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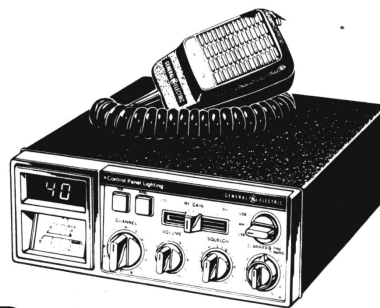
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CITIZENS BAND

SERVICE MANUAL

MODEL 3-5826A CB TRANSCEIVER



MOBILE SSB -SINGLE SIDEBAND-

FEATURES
<p>80 Channel Single Side Band allows user to Receive and Transmit 80 SSB Channels or 40 AM CB channels for greater versatility. Clarifier Control assures fine tuning on receiver frequency.</p> <ul style="list-style-type: none"> ● Nitebright illuminated control panel for convenient night time operation ● Dual-Clarifier Control ...5 to 1 ratio for fine VS coarse control for true fine tuning of receiver frequency ● Lighted S/Rf meter ...shows relative Receive & Transmit signal strength ● NB (Noise Blanker) & ANL (Automatic Noise Limiter) switches to reduce ignition type noise. ● PA capability to monitor CB calls through PA speaker or use as PA system. ● Built-in Mic. Pre Amp - for modulation boost at low volume level ● LED channel display ● Screw-on type microphone ● Removable DC power cord ● Quick release mounting thumb screws from mounting bracket ● Rf Gain Control ● Jacks for: External Speaker (8Ω), PA Speaker (8Ω), & DC power cord

SERVICE	SPECIFICATIONS
<p style="text-align: center;">GENERAL</p> <p>CHANNELS: 40 channels, PLL digital logic synthesizer circuitry SSB-80</p> <p>POWER REQUIREMENT: Consumption 25 watts, current drain: 1.8 amps (100% mod.) at 13.8 volt DC</p> <p>POWER SUPPLY: 12 volts DC nominal negative ground</p> <p>SEMICONDUCTORS: Integrated circuits, transistors and diodes</p> <p>OPERATING TEMPERATURE RANGE: -30° to +50°C</p> <p>MICROPHONE: Dynamic with push-to-talk switch, 500 ohm</p> <p>SWITCHABLE ANL (Automatic Noise Limiter)</p> <p>SWITCHABLE NB (Noise Blanker)</p> <p>SWITCHABLE PA (Public Address)</p> <p>CONTROLS: Volume with ON/OFF switch, squelch and PA control, RF Gain, clarifier, channel selector switch</p> <p>CONNECTORS: External speaker and PA jacks 3.5mm(8ohms impedance), antenna receptacle to match PL-259 coax (50 ohms impedance)</p> <p>CIRCUIT PROTECTIONS: Prevents transistor burn-out when transmitting with open or loose antenna, 3-amp fuse in DC power cord</p>	<p style="text-align: center;">TRANSMITTER</p> <p>FREQUENCY RESPONSE: 400Hz to 2.5kHz</p> <p>FREQUENCY COVERAGE: 26.965 to 27.405 MHz; 40 channels and SSB 80 channels.</p> <p>TRANSMIT POWER OUTPUT(RF[Radio Frequency]power to antenna): 4 watts maximum as limited by FCC Rules and Regulations at 13.8 volt DC: nominal between 3.7 and 4 watts.</p> <p>MODULATION: Capable of 100%; factory pre-set limit 85-100%</p> <p>FREQUENCY TOLERANCE: Better than ±.005% max.</p> <p style="text-align: center;">RECEIVER</p> <p>SYSTEM: Single conversion Superheterodyne.</p> <p>SENSIVITY: AM-Better than .5uv for 500MW, SSB-.25uv for 500 MW audio power.</p> <p>CLARIFIER: Min. 1000, Max. 2200 Hz.</p> <p>FREQUENCY COVERAGE: 26.965 to 27.405 MHz.</p> <p>ADJACENT CHANNEL SELECTIVITY: Better than 60db.</p> <p>SPURIOUS REJECTION: Better than 45db.</p> <p>IF FREQUENCIES: 10.695 MHz (AM) 10.6935MHz (SSB).</p> <p>SQUELCH RANGE (SENSITIVITY): 0.5 to 2000 uV nominal.</p> <p>IMAGE REJECTION RATIO: Better than 55db.</p> <p>SIGNAL TO NOISE (S/N): Unsquelled; min. 40 db, squelched; min. 60 db.</p> <p>All Measurements at 25° C & 13.8 VDC.</p>

