

MPG-80

SPECIFICATIONS

Power Consumption	0.9W
Dimensions	480(W) x 78(D) x 177(H) mm 19"(W) x 3-1/8"(D) x 7-1/16"(H)
Weight	3 kg/6 lb 10 oz



ANGLE (22125524)

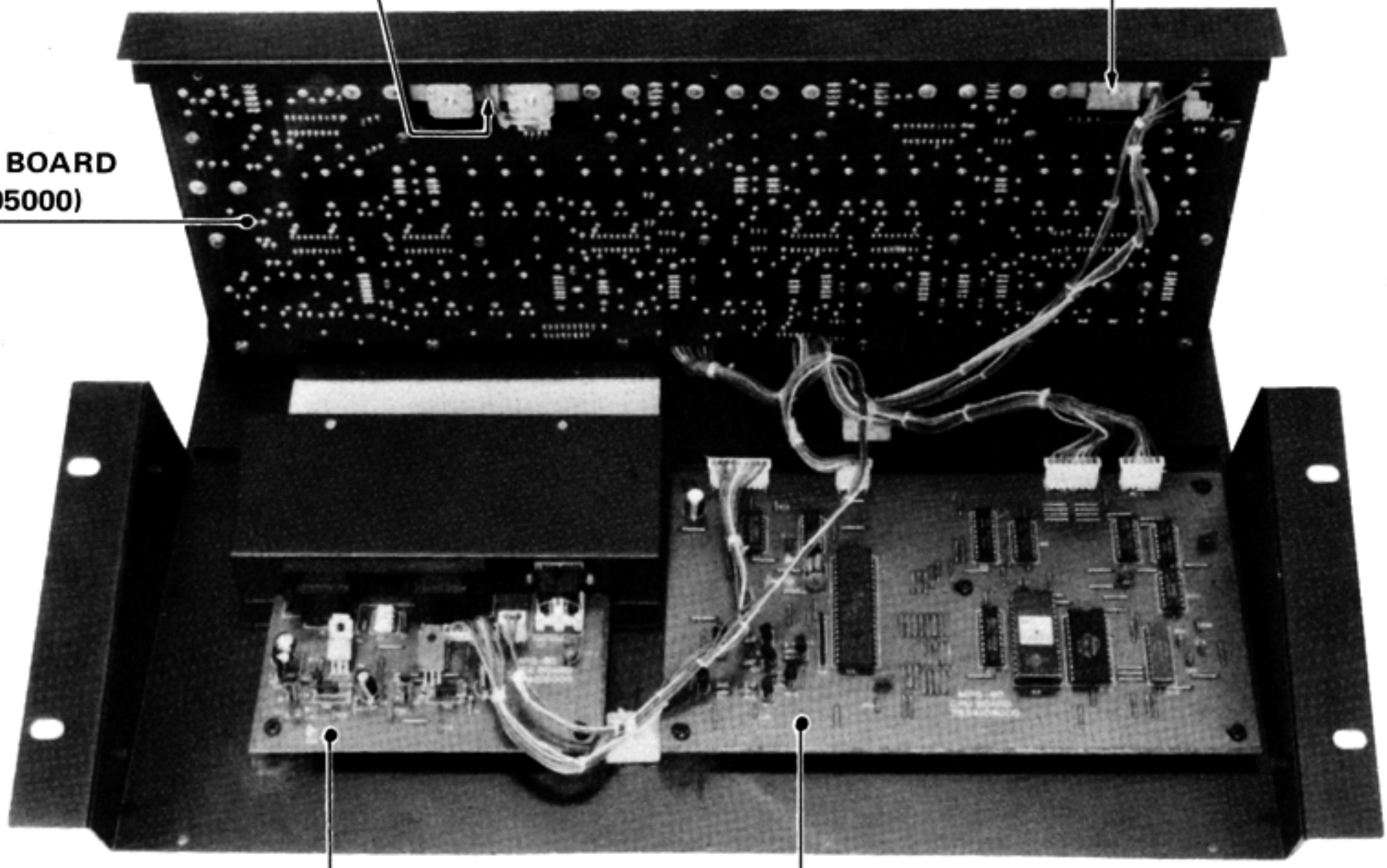
PANEL (22215427)

CHASSIS (22815437)

SWITCH BOARD-2 (7934107000)

SWITCH BOARD-1 (7934106000)

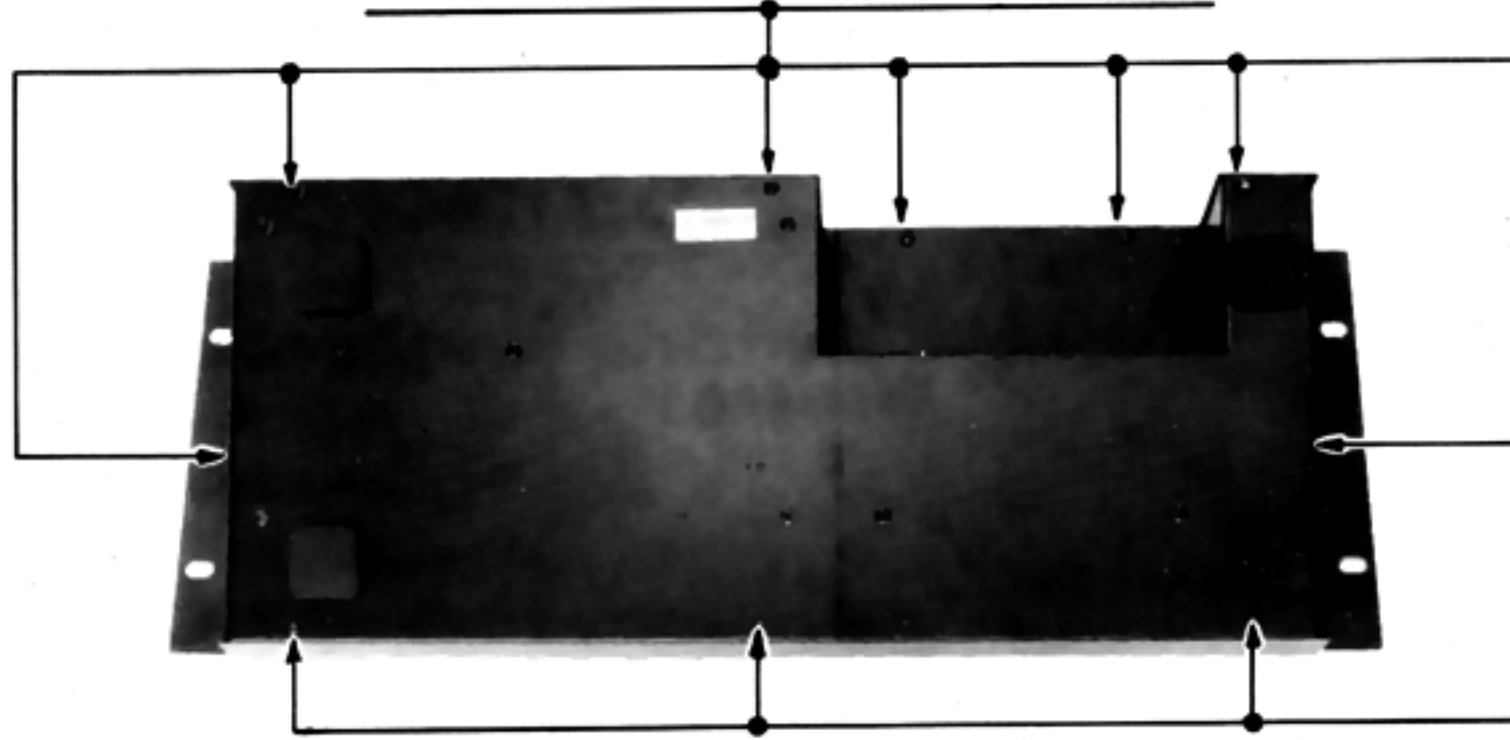
PANEL BOARD (7934105000)



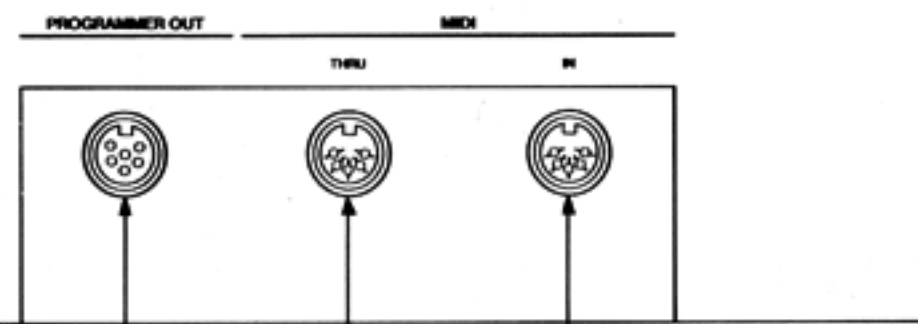
JACK BOARD (793409000)

CPU BOARD (7934108000)

Tapping screw 3 x 6mm binding B1 Fe Br



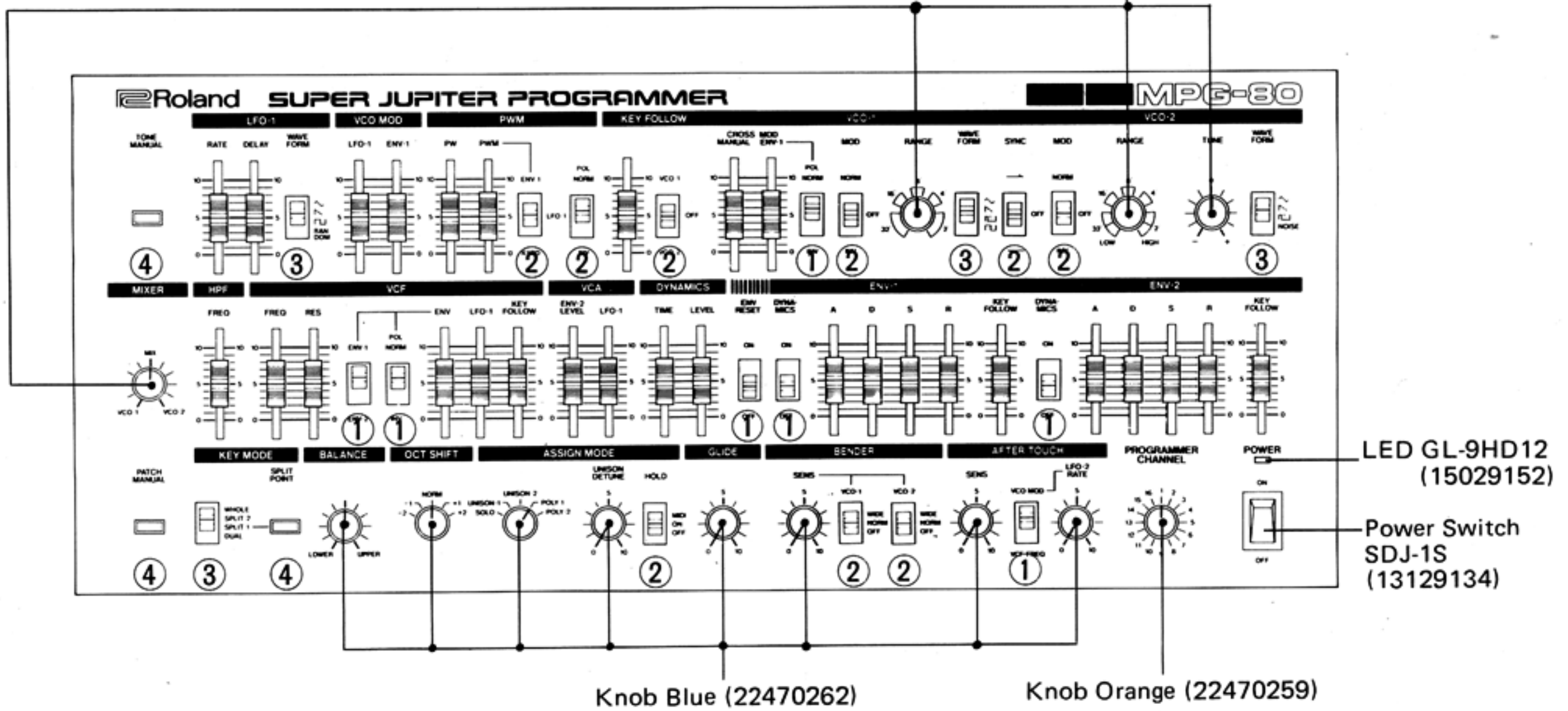
Roland



TCS5360-01-1111
(13429621)

