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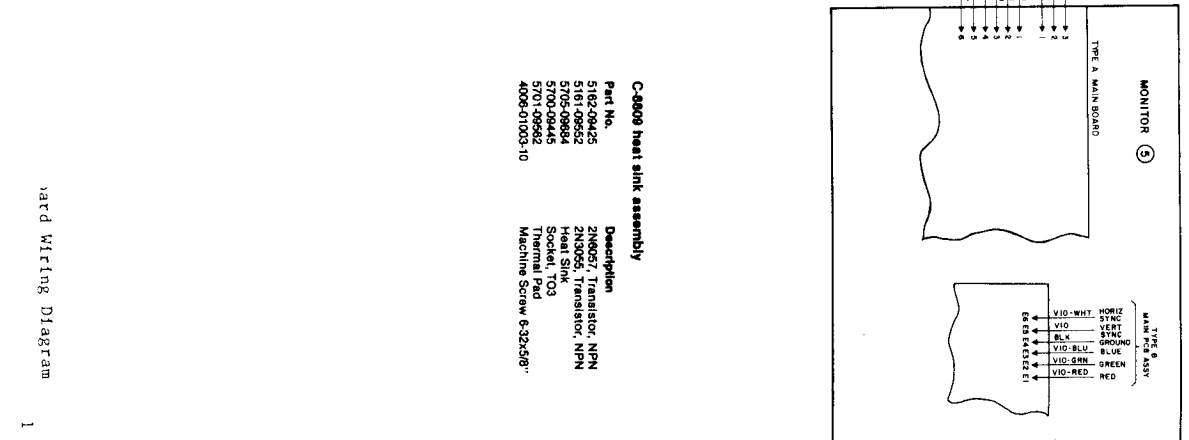
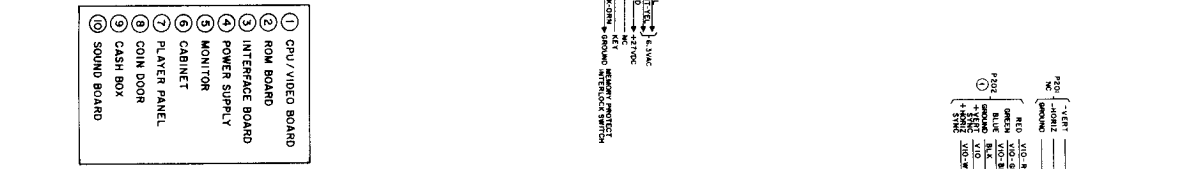
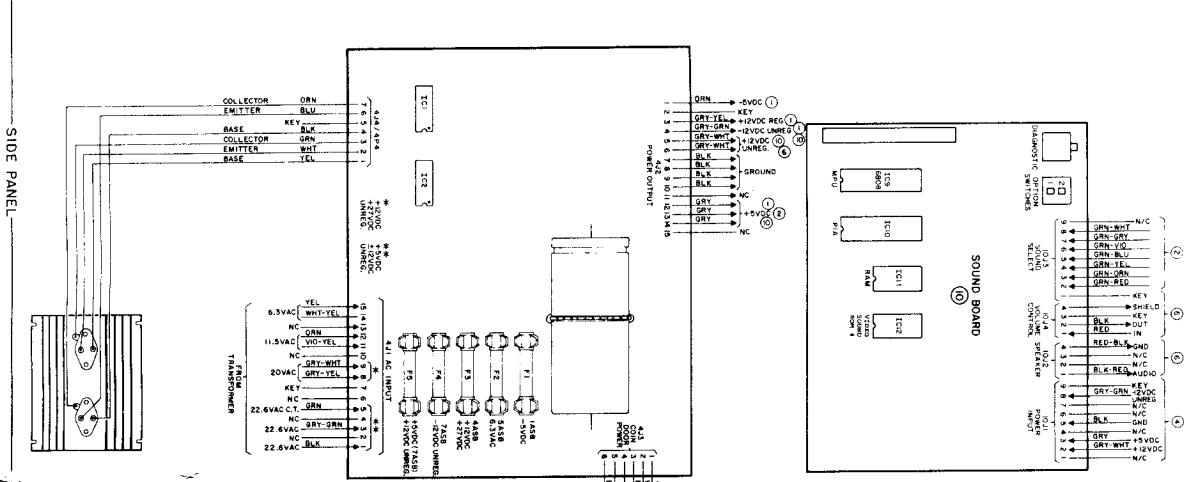
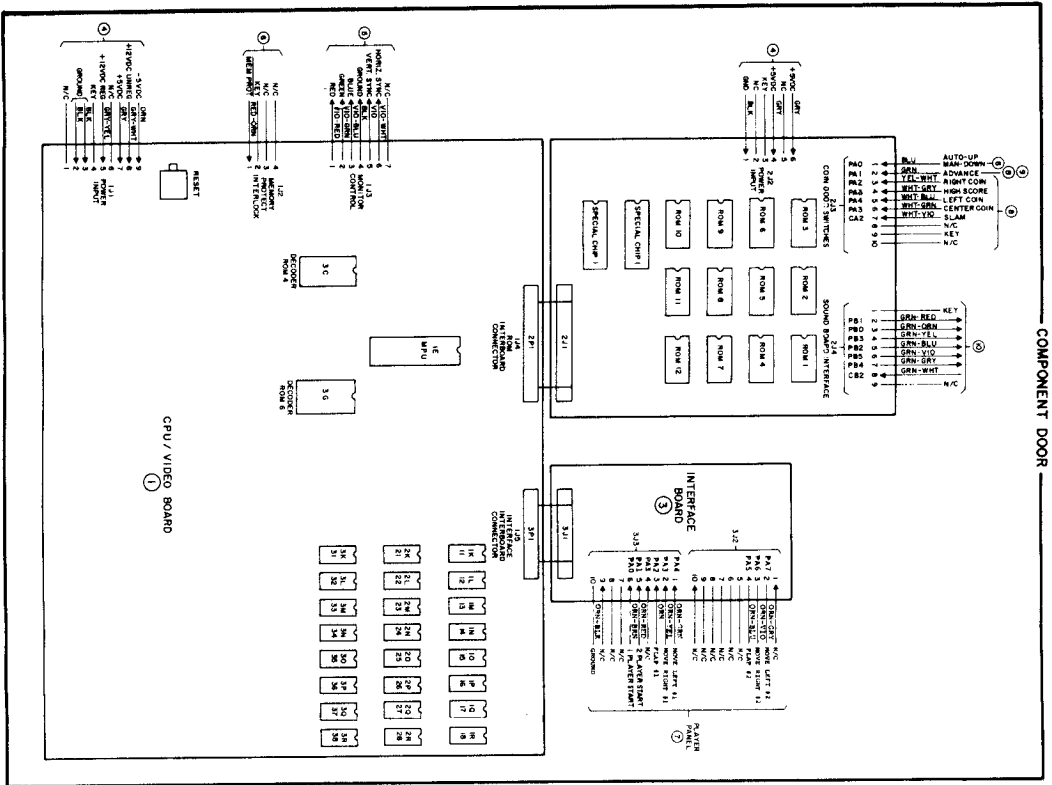
Williams® 
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INTERBOARD WIRING