CAUTION: THIS MANUAL IS DESIGNED FOR USE BY QUALIFIED ELECTRONIC TECHNICIANS ONLY. REPAIR OR ADJUSTMENT OF TRANSMITTER CIRCUITS MUST BE UNDER SUPERVISION OF A PERSON WITH FIRST-OR SECOND-CLASS RADIOTELEPHONE LICENSE. CONSUMER USERS ARE URGED TO CONTACT QUALIFIED FACTORY AUTHORIZED SERVICE FACILITIES FOR REPAIRS.

CABINET DISASSEMBLY

Remove the two thumb screws and the eight cabinet screws from the sides of the cabinet. Carefully lift the cabinet top and bottom apart. Remove the two slide clips from the speaker.

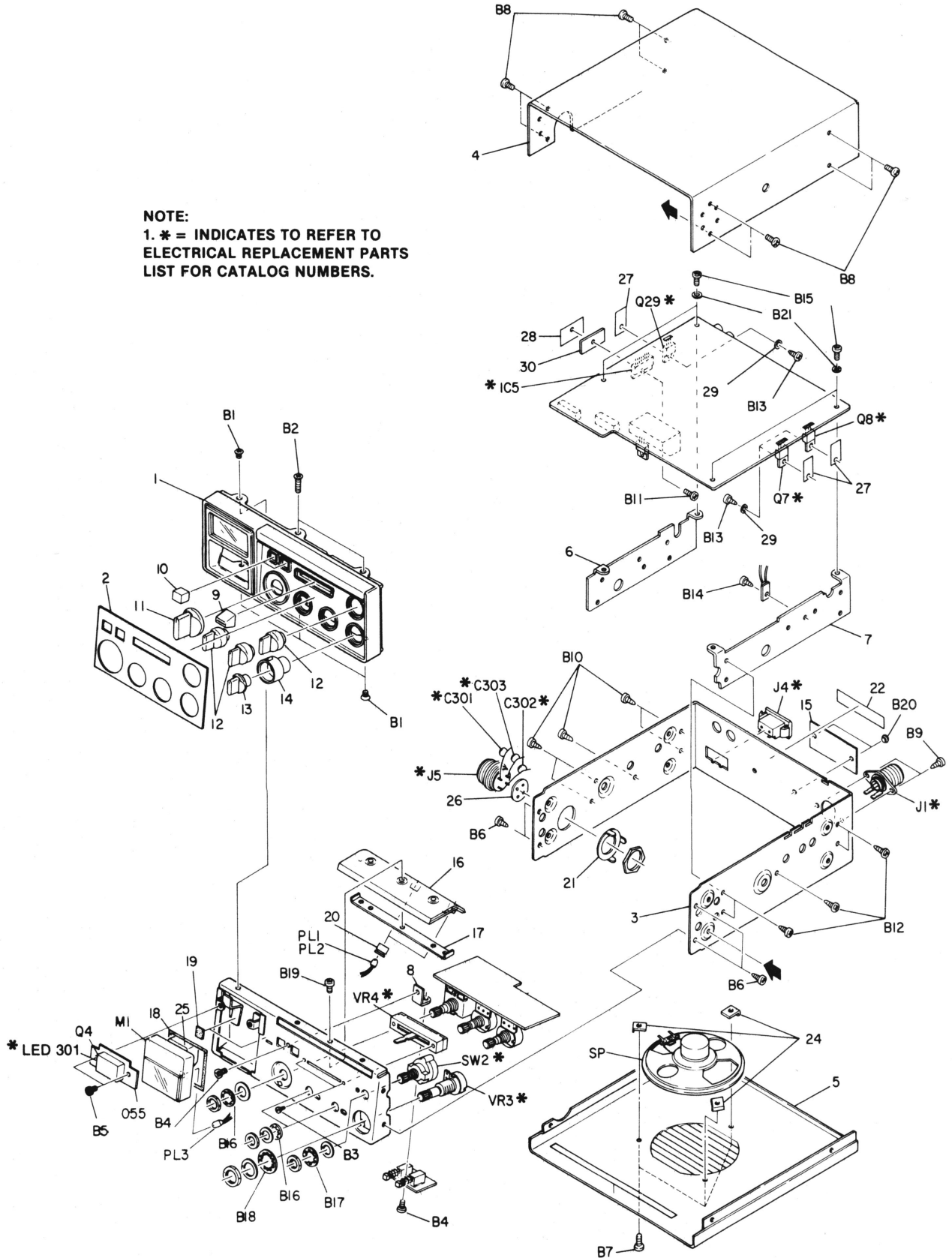
To service the Volume control, Squelch control, RF Gain control, Clarifier control,

