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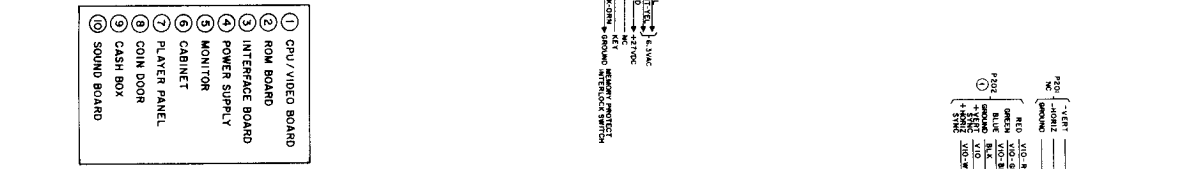
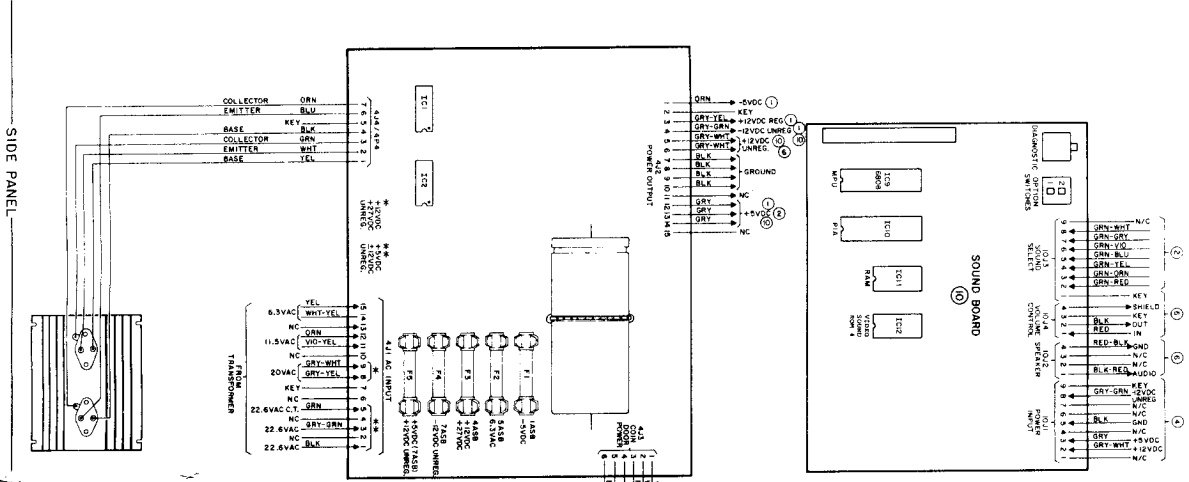
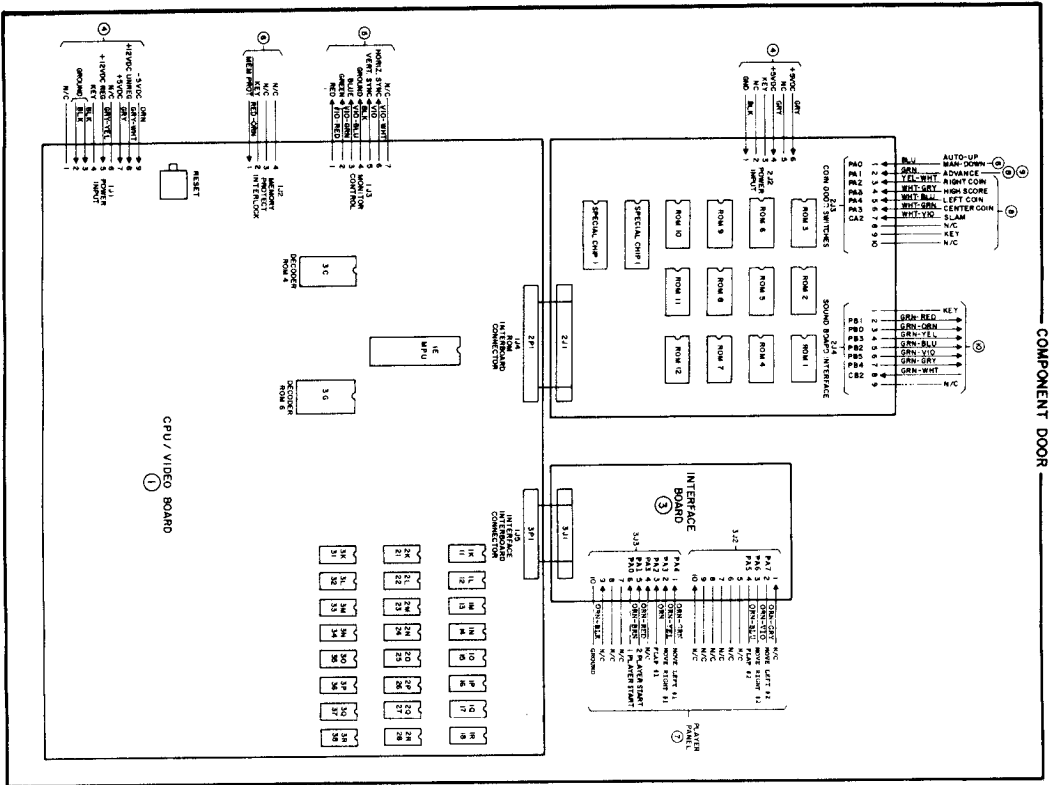
Williams® 
ELECTRONICS, INC.

3401 N. California Ave.
Chicago, IL 60618
Cable Address: WILCOIN, CHICAGO
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INTERBOARD WIRING



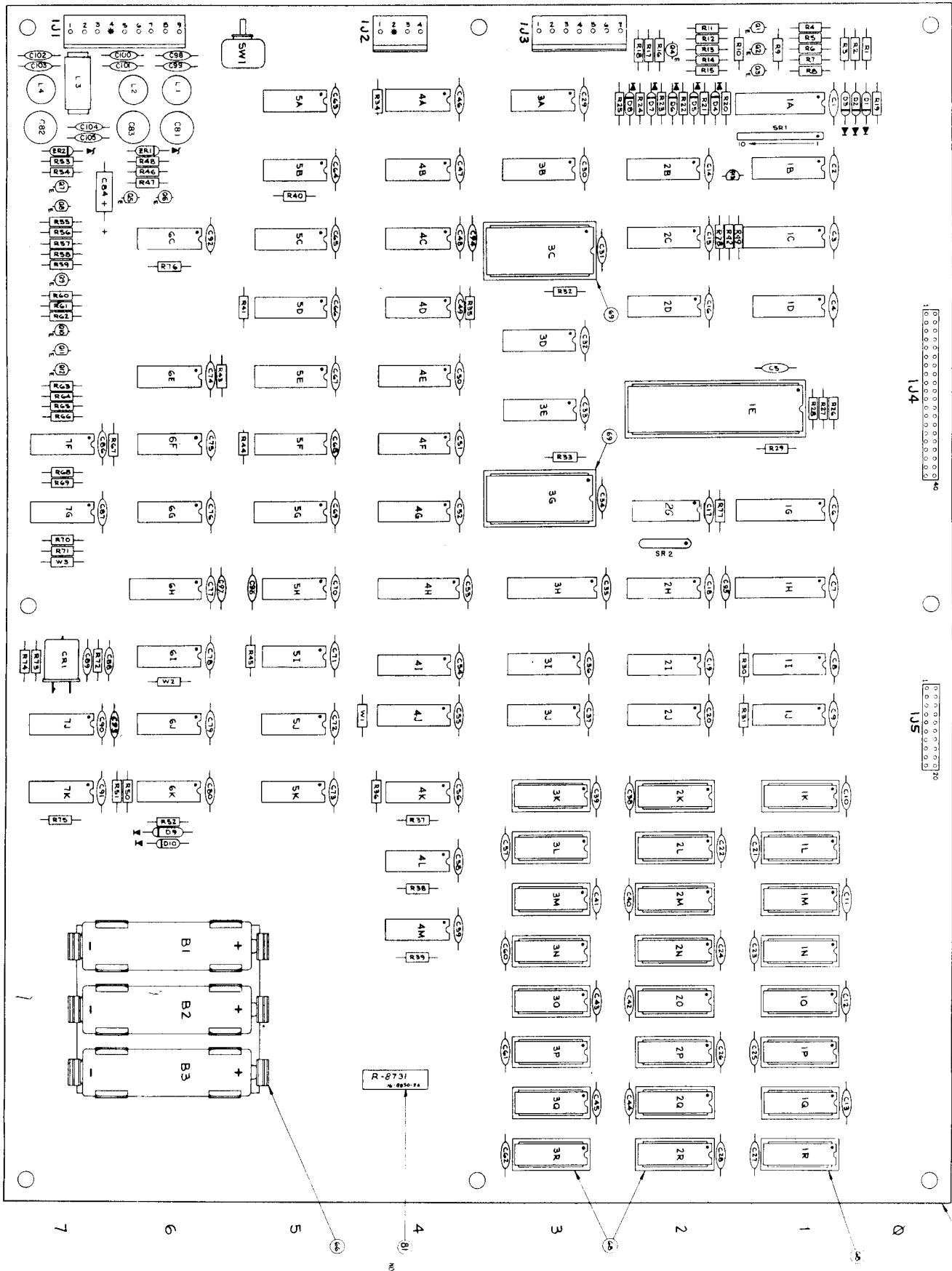
C-8808 Heat sink assembly

Part No.	Description
2N8057	Transistor, NPN
5161-09582	2N3955, Transistor, NPN
5705-08884	Heat Sink
5707-08885	Socket, Pkg
4009-01003-10	Machine Screw 8-32x3/8"

