	43	DMAAK0
DMRQ1	46	45	DMAAK1
GND	48	47	GND
EXTROM	50	49	N.C
ADCEM	52	51	INTP7
GND	54	53	GND
BMHz	56	55	N.C
VDD	58	57	VDD
+12V	60	59	+12V
A.G	62	61	A.G
-12V	64	63	-12V

OPTION SOCKET FOR SCS

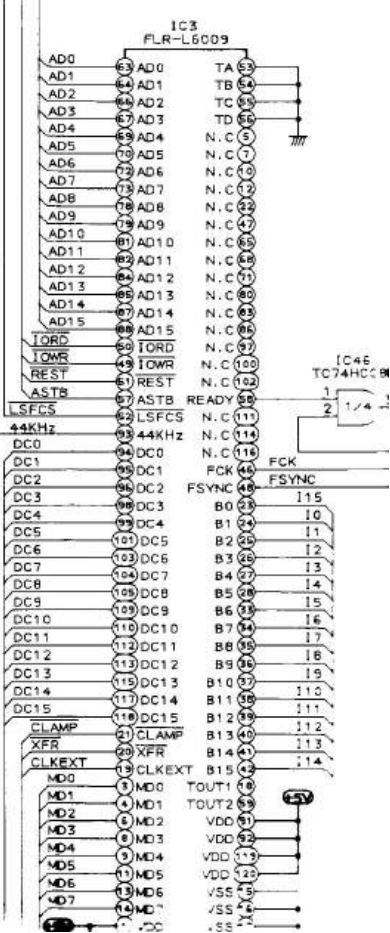
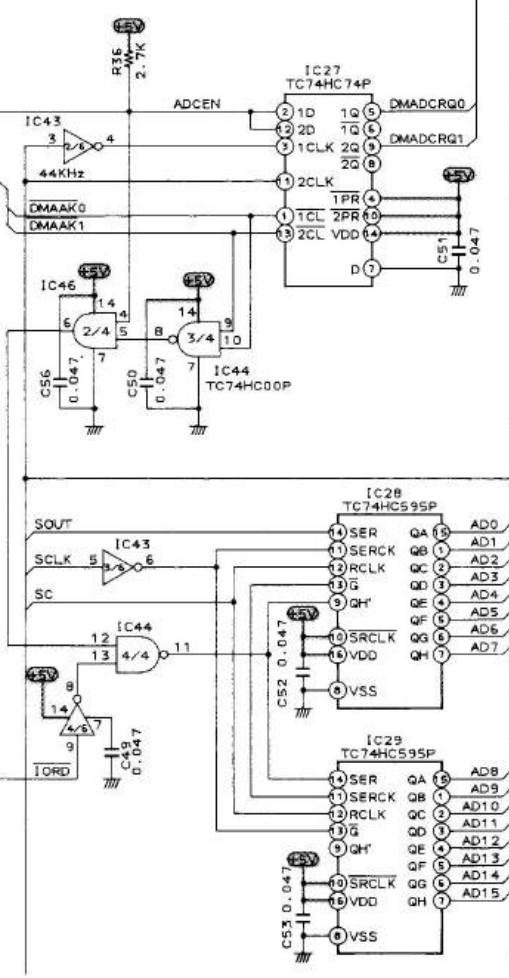
#6 P105	
VDD	2
GND	4
DD0	6
DD1	8
DD2	10
DD3	12
DD4	14
DD5	16
DD6	18
DD7	20
A1	22
A2	24
A3	26
A4	28
N.C	30
N.C	32
N.C	34
N.C	36
N.C	38
N.C	40
N.C	42
N.C	44
N.C	46
N.C	48
N.C	50
N.C	52
N.C	54
N.C	56
N.C	58
N.C	60
N.C	62
N.C	64

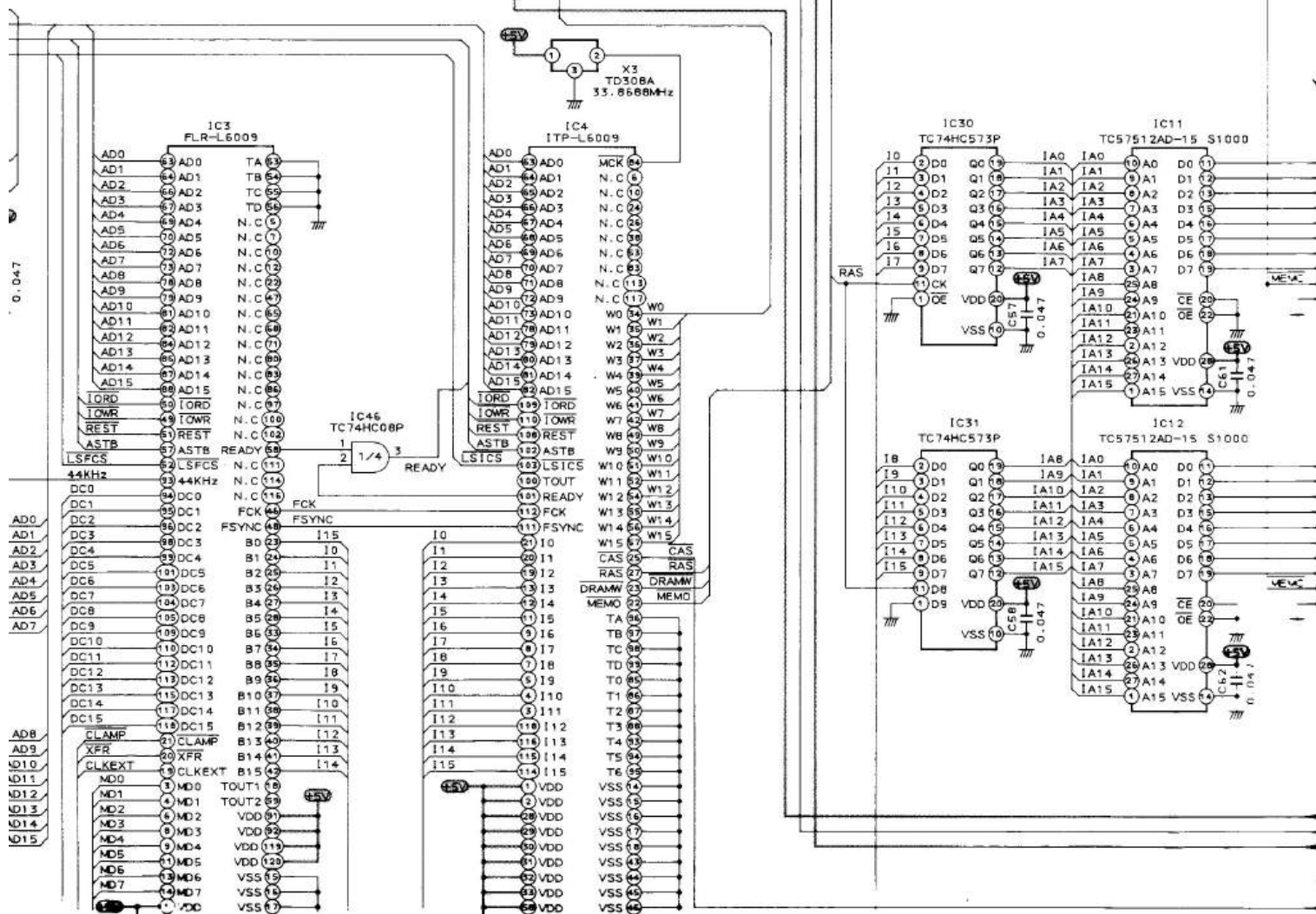
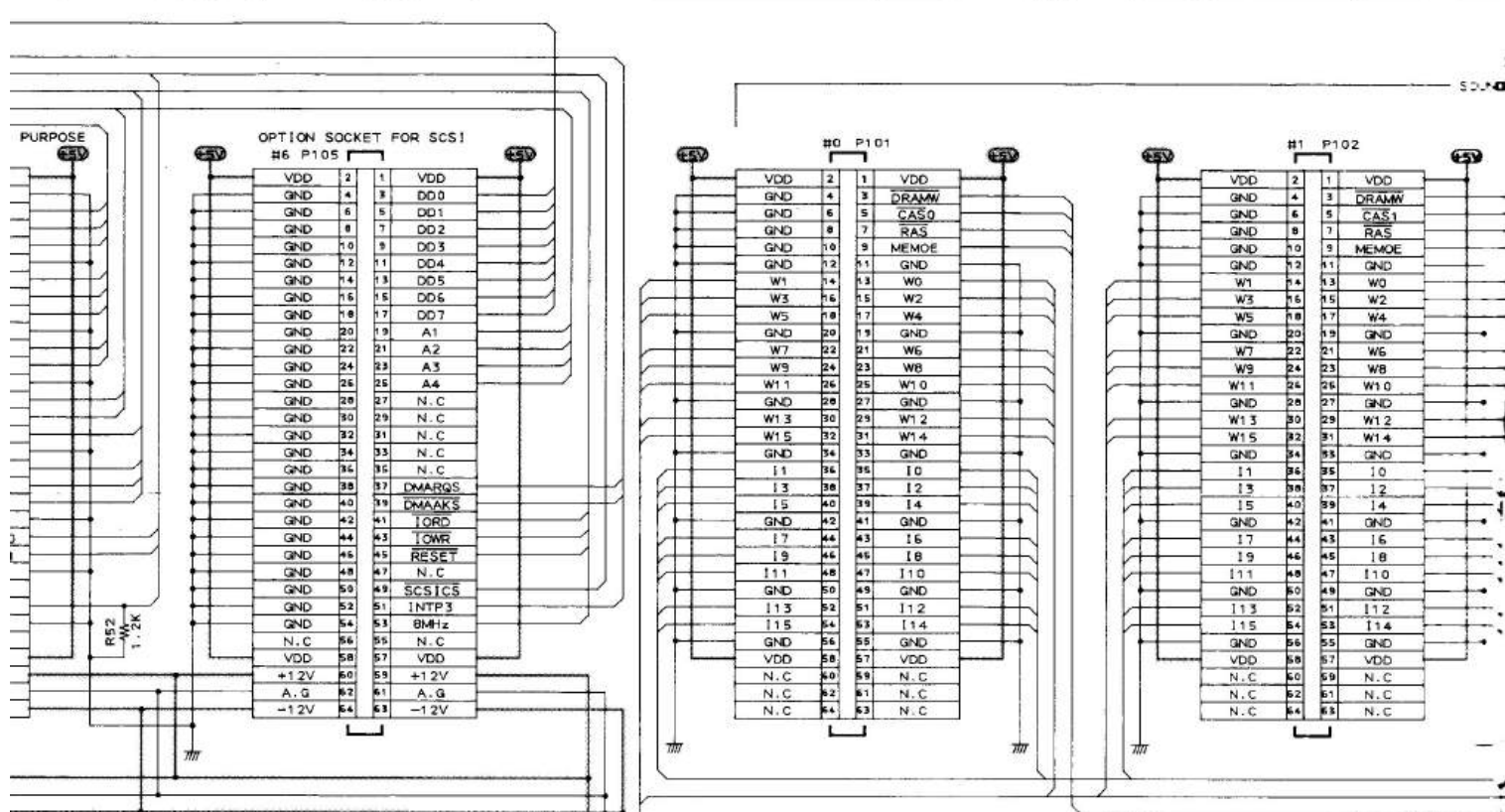
TO CPU PCB (1/2)

