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Craig L105 Service Manual

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SERVICE MANUAL

CRAIG®

L105

40-CHANNEL MOBILE CB TRANSCEIVER

WARNING

FCC Rules require that ALL transmitter section adjustments, other than those supplied by Craig as front-panel operating controls, be made by or under the immediate supervision of the holder of an FCC First or Second Class Radio-Telephone Operator's License.

Replacement or substitution of IC's, crystals, transistors, regulator diodes, or any other part of a specialized nature with parts other than those recommended by Craig may cause the operator to be in violation of the Type Acceptance requirements of Part 2 of the Rules.



SPECIFICATIONS

RECEIVER

SENSITIVITY	AM: Better than 0.4 μ V for 10 dB (S+N)/N
BANDWIDTH	7.0 KHz @ 6.0 dB
AGC	Change in audio output less than 10 dB from 10 μ V to 1.0 volts
SQUELCH	Adjustable, threshold less than 0.5 μ V Tight, more than 250 μ V
OUTPUT POWER	4 W at 10 % THD
IMAGE REJECTION	Better than 90 dB
IF REJECTION	Better than 60 dB @ 10.695 MHz
ADJACENT CHANNEL REJECTION	Better than 60 dB
IF FREQUENCY	AM: 10.695 MHz
CLARIFIER RANGE	AM: \pm 1,000 Hz
NOISE BLANKER	RF parallel gate type

P.A. SYSTEM

OUTPUT POWER	4 W
--------------	-----

TRANSMITTER

RF POWER OUTPUT	AM: 4 W
MODULATION CAPABILITY	100 %
SPURIOUS ATTENUATION	60 dB minimum
OUTPUT IMPEDANCE	50 Ohm

GENERAL

CHANNELS	40 AM
FREQUENCY RANGE	26,965 to 27,405
FREQUENCY TOLERANCE	\pm .005% from -30° C to + 50° C
FREQUENCY STABILITY	\pm 0.001 %
MICROPHONE	Dynamic
POWER SOURCE	13.8 Vdc, pos. or neg. ground
CURRENT DRAIN;	
RECEIVE:	0.7 A @ maximum audio output, 0.3 A @ standby (no signal)
TRANSMIT:	AM full mod 1.5 A

PARTS PRICE LIST

SUBJECT TO CHANGE WITHOUT NOTICE. USE ALL AVAILABLE NUMBERS AND COMPLETE DESCRIPTION WHEN ORDERING, INCLUDING MODEL NUMBER
THESE PRICES HAVE BEEN REVISED AS OF 4/30/80

REF. No.	CRAIG KEY No.	DESCRIPTION	MFR's SUGG RET. PRICE
PACKAGING			
	L105001	Individual Carton	3.35
	L105002	Styrofoam, FRONT	1.30
	L105003	Styrofoam, REAR	1.30
	L103507	Microphone (Complete)	29.90
	L150396	Bracket, Mic Mounting	.75
	XFU002	Spare Fuse, 2A	1.00
	L105100	Mounting Bracket (Unit)	1.50
	L103212	Mounting Screw (Unit)	.50
	L103231	Rubber Washer (Mtg Brkt)	.25
	L103004	Mounting Hardware Kit	3.00
	4101033	D.C. Power Plug w/Cord	3.50
CABINET & CHASSIS			
1	NSP	Chassis	----
2A	L105010	Assy, Front Escutcheon	9.40
2	L105011	Front Escutcheon	7.35
3	L105070	Window, Front Display	4.15

REF. No.	CRAIG KEY No.	DESCRIPTION	MFR's SUGG RET. PRICE
CABINET & CHASSIS (continued)			
4	L103071	Optical Filter (Ch. Display)	.55
5	L103026	Knob, CHANNEL SELECT	1.40
6	L103027	Knob, TONE/CAL/METER SW/D. TUNE	.90
7	L105026	Knob, SQUEL/RF GAIN	.85
8	L105027	Knob, VOL/MIC GAIN	.80
9	L103291	Spring Plate, Ch. Sel. Knob	.25
10	L105291	Spring Plate, Squel/RF Knob	.25
11	L105292	Spring Plate, Vol/Mic Knob	.25
12	L105050	Cabinet Top	5.10
13	L103100	Wool Tack	.25
14	L105050	Cabinet Bottom	5.35
15	L105100	Mounting Bracket (Unit)	1.50
16	L103212	Mounting Screw (Unit)	.50
17	L103231	Rubber Washer (Mtg Brkt)	.25
18	NSP	Model No./FCC/Serial No. Plate	----
19	NSP	Rivet	----
20	L103213	Plastic PH Screw M3x6	.25
21	L105212	Plastic PH Screw M3x8	.25

