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**Craig L600 Service Manual**

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# SERVICE MANUAL

# CRAIG®

# L600

## 40 CHANNEL INDASH CB WITH AM/FM/MPX RADIO



### SPECIFICATIONS

#### RADIO

TUNER FREQUENCY RANGE.....AM: 540 - 1600 kHz  
 FM: 88 - 108 MHz  
 SIGNAL/NOISE RATIO.....Better than 40 dB  
 AUDIO OUTPUT.....4 W average continuous  
 sine-wave power per-CH

#### CB GENERAL

CHANNELS.....40 Channels  
 FREQUENCY RANGE.....26.965 to 27.405 MHz  
 FREQUENCY TOLERANCE.....±0.005% from -30 C to +50 C  
 FREQUENCY STABILITY.....0.001%  
 MICROPHONE.....Dynamic with press-to-talk  
 and Up/Down Channel Switch  
 POWER SOURCE.....12 V system, negative-ground  
 CURRENT DRAIN.....RECEIVE: 1.3A @ maximum  
 audio output, 0.5A  
 standby (no signal)  
 TRANSMIT: AM Full mode, 1.5A

#### TRANSMITTER

RF POWER OUTPUT.....4.0 Watts  
 MODULATION CAPABILITY.....100%  
 SPURIOUS ATTENUATION.....60 dB minimum  
 OUTPUT IMPEDANCE.....50 Ohm

#### RECEIVER

SENSITIVITY.....Better than 0.5uV for  
 10 dB (S+N)/N  
 BANDWIDTH.....±2 kHz @ -6 dB  
 AGC.....Change in audio output less  
 than 12 dB from 10uV to 0.5V  
 POWER OUTPUT.....8 W @ 10% THD  
 IMAGE REJECTION.....Better than 60 dB  
 ADJACENT CH REJECTION.....Better than 60 dB  
 IF FREQUENCY.....1st IF 10.695 MHz  
 2nd IF 455 kHz  
 P.A. POWER OUTPUT.....12 W @ 10%

### WARNING

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.

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.

**A PRODUCT OF CRAIG CORPORATION**

P A R T S P R I C E L I S T

SUBJECT TO CHANGE WITHOUT NOTICE. USE ALL AVAILABLE  
NUMBERS AND COMPLETE DESCRIPTION WHEN ORDERING, INCLUDING MODEL NUMBER  
 \* \* \* "THESE PRICES HAVE BEEN REVISED AS OF 11-21-77." \* \* \*

Ref. No.	Craig Key No.	Description	Mfr's Sugg Ret. Price	Ref. No.	Craig Key No.	Description	Mfr's Sugg Ret. Price
<u>P A C K A G I N G</u>							
	L600001	Individual Carton	2.50	L600007	9P Male Power Conn(car side)		2.00
	L600002	Styrofoam, Top	.45	L600008	Plastic Bkt, Mic Conn Mtg		1.20
	L600003	Styrofoam, Bottom	.45	L600009	"L" Bkt Strap		.45
	9744100	Gasket	1.10	L600026	Tool, (Hex Knob)Trimmer Adj		.25
	L600004	Mtg Hardware Kit	1.30	L600027	Knob, BALANCE		.75
	3128054	Perforated Mtg Strap	.40	3148020	Knob, TONE		.75
	S680007	Trim Plate (stripped)	2.00	3148021	Knob, VOLUME/TUNING		.80
	L600005	(L)Index Label, CH/VOL/TONE	.45	L600701	MICROPHONE (Imp: 600 Ohm)		18.80
	L600006	(R)Index Label, TUNING/BAL	.45	4101004	Bkt, Mic Mtg		.65
	XPU002	Fuse, 2A	.30				

<u>C A B I N E T &amp; C H A S S I S</u>							
1	L600010	Ass'y, Front Escutcheon	5.00	44	L600232	Stud, Shield Case	.50
2	L600395	Bkt, Dial Pointer Mtg	1.05	46	L600028	Knob, SQUELCH	.95
3	L600212	Shaft, Dial String Pulley	.25	47	L600029	Button, Mode Select	.85
4	T601086	Pulley, Dial String	.25	48	L600805	Refractor, Mode Ind Lamp	2.95
5	L600050	Top Cabinet	2.10	49	L600330	Bushing, Digital Display Mtg	.35
6	L600706	Fiber Insulator (B)	.70	51	3513038	Gear(E) w/Coupler, Tuning	.30
7	L600051	Cabinet Bottom	1.65	52	3513039	Coupler(C), Tuning	.30
8	L600707	Fiber Insulator (S)	.35	53	3513040	Coupler(D), Tuning	.30
9	L600708	Fiber Insulator (L)	.30	54	NSP	Heat Sink, Amp	**
10	L600800	Ass'y, PLL Shield Case	1.50	55	3513051	Spr, Dial String Restrain	.25
11	L600213	Shaft, Dial String Spool	.50	56	L600077	Dial Scale	1.80
12	L600231	Spacer, Spool Shaft	.25	57	3144060	Rubber Cushionon, Cord Clamp	.25
13	3513041	Gear(D), Spool Drive	.30	58	L600806	Rating Label/MODEL ID	.25
14	NSP	Main Chassis	**	59	L600709	Fiber Insulator(A), Amp	.25
15	L600061	Front Panel	1.65	60		Dial String, 0.3x450 mm	.25
16	L600062	Rear Panel(A)	1.15	101	3513059	Ass'y, Tuner(AM/FM RF)	12.65
17	L600063	Rear Panel(T)	1.70	102	L600607	Female Ant. Conn, AM/FM	1.80
18	NSP	Frame, Tuner PCB Strap	**	103	L600608	Socket, IC301	4.00
19	L600801	Lamp Housing	.85	104	2SC2166	Transistor (Q412)	3.80
20	L600380	Plate, Dial Pointer Guide	.35	105	L600609	Coaxial Ant Connector So, CB	4.65
21	L600396	Bkt, Gear Mtg/Str guide	.40	107	L600530	Ass'y, 5 Gang Push Sw, MODE	4.90
22	L600397	Bkt, Mod LED Mtg	.35	108	L600718	RELAY, MTS2	9.80
23	L600398	Bkt, Digital Display Mtg	.40	109	L600570	VR 10k, VOL/TONE w/Sw701,702	8.45
24	L600381	Plate, Dial Scale Strap	.35	110	L600571	VR 10k, BALANCE w/Ant Trimmer	7.50
25	NSP	Bkt, Heat Sink/PCB Strap	**	111	L600572	VR 10k, SQUELCH (VR902)	1.95
26	L600399	Bkt, AMP PCB Mtg	.40	112	L600516	Ass'y, LED PCB w/Comp	1.80
27	NSP	Bkt, Tuner Strap	**	113	L600517	Ass'y, Lamp PCB w/Comp	4.80
28	NSP	Bkt, Rear Panel(A)	**	114	L600601	Ass'y, Feed Thru Cap, 3000pF	3.90
29	L600382	Fitting Plate(B)	.30	115	L600602	Ass'y, Feed Thru Cap(MIC)	1.95
30	L600383	Clamp, Filter Capacitor	.40	116	L600610	9P Female Conn(Unit side)	1.80
32	L600081	Dial Pointer	.90	117	L600620	Ass'y, Mic Plug(unint side)	7.80
33	L600802	Refractor, Dial Scale	.95	118	L600807	Digital Display (FDL3V8)	16.50
34	L600384	Clamp, CB Antenna Cable	.25	119	L600518	Ass'y, Display Dimmer PCB (523302)	.40
35	L600803	Lug Terminal	.25		L600617	16P Connector Socket (CN4)	1.40
36	L600804	Copper Shield	.30	120	L600519	PCB(523701), VOL/TONE Cont	.40
37	NSP	Frame, IF PCB Mtg	**	301	L600520	Ass'y, AM/FM RF PCB w/Comp	17.35
38	S601038	Special Washer, Cont Adj	.30	302	L600521	Ass'y, AM/FM IF PCB w/Comp	21.70
39	3513035	Clamp, Antenna Cable (AM/FM)	.25	303	L600522	Ass'y, PLL PCB w/Comp	62.65
40	NSP	Shield, RF PCB	**	304	L600523	Ass'y, CB Tx/Rx PCB w/Comp	46.50
41	NSP	Frame, RF PCB Mtg	**	305	L600524	Ass'y, Audio Amp PCB w/Comp	19.95
42	NSP	Heat Sink	**	306	L600525	Ass'y, MODE Sw PCB w/Comp	19.85
43	3137014	Cord Clamp w/Tube	.25				