ADCEM

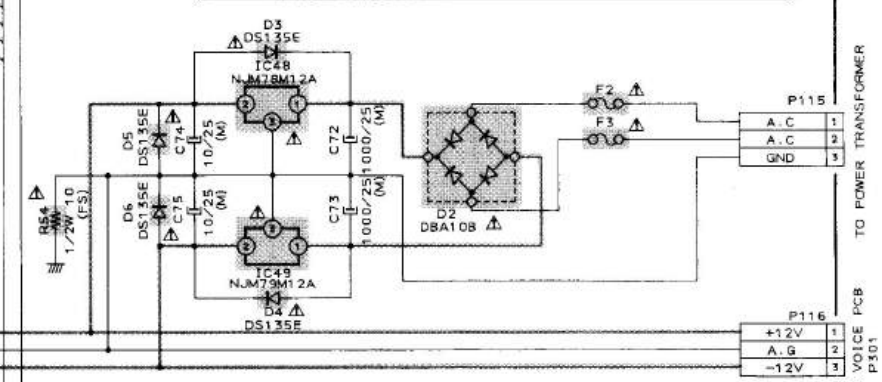
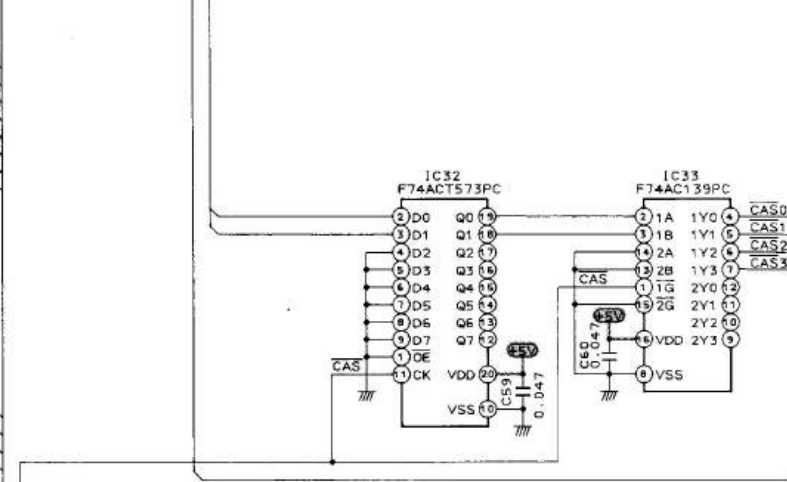
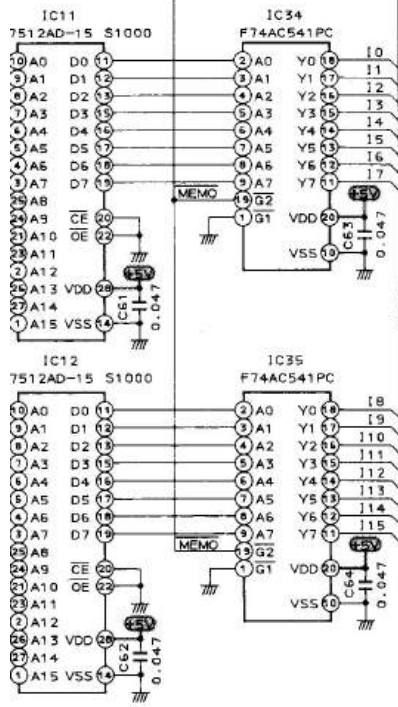
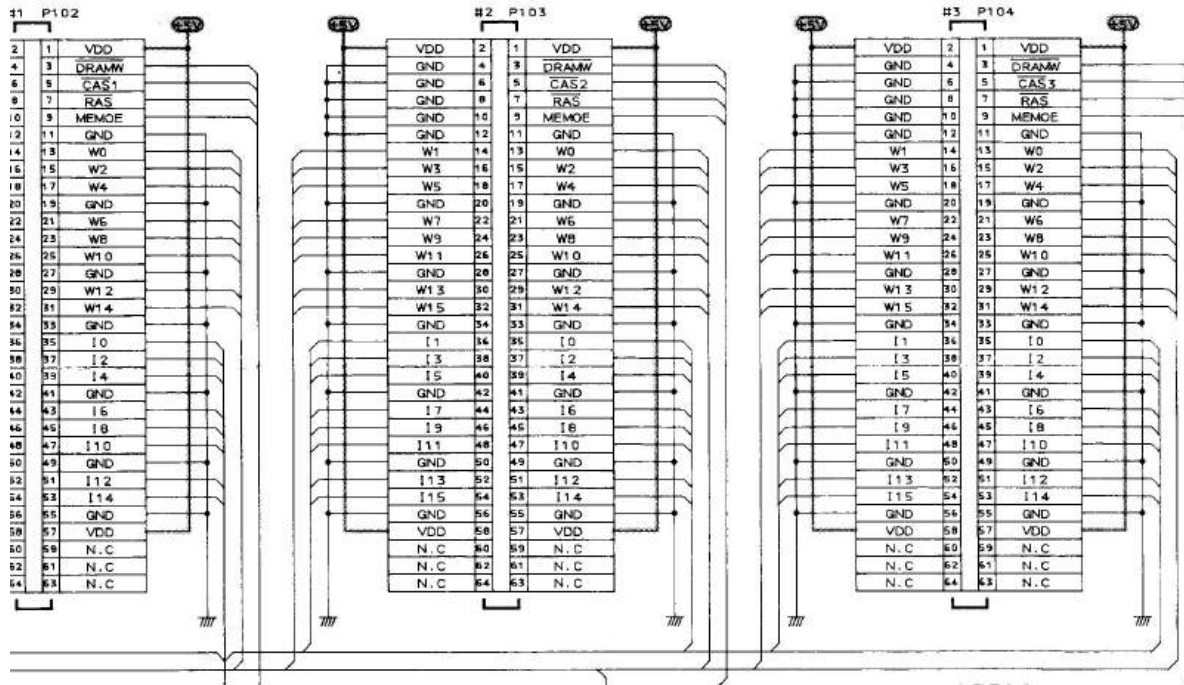
TO VOICE BOARD

P110	
GND	2
GND	4
GND	6
GND	8
GND	10
GND	12
10/20	14
GND	16
N.C	18
GND	20
SCLK	22
GND	24
SC	26
GND	28
SOUT	30
GND	32
CKLEXT	34
GND	36
CLAMP	38
GND	40
MONI	42
GND	44
MUTE	46
GND	48





SOUND MEMORY SOCKET



WARNING: ⚠ AND ⚡ INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY.

8 POWER SUPPLY LINE

3

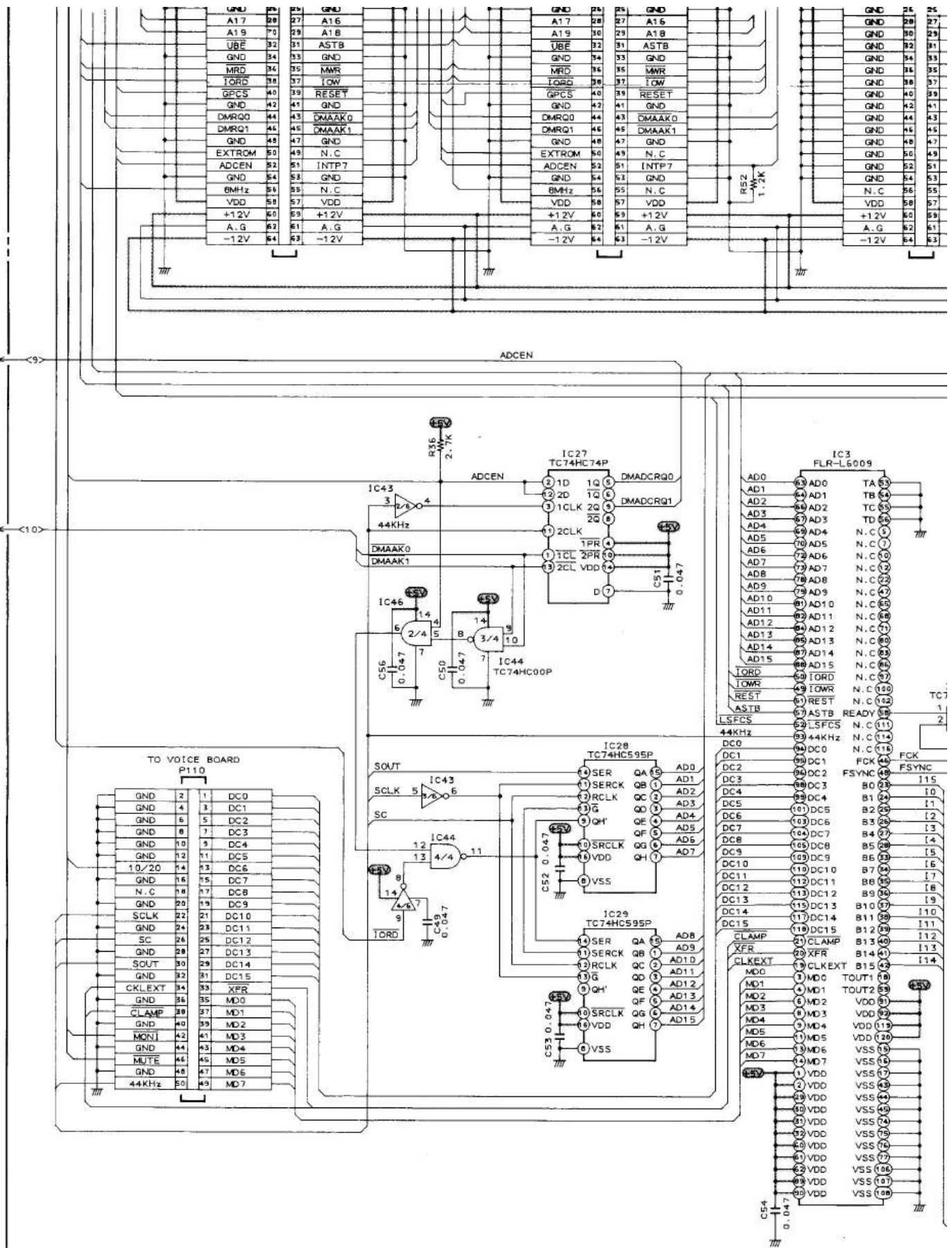
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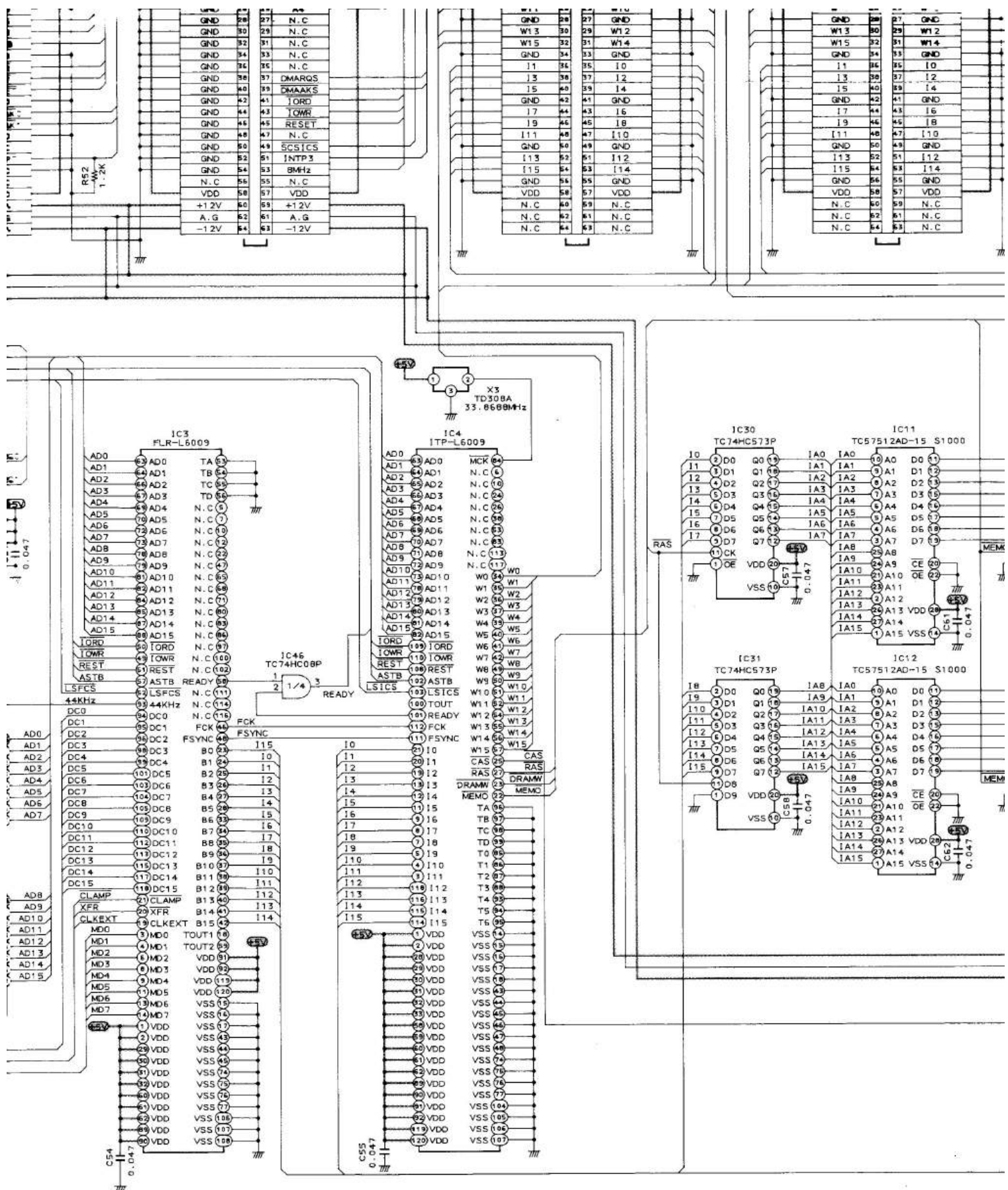
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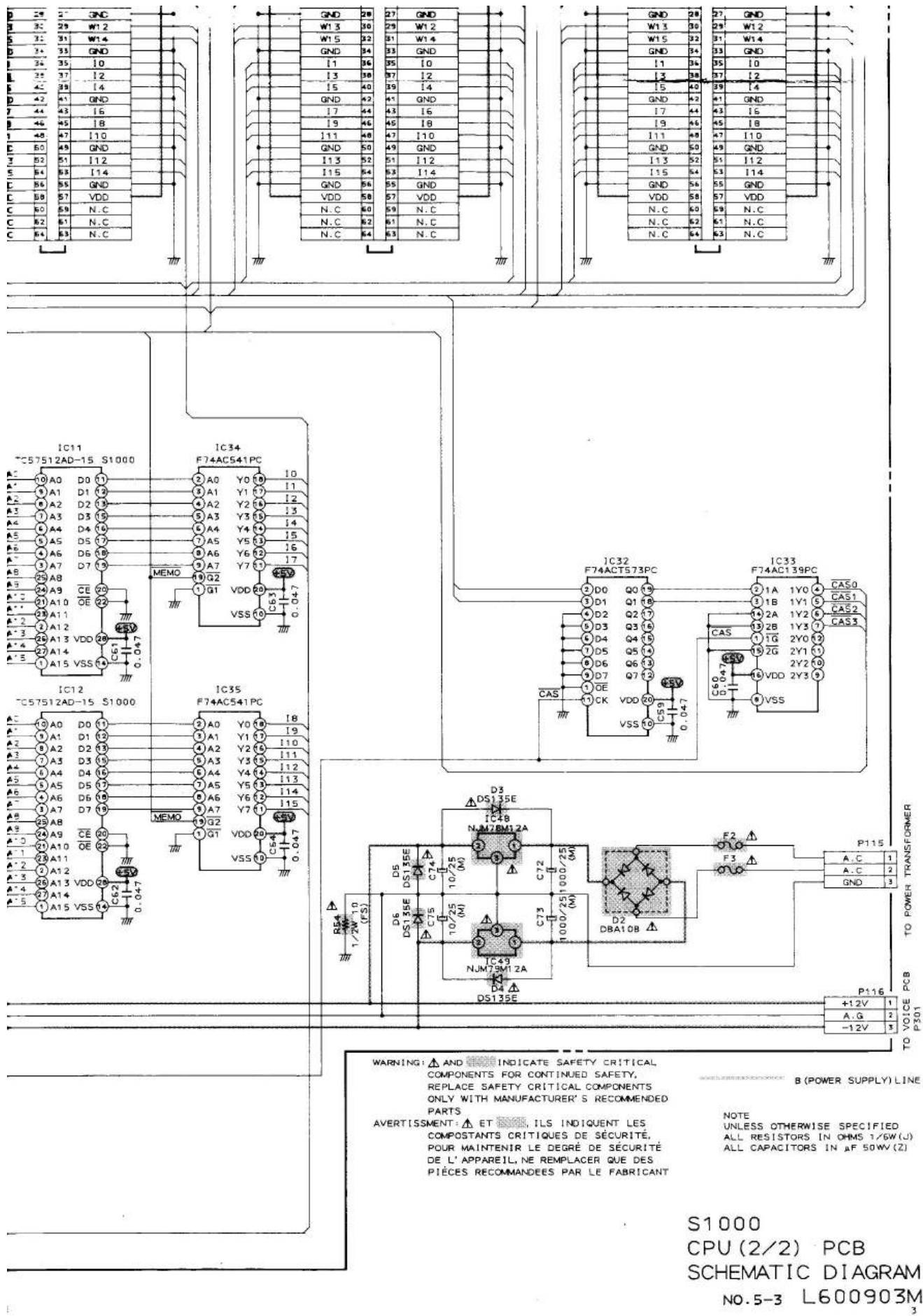
7