A B C D E F G H I J K L M N O P Q R

104

105



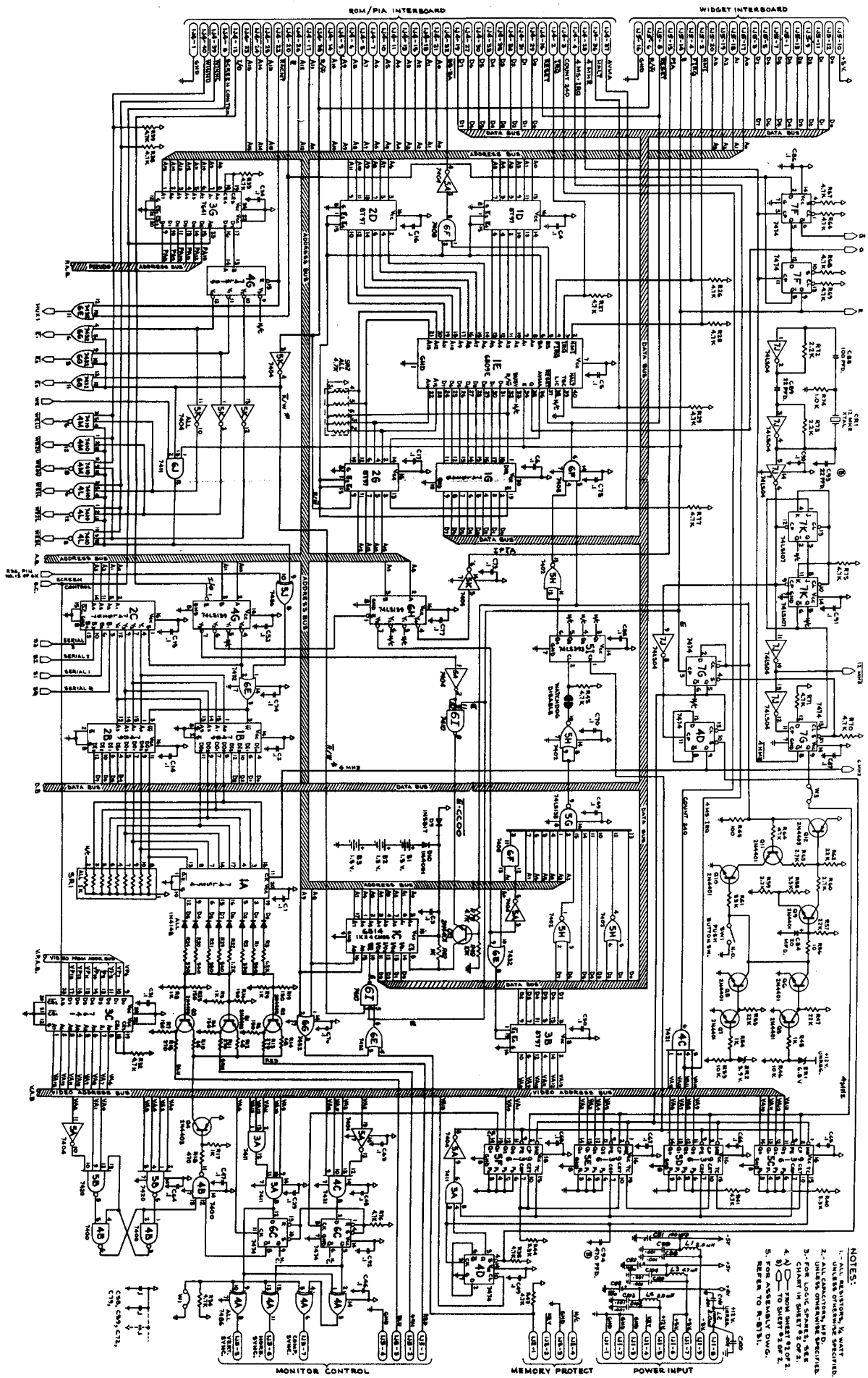
NOTE LABEL LOCATION IS PERMANENT

ITEM NO.	PART NO.	PART DESIGNATION	DESCRIPTION	REQ'D NO.
74	5791-09497-00	1J3	7 PIN HEADER 09-65-1071	1
75	5791-09027-00	1J1	9 PIN HEADER 09-65-1091	1
76	5019-09669-00	SR1	RESISTOR, 1K OHM 10 PIN SIP	1
77	5010-09534-00	W1, W2, W3	RESISTOR, C.F. 0 OHM 1/4 WATT	3
78	5340-09689-00	1C	5114 1K X 4 CMOS STATIC RAM	1
	5340-09667-00		6514 1K X 4 CMOS STATIC RAM	0
79	5281-09483-00	1B, 2B	74LS189 16 X 4 RAM	0
	5280-09625-00		74LS9 16 X 4 RAM	0
	5282-09716-00		74S189 16 X 4 RAM	0
	5281-09715-00		74LS289 16 X 4 RAM	2
	5282-09717-00		74S289 16 X 4 RAM	0
80	5641-09371-00	SW1	PUSH BUTTON SW. SPST	0
	5641-09312-00		PUSH BUTTON SW. DPDT MOM.	1
81	16-8850-26		LABEL PCB ASSY I.D.	1
82				
83	5019-09786-00	SR2	SIP 4.7KΩ 5R 6 PIN 5% 125 W/R @ 70°C	1
84	5281-09856-00	1H, 3H, 4H	OCTAL LATCH 74LS373	3
85				
47	5010-09035-00	R64	RESISTOR, C.F. 47K OHM 5% 1/4 W.	1
48	5551-09822-00	L3	COIL, 4.74H, 3A	1
49	5010-09001-00	R2, R21, R24	RESISTOR, C.F. 330 OHM 5% 1/4 W.	3
50	5010-09039-00	R56	RESISTOR, C.F. 10 OHM 5% 1/4 W.	1
51	5043-09491-00	C89, C93	CAPACITOR, AXIAL 22 PFD. 1K V. ±10%	2
52	5043-09492-00	C88	CAPACITOR, AXIAL 100 PFD. 50 V. ±10%	1
53	5040-09545-00	C84	CAPACITOR, AXIAL 22 MFD. 10 V. ±20%	1
54	5043-09065-00	C94 THRU C97	CAPACITOR, AXIAL 470 PFD. 50 V. XTR ±20%	4
55	5043-08996-00	SEE NOTE #3	CAPACITOR, AXIAL .1 MFD. 50 V. ±20%	85
56	5040-09421-00	C81, C82, C83	CAPACITOR, RADIAL 100 MFD. 25V. ±30-10%	3
57	5075-09059-00	ZR2	1N5990A 3.9V. ZENER DIODE	1
58	5075-09018-00	ZR1	1N5996A 6.8V. ZENER DIODE	1
59	5070-08919-00	D1, D2, D3, D4, D5, D6, D7, D8	1N4148 DIODE, SILICON	8
60	5070-09266-00	D9	1N5817 DIODE, SILICON	1
61	5160-08938-00	Q5, Q6, Q7, Q8, Q9, Q10, Q11, Q13	2N4401, TO-92 TRANSISTOR, NPN	8
62	5190-09016-00	Q1, Q2, Q3, Q4, Q12	2N4403, TO-92 TRANSISTOR, PNP	5
63	5520-09495-00	CR1	12 MHZ CRYSTAL	1
64	5043-09845-00	C98-C105	CAPACITOR, AXIAL 1000 PFD 50V ±20%	8
65	5880-09022-00	B1, B2, B3	BATTERY ALKALINE 1.5V. (AA)	3
66	5881-09021-00		BATTERY HOLDER *171	1
67	5700-09628-00		14-PIN IC SOCKET	0
68	5700-09006-00		16-PIN IC SOCKET	24
69	5700-09004-00		24-PIN IC SOCKET	2
70	5700-08985-00		40-PIN IC SOCKET	1
71	5791-09437-00	1J5	20 PIN RIBBON CABLE HEADER	1
72	5791-09349-00	1J4	40 PIN RIBBON CABLE HEADER	1
73	5791-09028-00	1J2	4 PIN HEADER 09-65-1041	1

NOTES:

- 411G: 1K, 1L, 1M, 1N, 1O, 1P, 1Q, 1R, 2K, 2L, 2M, 2N, 2O, 2P, 2Q, 2R, 3K, 3L, 3M, 3N, 3O, 3P, 3Q, 3R
- 4.7K Ω RESISTOR:
R26, R27, R28, R29, R32, R33, R35, R36, R37, R38, R39, R41, R43, R45, R50, R51, R52, R66, R67, R68, R69, R70, R71, R75, R34, R76, R77, R78
- .1 MFD. CAPACITORS:
C1, C2, C3, C4, C5, C6, C7, C8, C9, C10, C11, C12, C13, C14, C15, C16, C17, C18, C19, C20, C21, C22, C23, C24, C25, C26, C27, C28, C29, C30, C31, C32, C33, C34, C35, C36, C37, C38, C39, C40, C41, C42, C43, C44, C45, C46, C47, C48, C49, C50, C51, C52, C53, C54, C55, C56, C57, C58, C59, C60, C61, C62, C63, C64, C65, C66, C67, C68, C69, C70, C71, C72, C73, C74, C75, C76, C77, C78, C79, C80, C86, C87, C90, C91, C92
- FOR SCHEMATIC REFER TO 16-8809