A PRODUCT OF CRAIG CORPORATION

REF. No.	CRAIG KEY No.	DESCRIPTION	MFR's SUGG RET. PRICE
CABINET & CHASSIS (continued)			
22	-----	FH Screw M3x5	.25
23	-----	PH Screw M3x6	.25
24	-----	PH Screw M3x8	.25
25	-----	PH Tapp Screw M3x8	.25
26	-----	PH Tapp Screw M3x6	.25
27	-----	Hex Nut M3	.25
28	-----	Flange Nut M3	.25
29	L104380	Holder, LED TX/RX - Ch. 9 Ind	.30
30	L103028	Push Button, PA/ANL/DIM Ch. 9 Sw	.65
**	L103004	Hardware Mounting Kit	3.00
31	L150396	Brkt, Mic Mounting	.75
32	-----	RH Tapp Screw M3.5x8	.25
33	-----	Lock Washer M3.5	.25
34	-----	Star Washer M5	.25
35	-----	RH Tapp Screw M5x10	.25
36	NSP	Heat Sink	----
37	NSP	Ground Lug	----
38	NSP	Mica Insulator	----
D201	TLRG101	LED, TX/RX Indicator	2.05
D202	TLR124	LED, CHANNEL 9 Indicator	.85
D401	UR202	LED, CHANNEL Indicator	8.00
FC1	L103800	7 Lead Flexible Cable	.30
FC2	L103800	7 Lead Flexible Cable	.30
FC3	L104800	10 Lead Flexible Cable	.35
IC3	TA7222P	IC	6.85
J1	L103609	Socket, P.A. Speaker Jack	.75
J2	L103609	Socket, External Spkr Jack	.75
J201	4101027	Socket, D.C. Power Connector	1.75
J202	L103608	Socket, Mic Connector	2.15
J203	L103607	Connector, Coaxial Antenna	1.80
M201	L105604	Meter, SIG/SWR/MOD	8.00
PC595	NSP	PCB w/Comp, MAIN	----
PC596	L105517	PCB w/Comp, LED CH IND	8.00
PC597	L105518	PCB w/Comp, CH SELECT Sw	8.70
PL201	L103550	Pilot Lamp, Multi-Meter	1.05
S201	-----	Sw, POWER On/Off (See VR201)	----
SW200	L105530	Assy, Push Sw	19.65
S202	L103533	Push Sw, PA/CB Select	3.30
S203	L103533	Push Sw, NB/ANL On/Off	3.30
S204	L103533	Push Sw, DIM/BRITE Select	3.30
S205	L103533	Push Sw, CH 9 (AUTO) On/Off	3.30
S206	L105531	Sw, METER SELECTOR	3.45
S301	L104530	Rotary Sw, CH SELECT	9.15
SP201	L103702	Speaker (16 Ohm)	6.40
SW200	L105530	Assy, Push Sw (S202,3,4 & 5)	19.65
TR25	2SC2028	Transistor	1.65
TR26	2SC2029	Transistor	2.90
VR201	L105570	VR 50k, VOLUME Cont	7.55
VR202		VR 50k, SQUELCH Cont	
S201		Sw, POWER On/Off	
VR203	L105571	VR 1k, RF GAIN Cont	6.30
VR204		VR 5k, MIC GAIN Cont	
VR205	L105572	VR 20k, DELTA TUNE Cont	1.80
VR206	L105573	VR 50k, TONE Cont	1.80
VR207	L105574	VR 5k, SWR/CAL Cont	1.80
YD003	NSP	Mica Insulator	----
YD039	NSP	Mica Insulator	----