NSP: Non-Serviceable Part

<u>C H O K E S , C O I L S , T R I M M E R S , C R Y S T A L S &amp; T R A N S F O R M E R S</u>							
L101A		FM Antenna		T306,307,			
L101B		FM RF		404	L600642	PLL Coil, 27 MHz	1.35
L101C		FM OSC		T401,402	L600643	Antenna Coil	1.35
L103A	3513059	AM Antenna	RF Tuner	T403	L600644	IFT, 455kHz (yellow)	1.05
L103B		AM RF		T405	L600645	Buffer Coil	1.50
L103C		AM OSC		T406,408,			
L102	3136060	Trap Coil(10.7MHz), 2.2uH	.40	409,410	L600646	Filter Coil (Tx)	1.20
L104	3513081	AM OSC Coil (red)	.95	T407	L600647	Filter Coil	1.20
L105	3513082	AM Peaking Coil, 4.2uH	.95	T411	L600648	Modulation Transformer	1.90
L301	L600670	Micro Inductor, 270uH	.55	T412	3135020	Choke Coil, 1mH 0.5A	1.35
L302	L600671	Micro Inductor, 1uH	.65	CF201,202,			
L401	L600672	Peaking Coil, 4.2uH	.75	301,401	3137087	Ceramic Filter(SFE-10.7MHz)	1.35
L402	L600673	RF Choke Coil, 2uH	.65	CF402,403	4201050	Ceramic Filter(455 kHz)	4.75
L403	L600674	RF Choke Coil, 0.65uH	.65	C104, 113,			
L601	3513076	Peaking Coil, 8uH	.60	118	3513505	Trimmer Cap, 10pF	1.40
T101	3513078	FM IFT (orange)	.90	C131,137	L600675	Trimmer Cap, 50pF	1.50
T102,202	S601091	AM IFT (yellow)	1.05	C901	-----	Mounted on BALANCE Control	----
T103	L600641	AM IFT (white)	1.05	VC301	L600676	Trimmer Cap, 10pF	1.35
T201	S200070	FM IFT (orange)	1.20	VC302	L600677	Trimmer Cap, 20pF	1.35
T203	S601092	AM IFT (green)	1.05	X301	L600722	Crystal, 10.240 MHz	6.35
T301	4201058	IFT (10.7 MHz)	1.35	X302	L600723	Crystal, 36.750 MHz	6.35
T302,303,				X303	L600724	Crystal, 10.695 MHz	6.35
304,305	L600642	PLL Coil, 27 MHz	1.35	LY601	L600718	RELAY (MTS2)	9.80

## (PARTS LIST CONTINUED)

Ref. No.	Craig Key No.	Description	Mfr's Sugg Ret. Price	Ref. No.	Craig Key No.	Description	Mfr's Sugg Ret. Price
<u>M I S C E L L A N E O U S E L E C T R I C A L</u>							
	L600621	16P Connector Plug(CN2)	1.40	VR402	L600593	Semi-Var Res, 50k	.70
	L600622	10P Connector Plug(CN5,6,7)	1.35	VR701,702		L600570 [ VR 10k, TONE Control VR 10k, VOLUME Control ]	8.45
	L600623	8P Connector Plug(CN8)	1.20	VR703,704			
	L600624	4P Connector Plug(CN9)	1.05	SW701		Power Switch	
	L600625	15P Connector Plug(CN10)	1.45	SW702		Channel Select Switch	
	L600611	10P Conn So w/Leads (for CN5)	1.95	VR901	L600571	VR 10k, BALANCE Control	7.50
	L600612	10P Conn So w/Leads (CN3)	1.95	C901		Antenna Trimmer, 70pF	
	L600613	10P Conn So w/Leads (for CN7)	1.95	VR902	L600572	VR 10k, SQUELCH Control	1.95
	L600614	8P Conn So w/Leads (for CN8)	1.80	S601		L600530 [ LOCAL/DX ST/MONO AM/FM RADIO/CB PA/CB ]	MODE Select Sw 4.90
	L600615	4P Conn So w/Leads (for CN9)	1.55	S602			
	L600616	15P Conn So w/Leads (for CN10)	2.20	S603			
	L600590	Semi-Var Res, 5k	.70	S604			
R213	L600591	Semi-Var Res, 10k	.70	S605			
R215	L600592	Semi-Var Res, 20k	.70	LED	L600516	Ass'y, PCB w/Modulation LED	1.80