8



CPU (2/2) PCB L6009A5010





3

4

5

6

7

8

H

I

J

K

MIDI

THRU

OUT

IN

TO POWER TRANSFORMER

PI15

F2 F3

D2

C72 C73

D3 D4

IC48 NJM199M IC49 NJM199M

C74 C75

C76 C77

C78 C79

C80 C81

C82 C83

C84 C85

C86 C87

C88 C89

C90 C91

C92 C93

C94 C95

C96 C97

C98 C99

C100 C101

C102 C103

C104 C105

C106 C107

C108 C109

C110 C111

C112 C113

C114 C115

C116 C117

C118 C119

C120 C121

C122 C123

C124 C125

C126 C127

C128 C129

C130 C131

C132 C133

C134 C135

SCSI, HARD DISK CONNECTOR NO.6

GP OPTION CONNECTOR NO.5

GP OPTION CONNECTOR NO.4

SOUND MEMORY CONNECTOR NO.3

SOUND MEMORY CONNECTOR NO.2

SOUND MEMORY CONNECTOR NO.1

SOUND MEMORY CONNECTOR NO.0

PI06

PI07

PI04

PI03

PI02

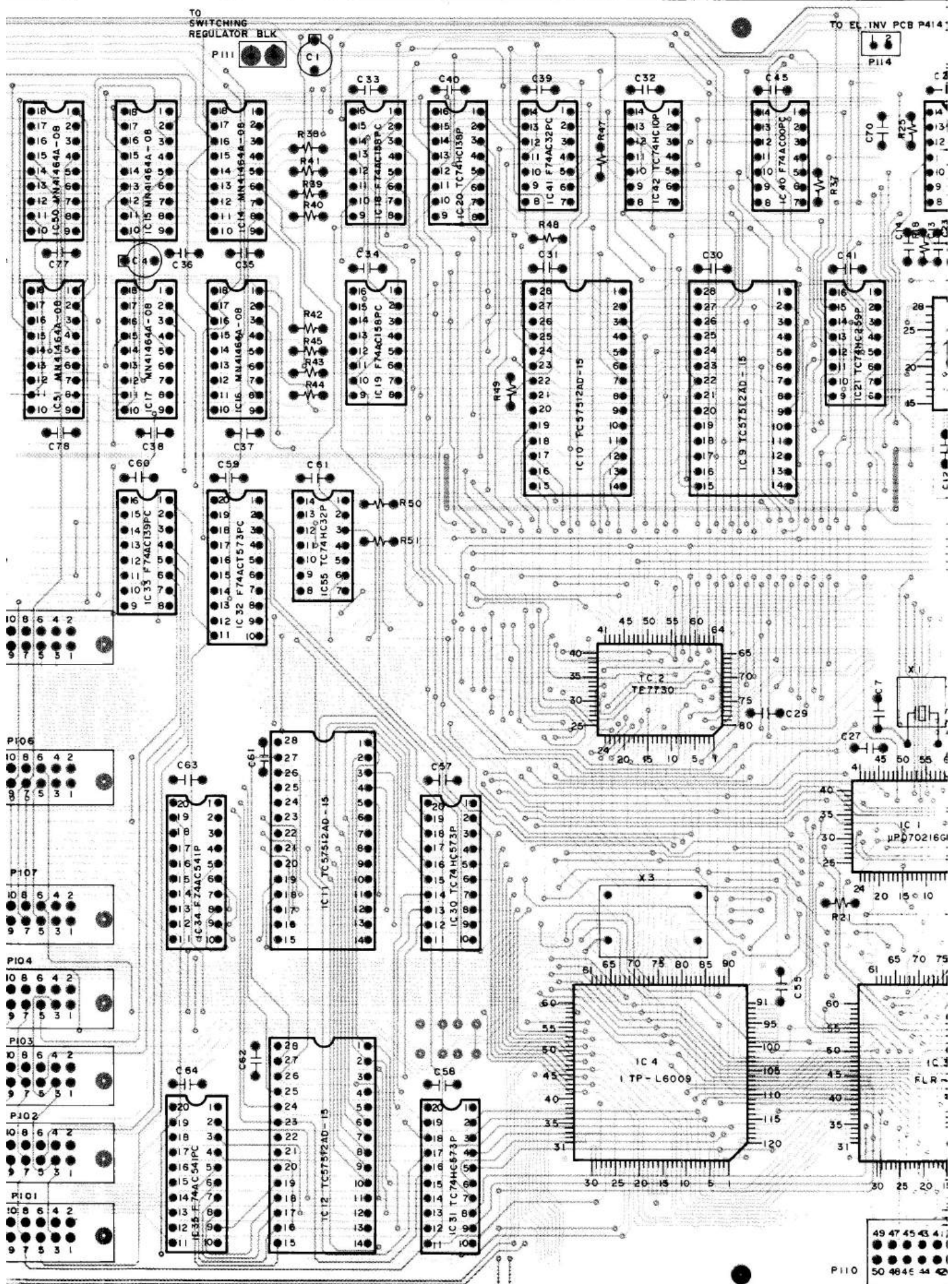
PI01

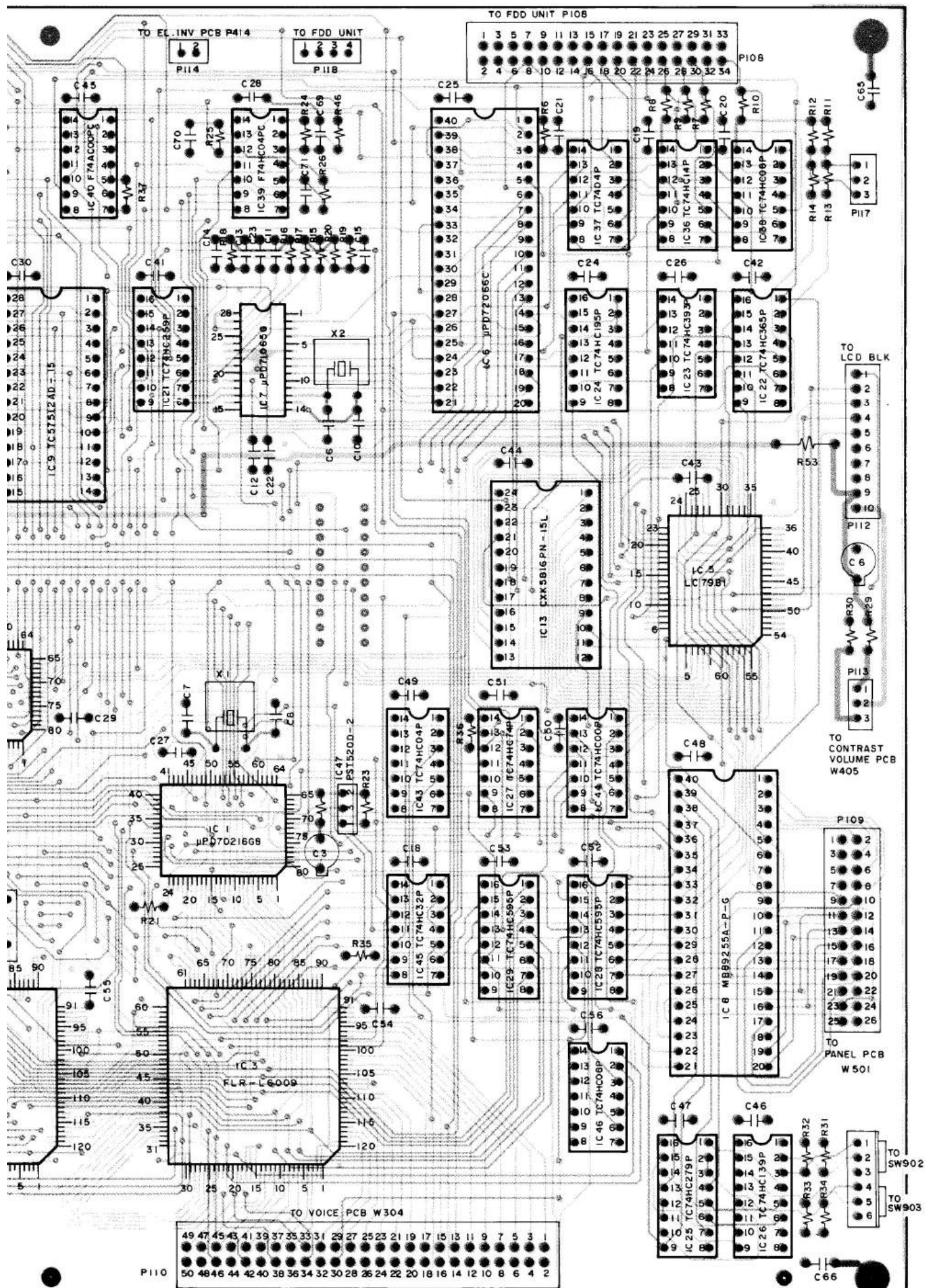
TO
SWITCHING
REGULATOR BLK

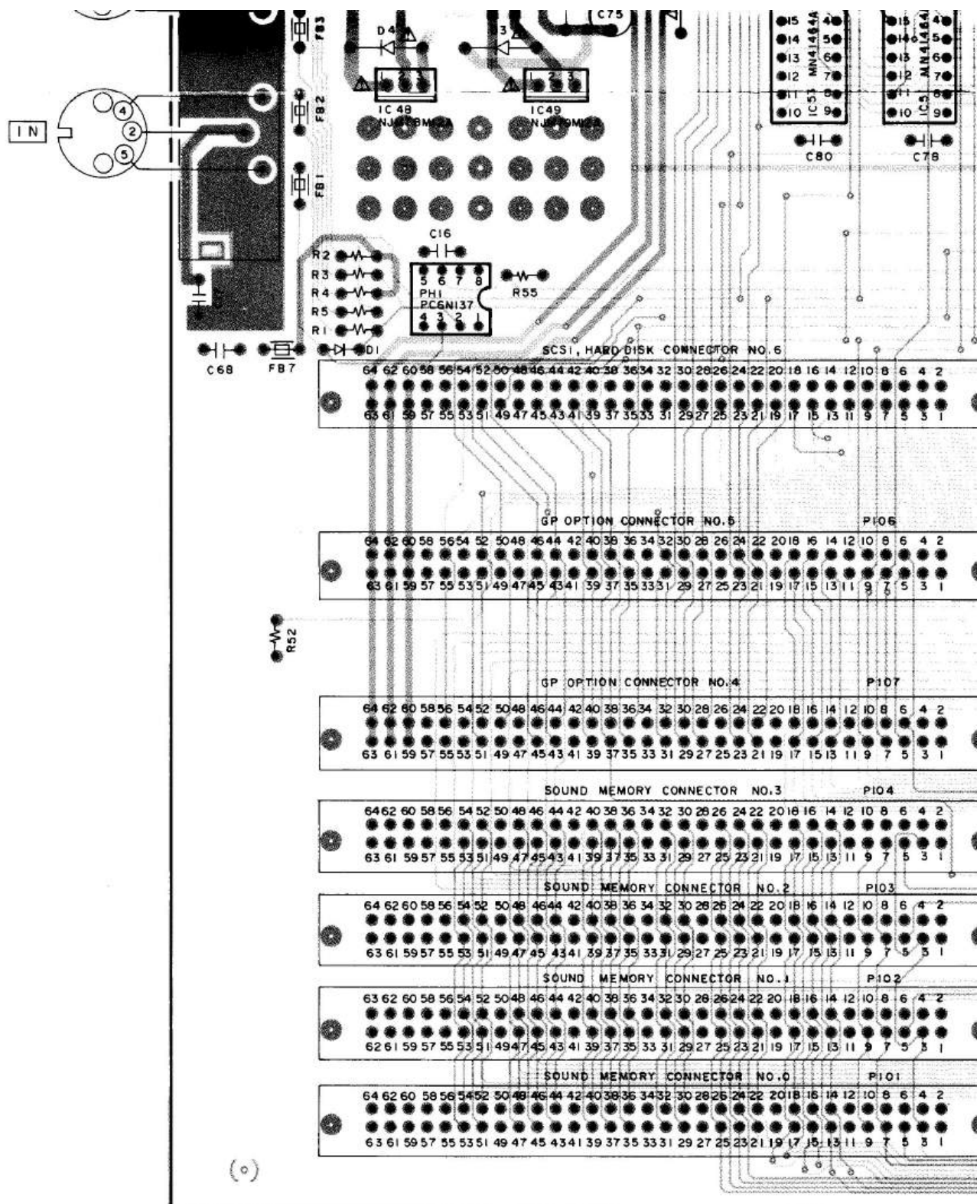
TO EL INV PCB P414

P111

P114



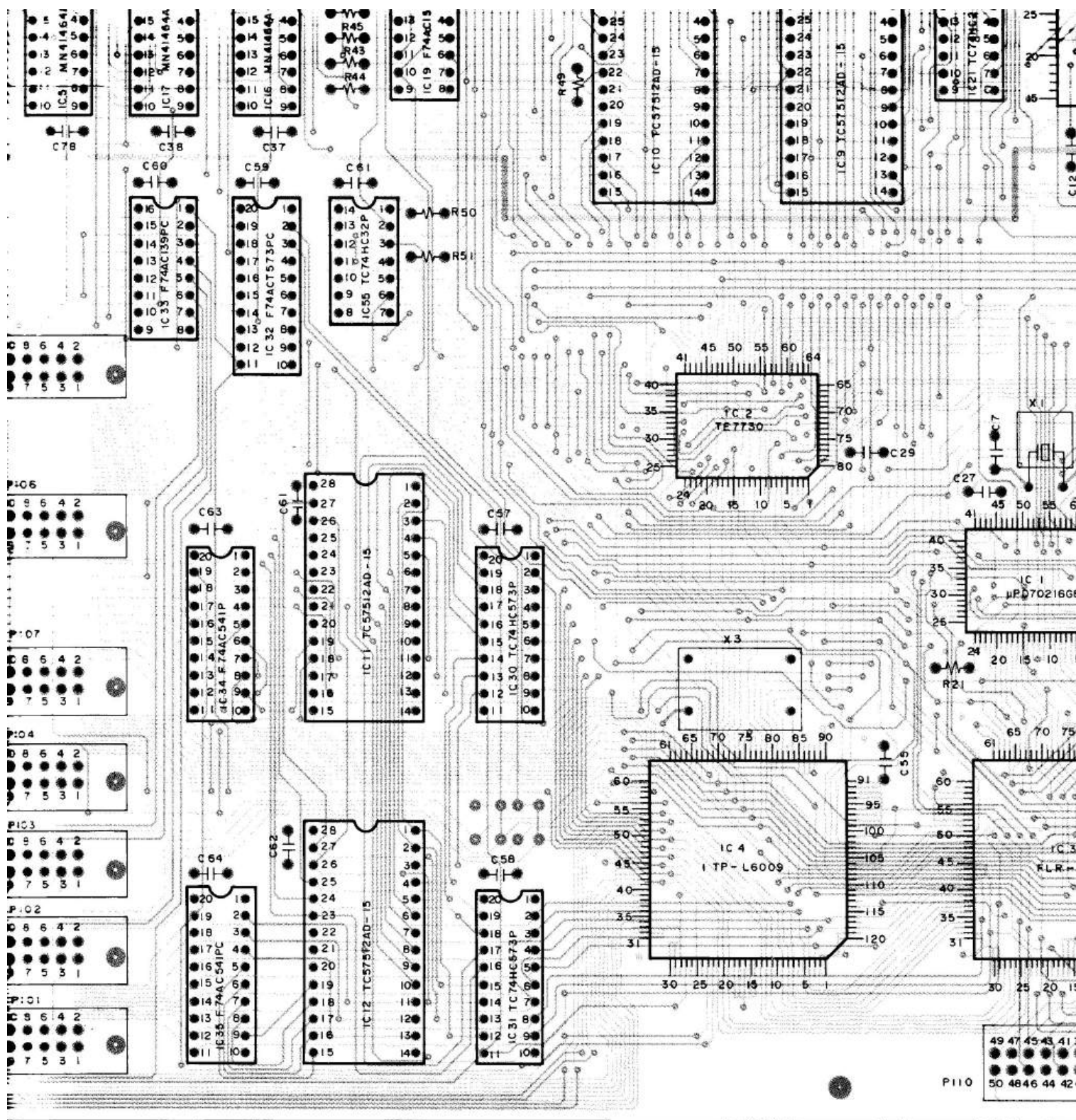




LOCATION OF COMPONENTS

ICS

IC1.....C3	IC13.....B2	IC25.....A4	IC37.