REF. No.	CRAIG KEY No.	DESCRIPTION	MFR's SUGG RET. PRICE
COILS, TRIMMERS & XFORMERS			
FL1	L103670	Ceramic Filter (FL048)	1.40
FL2	L103671	Ceramic Filter (FL066)	6.45
L1	L104670	Trimmer (LA029)	.90
L2	L104671	Trimmer (LA138)	.90
L3	L103675	Trimmer (LA181)	.90
L4	L103675	Trimmer (LA181)	.90
L6	L103678	Trimmer (LA204)	.85
L7	L103679	Trimmer (LA207)	.85
L8	L104680	Trimmer (LA198)	1.75
L9	L104679	Trimmer (LA088)	.90
L10	L103683	Trimmer (LA208)	.90
L11	L103684	Trimmer (LC072)	.80
L13	L103685	Coil (LD033)	.40
L14	L103686	Trimmer (LC073)	.75
L15	L103687	Coil (LE093)	.25
L16	L104674	Coil (LE096)	.25
L17	L103684	Trimmer (LC072)	.80
L18	L105670	Coil (LD113)	1.80
L19	L104677	Trimmer (LA165)	.90
L20	L104678	Trimmer (LA201)	.90
L21	L105671	Trimmer (LA218)	.95
L22	L105672	Coil (LD077)	.25
T1	L103641	Transformer, Output (TF177)	3.55
T2	L103642	Coil, AF Choke (TF083)	1.05