S E M I C O N D U C T O R S

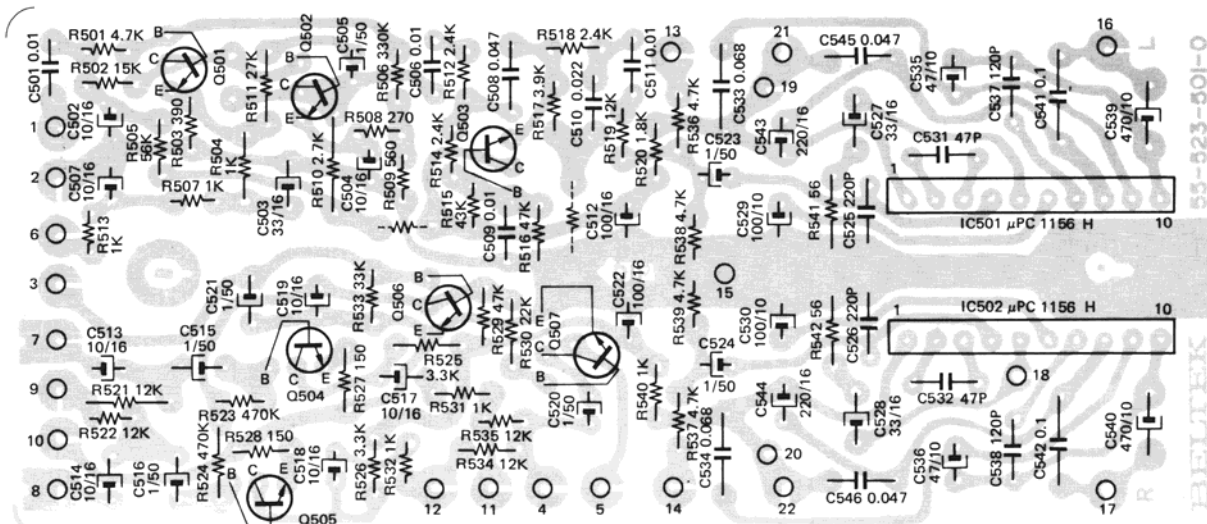
Q101	2SC784	Transistor	1.20	IC201	SN76670N	I.C., IF	4.75
Q102,103	2SC785	"	1.20	IC202	SN76115	I.C., MPX	5.70
Q104	2SC941	"	1.30	IC301	MSM5951	I.C., PLL	32.70
Q105	2SC929	"	1.65	IC501,502	uPC1156H	I.C., AMP	5.25
Q201	2SC930	"	1.50	LED	L600516	L.E.D.	1.80
Q202	2SC372	"	1.80	CR101	1S2473	Diode	1.05
Q203	2SD471	"	1.10	CR102	1S553	"	1.50
Q301,302	2SC1449	"	1.50	CR103,203,			
Q303,304,				204	1S188	Diode	.60
305,306,				CR201,202,			
307	2SC945	Transistor	1.50	301,302,			
Q308	2SK68	F.E.T.	4.75	303,304,			
Q309,407,				305,306,			
408,501,				307,308,			
502,503,				401,403,			
504,505,				404,405,			
506,507	2SC923	Transistor	1.80	406,407,			
Q310,313,				408,904,			
315,316,				905	1S1588	Diode	1.00
311,401,				CR402	1N60	"	.45
402,403,				CR310	MV2105	Vari-Cap Diode	2.90
404,405,				CR601,602,			
406,409,				603,604,			
410	2SC710	Transistor	1.15	605	SIB0102	Diode	.55
Q312	2SK60	F.E.T.	3.30	CR901,902,			
Q314	2SK49	F.E.T.	1.50	903	W06A	Diode	1.05
Q411	2SC2086	Transistor	1.65	Z201	RD10EK7	Zener Diode	.70
Q412	2SC2166	Transistor	3.80	Z301	YZ058	Diode	1.05
Q601	2SA733	"	.95	Z601	RD9.1FK3	Zener Diode	1.30
Q901	2SA696	"	1.40				

R E S I S T O R S , C A R B O N , O H M S , ±10%, 0.25¢ OR NOTED

Ref. No.	Description	Ref. No.	Description	Ref. No.	Description	Ref. No.	Description
R327	560 Ohm, 1/8W	R233	820 Ohm, 1/4W	R343,346,		R122,347,	
R328	2.2k Ohm, 1/8W	R104,107,		501,536,		434,438,	
R446,454,		108,204,		537,538,		530,603	22k Ohm, 1/4W
455	10 Ohm, 1/4W	219,228,		539,606,		R511	27k " "
R227,457,		230,334,		459	4.7k Ohm, 1/4W	R102,214,	
458	4.7 Ohm, 1/4W	337,339,		R101,110,		533	33k Ohm, 1/4W
R408,453	47 " "	349,352,		231,304,		R515	43k " "
R541,542	56 " "	404,410,		306,307,		R217,331,	
R109,121,		411,417,		309,310,		439,516,	
232,409,		462,504,		311,312,		529,604,	
414,423,		507,513,		313,314,		605	47k Ohm, 1/4W
429,461	100 Ohm, 1/4W	531,532,		316,317,		R218,305,	
R209	120 " "	540,607,		318,319,		308,314,	
R206,207,		705,706	1k Ohm, 1/4W	322	5.6k Ohm, 1/4W	330,505	56k Ohm, 1/4W
234,527,		R332,353	1.2k Ohm, 1/4W	R111,225,		R432,434,	
528	150 Ohm, 1/4W	R120,520	1.8k " "	226,342,		441,443	68k Ohm, 1/4W
R302	200 " "	R117,329,		350,355,		R125,336	82k Ohm, 1/4W
R103,345,		340,418,		401	6.8k Ohm, 1/4W	R113,222,	
348,445	220 Ohm, "	420,421,		R114,115,		422,424,	
R508	240 " "	425,444,		119,124,		427,433,	
R333,344	270 " "	601	2.2k Ohm, 1/4W	203,229,		435,436,	
R303	300 " "	R512,514,		324,325,		440,442	100k Ohm, 1/4W
R123,201,		518	2.4k " "	437	10k Ohm, 1/4W	R448	220k " "
205,208,		R112,118,		R106,403,		R506	330k " "
354,412,		223,224,		405,407,		R320,321,	
415,430	330 Ohm, "	510	2.7k Ohm, 1/4W	416,428,		523,524	470k Ohm, 1/4W
R503	390 " "	R105,210,		452,460,		R212	1M " "
R402,406,		211,220,		519,521,		R323	1.8M " "
413,419,		221,525,		522,534,		R456	10 Ohm, 1/4W
431,447,		526	3.3k Ohm, 1/4W	535	12k Ohm, 1/4W	R602	100 Ohm, 1/4W
450	470 Ohm, 1/4W	R326,451,		R216,341,		R301	33 Ohm, 1W
R901,902,		517	3.9k Ohm, 1/4W	351,502	15k Ohm, 1/4W	R213,215	(see Misc. List)
335,509	560 Ohm, 1/4W	R202,338	4.7k " "	R356	18k " "		

