

# KORG®



## DIGITAL DELAY SERVICE MANUAL

# SDD-3000

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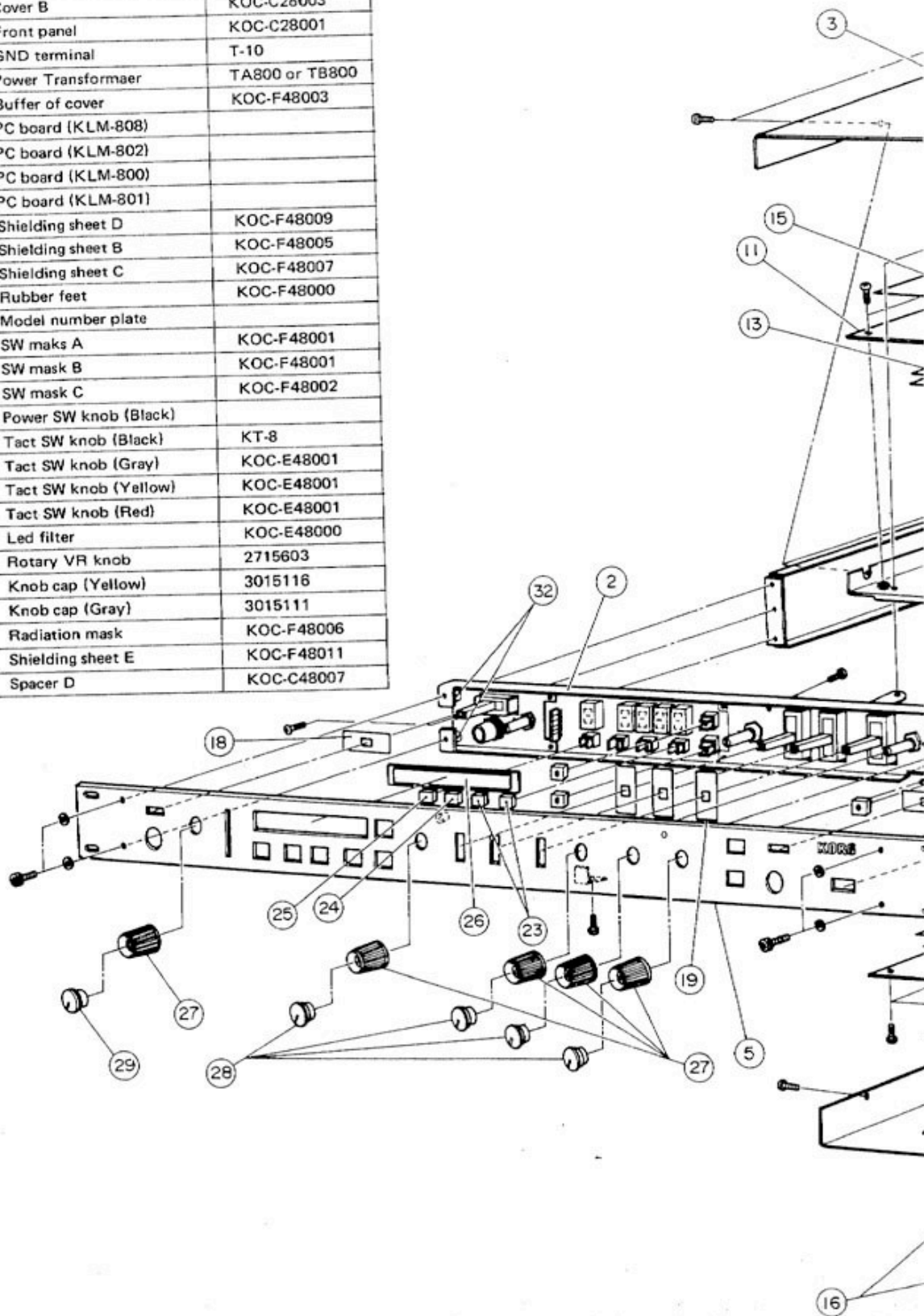
KEIO ELECTRONIC LABORATORY CORPORATION  
TOKYO/JAPAN

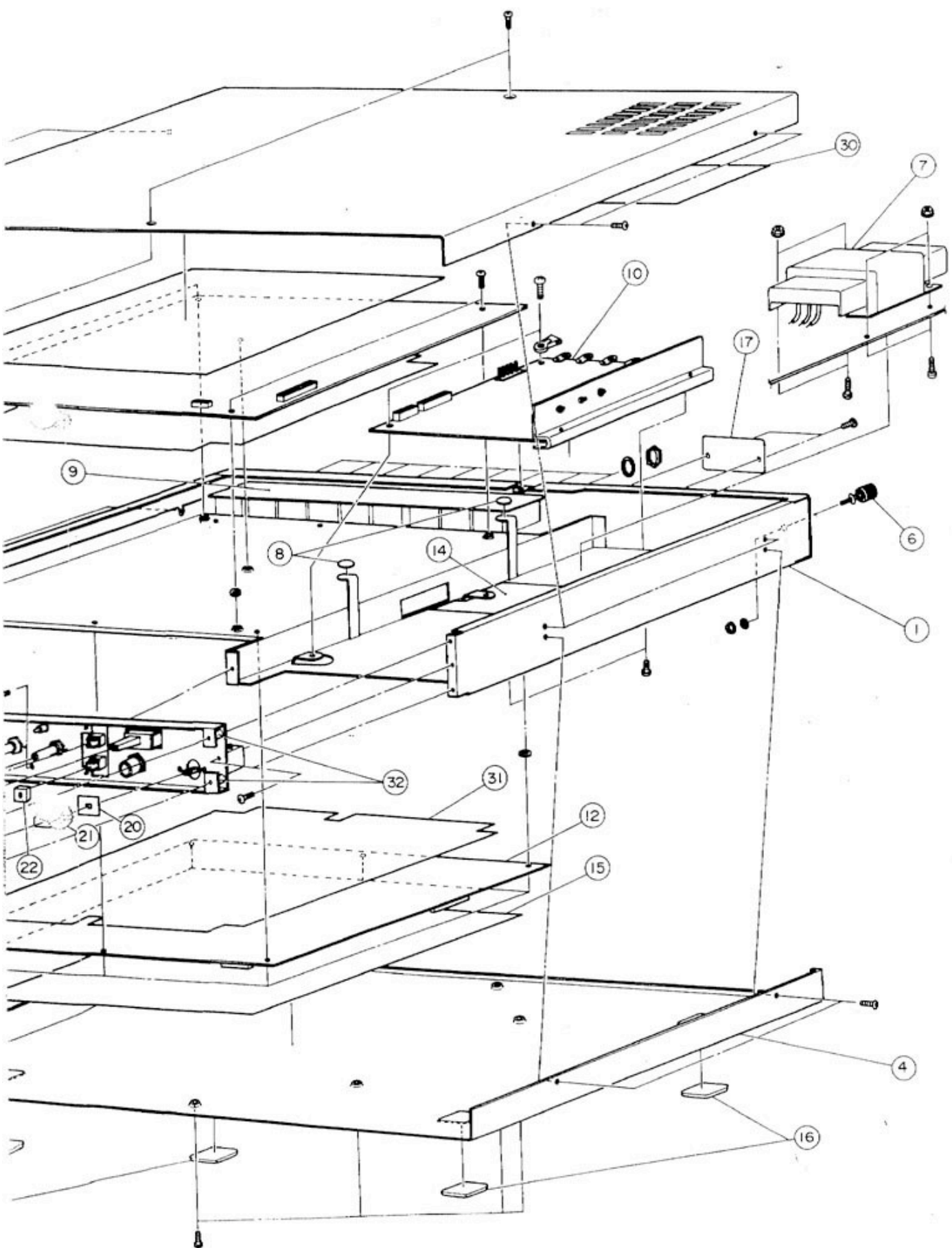
# 1. SPECIFICATIONS

INPUT (0dBm = 775mV)		Input level -30dBm -10dBm + 4dBm	Impedance 470Kohm 47Kohm 10Kohm	Max (Clip) Level (VR at 5) -13dBm + 7dBm +21dBm
OUTPUT (0dB = 775mV)		Output level -20dBm -10dBm + 4dBm	Max (Clip) Level ~ 3dBm + 7dBm +21dBm	
FREQUENCY RESPONSE		20 ~ 20KHz ±0.5dB (Direct) 20 ~ 17KHz +0.5dB (Effect) -3dB (Effect)		
DYNAMIC RANGE		110dB (Direct) A-Weighted 94dB (Effect)	"	
S/N RATIO		95dB (Direct) 88dB (Effect)	"	
TOTAL DISTORTION		0.005% Typical at 1KHz (Direct) 0.03% Typical at 1KHz (Effect)		
FILTER	LOW CUT	Turn over freq 125Hz 250Hz 500Hz	Roll Off -3dB/OCT -3dB/OCT -3dB/OCT	
	HIGH CUT	8KHz 4KHz 2KHz	-6dB/OCT -6dB/OCT -6dB/OCT	
MODULATION		VCO frequency range 0.1Hz ~ 15Hz Waveform (∧, ∇, Random, Envelope) Intensity (0 - 2:1)		
DELAY TIME		0 ~ 1023msec 1msec step (With full bandwidth)		
DIMENSIONS		482(W) x 46(H) x 381(D) mm		
WEIGHT		6 Kg		
POWER SUPPLY		Local voltage		
POWER CONSUMPTION		22 W		

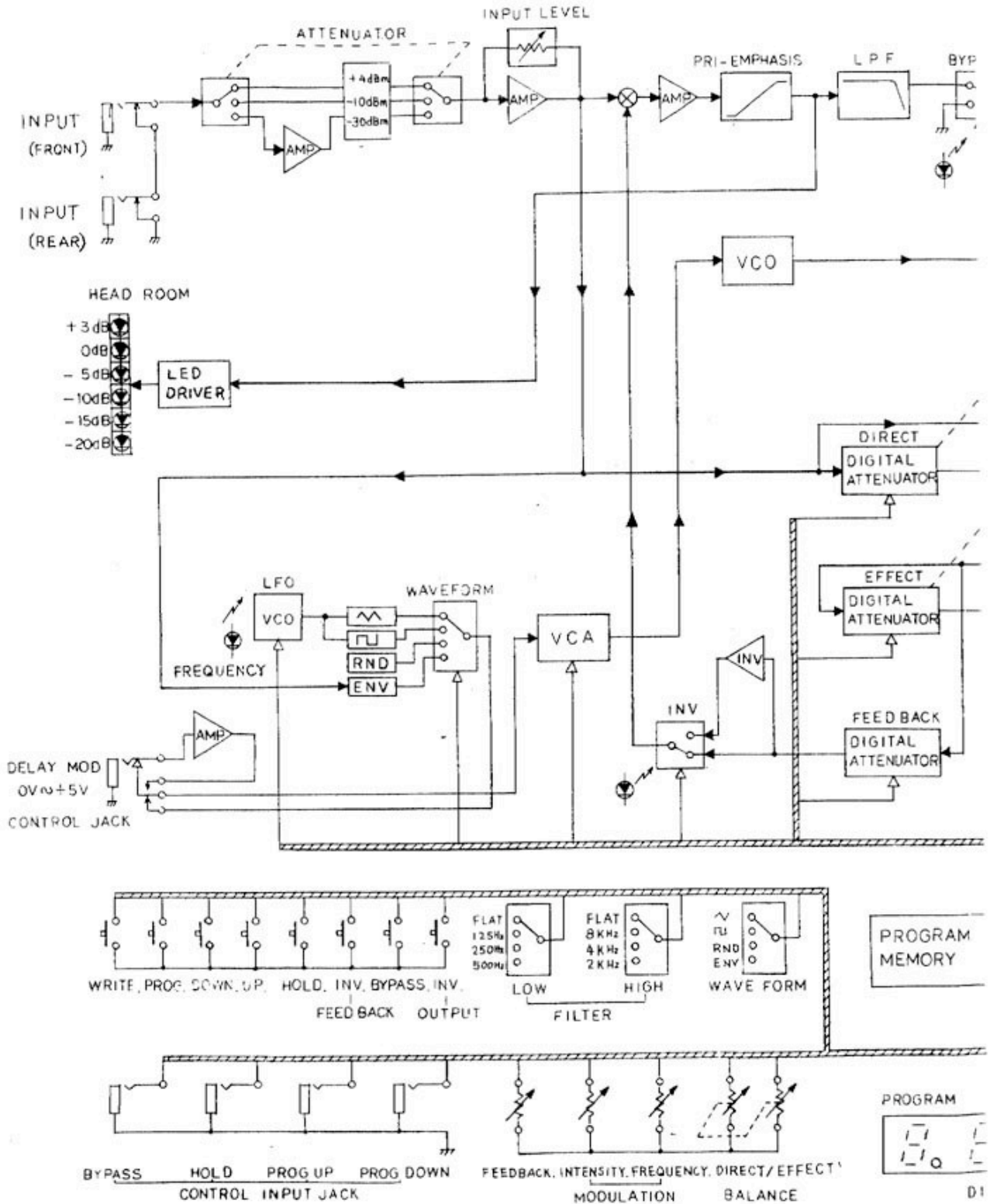
## 2. STRUCTURAL DIAGRAM

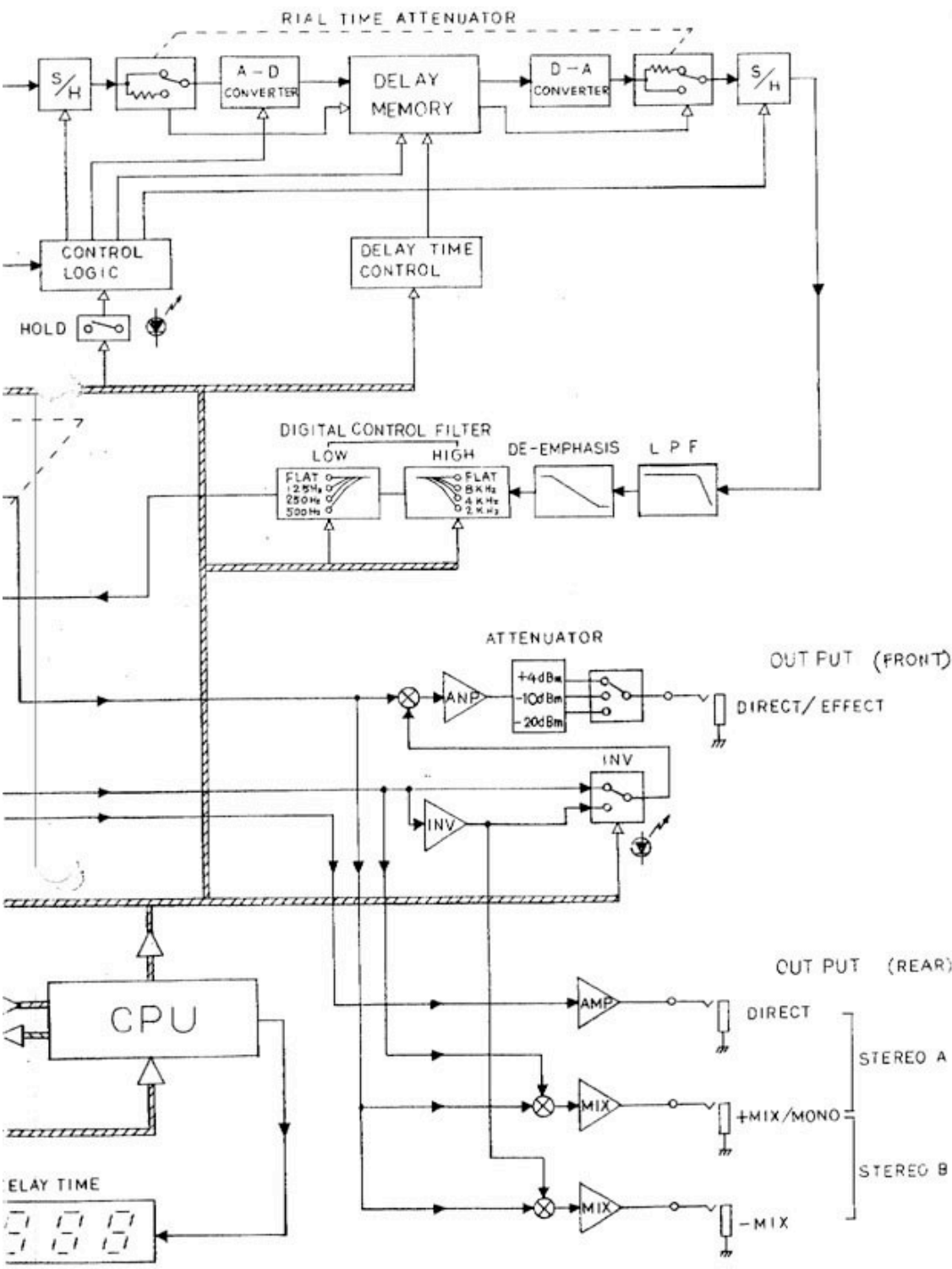
PART NO.	PARTS NAME	REMARKS
1	Main frame	KOC-C28002
2	Front frame	KOC-C28000
3	Cover A	KOC-C28002
4	Cover B	KOC-C28003
5	Front panel	KOC-C28001
6	GND terminal	T-10
7	Power Transformaer	TA800 or TB800
8	Buffer of cover	KOC-F48003
9	PC board (KLM-808)	
10	PC board (KLM-802)	
11	PC board (KLM-800)	
12	PC board (KLM-801)	
13	Shielding sheet D	KOC-F48009
14	Shielding sheet B	KOC-F48005
15	Shielding sheet C	KOC-F48007
16	Rubber feet	KOC-F48000
17	Model number plate	
18	SW maks A	KOC-F48001
19	SW mask B	KOC-F48001
20	SW mask C	KOC-F48002
21	Power SW knob (Black)	
22	Tact SW knob (Black)	KT-8
23	Tact SW knob (Gray)	KOC-E48001
24	Tact SW knob (Yellow)	KOC-E48001
25	Tact SW knob (Red)	KOC-E48001
26	Led filter	KOC-E48000
27	Rotary VR knob	2715603
28	Knob cap (Yellow)	3015116
29	Knob cap (Gray)	3015111
30	Radiation mask	KOC-F48006
31	Shielding sheet E	KOC-F48011
32	Spacer D	KOC-C48007