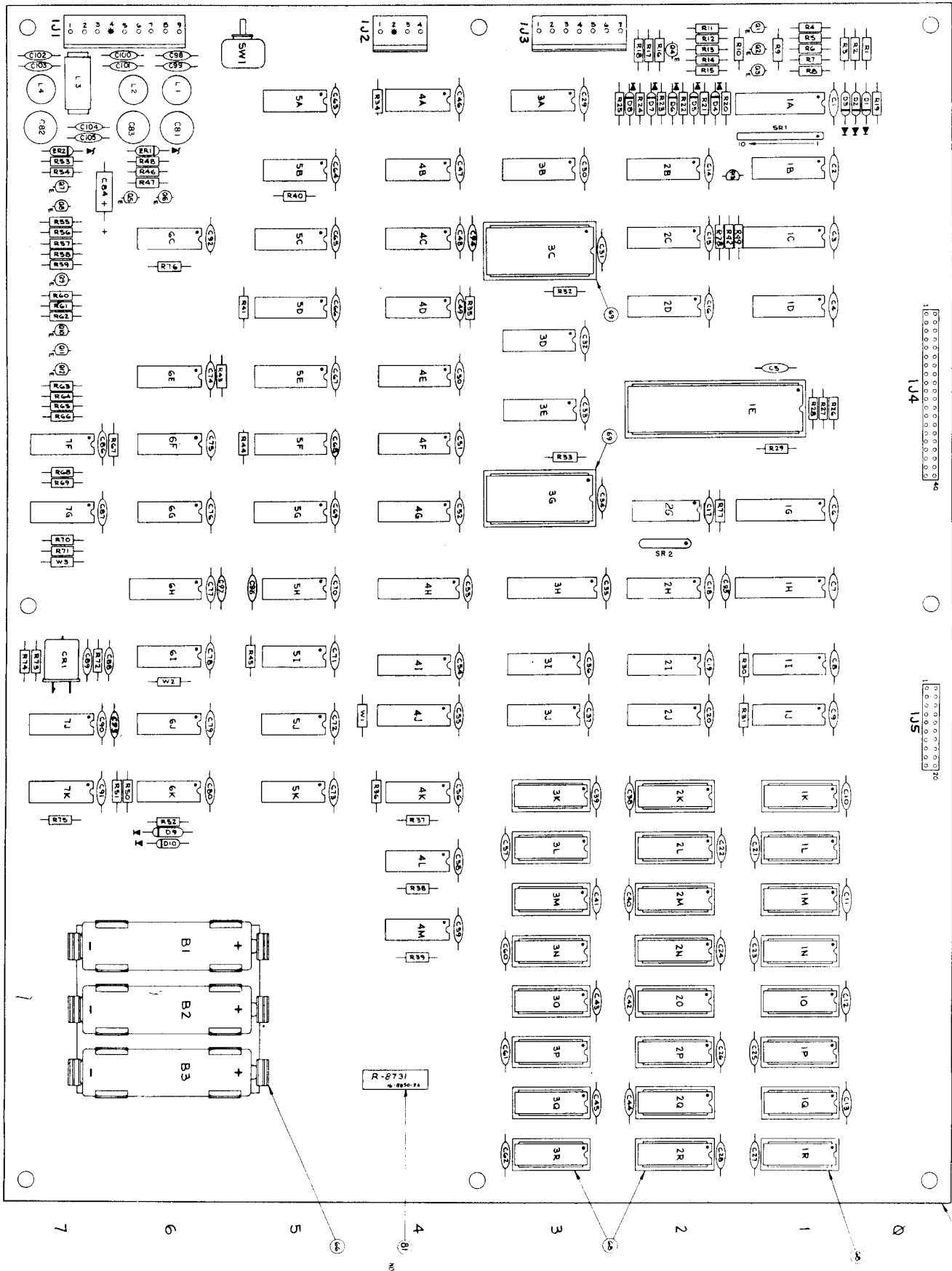
C-8808 Heat sink assembly

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



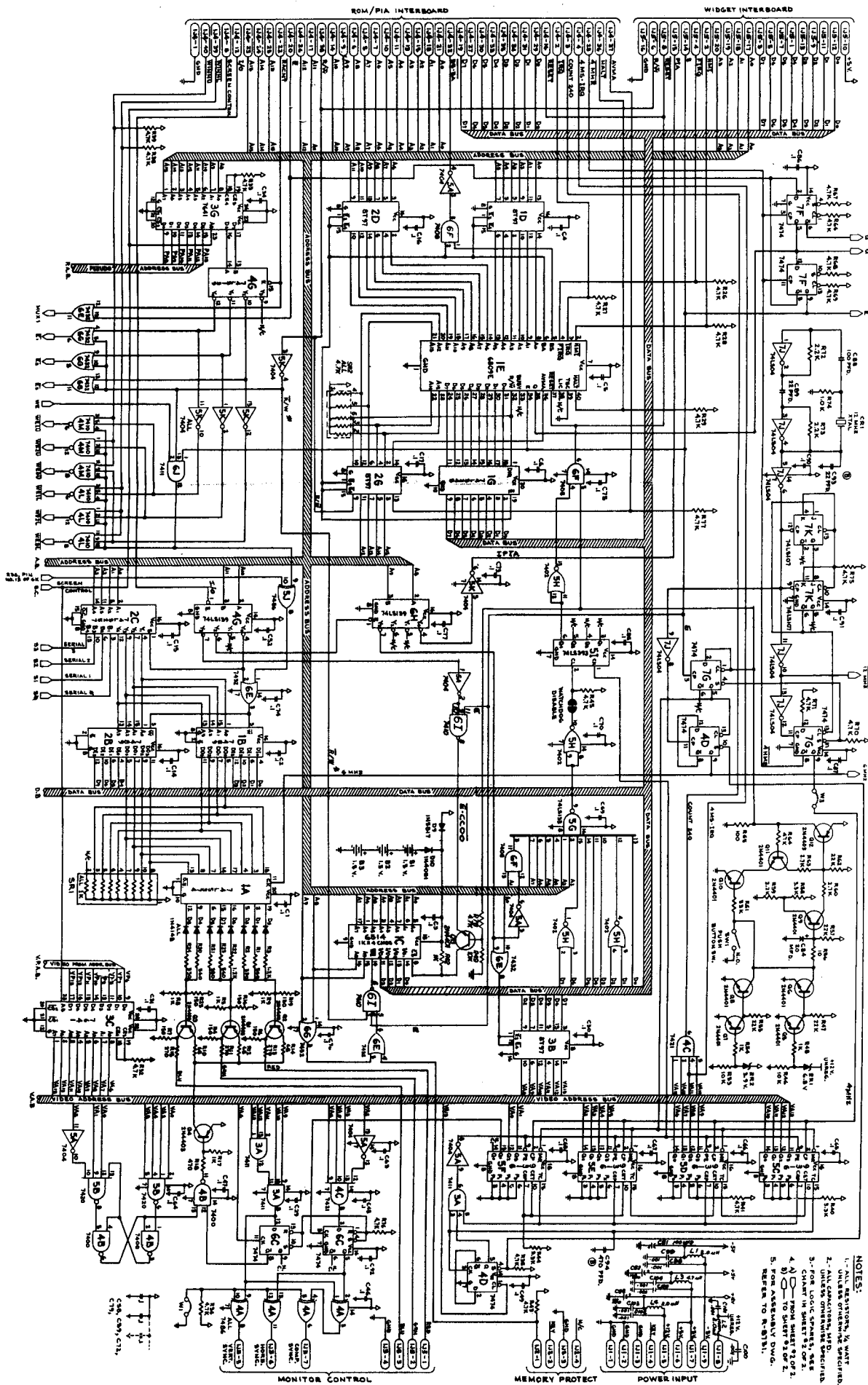
NOTE LABEL LOCATION IS PERMANENT

ITEM NO.	PART NO.	PART DESIGNATION	DESCRIPTION	REQ'D NO.
74	5791-09497-00	IJ3	7 PIN HEADER 09-65-1071	1
75	5791-09027-00	IJ1	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	IC	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		7489 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	IN5990A 3.9V. ZENER DIODE	1
58	5075-09018-00	ZR1	IN5996A 6.8V. ZENER DIODE	1
59	5070-08919-00	D1, D2, D3, D4, D5, D6, D7, D8	IN4148 DIODE, SILICON	8
60	5070-09266-00	D9	IN5817 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	IJ5	20 PIN RIBBON CABLE HEADER	1
72	5791-09349-00	IJ4	40 PIN RIBBON CABLE HEADER	1
73	5791-09028-00	IJ2	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

