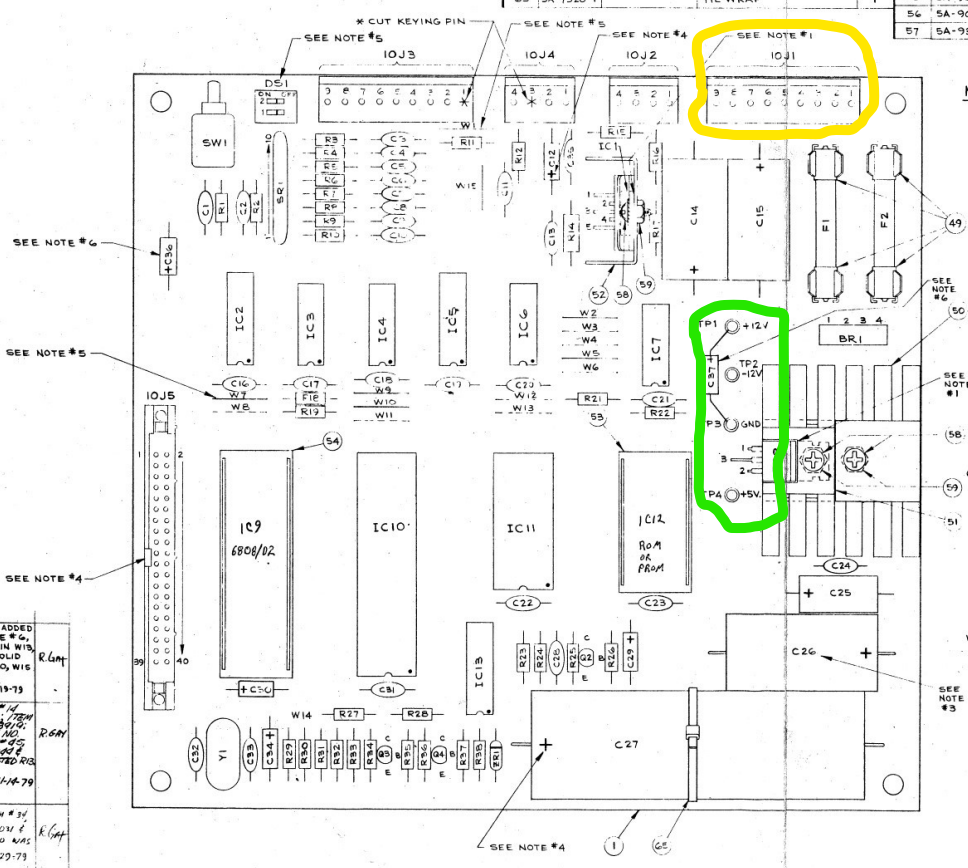
ITEM NO.	PART NO.	PART DESIGNATION	DESCRIPTION	REQ'D. NO.
58			6-32 x 3/16 BINDER HEAD SCREW	3
59			6-32 HEX NUT	3
60		W1, W2, W5, W7, W9, W10, W15	WIRE JUMPER 22 GAUGE WIRE WITH INSULATION	7
61	5A-9248	TP1 THR TP4	TERMINAL #1502-1	4
62	5A-9363	R11	RESISTOR, FC, 5.6 K OHM 5% 1/4 WATT	1
64	5A-9362	SR1	RESISTOR, 4.7 K OHM 10 PIN SIP	1
65	3A-7520-1		TIE WRAP	1

ITEM NO.	PART NO.	PART DESIGNATION	DESCRIPTION	REQ'D. NO.
48	5A 6314	F1, F2	4 AMP SLOW BLOW FUSE	2
49	5A-9178		FUSE HOLDER	4
50	5A-9172		HEAT SINK THERMALLOY #6072B	1
51	5A-9173		HEAT SINK THERMALLOY #6071B	1
52	5A-9199		HEAT SINK THERMALLOY #6030	1
53	5A-9004		24 PIN SOCKET	1
54	5A-8985		40 PIN SOCKET	1
55	5A-9027	10J1, 10J3	9 PIN MALE CONNECTOR	2
56	5A-9028	10J2, 10J4	4 PIN MALE CONNECTOR	2
57	5A-9349	10J5	40 PIN RIBBON HEADER	1



NOTES:

1. USE THERMAL COMPOUND BETWEEN ICs AND HEAT SINK.
2. CAUTION: AVOID STATIC DISCHARGE DAMAGE TO MOS LOGIC.
3. SYMBOLS SHOWN ON COMPONENTS ARE FOR REFERENCE ONLY. DO NOT SCREEN OR STAMP.
4. OBSERVE INDEX MARK OF ALL INTEGRATED CIRCUITS, DIODES D1, D2, AND ZR1.