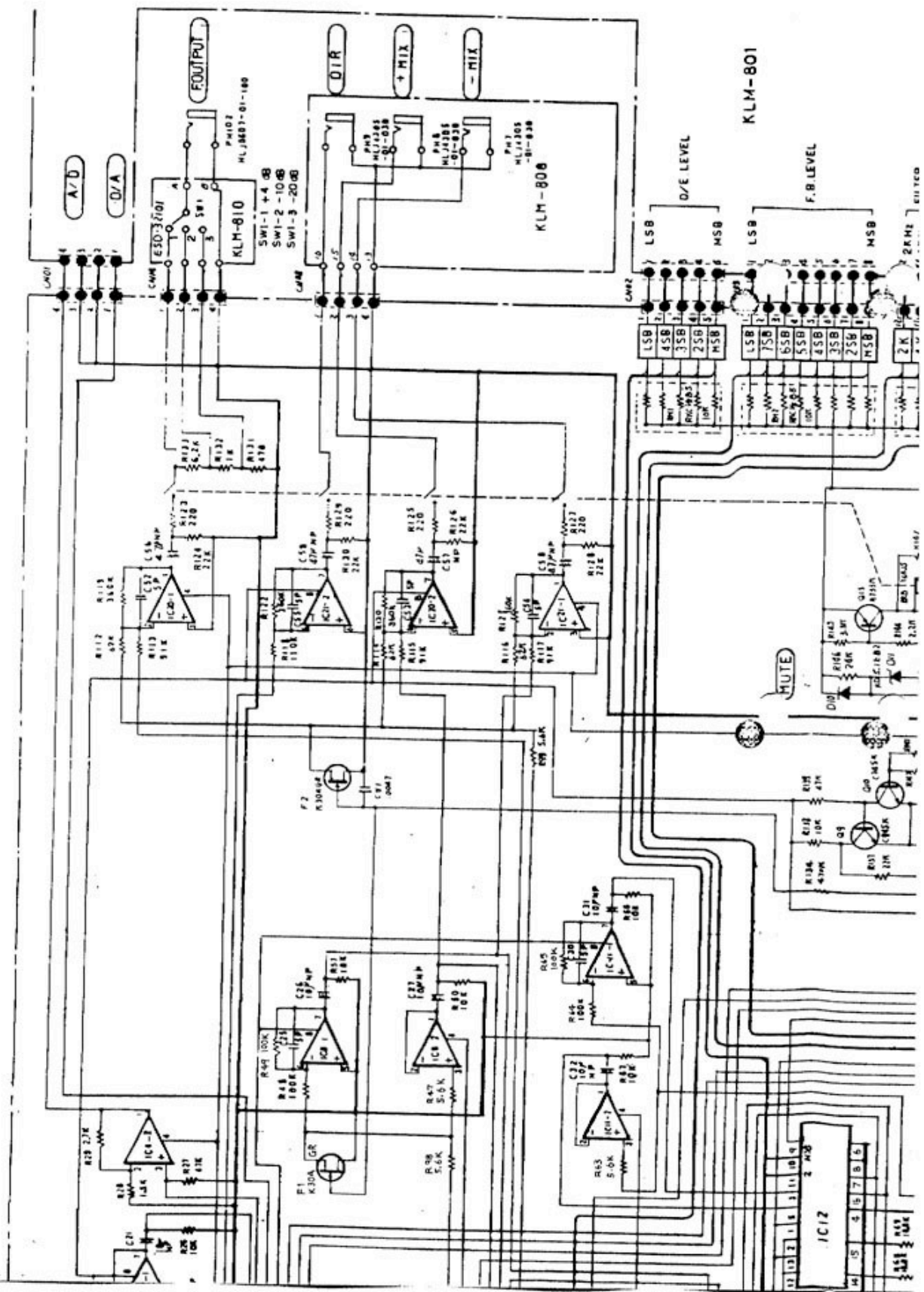


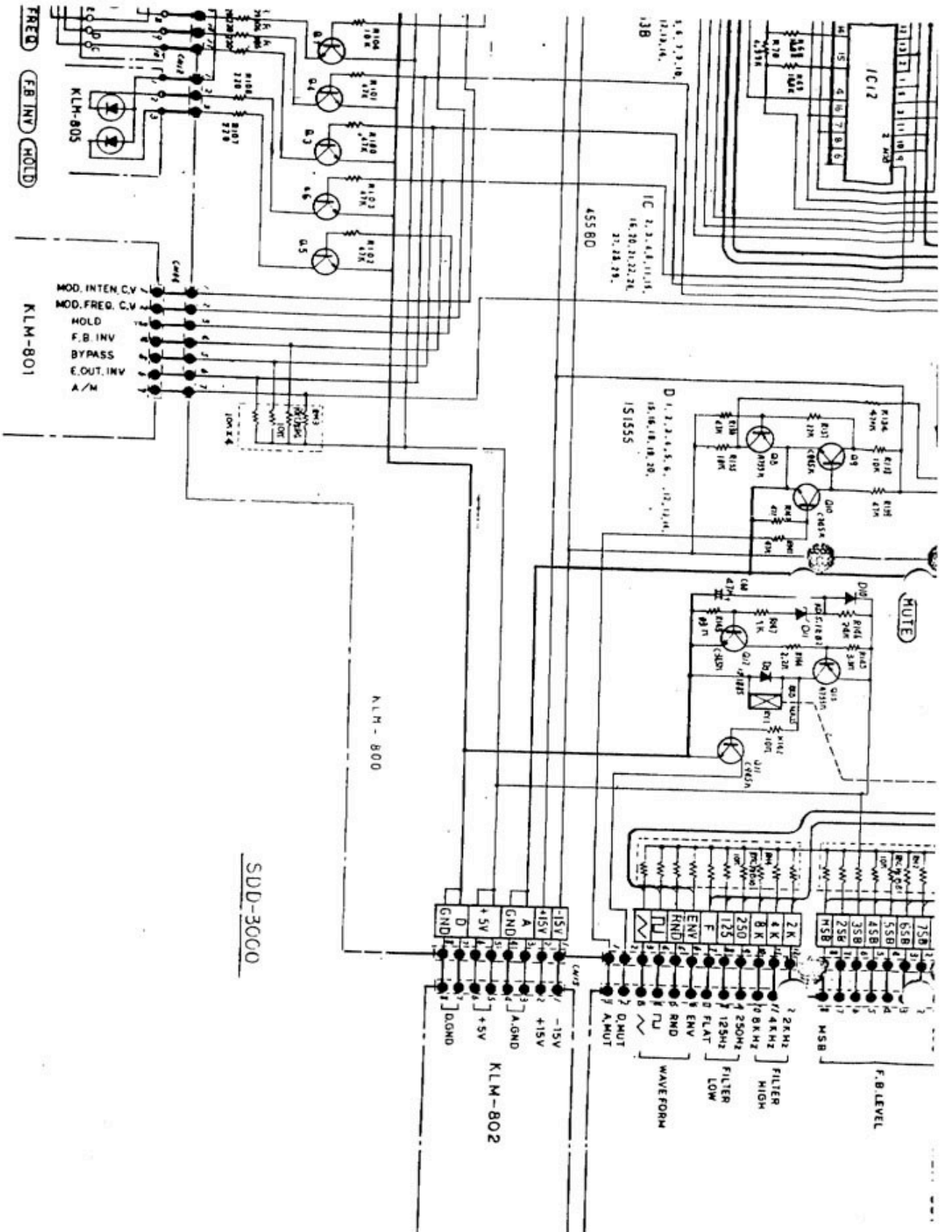
### 3. BLOCK DIAGRAM



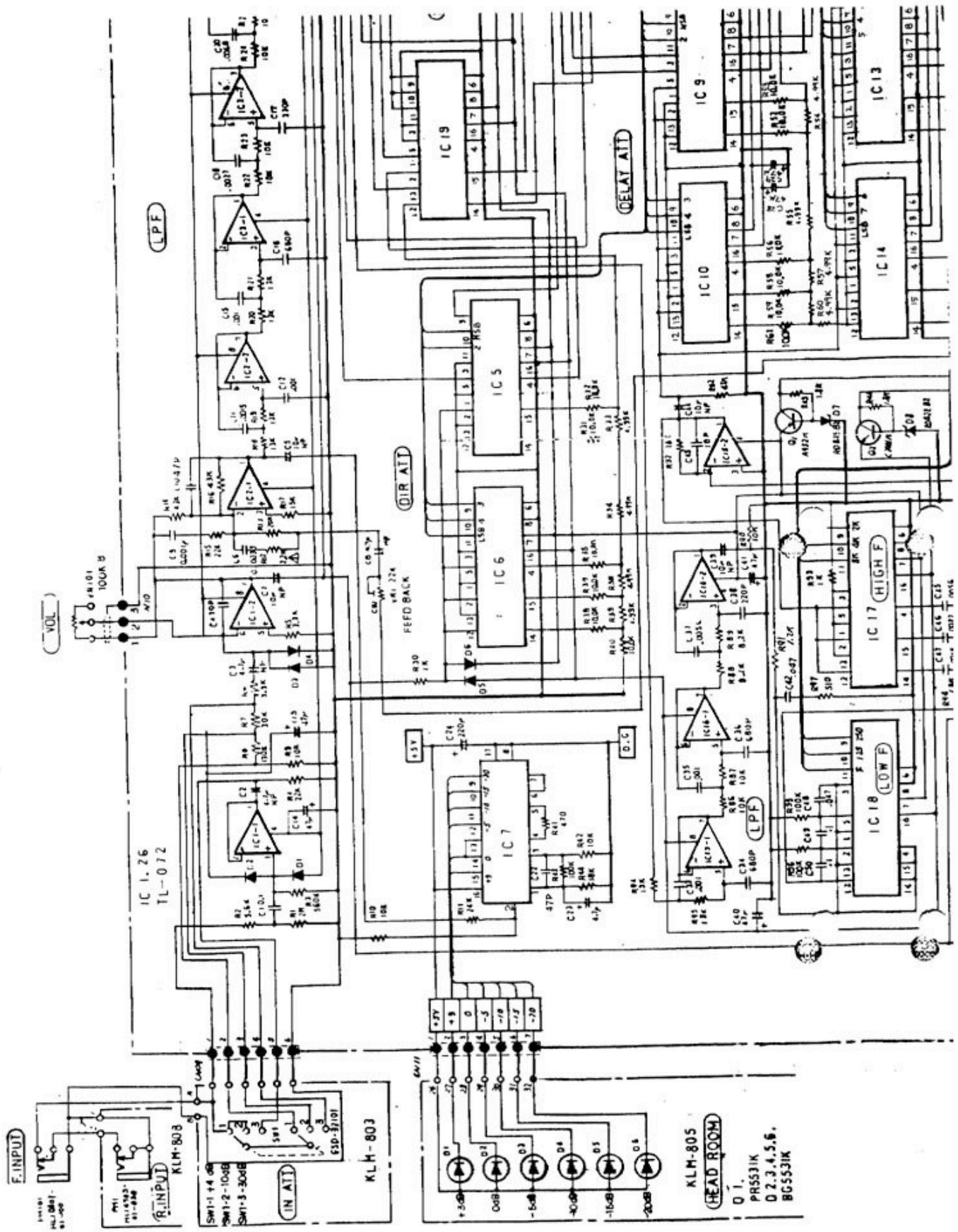


AY









F. INPUT

SW1-1 +4 ON  
SW1-2 -100B  
SW1-3 -300B

R. INPUT  
KLM-803  
650-3101

(IN ATT)

KLM-803

6V/11

+5.0B  
0.0B  
-5.0B  
-10.0B  
-20.0B

01  
02  
03  
04  
05  
06

KLM-805  
(HEAD ROOM)

Q 1  
PR5531K  
D 2, 3, 4, 5, 6  
BC5531K

IC 1, 2, 6  
TL-072

IC 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15  
741

IC 16  
7400

IC 17  
7401

IC 18  
7404

IC 19

IC 10

IC 13

DIR ATT

DELAY ATT

HIGH F.

LOW F.

PEFO BACK

5.5V

D.C.

5.5V

5.5V

5.5V

5.5V

5.5V

5.5V

5.5V

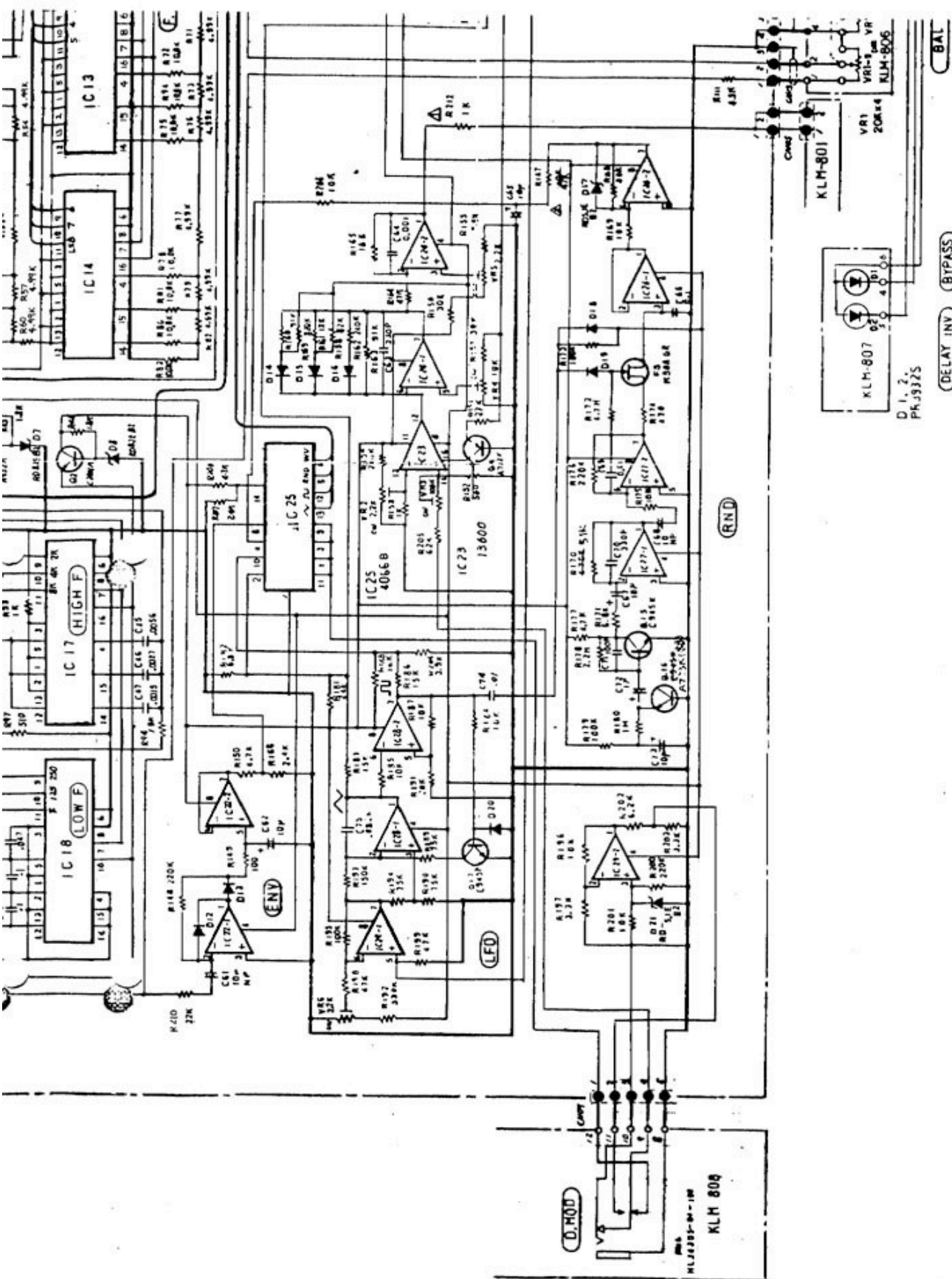
5.5V

5.5V

5.5V

5.5V

RESISTOR VALUES: R1 10K, R2 10K, R3 10K, R4 10K, R5 10K, R6 10K, R7 10K, R8 10K, R9 10K, R10 10K, R11 10K, R12 10K, R13 10K, R14 10K, R15 10K, R16 10K, R17 10K, R18 10K, R19 10K, R20 10K, R21 10K, R22 10K, R23 10K, R24 10K, R25 10K, R26 10K, R27 10K, R28 10K, R29 10K, R30 10K, R31 10K, R32 10K, R33 10K, R34 10K, R35 10K, R36 10K, R37 10K, R38 10K, R39 10K, R40 10K, R41 10K, R42 10K, R43 10K, R44 10K, R45 10K, R46 10K, R47 10K, R48 10K, R49 10K, R50 10K, R51 10K, R52 10K, R53 10K, R54 10K, R55 10K, R56 10K, R57 10K, R58 10K, R59 10K, R60 10K, R61 10K, R62 10K, R63 10K, R64 10K, R65 10K, R66 10K, R67 10K, R68 10K, R69 10K, R70 10K, R71 10K, R72 10K, R73 10K, R74 10K, R75 10K, R76 10K, R77 10K, R78 10K, R79 10K, R80 10K, R81 10K, R82 10K, R83 10K, R84 10K, R85 10K, R86 10K, R87 10K, R88 10K, R89 10K, R90 10K, R91 10K, R92 10K, R93 10K, R94 10K, R95 10K, R96 10K, R97 10K, R98 10K, R99 10K, R100 10K.