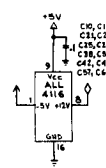
BILL OF MATERIAL				
ITEM NO.	PART NO.	PART DESIGNATION	DESCRIPTION	REQ'D NO.
1	5770-09656-00		BARE P.C. BOARD REV. 0	1
2	5280-09073-00	4B	7400 QUAD 2-INPUT NAND	1
3	5280-08948-00	5H	7402 QUAD 2-INPUT NOR	1
4	5281-09215-00	7J	74LS04 HEX. INVERTER	1
5	5280-09013-00	5A, 5K	7404 HEX. INVERTER	2
6	5280-08973-00	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, R50, R77, 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



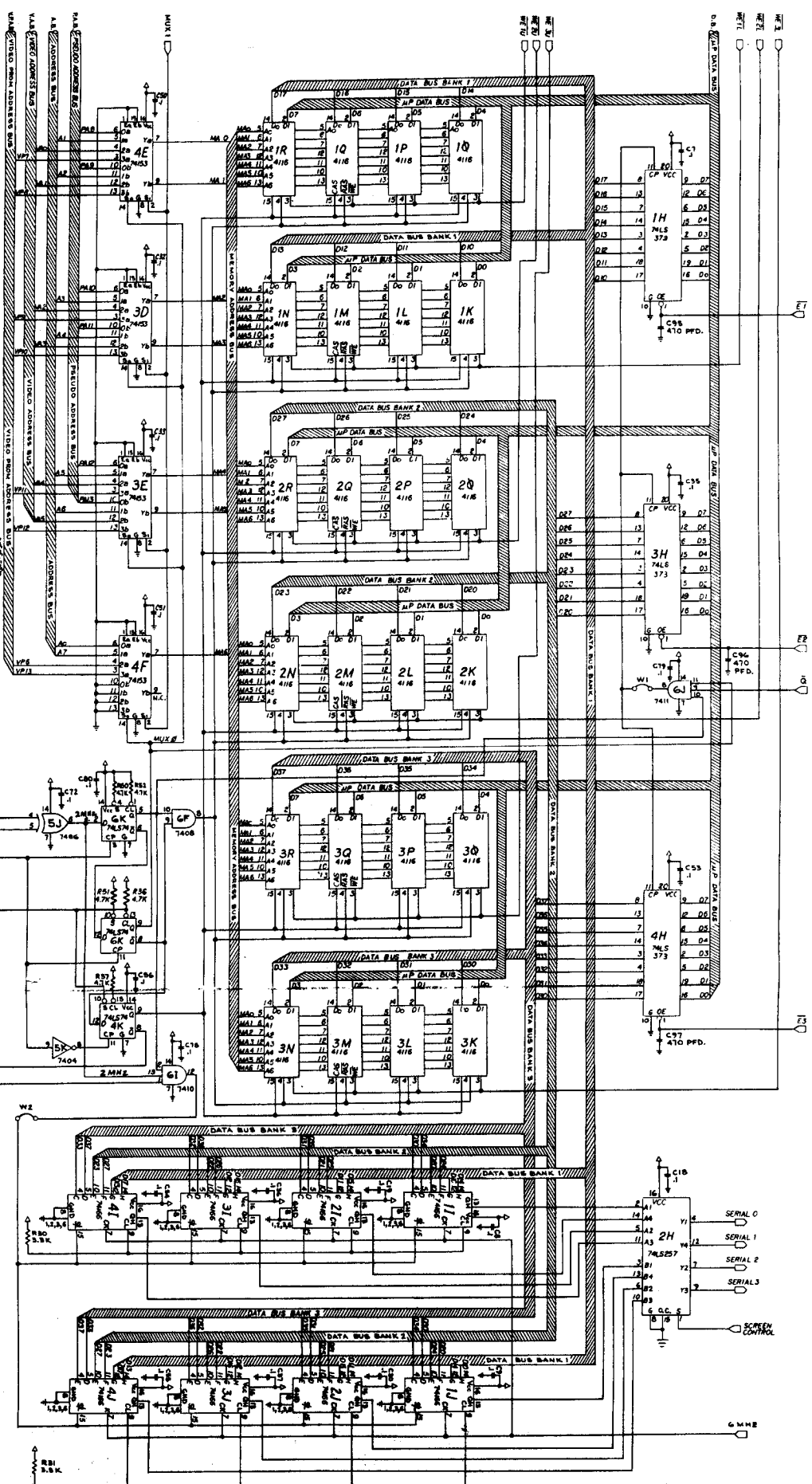
- NOTES:
1. ALL RESISTORS, % WATT UNLESS OTHERWISE SPECIFIED.
 2. UNLESS OTHERWISE SPECIFIED.
 3. FOR LOGIC SYMBOLS, SEE CHART IN SHEET 2 OF 2.
 4. FROM SHEET 2 OF 2.
 5. ASSEMBLY DIAG.
 6. REFER TO R-8751/C.