Ref. No.	Description	Ref. No.	Description
<b>CAPACITORS</b>			
C350	Mica Cap, 2pF/50V	C501,506,509,511,703	Polyester Film, 0.01uF/50V
C319,321,346	" " 5pF/50V	C306,510	" " 0.022uF/50V
C324	" " 10pF/50V	C216,508,545,546	" " 0.047uF/50V
C348	" " 20pF/50V	C533,534	" " 0.068uF/50V
C418,438	" " 22pF/50V	C209,541,542,603	" " 0.1uF/50V
C326	" " 27pF/50V	C213,217	" " 470pF/125V
C325,411	" " 33pF/50V	C301,307	Tantalum, 4.7uF/16V
C327,330,333,345,434,531,532	Mica Cap, 47pF/50V	C311	" 1uF/25V
C328	" " 56pF/50V	C303,304,313,701,702	Tantalum, 0.1uF/35V
C335	" " 75pF/50V	C305	" 0.15uF/35V
C343,439	" " 82pF/50V	C428	" 0.47uF/35V
C341,436,442	" " 100pF/50V	C312	" 0.68uF/35V
C431,446,537,538	" " 120pF/50V	C115,140	Ceramic, 2pF/50V
C308	" " 160pF/50V	C106,114,123	" 3pF/50V
C441	" " 180pF/50V	C102,110	" 5pF/50V
C443,445,525,526	" " 220pF/50V	C105,112,121,206,207,230	Ceramic, 10pF/50V
C444	" " 270pF/50V	C314,316	" 12pF/50V
C342	" " 470pF/50V	C315	" 14pF/50V
C215	Electrolytic, 0.22uF/50V	C119	" 15pF/50V
C214,218	" 0.47uF/50V	C101,109	" 22pF/50V
C417,424,429,448,449,505,520,521,523,524,515,516	Electrolytic, 1uF/50V	C103,111,120	" 27pF/50V
C204,227	" 10uF/10V	C317,322,347,401,407	Ceramic, 33pF/50V
C232	" 33uF/10V	C138,309	" 47pF/50V
C535,536	" 47uF/10V	C331,334,337,432	" 82pF/50V
C226	" 220uF/10V	C116,208,229	" 100pF/50V
C539,540	" 470uF/10V	C130	" 130pF/50V
C403,426,447,502,504,507,513,514,517,518,519	Electrolytic, 10uF/16V	C318	" 150pF/50V
C210,212	" 3.3uF/16V	C136	" 220pF/50V
C427	" 4.7uF/16V	C351	" 0.001uF/50V
C503,527,528	" 33uF/16V	C320,323,329,332,336,338,339,340,344,349	Ceramic, 0.005uF/50V
C602	" 47uF/16V	C107,108,117,122,124,201,202,203,225,235	Ceramic, 0.01uF/25V
C234,512,522,529,530	Electrolytic, 100uF/16V	C402,404,405,406,408,409,410,433,435,437,440	Ceramic, 0.01uF/50V
C302,543,544,601	" 220uF/16V	C127,128,129,139,205,228,233	Ceramic, 0.04uF/25V
C430	" 1000uF/16V	C412,413,414,415,416,420,421	Ceramic, 0.04uF/50V
C221,222,223,224	Polyester Film, 0.0015uF/50V		
C211,419,422,423	" 0.0022uF/50V		
C132,135	" 0.0033uF/50V		
C425	" 0.0047uF/50V		
C125	" 0.0056uF/50V		
C134,219,220	" 0.015uF/50V		
C126,133,231,236	" 0.01uF/50V		

### AUDIO AMP PCB



55-523-501-0 BELTEK

## ALIGNMENT PROCEDURES

### EQUIPMENT REQUIRED

- \* Frequency Counter
- \* Oscilloscope
- \* V.T.V.M.
- \* RF Power Meter
- \* Audio Freq'cy Generator
- \* CB Signal Generator

- \* Regulated Power Supply (12V)
- \* AM Signal Generator
- \* FM Signal Generator
- \* Sweep Generator
- \* Stereo Generator
- \* Marker Generator

### NOTES:

- 1) 50 Ohm dummy load should be connected to Antenna connector.
- 2) Non-metallic tools should be used.
- 3) Generator output impedance should be matched with dummy antenna.
- 4) Keep Signal level as low as possible.
- 5) Standard AM/FM Mod: 400Hz 30% amplitude

### AM

STEP	ADJUSTING CIRCUIT	CONNECTIONS		FREQ'CY	DIAL SETTING	ADJUST	ADJ FOR -
		INPUT	OUTPUT				
1	IF	Connect Sweep Generator with marker Gen. loosely coupled to RF cover.	Connect Scope to AM Det. (CR204)	455kHz	High End	T102,T103 T202,T203	Maximum Output
2	BAND	Connect AM Signal Gen. thru dummy Ant. to Ant. receptacle.	Connect a VTVM to the audio output of either channel.	520kHz (Mod.)	Low End	L104	(OSC Coil) Maximum Output
3				1640kHz (Mod.)		C137	(OSC Trimmer) Maximum Output
4				TRACKING	1400kHz (Mod.)	1400kHz	C131 C901
5	NOTE: C901 antenna trimmer is mounted on tuning/balance control.						

### FM

1	IF	Connect Sweep Gen. loosely coupled to base of mixer transistor Q102	Connect Scope to FM Dector Out.	10.7MHz (Mod.)	High End	T101,201	Adjust for symmetric "S" curve
2	BAND	Connect FM Signal Gen. thru dummy Ant. to Ant. receptacle	Connect a VTVM with a 4 Ohm resistor across, to audio output.	86.5MHz (Mod.)	Low End	C118	Maximum Output
3	TRACKING	Connection same as above (SIGNAL LEVEL LOW)	Connection same as above	106MHz (Mod.)	106MHz	C104,C113	Maximum Output

### MPX

1	FREE RUNNING FREQ'CY	/	Connect a Frequency Counter to TP-2 (Pin No 10 of IC202)	No Signal	/	R215	Adjust for reading of 19kHz $\pm$ 50Hz
2	STEREO SEP.	Connect FM Signal Gen. with Stereo Generator thru dummy ant. to Ant. receptacle.	Connect a VTVM to Audio output	98MHz	98MHz	R213	Adj for maximum R(L) output when L(R) signal is modulated. separation should be 25dB or more.

### PLL (CB ONLY)

STEP	ADJUSTING CIRCUIT	CONNECTIONS		CHANNEL SELECT.	ADJUST	ADJUST FOR
		INPUT	OUTPUT			
1	Rx 2nd LOCAL FREQ'CY	No Signal	Connect a Freq'cy Counter, Scope, coupled to Pin No. 17 & 18 (No. 29 & 30 on PLL schematic) of connector socket CN3. (see fig. 1)	CH-9	VC301 T301	10.240 MHz $\pm$ 100 Hz Maximum Output
2	Rx 1st LOCAL FREQ'CY		Connect a Freq'cy Counter, Scope, coupled to Pin No. 19 & 20 (No. 31 & 32 on PLL schematic) of connector socket CN3. (see fig. 1)	CH-18	T302 T304	37.870 MHz $\pm$ 200 Hz Maximum Output
3	Tx FREQ'CY		Connect a Freq'cy Counter, Scope, coupled to Pin No. 15 & 16 (No. 27 & 28 on PLL schematic) of connector socket CN3. (see fig. 1)		VC302 T305 T306 T307	27.175 MHz $\pm$ 100 Hz Maximum Output
4	FREE RUNNING FREQ'CY		Connect DC Voltage Meter to collector of Q309	CH-1	T303	1.0 $\pm$ 0.1V (in RECEIVE mode)