D. HOD

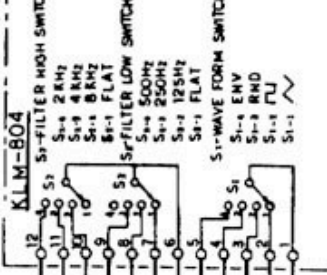
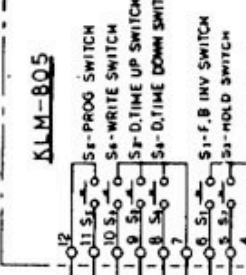
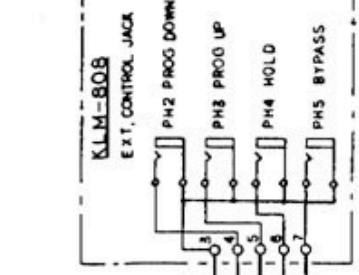
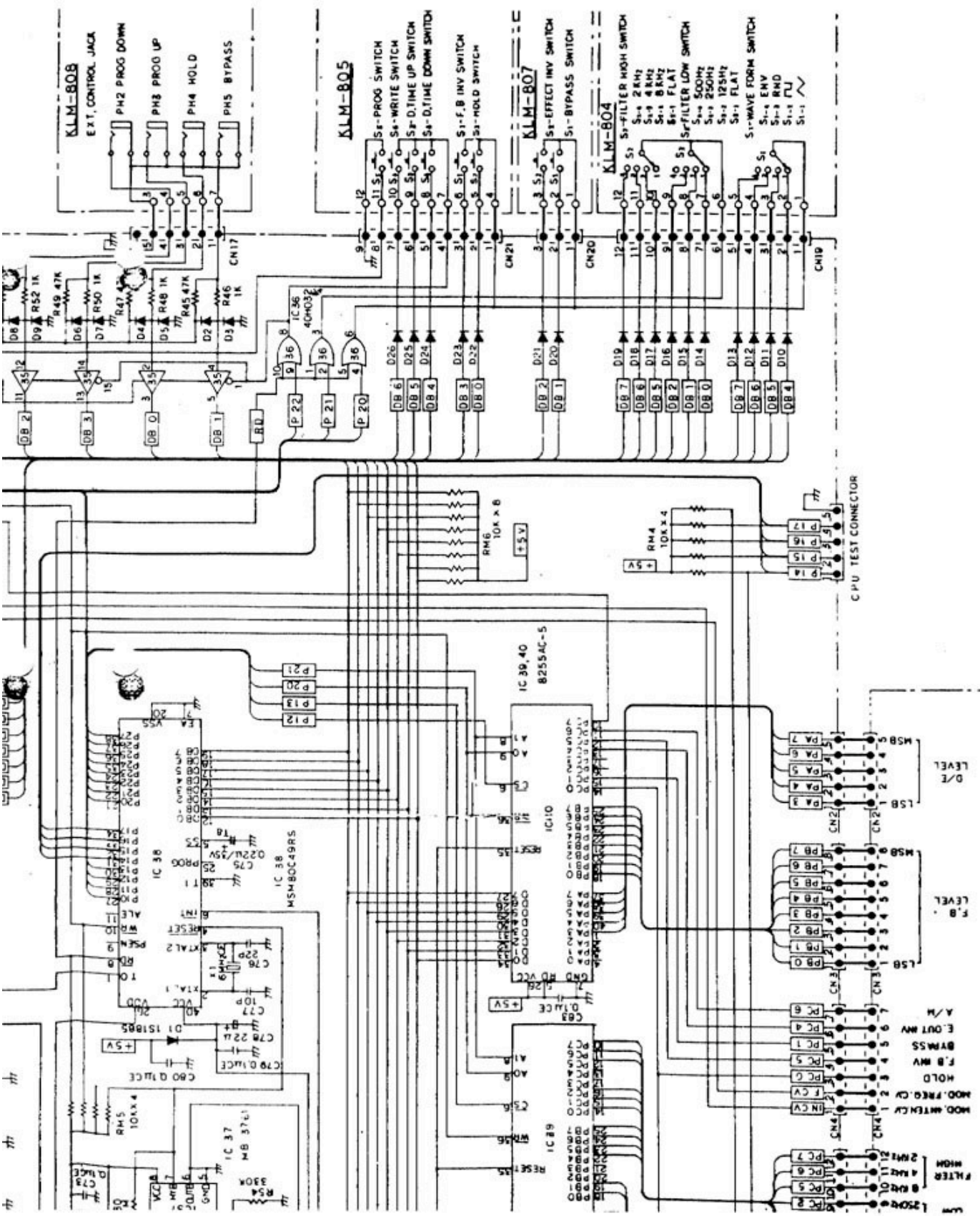
ML7235-01-100  
KLM 800

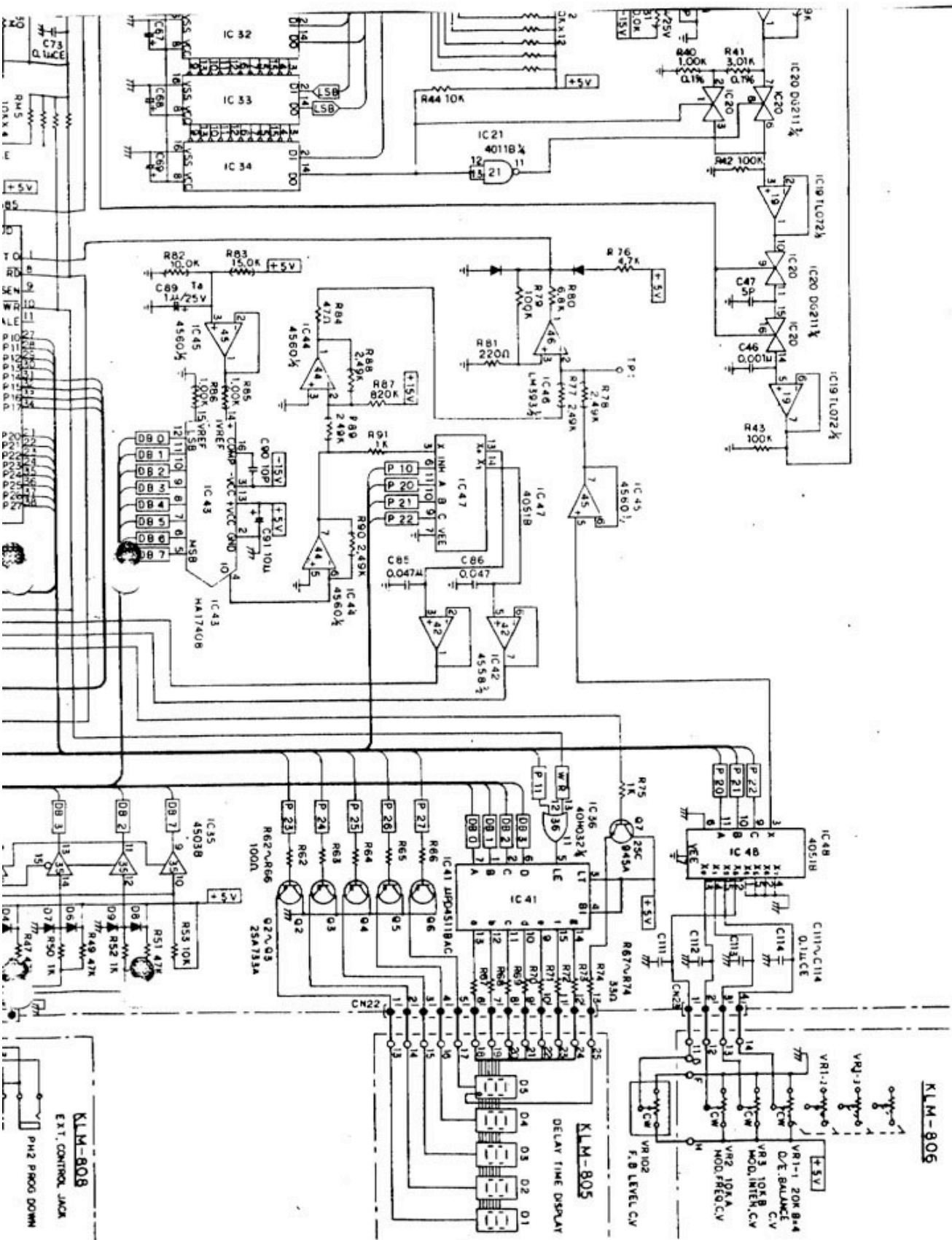
KLM-801  
VRI 20K44  
VRI-8  
KLM-806

D. I. 2.  
PKJ9325

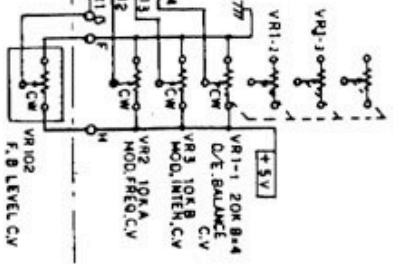
DELAY INV BYPASS

BAL

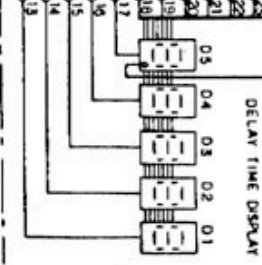




**KLM-806**

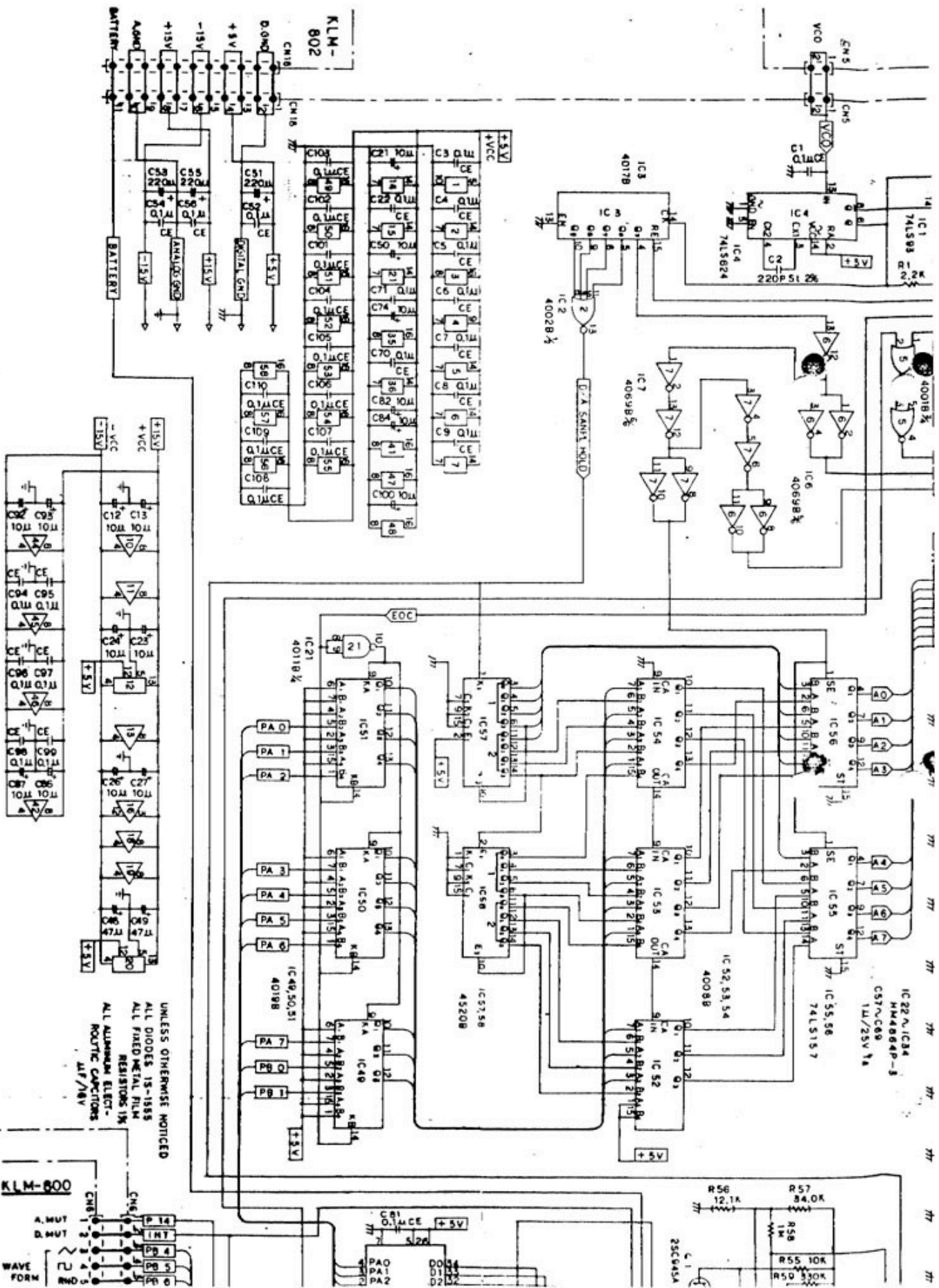


**KLM-805**



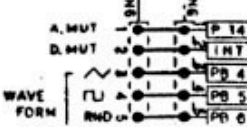
**KLM-808**  
EXT. CONTROL JACK  
PH2 PROG DOWN



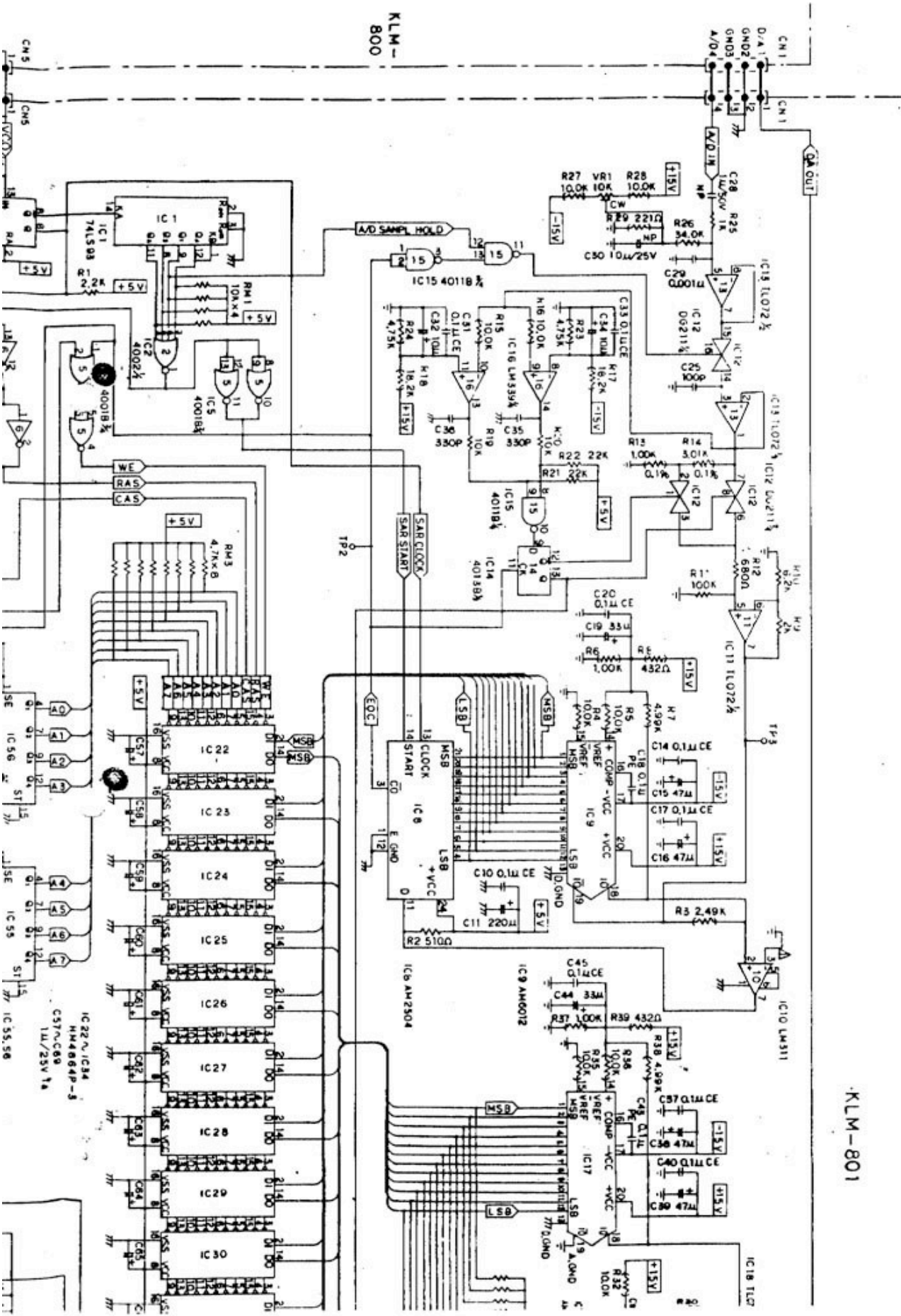


UNLESS OTHERWISE NOTICED  
 ALL DIODES 1S-1885  
 ALL FILLED METAL FILM  
 RESISTORS 1%  
 ALL ALUMINUM ELECT-  
 ROLIC CAPACITORS  
 MF/8V