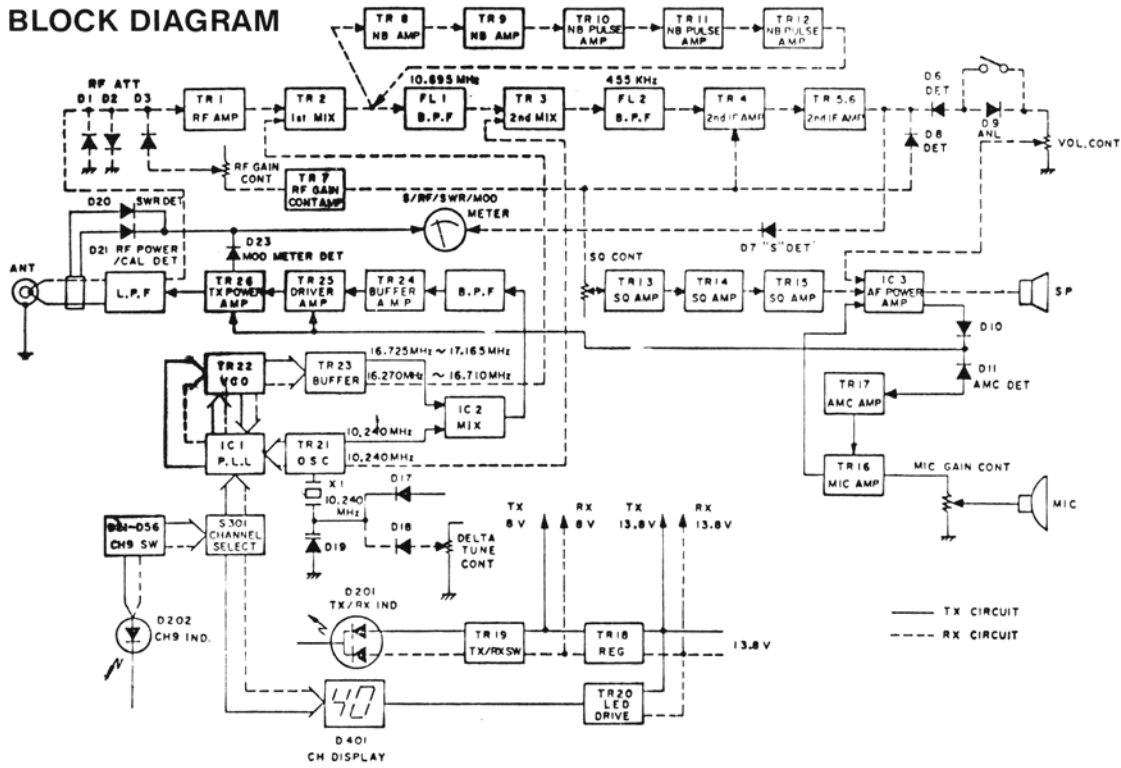
REF. No.	CRAIG KEY No.	DESCRIPTION	MFR's SUGG RET. PRICE
MISCELLANEOUS ELECTRICAL			
F201	XFU002	Fuse, 2A	1.00
FC1	L103800	7 Lead Flexible Cable	.30
FC2	L103800	7 Lead Flexible Cable	.30
FC3	L104800	10 Lead Flexible Cable	.30
J1	L103609	Socket, P.A. Spkr Jack	.75
J2	L103609	Socket, External Spkr Jack	.75
J201	4101027	Socket, D.C. Power Conn	1.75
J202	L103608	Socket, Mic Connector	2.15
J203	L103607	Connector, Coaxial Antenna	1.80
M201	L105604	Meter, SIG/SWR/MOD	8.00
MIC1	L103507	Microphone (Complete)	29.90
P201	4101033	D.C. Power Plug w/Cord	3.50
PC595	NSP	PCB w/Comp, MAIN	----
PC596	L105517	PCB w/Comp, LED CH IND	8.00
PC597	L105518	PCB w/Comp, CH SELECT Sw	8.70
PL201	L103550	Pilot Lamp, Multi-Meter	1.05
S201	-----	Sw, POWER On/Off (See VR201)	----
SW200	L105530	Assy, Push Sw	19.65
S202	L103533	Push Sw, PA/CB Select	3.30
S203	L103533	Push Sw, NB/ANL On/Off	3.30
S204	L103533	Push Sw, DIM/BRITE Select	3.30
S205	L103533	Push Sw, CH 9 (AUTO) On/Off	3.30
S206	L105531	Sw, METER SELECTOR	3.45
S301	L104530	Rotary Sw, CH SELECT	9.15
SP201	L103702	Speaker (16 Ohm)	6.40
SW200	L105530	Assy, Push Sw (S202,3,4&5)	19.65
VR1	L104590	Semi-Fixed Res 500 Ohm	.65
VR2	L600593	Semi-Fixed Res 50k Ohm	.70
VR3	L600593	Semi-Fixed Res 50k Ohm	.70
VR4	S609590	Semi-Fixed Res 5k Ohm	.70
VR5	L600593	Semi-Fixed Res 50k Ohm	.70
VR6	L105590	Semi-Fixed Res 10k Ohm	.65
VR201	L105570	VR 50k, VOLUME Cont	7.55
VR202		VR 50k, SQUELCH Cont	
S201		Sw, POWER On/Off	
VR203	L105571	VR 1k, RF GAIN Cont	6.30
VR204		VR 50k, MIC GAIN Cont	
VR205	L105572	VR 20k, DELTA TUNE Cont	1.80
VR206	L105573	VR 50k, TONE Cont	1.80
VR207	L105574	VR 5k, SWR/CAL Cont	1.80
X1	L103722	Crystal (10.240 MHz)	4.55

SEMICONDUCTORS			
D1,2,3,5,8,9,11,12,15,16,17,18,23,24,51,52,53,54,55,56	IS2075K	Diode	.35
D4,7,21,22	IN60AM	Diode	.35
D6	IS2076A	Diode	.25
D10,14	IN4003	Diode	.65
D13	RD10EB1	Zener Diode	.40
D19,20	IS2688EA	Vari-Cap Diode	1.05
D201	TLRG101	LED, TX/RX Indicator	2.05
D202	TLR124	LED, CH 9 Indicator	.85
D401	UR202	LED, CH Ind	9.15
IC1	TC9106P	IC (PLL)	11.65
IC2	TA7310P	IC (TX MIX)	2.50
IC3	TA7222P	IC (AF POWER)	6.85
TR1	2SC763	Transistor	.50
TR2	2SK19	FET	4.40
TR3,4,5,6,8,9,10,12,23,24	2SC710	Transistor	1.15
TR7,13,14,15	2SC711	Transistor	.95
TR11,17,19	2SA628	Transistor	.45
TR16,21,22	2SC458	Transistor	1.85
TR18,20	2SD355	Transistor	1.50
TR25	2SC2028	Transistor	1.65
TR26	2SC2029	Transistor	2.90