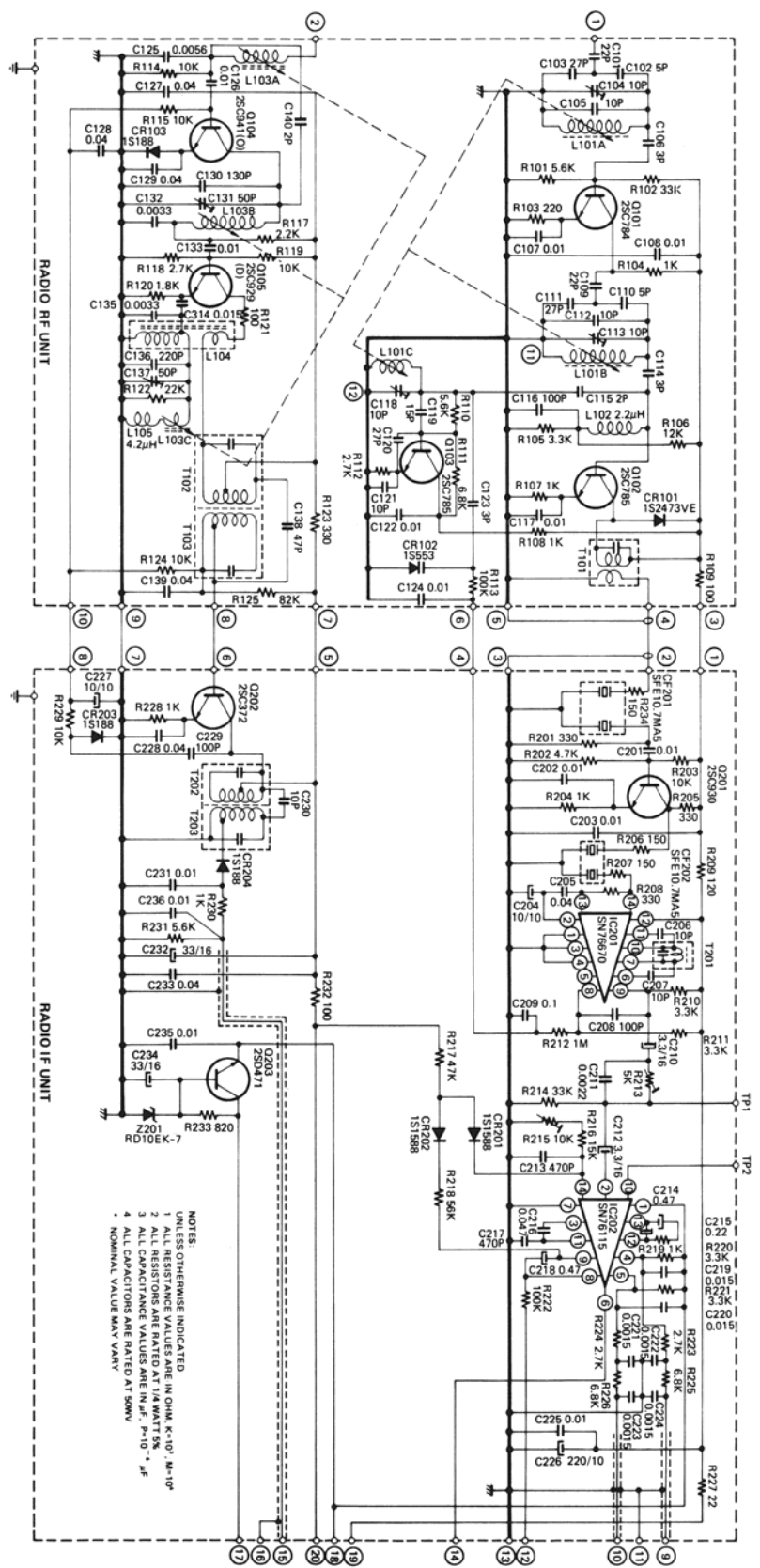
### TRANSMITTER

1	Tx OUTPUT (no Mod)	Key Mic to "ON" position (Tx Mode)	Connect an RF Power Meter with 50 Ohm dummy load to CB Ant. input.	CH-18	T404,T405 T406,T407 T408,T409 T410	Max. output at each coil, then, adjust for standard output (4.0 Watts).
2	Tx Mod. LIMITER	Connect an Audio Signal Generator to Mic input. (Input Level: 50% Mod. +2dB at 1.2kHz)	Connect an RF Power Meter with 50 Ohm dummy load, Scope to CB Ant. connector.	CH-18	VR402	Not to exceed 85% modulation

### RECEIVER

1	Rx SENSITIVITY	Connect a CB Signal Gen. to CB Ant. connector. (50dB)1kHz, 30% Mod.	Connect a VTVM with a 4 Ohm resistor across, to audio output.	CH-18	T401,T402 T403	Maximum Output
2	Rx SQ SENS.				VR401	Obtain a reading of 6dB with tight SQ.

# AM/FM RF/IF/MPX

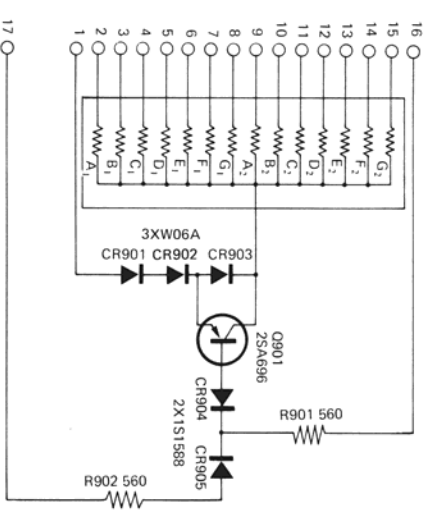
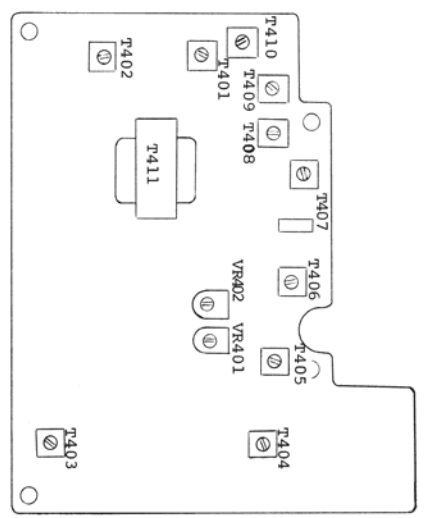
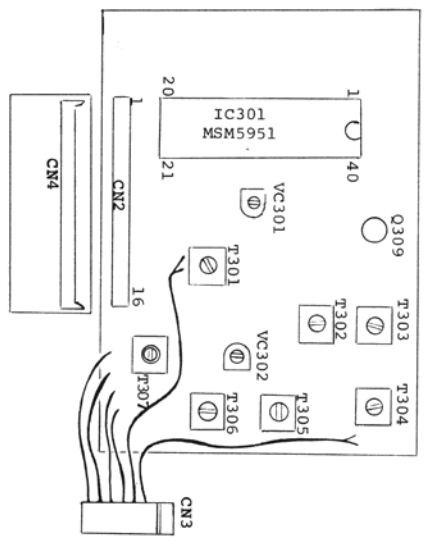