IC2.....C,D3	IC14.....E1	IC26.....A4	IC38.
IC3.....B,C4	IC15.....E1	IC27.....B3	IC39.
IC4.....C,D4	IC16.....E1,2	IC28.....A3	IC40.
IC5.....A2	IC17.....E1,2	IC29.....B3	IC41.
IC6.....B1,2	IC18.....D1	IC30.....D3	IC42.
IC7.....B,C2	IC19.....D1,2	IC31.....D4	IC43.
IC8.....A3,4	IC20.....D1	IC32.....E2	IC44.
IC9.....C2	IC21.....C1,2	IC33.....E2	IC45.
IC10.....D2	IC22.....A1,2	IC34.....E3	IC46.
IC11.....E3	IC23.....A1,2	IC35.....E4	IC47.
IC12.....E4	IC24.....A1,2	IC36.....A1	IC48.



CPU PCB L6009A5010

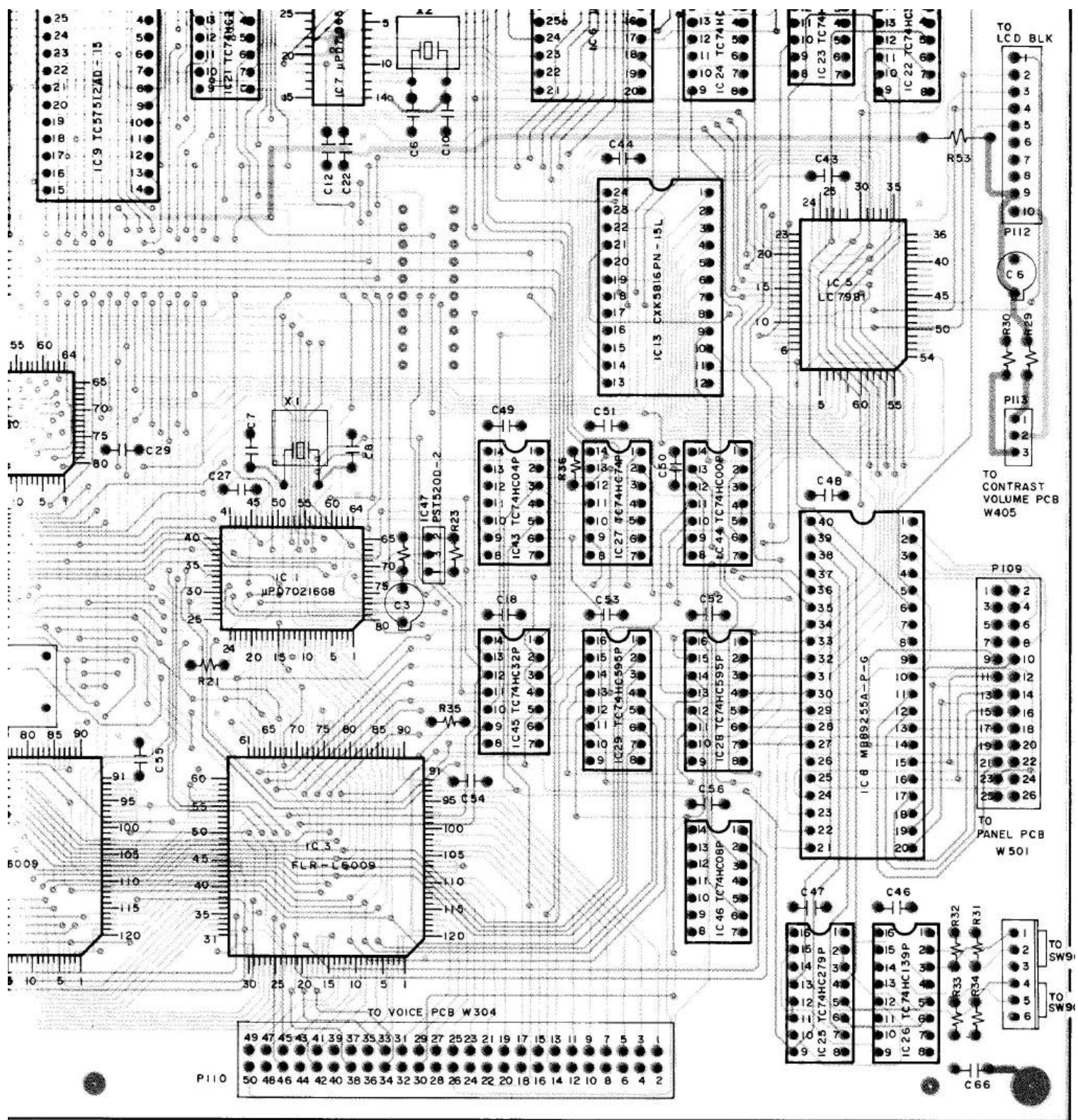
4 IC37.....A1
4 IC38.....A1
3 IC39.....B,C1
3 IC40.....C1
3 IC41.....D1
3 IC42.....D2
4 IC43.....B3
2 IC44.....A3
2 IC45.....B3
3 IC46.....A4
4 IC47.....B3
1 IC48.....G2

IC49.....G2
IC50.....F1
IC51.....F1,2
IC52.....F1
IC53.....F1,2
IC54.....F1
IC55.....E2
PH1.....G2

CONNECTORS

P101.....F,G4
P102.....F,G4
P103.....F,G4
P104.....F,G4
P105.....F,G2
F,G3
P106.....F,G3
P107.....F,G3
P108.....A,B1
P109.....A3,4
P110.....B,C4
P111.....E1
P112.....A2