MIDI 2-NS
(13429628)

Knob Yellow (22470261)



Knob Blue (22470262)

Knob Orange (22470259)

LED GL-9HD12
(15029152)

Power Switch
SDJ-1S
(13129134)

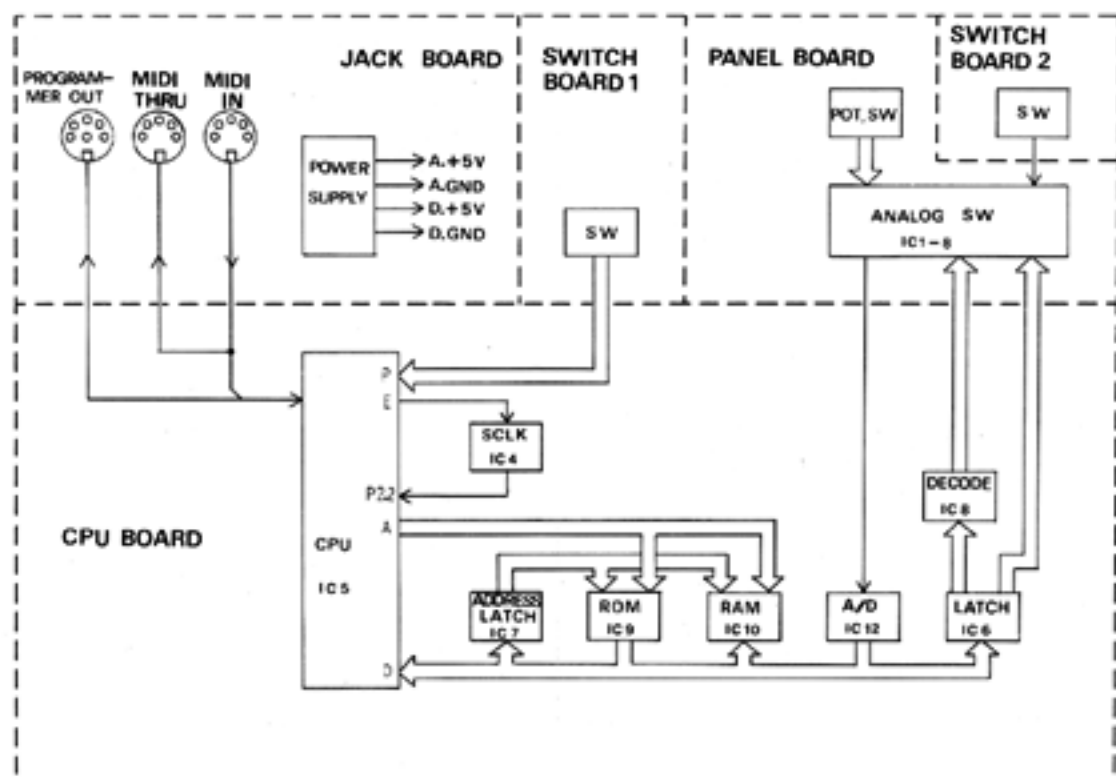
UNLESS OTHERWISE SPECIFIED

- ① 2-contact slide switches SSY022-12PN
- ② 3-contact slide switches SSY023-12PN
- ③ 4-contact slide switches SSY024-12PN
- ④ Button (22475598), Switch SPQ009G

- (13159149)
- (13159336)
- (13159508)
- (13129351)

- Knob (Slider) (22475329)
- Knob (Slide switch) (22475372)
- All rotary Potentiometers K161MOZ1A-50KB. (13219371)
- All sliders are S2518G401-50KB. (13339957)

BLOCK DIAGRAM



CIRCUIT DESCRIPTION

GENERAL

Signals from the potentiometers and switches on the panel board are converted to digital equivalent at the A/D converter (IC12) output and passed on to the CPU (IC5) for further processes.

The MKS-80 feeds the MPG-80 with an unregulated 8.5V through the programmer cable (6P DIN). The voltage is split and converted to two regulated +5V for analog and digital circuits. These voltages are current-limited to 90mA.

CPU BOARD

PIN DESCRIPTION

RES When the power is first applied, the reset circuit PST518A (IC15) and associated circuits force this terminal to low for approx. 70ms. The same will take place as a power down resetting function if either of +5V supplies drops to the predetermined voltage.

D0-D7 These buses are timeshared by data and addresses (A0 - A7). Addresses are latched into IC7 on a fall edge of address strobe (AS).

A8-A15 . . . Address buss

E The output (1MHz) is 1/4 of the Xtal frequency and used for system timing.

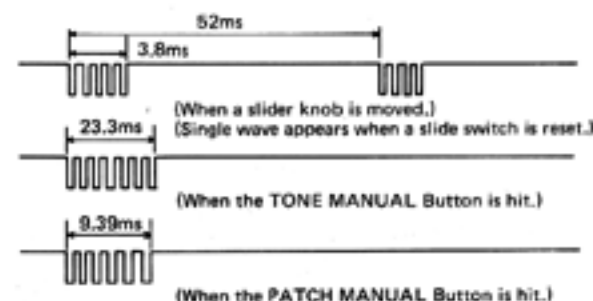
P2.0 One of the logic function elements (P2.0-P2.2) which determine the operation mode of the CPU IC5.

P2.1
P2.2 P2.2 Also serves as the input of SERIAL INTERFACE CLOCK from IC4. When the operation mode has been set on the rising edge of RESET, P1.6 goes high, resetting IC4 and turning P2.2 low.

P1 P1.0, P1.1, P1.2 and P1.3 read signals from the programmer channel switch (switch board -1).

P2, 3 Data receive port of the serial communication interface.

P2, 4 Data transmit port of the serial communication interface.

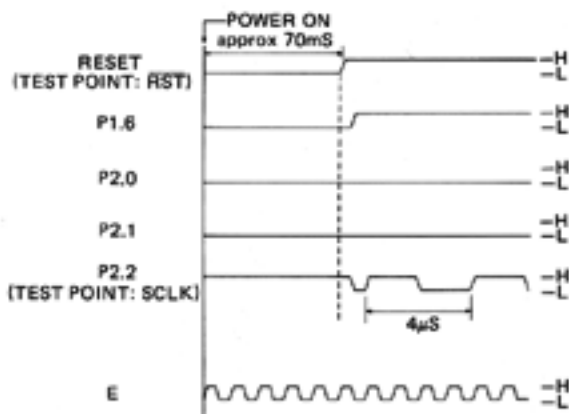


Test point: TX

ROM 27C64, a lower current CMOS IC.

RAM TEST . . . To check the RAM (IC10) functioning, turn on the power switch of MPG-80 while pressing both the TONE MANUAL and PATCH MANUAL buttons. The MPG-80 is now in the RAM test mode.

If MKS-80 fails to function normally, check the RAM.

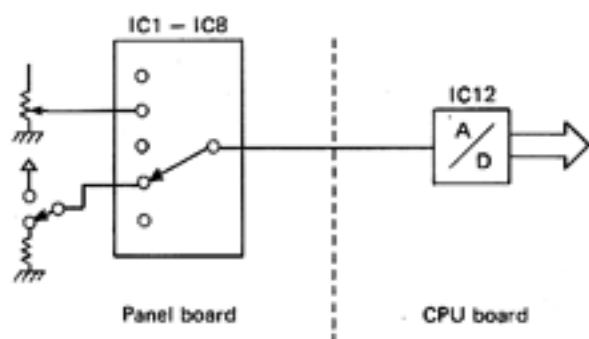


READING POTENTIOMETERS AND SWITCHES

Data from 39 potentiometers and 25 switches connected to analog switches (IC1-IC8) on the panel board are selected one by one by IC6 and IC8 on the CPU board. (The position of a switch is also represented in analog value by the voltage divider-resistors). Exceptions are PROGRAMMER CHANNEL and POWER switches.

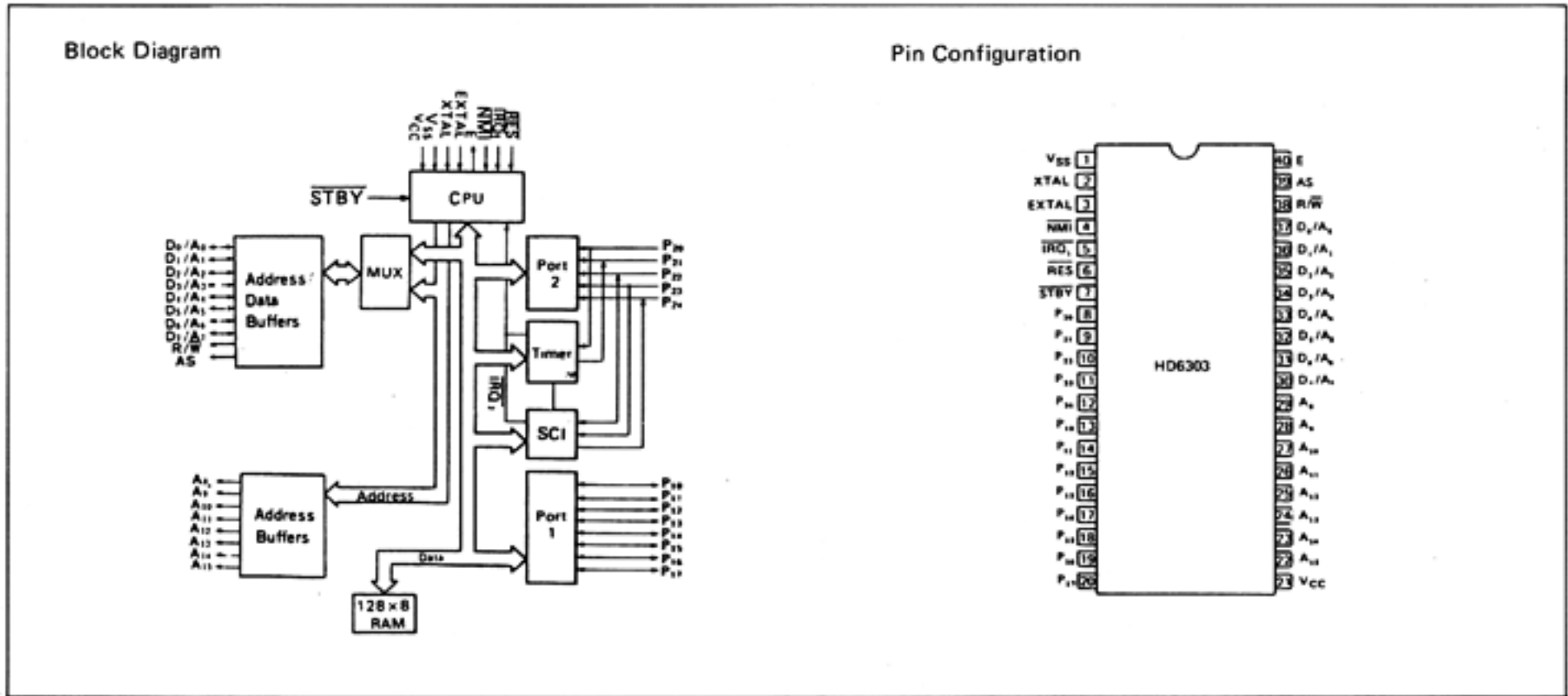
Signals from the programmer channel switch (16 positions) are directly input in 4-bit binary code to the CPU port 1.

Selected analog data is converted into 8-bit code at the output of IC12 on the CPU board and routed to the CPU IC5.