**FIG. 1**

**FIG. 2**

## DIMMER CIRCUIT

14 Segments BY FDL 3V8



## VOLTAGE CHART

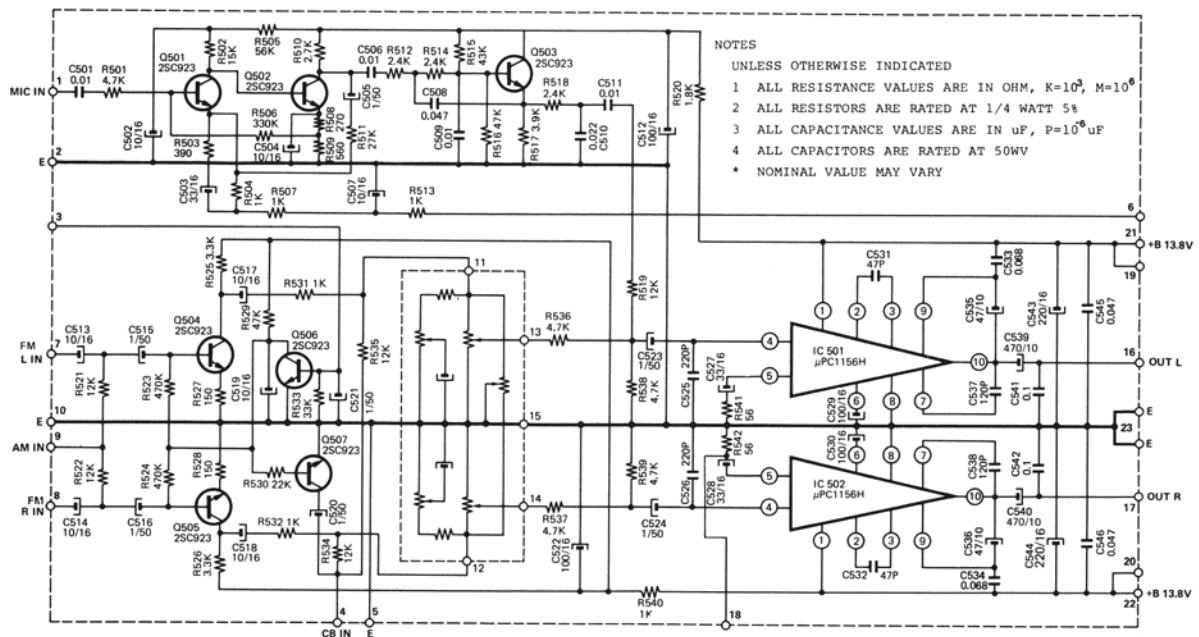
Pin No.	IC501	IC201	IC202
	IC502		
1	14.5	0	9.2
2	7.6	2.0	3.0
3	1.4	0	4.6
4	3.6	0	6.9
5	3.7	0.7	6.9
6	4.3	2.0	0.7
7	1.3	3.6	0
8	0	5.0	2.3
9	13.5	4.8	2.2
10	7.1	3.6	1.6
11		2.0	2.3
12		8.8	2.3
13		2.0	2.3
14		2.0	3.2

Pin No.	IC301		Pin No.	IC301
	IC301	IC301		
Tune CB to CH-15				
1	5.4	21	0.6	
2	0	22	0.5	
3	0	23	3.8	
4	0	24	0.5	
5	0	25	0.5	
6	0	26	3.8	
7	0	27	3.8	
8	5.4	28	3.8	
9	5.4	29	3.8	
10	5.4	30	0	
11	0	31	2.5	
12	1.0	32	2.6	
13	5.4	33	2.0	
14	5.4	34	1.3	
15	5.4	35	0.7	
16	0.6	36	0	
17	3.8	37	5.3	
18	0.6	38	2.6	
19	0.6	39	0	
20	3.8	40	0	

Ref. No.	MODE	E	B	C	Ref. No.	MODE	E	B	C
Q102	FM	1.0	1.6	7.5	Q316	Tx	0.9	0.9	3.7
Q103	FM	2.2	2.8	6.2	Q401	Rx	0.1	0.8	8.3
Q104	AM	0.1	0.6	8.2	Q402	Rx	0.2	0.8	9.0
Q105	AM	1.2	1.8	8.4	Q403	Rx	0.3	0.9	8.9
Q201	FM	1.7	2.4	7.4	Q404	Rx	1.3	2.0	8.0
Q202	AM	0.8	1.5	9.0	Q405	Rx	0	0.6	1.9
Q203	FM	9.2	9.8	14.5	Q406	Rx	1.1	1.8	8.1
Q301	Rx	10.4	11.1	12.3	Squelched				
Q301	Tx	10.1	10.8	11.7	Q407		0	0.6	0.1
Q302	Rx	5.4	6.0	10.5	Q408		0	0	9.4
Q302	Tx	5.4	6.0	10.1	Un-Squelched				
Q303	Rx	0	0	5.4	Q407		0	0	5.2
Q303	Tx	0	-0.3	5.3	Q408		0.5	1.1	4.1
Q304	Rx	0	0.6	0.04	Q409	Tx	0	0.5	7.7
Q304	Tx	0	0.3	-0.3	Q410	Tx	1.3	1.5	8.9
Q305	Rx	0	0	5.4	Q411	Tx	0	0	10.3
Q305	Tx	0	-0.2	5.4	Q412	Tx	0	0	11.6
Q306	Rx	0	0	5.3	Q501		1.5	1.3	2.6
Q306	Tx	0	0	5.0	Q502		1.9	2.6	2.0
Q307	Rx	4.6	5.3	5.4	Q503		3.6	4.2	8.3
Q307	Tx	4.5	5.0	5.4	Q504		0.3	0.9	4.0
Q309	Rx	0	0.6	1.4	Q505		0.3	0.9	3.5
Q309	Tx	0	0.4	1.3	Q506		0	0	3.5
Q310		3.2	3.5	4.7	Q507		0	0.6	0
Q311	Rx	0	0.7	2.7	F.E.T.				
Q311	Tx	0	-0.07	0.6	Q308	Rx	0.9	0.7	5.4
Q313	Rx	2.2	2.6	8.5	Q308	Tx	0.9	0.6	5.4
Q313	Tx	1.5	2.1	6.7	Q312		0	0	1.2
Q315	Rx	0.5	1.2	6.8	Q314		0.3	0	4.3
Q315	Tx	0.5	0.9	6.7					