P113.....A3
P114.....C1
P115.....G1
P116.....F1
P117.....A1
P118.....B1
P119.....A4
J101.....G1,2



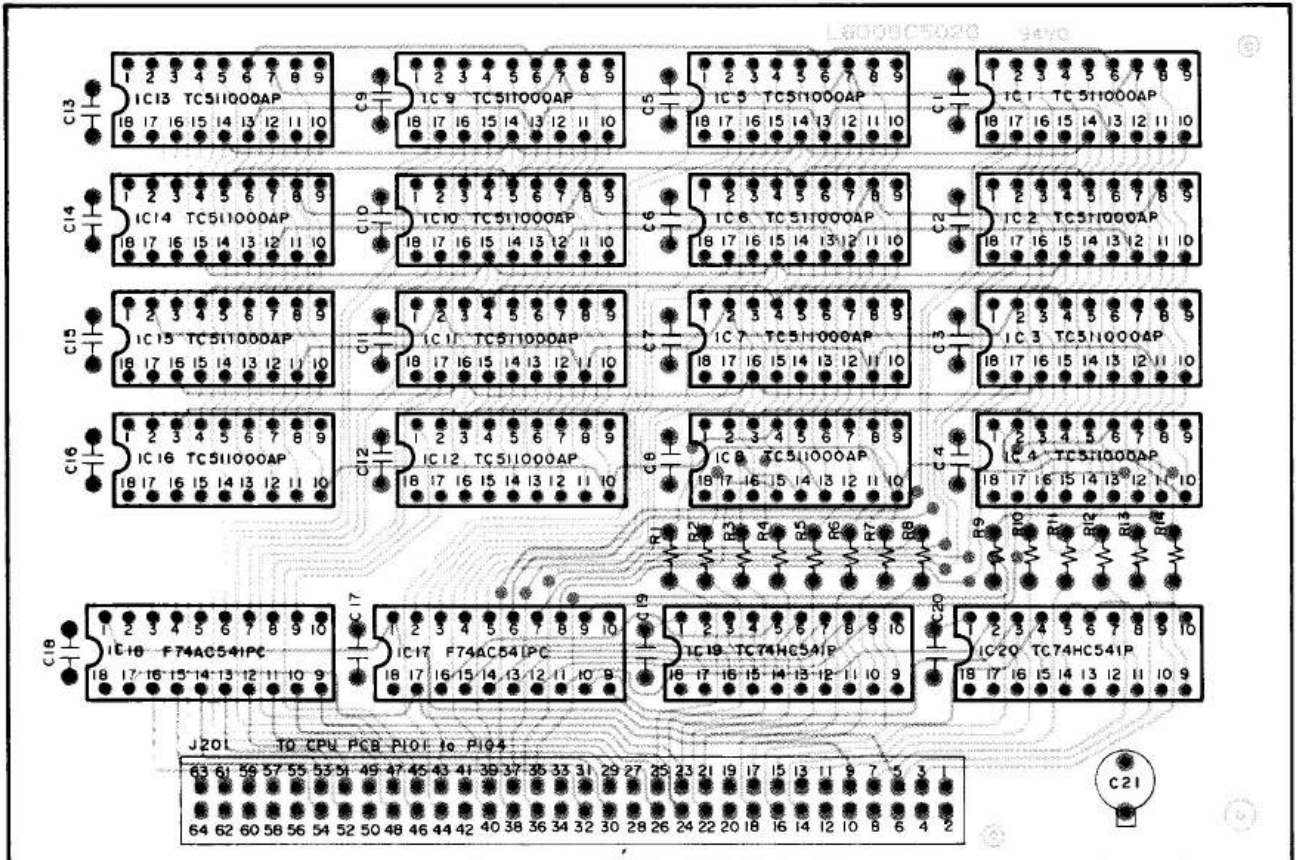
0

A3
C1
G1
F1
A1
B1
A4

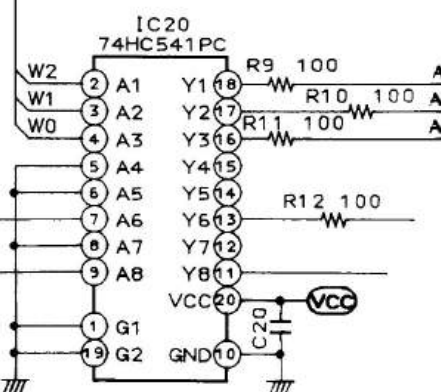
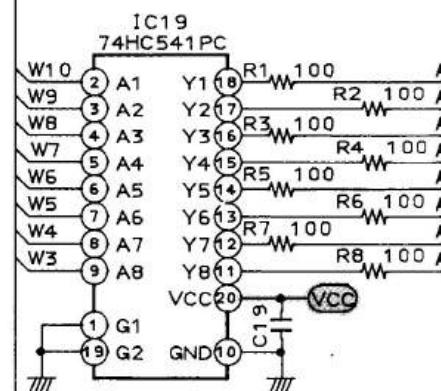
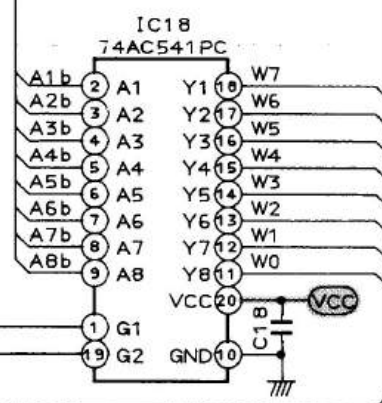
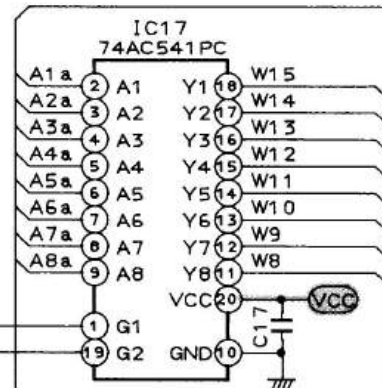
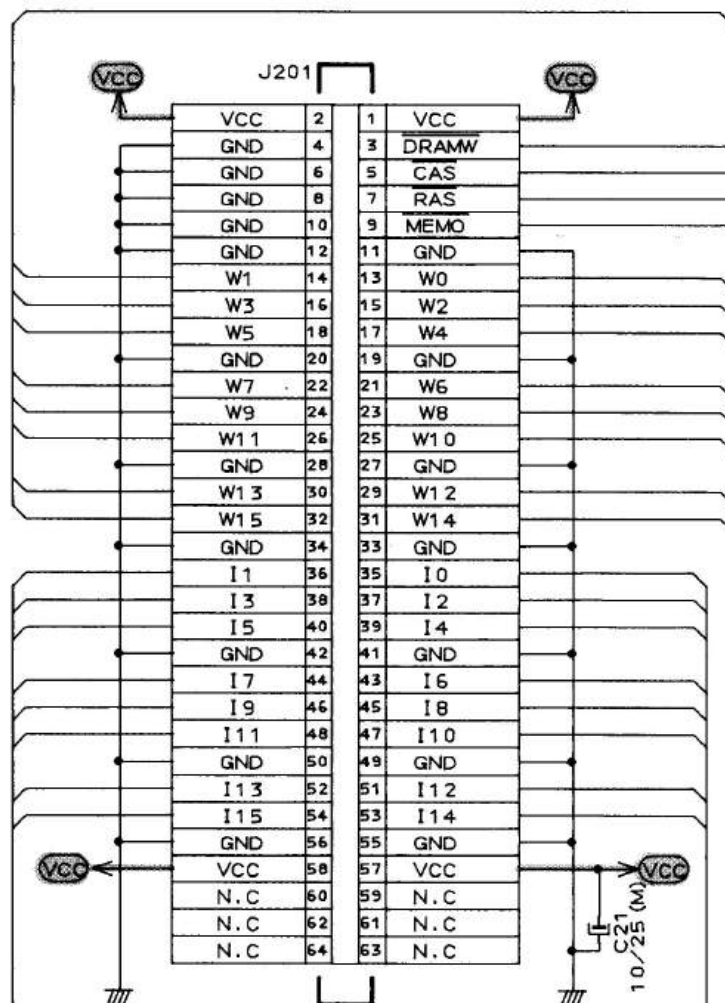
G1,2

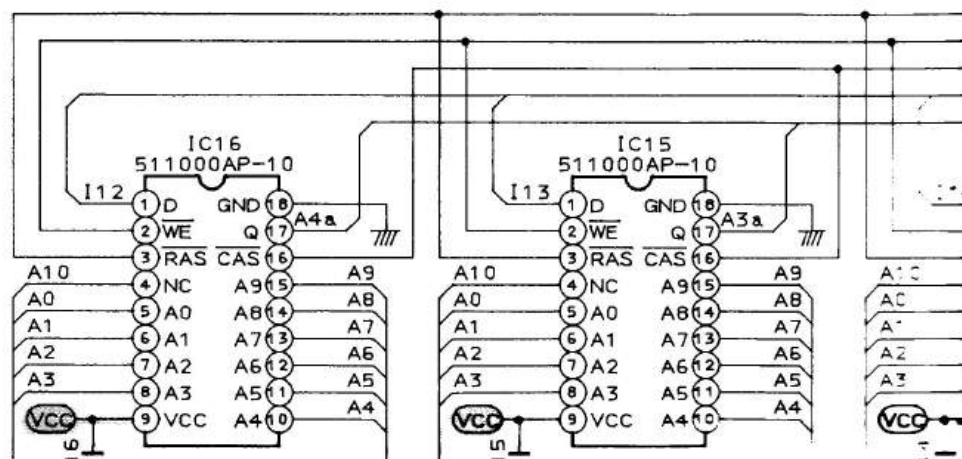
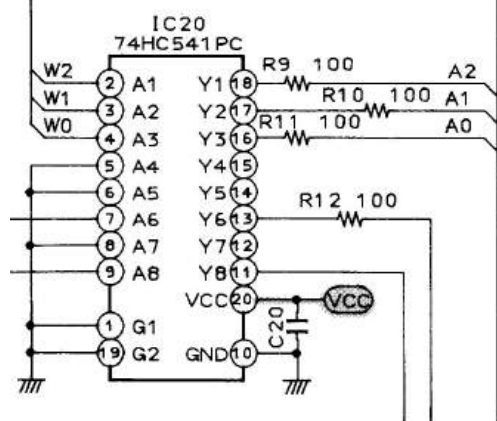
WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

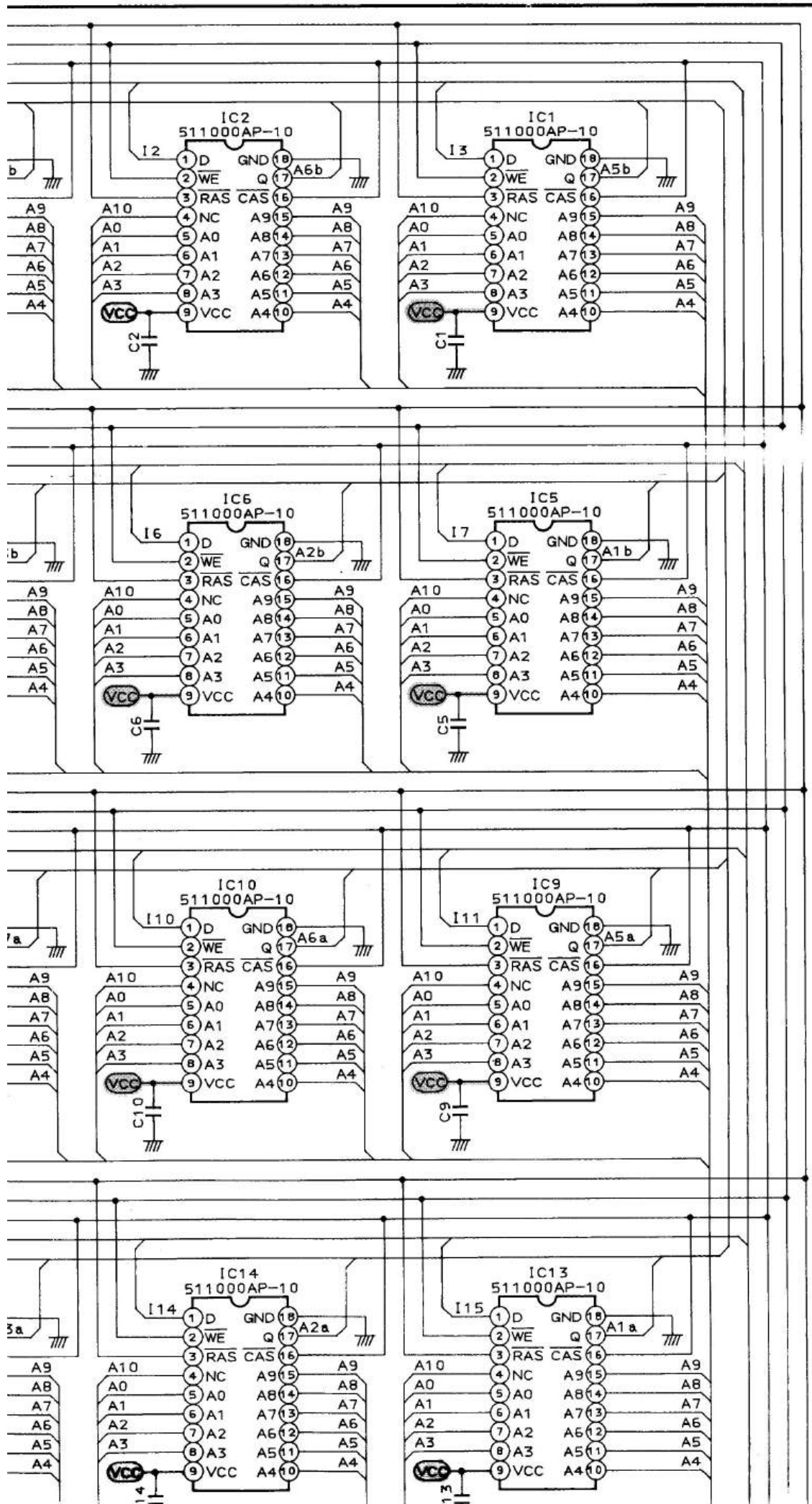
AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT.



