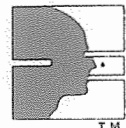


DISASSEMBLY INSTRUCTIONS

<p>CHASSIS REMOVAL</p> <p>Lay console facedown on a soft protective surface and remove four screws holding top to cabinet bottom. Screws near rear of bottom also hold circuit board in place. Separate front of cabinet bottom and lift cabinet bottom off cabinet top. CAUTION: when lifting circuit board out of cabinet top, damage to shielding foil may result if extreme care is not exercised. Lift front edge of circuit board clear of mounting pins (between switches) and release connectors and switches from cabinet back.</p>	<p>JOYSTICK CONTROLLER</p> <p>Remove four screws from bottom of joystick base and lift bottom off base. Screws also hold circuit board in place.</p> <p>PADDLE CONTROLLER</p> <p>Pull knob off control, remove two screws from bottom of base and lift bottom off base.</p>
---	---

SET 2196 FOLDER 2

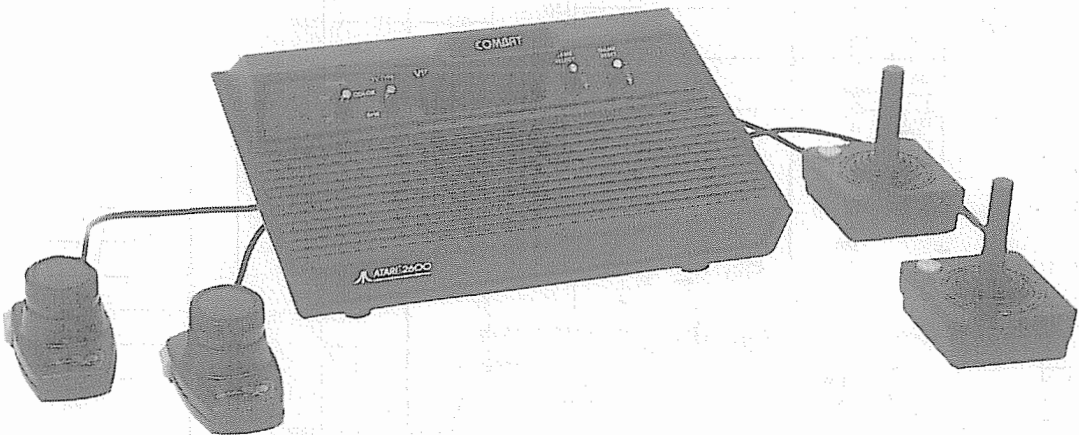


PHOTOFACT® Folder
with **CIRCUITRACE**

For Supplier Address See PHOTOFACT® Index

ATARI
MODEL CX-2600A

ATARI
MODEL CX-2600A



ATARI
MODEL CX-2600A

SET 2196 FOLDER 2



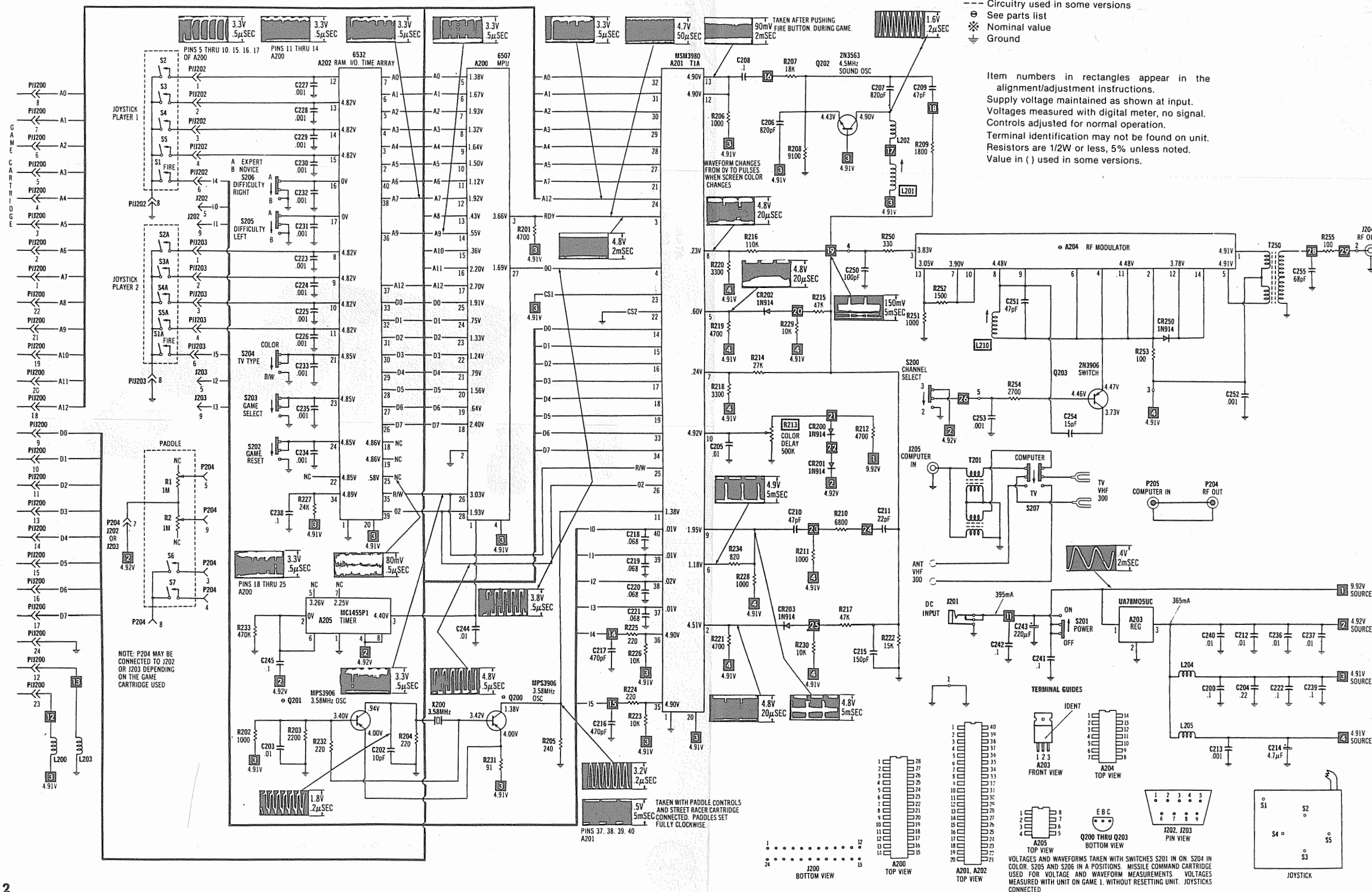
HOWARD W. SAMS & CO., INC. Indianapolis, Indiana 46206