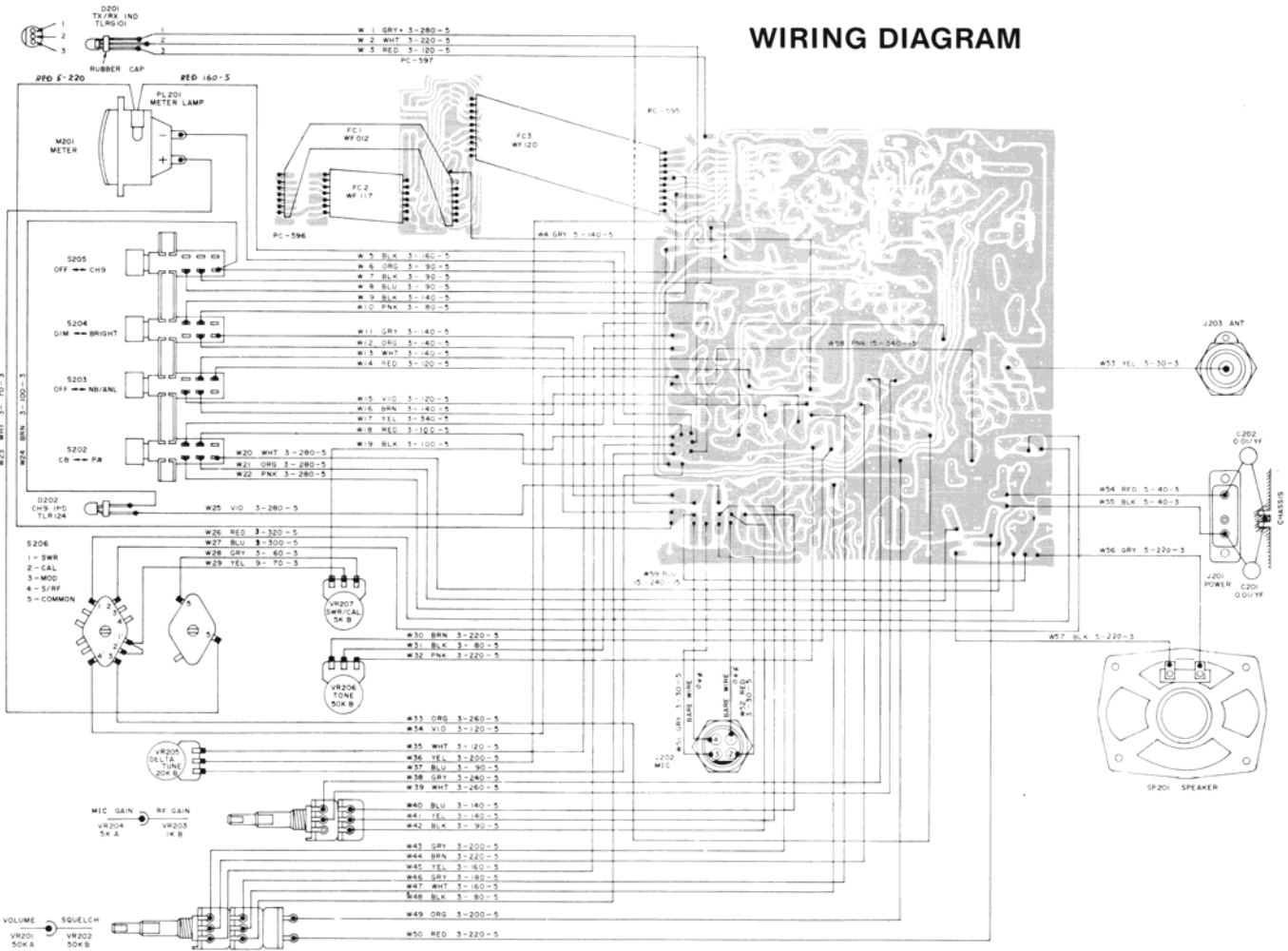
NOTE: NSP ; Non Serviceable Part