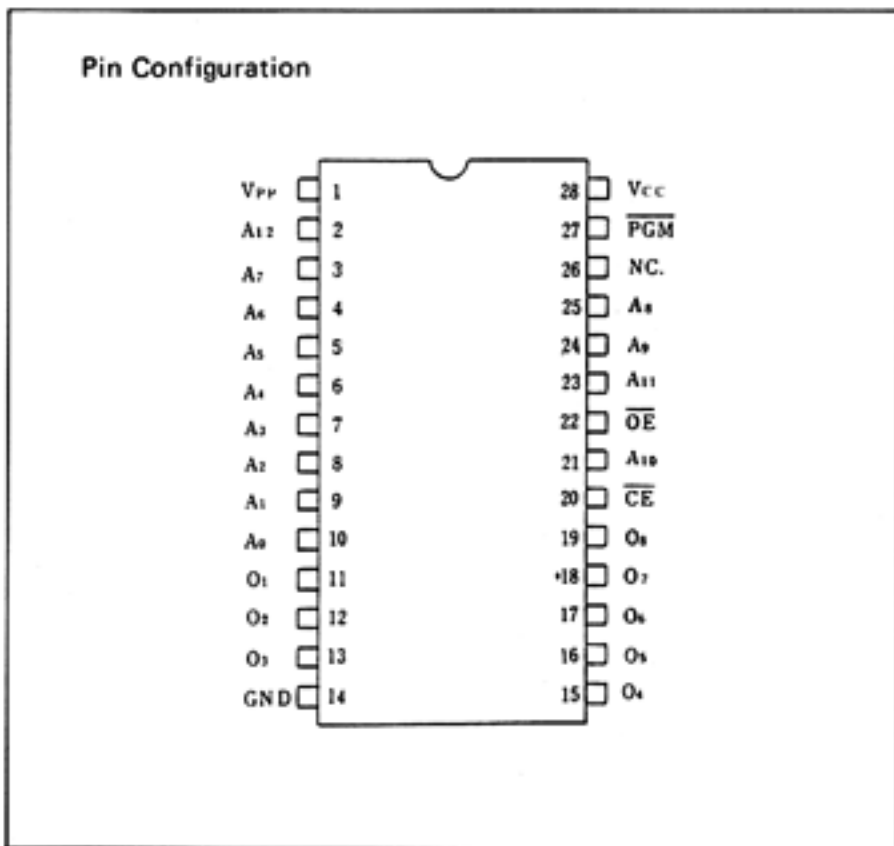


IC DATA

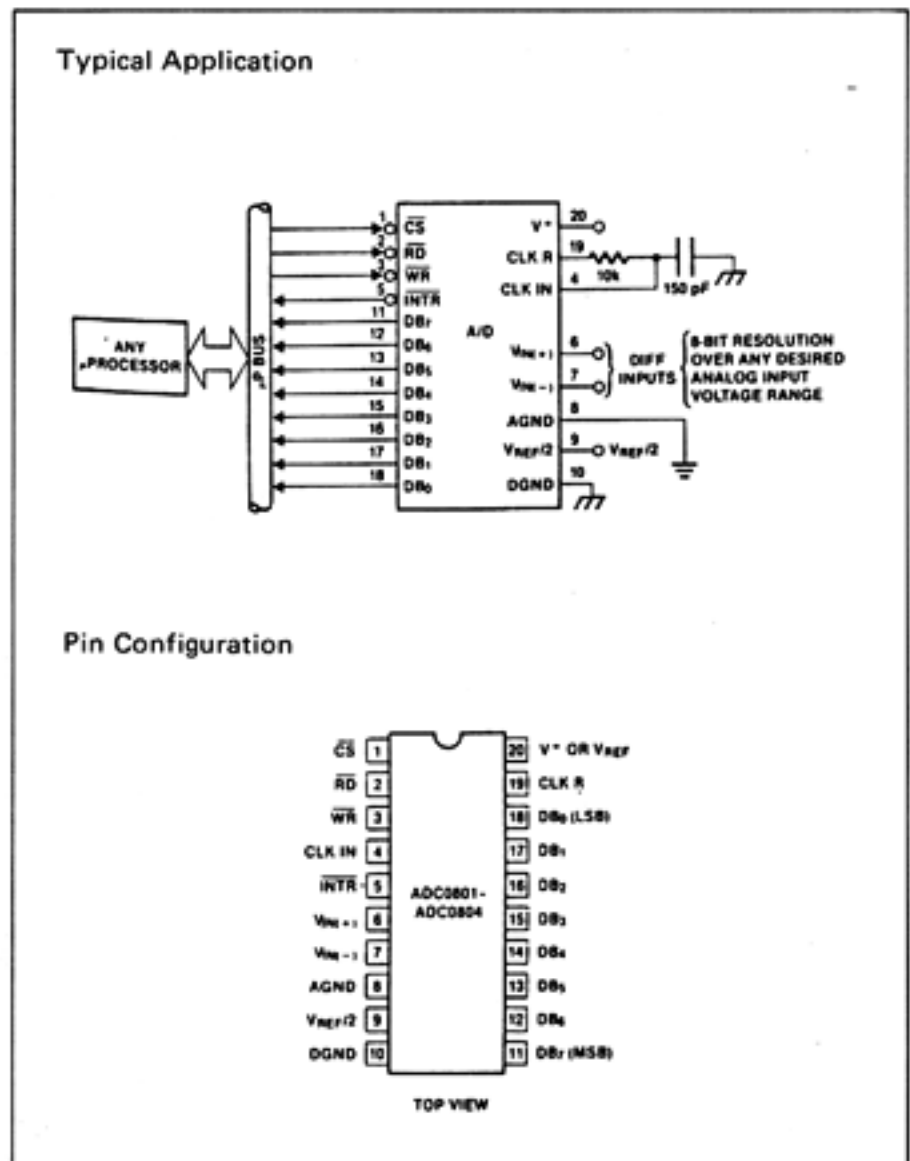
HD6303RP CMOS Micro Processing Unit



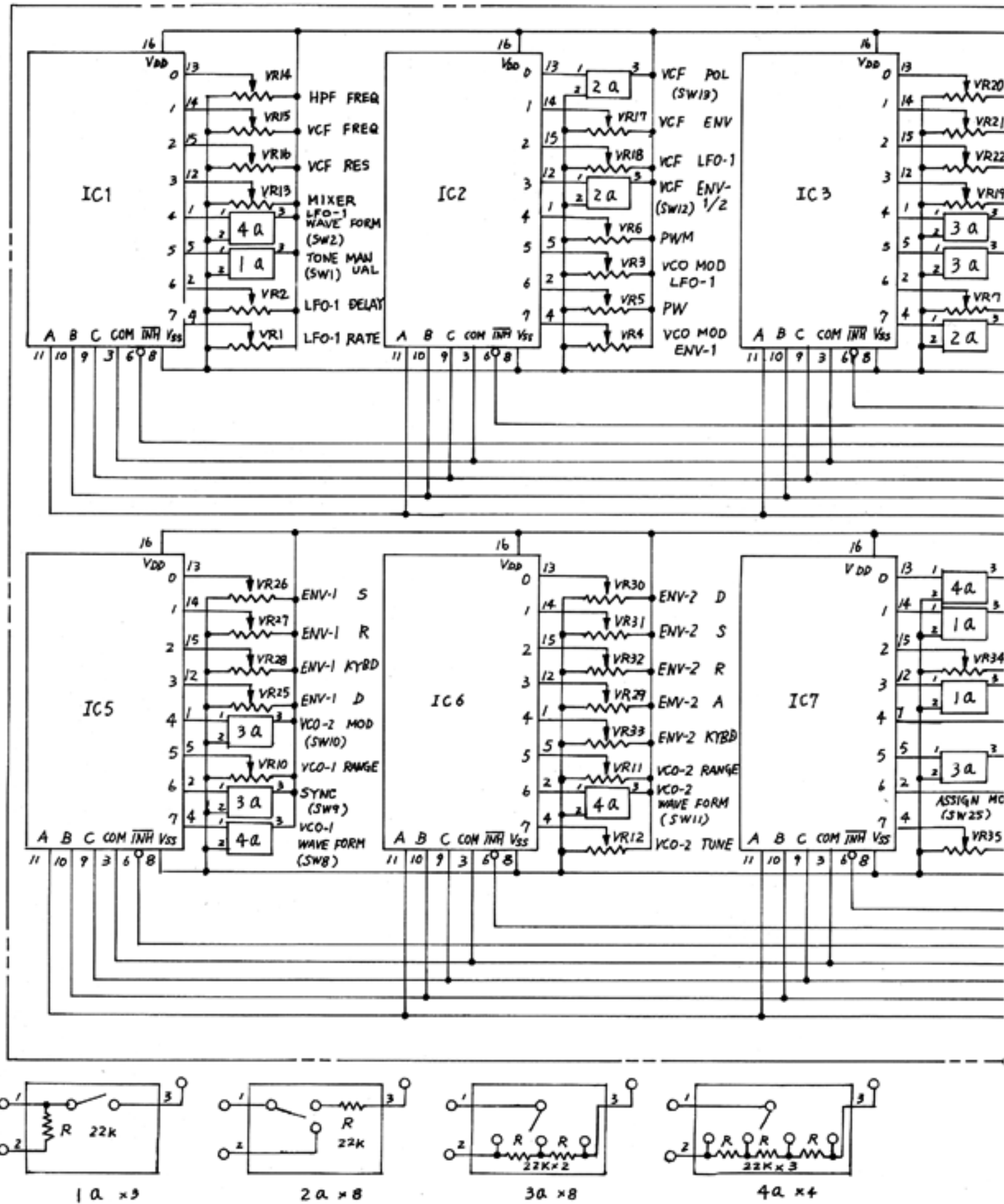
MBM27C-64-671 CMOS 65536-BIT UV ERASABLE AND ELECTRICALLY PROGRAMMABLE READ ONLY MEMORY



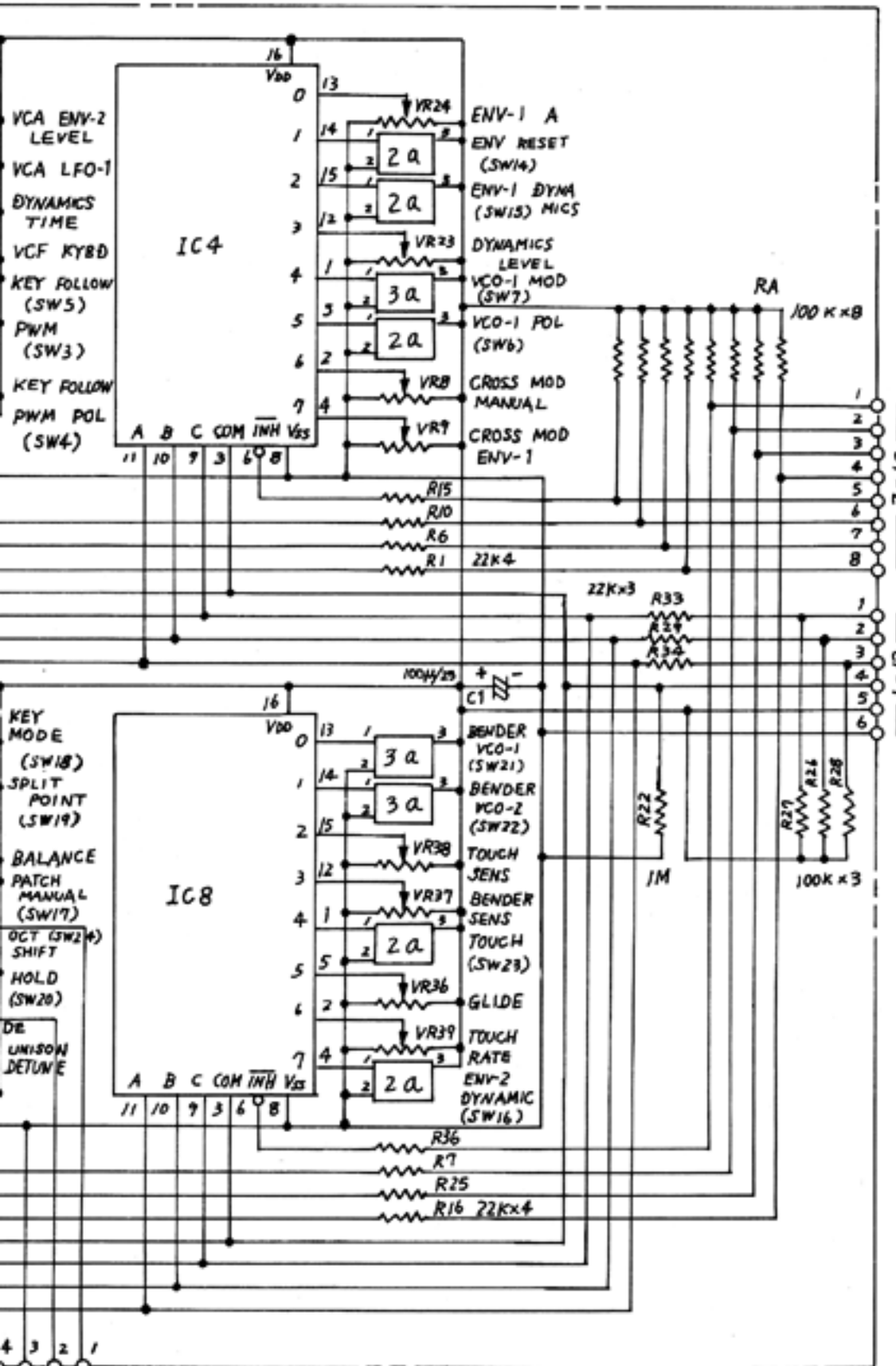
ADC0803LCN 8-Bit Microprocessor Compatible A/D Converters