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

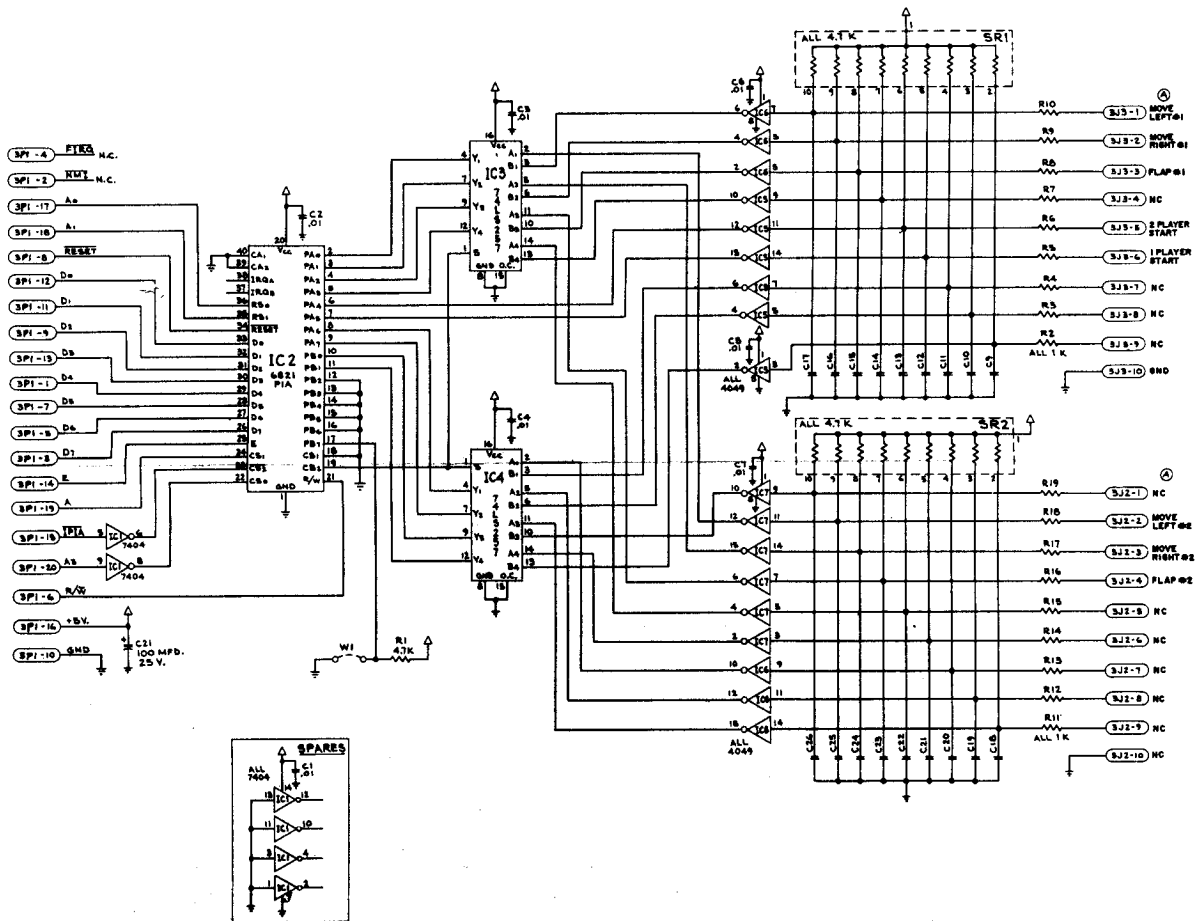
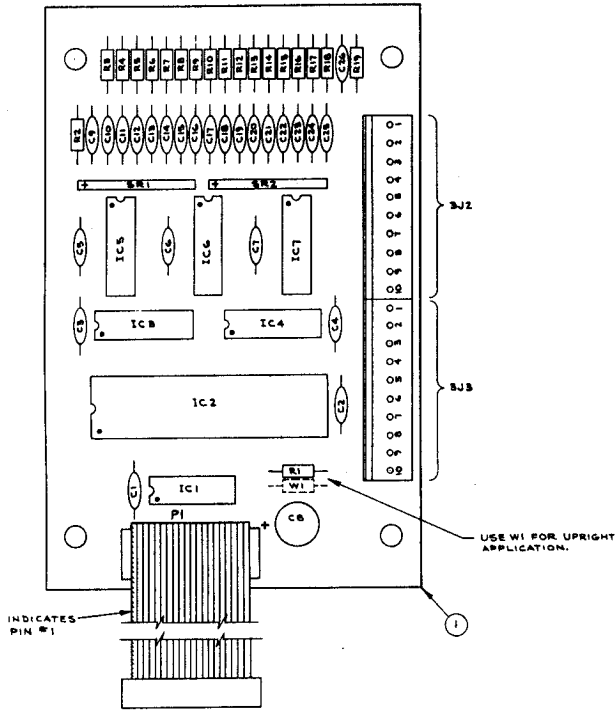
SPARE		
LOC.	LOGIC	QTY.
4B	7400	1
4K	74LS74	1
5I	74LS99B	1
5J	7486	2
6D	4011	2
6H	74LS199	1
6I	7410	2



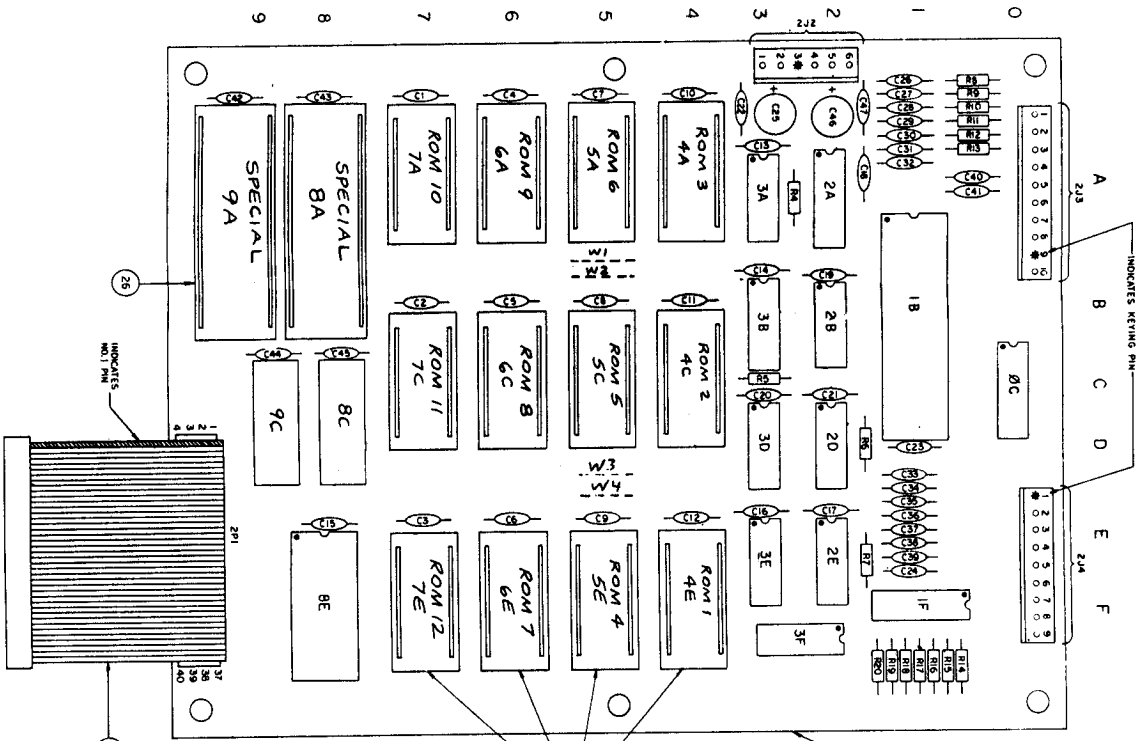
R-8731 CPU Board Logic Diagram (Sheet 2 of 2)



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	4281-09486-00	IC3, IC4	74LS257 QUAD DATA MULTIPLEXER	2
6	5019-09463-00	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	5048-08980-00	C1 THRU C7	CAPACITOR, CERAMIC DISC, 01 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