**KLM-802**



# KLM-801

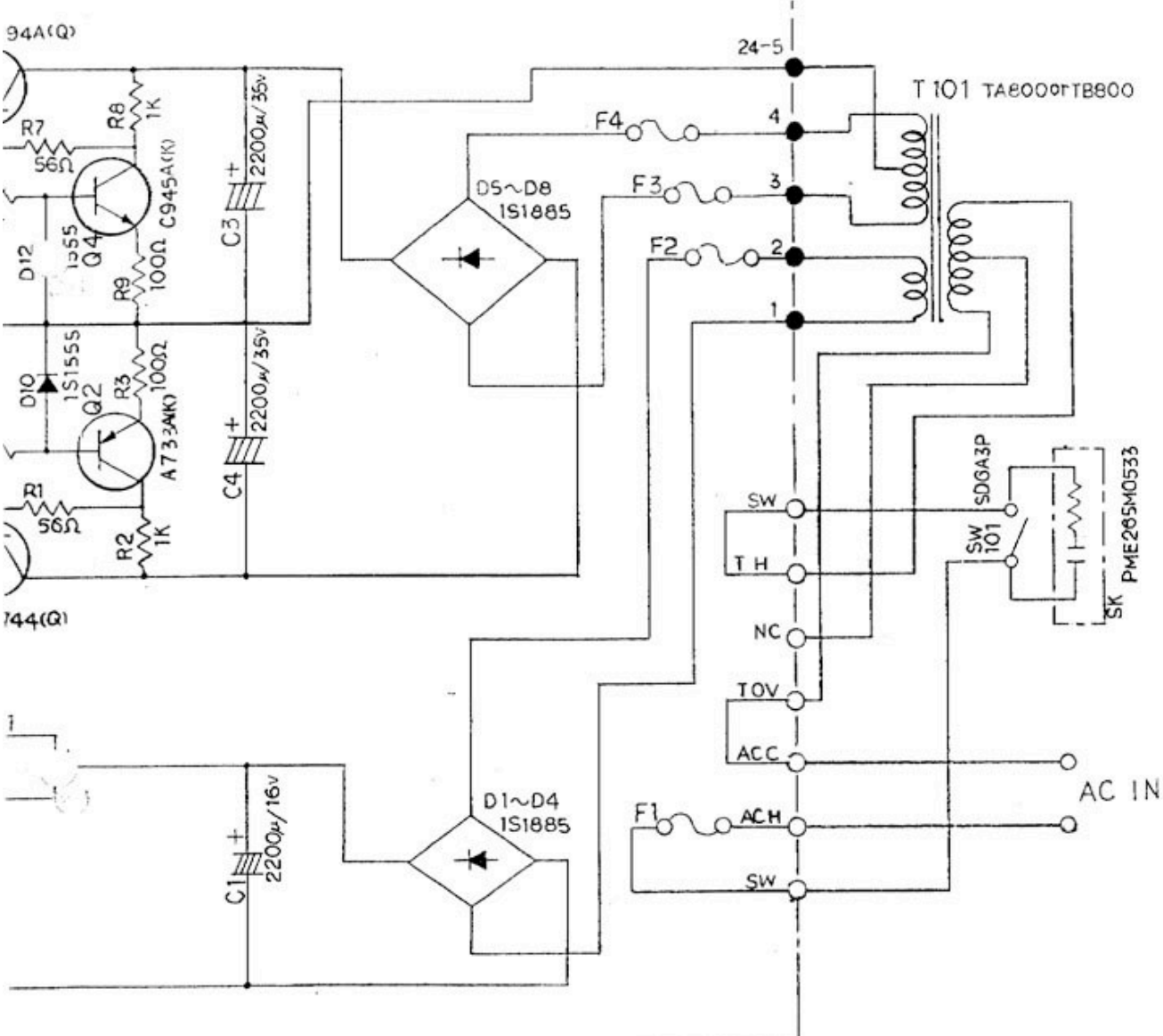


KLM-801

KLM-800

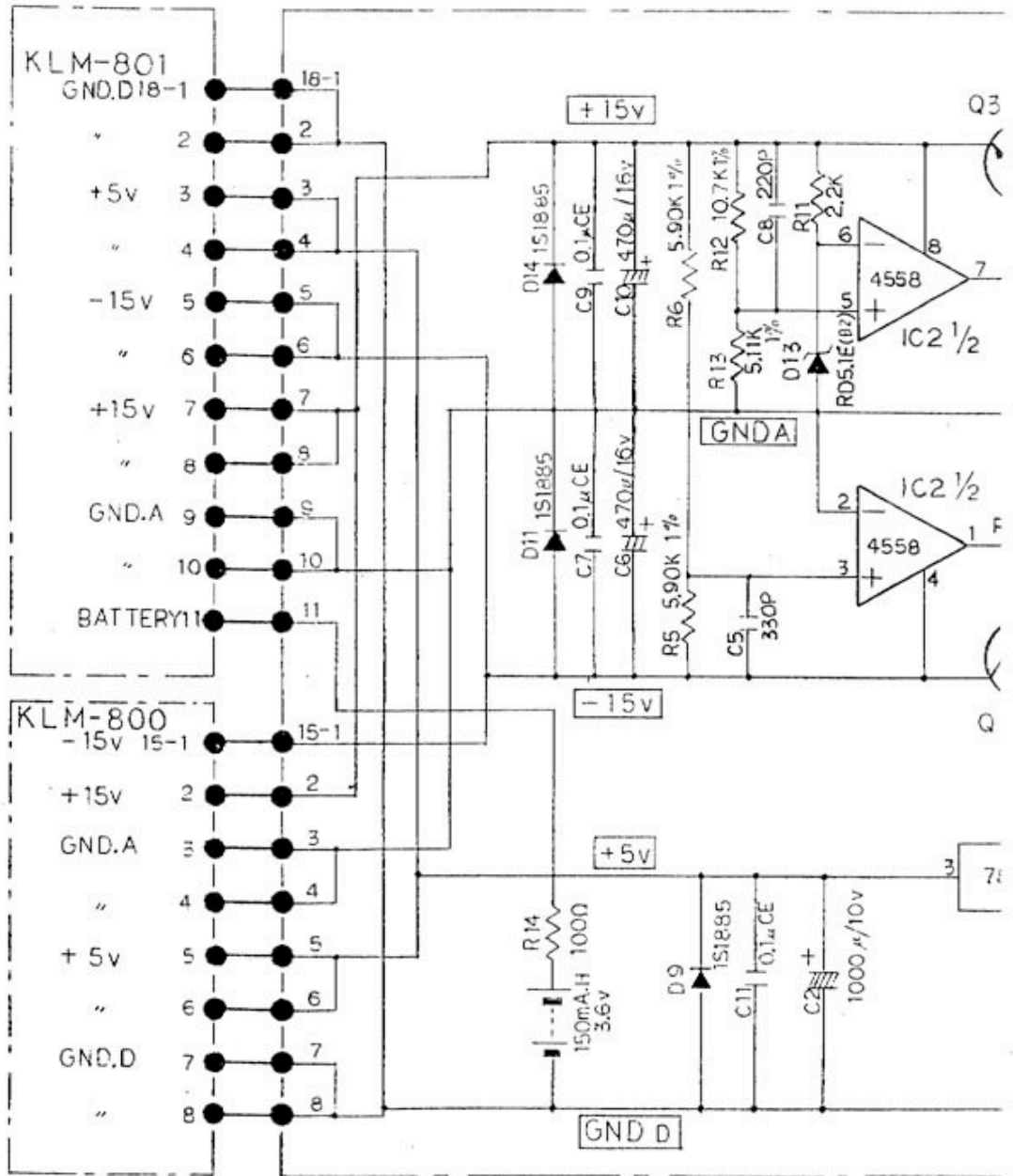
CMS  
1  
2  
3  
4  
5  
6  
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15  
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100

# KLM-802



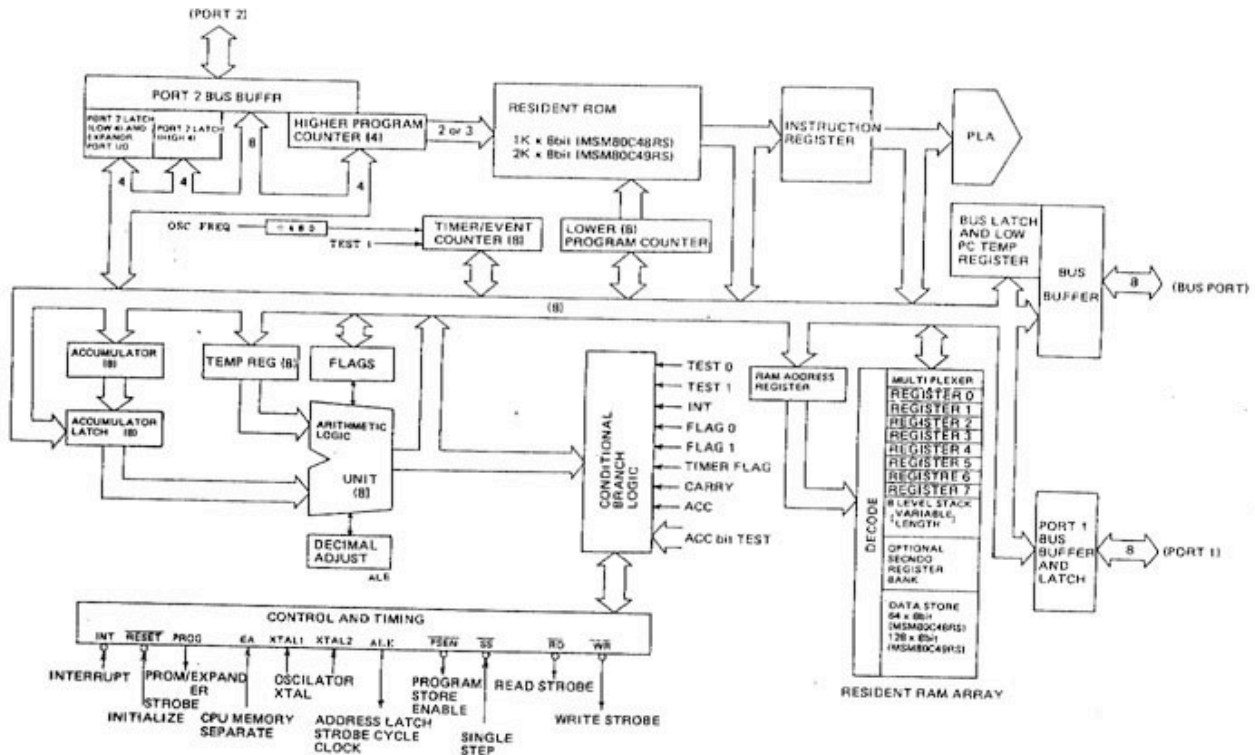
	F1	F2	F3, F4	T101
100V		Δ	Δ	TA-800
117V	250V 0.5A	125V 3A 1.6A	250V 1A 0.5A	
220V	Δ		Δ	TB-800
240V	250V T 0.5A 315mA	250V T 1.6A	250V T 0.5A 250mA	