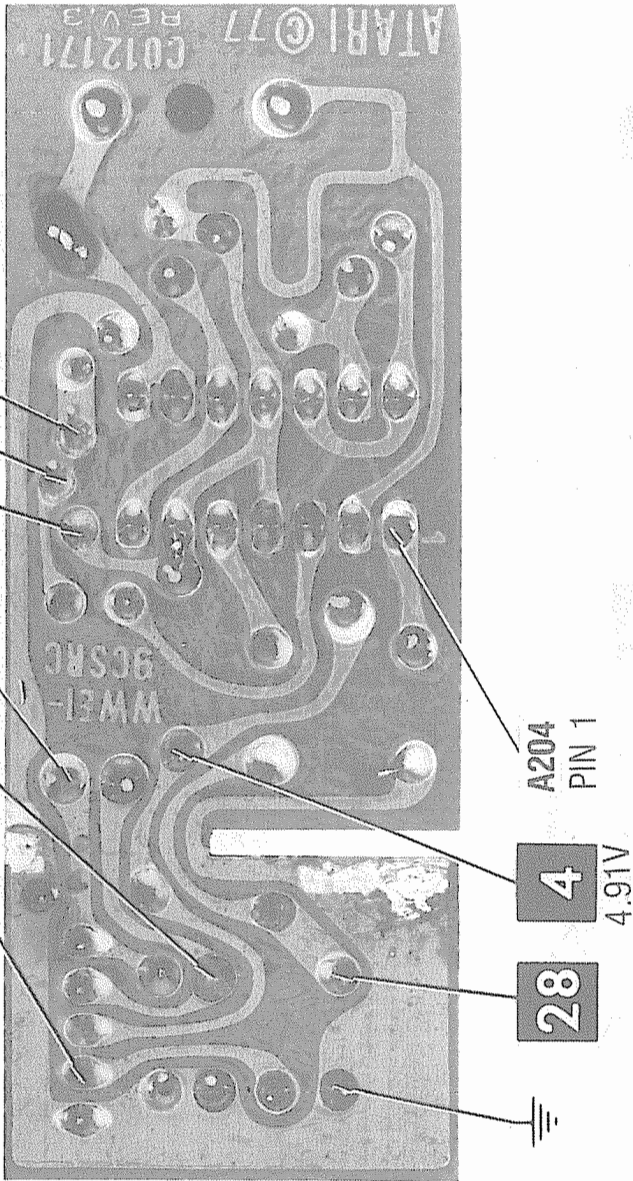
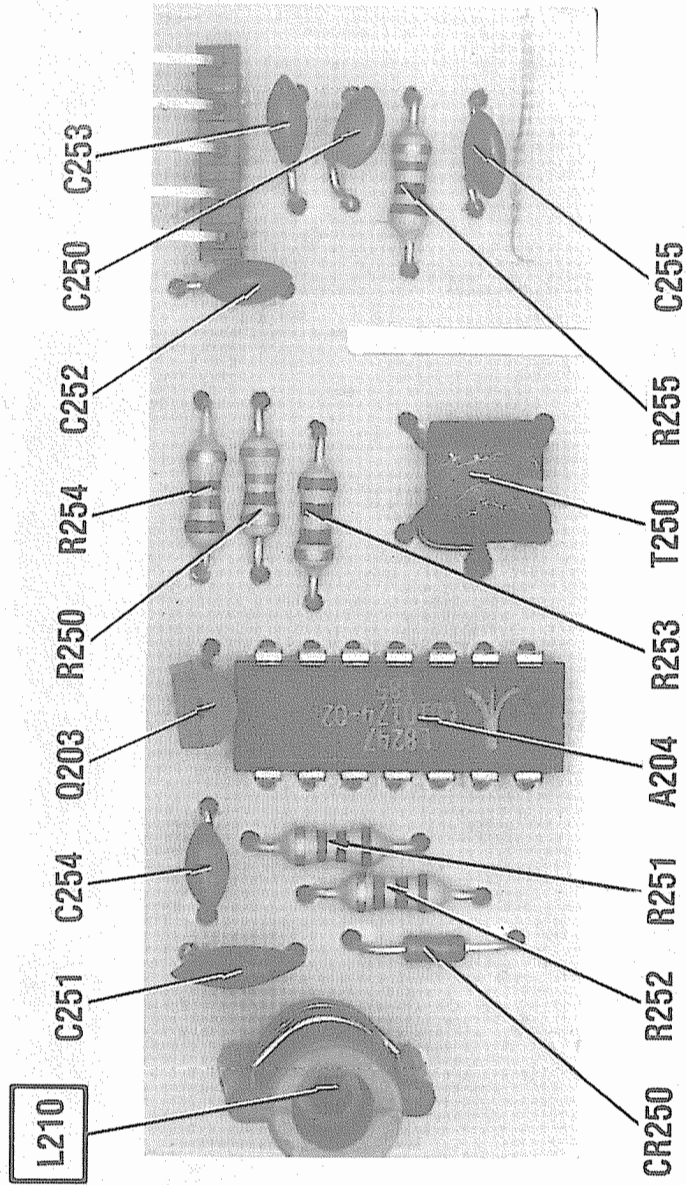
The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. 83PZ01769