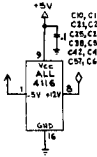
BILL OF MATERIAL				
ITEM NO.	PART NO.	PART DESIGNATION	DESCRIPTION	REQ'D NO.
1	5770-09656-00		BARE P.C. BOARD REV. 0	1
2	5280-09073-00	4B	7400 QUAD 2-INPUT NAND	1
3	5280-08948-00	5H	7402 QUAD 2-INPUT NOR	1
4	5281-09215-00	7J	74LS04 HEX. INVERTER	1
5	5280-09013-00	5A, 5K	7404 HEX. INVERTER	2
6	5280-08973-00	6F	7408 QUAD AND	1
7	5280-09011-00	4L, 4M, 6I	7410 TRIPLE 3-INPUT NAND	3
8	5280-09475-00	3A, 6J	7411 TRIPLE 3-INPUT AND	2
9	5280-09530-00	5B	7420 DUAL 4-INPUT NAND	1
10	5280-09476-00	4C	7421 DUAL 4-INPUT AND	1
11	5280-09477-00	6E, 6G	7432 QUAD 2-INPUT OR	2
12	5280-09478-00	4D, 4K, 4K, 6C, 7F, 7G	7474 DUAL-D TYPE FLIP-FLOP	6
13	5280-09479-00	4A, 5J	7486 QUAD 2-INPUT EX-OR	2
14	5281-09480-00	7K	74LS107 DUAL J-K FLIP-FLOP	1
15	5281-09532-00	5G	74LS133 13-INPUT NAND	1
16	5281-09246-00	4G, 6H	74LS139 DUAL 2 to 4 LINE DECODER	2
17	5280-09481-00	3D, 3E, 4E, 4F	74LS53 DUAL 4 to 1 DATA INVERT	4
18	5280-09668-00	1I, 1J, 2I, 2J, 3I, 3J, 4I, 4J	74166 8-BIT SHIFT REGISTER	8
19				
20	5281-09308-00	1G	74LS245 OCTAL BUSTRANSCEIVER	1
21	5281-09485-00	2C, 2H	74LS257 QUAD DATA MUX	2
22	5370-08989-00	1D, 2D, 2G, 3B	8T97 HEX. TS BUFFER	0
	5281-09385-00		74LS367 HEX BUS DRIVER	4
23	5281-09486-00	1A,	74LS374 OCTAL D-TYPE FLIP-FLOP	1
24	A-5342-09821	3C	UNIVERSAL VERT. DECODER ROM 4	1
25	A-5342-0969A	3G	UNIVERSAL HORIZ. DECODER ROM 4	1
26	5551-09848-00	L1, L2, L4	COIL, 204H, 1.5A	3
27	5281-09533-00	5I	74LS393 DUAL 4-BIT BIN. COUNTER	1
28	5340-09488-00	SEE NOTE #1	411G (450 ns ACCESS) 16K X 1 DYNAMIC RAM	24
29	5070-06258-00	D10	1N4001 DIODE	1
30	5280-09489-00	5C, 5D, 5E, 5F	9316 4-BIT BIN. COUNTER	4
31	5400-09490-00	1E	6809E MICROPROCESSOR	1
32	5010-09548-00	R10, R12, R14	RESISTOR, C.F. 68 OHM 2% 1/4 W.	3
33	5010-09036-00	R65	RESISTOR, C.F. 100 OHM 5% 1/4 W.	1
34	5010-09187-00	R4, R6, R7, R16, R19, R25	RESISTOR, C.F. 150 OHM 5% 1/4 W.	6
35	5010-09508-00	R11, R13, R15	RESISTOR, C.F. 270 OHM 2% 1/4 W.	3
36	5010-09416-00	R18	RESISTOR, C.F. 470 OHM 5% 1/4 W.	1
37	5010-08992-00	R1, R20, R23	RESISTOR, C.F. 560 OHM 5% 1/4 W.	3
38	5010-09358-00	R42, R5, R9, R7, R48, R54, R74	RESISTOR, C.F. 1K OHM 5% 1/4 W.	8
39	5010-09314-00	R3, R22	RESISTOR, C.F. 1.2 K OHM 5% 1/4 W.	2
40	5010-08998-00	R59, R72, R73	RESISTOR, C.F. 2.2 K OHM 5% 1/4 W.	3
41	5010-08997-00	R60, R63	RESISTOR, C.F. 2.7 K OHM 5% 1/4 W.	2
42	5010-08983-00	R30, R31, R40, R44, R58	RESISTOR, C.F. 3.3 K OHM 5% 1/4 W.	5
43	5010-08991-00	SEE NOTE #2	RESISTOR, C.F. 4.7 K OHM 5% 1/4 W.	1
44	5010-09034-00	R49, R46, R53	RESISTOR, C.F. 10 K OHM 5% 1/4 W.	3
45	5010-08774-00	R47, R55, R57, R62	RESISTOR, C.F. 22 K OHM 5% 1/4 W.	4
46	5010-09113-00	R61	RESISTOR, C.F. 33 K OHM 5% 1/4 W.	1



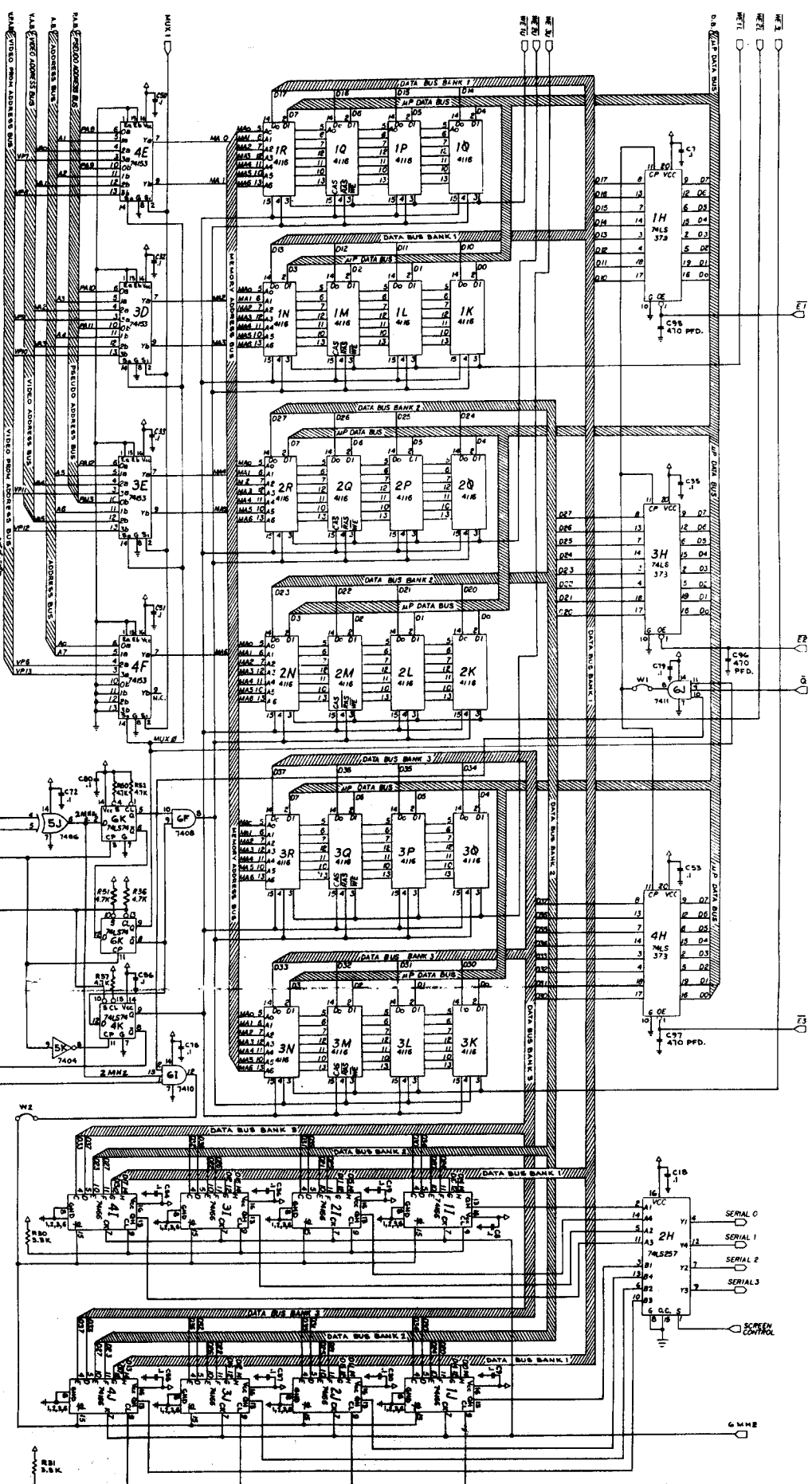
- NOTES:
1. ALL RESISTORS, % WATT UNLESS OTHERWISE SPECIFIED.
 2. UNLESS OTHERWISE SPECIFIED.
 3. FOR LOGIC SYMBOLS, SEE CHART IN SHEET 2 OF 2.
 4. FROM SHEET 2 OF 2.
 5. REFER TO R-8751 CPU BOARD ASSEMBLY DRAWING.