PANEL BOARD



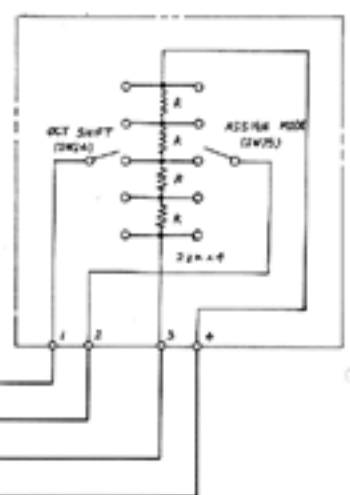
15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29



CPU BOARD

IC1 - 8: HD14051 BP, VR1 - 39: 50KB Pin 7, 8 (Vss) of all ICs connected to analog ground
Pin 16 (VDD) of all ICs connected to +5V

SWITCH BOARD-2

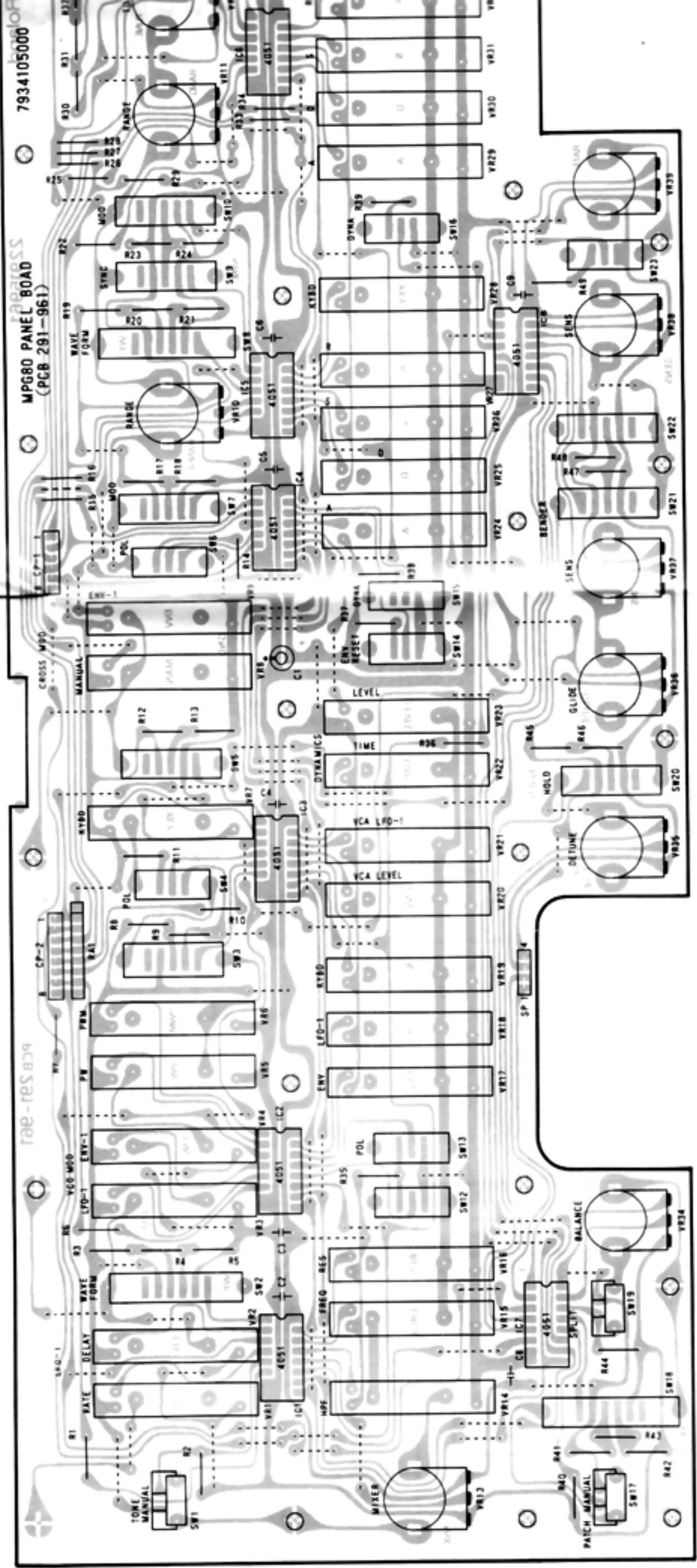


DEC. 1984

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22

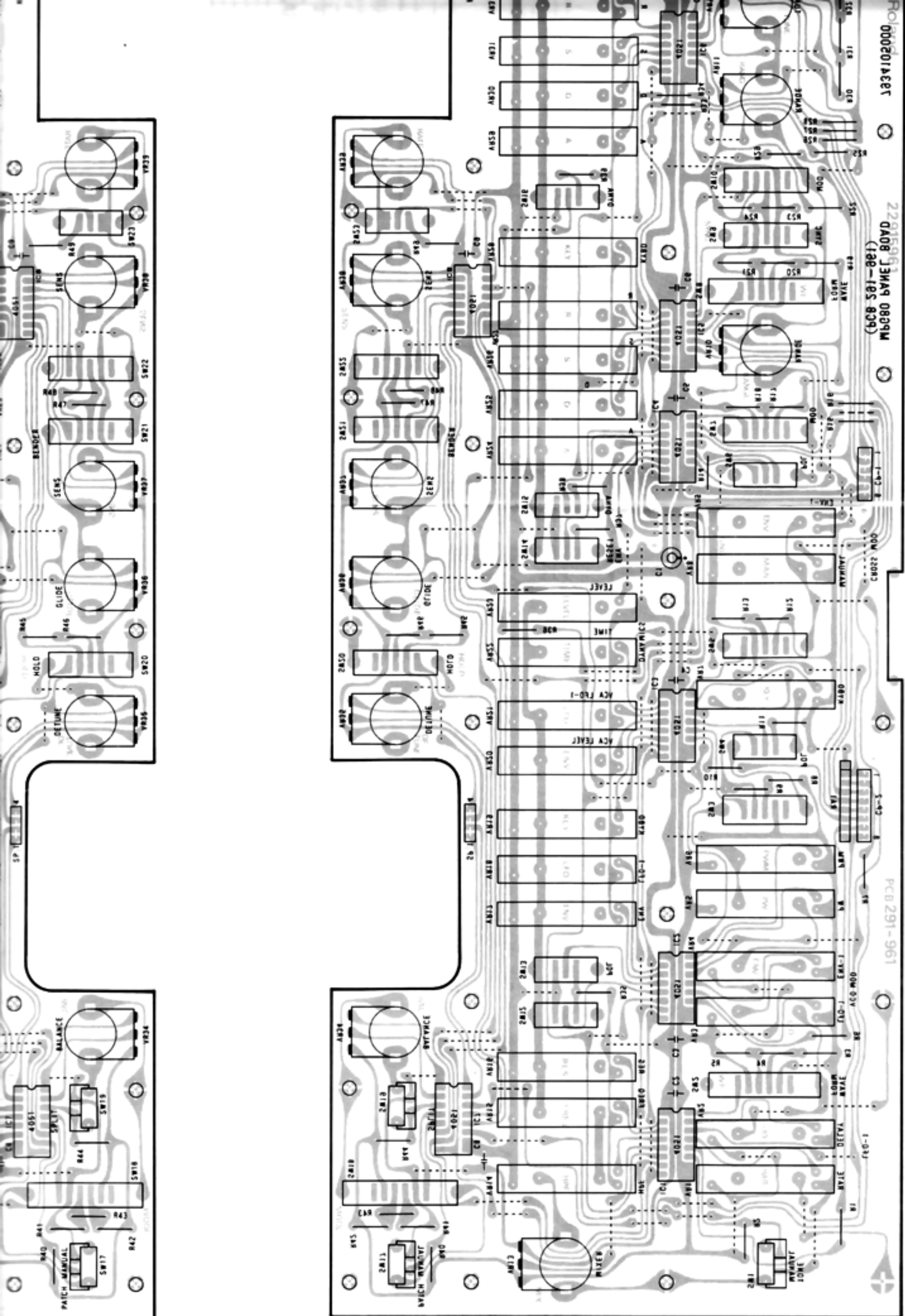
A B C D E F G H I J K L M N

PANEL BOARD 7934105000 (pcb 22915961)

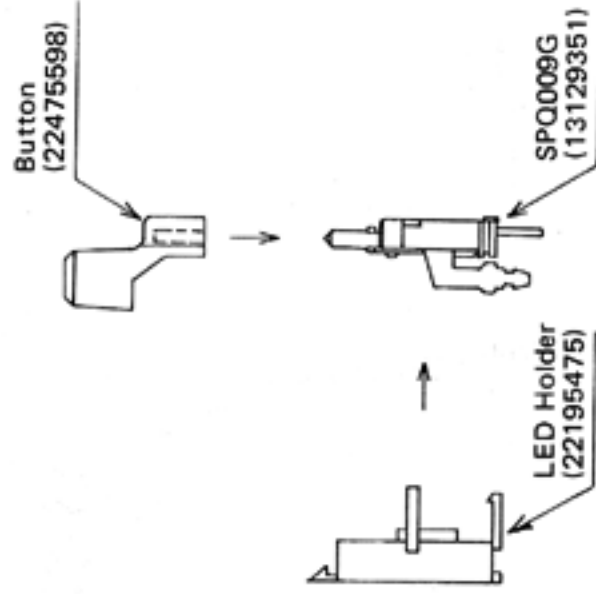
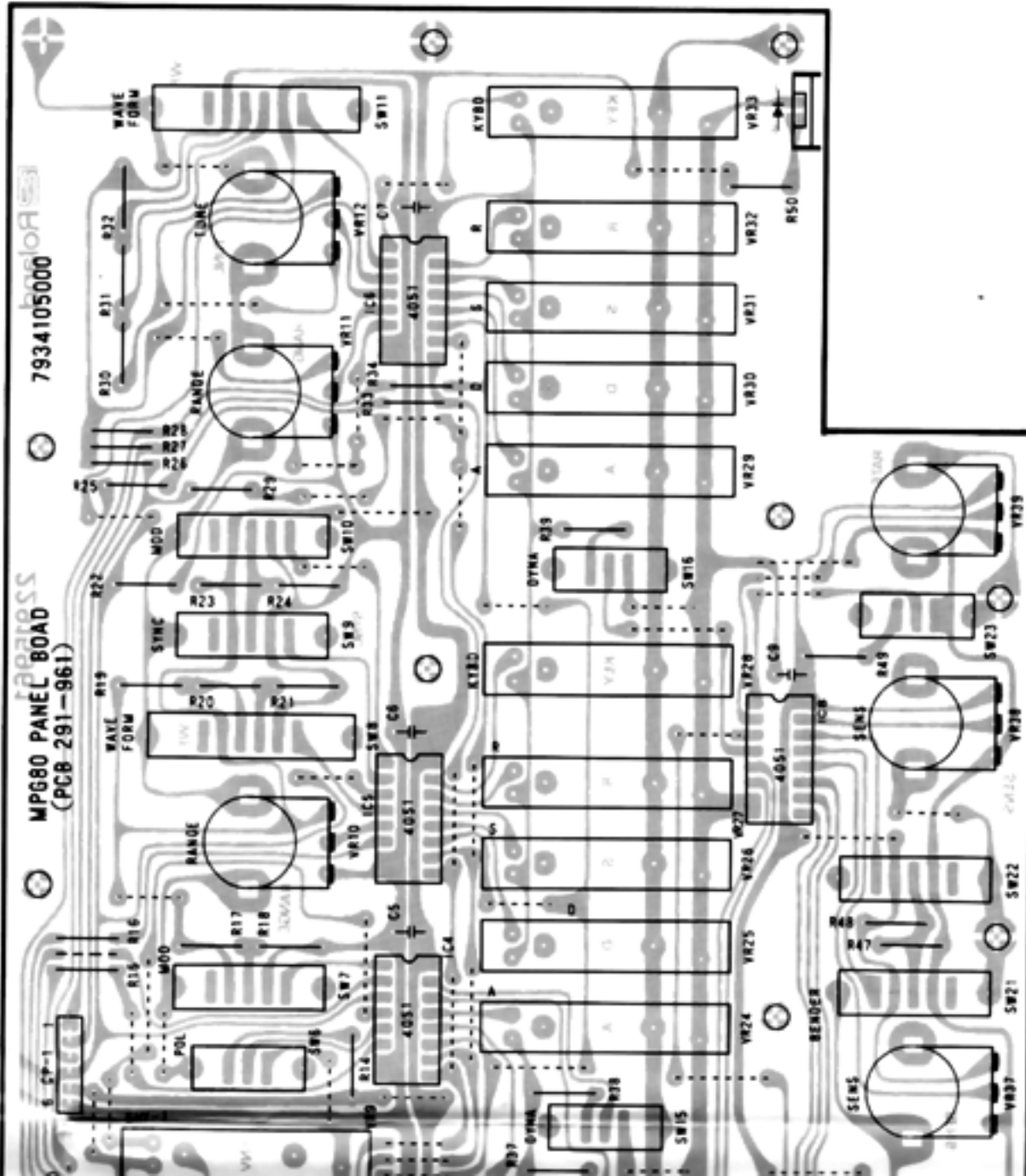