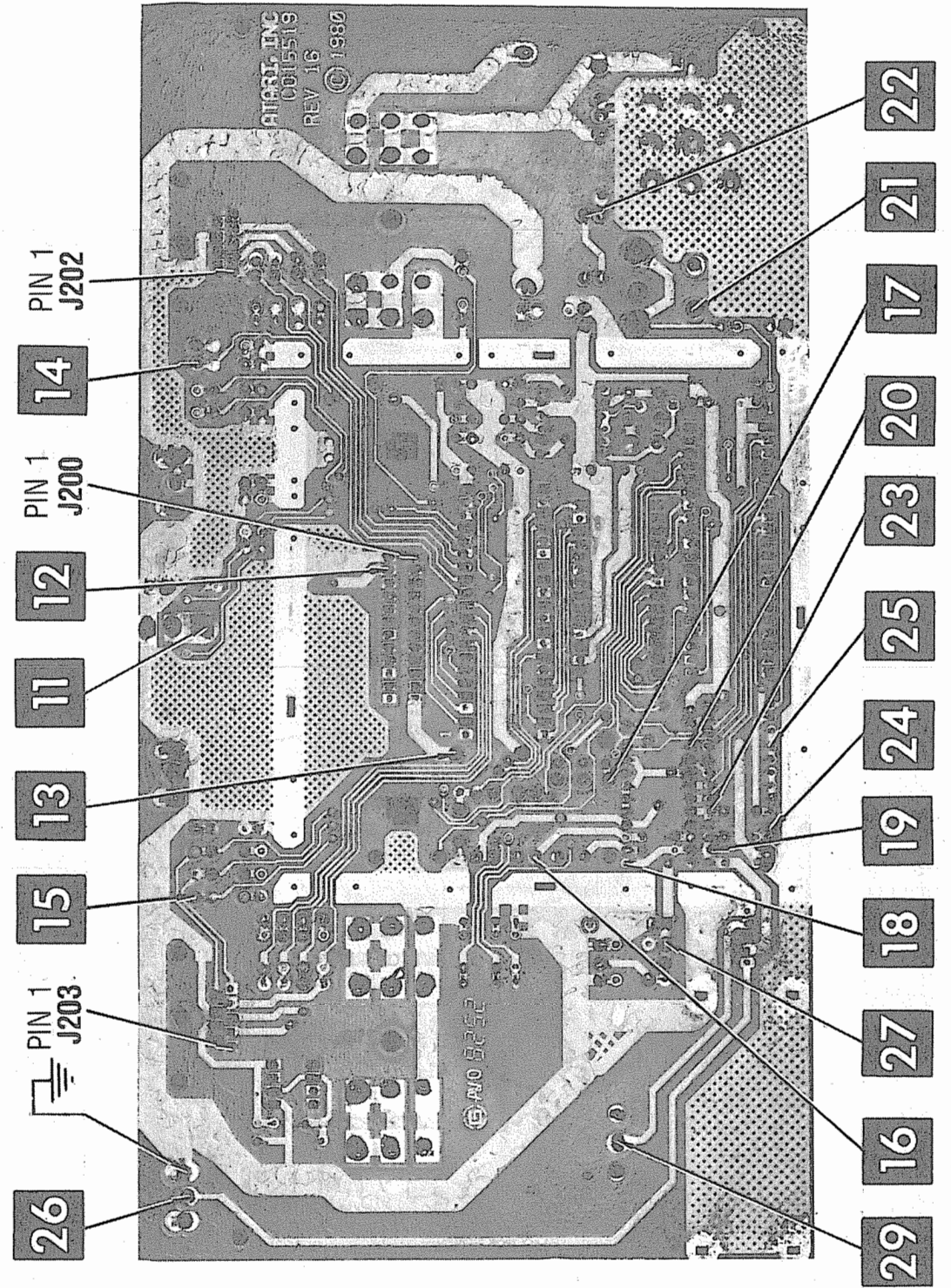
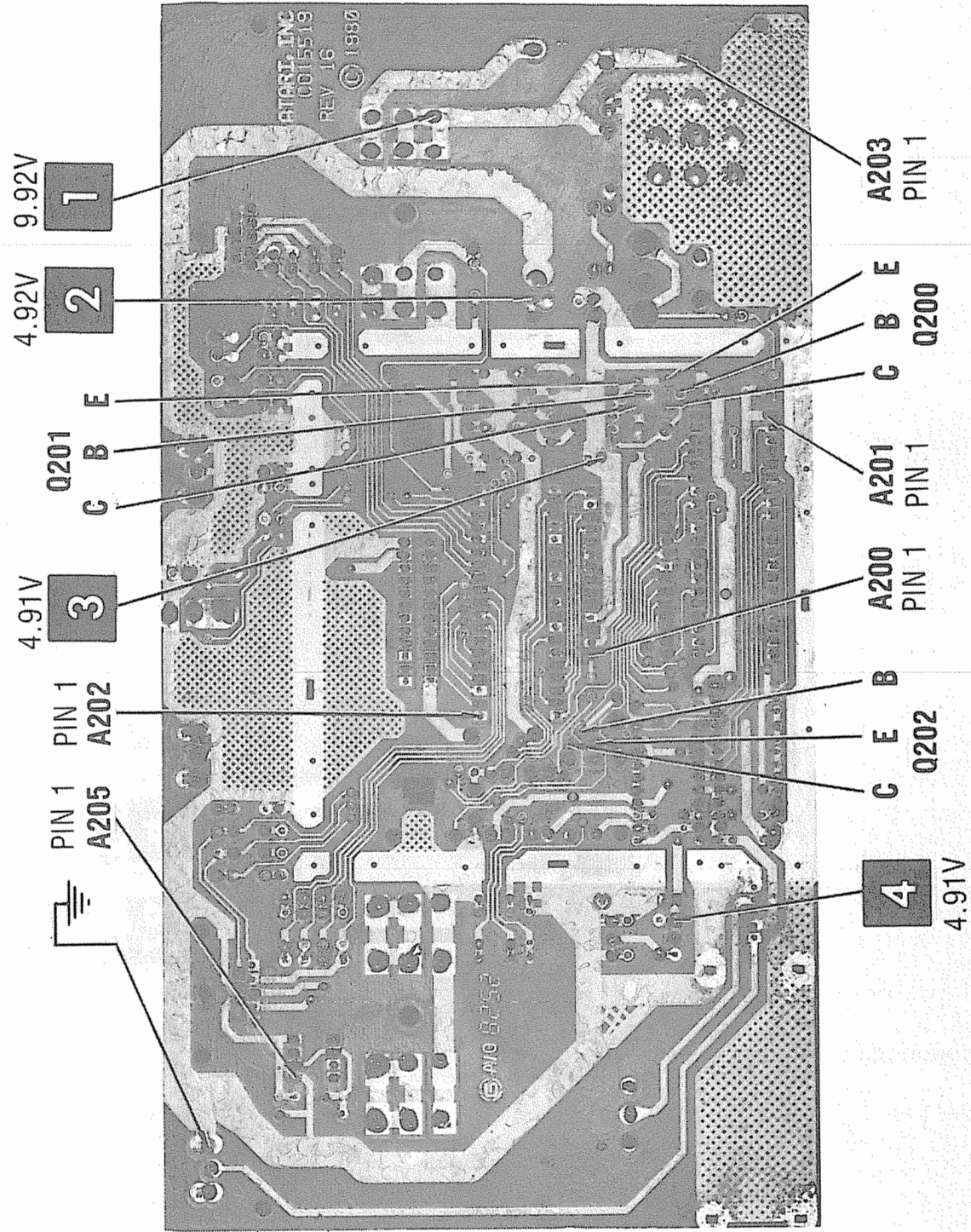
Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1983 Howard W. Sams & Co., Inc. Indianapolis, Indiana 46206. Printed in U.S. of America.