R-8751 CPU Board Logic Diagram
(Sheet 1 of 2)

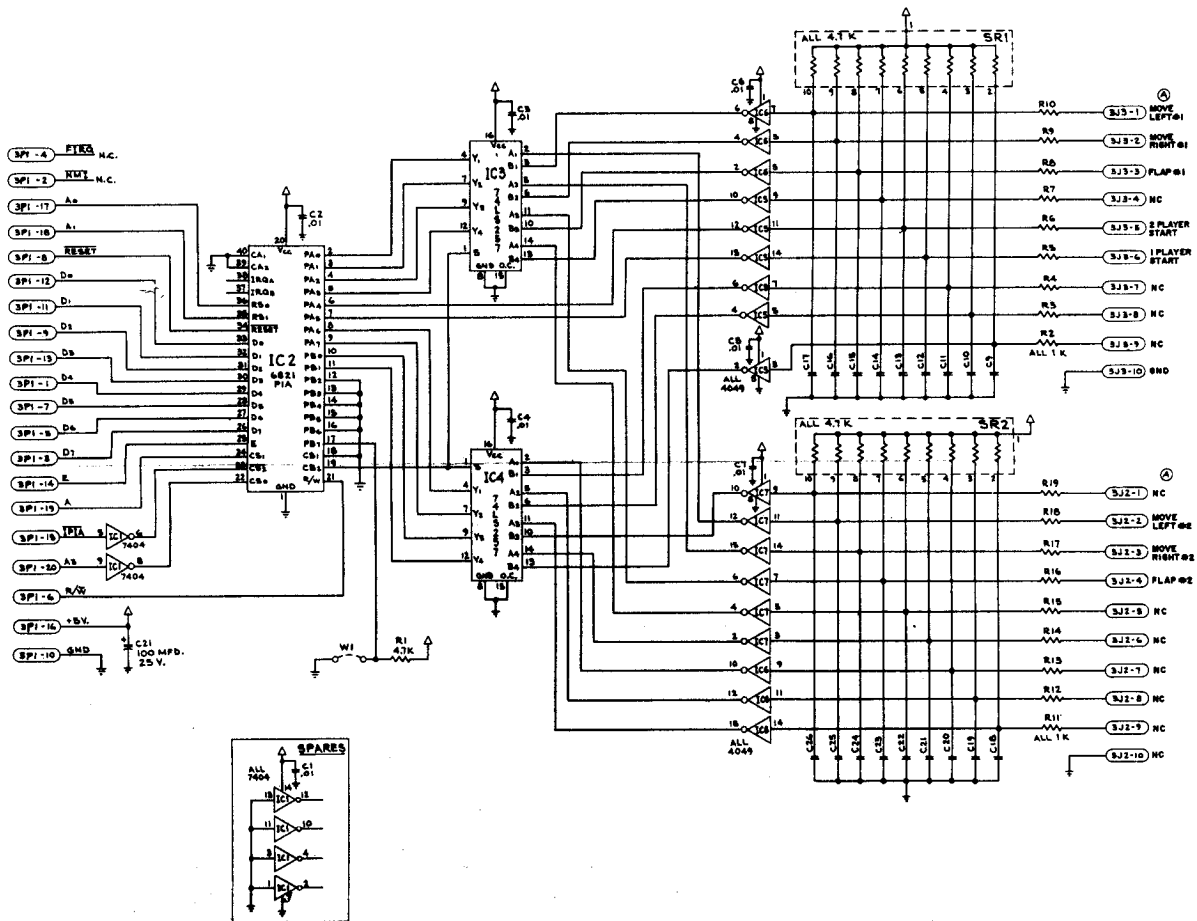
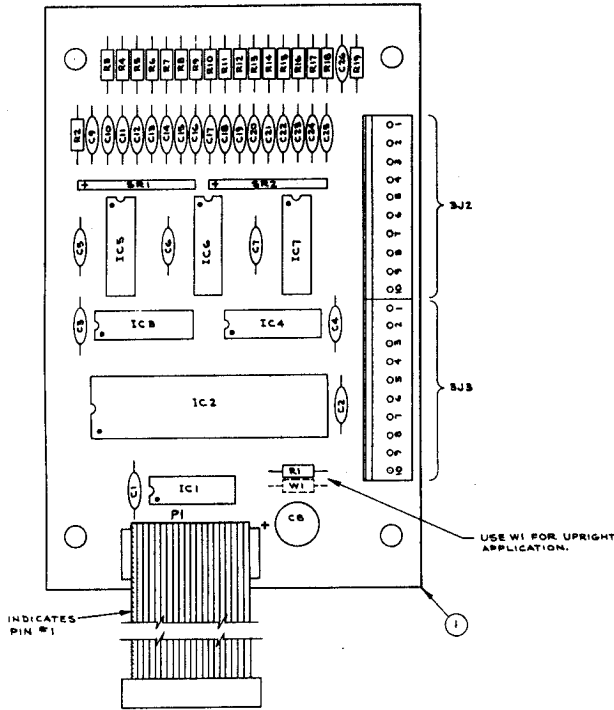
SPARE		
LOC.	LOGIC	QTY.
4B	7400	1
4K	74LS74	1
5I	74LS99B	1
5J	7486	2
6D	4011	2
6H	74LS199	1
6I	7410	2



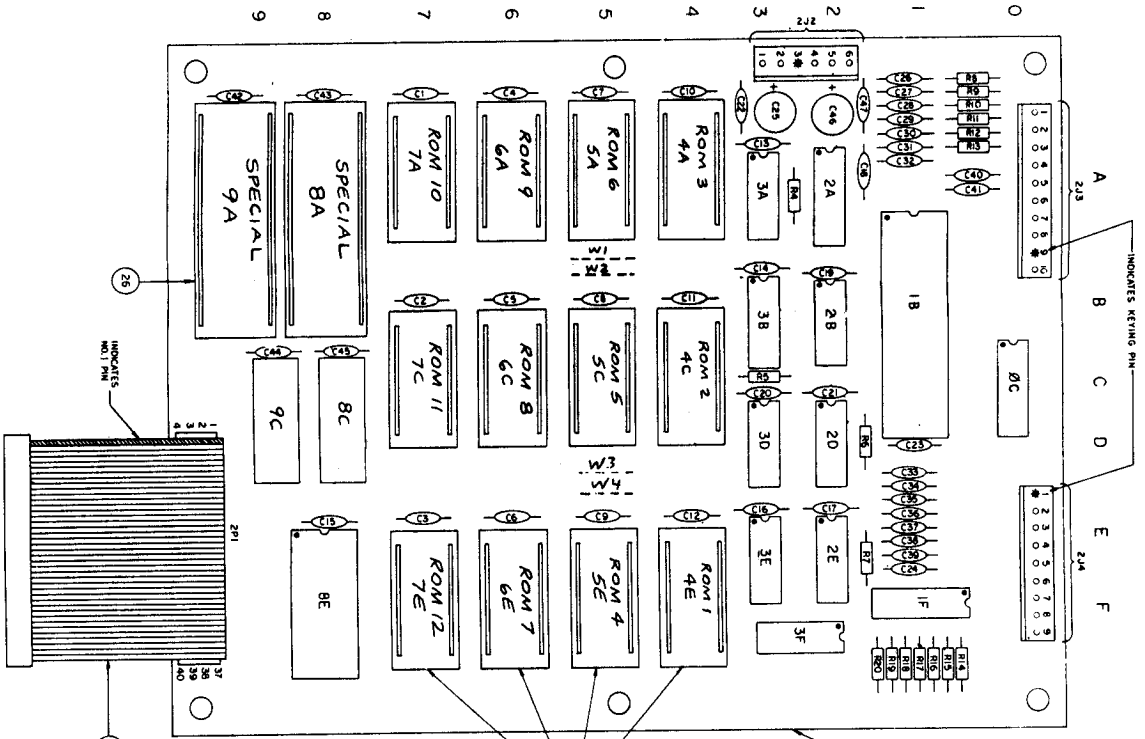
R-8731 CPU Board Logic Diagram (Sheet 2 of 2)



BILL OF MATERIAL				
ITEM NO.	PART NO.	PART DESIGNATION	DESCRIPTION	NO. REQ'D.
1	5772-09480-00		BARE P.C. BOARD	1
2	5430-08972-00	IC2	6871 PIA	1
3	5310-08918-00	IC8, IC6, IC7	4049 CMOS HEX INVERTOR	3
4	5280-09018-00	IC1	7404 HEX INVERTER	1
5	4261-09486-00	IC3, IC4	74LS257 QUAD DATA MULTIPLEXER	2
6	5019-09163-00	SR1, SR2	4.7K OHM 5 RES. 10 PIN SIP	2
7	5010-09386-00	R2 THRU R19	RESISTOR, C.F. 1K OHM 5% 1/4 WATT	18
8	5010-08991-00	R1	RESISTOR, C.F. 4.7K OHM 5% 1/4 WATT	1
9	5010-09384-00	W1	RESISTOR, C.F. 0 OHM 1/4 WATT	1
10	5043-09068-00	C9 THRU C26	CAPACITOR, CERAMIC DISC 470 PFD. 50 V. XTR 220%	18
11	5040-09421-00	CB	CAPACITOR, ELECT. RADIAL, 100 MFD. 25 VOLT. +50-10%	1
12	5045-08950-00	C1 THRU C7	CAPACITOR, CERAMIC DISC, 0.1 MFD. 50 V. +50-20%	7
13	5775-09540-00	P1	20 PIN RIBBON CABLE ASSY	1
14	5781-09444-00	SJ2, SJ3	10 PIN HEADER 09-65-1101	2