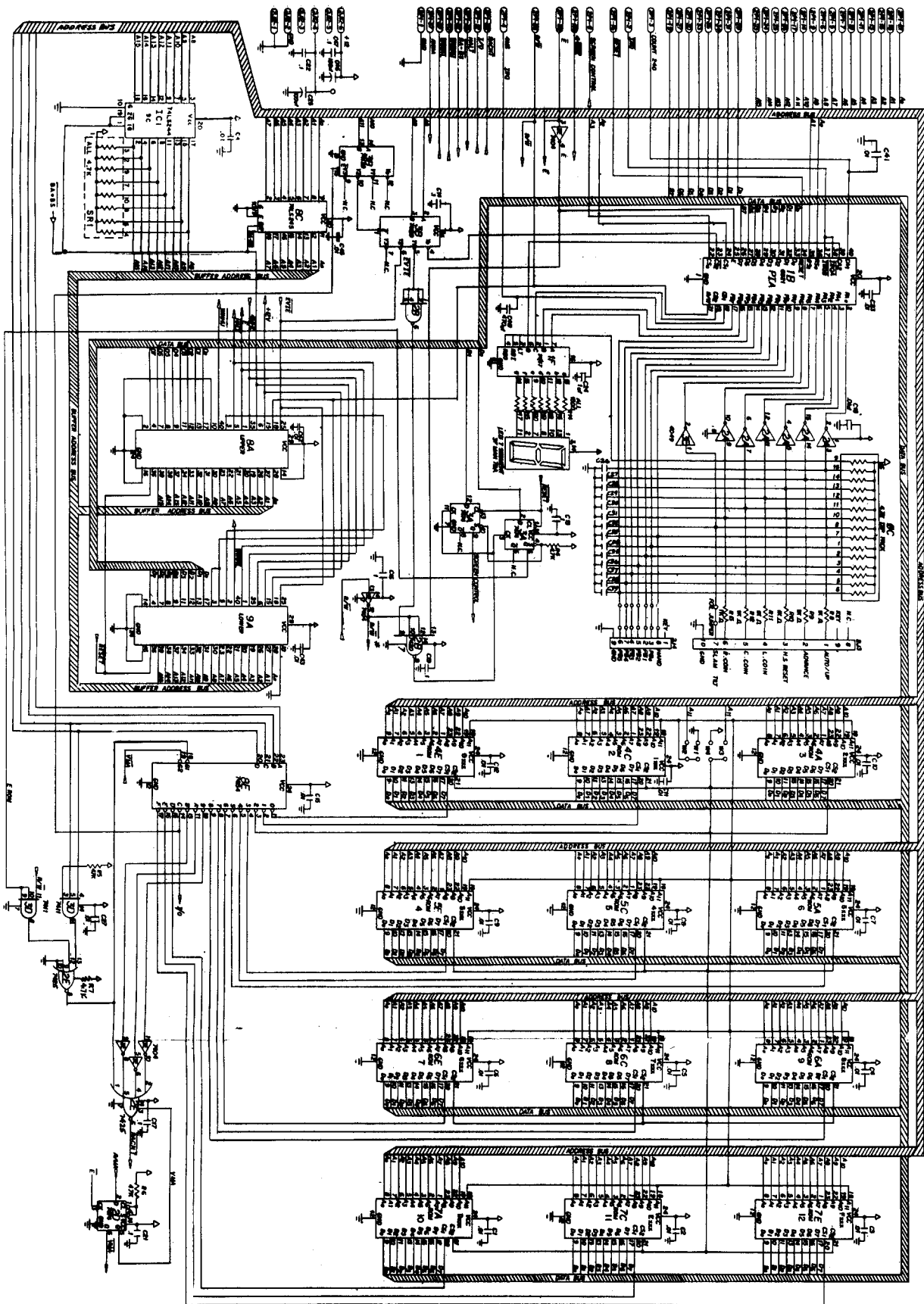


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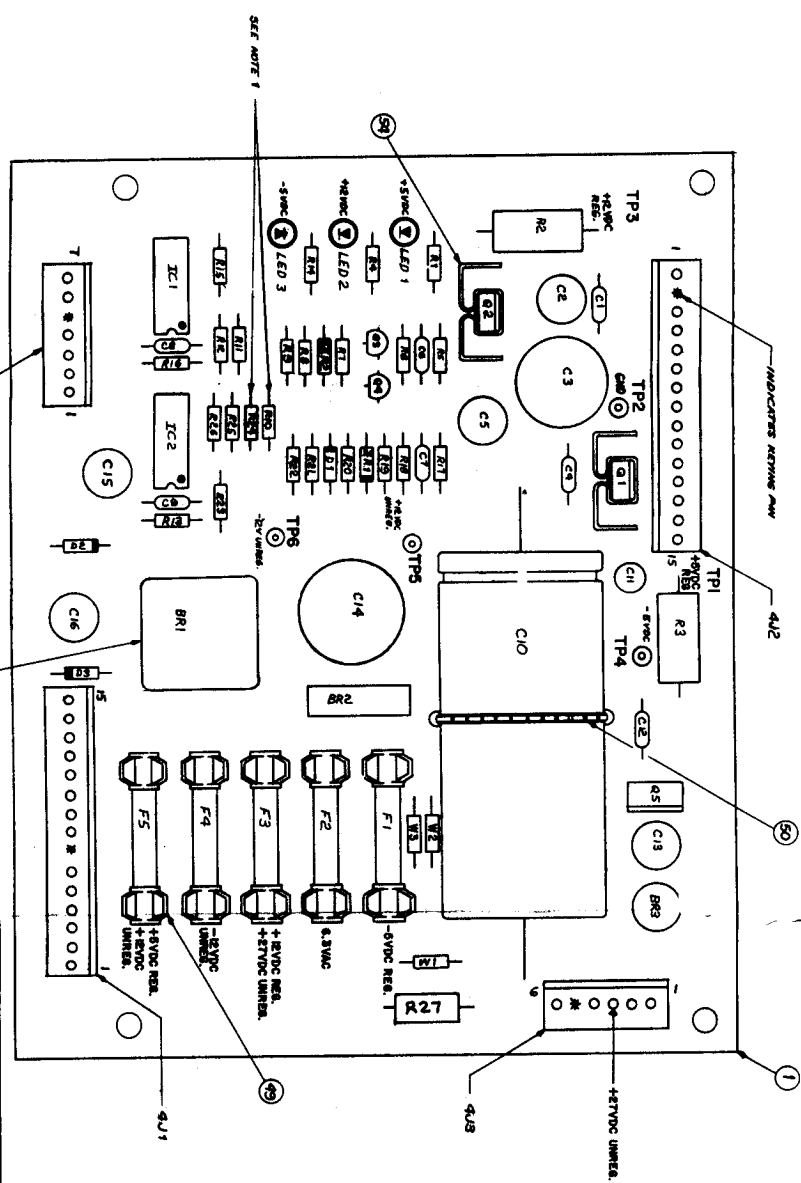
CHIP CODE	ROM #	PART #
4E	ROM 1	A-5343-09962A
4C	ROM 2	A-5343-09962A
4A	ROM 3	A-5343-09962A
5E	ROM 4	A-5343-09965A
5C	ROM 5	A-5343-09965A
5A	ROM 6	A-5343-09965A
6E	ROM 7	A-5343-09967A
6C	ROM 8	A-5343-09967A
6A	ROM 9	A-5343-09970A
7A	ROM 10	A-5343-09970A
7C	ROM 11	A-5343-09972A
7E	ROM 12	A-5343-09972A
		W2, W4

BILL OF MATERIALS

ITEM NO.	PART NO.	PART DESCRIPTION	QTY
1	5271	BASE PCB BOARD	1
2	5280-00	144PBCD TO 7SEG LED DISPLAY	1
3	09407-00	IF	1
4	5280-00	20 3A	1
5	09476-00	7A4	1
6	5281-00	TALES DOUL 2 TO 4	1
7	09476-00	TALES DOUL 2 TO 4	1
8	5280-00	TALES DOUL 2 TO 4	1
9	09476-00	TALES DOUL 2 TO 4	1
10	09476-00	TALES DOUL 2 TO 4	1
11	09476-00	TALES DOUL 2 TO 4	1
12	09476-00	TALES DOUL 2 TO 4	1
13	09476-00	TALES DOUL 2 TO 4	1
14	09476-00	TALES DOUL 2 TO 4	1
15	09476-00	TALES DOUL 2 TO 4	1
16	09476-00	TALES DOUL 2 TO 4	1
17	09476-00	TALES DOUL 2 TO 4	1
18	09476-00	TALES DOUL 2 TO 4	1
19	09476-00	TALES DOUL 2 TO 4	1
20	09476-00	TALES DOUL 2 TO 4	1
21	09476-00	TALES DOUL 2 TO 4	1
22	09476-00	TALES DOUL 2 TO 4	1
23	09476-00	TALES DOUL 2 TO 4	1
24	09476-00	TALES DOUL 2 TO 4	1
25	09476-00	TALES DOUL 2 TO 4	1
26	09476-00	TALES DOUL 2 TO 4	1
27	09476-00	TALES DOUL 2 TO 4	1
28	09476-00	TALES DOUL 2 TO 4	1
29	09476-00	TALES DOUL 2 TO 4	1
30	09476-00	TALES DOUL 2 TO 4	1
31	09476-00	TALES DOUL 2 TO 4	1
32	09476-00	TALES DOUL 2 TO 4	1