- ✖ Circuitry not used in some versions
- Circuitry used in some versions
- ⊕ See parts list
- ⊗ Nominal value
- ⊥ Ground

Item numbers in rectangles appear in the alignment/adjustment instructions. Supply voltage maintained as shown at input. Voltages measured with digital meter, no signal. Controls adjusted for normal operation. Terminal identification may not be found on unit. Resistors are 1/2W or less, 5% unless noted. Value in () used in some versions.

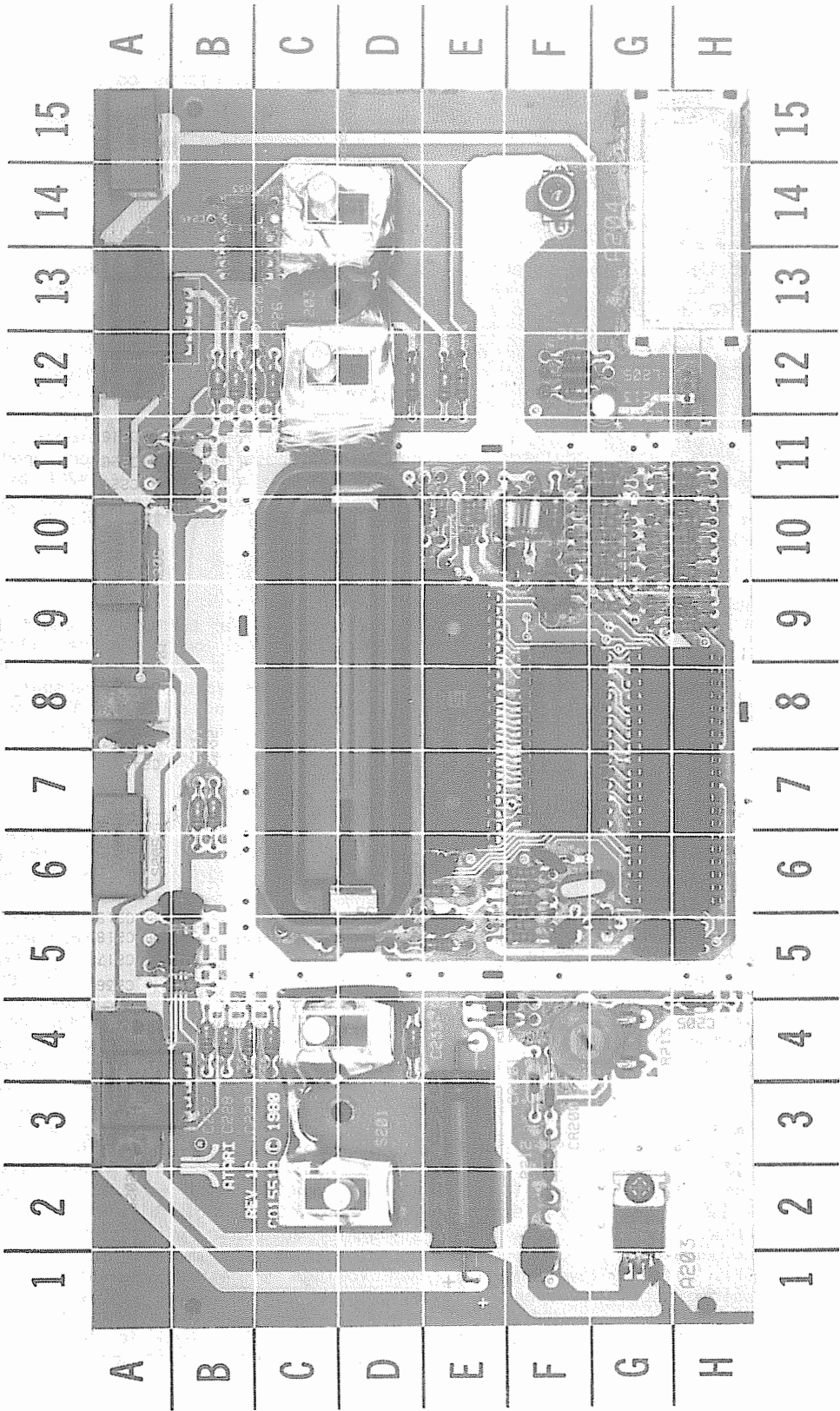






MAIN BOARD GridTrace LOCATION GUIDE

A200	F-8	C218	B-5	C240	E-4	Q201	F-5	R221	G-9
A201	H-7	C219	B-6	C241	F-1	Q202	F-10	R222	H-11
A202	E-8	C220	B-11	C242	A-8	R201	G-5	R223	E-10
A203	G-2	C221	B-11	C243	E-3	R202	F-6	R224	C-11
A205	B-13	C222	E-6	C244	E-12	R203	F-6	R225	C-5
C200	F-6	C223	B-12	C245	B-14	R204	F-5	R226	E-5
C202	E-5	C224	B-12	CR200	F-3	R205	F-6	R227	E-10
C203	E-6	C225	C-12	CR201	F-3	R206	G-10	R228	H-9
C204	G-5	C226	C-12	CR202	G-9	R207	E-10	R229	G-10
C205	H-4	C227	B-4	CR203	H-9	R208	E-11	R230	H-10
C206	F-10	C228	B-4	J200	C-8	R209	G-11	R231	F-5
C207	F-10	C229	B-4	J201	A-8	R210	H-10	R232	F-6
C208	G-11	C230	C-4	J202	A-3	R211	G-10	R233	B-14
C209	G-11	C231	C-4	J203	A-13	R212	F-3	R234	H-9
C210	H-10	C232	B-7	J204	F-14	R213	F-4	S200	A-15
C211	H-11	C233	D-4	L200	D-5	R214	H-10	S201	C-2
C212	F-12	C234	E-12	L201	F-9	R215	H-10	S202	C-14
C213	F-12	C235	D-12	L202	F-10	R216	H-10	S203	C-12
C214	G-12	C236	B-5	L203	E-10	R217	H-9	S204	C-4
C215	H-11	C237	B-10	L204	E-4	R218	G-10	S205	A-6
C216	B-11	C238	D-10	L205	F-12	R219	G-10	S206	A-10
C217	B-5	C239	E-5	Q200	G-5	R220	G-10	X200	F-6