000201A CER 22915961 QA08 JMA9 0809M (188-185-839)

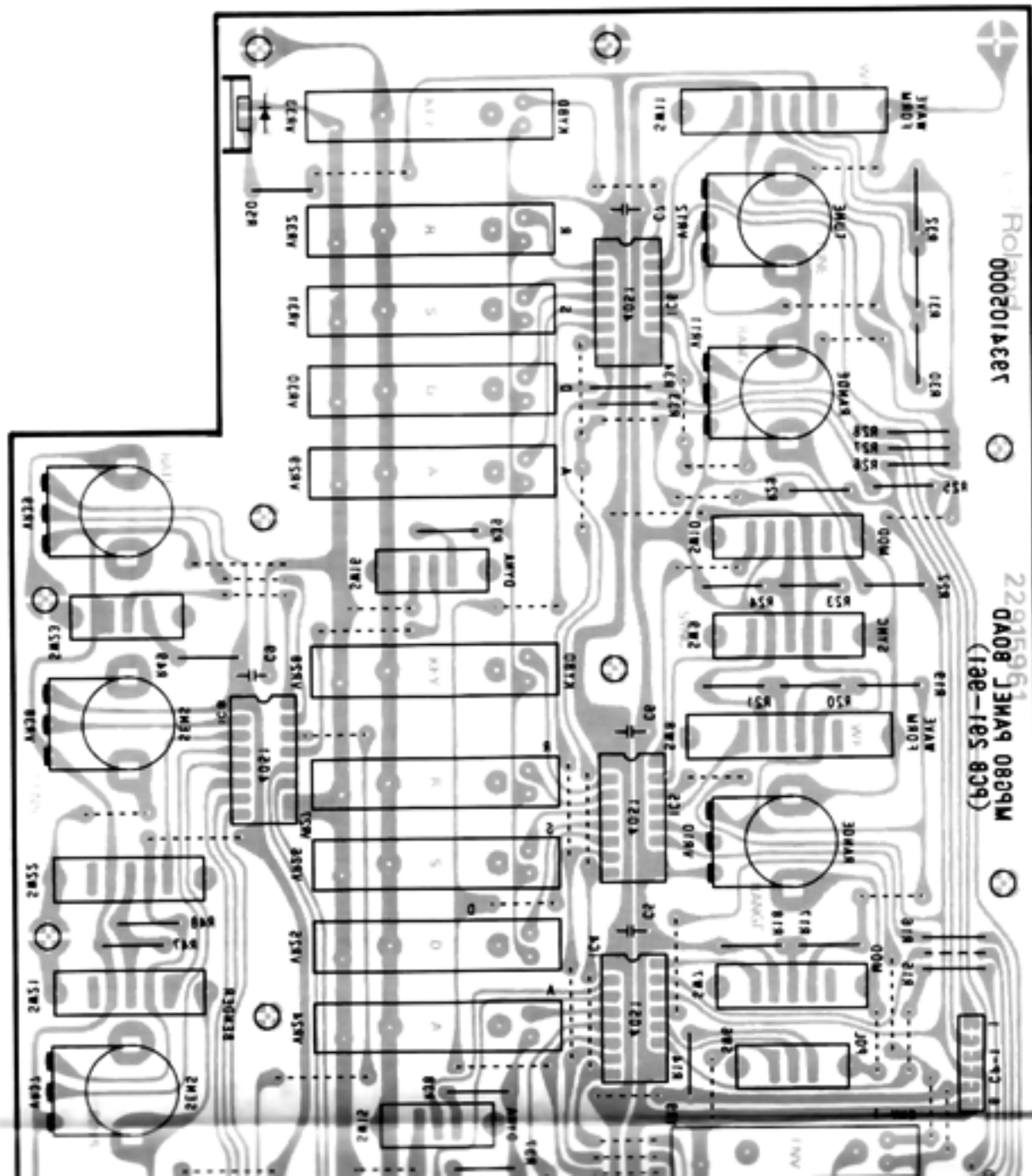
PCB 291-961



J K L M N O P Q R S T U V W X Y Z



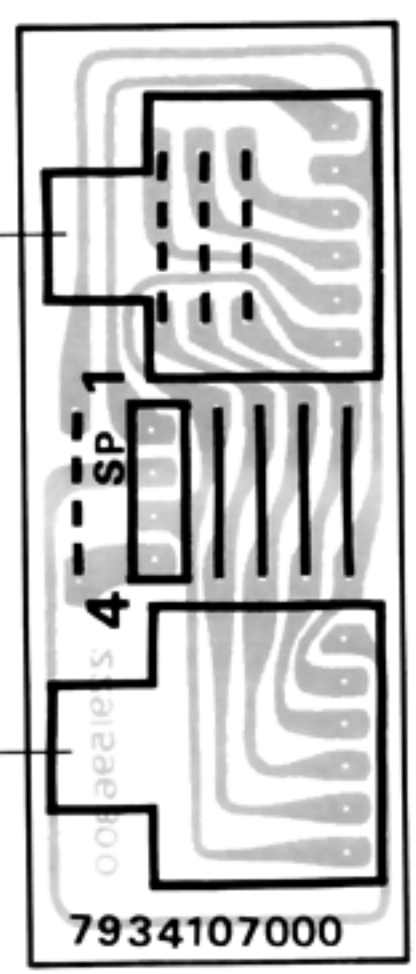
VR1 - 9, 14 - 33	S2518G401-50KB (L=20mm)	13339957
VR10 - 13, 34 - 39	K161M0Z1A-50KB (L=22.5mm)	13219371
SW1, 17, 19	SPQ009G	13129351
SW4, 6, 12 - 16, 23	SSY022-12PN	13159149
SW3, 5, 7, 9, 10, 20 - 22	SSY023-12PN	13159336
SW2, 8, 11, 18	SSY024-12PN	13159508



SWITCH BOARD-2

7934107000 (pcb 22915963)

Switch SBU101-5N (L=25mm) (13119409)