D-9144 ROM Board Logic Diagram

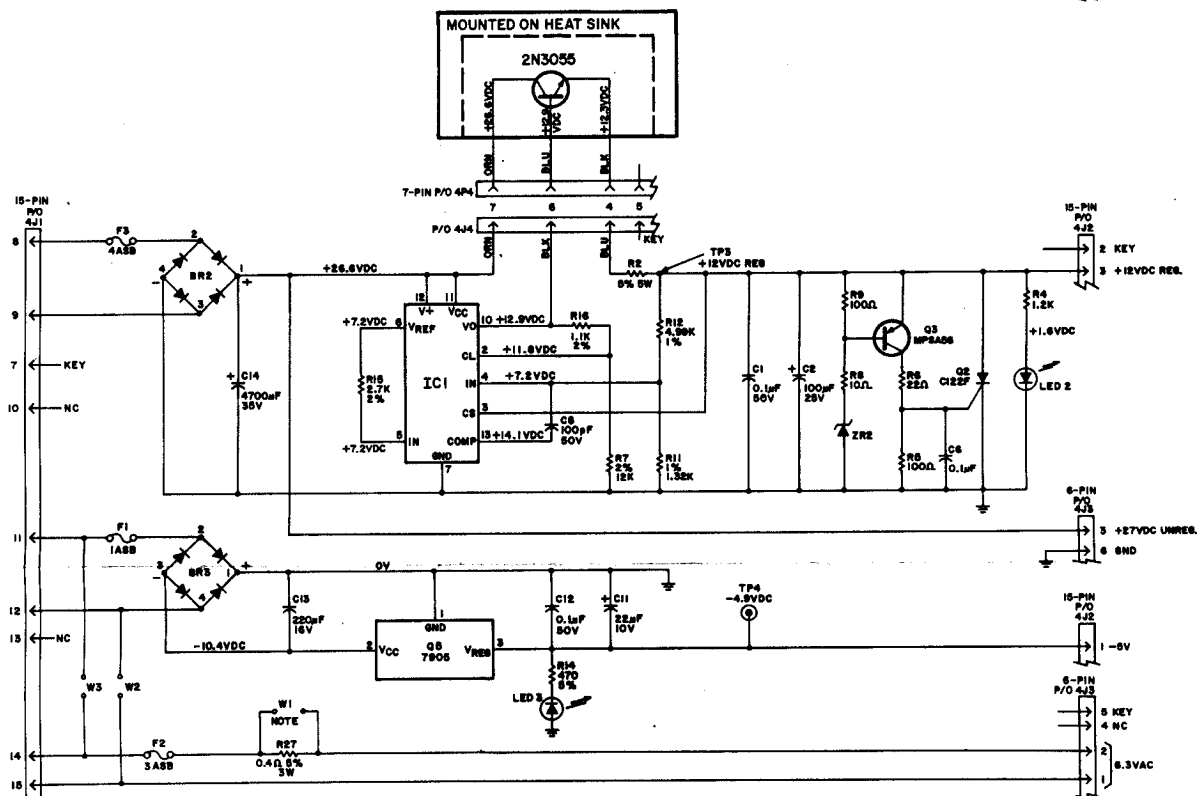
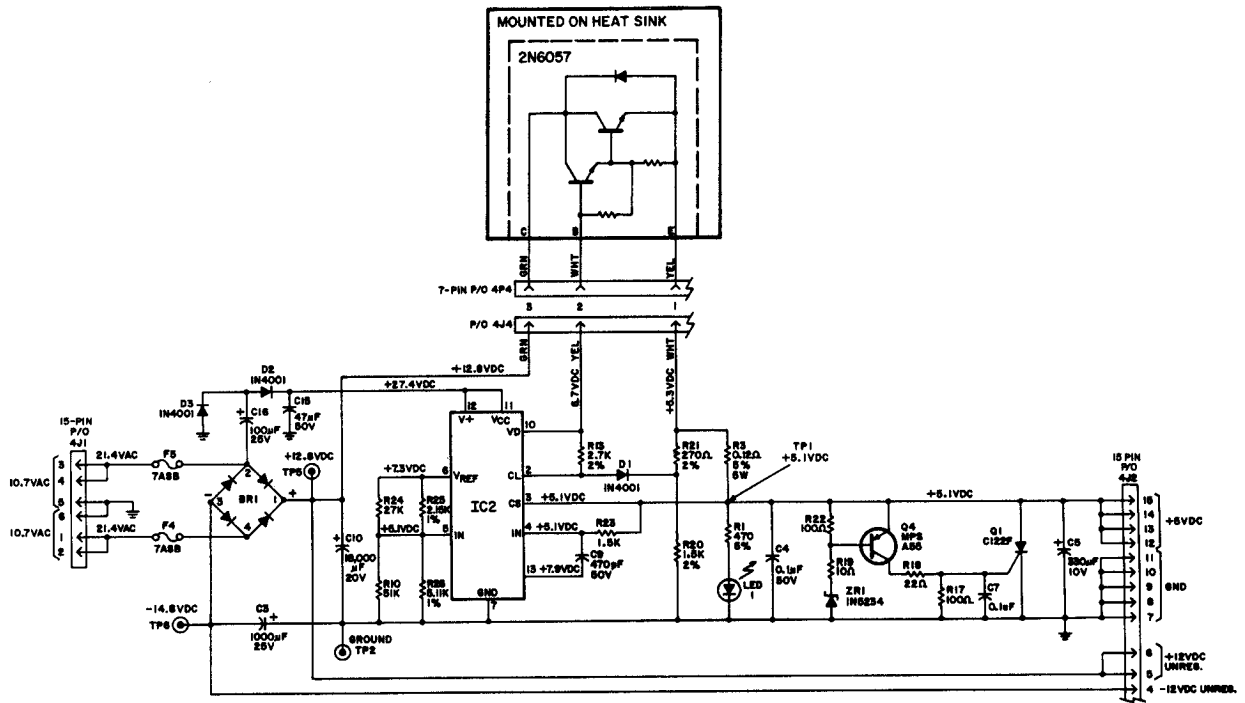


NOTES:
 1. REMOVE R24 IF +5VDC IS GREATER THAN 5.25 VDC,
 REMOVE R10 IF +5VDC IS LESS THAN 4.75 VDC.
 2. BR1 MUST BE MOUNTED 1/8" ABOVE SURFACE OF
 BOARD.
 3. FOR SCHEMATIC REFER TO 16-8011.