# KLM-802



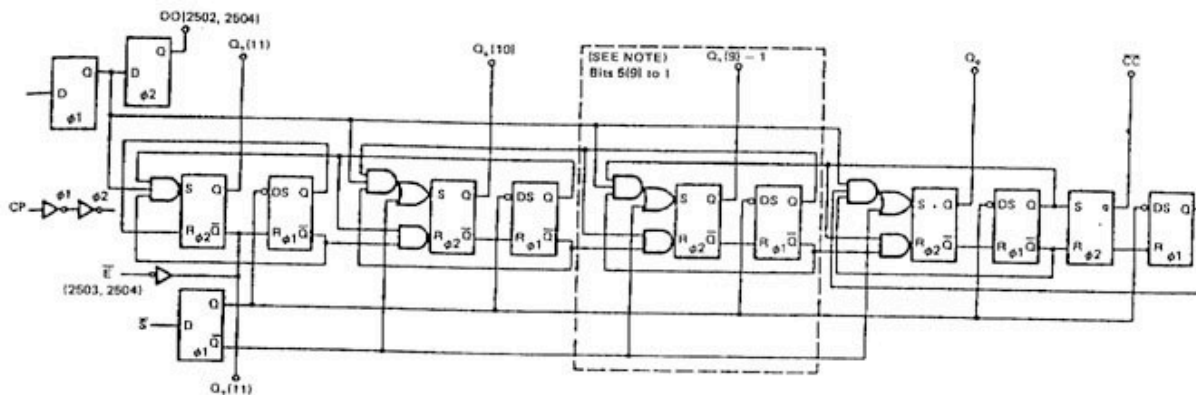


### BLOCK DIAGRAM



### IC AM2504 Twelve-Bit Successive Approximation Registers

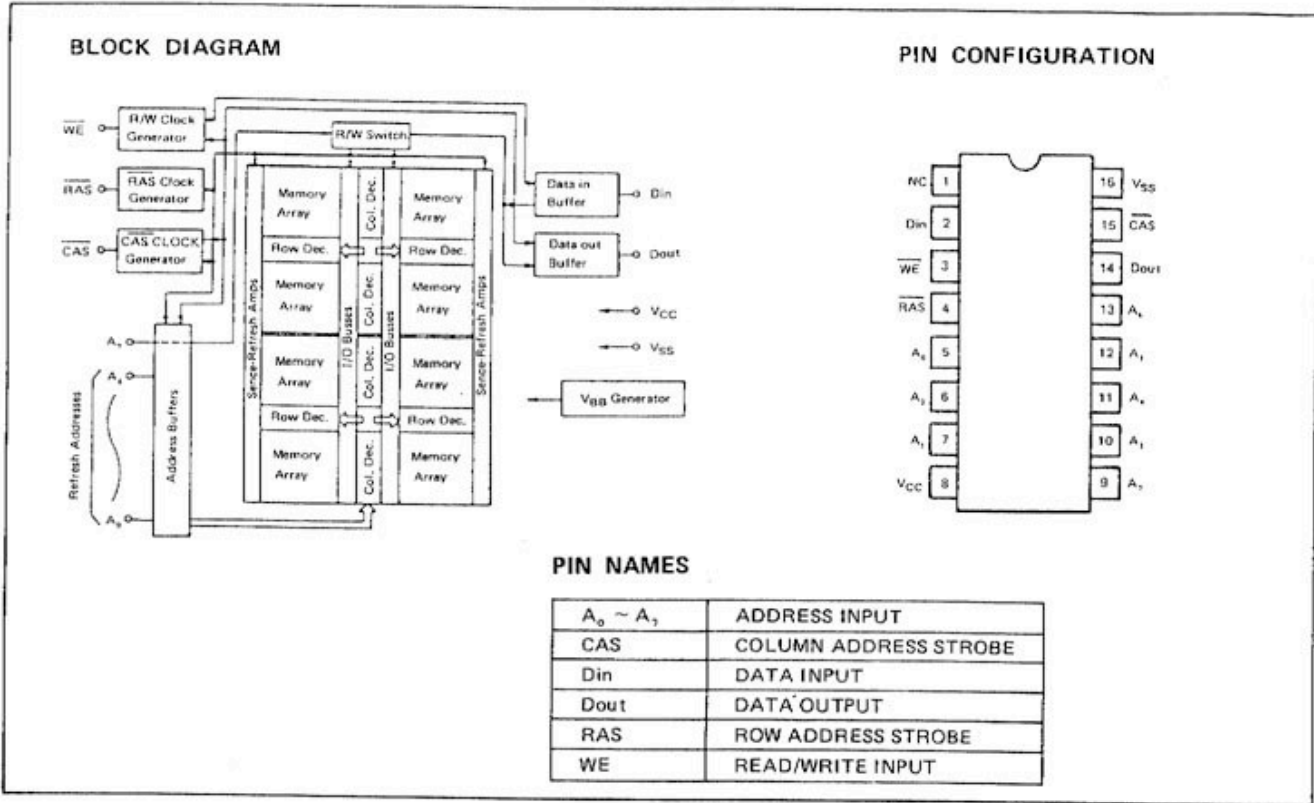
### LOGIC DIAGRAM



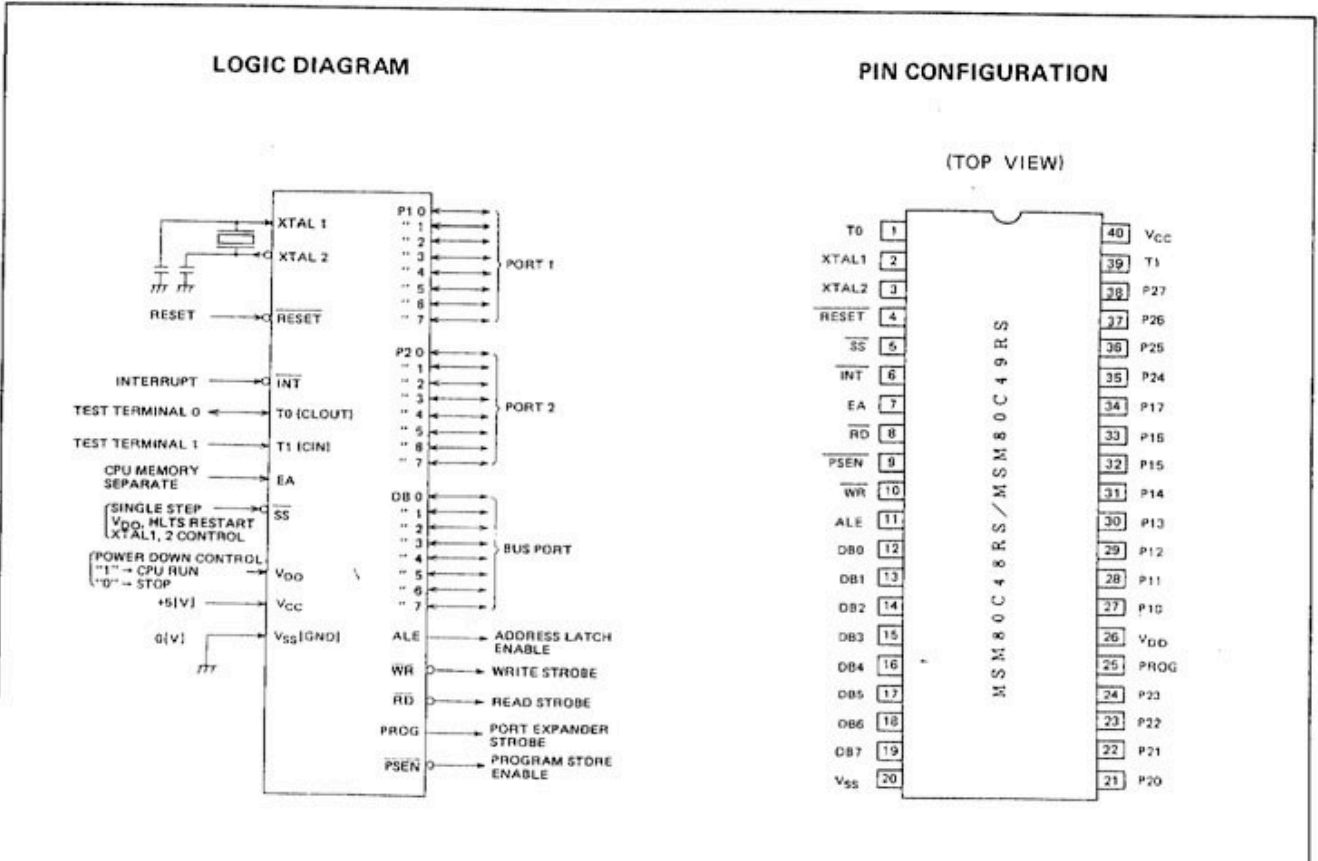
- Notes: 1. Cell logic is repeated for register stages.  
 Q<sub>1</sub> to Q<sub>3</sub>, Am2502/3, Q<sub>9</sub> to Q<sub>7</sub>, Am2504.  
 2. Numbers in parentheses are for Am2504.

# 5. REFERENCE DATA

IC 4864 65536-word x 1 bit Dynamic Random Access Memory



IC 80C49RS 8 bit – Microprocessor

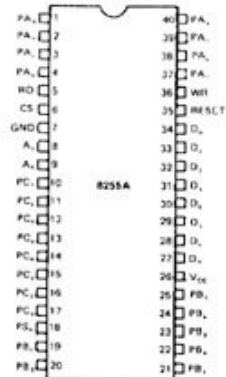


# IC 8255A-5 PROGRAMMABLE PERIPHERAL INTERFACE

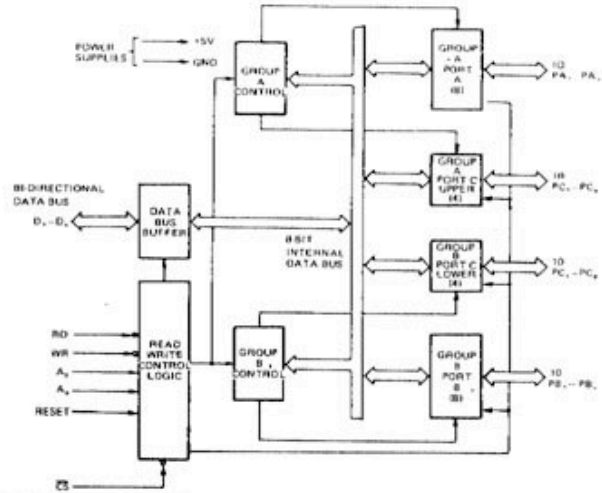
## PIN NAMES

D <sub>7</sub> -D <sub>0</sub>	DATA BUS (BI DIRECTIONAL)
RESET	RESET INPUT
CS	CHIP SELECT
RD	READ INPUT
WR	WRITE INPUT
A <sub>0</sub> , A <sub>1</sub>	PORT ADDRESS
PA <sub>7</sub> -PA <sub>0</sub>	PORT A (BIT)
PB <sub>7</sub> -PB <sub>0</sub>	PORT B (BIT)
PC <sub>7</sub> -PC <sub>0</sub>	PORT C (BIT)
V <sub>cc</sub>	+5 VOLTS
GND	0 VOLTS

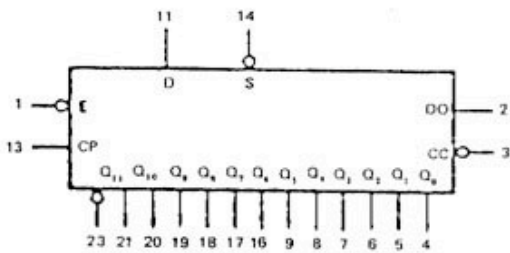
## PIN CONFIGURATION



## 8255A BLOCK DIAGRAM

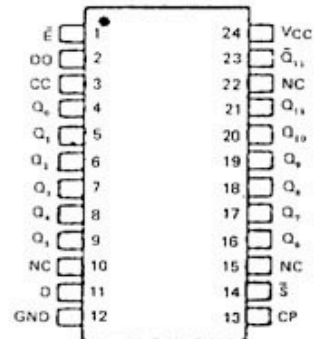


### LOGIC SYMBOLS



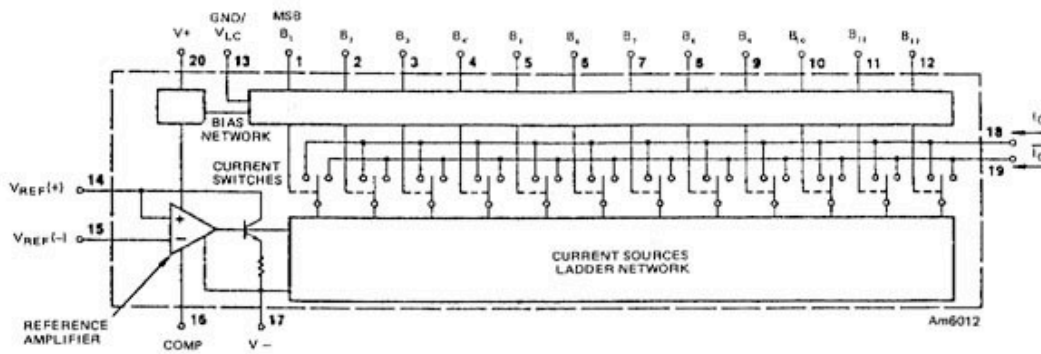
V<sub>CC</sub> = PIN 24  
 GND = PIN 12  
 NC = PINS 10, 15, 22