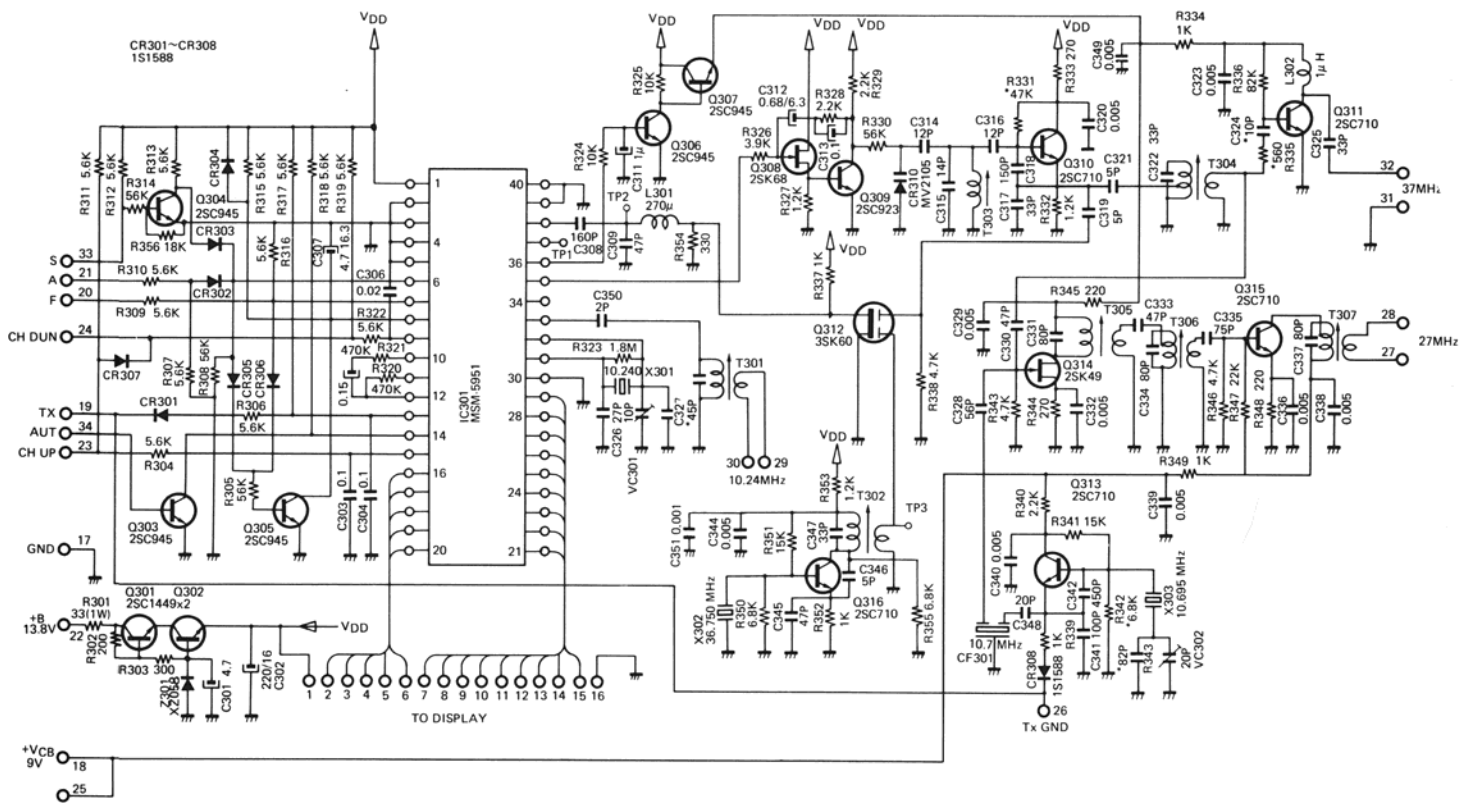
Rx: RECEIVE      Tx: TRANSMIT

## AUDIO AMP

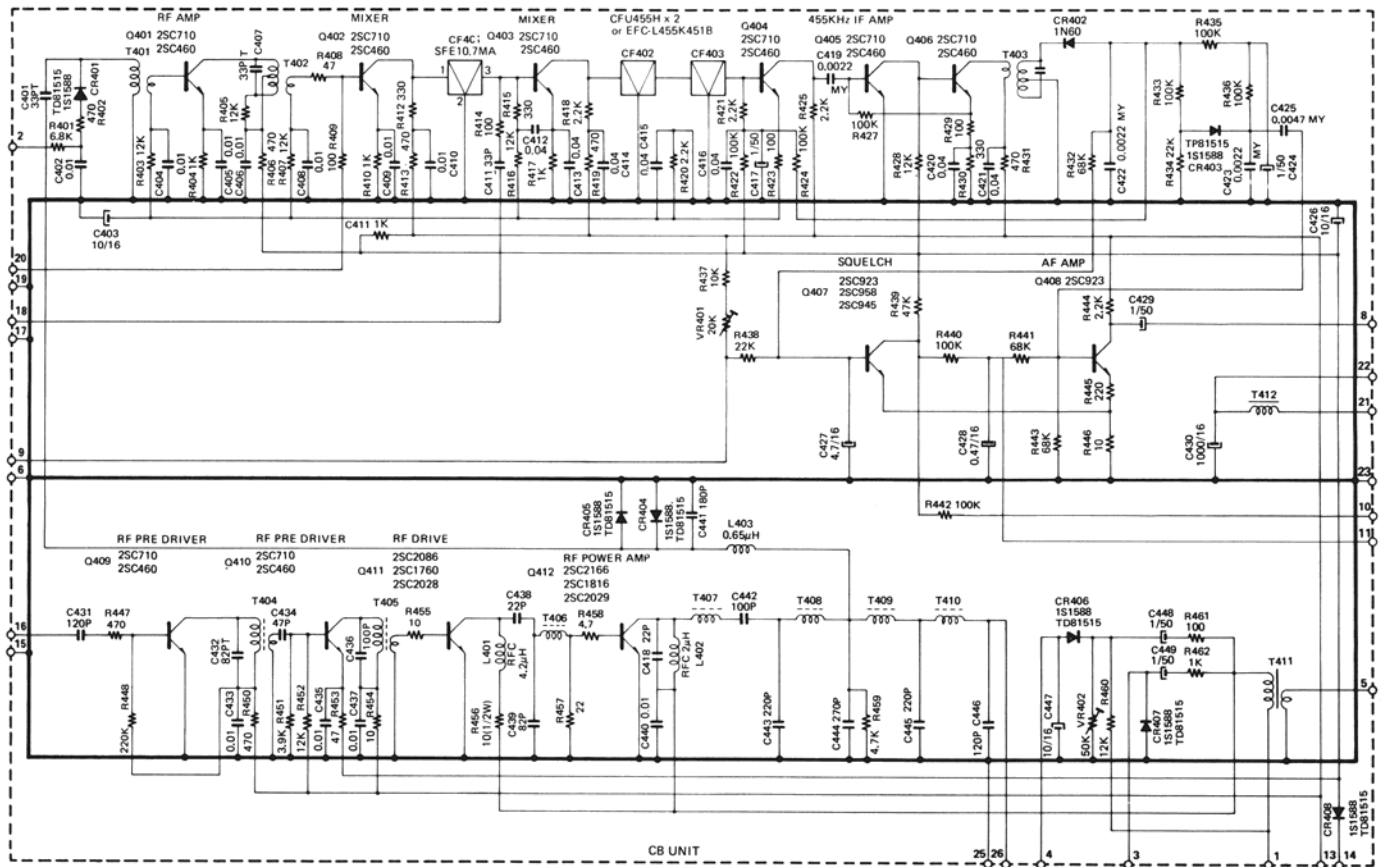




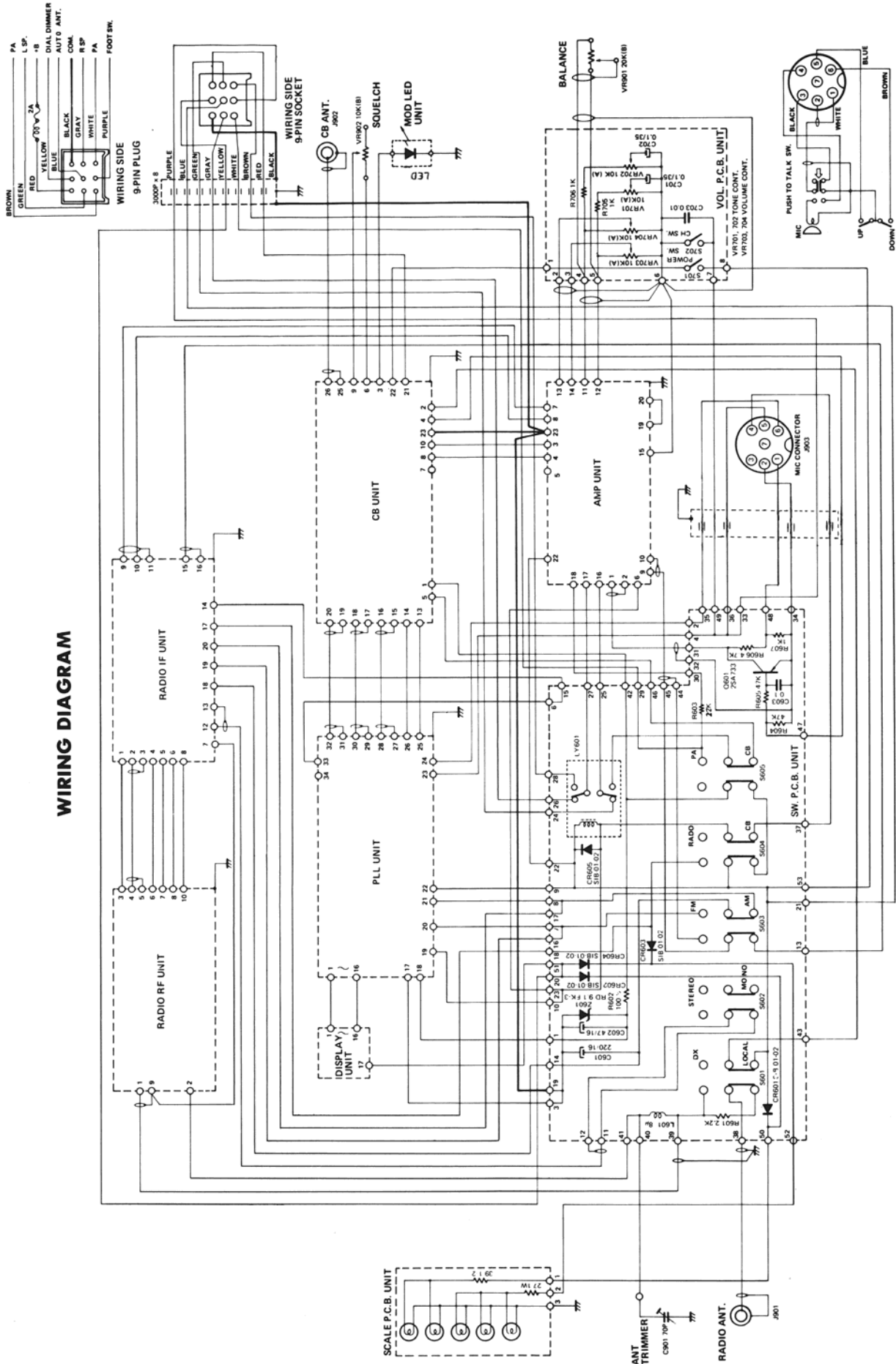