C-8783 Interface Board Assembly and Logic Diagram

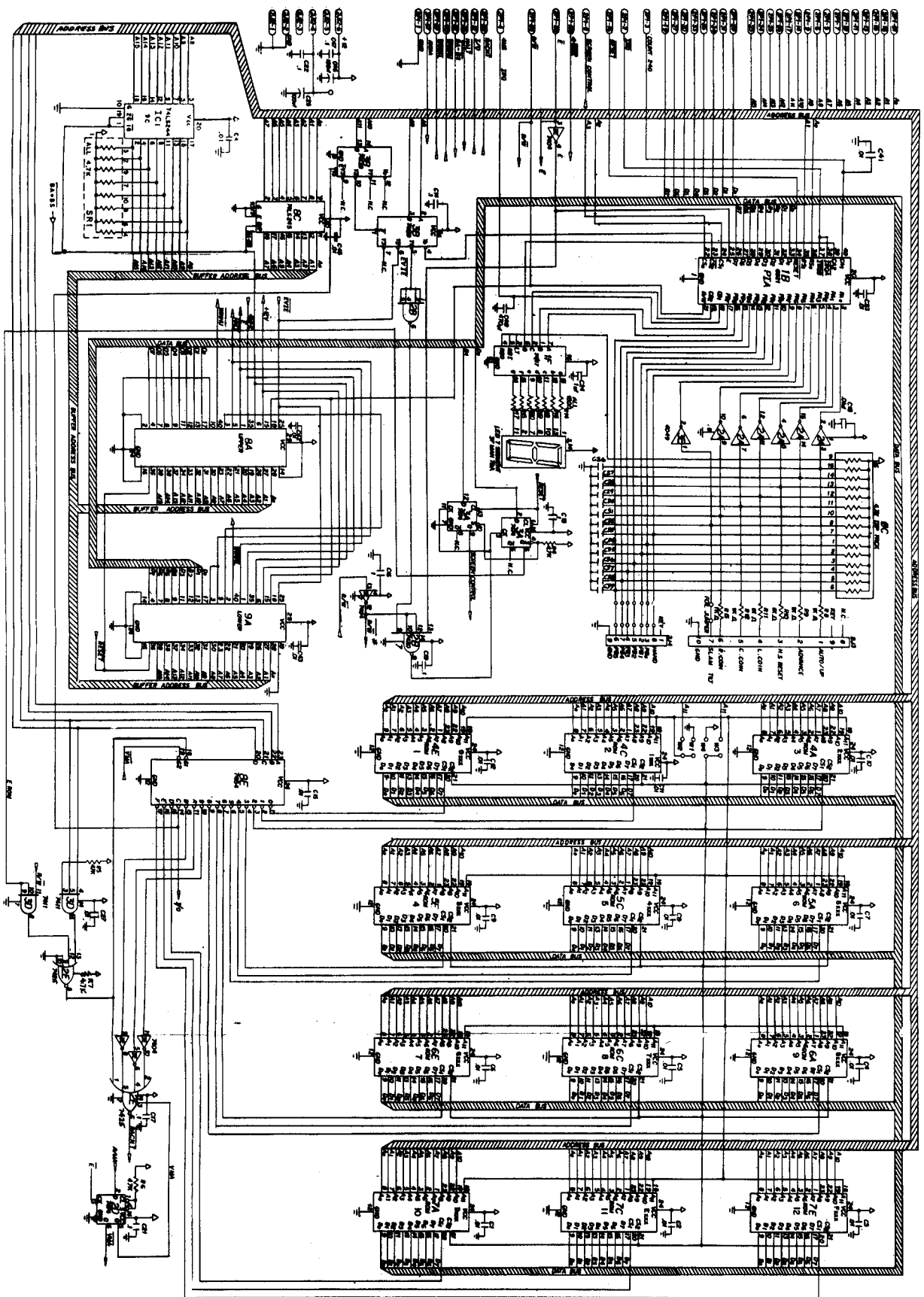


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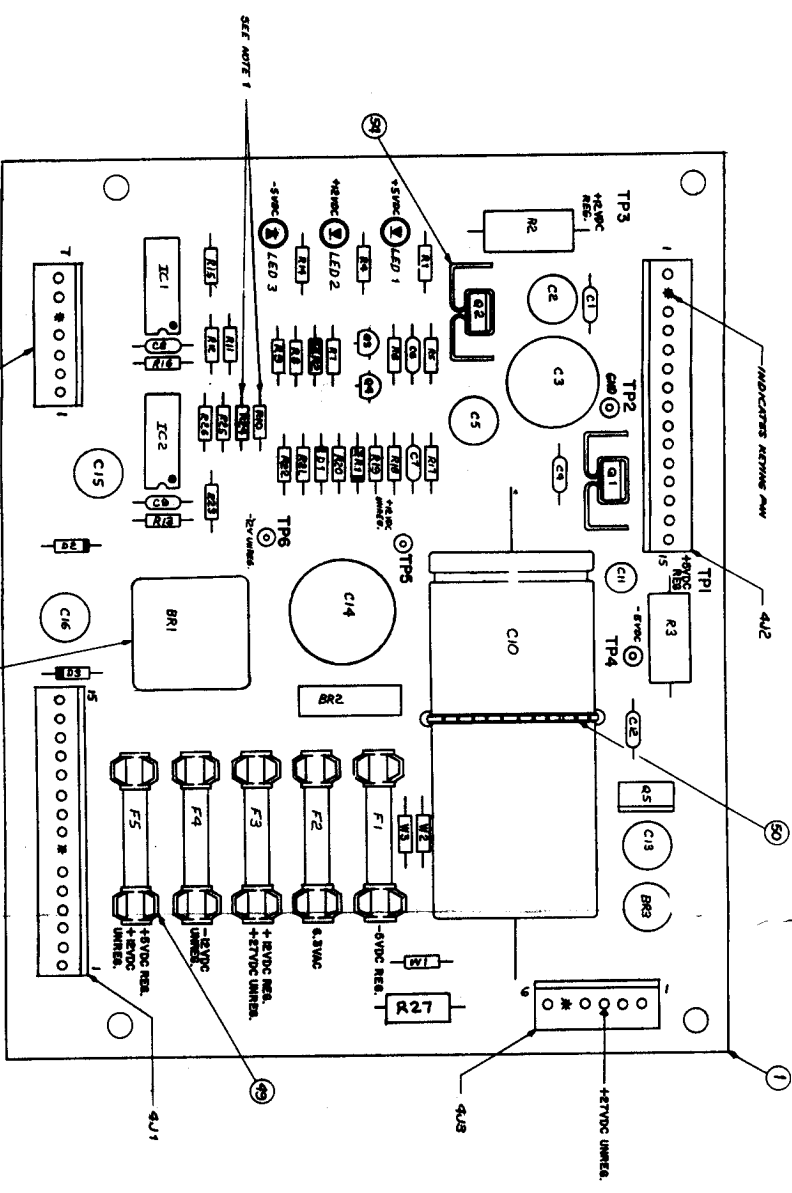
CHIP CODE	ROM #	PART #
4E	ROM 1	A-5343-09961A
4C	ROM 2	A-5343-09962A
4A	ROM 3	A-5343-09963A
5E	ROM 4	A-5343-09965A
5C	ROM 5	A-5343-09966A
5A	ROM 6	A-5343-09967A
6E	ROM 7	A-5343-09968A
6A	ROM 8	A-5343-09969A
7A	ROM 9	A-5343-09970A
7C	ROM 10	A-5343-09971A
7E	ROM 11	A-5343-09972A
7A	ROM 12	A-5343-09972A

BILL OF MATERIALS

ITEM NO.	PART NO.	PART DESCRIPTION	QTY
1	5280-00	BASE PCB BOARD	1
2	5280-00	44TRC0 TO 7SEG LED DISPLAY	1
3	09407-00	IF	1
4	09476-00	20 3A	2
5	09476-00	7A74 TALS09 DUAL 2 TO 4	1
6	09476-00	3B	1
7	09476-00	7A11 TALS09 DUAL 2 TO 4	1
8	09476-00	2B	1
9	09476-00	3D	1
10	09476-00	3E	1
11	09476-00	3F	1
12	09476-00	2E	1
13	09476-00	2D	1
14	09476-00	2C	1
15	09476-00	2B	1
16	09476-00	2A	1
17	09476-00	1F	1
18	09476-00	1E	1
19	09476-00	1D	1
20	09476-00	1C	1
21	09476-00	1B	1
22	09476-00	9A, 9A	2
23	09476-00	9C	1
24	09476-00	9E	1
25	09476-00	9A, 9A	2
26	09476-00	9C	1
27	09476-00	9E	1
28	09476-00	9A, 9A	2
29	09476-00	9C	1
30	09476-00	9E	1
31	09476-00	9A, 9A	2
32	09476-00	9C	1