DA00 (1ae-108-809)
M6C80 bVMEC 80VD

22915963

00020146CT

1034102000

Roland

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22

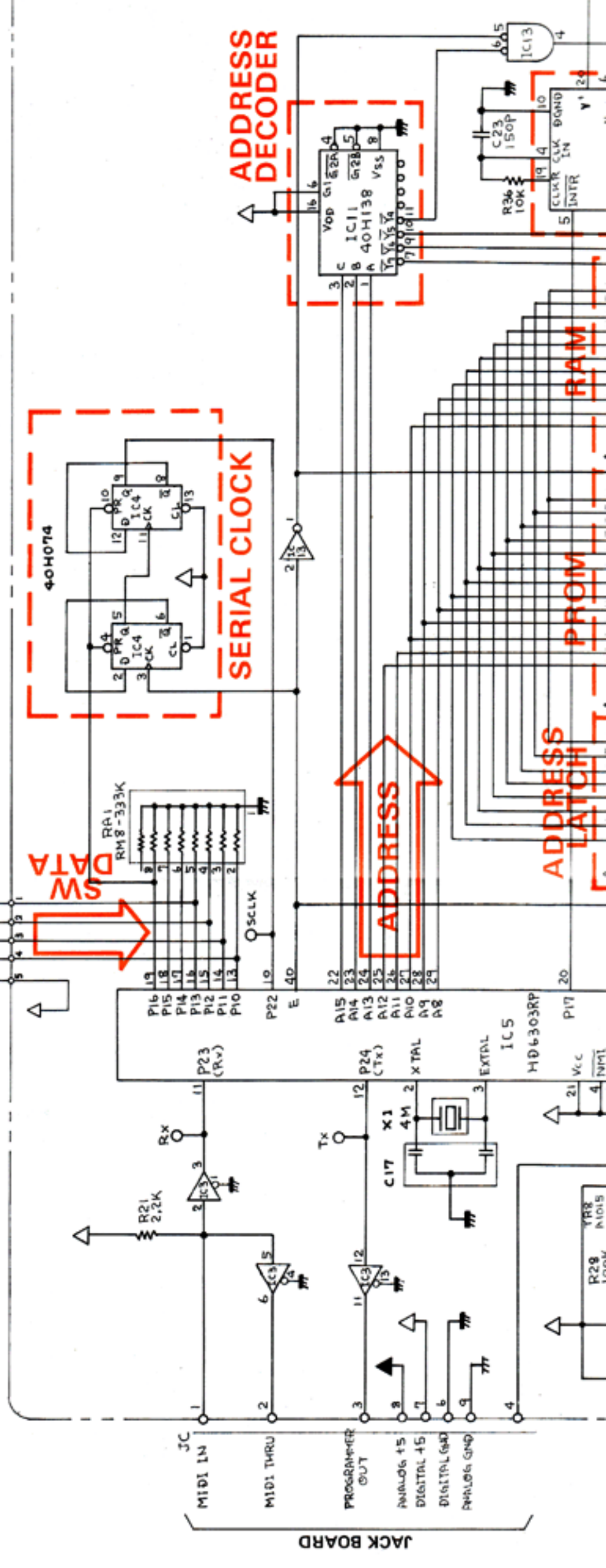
CPU BOARD

SWITCH BOARD-1

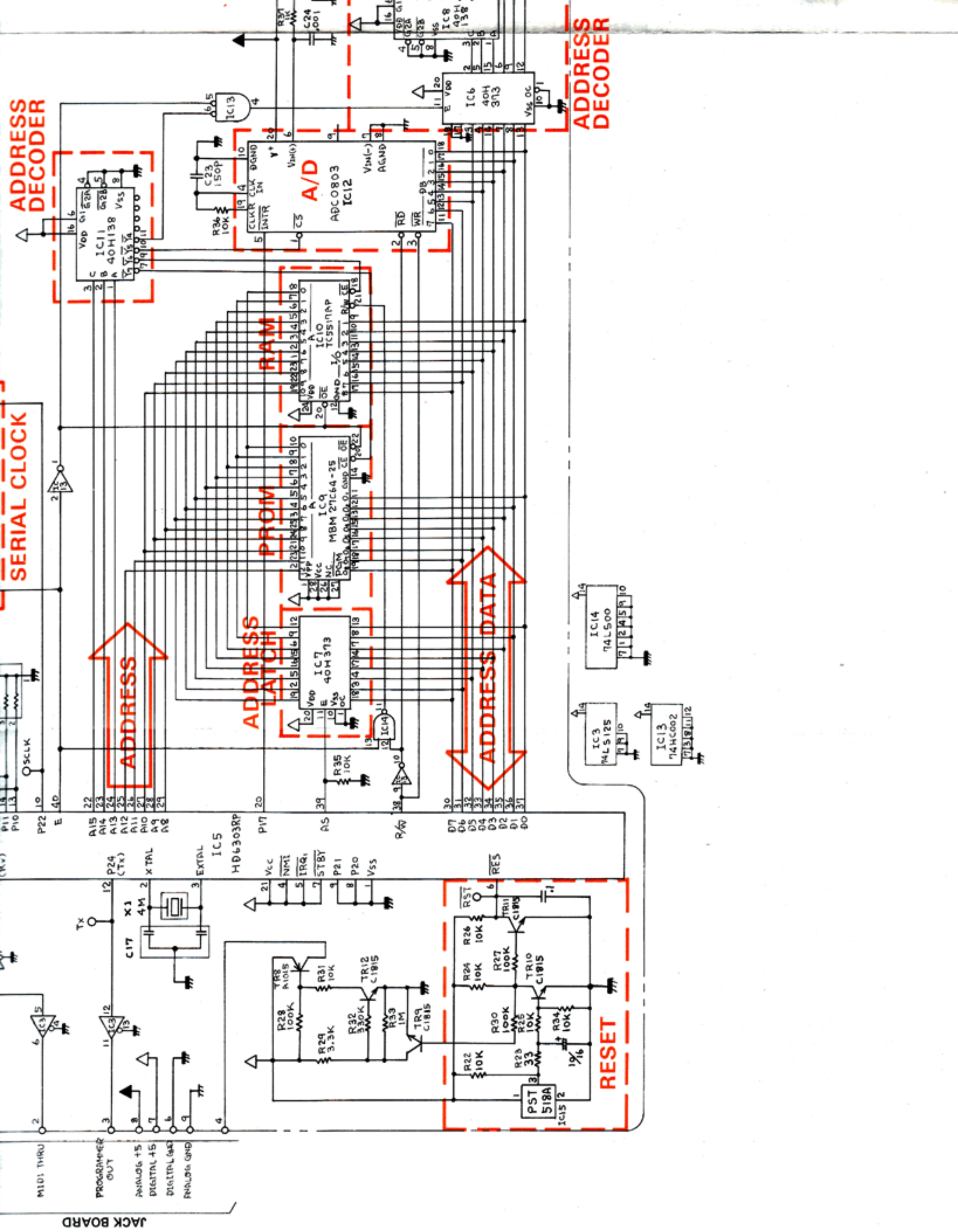
(O = ON)

	T1	T2	T3	T4
1				
2	0			
3		0		
4	0	0		
5			0	
6	0		0	
7		0	0	
8	0	0	0	
9				0
10	0			0
11		0		0
12	0	0		0
13			0	0
14	0		0	0
15		0	0	0
16	0	0	0	0

SWITCH BOARD 1
(PROGRAMMER CH.)



A B C D E F G H I J K L M N



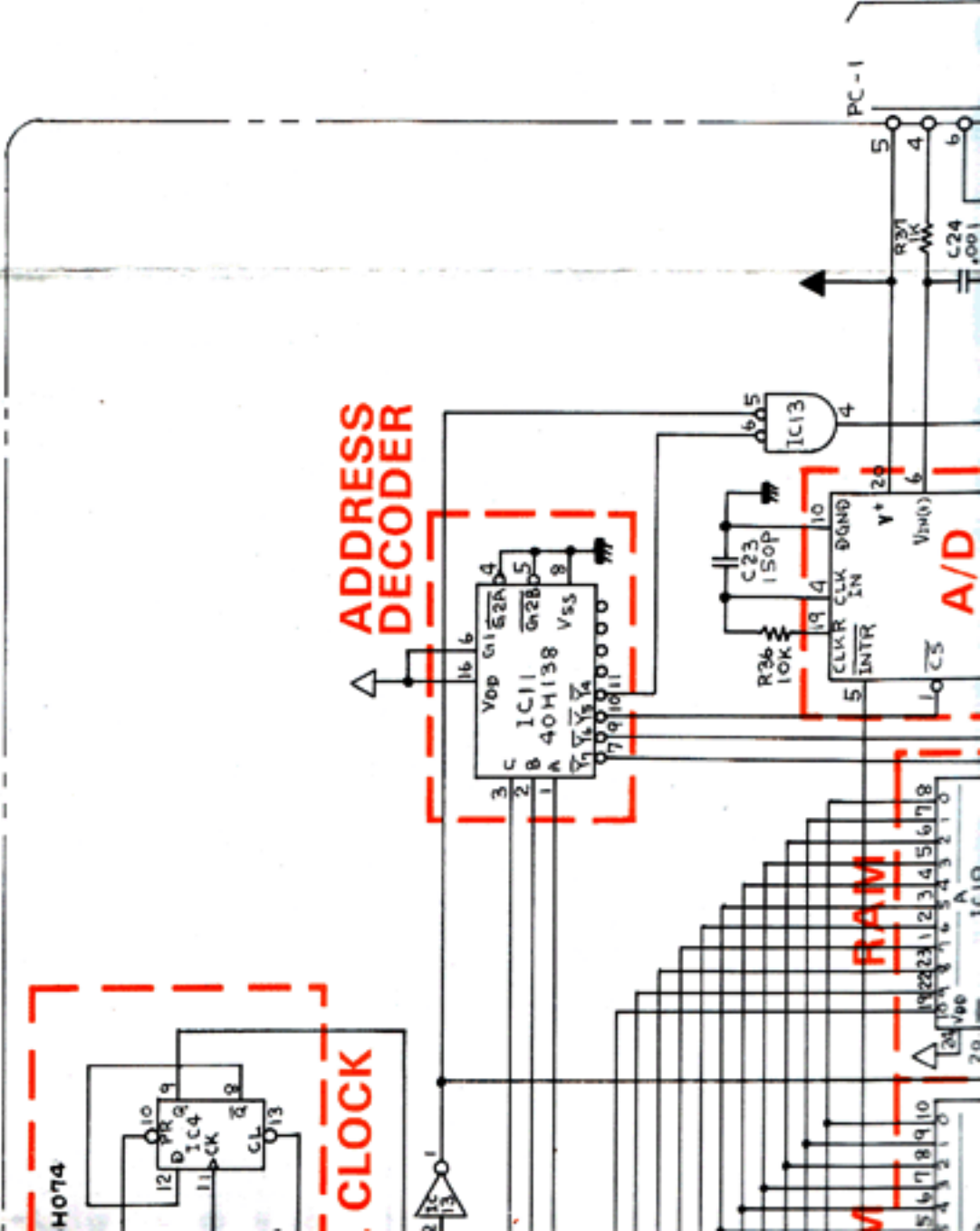
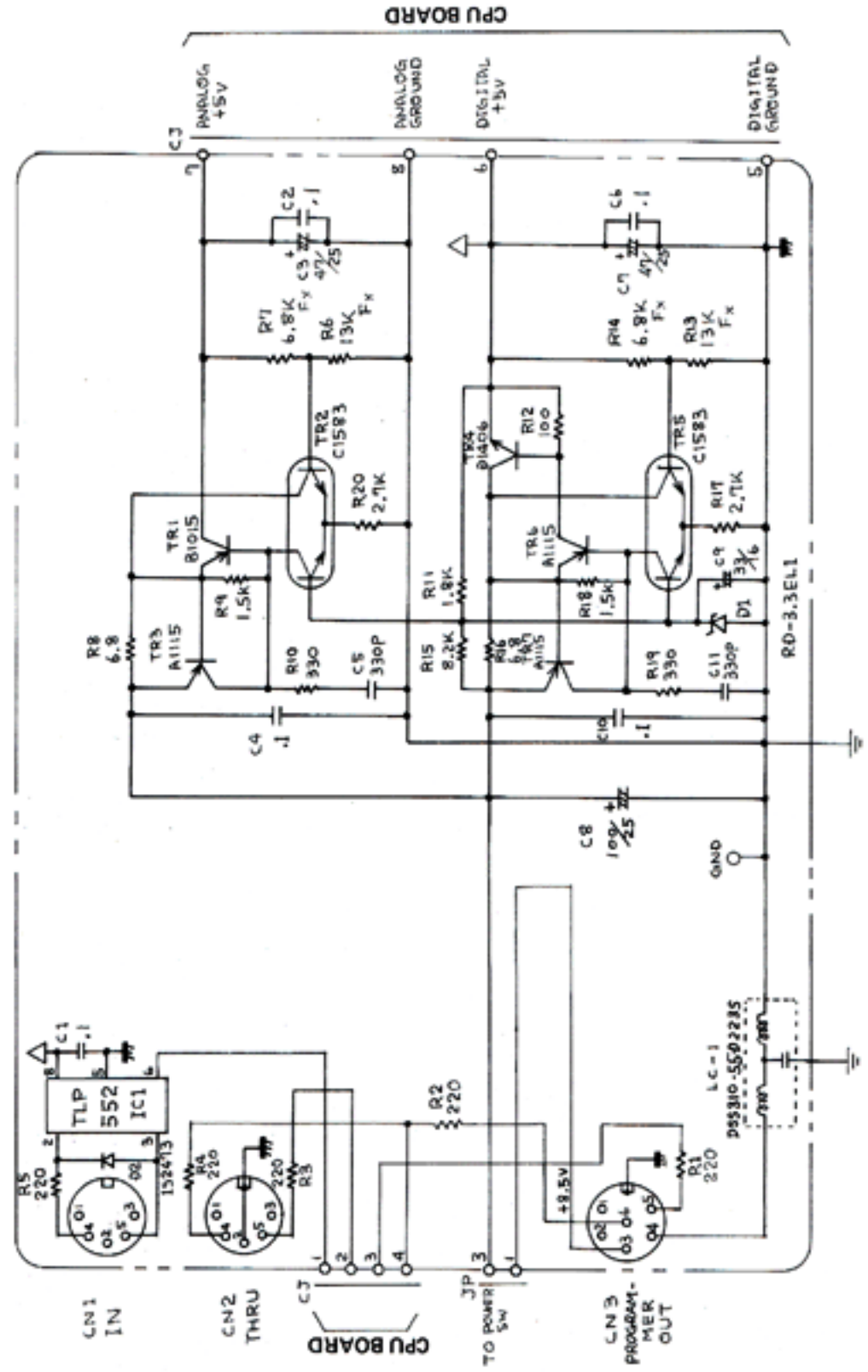
K L M N O P Q R S T U V W X Y Z

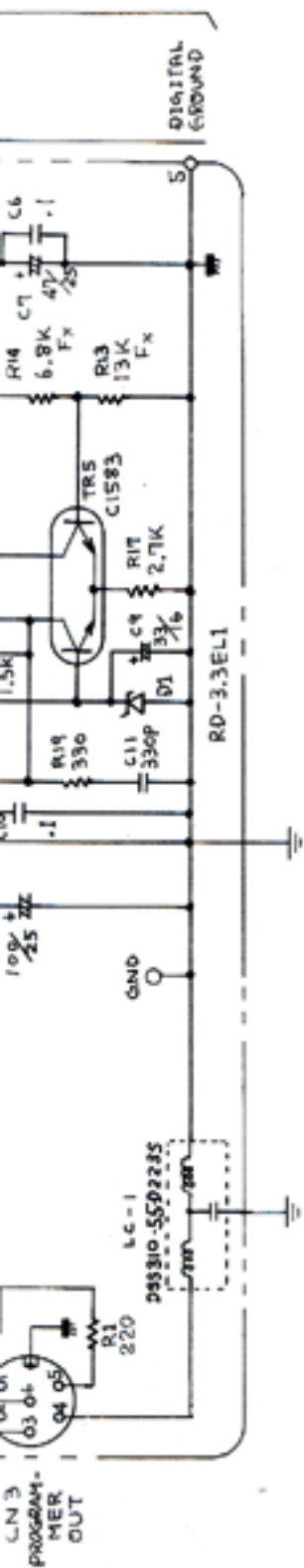
14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35

(IO - ON)