MEMORY PCB / EXM005 (OPTIONAL MEMORY BOARD) L6009C5020







1

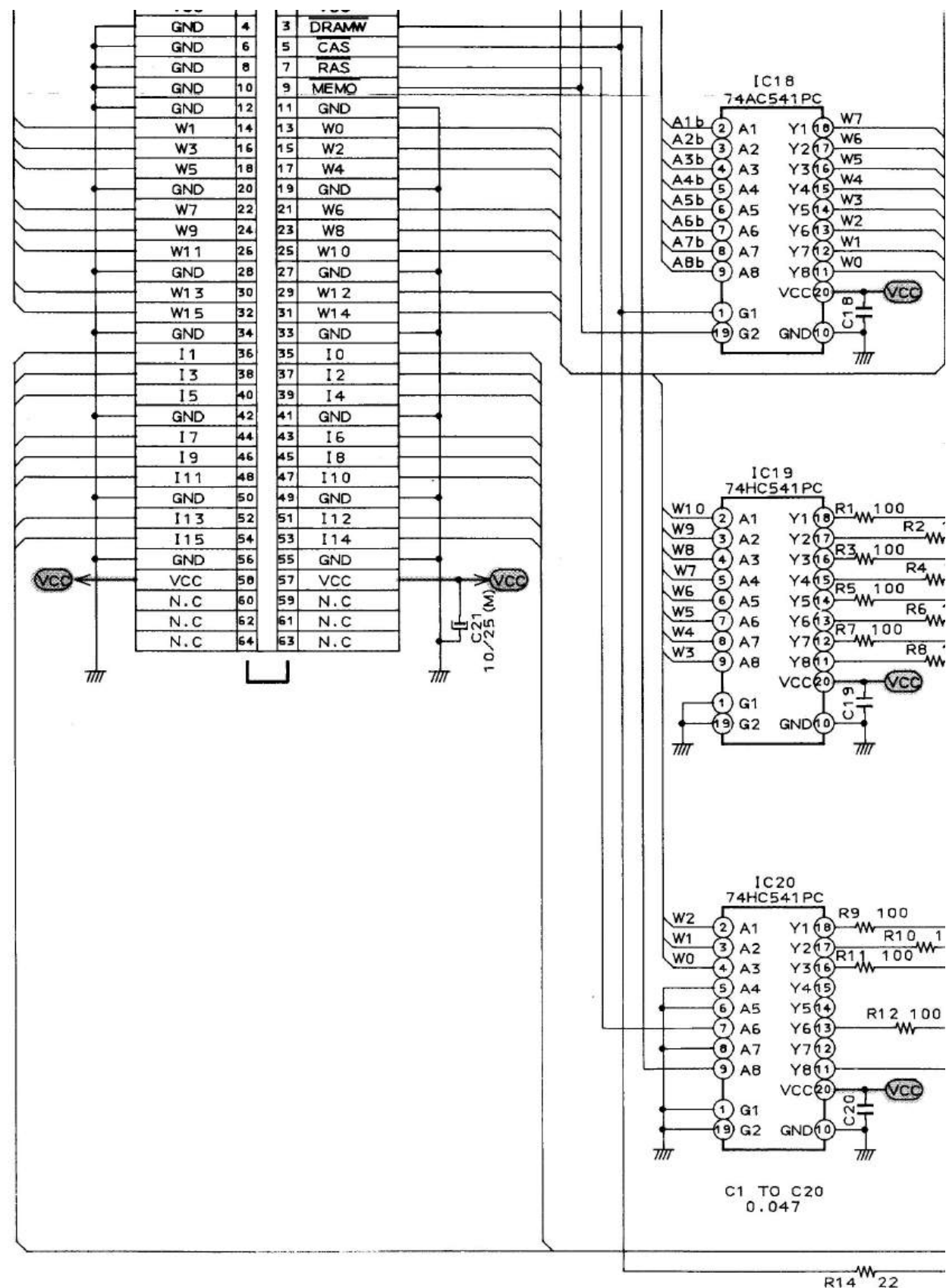
2

3

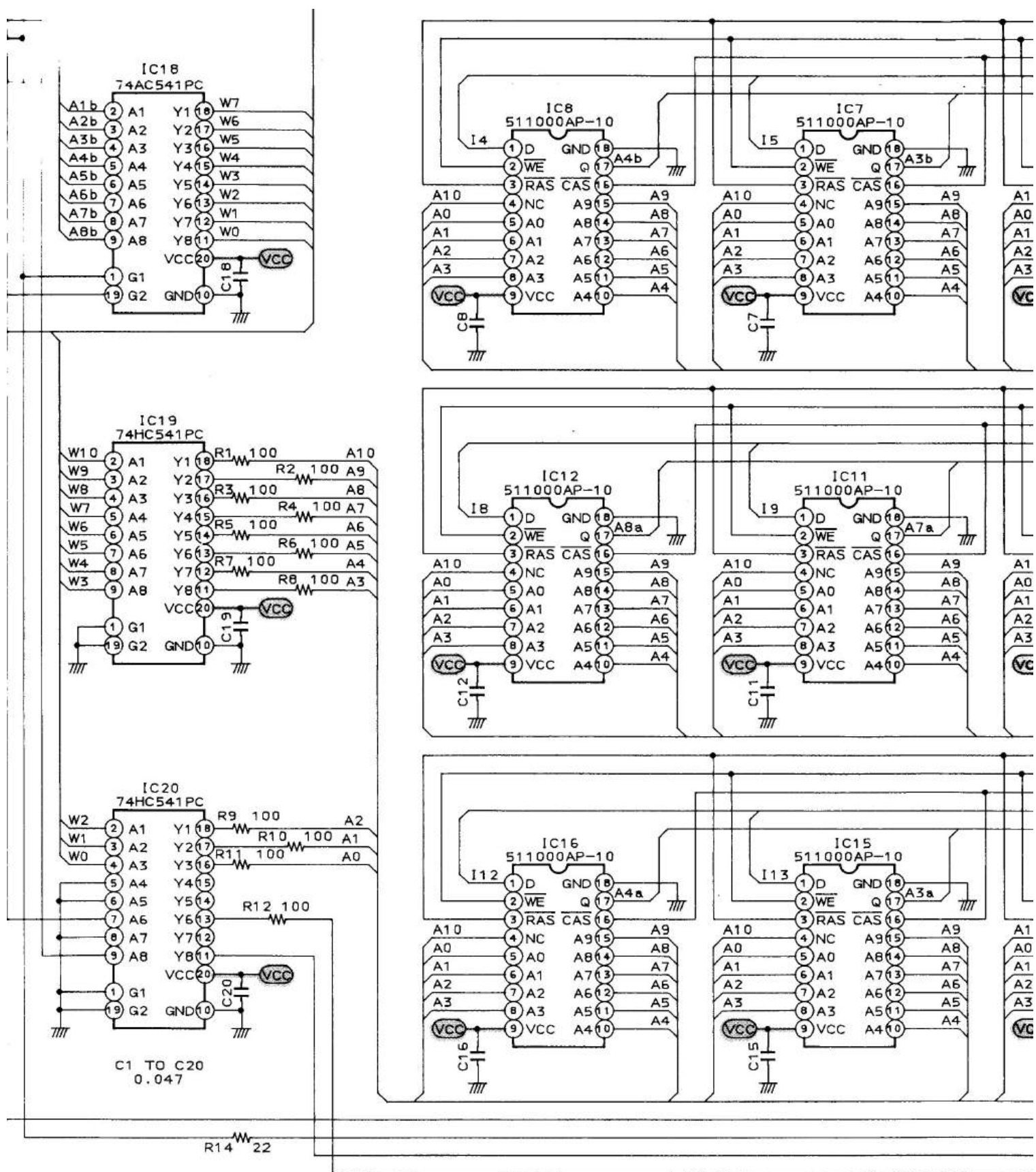
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5