### PIN CONFIGURATION

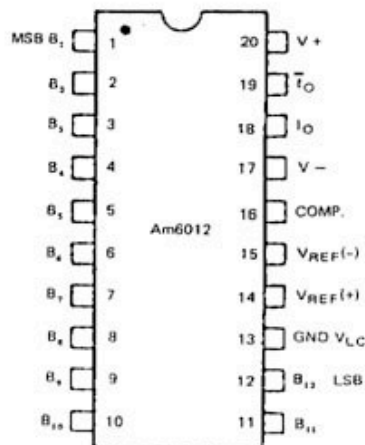


## IC AM6012 12 bit High Speed Multiplying D/A Converter

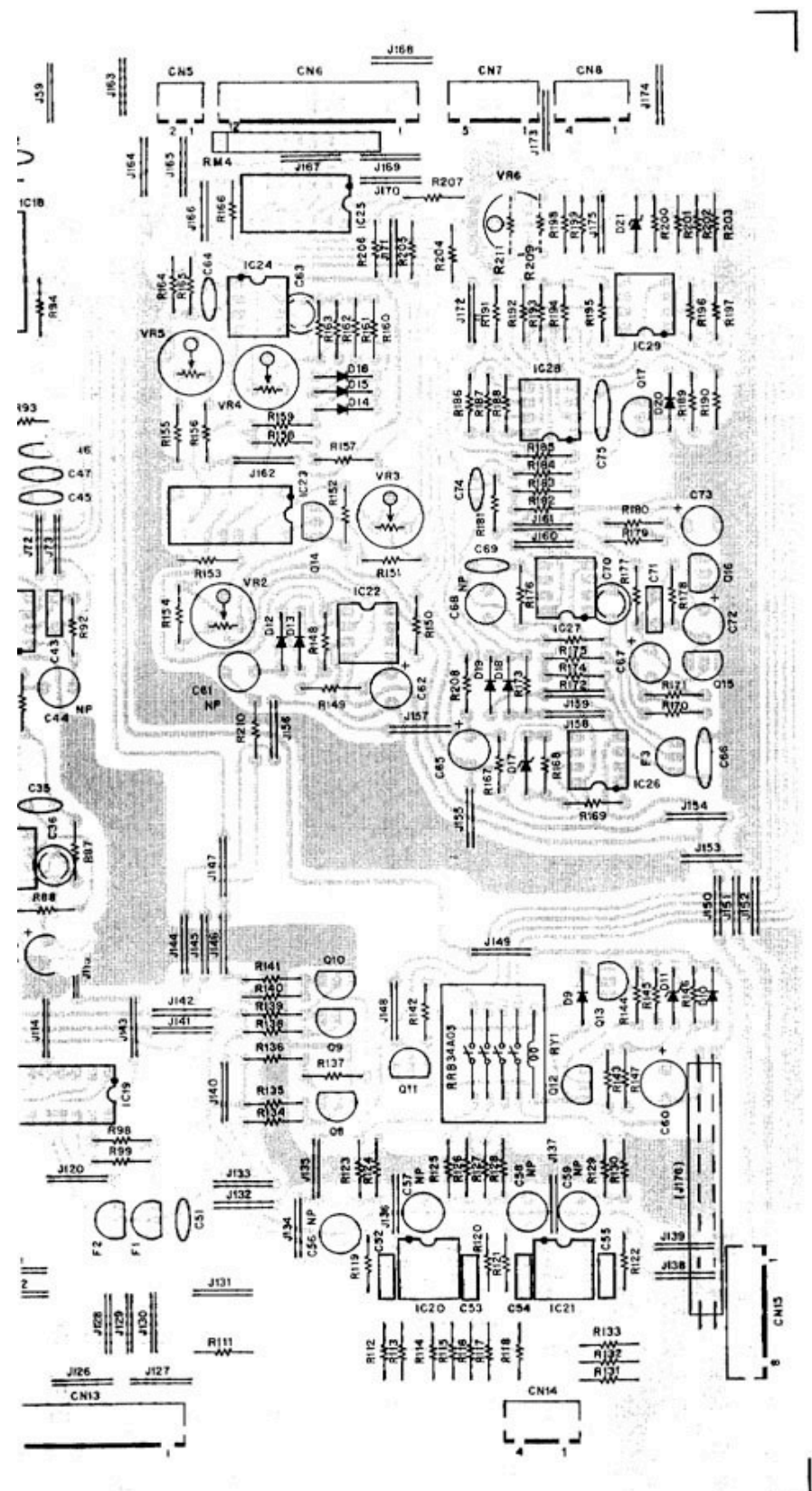
### FUNCTIONAL DIAGRAM



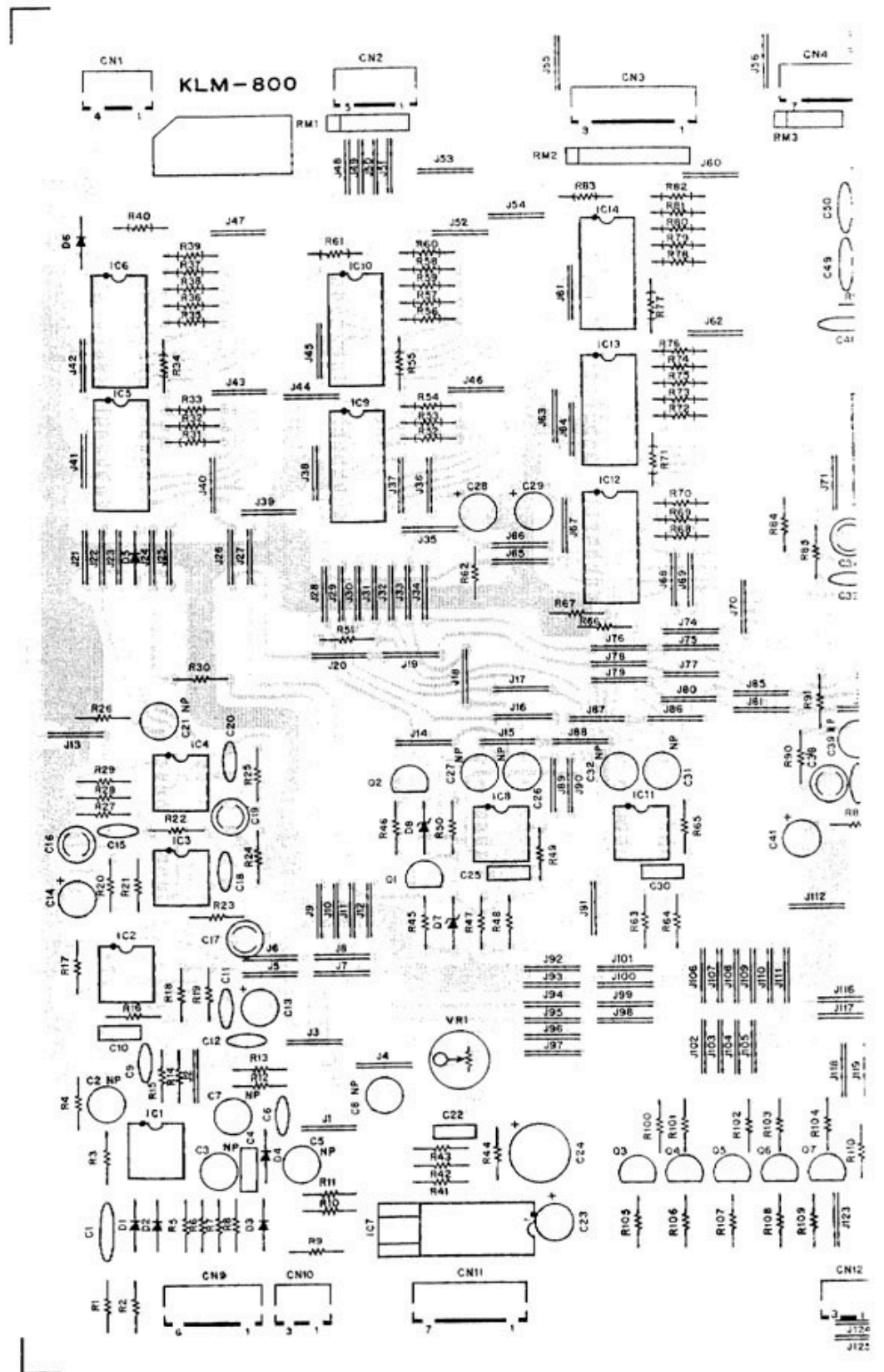
### PIN CONFIGURATION

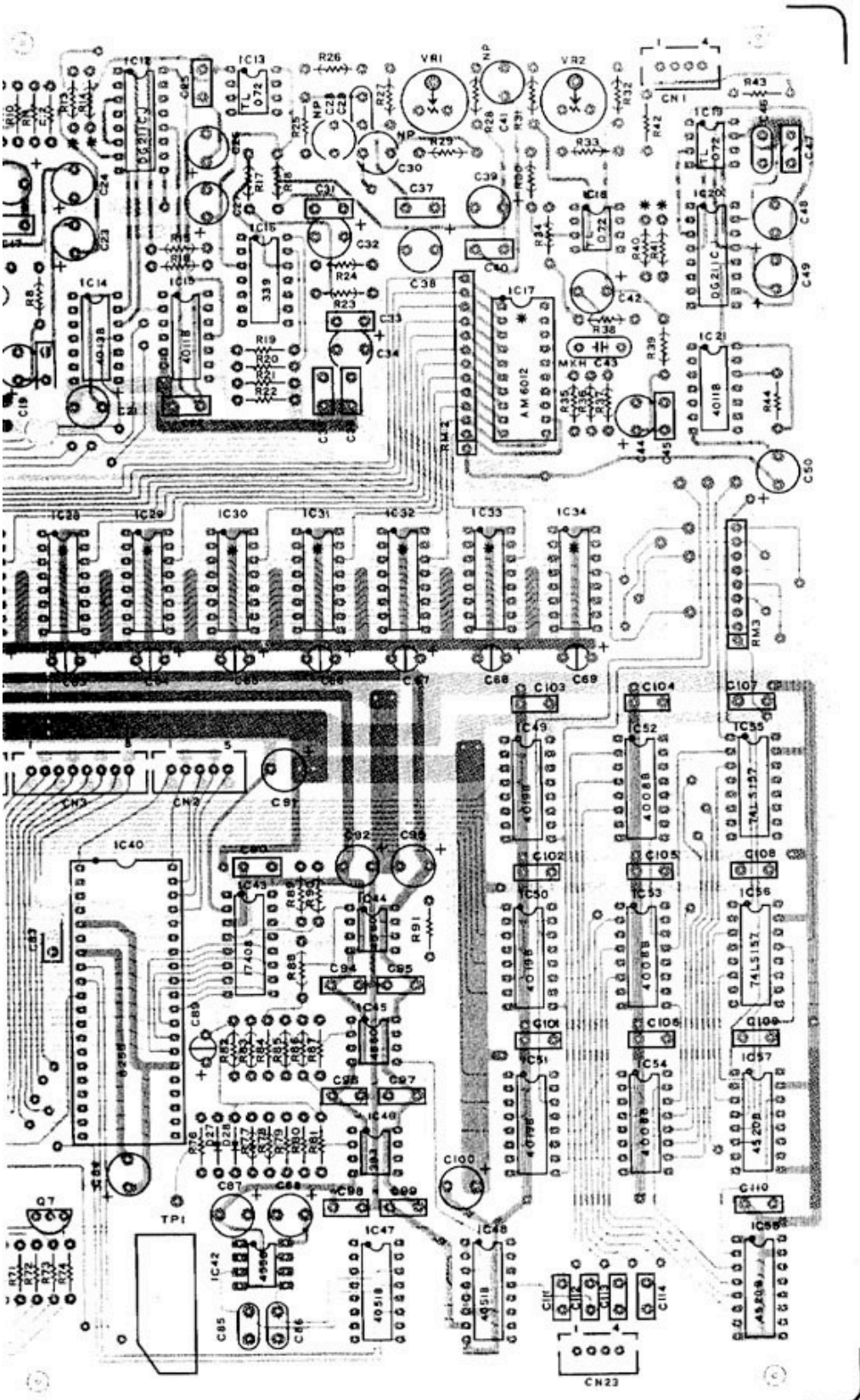


Note:  
 Pin 1 is marked  
 for operation

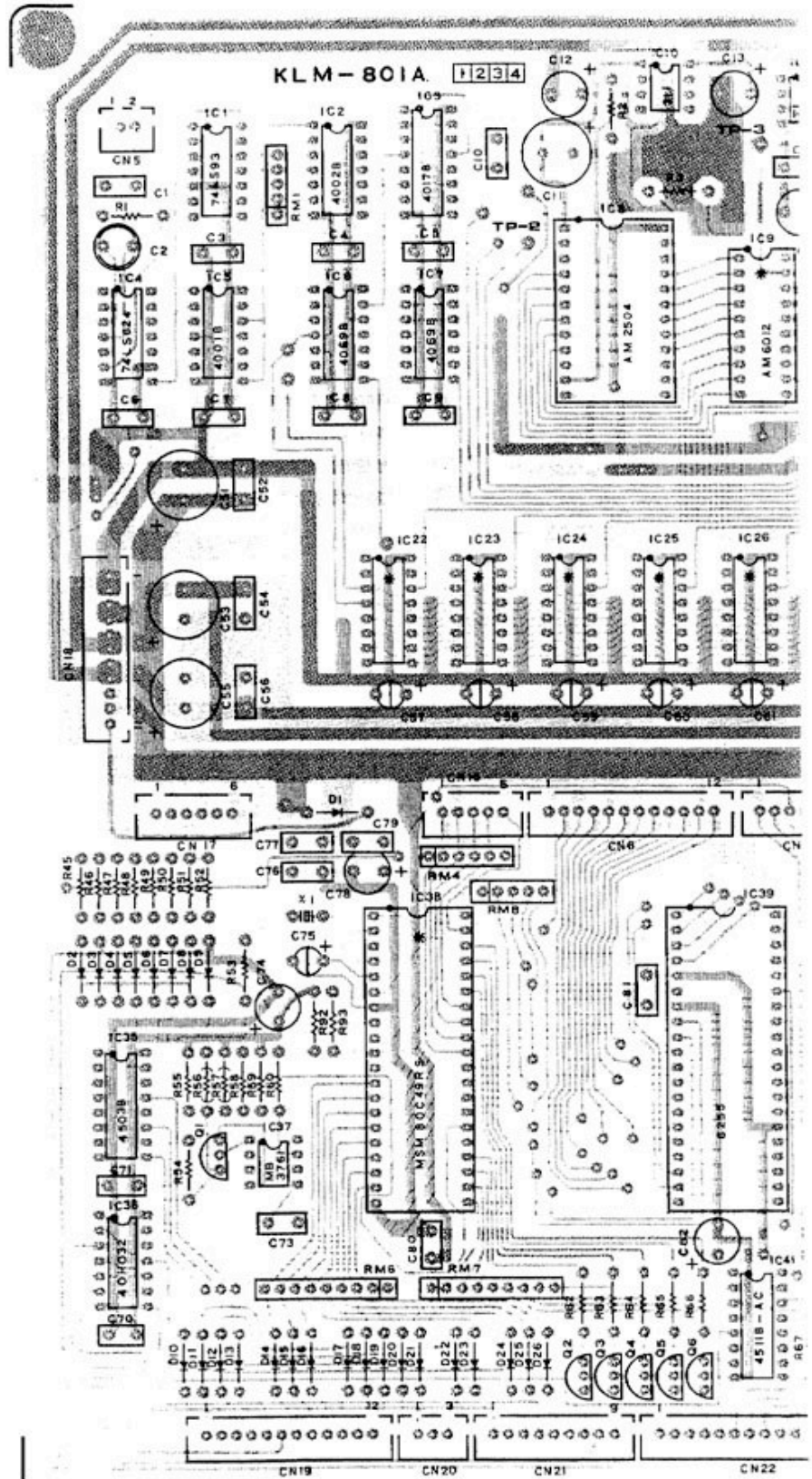


# 6. PC BOARD KLM-800



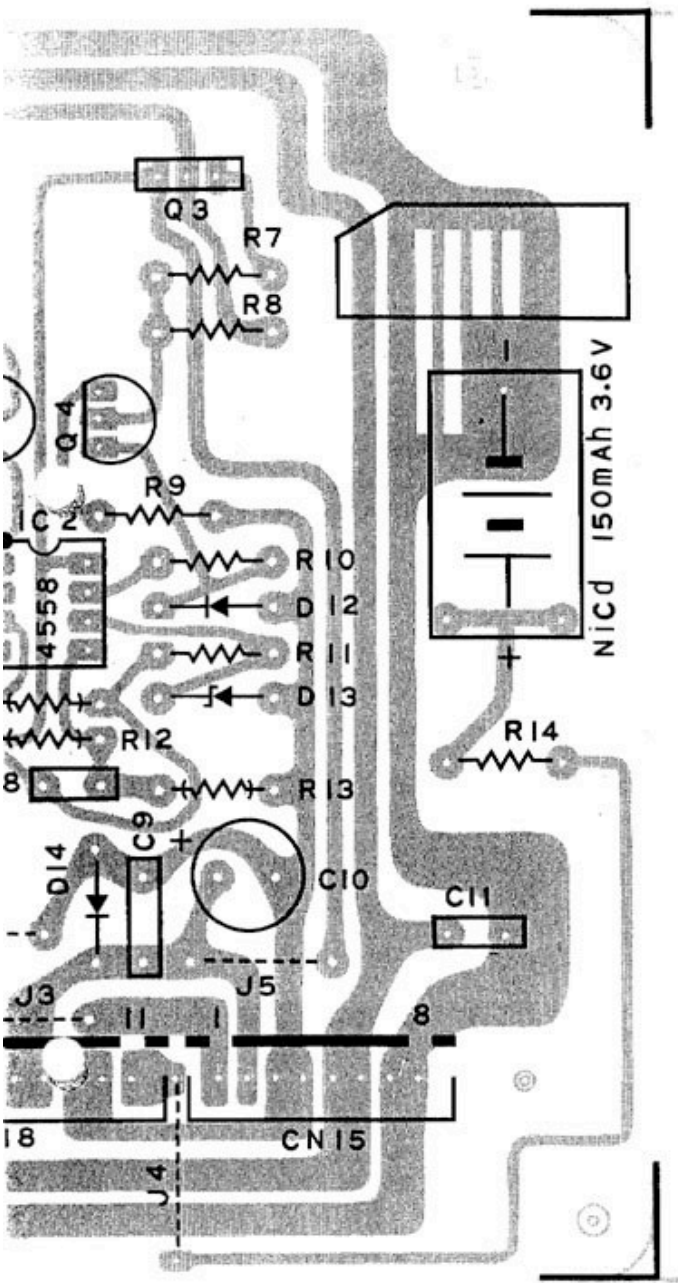
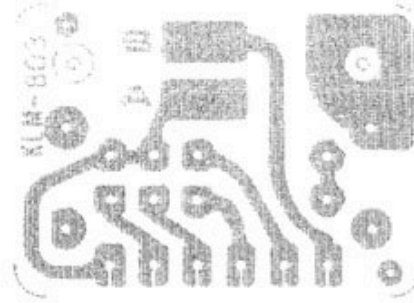