TROUBLESHOOTING

POWER SUPPLY

If the unit is dead, check for 9.92V from the AC adaptor. If the voltage is absent, check for possible shorts to ground and check DC Input Jack (J201) and the AC adaptor plug for possible opens or bad connections. If the 9.92V is good, check for 4.92V at the output of the Regulator IC (A203). If the voltage is absent, check for possible shorts to ground and check IC A203 by substitution. Check the AC ripple with a scope at the input and output of IC A203. If there is too much ripple, check Capacitors C241 and C242 and Electrolytic C243 at the input of IC A203 and check Capacitors C200, C204, C212, C213, C236, C237, C239 and C240 and Electrolytic C214 at the output.

VIDEO

If there is a carrier from the RF modulator but no video, check for 4.91V at pin 4 of the MPU IC (A200) and pin 20 of the TIA IC (A201) and the RAM IC (A202). If the voltage is absent at any of the ICs, check for possible opens or shorts on the printed circuit board. If the voltage is absent at all the ICs, check the Regulator IC (A203) and the AC adaptor. If the voltage is good, check the 3.58MHz clock pulses at pin 11 of IC A201. If the pulses are absent, check the voltages and components associated with the 3.58MHz Oscillator Transistors (Q200 and Q201). If the pulses are good, check the 1.19MHz clock pulses at pins 4 and 26 of IC A201. If the 1.19MHz pulses are absent, check for opens or shorts on the circuit board and check IC A201 by substitution. Check the video waveforms at pins 5 thru 9 of IC A201. If any of the waveforms are absent, check the components associated with the missing waveform and check IC A201 by substitution. Check for a video waveform at pin 4 of the RF Module. If the waveform is absent, check the components associated with pin 4 of the RF Module and check for possible opens or shorts on the circuit board. If the video waveform is good, check the voltages and components associated with Switch Transistor (Q203) and the RF Modulator IC (A204).

COLOR

If the colors are not correct, check the frequency of the 3.58MHz Oscillator and the "Color Delay Adjustment". If there are also wavy lines in the picture or the colors fade in and out, check Capacitors C241, C242 and Electrolytic C243 and Regulator IC (A203). If there is no color, check the waveforms on pins 6 and 9 of the TIA IC (A201). If the waveforms are absent, check for possible shorts or opens and check IC A201 by substitution. If the waveforms have no color information, check the Color, B/W Switch (S204), Capacitor C233 and check the voltage on pin 21 of the RAM IC

(A202). Check the MPU IC (A200) and IC A202 by substitution. Check the connections on socket J200. If the waveforms on pins 6 and 9 of IC A201 are good, check Capacitors C211 and C210 and Resistors R210, R211, R228 and R234. If no problems are found, check the voltages and components associated with the RF Modulator IC (A204) and Switch Transistor (Q203).

AUDIO

If there is no sound, check for a 4.5MHz waveform at the collector of the 4.5MHz Sound Oscillator Transistor (Q202). If the waveform is absent, check the voltages and components associated with Transistor Q202. If the waveform is good, check the adjustment of Coil L201. Check for audio waveforms at pin 12 and 13 of the TIA IC (A201) while a game is in progress. If the audio waveforms are absent, check for possible shorts or opens on the circuit board and check IC A201 by substitution. If the audio waveforms are good, check Capacitors C206 thru C209 and Resistors R206 thru R209.

SYNC

If the vertical or horizontal won't lock in or there is vertical or horizontal jitter, check the sync waveform at pin 2 of the TIA IC (A201). If the waveform is absent, check for possible shorts and check IC A201 by substitution. If the waveform is good, check Diode CR203 and Resistors R217, R221 and R230.