NB & ANL switch, CB/PA switch, LSB/AM/USB switch, Meter, meter light, front panel lights, Channel switch and channel readout, requires removal of the front panel assembly. Remove the knobs and six screws from the top and bottom of the front panel and carefully slide the panel forward to expose the control and switch wiring.

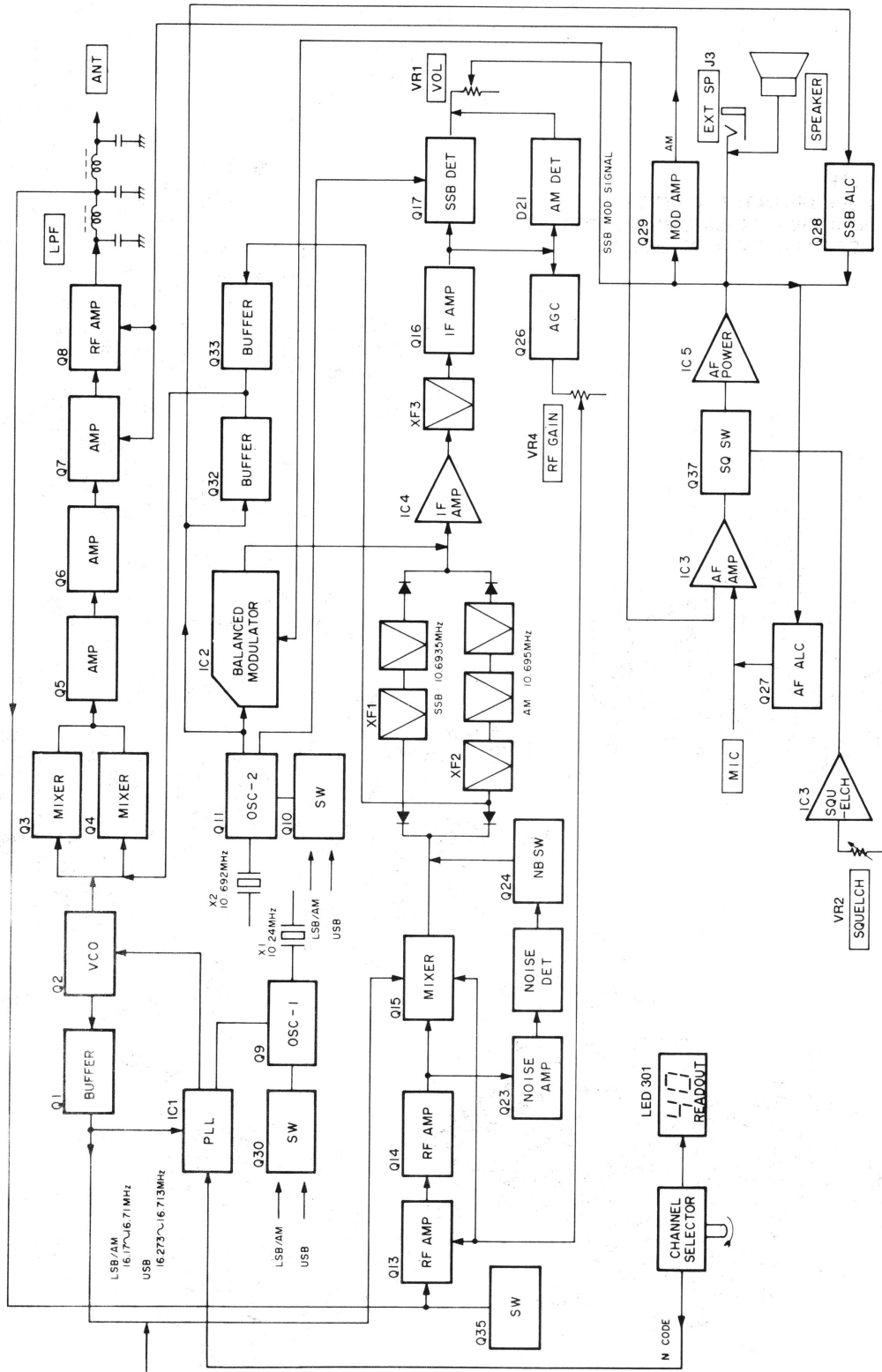
REPLACEMENT PARTS LIST MODEL 3-5826A

CAT. NO.	REF. NO.	DESCRIPTION	CAT. NO.	REF. NO.	DESCRIPTION
CABINET & CHASSIS			ACCESSORIES		
EA98X825	CA-1	Cabinet front assembly w/ control panel insert(ref.No.2)	5-1728	AC-1	Standard Microphone, 500Ω screw type
EA43X1439	CA-9	Rf Gain Control Knob	5-1722	AC-2	Power Cord, 2 pin
EA43X1440	CA-10	NB & ANL Control Knobs	5-1724	AC-3	Fuse, 3 amp.
EA43X1391	CA-11	Channel Selector Knob	5-1733	AC-4	Universal Mounting Bracket
EA43X1388	CA-12	Volume, Squelch and USB/AM/ LSB Control Knobs	5-1732	AC-5	Thumb screws
EA43X1387	CA-13	Clarifier-fine Adjust knob	5-1729	AC-6	Standard mike, holder
EA43X1441	CA-14	Clarifier-Rapid Adjust Knob			
EA62X310	M-1	S/Rf Meter	Note:	1.	Parts not listed are non-stocked replacement items.
EA41X237	PL1	Meter pilot light		2.	AC and CA references are for factory use only.