6

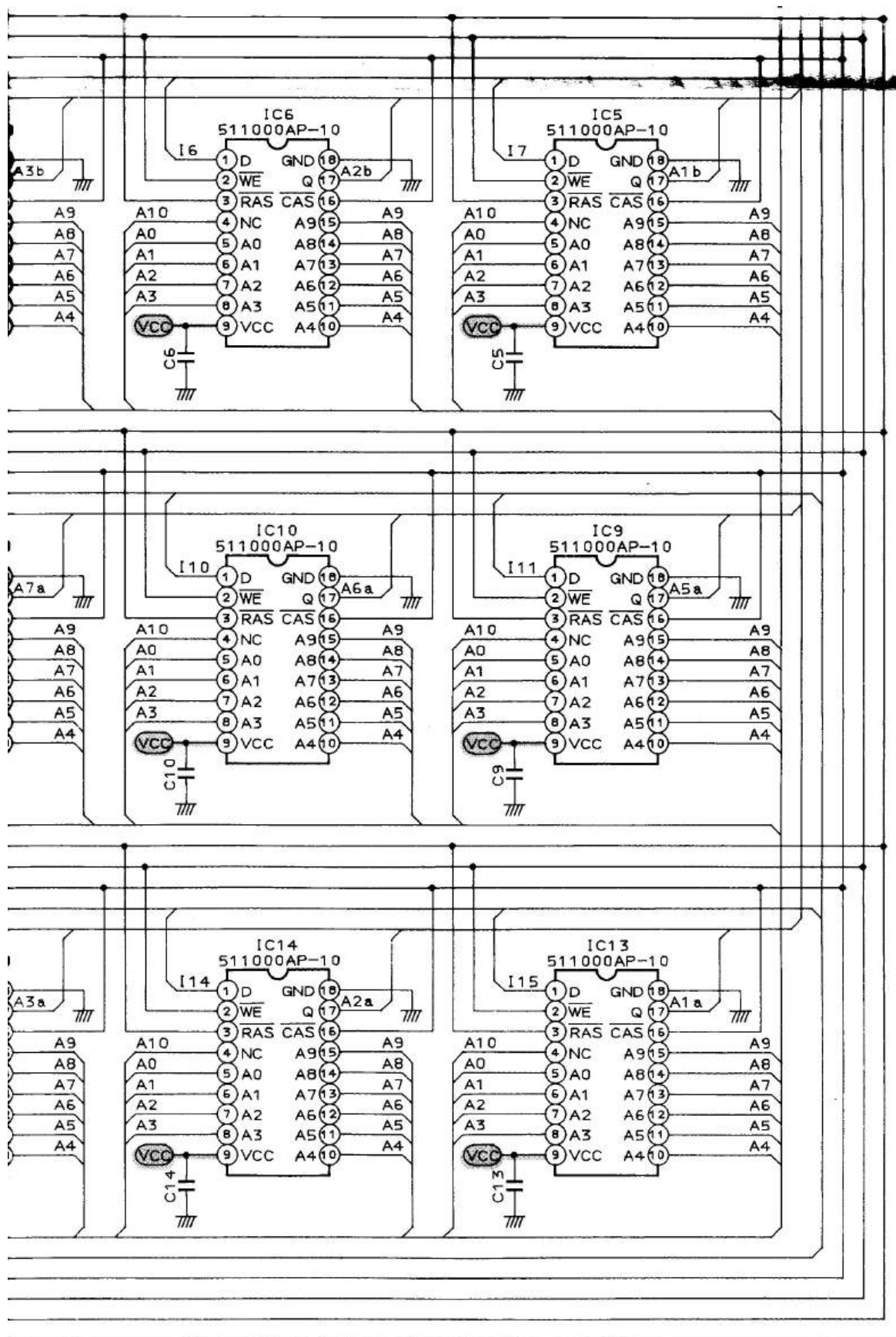


MEMORY PCB L6009C5020



NOTE: B (POWER SUPPLY) LINE

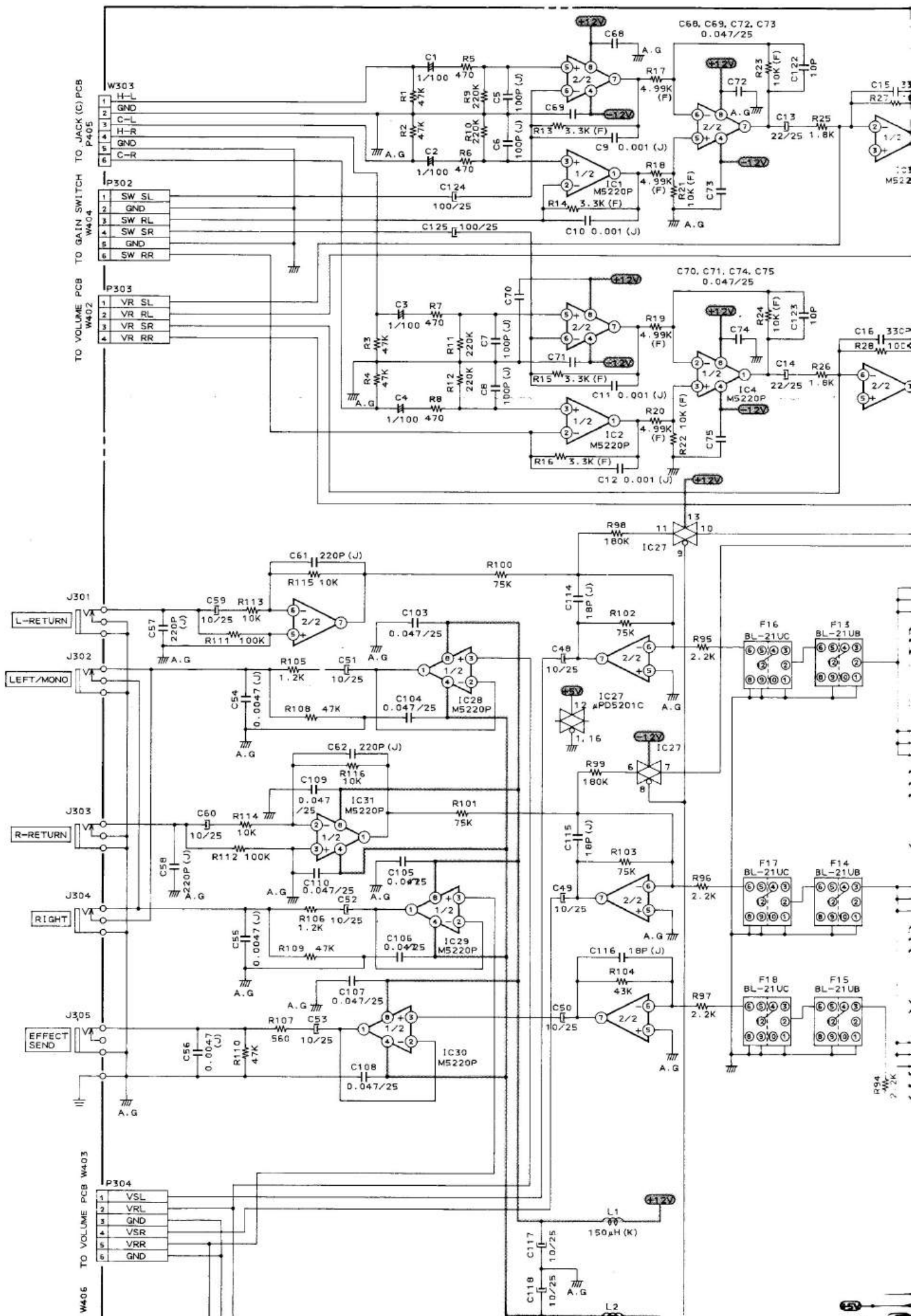
NOTE
UNLESS OTHERWISE SPECI
ALL RESISTORS IN OHMS
ALL CAPACITORS IN μ F 50

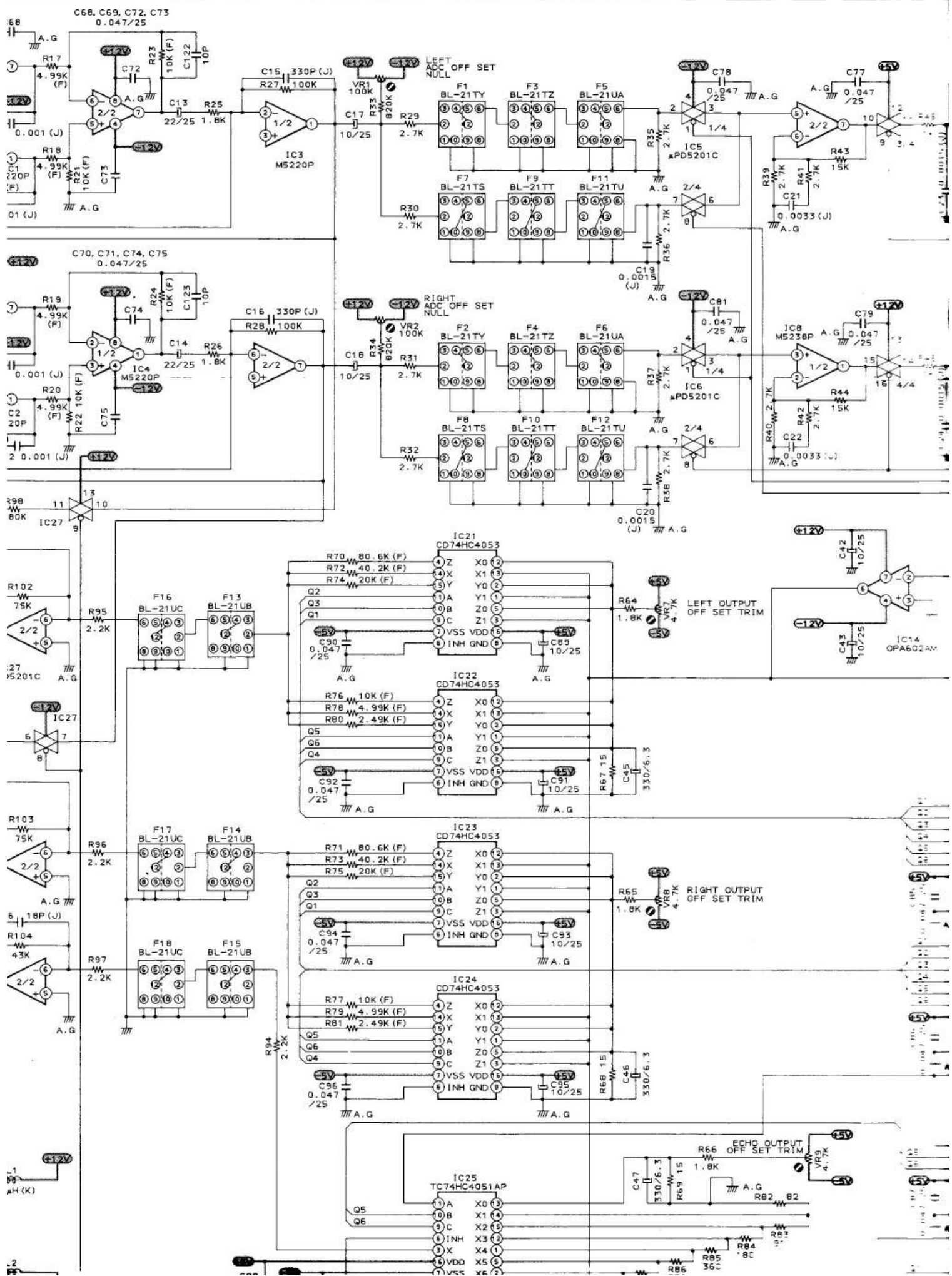


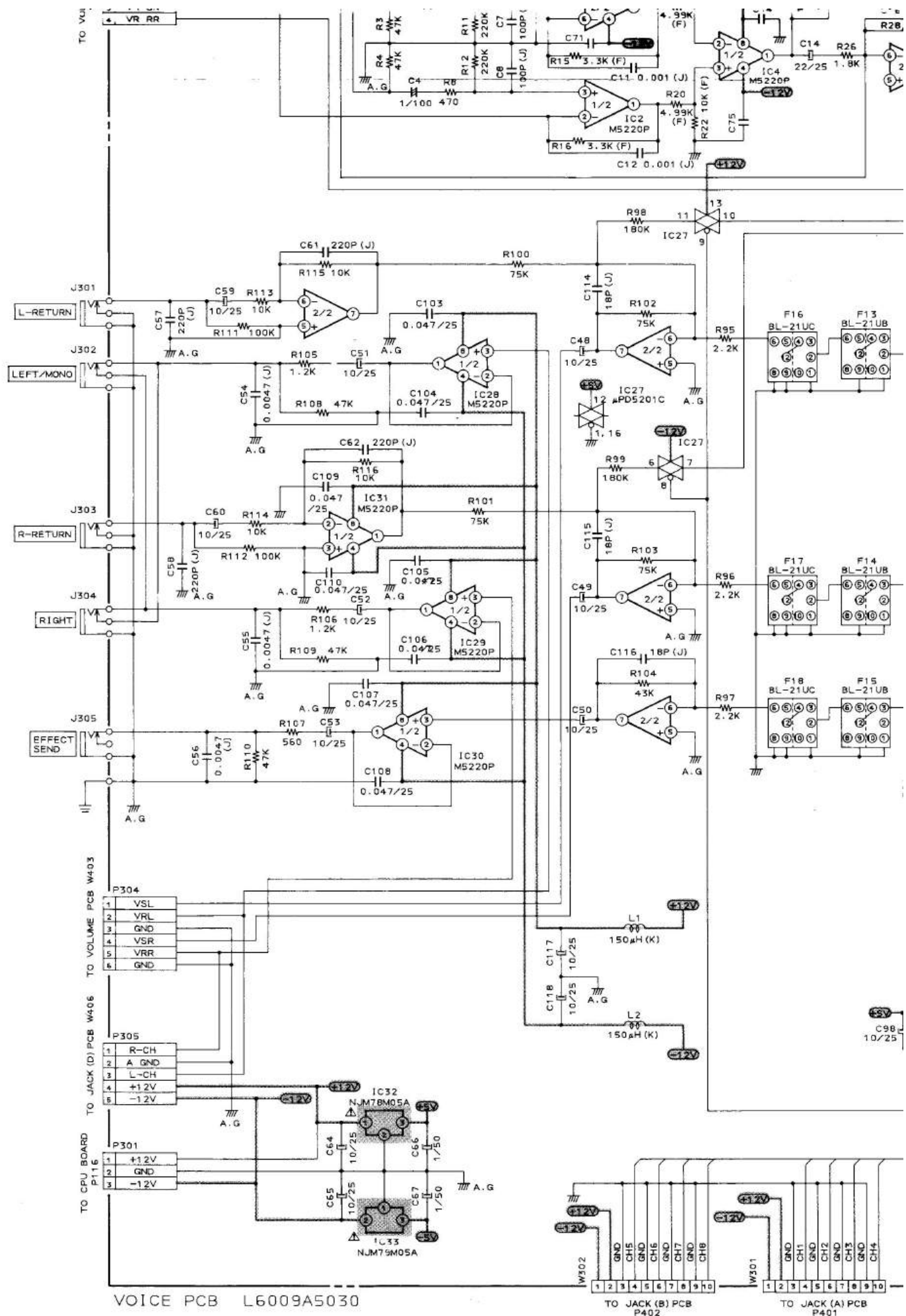
S1000
MEMORY PCB/EXM005
(OPTICAL MEMORY BOARD)
SCHEMATIC DIAGRAM

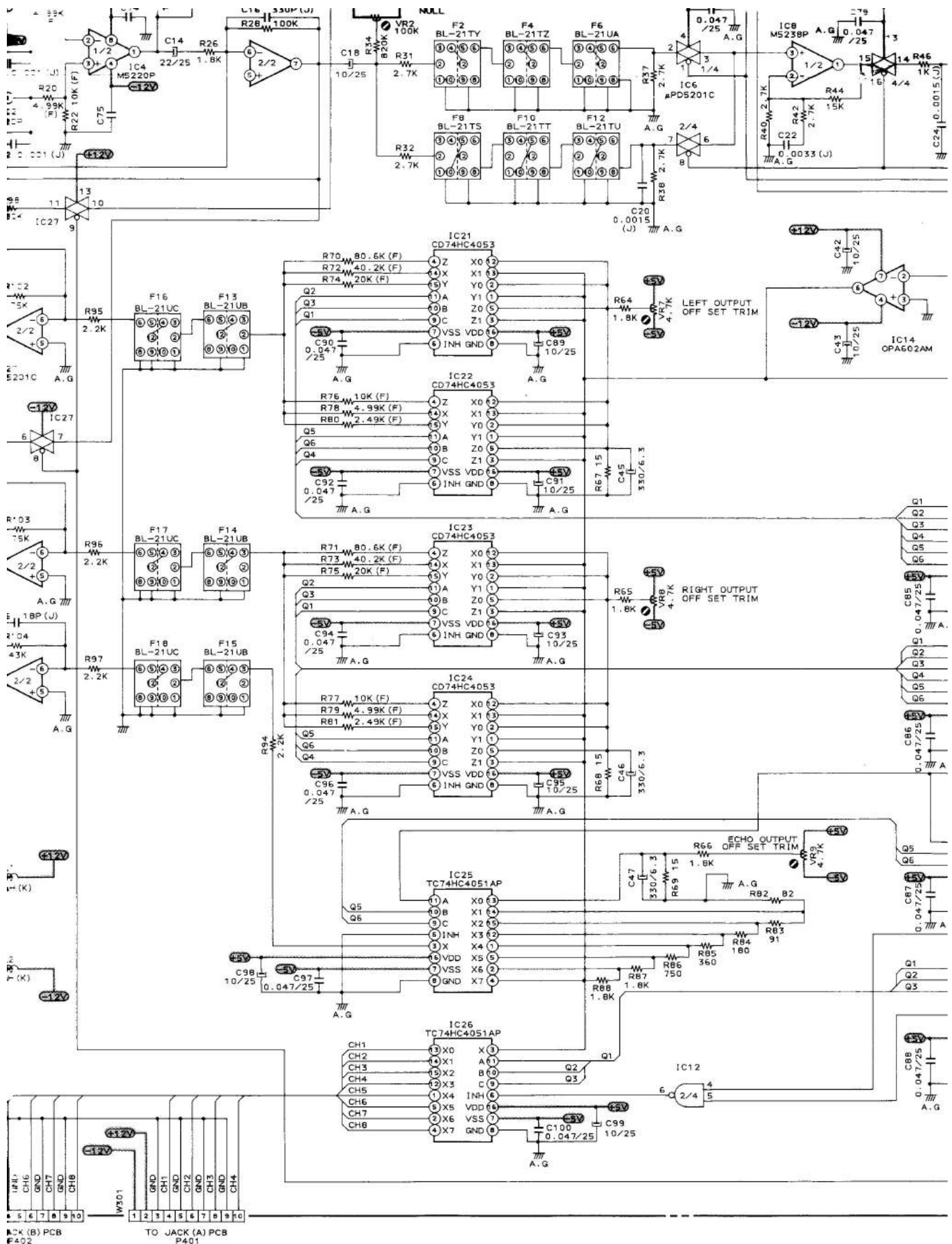
NO.5-5 L600905M₂

OTHERWISE SPECIFIED
RESISTORS IN OHMS 1/6W (J)
CAPACITORS IN μ F 50 WV (Z)