# KLM-801

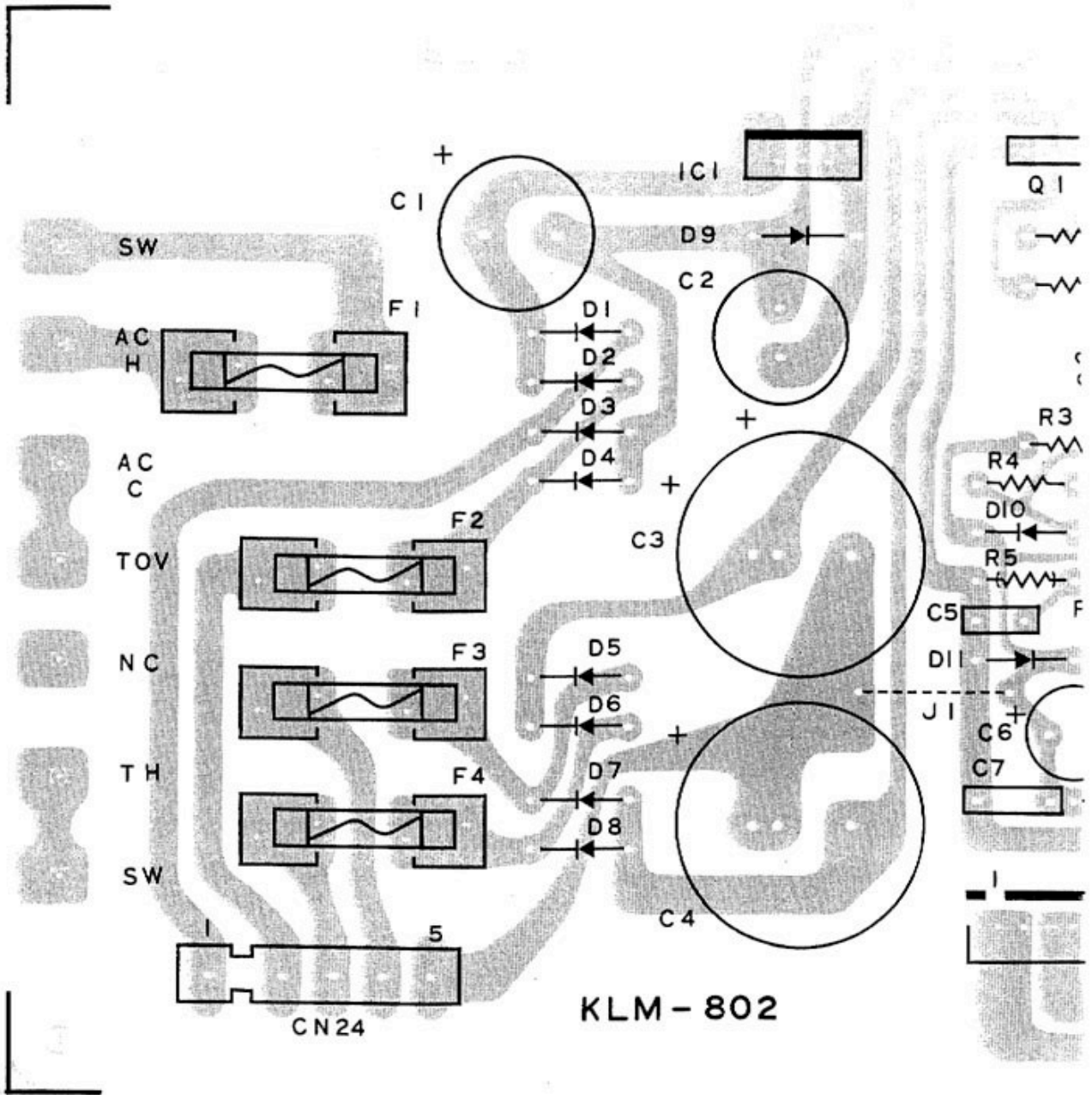




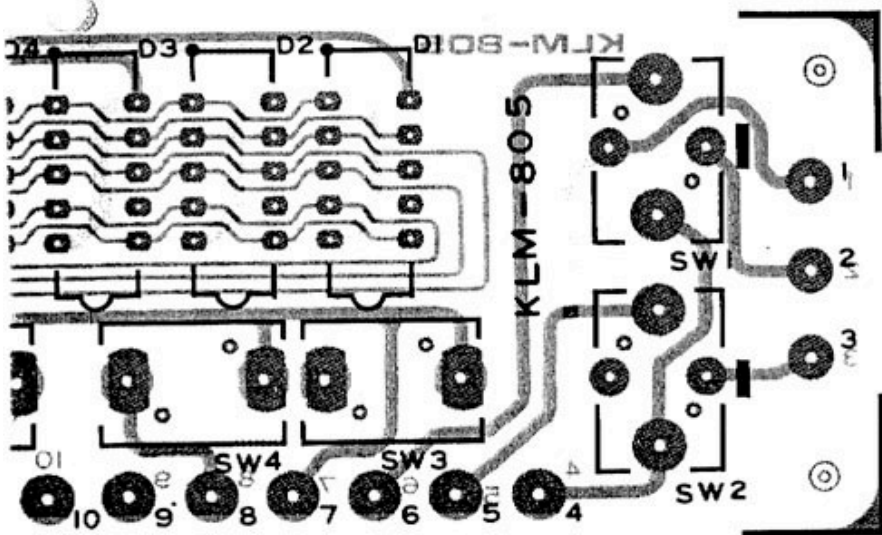
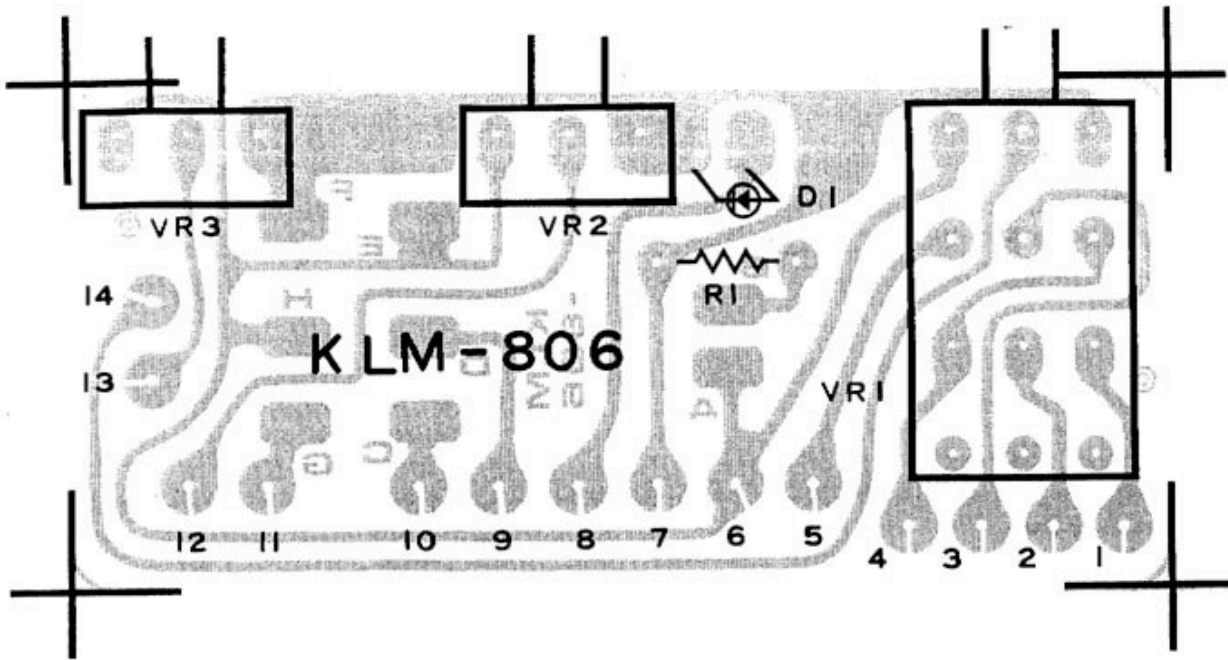
# KLM-803



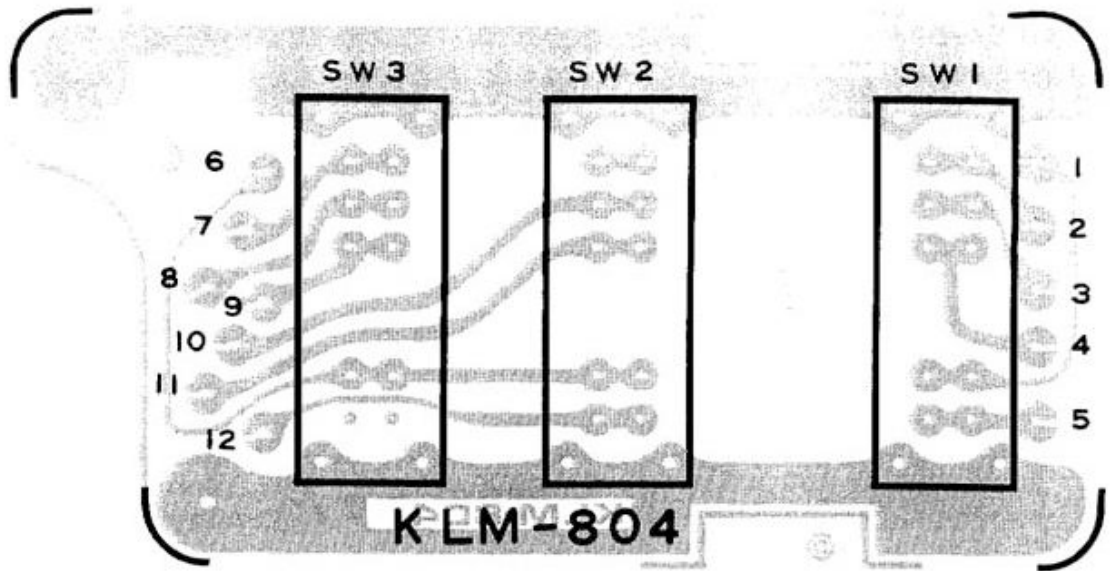
# KLM-802



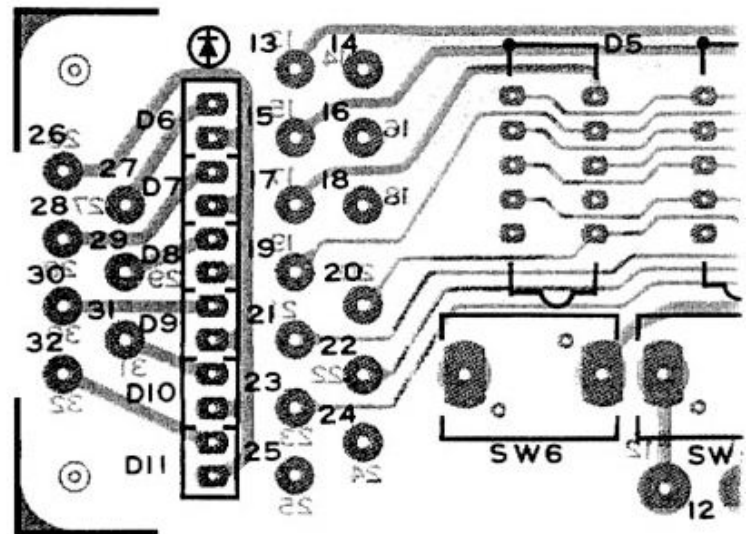
# KLM-806



# KLM-804

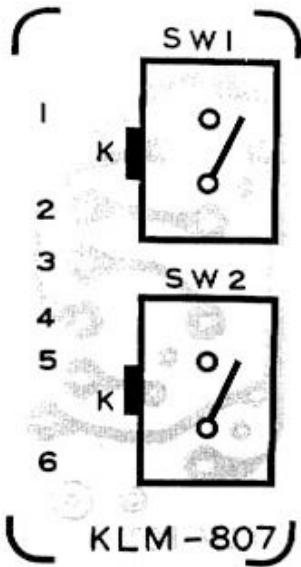


# KLM-805

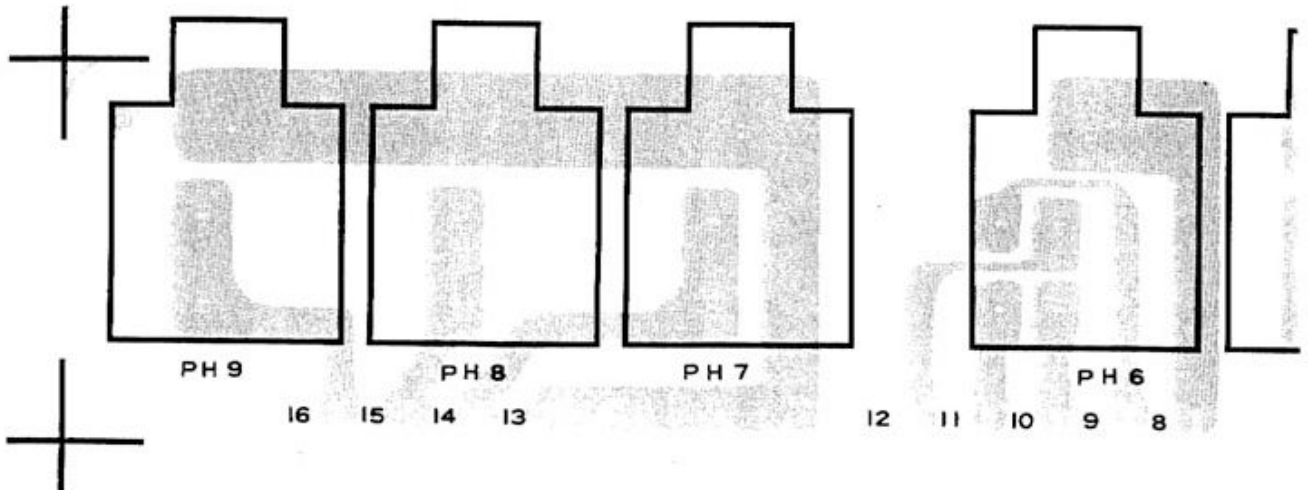


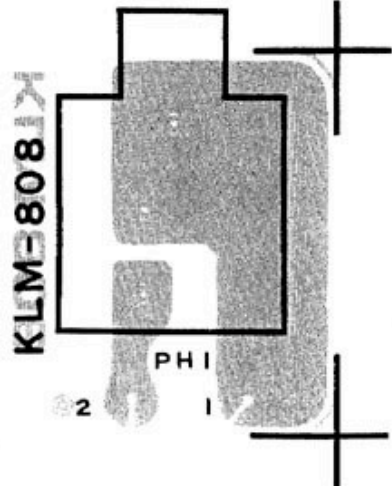
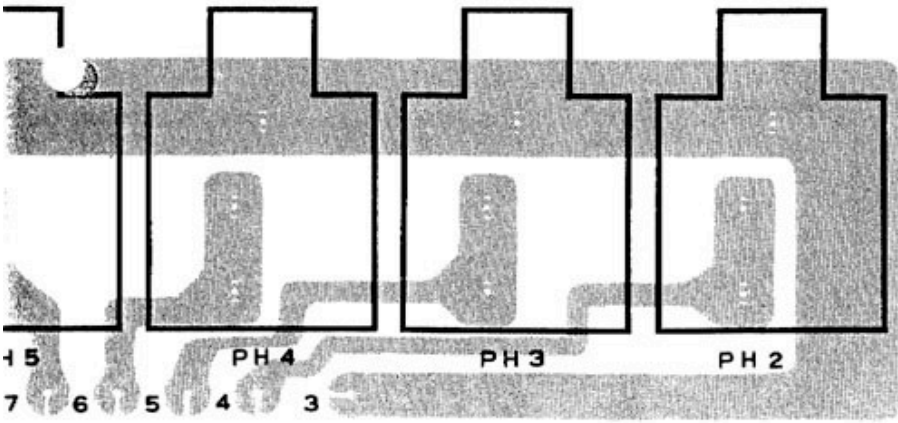
KLM-807

KLM-810



KLM-808





## 7. CHECK AND ADJUSTMENT PROCEDURE

Caution: This unit has been precisely adjusted at the factory before shipment. Therefore, absolutely do not turn any of the variable resistors other than those required for servicing. Testing and adjustment should be performed only after allowing the unit to warm up for ten minutes. Variable resistor locations are marked on separate charts.

### KLM-802 Check

#### 1. Power supply check.

Use DVM (digital voltmeter) to check connectors CN18 and CN15. Confirm that voltages are within specifications listed below.

- 1) +15V ..... +14.25V ~ +15.75V.
- 2) -15V ..... -14.25V ~ -15.75V.
- 3) +5V ..... +4.75V ~ +5.25V.

#### 2. Memory backup battery voltage check.

Turn off power and check using DVM.

- 1) Battery, 3.6V ..... 3.0V ~ 3.65V.

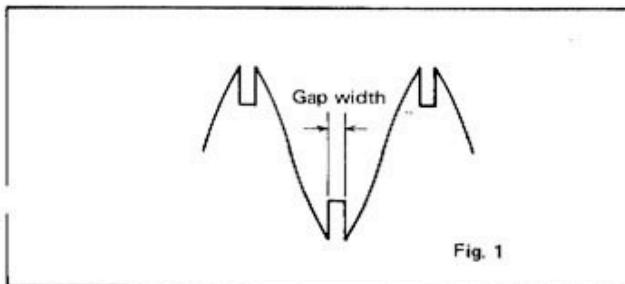
#### Caution

Be careful not to short circuit the battery. The battery is not usable if voltage is 2.5V or less. Therefore, it is recommended that the battery be replaced if voltage is 2.7V or less.

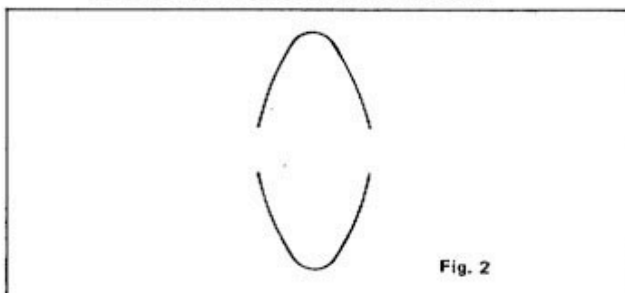
### KLM-801 Check and adjustment

#### 1. Compander.

- 1) Setting: Intensity 0, Frequency 0, Feedback 0, Balance 10, Input ATT +4dB.
- 2) Connect SG (standard signal generator) to SDD-3000. Apply 40Hz, 20Vpp sine wave.
- 3) Connect oscilloscope (2V/div, 10msec/div) to TP3 and observe waveform shown in Fig-1.



- 4) Adjust input level and confirm symmetrical gap widths for the upper and lower halfwaves as shown in Fig-1.
- 5) Adjust VR1 if there is any deviation.
- 6) Observe output waveform on oscilloscope.
- 7) Raise oscilloscope sensitivity to enlarge sections of the waveform where there were gaps. Confirm that there are no notches as shown in Fig-2.



- 8) If there are notches, adjust VR2.

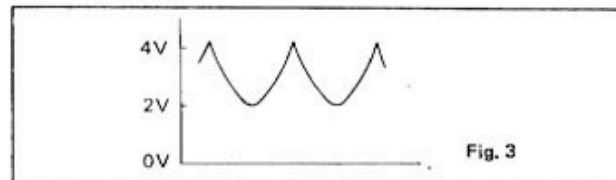
### KLM-800 Check and adjustment

#### 1. LFO Frequency.

- 1) Setting: Modulation intensity 10, Frequency 0, Waveform  $\square$ .
- 2) Connect frequency counter to KLM-850 J165. (IC24 1PIN) Confirm 10sec  $\pm$ 2sec. Adjust VR6 if there is any deviation.
- 3) Next, set Frequency to 10 and confirm counter reading of 16Hz  $\pm$ 2Hz.
- 4) Confirm that LED flashes in time with LFO cycle.

#### 2. LFO Waveform.

- 1) Setting: Intensity 10, Frequency 10, Waveform  $\wedge$ .
- 2) Connect oscilloscope (2V/div, 20msec/div) to KLM-800 J165 (IC24 1PIN) and observe waveform shown in Fig-1.



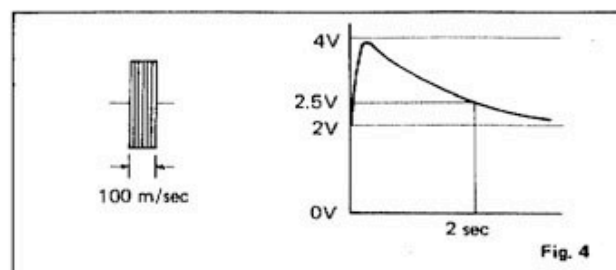
- 3) Adjust rounded bottom of waveform with VR2.
- 4) Adjust upper limit of amplitude with VR3. (About 4V.)
- 5) Adjust lower limit of amplitude with VR4. (About 2V.)
- 6) Set Waveform to  $\square$  and confirm that amplitude is about the same for both the square wave and triangle wave.

#### 3. LFO Waveform RND.

- 1) Setting: Intensity 5, Frequency - varied, Waveform RND.
- 2) Connect oscilloscope (2V/div, 0.2sec/div, DC) to KLM-800 J165. (IC24 1PIN)
- 3) Confirm that the integrated waveform's amplitude is varied at random by the LFO cycle.

#### 4. LFO Waveform ENV.


- 1) Setting: Intensity 10, Frequency 0, Waveform ENV.
- 2) Connect oscilloscope (2V/div, 0.5sec/div) to KLM-800 J165. (IC24 1PIN)
- 3) Set Input ATT to +4dB and Input level to 5. Apply a 100msec pulse to the input and confirm the waveform shown in Fig-2.



#### 5. Sampling Frequency.

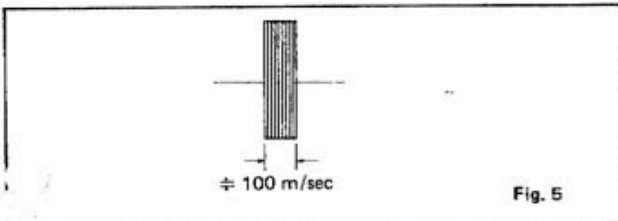
- 1) Setting: Intensity 0, Frequency 0.
- 2) Connect frequency counter to KLM-801 TP2 and confirm 64kHz  $\pm$ 2kHz.
- 3) Adjust KLM-800 VR5 if there is any deviation.