D-9144 ROM Board Logic Diagram

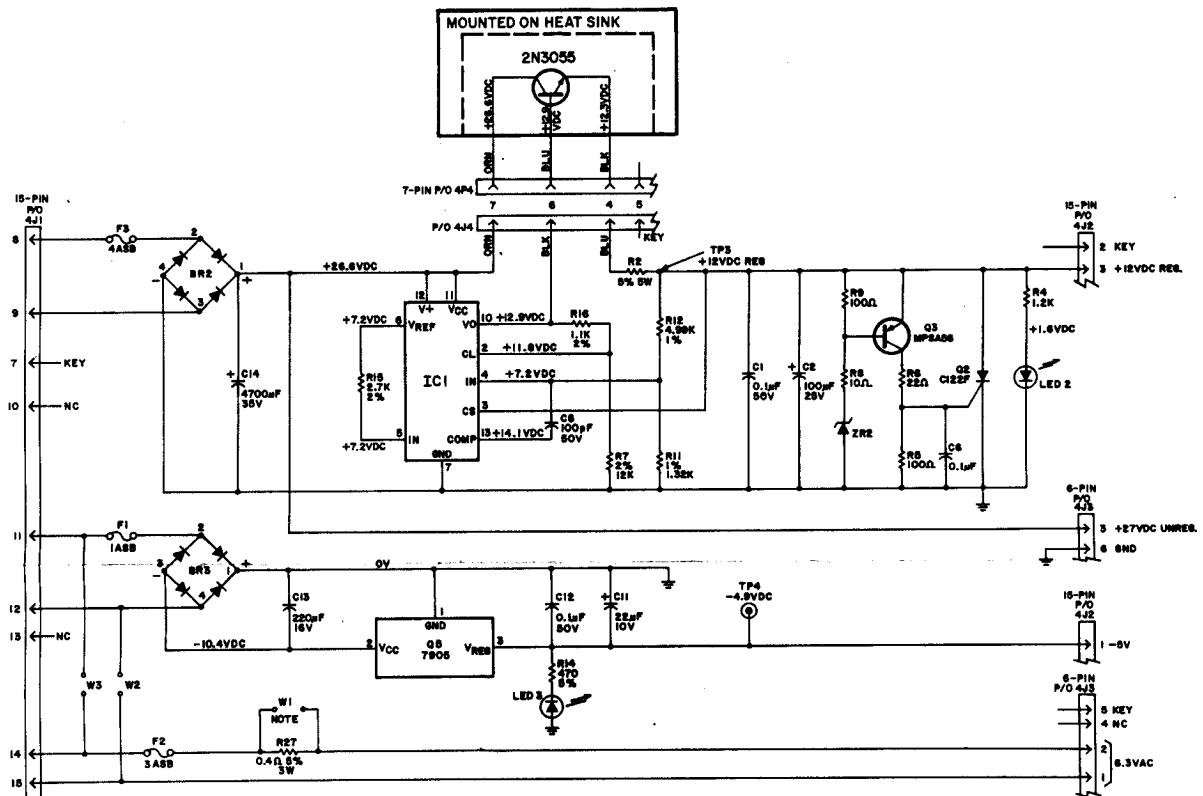
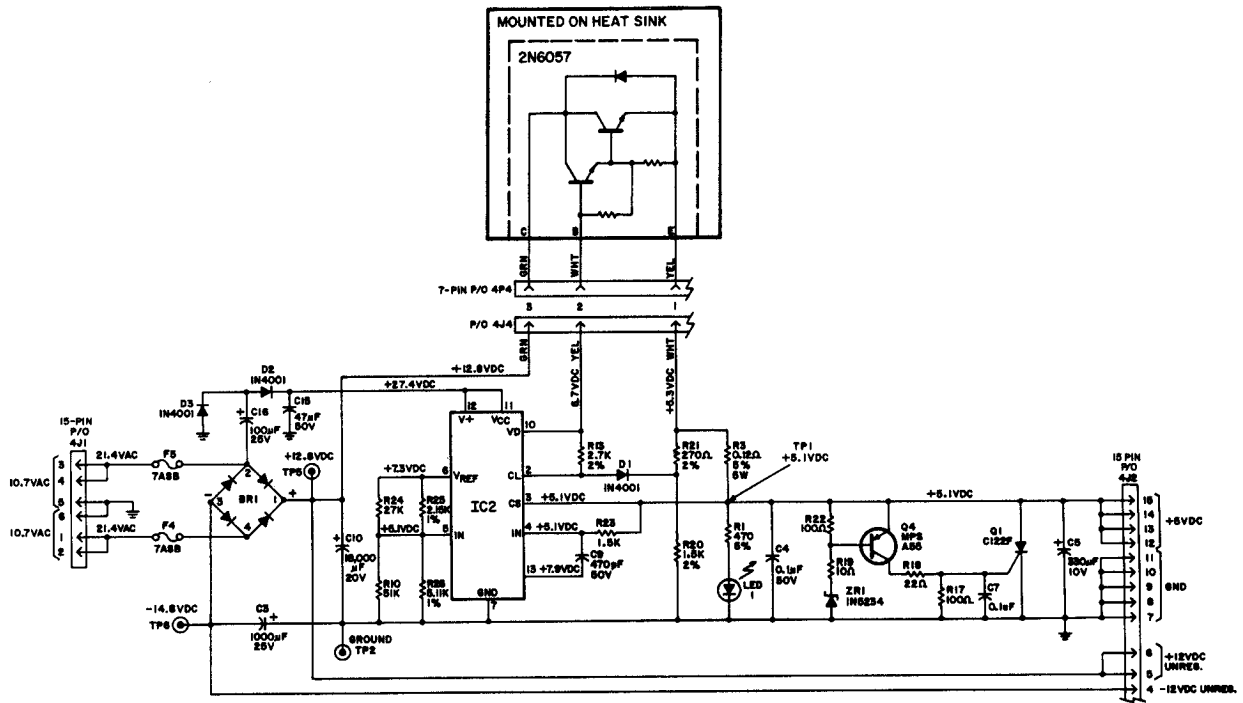


NOTES:
 1. REMOVE R24 IF +5VDC IS GREATER THAN 5.25 VDC,
 REMOVE R10 IF +5VDC IS LESS THAN 4.75 VDC.
 2. BR1 MUST BE MOUNTED 1/8" ABOVE SURFACE OF
 BOARD.
 3. FOR SCHEMATIC REFER TO 16-8011.

ITEM NO.	QTY	PART NO.	DESCRIPTION	UNIT	REVISION
55	1	5000-	RESISTOR C.I.	1	
56	1	5012A-00	RESISTOR C.I.	1	
57	1	5013-00	RESISTOR C.I.	1	
58	1	5014-00	RESISTOR C.I.	1	
59	1	5015-00	RESISTOR C.I.	1	
60	1	5016-00	RESISTOR C.I.	1	
61	1	5017-00	RESISTOR C.I.	1	
62	1	5018-00	RESISTOR C.I.	1	
63	1	5019-00	RESISTOR C.I.	1	
64	1	5020-00	RESISTOR C.I.	1	
65	1	5021-00	RESISTOR C.I.	1	
66	1	5022-00	RESISTOR C.I.	1	
67	1	5023-00	RESISTOR C.I.	1	
68	1	5024-00	RESISTOR C.I.	1	
69	1	5025-00	RESISTOR C.I.	1	
70	1	5026-00	RESISTOR C.I.	1	
71	1	5027-00	RESISTOR C.I.	1	
72	1	5028-00	RESISTOR C.I.	1	
73	1	5029-00	RESISTOR C.I.	1	
74	1	5030-00	RESISTOR C.I.	1	
75	1	5031-00	RESISTOR C.I.	1	
76	1	5032-00	RESISTOR C.I.	1	
77	1	5033-00	RESISTOR C.I.	1	
78	1	5034-00	RESISTOR C.I.	1	
79	1	5035-00	RESISTOR C.I.	1	
80	1	5036-00	RESISTOR C.I.	1	
81	1	5037-00	RESISTOR C.I.	1	
82	1	5038-00	RESISTOR C.I.	1	
83	1	5039-00	RESISTOR C.I.	1	
84	1	5040-00	RESISTOR C.I.	1	
85	1	5041-00	RESISTOR C.I.	1	
86	1	5042-00	RESISTOR C.I.	1	
87	1	5043-00	RESISTOR C.I.	1	
88	1	5044-00	RESISTOR C.I.	1	
89	1	5045-00	RESISTOR C.I.	1	
90	1	5046-00	RESISTOR C.I.	1	
91	1	5047-00	RESISTOR C.I.	1	
92	1	5048-00	RESISTOR C.I.	1	
93	1	5049-00	RESISTOR C.I.	1	
94	1	5050-00	RESISTOR C.I.	1	
95	1	5051-00	RESISTOR C.I.	1	
96	1	5052-00	RESISTOR C.I.	1	
97	1	5053-00	RESISTOR C.I.	1	
98	1	5054-00	RESISTOR C.I.	1	
99	1	5055-00	RESISTOR C.I.	1	
100	1	5056-00	RESISTOR C.I.	1	