T1	T2	T3	T4
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

JACK BOARD



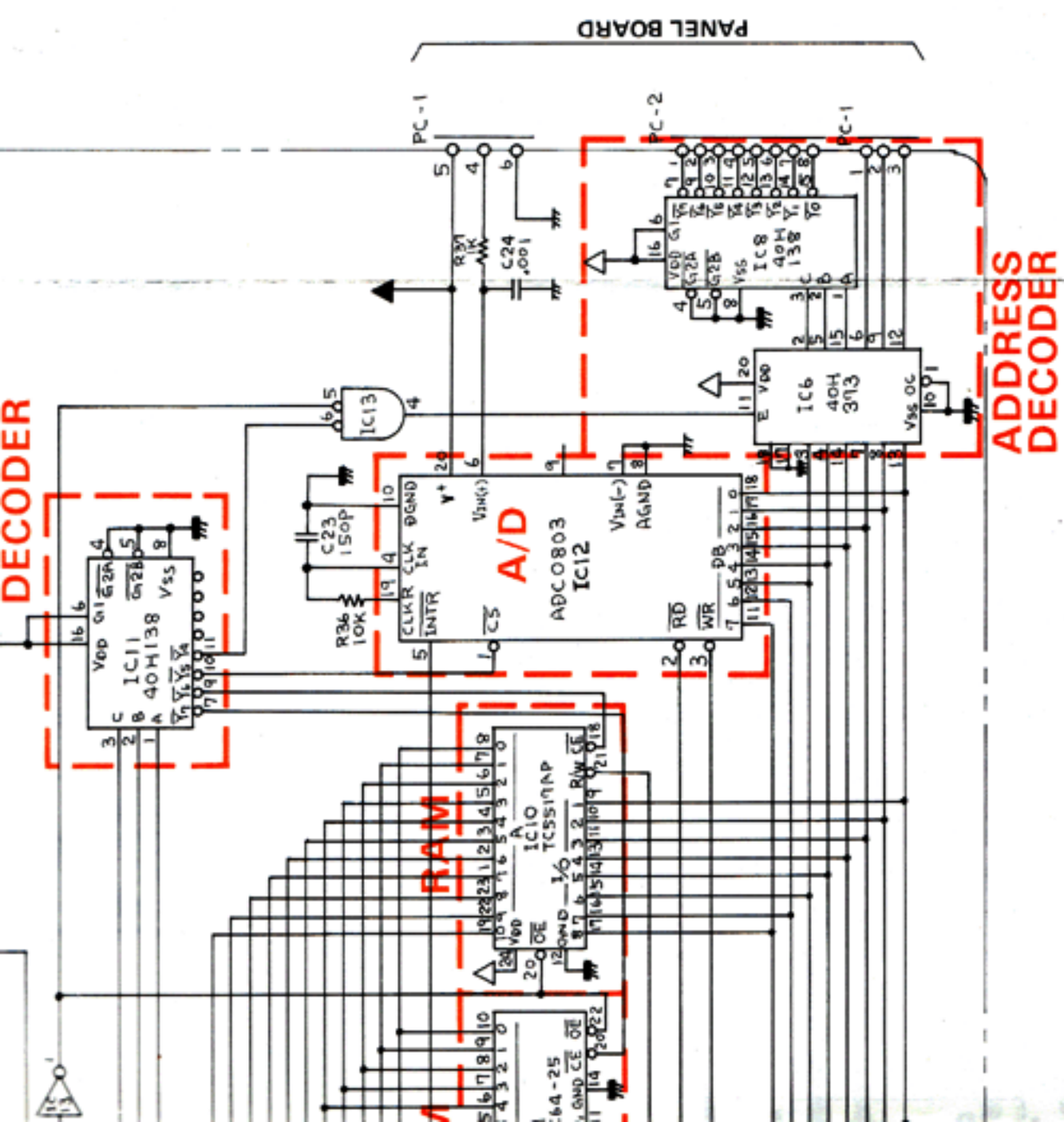


**PROM REVISIONS INFORMATION
(SN490900-UP)**

CHANGES:
 CPU BOARD (IC 9) MBM27C-64-671 Ver.4.0 to
 MBM27C-64-671 Ver.5.0

In rare cases the MPG-80 can send out edited data even when none of the Panel Controls are being reset.

This is due to a noise being induced on A/D circuitry. PROM of version 5.0 eliminates this problem by providing higher noise immunity for the circuits.

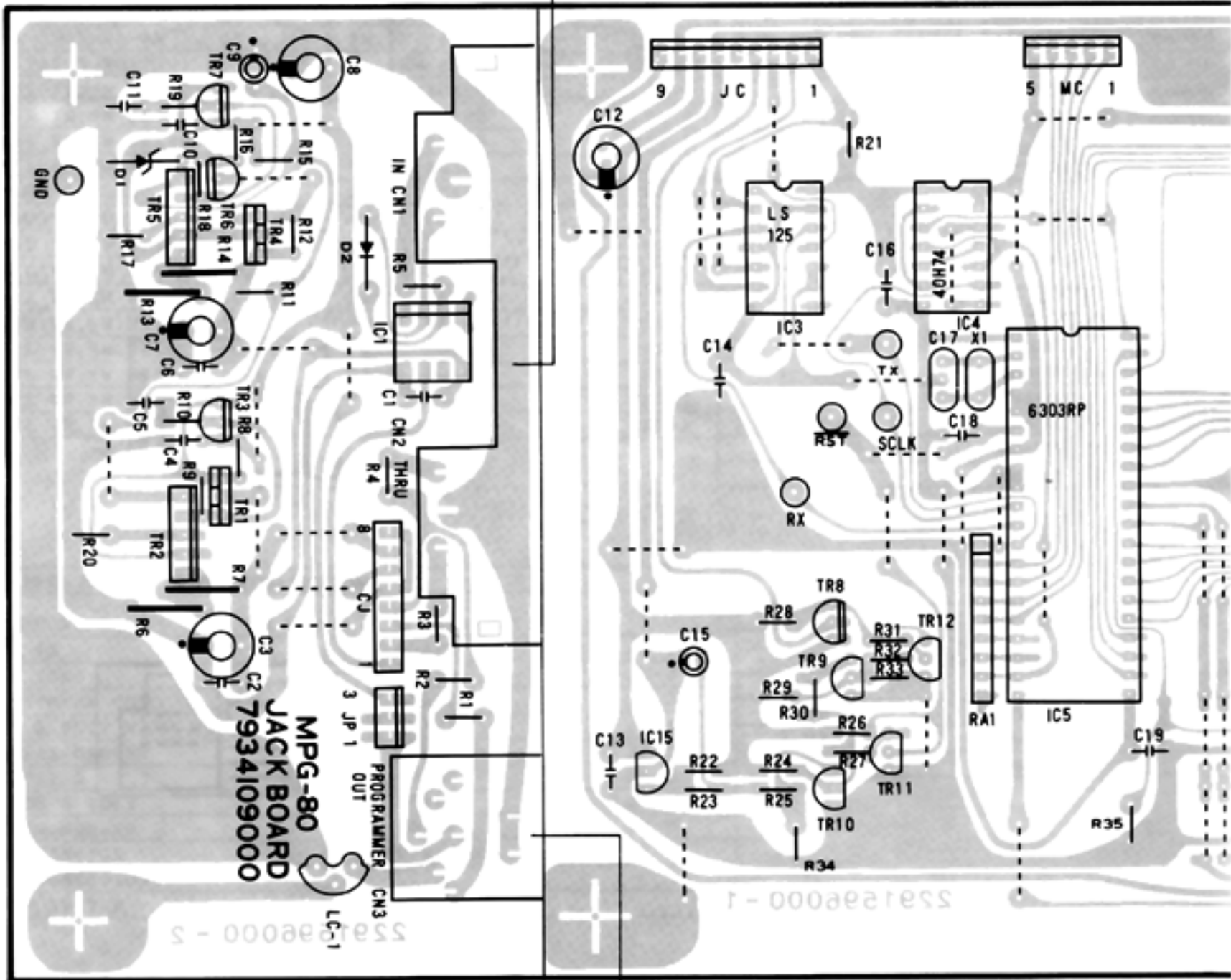


1 2 3 4 5 6 7 8 9 10 11 12 13 14

A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
S
T
U
V
W
X
Y
Z

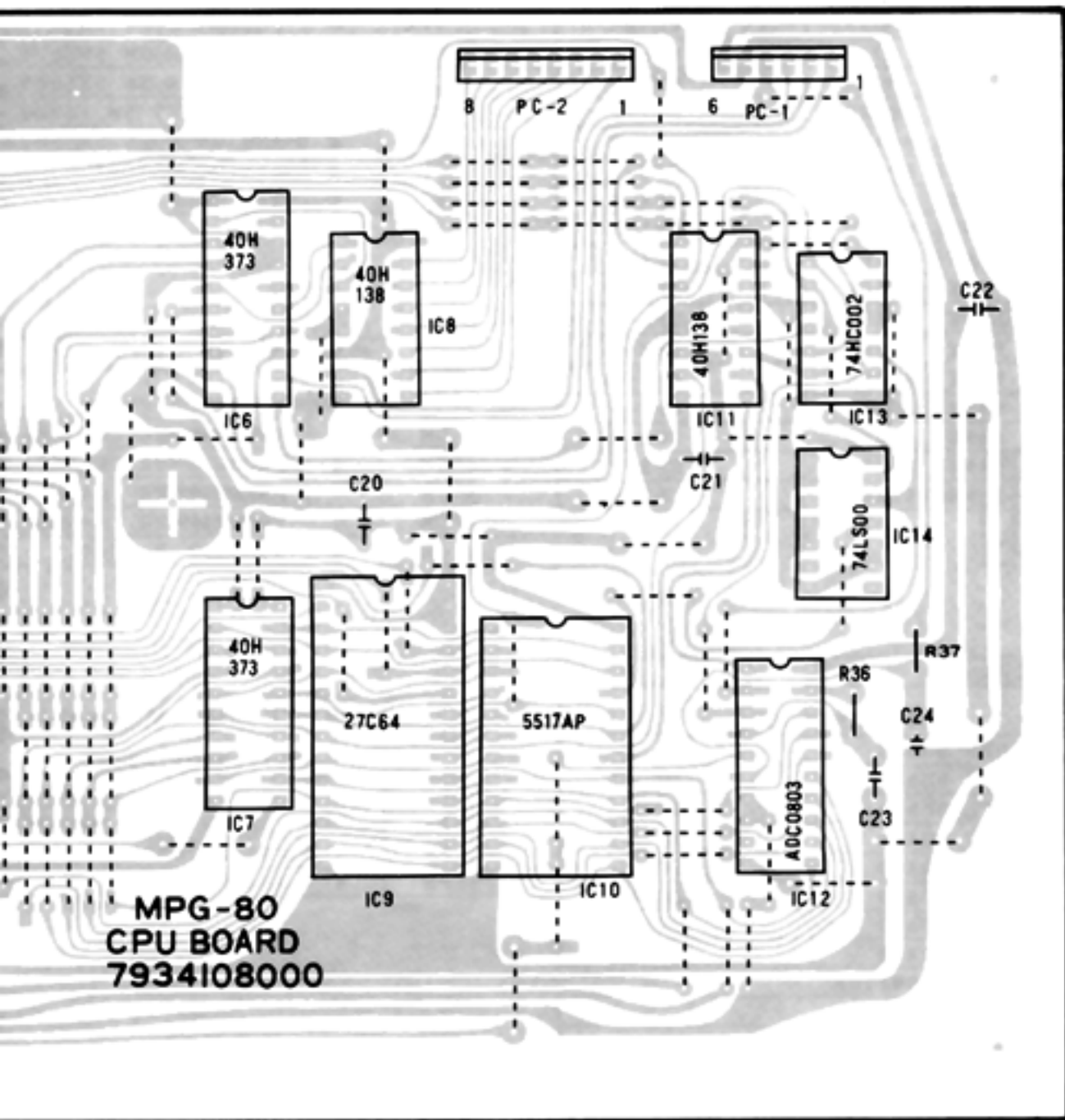
CPU BOARD 7934108000 JACK BOARD 7934109000 (pcb 22915960)

MIDI 2-NS (13429628)



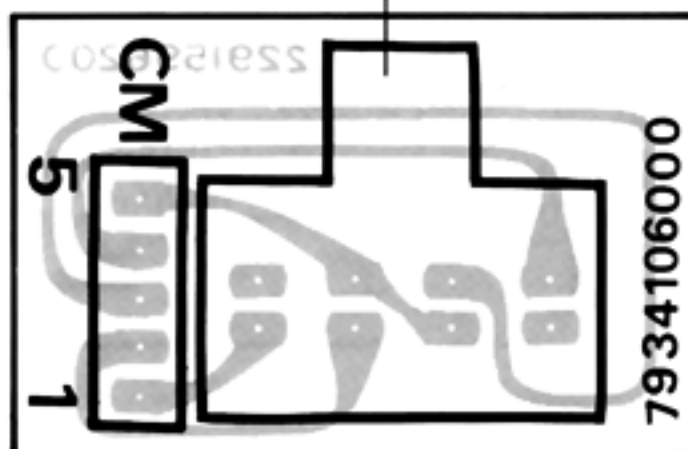
TCS5360-01-1111 (13429621)