#### 6. MOD Sampling Frequency.

- 1) Setting: Intensity 10, Frequency 0, Wave form  .
- 2) Connect frequency counter to KLM-801 TP2 and confirm that readings are within specifications listed below.  
Max: 78kHz  $\pm$ 2kHz.  
Min: 40kHz  $\pm$ 1kHz.
- 3) If there is any deviation adjust KLM-800 VR3 for maximum value and adjust VR4 for minimum value. Repeat adjustments as necessary to bring both values within specifications.  
**Note:** Frequency rises if VCO voltage is high.

#### 7. Feedback.

- 1) Setting: Input ATT +4dB, Balance 10, Delay Time 50msec, Filter Low 500Hz, High 2kHz, Intensity 0, Feedback inv OFF, Feedback 10.
- 2) Use SG to apply a 100msec pulse (Fig-3) to input; confirm oscillation.  
Also confirm that there is no oscillation when there is no input (Input level at 0).



- 3) Adjust VR1 if there is any deviation.
- 4) Set Delay Time to 8msec, LOW and HIGH filters to FLAT, and adjust Feedback to the point just before oscillation.
- 5) Confirm that volume changes when the INV switch is turned on and off.  
**Note:** Phase is inverted when INV switch is ON.



# 8. PARTS LIST

\*CARBON RESISTOR NOT LISTED

PART CODE	PART NAME SPECIFICATIONS	P.C. BOARD	Q'TY
<b>METAL FILM RESISTORS</b>			
12064100	1/8BY 1.00K	KLM-801	2
12064301	1/8BY 3.01K		2
12114511	1/4FY 5.11K	KLM-802	1
12114590	1/4FY 5.9K		2
12115107	1/4FY 10.7K		1
12413100	1/4TP 100Ω	KLM-801	1
12413221	1/4TP 221Ω		1
12413432	1/4TP 432Ω		2
12414100	1/4TP 1.00K		4
12414249	1/4TP 2.49K		7
12414475	1/4TP 4.75K		2
12414499	1/4TP 4.99K	KLM-800	15
		KLM-801	3
12415100	1/4TP 10.0K	KLM-800	21
12415100	1/4TP 10.0K	KLM-801	11
12415121	1/4TP 12.1K		1
12415150	1/4TP 15.0K		1
12415182	1/4TP 18.2K		2
12415340	1/4TP 34K		2
<b>BLOCK RESISTORS</b>			
13504510	RKC1/8B4J 10K	KLM-800	1
		KLM-801	1
13504610	RKC1/8B4J 100K		1
13505510	RKC1/8B5J 10K	KLM-800	1
		KLM-801	1
13508447	RKC1/8B8J 4.7K		1
13508510	RKC1/8B8J 10K	KLM-800	1
		KLM-801	1
13508610	RKC1/8B8J 100K		1
13510510	RKC1/8B10J 10K	KLM-800	1
13512510	RKC1/8B12J 10K	KLM-801	1
<b>MYLAR CAPACITORS</b>			
20003547	50V 0.047UFK	KLM-800	2
		KLM-801	2
20003582	50V 0.082UFK	KLM-800	1
20003610	50V 0.1UFK		4
20401410	50V 0.001UF J		6
		KLM-801	2
20401415	50V 0.0015UF J	KLM-800	2
20401427	50V 0.0027UF J		2
20401433	50V 0.0033UF J		1
20401447	50V 0.0047UF J		1
20401456	50V 0.0056UF J		2
20401468	50V 0.0068UF J		1
20401510	50V 0.01UF J		2
<b>STYROL CAPACITORS</b>			
20502318	50V GT 180PF	KLM-801	1
20503312	50V JT 120PF	KLM-800	1
20503322	50V JT 220PF	KLM-800	1
20503333	50V JT 330PF		3
20503368	50V JT 680PF		3
<b>CERAMIC CAPACITORS</b>			
21238610	25V 0.1UF	KLM-802	3
21256322	50V 220PFJ		1
21256333	50V 330PF		1
21441500	50V 5PF	KLM-800	6
		KLM-801	1
21442100	50V 10PF	KLM-800	2
		KLM-801	2
21442220	50V 22PF		1
21442470	50V 47PF	KLM-800	2

PART CODE	PART NAME SPECIFICATIONS	P.C. BOARD	Q'TY
21443100	50V 100PF		1
		KLM-801	1
21443330	50V 330PF		2
21446100	25V 0.1UF		48
<b>SPARK KILLER</b>			
21900300	PME265MC 533		1
<b>TANTALUM CAPACITORS</b>			
22424110	25V 1UF	KLM-801	14
22425022	35V 0.22UF		1
<b>ELECTROLYTIC CAPACITORS</b>			
23404410	A10V 1000UF	KLM-802	1
23407210	A16V 10UF	KLM-801	20
23407222	A16V 22UF		1
23407233	A16V 33UF		2
23407247	A16V 47UF	KLM-800	7
		KLM-801	6
23407322	A16V 220UF	KLM-800	1
		KLM-801	4
23407347	A16V 470UF	KLM-802	2
23407422	A16V 2200UF		1
23413422	B35V 2200UF		2
24507247	A16V 47UF RBP	KLM-800	4
24511147	A25V 4.7UF RBP	KLM-800	3
24511210	A25V 10UF RBP		11
		KLM-801	2
24515110	A50V 1UF RBP		1
25013210	16V 10UF	KLM-800	4
25016110	50V 1UF		1
25016147	50V 4.7UF		1
<b>MKT CAPACITORS</b>			
27308610	100V 0.1UF	KLM-801	2
<b>TRANSISTORS</b>			
30000727	2SA733 AK	KLM-802	1
30000799	2SA733 AK SELECTED	KLM-800	1
30100328	2SB744A P/Q	KLM-802	1
30200327	2SC945 AK		1
30300528	2SD794A P/Q		1
30400010	2SA733A K	KLM-800	3
		KLM-801	5
30400030	2SA952A K	KLM-800	1
30420010	2SC945A K		11
		KLM-801	2
30420040	2SC2001 K	KLM-800	1
<b>FET</b>			
30460011	2SK30A TM-GR		3
<b>DIODES</b>			
31000100	1S1555	KLM-802	2
31400100	1S1555 TP	KLM-800	15
31400100	1S1555 TP	KLM-801	27
31000200	1S1885	KLM-800	1
		KLM-801	1
		KLM-802	11
<b>ZENER PIODES</b>			
31101300	RD 5.1EB2		1
31420100	RD 8.2EB-TN-B2	KLM-800	2
31420200	RD 5.1EB-TN-B2		3
<b>LED</b>			
31201400	PR 3932S	KLM-806	1
31201600	BG5531	KLM-805	5

PART CODE	PART NAME SPECIFICATIONS	P.C. BOARD	Q'TY
31201700	PR5531		1
31250100	TLR312		1
31250200	TLG312-E/F		4
<b>IC</b>			
32001043	UPD-8255AC-5	KLM-801	2
32001045	UPD-4511B-AC		1
32002019	AN-6878	KLM-800	1
32003043	TC-40H032P	KLM-801	1
32204004	HD-14066 BP	KLM-800	1
32004006	HD-14520 BP	KLM-801	2
32004007	HD-14001 BP		1
32004008	HD-14011 BP		2
32004009	HD-14013 BP		1
32004017	HD-14051 BP		2
32004019	HD-14069 UBP		2
32004021	HD-14503 BP		1
32004030	HA-17408P		1
32004036	HD-14002BP		1
32004037	HD-14008BP		3
32004038	HD-14017BP		1
32004039	HD-14053BP	KLM-800	10
32004040	HD-14519BP	KLM-801	3
32004042	HM-4864P-3		13
32006008	MSM-80C49RS		1
32009001	NJM-4558D-V	KLM-800	14
		KLM-801	1
		KLM-802	1
32009006	NJM-4560 D	KLM-801	2
32009011	NJM-7805 A	KLM-802	1
32009012	NJM-311D	KLM-801	1
32009013	NJM-13600 D	KLM-800	1
32012001	MB-3761 M	KLM-801	1
32021006	LM-339 N		1
32021011	TL-072	KLM-800	2
		KLM-801	4
32021017	LM-393-N		1
32021036	SN-74LS624		1
32021037	SN-74LS157		2
32021038	SN-74LS93P		1
32034001	AM2504PC		1
32034002	AM6012PC		2
32035001	DG211CJ		2
<b>CERAMIC OSCILLATORS</b>			
33500900	EFO-A6R0M01		1
<b>PC BOARD</b>			
34080000	KLM-800	KLM-800	1
34080101	KLM-801	KLM-801	1
34080200	KLM-802	KLM-802	1
34080300	KLM-803	KLM-803	1
34080400	KLM-804	KLM-804	1
34080500	KLM-805	KLM-805	1
34080600	KLM-806	KLM-806	1
34080700	KLM-807	KLM-807	1
34080800	KLM-808	KLM-808	1
34081000	KLM-810	KLM-810	1
<b>SEMI-FIXED RESISTORS</b>			
35201222	H1051A 2.2KB	KLM-800	3
35201310	H1051A 10KB		1
35201322	H1051A 22KB		1
35201410	H1051A 100KB		1
35202310	H1021A 10KB	KLM-801	2

PART CODE	PART NAME SPECIFICATIONS	P.C. BOARD	Q'TY
<b>ROTARY VR</b>			
36014900	K161100GKC 10KB		1
36015000	K161100GKC 100KB		1
36015100	K161100LCC 10KA	KLM-806	1
36015200	K161100LCC 10KB		1
36203400	K164A0011A 20KBX4		1
<b>SLIDE SW</b>			
37301900	ESD-32108	KLM-803	1
		KLM-810	1
37303800	ESD-32110	KLM-804	3
<b>POWER SW</b>			
37504700	SDGA 3P		1
<b>TACT SW</b>			
37504800	KEC-10010	KLM-805	4
37504900	KEC-11903		2
		KLM-807	2
<b>POWER TRANSFORMERS</b>			
40007700	TA-800	100V UNI JAM	1 1 1
		117 2P	1
40007800	TB-800	220 GE	1
		220 SE	1
		240 AF	1
		240 AU	1
		DEMKO	1
		SEMKO	1
		NEMKO	1
		240 GE	1
		220 FR	1
<b>RELAY</b>			
40300500	RRB34A05	KLM-800	1
<b>PHONE JACK</b>			
45401400	HLJ-4305-01-030	KLM-808	1
45401500	HLJ-4305-01-100		8
45401600	HLJ-0607-01-100		2
<b>FUSE</b>			
46402501	125V 3A UL	100V UNI JAM	1 1 1
		117 2P	1
46411701	250V 0.5A UL	100V UNI JAM	1 1 1
		117 2P	1
46412003	250V 1.0A UL	100V UNI	2 2
		JAM	2
		117 2P	2
46461701	250V T500MA	220 GE	3
		220 SE	3
		240 AF	3
		240 AU	3
		DEMKO	3
		SEMKO	3
		NEMKO	3
		240 GE	3
		220 FR	3
46462201	250V T1.6A	220 GE	1
		220 SE	1

PART CODE	PART NAME SPECIFICATION	P.C. BOARD	Q'TY
46462201	250V T1.6A	240 AF	1
		240 AU	1
		DEMKO	1
		SEMKO	1
		NEMKO	1
		240 GE	1
	220 FR	1	
<b>HARNESS</b>			
47090000	HNS-800		1
47090100	HNS-801		1
47090200	HNS-802		1
47090300	HNS-803		1
47090400	HNS-804		1
47090500	HNS-805		1
47090600	HNS-806		1
47090700	HNS-807		1
47090800	HNS-808		1
47090900	HNS-809		1
47091000	HNS-810		1
47091100	HNS-811		1
47091200	HNS-812		1
47091300	HNS-813		1
47091400	HNS-814		1
47091500	HNS-815		1
47091600	HNS-816		1
47091700	HNS-817		1
47091800	HNS-818		1
47091900	HNS-819		1
47092000	HNS-820		1
47092100	HNS-821		1
<b>CONNECTOR TOP</b>			
47130200	B2B-XHA	KLM-800	1
47130300	B3B-XHA	KLM-801	1
		KLM-800	2
		KLM-801	1
47130400	B4B-XHA	KLM-800	3
47130500	B5B-XHA	KLM-801	2
		KLM-800	2
		KLM-801	2
47130600	B6B-XHA	KLM-800	1
47130700	B7B-XHA	KLM-801	1
		KLM-800	2
		KLM-801	1
47130800	B8B-XHA	KLM-800	2
		KLM-801	1
		KLM-802	1
47130900	B9B-XHA	KLM-801	1
47131100	B11B-XHA	KLM-800	1
		KLM-801	1
		KLM-802	1
47131200	B12B-XHA	KLM-800	1
47131300	B13B-XHA	KLM-801	2
		KLM-801	1
<b>IC SOCKET</b>			
48005162	16P C471611	KLM-801	13
48005202	20P C472011		2
48005402	40P C474011		1
<b>BUFFER OF COVER</b>			
50005200	KOC-F48003		2
<b>FUSE HOLDER</b>			
51501600	S-N5053 #01	KLM-802	8

PART CODE	PART NAME SPECIFICATION	P.C. BOARD	Q'TY
<b>BATTERY</b>			
52000900	3/170DK (3.6V 170MAH)		1
<b>BUSHING</b>			
54000300	SR-4K-4	100V	1
		UNI	1
		117 2P	1
54000400	SR-5P-4	JAM	1
54000500	SR-6W-1	240 AU	1
		220 GE	1
		220 SE	1
		240 AF	1
		DEMKO	1
		SEMKO	1
		NEMKO	1
		240 GE	1
		220 FR	1
<b>TEST PIN</b>			
54007100	LC-2-G-YELLOW	KLM-801	3
<b>CORD BAND</b>			
54007600	No. 113		1
<b>GND TERMINAL</b>			
54007700	T-10		1
<b>JAMPER CORD</b>			
54502000	SMV2J-B7/0.16X2X70	KLM-800	1
<b>SW MASK</b>			
55004800	A 23X12 KOC-F48001		2
55004900	B 28X12 KOC-F48001		3
55005000	C 20X14 KOC-F48002		1
<b>RADIATION MASK</b>			
55005100	120X105 KOC-F48006		1
<b>RADIATION BOARD</b>			
56002300	SDD-3000 KOC-C48000	KLM-802	1
<b>SHIELDING SHEET</b>			
58017000	B100X70 KOC-F48005		1
58017100	C 280X280 KOC-F48007		2
58017200	D KOC-F48009		1
58017300	E KOC-F48011		1
<b>AC CORD</b>			
60000101	KE1044 0.75SQ 2.5M	100V	1
60000200	SPT-2 18AWG/2 2.5M	UNI	1
		117 2P	1
		220GE	1
60000300	CLASS1H05VV-F3X0.75	DEMKO	1
		SEMKO	1
		NEMKO	1
		240 GE	1
		240 AU	1
		240 AF	1
60000400	SAA 3X0.75 2.5M	240 AU	1
60000500	240AF 2.5M GRAY	240 AF	1
60000600	SVT 18AWGX3 2.5M	JAM	1
60000900	SEV 2.5M GRAY	220 SE	1
60001300	KP4819D 3X0.75 2.5M	220 FR	1
<b>ROTARY VR KNOB</b>			
62010900	RITEL 27-15-603		5
<b>TACT SW KNOB (BLACK)</b>			
62011000	KT-8		4

PART CODE	PART NAME SPECIFICATION	P.C. BOARD	Q'TY
<b>POWER SW KNOB</b>			
62011100	SUE55102 SDGA		1
<b>TACT SW KNOB (RED)</b>			
62011202	KOC-E48001		1
<b>TACT SW KNOB (YELLOW)</b>			
62011204	KOC-E48001		1
<b>TACT SW KNOB (GRAY)</b>			
62011208	KOC-E48001		2
<b>KNOB CAP (GRAY)</b>			
62910901	RITEL 30-15-111		1
<b>KNOB CAP (YELLOW)</b>			
62910902	RITEL 30-15-16		4
<b>FRONT PANEL</b>			
64057500	KOC-C28001		1
<b>FRONT FRAME</b>			
64057600	KOC-C28000		1
<b>MAIN FRAME</b>			
64057700	KOC-C28002		1
<b>COVER A</b>			
64057800	KOC-C28002		1
<b>COVER B</b>			
64057900	KOC-C28003		1
<b>SPACER D</b>			
64058300	3.2X6X5.5 C48007		4
<b>LED FILTER</b>			
64609700	KOC-E48000		1
<b>SPACER A</b>			
64611100	KOC-E48003		2
<b>RUBBER FEET</b>			
64904400	25X25X4.5 KOC-F48000		4
<b>MODEL NUMBER PLATE</b>			
68600700	KOC-C40424	UNI	1
		JAM	1
		117 2P	1
		220 GE	1
		220 SE	1
		240 AF	1
		240 AU	1
		DEMKO	1
		SEMKO	1
		NEMKO	1
		240 GE	1
		220 FR	1