BILL OF MATERIAL

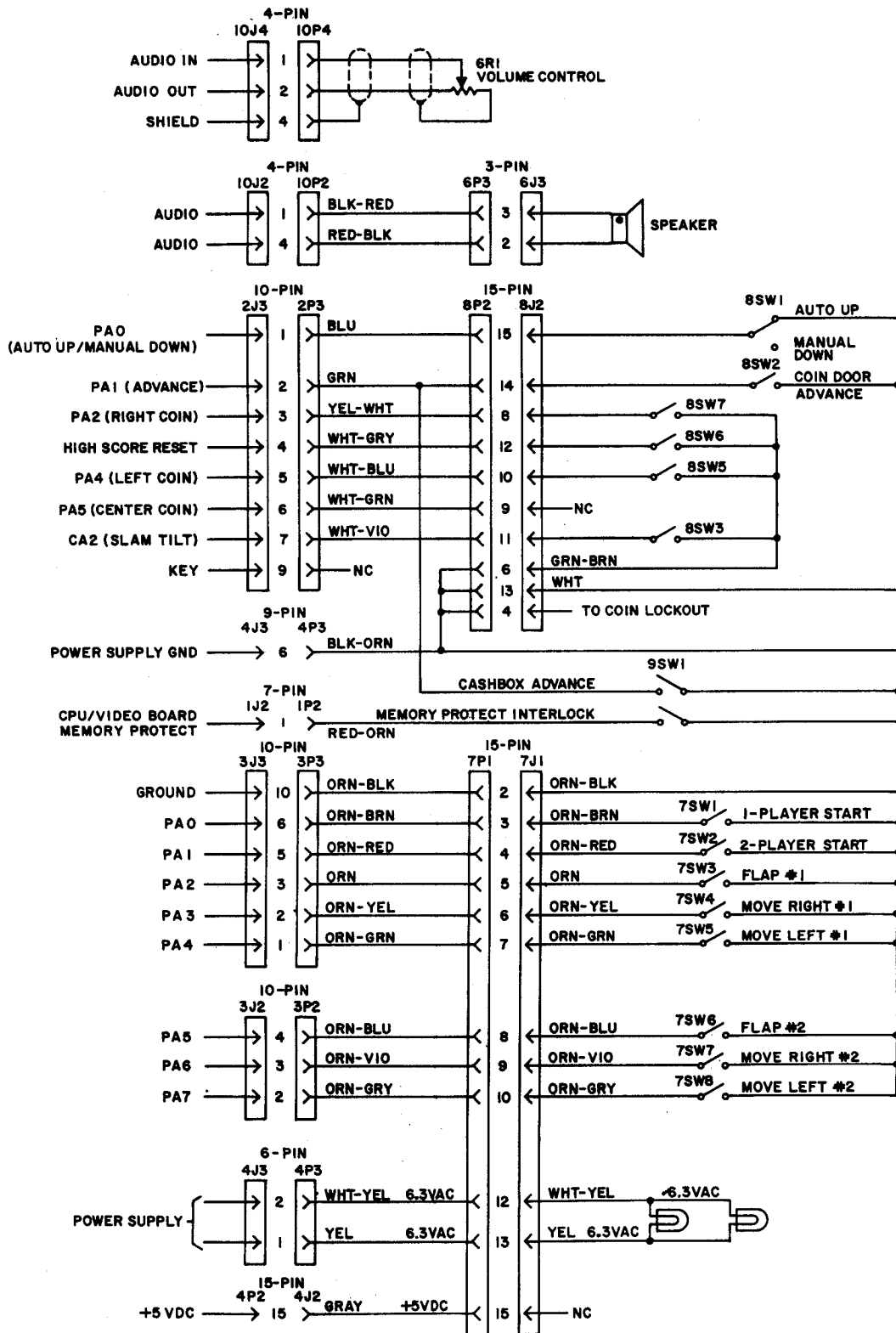
ITEM NO.	QTY	PART NO.	DESCRIPTION	UNIT	REVISION
1	1	5000-	RESISTOR C.I.	1	
2	1	5012A-00	RESISTOR C.I.	1	
3	1	5013-00	RESISTOR C.I.	1	
4	1	5014-00	RESISTOR C.I.	1	
5	1	5015-00	RESISTOR C.I.	1	
6	1	5016-00	RESISTOR C.I.	1	
7	1	5017-00	RESISTOR C.I.	1	
8	1	5018-00	RESISTOR C.I.	1	
9	1	5019-00	RESISTOR C.I.	1	
10	1	5020-00	RESISTOR C.I.	1	
11	1	5021-00	RESISTOR C.I.	1	
12	1	5022-00	RESISTOR C.I.	1	
13	1	5023-00	RESISTOR C.I.	1	
14	1	5024-00	RESISTOR C.I.	1	
15	1	5025-00	RESISTOR C.I.	1	
16	1	5026-00	RESISTOR C.I.	1	
17	1	5027-00	RESISTOR C.I.	1	
18	1	5028-00	RESISTOR C.I.	1	
19	1	5029-00	RESISTOR C.I.	1	
20	1	5030-00	RESISTOR C.I.	1	
21	1	5031-00	RESISTOR C.I.	1	
22	1	5032-00	RESISTOR C.I.	1	
23	1	5033-00	RESISTOR C.I.	1	
24	1	5034-00	RESISTOR C.I.	1	
25	1	5035-00	RESISTOR C.I.	1	
26	1	5036-00	RESISTOR C.I.	1	
27	1	5037-00	RESISTOR C.I.	1	
28	1	5038-00	RESISTOR C.I.	1	
29	1	5039-00	RESISTOR C.I.	1	
30	1	5040-00	RESISTOR C.I.	1	
31	1	5041-00	RESISTOR C.I.	1	
32	1	5042-00	RESISTOR C.I.	1	
33	1	5043-00	RESISTOR C.I.	1	
34	1	5044-00	RESISTOR C.I.	1	
35	1	5045-00	RESISTOR C.I.	1	
36	1	5046-00	RESISTOR C.I.	1	
37	1	5047-00	RESISTOR C.I.	1	
38	1	5048-00	RESISTOR C.I.	1	
39	1	5049-00	RESISTOR C.I.	1	
40	1	5050-00	RESISTOR C.I.	1	
41	1	5051-00	RESISTOR C.I.	1	
42	1	5052-00	RESISTOR C.I.	1	
43	1	5053-00	RESISTOR C.I.	1	
44	1	5054-00	RESISTOR C.I.	1	
45	1	5055-00	RESISTOR C.I.	1	
46	1	5056-00	RESISTOR C.I.	1	
47	1	5057-00	RESISTOR C.I.	1	
48	1	5058-00	RESISTOR C.I.	1	
49	1	5059-00	RESISTOR C.I.	1	
50	1	5060-00	RESISTOR C.I.	1	

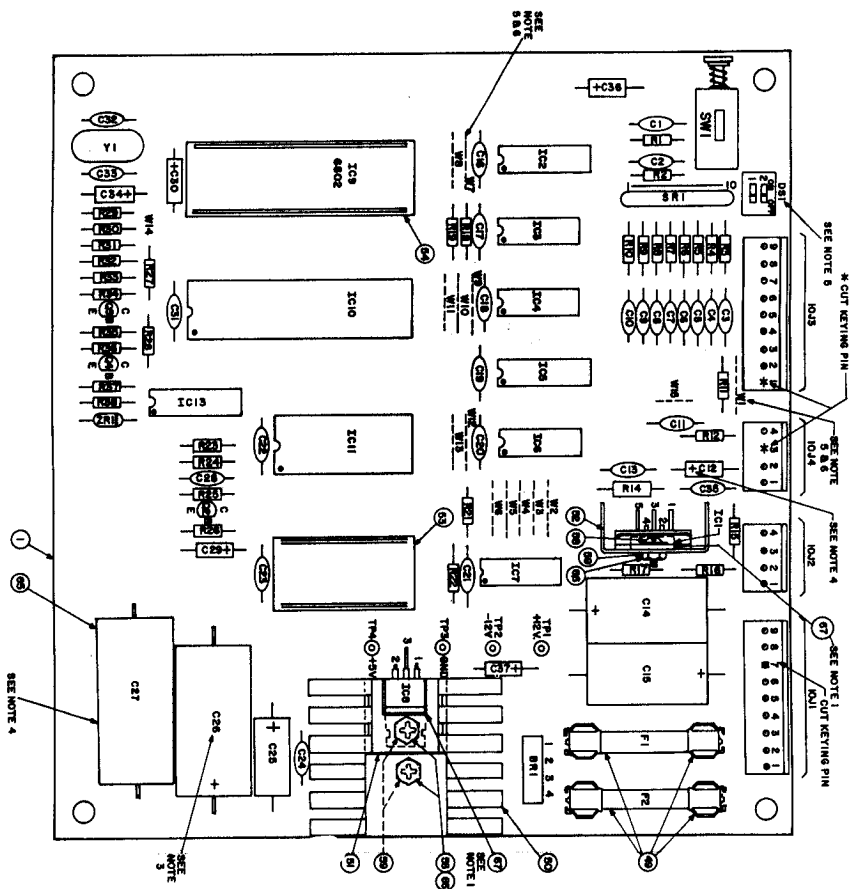


NOTE: JUMPERS W1, W2 & W3 ARE ALL N.C. IN JOUST-UPRIGHT GAMES.
 THESE GAMES USE POWER TRANSFORMER 60S-C-0955 WITH
 A 12.5VCT SECONDARY, ALLOWING 6.5V FOR GENERAL ILLUMINATION.