JOYSTICKS AND PADDLES

If some positions or buttons on the joysticks don't work, check for breaks in the circuit at sockets J202 and J203 and check the buttons and switches on the joysticks for proper operation. Using the Joystick and Paddle Connection Chart, check the voltages on the appropriate pin while operating the joystick or paddle switches. The voltages should drop from 4.80V to 0V when the switch is closed. If the voltages are not correct, check the bypass capacitor connected to the defective pin and check for possible shorts or opens on the printed circuit board. If no problem is found, check the MPU IC (A200), TIA IC (A201) and RAM IC (A202) by substitution. If the paddle controls are not working properly, check the waveforms on pins 37 thru 40 of IC A201 while turning the paddle control. The waveform should vary from a .5Vpp pulse waveform with the control fully clockwise to a 1Vpp sawtooth waveform with the control fully counterclockwise. The waveform reaches a maximum voltage of 4.8Vpp between the two positions. If the waveforms are not present or not proper, check the bypass capacitor connected to the defective pin, check for shorts or opens on the printed circuit board and check IC A201 by substitution.

TROUBLESHOOTING (Continued)

JOYSTICK AND PADDLE CONNECTIONS

	A201 PIN NUMBER	A202 PIN NUMBER	J202 PIN NUMBER	J203 PIN NUMBER
JOYSTICKS LEFT (Player 1)	36			
RIGHT (Player 2)	35			
PADDLES				

PARTS LIST AND DESCRIPTION (CONTINUED)
(When ordering parts, state Model, Part Number, and Description.)

MISCELLANEOUS

ITEM No.	PART NAME	MFGR. PART No.	NOTES
J201 thru S5A X200	Jack Switch Switch Switch Switch Switch Switch Switch Switch Switch Switch Crystal Adaptor Adaptor Controller Controller Handle Insert P.C. Board P.C. Board RF Modulator	79-5918 C0-12241 C0-10373 C0-10388 C0-10388 C0-10373 C0-12241 C0-12241 EWC-TV-GS C0-16010 CA-014034 CA-014034A CA-012994-03 CA-012760-06 C0-12116 CA-012233 CA-016741 CA-012174	DC Input Part of Joystick Controller Part No. CA-012994-03 Part of Paddle Controller Part No. CA-012760-06 Channel Select (2,3) Power (On,Off) Game Reset Game Select TV Type (Color, B/W) Difficulty Left (A,B) Difficulty Right (A,B) Select (Computer,TV), Complete Assembly Part of Joystick Controller Part No. CA-012994-03 3.58MHz AC (9V @ 500mA) AC (Heavy Duty) Joystick Paddle Main (Includes RF Modulator) Joystick Channel 2/3

CABINETS & CABINET PARTS (When ordering specify model, chassis & color)

MISCELLANEOUS ADJUSTMENTS

Suggested Alignment Tools: GC ELECTRONICS
L201, L210.....9300, 9302, 9304

COLOR DELAY ADJUSTMENT

Adjust Color Delay Control (R213) for normal color on a game cartridge with a known color.

SOUND ADJUSTMENT

Connect a pickup loop to a Frequency Counter and slip the loop over L201. Adjust L201 for a frequency of 4.5MHz.

RF MODULATOR ADJUSTMENT

Set a TV on channel 2 or 3. Set Switch S200 on the same channel and adjust L210 for the best picture.

RESISTANCE MEASUREMENTS

MEASUREMENTS TAKEN WITH LOW POWER OHMS METER														
ITEM	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6	PIN 7	PIN 8	PIN 9	PIN 10	PIN 11	PIN 12	PIN 13	PIN 14
A200	INF	0	5050	1240	INF	INF	INF	INF	INF	INF	INF	INF	INF	INF
	PIN 15	PIN 16	PIN 17	PIN 18	PIN 19	PIN 20	PIN 21	PIN 22	PIN 23	PIN 24	PIN 25	PIN 26	PIN 27	PIN 28
	INF	INF	INF	INF	INF	INF	INF	INF	INF	INF	INF	INF	INF	2090
	0	6030	5060	INF	6010	3040	4110	4410	2220	INF	238	2200	2200	INF
A201	PIN 15	PIN 16	PIN 17	PIN 18	PIN 19	PIN 20	PIN 21	PIN 22	PIN 23	PIN 24	PIN 25	PIN 26	PIN 27	PIN 28
	INF	INF	INF	INF	INF	1240	INF	0	1240	INF	INF	2090	INF	INF
	PIN 29	PIN 30	PIN 31	PIN 32	PIN 33	PIN 34	PIN 35	PIN 36	PIN 37	PIN 38	PIN 39	PIN 40		
	INF	INF	INF	INF	INF	INF	11K	11K	INF	INF	INF	INF		
A202	0	INF	INF	INF	INF	INF	INF	2840	2820	2820	2820	2810	2840	2830
	PIN 15	PIN 16	PIN 17	PIN 18	PIN 19	PIN 20	PIN 21	PIN 22	PIN 23	PIN 24	PIN 25	PIN 26	PIN 27	PIN 28
	2820	2960	2950	2970	2970	1230	3000	3010	2980	2970	INF	INF	INF	INF
	PIN 29	PIN 30	PIN 31	PIN 32	PIN 33	PIN 34	PIN 35	PIN 36	PIN 37	PIN 38	PIN 39	PIN 40		
A203	INF	INF	INF	INF	INF	25K	INF	INF	INF	INF	2050	INF		
	INF	0	1236											
	A204	1236	1335	1335	1237	1335	2500	1335	1335	2500	1335	INF	1014	INF
	A205	0	464K	INF	1230	463K	INF	1230						
ITEM	E	B	C		ITEM	E	B	C		ITEM	E	B	C	
Q200	1326	1479	238		Q202	9220	514	456		Q203	540	2720	INF	
Q201	1235	1260	220											

Measurements taken with S201 On, S200 Channel 2, S204 Color, S205 and S206 A, no cartridge used, no Joysticks or Paddle Controllers connected.