15 16 17 18 19 20 21 22 23 24 25 26 27 28 29



SWITCH BOARD-1
7934106000 (pcb 22915962)

Switch SRS101G (L=25mm) (13119807)



WIRING DATA TABLE

CPU BOARD				
CNCTR	PIN No.	DESCRIPTION		
JC	1	MIDI IN	JACK BOARD	CJ-1
JC	2	MIDI THRU	JACK BOARD	CJ-2
JC	3	PROGRAMMER OUT	JACK BOARD	CJ-3
JC	4	MIDI 5 VOLT WITH RESET	JACK BOARD	CJ-4
JC	5	NON CONNECTION		
JC	6	DIGITAL GROUND	JACK BOARD	CJ-5
JC	7	DIGITAL 5 VOLT	JACK BOARD	CJ-6
JC	8	ANALOG 5 VOLT	JACK BOARD	CJ-7
JC	9	ANALOG GROUND	JACK BOARD	CJ-8
MC	1	MIDI CHANNEL SW D3	SWITCH BOARD-1	CM-1
MC	2	MIDI CHANNEL SW D2	SWITCH BOARD-1	CM-2
MC	3	MIDI CHANNEL SW D1	SWITCH BOARD-1	CM-3
MC	4	MIDI CHANNEL SW D0	SWITCH BOARD-1	CM-4
MC	5	DIGITAL 5 VOLT	SWITCH BOARD-1	CM-5
PC1	1	PANEL VR, SW SELECT BUS D2	PANEL BOARD	CP1-1
PC1	2	PANEL VR, SW SELECT BUS D1	PANEL BOARD	CP1-2
PC1	3	PANEL VR, SW SELECT BUS D0	PANEL BOARD	CP1-3
PC1	4	PANEL VR, SW ANALOG DATA	PANEL BOARD	CP1-4
PC1	5	ANALOG 5 VOLT	PANEL BOARD	CP1-5
PC1	6	ANALOG GROUND	PANEL BOARD	CP1-6
PC2	1	PANEL VR, SW SELECT 3B-3F	PANEL BOARD	CP2-1
PC2	2	PANEL VR, SW SELECT 30-37	PANEL BOARD	CP2-2
PC2	3	PANEL VR, SW SELECT 28-2F	PANEL BOARD	CP2-3
PC2	4	PANEL VR, SW SELECT 20-27	PANEL BOARD	CP2-4
PC2	5	PANEL VR, SW SELECT 18-1F	PANEL BOARD	CP2-5
PC2	6	PANEL VR, SW SELECT 10-17	PANEL BOARD	CP2-6
PC2	7	PANEL VR, SW SELECT 08-0F	PANEL BOARD	CP2-7
PC2	8	PANL VR, SW SELECT 00-07	PANEL BOARD	CP2-8

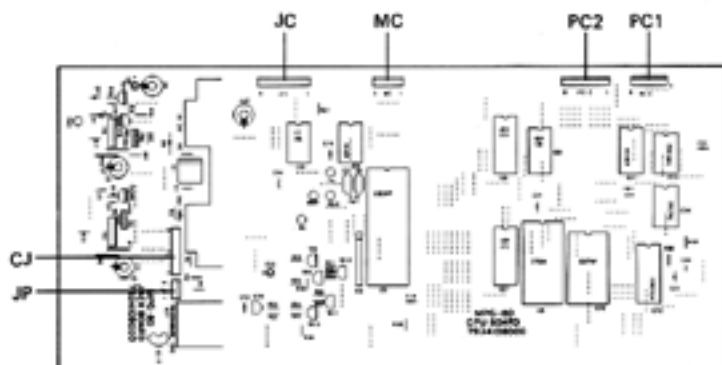
PANEL BOARD		
CNCTR	PIN No.	DESCRIPTION
CP1	1	PANEL VR, SW SELECT I
CP1	2	PANEL VR, SW SELECT
CP1	3	PANEL VR, SW SELECT
CP1	4	PANEL VR, SW ANALOG I
CP1	5	ANALOG 5 VOLT
CP1	6	ANALOG GROUND
CP2	1	PANEL VR, SW SELECT
CP2	2	PANEL VR, SW SELECT
CP2	3	PANEL VR, SW SELECT
CP2	4	PANEL VR, SW SELECT
CP2	5	PANEL VR, SW SELECT
CP2	6	PANEL VR, SW SELECT
CP2	7	PANEL VR, SW SELECT
CP2	8	PANEL VR, SW SELECT
SP	1	OCT SHIFT SW (SW24)
SP	2	ASSIGN MODE SW (SW25)
SP	3	ANALOG GROUND
SP	4	ANALOG 5 VOLT

SWITCH BOARD-		
CNCTR	PIN No.	DESCRIPTION
CM	1	PROGRAMMER CHENNEL S
CM	2	PROGRAMMER CHANNEL S
CM	3	PROGRAMMER CHANNEL S
CM	4	PROGRAMMER CHANNEL S
CM	5	DIGITAL 5 VOLT

JACK BOARD				
CNCTR	PIN No.	DESCRIPTION	DESTINATION	
CJ	1	MIDI IN	CPU BOARD	JC-1
CJ	2	MIDI THRU	CPU BOARD	JC-2
CJ	3	PROGRAMMER OUT	CPU BOARD	JC-3
CJ	4	MIDI 5 VOLT WITH RESET	CPU BOARD	JC-4
CJ	5	DIGITAL GROUND	CPU BOARD	JC-5
CJ	6	DIGITAL 5 VOLT	CPU BOARD	JC-6
CJ	7	ANALOG 5 VOLT	CPU BOARD	JC-7
CJ	8	ANALOG GROUND	CPU BOARD	JC-8
JP	1	POWER SWITCH	POWER SWITCH	
JP	2	NON CONNECTION		
JP	3	POWER SWITCH	POWER SWITCH	

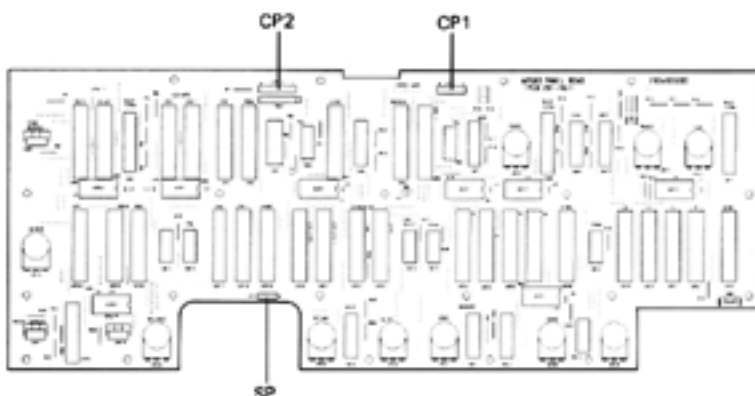
SWITCH BOARD-		
CNCTR	PIN No.	DESCRIPTION
PS	1	OCT SHIFT SW (SW24)
PS	2	ASSIGN MODE SW (SW25)
PS	3	ANALOG GROUND
PS	4	ANALOG 5 VOLT

CPU/JACK BOARD



DESTINATION		
US D2	CPU BOARD	PC1-1
US D1	CPU BOARD	PC1-2
US D0	CPU BOARD	PC1-3
ATA	CPU BOARD	PC1-4
	CPU BOARD	PC1-5
	CPU BOARD	PC1-6
3B-3F	CPU BOARD	PC2-1
30-37	CPU BOARD	PC2-2
2B-2F	CPU BOARD	PC2-3
20-27	CPU BOARD	PC2-4
1B-1F	CPU BOARD	PC2-5
10-17	CPU BOARD	PC2-6
0B-0F	CPU BOARD	PC2-7
00-07	CPU BOARD	PC2-8
COMMON	SWITCH BOARD-2	PS-1
COMMON	SWITCH BOARD-2	PS-2
	SWITCH BOARD-2	PS-3
	SWITCH BOARD-2	PS-4

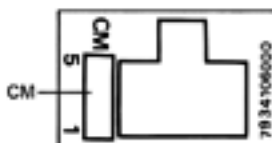
PANEL BOARD



1

DESTINATION		
W D3	CPU BOARD	MC-1
W D2	CPU BOARD	MC-2
W D1	CPU BOARD	MC-3
W D0	CPU BOARD	MC-4
	CPU BOARD	MC-5

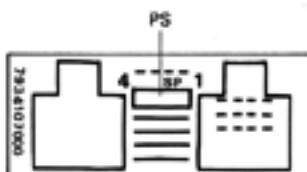
SWITCH BOARD-1



2

DESTINATION		
COMMON	PANEL BOARD	SP-1
COMMON	PANEL BOARD	SP-2
	PANEL BOARD	SP-3
	PANEL BOARD	SP-4

SWITCH BOARD-2



MPG-80 PARTS LIST

CHASSIS

22815437	Chassis	
22125524	Rack mount angle	(left,right)

PANEL

22215427	Panel	
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HOLDER

22195494	Holder	(MIDI CH. rotary)
22195495	Holder	(5-contact rotary)
22195475	LED Holder	

COVER

22245449	Cover	(slider)
22245450	Cover	(slider)

KNOB,BUTTON

22475329	Knob	(slider)
22470259	Knob	(rotary)-orange
22470262	Knob	(rotary)-blue
22470261	Knob	(rotary)-yellow
22475372	Knob	(slide switch)
22475598	Button	(Push switch)

SWITCH

13129134	SDJ-1S (lead terminal)	(power switch)
13159149	SSY022-12PN	(2-contact slide switch)
13159336	SSY023-12PN	(3-contact slide switch)
13159508	SSY024-12PN	(4-contact slide switch)
13129351	SPQ009G	(tact switch)
13119807	SRS101G(L=25mm)	(16-contact rotary switch)
13119409	SBU101-5N(L=25mm)	(5-contact rotary switch)

PCB

7934108000	CPU BOARD	(PCB 22915960)
7934109000	JACK BOARD	(PCB 22915960)
7934105000	PANEL BOARD	(PCB 22915961)
7934106000	SWITCH BOARD-1	(PCB 22915962)
7934107000	SWITCH BOARD-2	(PCB 22915963)

CONNECTOR

13429628	MIDI 2-NS	(5P-DIN x 2 Socket)
13429621	TCS5360-01-1111	(6P-DIN Socket)
13439246	5129-04A	
13439119	5045-03A	
13439121	5045-05A	
13439122	5045-06A	
13439124	5045-08A	
13439125	5045-09A	

LED

15029152	GL-9HD12	(red)
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PHOTO COUPLER

15229706 TLP552

DIODE

15019103 1S2473
 15019664 RD-3.3EL-1 (zenner)

TRANSISTOR

15119113 2SA1015 GR
 15119129 2SA1115 E
 15119814 2SB1015 O
 151291300G 2SC1583 G
 15129114 2SC1815 GR
 15129827 2SD1406 O

IC

15179186 HD6303RP (C-mos CPU)
 15179671 M8M27C-64-671 (C-mos ROM MPG-80)
 15179316 TC5517AP (static RAM)
 15219130 ADC0803LCN (8-bit A/D)
 15159113H0 HD14051BP (single 8-channel switch)
 15169516 TC74HC02 (quad 2-input NOR)
 15159510 TC40H074P (dual D-type FF)
 15159506 TC40H138P (3to8 decoder)
 15159508 TC40H373P (octal D-type latch)
 15169316 74LS125 (quadruple bus buffer)
 15169301 74LS00 (quadruple 2-input NAND)
 15219139 PST518A (reset IC)

CERAMIC OSC

12389715 KMFC1002T (4 MHz)

RESISTOR

13769169K0 SN14K2EF6.8K (6.8K metalized)
 13769176K0 SN14K2EF13K (13K metalized)

RESISTOR ARRAY

13919142 RGS08-104K
 13919127 RMB-333K

FILTER

13529105 DSS310-55D223S (EMI filter)

POTENTIOMETER

13219371 K161M0Z1A-50KB(L=22.5mm) (rotary)
 13339957 S2518G401-50KB(L=20mm) (slide)

IC SOCKET

13429525 IS28B0BCT (IC 28 pin)

CABLE

23483154 6-P DIN cable

OTHER

22150512 Standoff 3x6mm