D-8784 Power Supply Board Schematic Diagram

CABINET WIRING



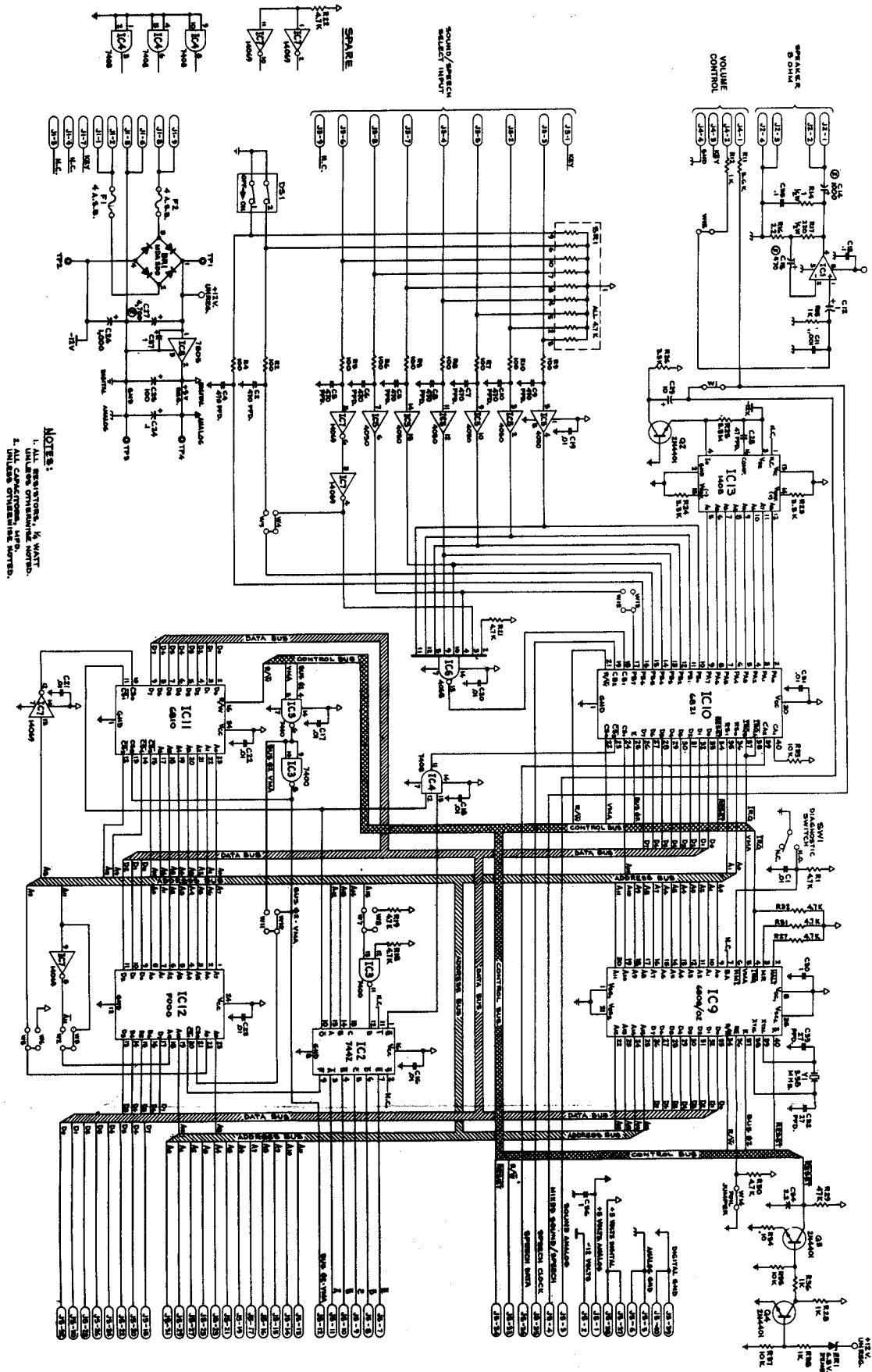


ITEM NO.	PART NO.	PART DESIGNATION	DESCRIPTION	REQ'D. NO.
1	012-01146-4	IC1	RAE P.C. BOARD REF. F	1
2	5370-09156-00	IC2	TDA 2002 V AUDIO AMPLIFIER	1
3	5280-09012-00	IC3	7442 DEC-DEC RECODER	1
4	5280-08013-00	IC4	7400 QUAD 2 INPUT NAND	1
5	5310-08113-00	IC5	7408 BUFFER INV. AND GATE	1
6	5310-09154-00	IC6	4068 8 INPUT NAND GATE	1
7	5310-08971-00	IC7	4069 HEX INVERTER	1
8	5250-09157-00	IC8	7405 5 VOLT REG. W/10 220 OHM	1
9	5340-09003-00	IC9	6810 P.A.M.	1
10	5371-09122-00	IC10	1408 D/A CONVERTER	1
11	5340-09003-00	IC11	2M4021 NPN TRANSISTOR	1
12	5100-09018-00	IC12	1N9564 6.8V ZENER DIODE	1
13	5100-09332-00	IC13	MOA 500/2023	1
14	5320-09020-00	IC14	3.50 WATT CRYSTAL	1
15	5010-08991-00	IC15	RESISTOR, FC, 4.7K OHM, 5% 1/4 WATT	9
16	5010-09038-00	IC16	RESISTOR, FC, 100 OHM, 5% 1/4 WATT	1
17	5010-09181-00	IC17	RESISTOR, FC, 1 OHM, 10% 1/2 WATT	5
18	5010-09181-00	IC18	RESISTOR, FC, 1 OHM, 10% 1/2 WATT	5
19	5010-09181-00	IC19	RESISTOR, FC, 1 OHM, 10% 1/2 WATT	5
20	5010-09181-00	IC20	RESISTOR, FC, 220 OHM, 5% 1/2 WATT	1
21	5010-09181-00	IC21	RESISTOR, FC, 220 OHM, 5% 1/2 WATT	1
22	5010-09181-00	IC22	RESISTOR, FC, 2.2 OHM, 5% 1/4 WATT	1
23	5010-09181-00	IC23	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
24	5010-09181-00	IC24	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
25	5010-09181-00	IC25	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
26	5010-09181-00	IC26	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
27	5010-09181-00	IC27	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
28	5010-09181-00	IC28	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
29	5010-09181-00	IC29	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
30	5010-09181-00	IC30	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
31	5010-09181-00	IC31	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
32	5010-09181-00	IC32	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
33	5010-09181-00	IC33	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
34	5010-09181-00	IC34	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
35	5010-09181-00	IC35	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
36	5010-09181-00	IC36	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
37	5010-09181-00	IC37	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
38	5010-09181-00	IC38	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
39	5010-09181-00	IC39	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
40	5010-09181-00	IC40	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
41	5010-09181-00	IC41	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
42	5010-09181-00	IC42	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
43	5010-09181-00	IC43	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
44	5010-09181-00	IC44	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
45	5010-09181-00	IC45	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
46	5010-09181-00	IC46	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
47	5010-09181-00	IC47	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
48	5010-09181-00	IC48	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
49	5010-09181-00	IC49	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
50	5010-09181-00	IC50	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
51	5010-09181-00	IC51	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
52	5010-09181-00	IC52	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
53	5010-09181-00	IC53	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
54	5010-09181-00	IC54	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
55	5010-09181-00	IC55	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
56	5010-09181-00	IC56	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
57	5010-09181-00	IC57	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
58	5010-09181-00	IC58	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
59	5010-09181-00	IC59	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
60	5010-09181-00	IC60	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
61	5010-09181-00	IC61	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
62	5010-09181-00	IC62	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
63	5010-09181-00	IC63	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
64	5010-09181-00	IC64	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
65	5010-09181-00	IC65	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
66	5010-09181-00	IC66	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
67	5010-09181-00	IC67	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
68	5010-09181-00	IC68	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
69	5010-09181-00	IC69	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
70	5010-09181-00	IC70	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
71	5010-09181-00	IC71	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
72	5010-09181-00	IC72	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
73	5010-09181-00	IC73	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
74	5010-09181-00	IC74	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
75	5010-09181-00	IC75	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
76	5010-09181-00	IC76	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
77	5010-09181-00	IC77	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
78	5010-09181-00	IC78	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
79	5010-09181-00	IC79	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
80	5010-09181-00	IC80	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
81	5010-09181-00	IC81	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
82	5010-09181-00	IC82	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
83	5010-09181-00	IC83	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
84	5010-09181-00	IC84	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
85	5010-09181-00	IC85	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
86	5010-09181-00	IC86	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
87	5010-09181-00	IC87	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
88	5010-09181-00	IC88	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
89	5010-09181-00	IC89	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
90	5010-09181-00	IC90	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
91	5010-09181-00	IC91	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
92	5010-09181-00	IC92	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
93	5010-09181-00	IC93	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
94	5010-09181-00	IC94	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
95	5010-09181-00	IC95	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
96	5010-09181-00	IC96	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
97	5010-09181-00	IC97	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
98	5010-09181-00	IC98	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
99	5010-09181-00	IC99	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
100	5010-09181-00	IC100	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1

NOTES:
 1. USE THERMAL COMPOUND BETWEEN IC1 AND IC9, AND HEAT SINKS.
 2. CAUTION: AVOID STATIC DISCHARGE DAMAGE TO MOS LOGIC.
 3. SYMBOLS SHOWN ON COMPONENTS ARE FOR REFERENCE ONLY.
 4. OBSERVE INDEX MARKS OF ALL INTEGRATED CIRCUITS;
 DIODES 01, 02, AND Z81;
 CAPACITORS C12, C14, C15, C29, C36, C27;
 CONNECTORS 1011, 1025, 1044, 1045, 1055;
 POSITION OF TRANSISTORS 01, 02, 03, 04.
 5. DIMENSIONS
 M33
 M32
 M31 IN
 M11
 M10
 M12
 M13

BILL OF MATERIAL

REQ'D. NO.



NOTES:
 1. ALL RESISTORS, $\frac{1}{2}$ WATT.
 2. UNLESS OTHERWISE NOTED.
 3. UNLESS OTHERWISE NOTED.