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

BILL OF MATERIAL

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

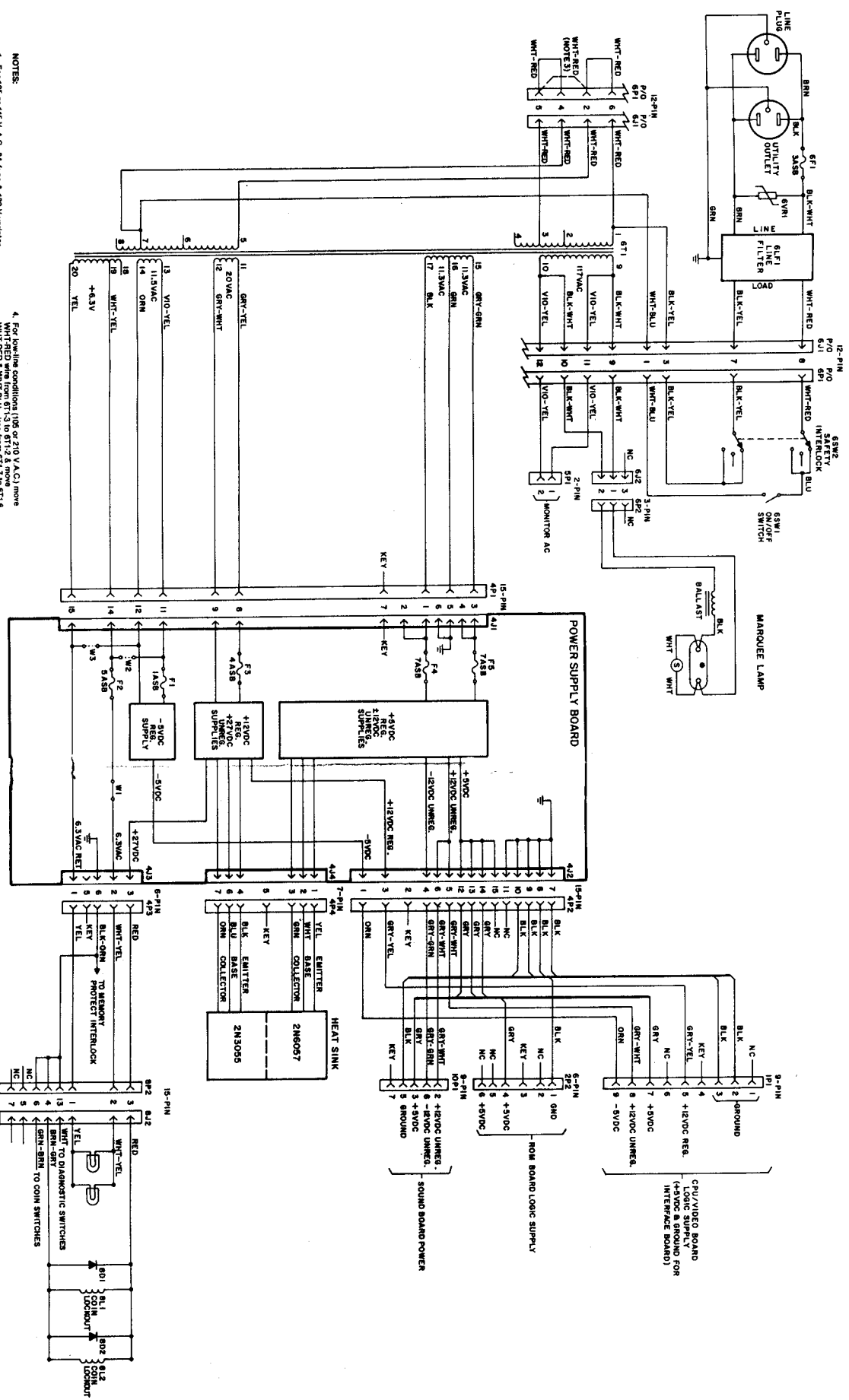


NOTE: JUMPERS W1, W2 & W3 ARE ALL N.C. IN JOUST-UPRIGHT GAMES. THESE GAMES USE POWER TRANSFORMER 60S-C-0955 WITH A 12.5VCT SECONDARY, ALLOWING 6.5V FOR GENERAL ILLUMINATION.

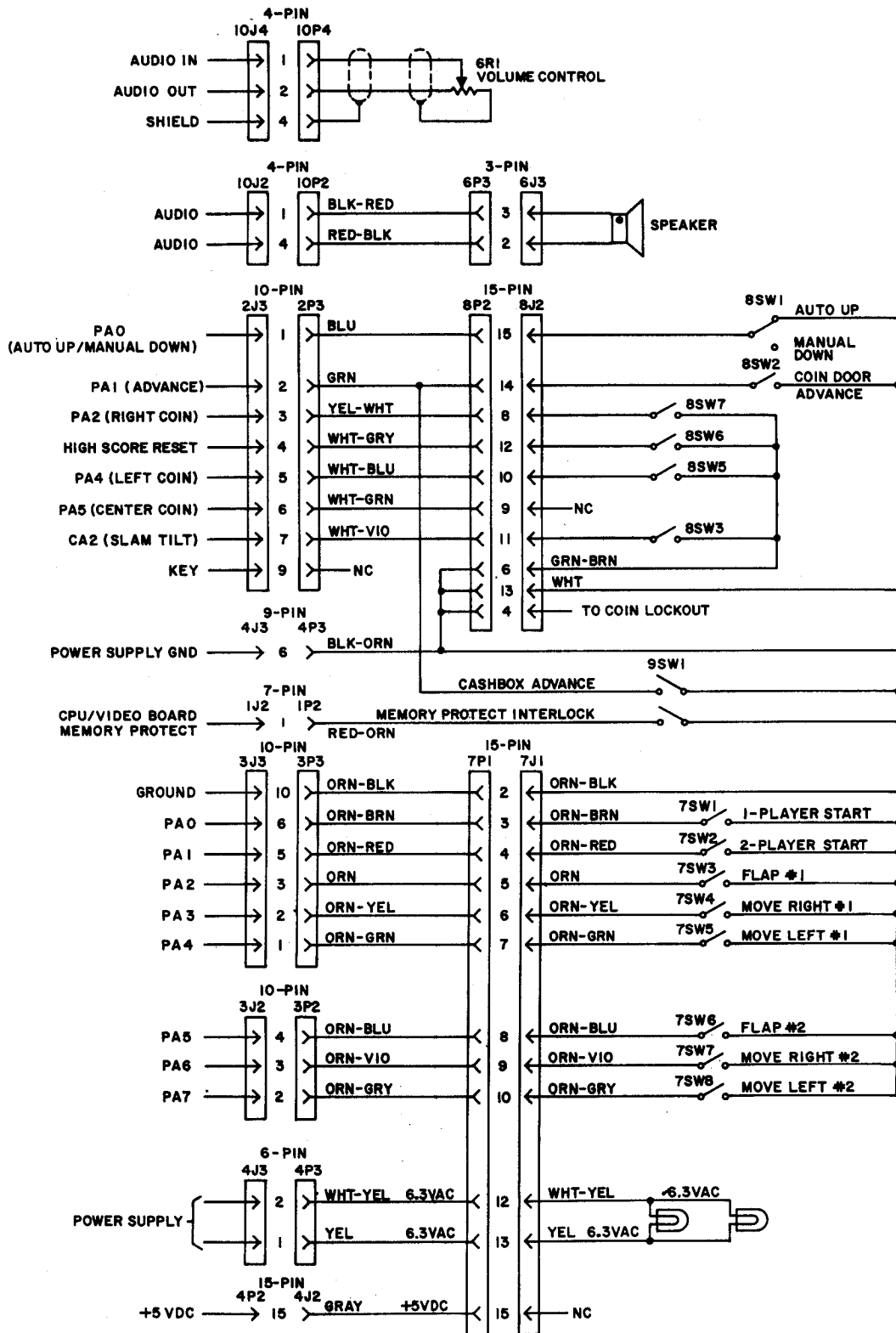
D-8784 Power Supply Board Schematic Diagram