# PLL SYNTHESIZER

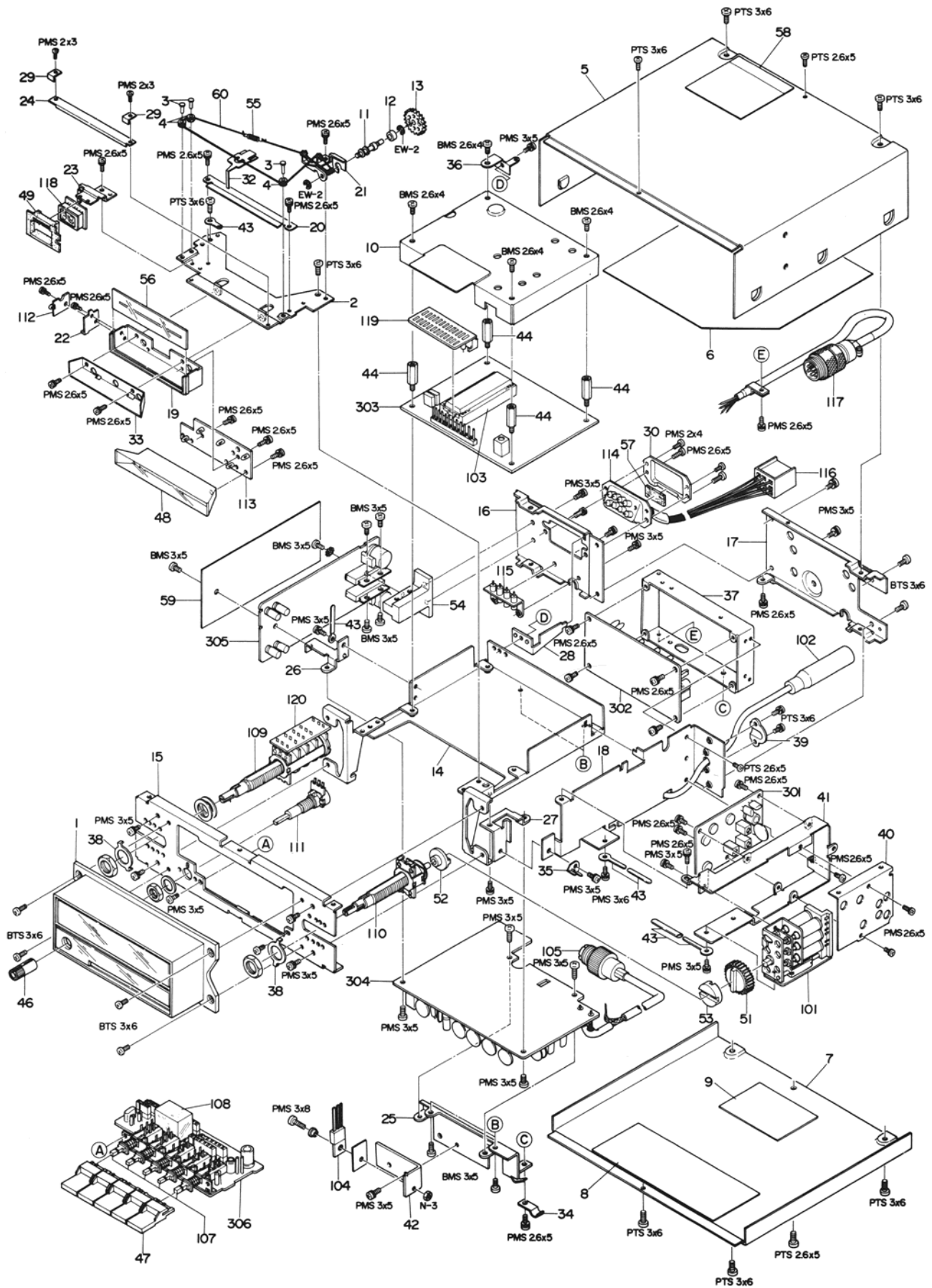


# CB CIRCUIT DIAGRAM



# WIRING DIAGRAM





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