CAPACITORS C12, C14, C15, C24, C25, C26, C27.

CONNECTORS 10J1, 10J2, 10J4, 10J3, 10J5.

POSITION OF TRANSISTORS Q1, Q2, Q3, Q4.

5. DS1 - 1 SELECTS SOUNDS/NOTES
   2 SELECTS SPEECH/NO SPEECH (W9/W4)

W4 - SPEECH MODULE STATUS
IN - SPEECH MODULE NOT ATTACHED
OUT- SPEECH MODULE ATTACHED

W14 - MPU INTERNAL RAM ENABLE

W7 & W8-MEMORY MAP CONTROL

W12 & W13 - P87 STATUS CONTROL (W13 NEVER USED)

W4 & W9 - P85 STATUS CONTROL

6. SOLDERED ON TOP OF BOARD

INSTALL THESE JUMPERS FOR FOLLOWING GAMES:

W15, W8, W12, W4, W1, W3, W6, W11 FOR:

SOUND ROM 1:
- WORLD CUP
- DISCO FEVER
- CONTACT
- POKERINO
- PHOENIX
- ARISTOCRAT SHUFFLE
- POMPILI SHUFFLE
- KING TUT SHUFFLE
- TAURUS SHUFFLE

W15, W8, W12, W4, W1, W2, W5, W10, FOR:

SOUND ROM 1:
- FLASH
- STELLAR WARS
- TRI ZONE
- TIME WARP

(5A-9198)

W7, W15, W9, W1, (*SEE NOTE #5) W2, W5, W10 FOR:

GORGAR; SOUND ROM 2 - 5A-9360

IC 12 SELECTION STRAPPING:

(2K x 8)	(1K x 8)	(512 x 8)
W2 - IN	W3 - IN	W3 -
W5 - IN	W3 - IN	W6 - IN
W10	W6	W11

BILL OF MATERIAL

ITEM NO.	PART NO.	PART DESIGNATION	DESCRIPTION	REQ'D. NO.
1	IC-2001-146-3		BARE P.C. BOARD	1
2	5A-9156	IC1	TDA 2002 V AUDIO AMPLIFIER	1
3	5A-9012	IC2	7442 BCD-DEC DECODER	1
4	5A-9073	IC3	7400 QUAD 2 INPUT NAND	1
5	5A-8973	IC4	7408 QUAD 2 INP. AND GATE	1
6	5A-9153	IC5	4050 BUFFER	1
7	5A-9154	IC6	4068 8 INPUT NAND GATE	1
8	5A-8971	IC7	14069 HEX INVERTER	1
9	5A-9157	IC8	7805 5 VOLT REG. W/TO220 CASE	1
10	5A-8972	IC10	6821 P.I.A.	1
11	5A-9003	IC11	6810 RAM	1
12	5A-9152	IC13	1408 D/A CONVERTER	1
13	5C-8938	Q2, Q3, Q4	2N4401 NPN TRANSISTOR	3
14				
15	5A-9018	ZR1	IN5996 6.8V. ZENER DIODE	1
16				
17	5A-9158 OR 5A-9357	BR1	MDA 200/3N253 BRIDGE RECTIFIER	1
18	5A-9020	Y1	3.58 MHz CRYSTAL	1
19	5B-8991	R1, R18, R19, R21, R22, R27, R30, R31, R32	RESISTOR, FC, 4.7K OHM 5% 1/4 WATT	9
20	5B-9036	R2 THRU R10	RESISTOR, FC, 100 OHM 10% 1/4 WATT	9
21	5A-8984	R12, R15, R28, R36, R38	RESISTOR, FC, 1K OHM 10% 1/4 WATT	5
22	5A-9181	R14	RESISTOR, FC, 1 OHM 10% 1/2 WATT	1
23	5A-9161	R16	RESISTOR, FC, 2.2 OHM 10% 1/4 WATT	1
24	5A-9361	R17	RESISTOR, FC, 220 OHM 10% 1/2 WATT	1
25				
26	5B-8983	R23, R24, R26	RESISTOR, FC, 3.3K OHM 10% 1/4 WATT	3
27	5A-9179	R25	RESISTOR, FC, 3.3 M OHM 10% 1/4 WATT	1
28	5A-9359	R29	RESISTOR, FC, 47 K OHM 5% 1/4 WATT	1
29	5B-8817	R33, R35, R37	RESISTOR, FC, 10 K OHM 10% 1/4 WATT	3
30	5B-9039	R34	RESISTOR, FC, 10 OHM 10% 1/4 WATT	1
31	5A-8980	C1, C16 THRU C28 C31	CAPACITOR, CERAMIC, .01 MFD. 50 V. ±20%	11
32	5A-9065	C2 THRU C10	CAPACITOR, CERAMIC 470 PFD. 50 V. ±20%	9
33	5A-9345	C11	CAPACITOR, CERAMIC, .001 MFD. 20% 100 V.	1
34	5A-9365	C12, C30, C36	CAPACITOR, ELECTROLYTIC 1 MFD. 63 V. -10/+ 50%	3
35	5A-8996	C13, C24, C35	CAPACITOR, CERAMIC .1 MFD. 50 V. ±20%	3
36	5A-9165 5A-9165-1	C14	CAPACITOR, ELECTROLYTIC, 800 MFD. 16 V. OR 1,000 MFD. 15 V. ±20%	1
37	5A-9164 5A-9164-1	C15	CAPACITOR, ELECTROLYTIC, 500 MFD. 15 V. OR 470 MFD. 25 V. ±20%	1
38	5A-8986	C25	CAPACITOR, ELECTROLYTIC, 100 MFD. 10 V. ±20%	1
39	5A-8893	C26,	CAPACITOR, ELECTROLYTIC, 1,000 MFD. 25 V. ±20%	1
40	5A-9046	C27	CAPACITOR, ELECTROLYTIC, 12,000 MFD. 16 V. ±20%	1
41	5A-9180	C28	CAPACITOR, CERAMIC, 47 PFD. 1K V. ±20%	1
42	5A-9343	C29	CAPACITOR, ELECTROLYTIC, 10 MFD. 25 V. LOW LEAK.	1
43	5A-9169	C32, C33	CAPACITOR, CERAMIC DISC, 27 PFD. 1K V. ±10%	2
44	5A-9168	C34	CAPACITOR, TANTALUM, 2.2 MFD. 15 V. ±20%	1
45	5A-9031	C37	CAPACITOR, TANTALUM, 1 MFD. 25 V. ±20%	1
46	5A-9024	SW1	MOMENTARY SWITCH SPDT	1
47	5A-9330	DS1	2 STD. DIP SWITCH	1

REVISION LETTER	REVISION	BY
E	REVISED NOTES, ADDED ITEM #45 & NOTE #6, RELOCATED W15, IN W13, DASH LINE WAS SOLID LINE & ITEM #60, W15 WAS W18 E.C.O. 11-19-79	R.Gay
D	DELETED ITEM #14 PT NO. 5A-9044 ITEM #16 5T-348-5% 5A-9170; ITEM #25 PT NO. 5A-8934 ITEM #45 PT NO. 5A-9349 & IN ITEM #21, DELETED R13 QTY. WAS 8 E.C.O. 4764 11-14-79	R.Gay
C	ADDED C36, ITEM #34 PT NO WAS 5A-9031 & QTY WAS 1, & C30 WAS .01 MFD. E.C.O. 4760 10-29-79	R.Gay
B	DELETED ITEM #62 ADDED R1 & R12 TO ITEM #19, QTY WAS 7, 10-4-79 ITEM #61, A... ITEM #62, NONE NOW ITEM #62 WAS 4.	R.G.
A	10-4-79	R.G.

DIETZGEN NO. 198H AGEPROOF

TOLERANCES	QTY.	ASSEMBLE ON
UNLESS OTHERWISE SPECIFIED: FRACTIONAL ±1/64 · DECIMAL .X ±.005 · .XX ±.010 · HOLE DIA. .XXX +.003 -.000 · ANGULAR ±1/2° · CONCENTRICITIES .T.I.R. .005 · SCREW THREADS CLASS 2		

WILLIAMS ELECTRONICS, INC.
SUBSIDIARY OF THE BERGEN CORP.
3401 N. CALIFORNIA CHICAGO, ILL. 60618 267-2240

NAME: SOUND BOARD SUB-ASSEM

MATERIAL | HEAT TREATMENT | FINISH

DRN. R.G.H. 9-28-79 | APP'D. [illegible] | SCALE 2:1 | D-8223

Sound Board Assembly Drawing