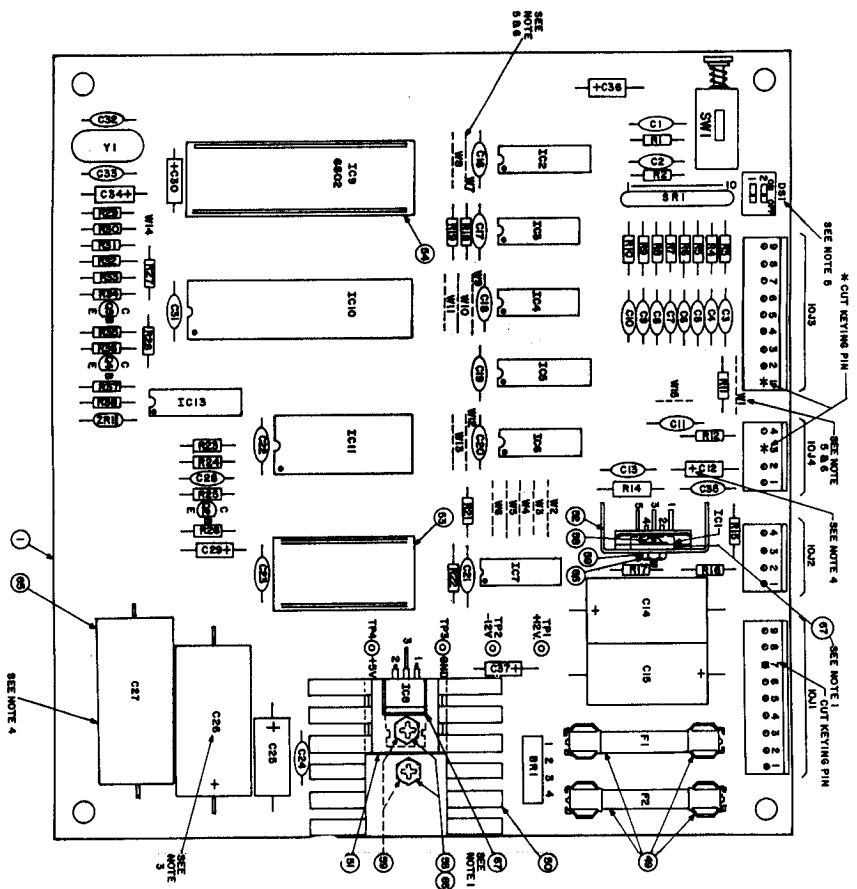
- NOTES:
1. For 105 or 115 V. A.C., 3A fuse & 130 V variator
 2. For 210 or 235 V. A.C., 1A fuse & 275V variator
 3. Jumper wires on EP1 shown with solid lines are connected for 177 V.A.C. operation. Only the one wire is connected for 230 V.A.C. operation.

4. For lowline conditions (105 or 210 V.A.C.) move WHT-RED wire from 8T-3 to 8T-2 & move WHT-RED & WHT-BLU wires from 8T-7 to 8T-6
5. For high line conditions (135 or 240 V.A.C.) move WHT-RED wire from 8T-3 to 8T-4 and move WHT-RED & WHT-BLU wires from 8T-7 to 8T-6



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	TDK 2002 V AUDIO AMP/FILTER	1
3	5280-09012-00	IC3	7442 DEC-DEC RECORDER	1
4	5280-08013-00	IC4	7400 QUAD 2 INPUT NAND	1
5	5310-08113-00	IC5	7408 BUFFER 2 IN-2 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	5340-09003-00	IC10	6810 P.A.M.	1
11	5371-09122-00	IC11	1408 D/A CONVERTER	1
12	5371-09122-00	IC12	1408 D/A CONVERTER	1
13	5100-09018-00	IC13	2M4021 NPN TRANSISTOR	3
14	5075-09018-00	Z81	1N9564 6.8V ZENER DIODE	1
15	5100-09332-00	B81	MOA 500/2M23	1
16	5320-09020-00	Y1	3.50 MHZ CRYSTAL	1
17	5010-08991-00	R1, R16, R19, R21, R22, R27, R30, R31, R32	RESISTOR, FC, 4.7K OHM, 5% 1/4 WATT	9
18	5010-09181-00	R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14, R15, R17, R18	RESISTOR, FC, 100 OHM, 5% 1/4 WATT	1
19	5010-09181-00	R16	RESISTOR, FC, 1 OHM, 10% 1/2 WATT	1
20	5010-09181-00	R17	RESISTOR, FC, 1 OHM, 10% 1/2 WATT	1
21	5010-09181-00	R18	RESISTOR, FC, 2.2 OHM, 5% 1/4 WATT	1
22	5010-09181-00	R19	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
23	5010-09181-00	R20	RESISTOR, FC, 220 OHM, 5% 1/2 WATT	1
24	5010-09361-00	R21, R24, R26	RESISTOR, FC, 5.1K OHM, 5% 1/4 WATT	3
25	5010-09361-00	R22	RESISTOR, FC, 5.1K OHM, 5% 1/4 WATT	1
26	5010-09361-00	R23	RESISTOR, FC, 47K OHM, 5% 1/4 WATT	1
27	5010-09361-00	R25	RESISTOR, FC, 100 OHM, 5% 1/4 WATT	1
28	5010-09361-00	R27	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
29	5010-09361-00	R28	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
30	5010-09361-00	R29	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
31	5010-09361-00	R30	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
32	5010-09361-00	R31	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
33	5010-09361-00	R32	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
34	5010-09361-00	R33	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
35	5010-09361-00	R34	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
36	5010-09361-00	R35	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
37	5010-09361-00	R36	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
38	5010-09361-00	R37	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
39	5010-09361-00	R38	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
40	5010-09361-00	R39	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
41	5010-09361-00	R40	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
42	5010-09361-00	R41	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
43	5010-09361-00	R42	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
44	5010-09361-00	R43	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
45	5010-09361-00	R44	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
46	5010-09361-00	R45	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
47	5010-09361-00	R46	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
48	5010-09361-00	R47	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
49	5010-09361-00	R48	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
50	5010-09361-00	R49	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
51	5010-09361-00	R50	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
52	5010-09361-00	R51	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
53	5010-09361-00	R52	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
54	5010-09361-00	R53	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
55	5010-09361-00	R54	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
56	5010-09361-00	R55	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
57	5010-09361-00	R56	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
58	5010-09361-00	R57	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
59	5010-09361-00	R58	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
60	5010-09361-00	R59	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
61	5010-09361-00	R60	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
62	5010-09361-00	R61	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
63	5010-09361-00	R62	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
64	5010-09361-00	R63	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
65	5010-09361-00	R64	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
66	5010-09361-00	R65	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
67	5010-09361-00	R66	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
68	5010-09361-00	R67	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
69	5010-09361-00	R68	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
70	5010-09361-00	R69	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
71	5010-09361-00	R70	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
72	5010-09361-00	R71	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
73	5010-09361-00	R72	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
74	5010-09361-00	R73	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
75	5010-09361-00	R74	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
76	5010-09361-00	R75	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
77	5010-09361-00	R76	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
78	5010-09361-00	R77	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
79	5010-09361-00	R78	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
80	5010-09361-00	R79	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
81	5010-09361-00	R80	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
82	5010-09361-00	R81	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
83	5010-09361-00	R82	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
84	5010-09361-00	R83	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
85	5010-09361-00	R84	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
86	5010-09361-00	R85	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
87	5010-09361-00	R86	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
88	5010-09361-00	R87	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
89	5010-09361-00	R88	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
90	5010-09361-00	R89	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
91	5010-09361-00	R90	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
92	5010-09361-00	R91	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
93	5010-09361-00	R92	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
94	5010-09361-00	R93	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
95	5010-09361-00	R94	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
96	5010-09361-00	R95	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
97	5010-09361-00	R96	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
98	5010-09361-00	R97	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
99	5010-09361-00	R98	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
100	5010-09361-00	R99	RESISTOR, FC, 10 OHM, 5% 1/4 WATT	1
101	5010-09361-00	R100	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.