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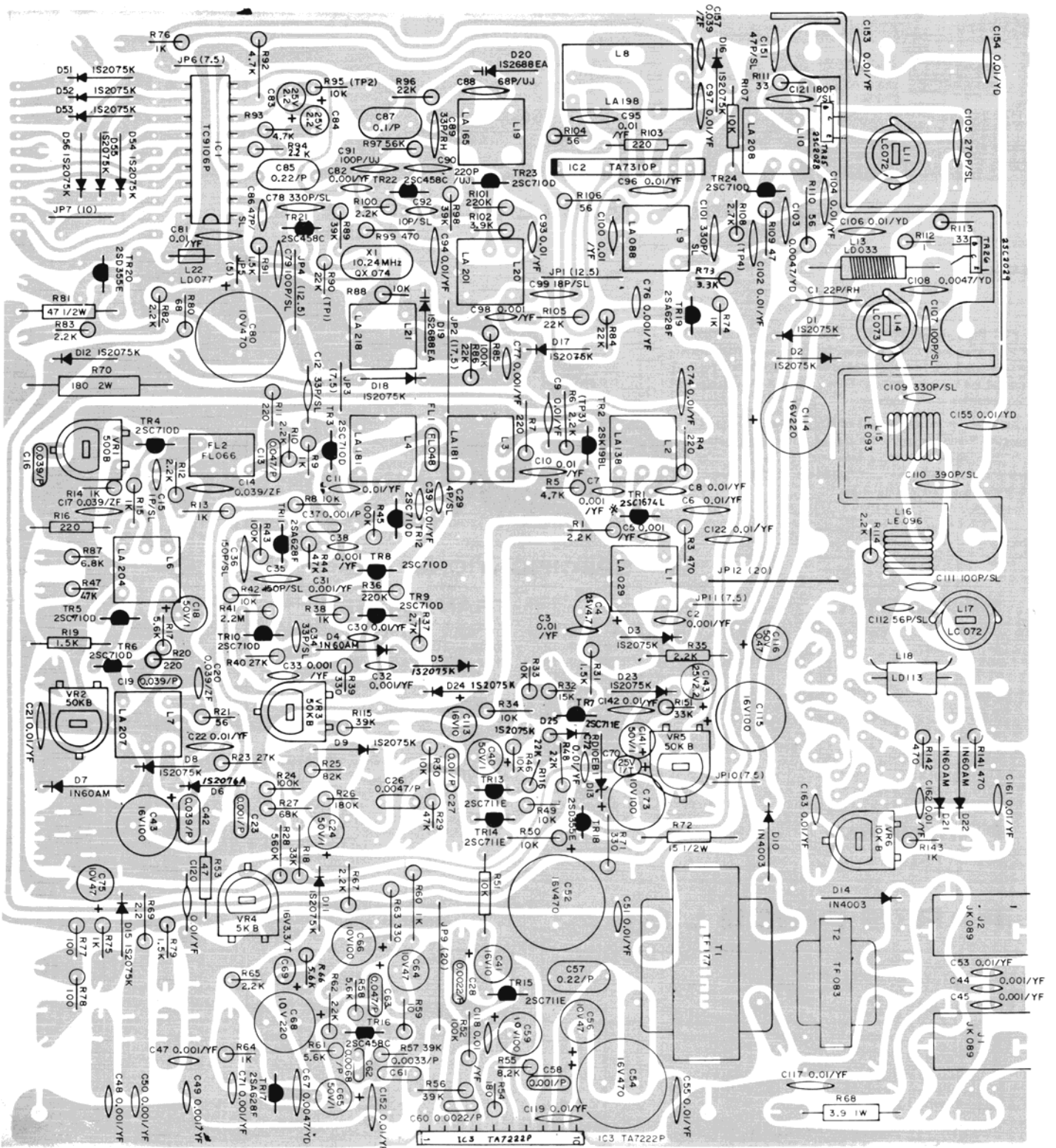
BLOCK DIAGRAM