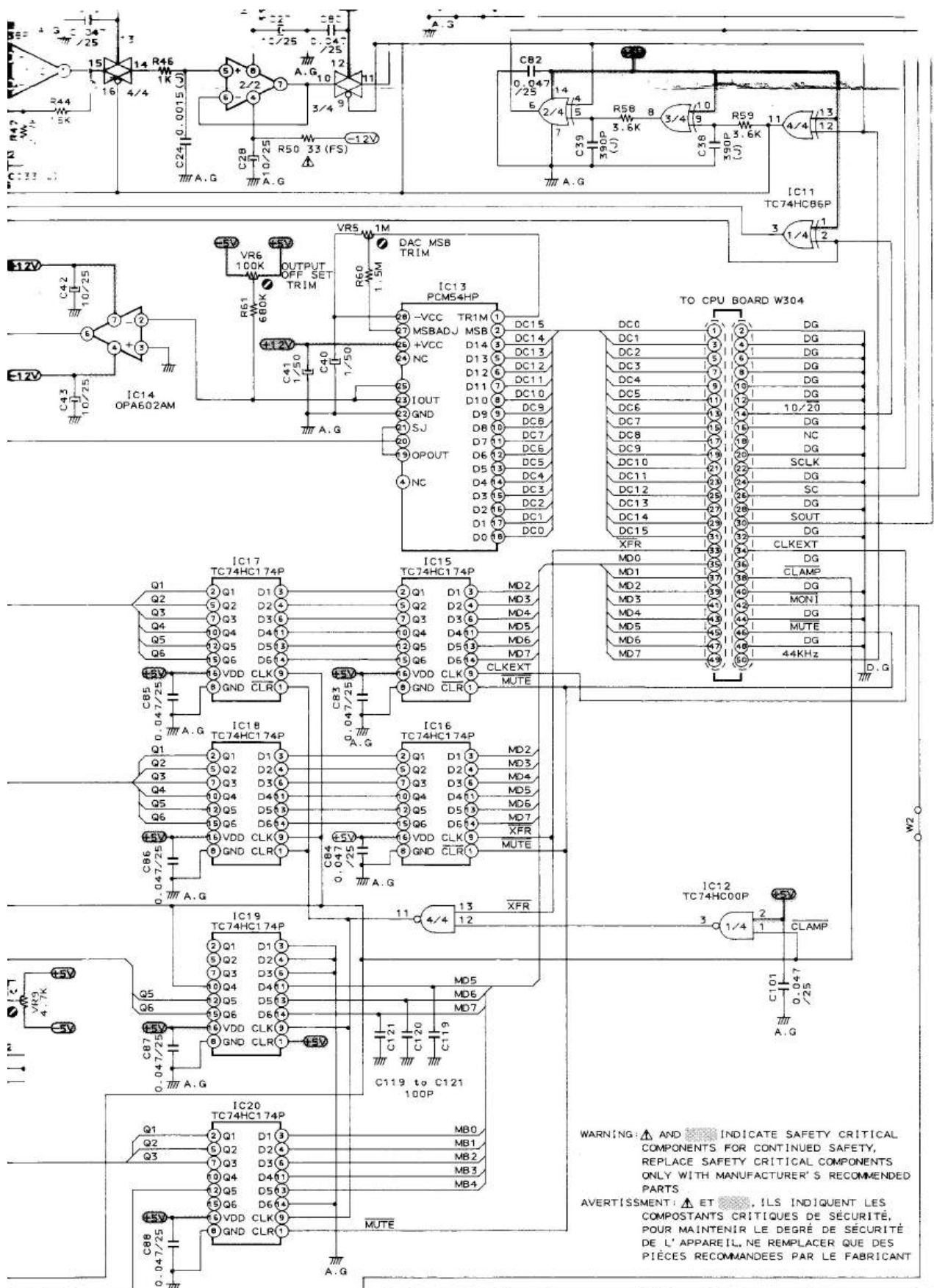
D

E

F

G

H



S1000
VOICE PCB
SCHEMATIC DIAGRAM
NO.5-4 L600904M

3

4

5

6

7

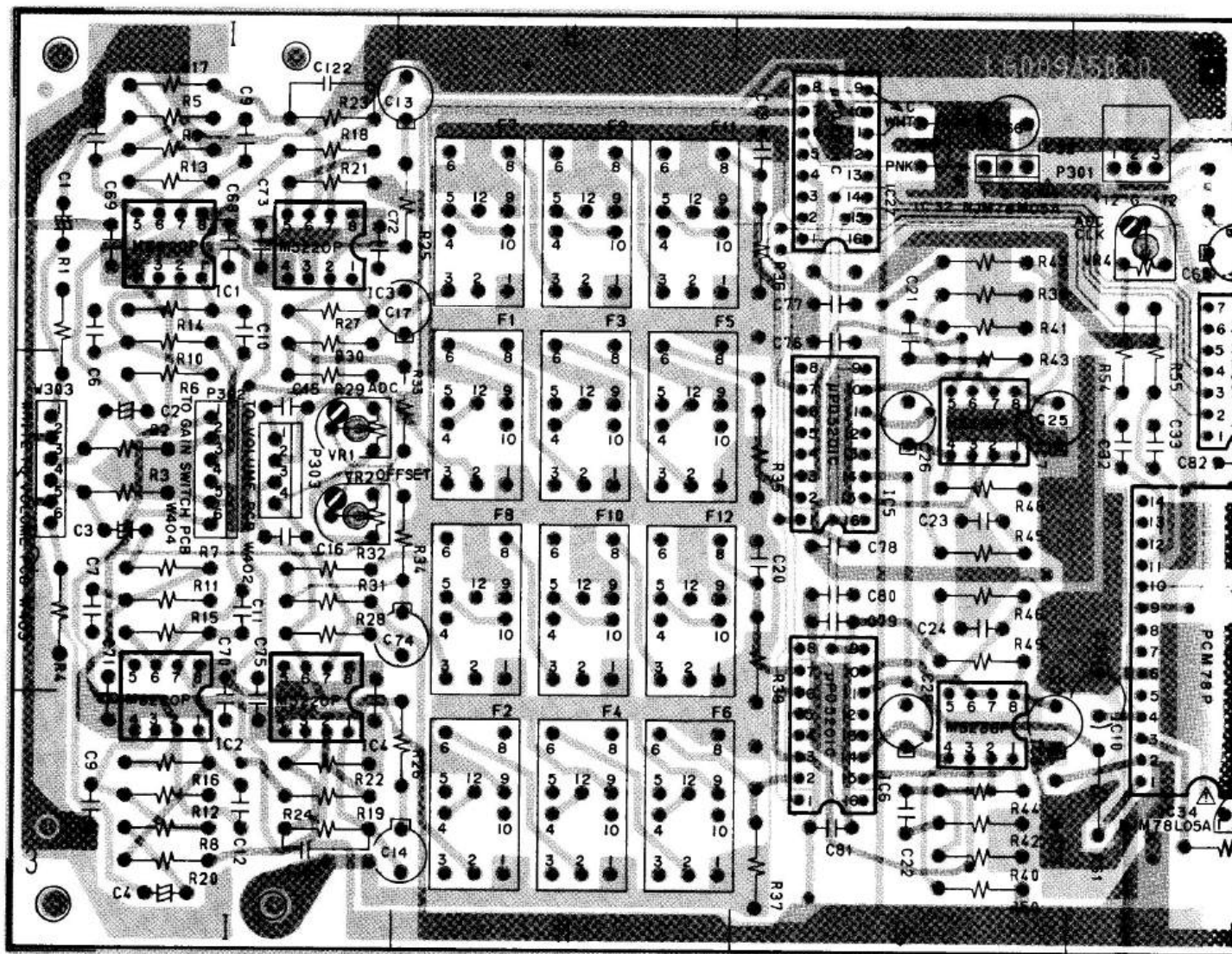
8

H

I

J

K



VOICE PCB L6009A5030

LOCATION OF COMPONENTS

ICS

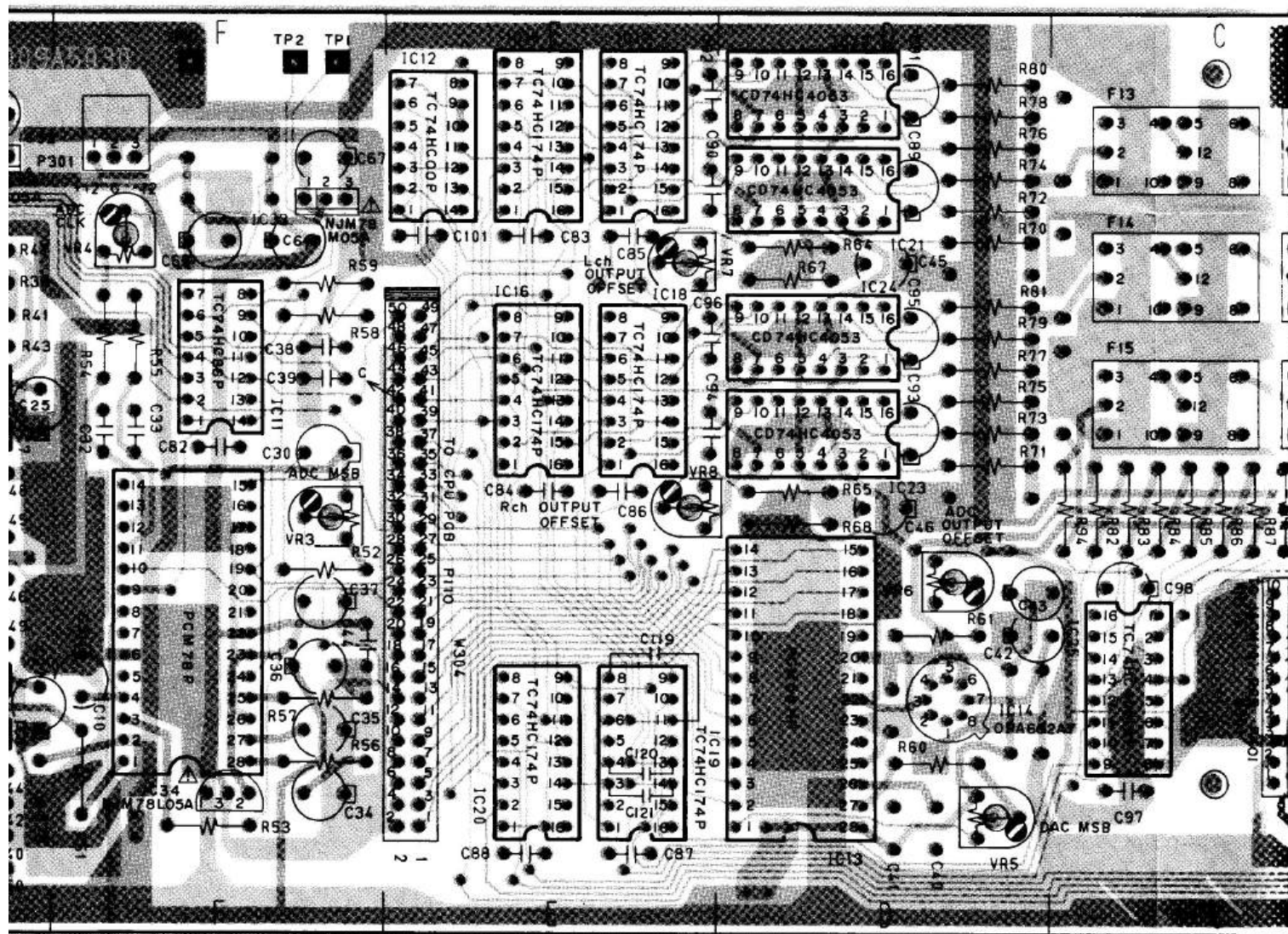
IC1...I1	IC19...E3
IC2...I2,3	IC20...E3
IC3...I1	IC21...D1
IC4...I2,3	IC22...D1
IC5...G2	IC23...D2
IC6...G2,3	IC24...D1,2
IC7...G2	IC25...C2,3
IC8...G3	IC26...C2,3
IC10...F2,3	IC27...G1
IC11...F1,2	IC28...B1
IC12...E1	IC29...B2

CONNECTORS

P301...F1
P302...I2
P303...I2
P304...B1
P305...A1
W301...C2,3
W302...B2,3
W303...I2
W304...E1,2,3

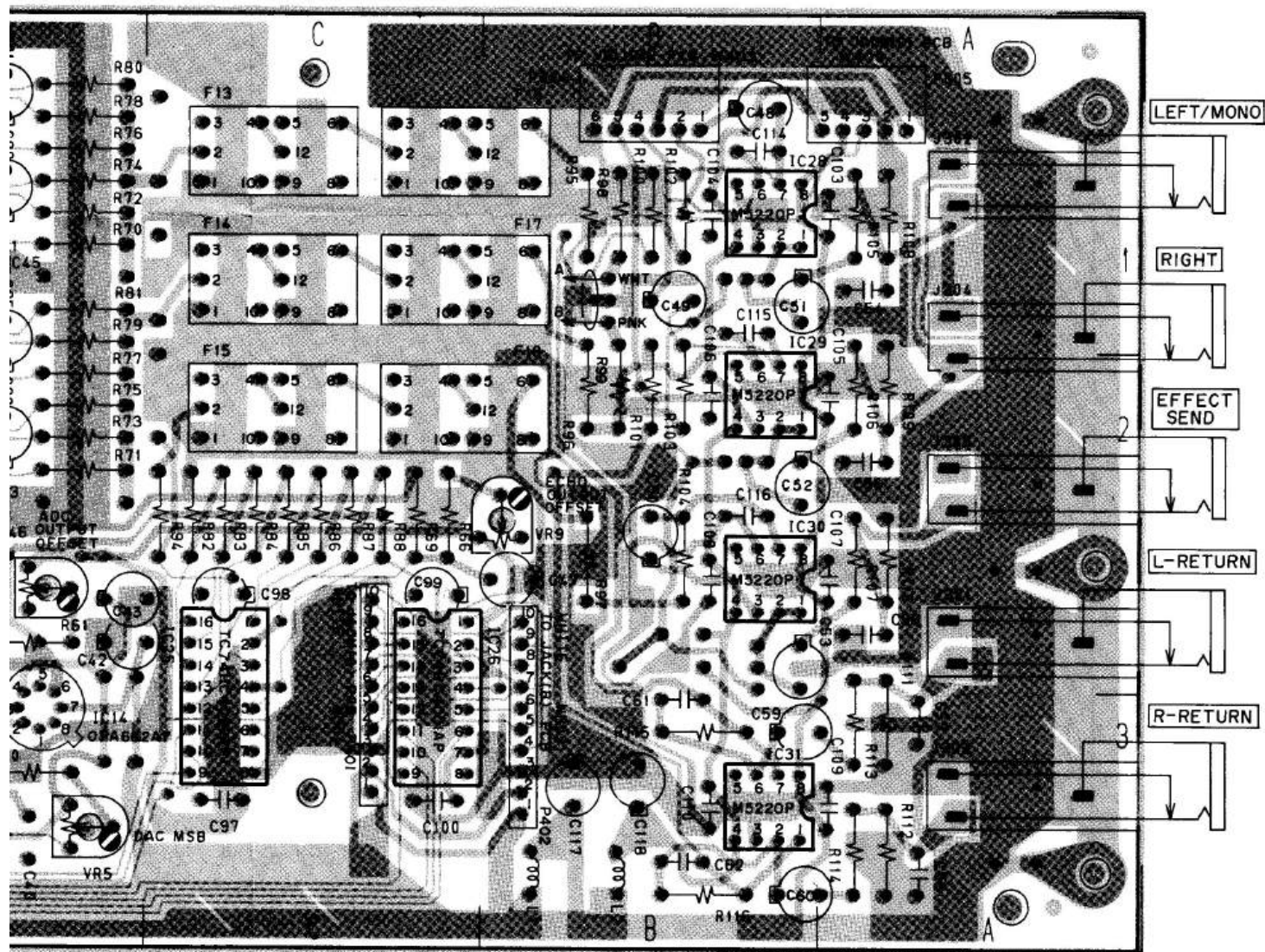
WARNING

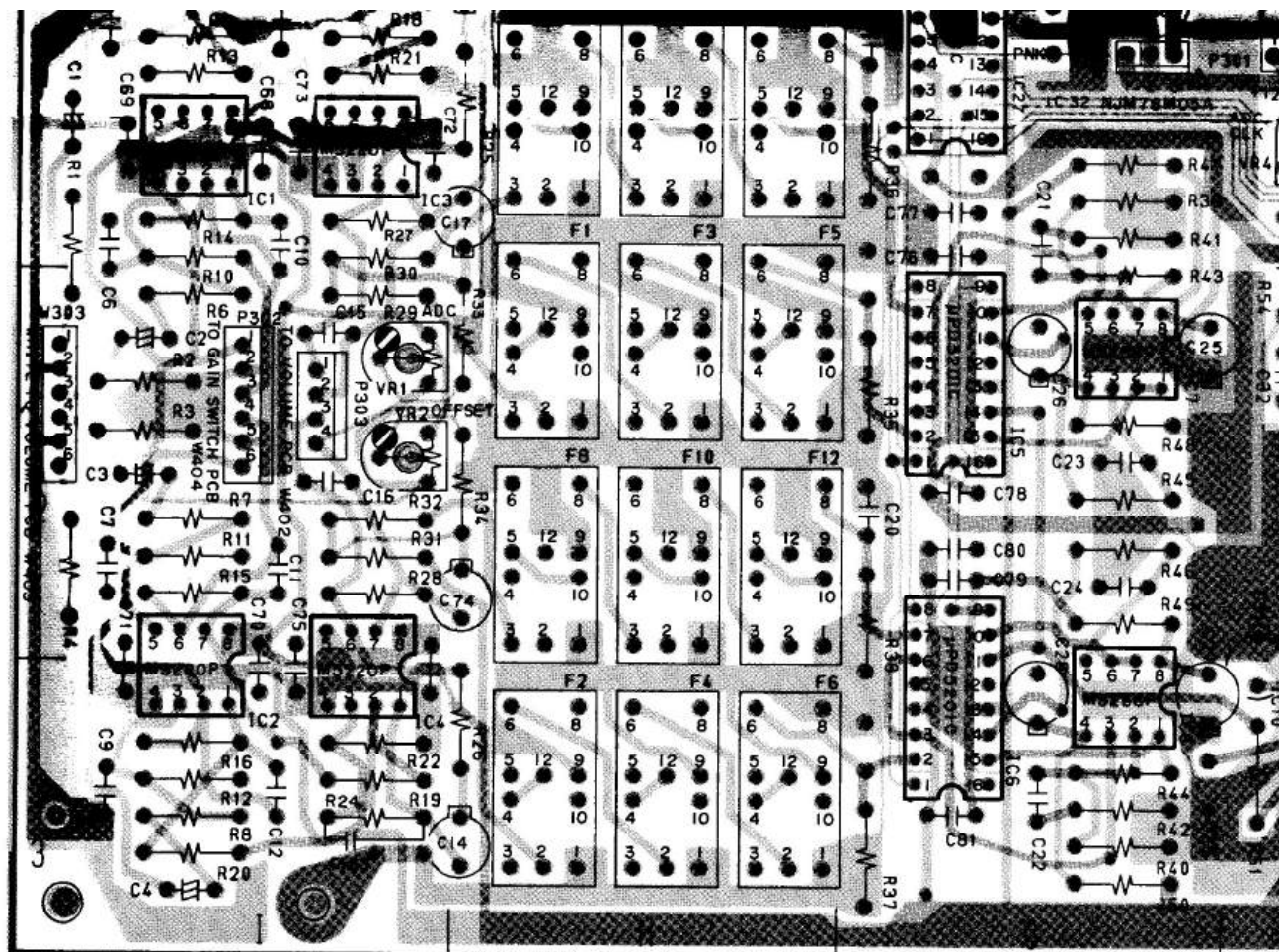
AVERTISSE



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AVERTISSEMENT: Δ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT.





VOICE PCB L6009A5030

LOCATION OF COMPONENTS

ICS

IC1...I1	IC19...E3
IC2...I2,3	IC20...E3
IC3...I1	IC21...D1
IC4...I2,3	IC22...D1
IC5...G2	IC23...D2
IC6...G2,3	IC24...D1,2
IC7...G2	IC25...C2,3
IC8...G3	IC26...C2,3
IC10...F2,3	IC27...G1
IC11...F1,2	IC28...B1
IC12...E1	IC29...B2
IC13...D2,3	IC30...B2
IC14...D3	IC31...B2
IC15...E1	IC32...G1
IC16...E2	IC33...F1
IC17...E1	IC34...F3
IC18...E2	

CONNECTORS

P301...F1
P302...I2
P303...I2
P304...B1
P305...A1
W301...C2,3
W302...B2,3
W303...I2
W304...E1,2,3
J301...A2
J302...A1
J303...A3
J304...A1
J305...A2