ATARI
MODEL CX-2600A

FOLDER 2

SEMICONDUCTORS (Select replacement transistor for best results)

ITEM No.	TYPE No.	MFG. PART No.	REPLACEMENT DATA						ZENITH PART No.
			EGG PART No.	GENERAL ELECTRIC PART No.	MOTOROLA PART No.	NTE PART No. (Formerly TCG)	RCA PART No.	WORKMAN PART No.	
A200	6507	CO-10745-03	EGG6507			NTE6507			221-Z9043
A201	MSM3980	CO-10444-22		GEVR-102	MC7805CT	NTE6532	SK3591/960		221-Z9018
A202	6532	CO-10750-03	EGG960	GEIC-172	MC3346P	NTE912	SK3543/912	WEP2104/912	
A203	UA78M05UC	CO-10750-03	EGG912						
A204		CO-10174-02		GEIC-269	MC1455P1	NTE955M	SK3564/955M	WEP2119/955M	221-Z9042
A205	MC1455P1		EGG955M	GEIC-269	MC1455P1	NTE955M	SK3564/955M	WEP2119/955M	221-Z9042
CR200 Thru	555	31-1N914	EGG177	GE-300	1N4935	NTE177	SK9091/177	WEP1062/177	103-131
CR203	1N914	31-1N914	EGG177	GE-300	1N4935	NTE177	SK9091/177	WEP1062/177	103-131
CR250	1N914	31-1N914	EGG177	GE-300	1N4935	NTE177	SK9091/177	WEP1062/177	103-131
Q200, 1	MPS3906		ECG159	GE-82	2N5401	NTE159	SK3466/159	WEP62/159	121-Z9003
Q202	2N3906	33-2N3906	ECG159	GE-82	2N5401	NTE159	SK3466/159	WEP62/159	121-Z9003
Q203	2N3563	34-2N3563	ECG108	GE-86*	MPS5543*	NTE108	SK3452/108	WEP56/108	121-925
Q203	2N3906	33-2N3906	ECG159	GE-82	2N5401	NTE159	SK3466/159	WEP62/159	121-Z9003

* Lead configuration may vary from original.

PARTS LIST AND DESCRIPTION (CONTINUED)
(When ordering parts, state Model, Part Number, and Description.)

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	MFG. PART No.
C214	4.7 35V	

ITEM No.	RATING	MFG. PART No.
C243	2200 16V	

CAPACITORS

ITEM No.	RATING	MFG. PART No.
C200	.1	CO-10821 CO-10821
C202	10 NPO 50V 5%	
C203	.01 25V	
C204	.22 100V	
C205	.01 25V	
C206	820 50V 5%	
C207	820 50V 5%	
C208	.1	
C209	47 NPO 50V 5%	
C210	47 NPO 50V 5%	
C211	22 NPO 50V 5%	
C212	.01 25V	
C213	.001 50V 10%	
C215	150 50V 10%	
C216	470 50V 10%	
C217	470 50V 10%	
C218	.068 100V 10%	
C219	.068 100V 10%	
C220	.068 100V 10%	
C221	.068 100V 10%	
C222	.1	
C223	.001 50V 10%	
C224	.001 50V 10%	
C225	.001 50V 10%	
C226	.001 50V 10%	

ITEM No.	RATING	MFG. PART No.
C227	.001 50V 10%	
C228	.001 50V 10%	
C229	.001 50V 10%	
C230	.001 50V 10%	
C231	.001 50V 10%	
C232	.001 50V 10%	
C233	.001 50V 10%	
C234	.001 50V 10%	
C235	.001 50V 10%	
C236	.01 25V	
C237	.01 25V	
C238	.1	
C239	.1	
C240	.01 25V	
C241	.1 100V 10%	
C242	.1 25V	
C244	.01 25V	
C245	.1	
C250	100 50V	
C251	47 50V	
C252	.001 50V	
C253	.001 50V	
C254	15 50V	
C255	68 50V	

CONTROLS (All wattages 1/2 watt, or less, unless listed)

ITEM NO.	FUNCTION	RESISTANCE	MFG. PART NO.	NOTES
R1	Paddle (Left)	1M	CO-10464	
R2	Paddle (Right)	1M	CO-10464	
R213	Color Delay	500K		

COILS (RF-IF)

ITEM No.	FUNCTION	MFG. PART No.
L200	RF Choke	
L201	Sound	
L202	RF Choke	
L203	RF Choke	
L204	RF Choke	

ITEM No.	FUNCTION	MFG. PART No.
L205	RF Choke	
L210	RF Modulator	
T201	Balun	
T250	RF Output	