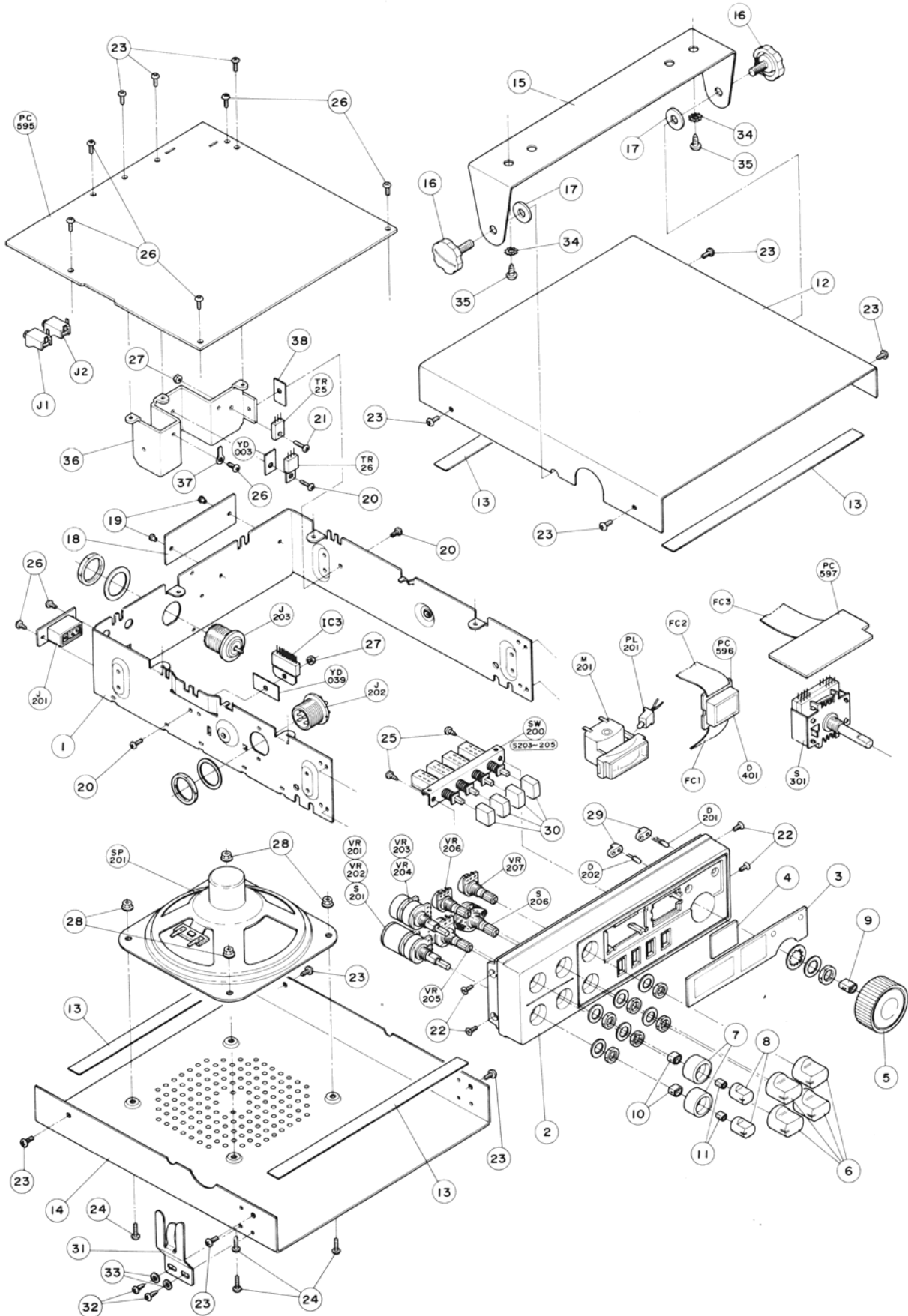
WIRING DIAGRAM



MAIN PCB



CABINET AND CHASSIS



PRODUCT OF CRAIG CORPORATION, COMPTON, CALIFORNIA 90220

4802KDBB
Printed in U.S.A.