EA41X328	PL2,3	Reflector pilot light		3.	For additional accessories, refer to G.E. accessories catalog or use and care Guide manual for this model.
EA95X192	SP	Speaker, 8Ω			

NOTE:
 1. * = INDICATES TO REFER TO
 ELECTRICAL REPLACEMENT PARTS
 LIST FOR CATALOG NUMBERS.



EXPLODED VIEW CABINET AND CHASSIS ITEMS



BLOCK DIAGRAM 3-5826A

CHANNEL	1 = 6.57V 0 = .02V IC1 PROGRAM DIVIDER						REC/XMIT AM, LSB VCO OUTPUT IN MHz AT TP2 (1)	REC/XMIT USB VCO OUTPUT IN MHz AT TP2 (1)	CHANNEL FREQUENCY IN MHz
	PINS								
	1	2	3	4	5	6			
1	1	0	0	0	0	0	16.270	16.273	26.965
2	0	1	0	0	0	0	16.280	16.283	26.975
3	1	1	0	0	0	0	16.290	16.293	26.985
4	0	0	1	0	0	0	16.310	16.313	27.005
5	1	0	1	0	0	0	16.320	16.323	27.015
6	0	1	1	0	0	0	16.330	16.333	27.025
7	1	1	1	0	0	0	16.340	16.343	27.035
8	0	0	0	1	0	0	16.360	16.363	27.055
9	1	0	0	1	0	0	16.370	16.373	27.065
10	0	0	0	0	1	0	16.380	16.383	27.075
11	1	0	0	0	1	0	16.390	16.393	27.085
12	0	1	0	0	1	0	16.410	16.413	27.105
13	1	1	0	0	1	0	16.420	16.423	27.115
14	0	0	1	0	1	0	16.430	16.433	27.125
15	1	0	1	0	1	0	16.440	16.443	27.135
16	0	1	1	0	1	0	16.460	16.463	27.155
17	1	1	1	0	1	0	16.470	16.473	27.165
18	0	0	0	1	1	0	16.480	16.483	27.175
19	1	0	0	1	1	0	16.490	16.493	27.185
20	0	0	0	0	0	1	16.510	16.513	27.205
21	1	0	0	0	0	1	16.520	16.523	27.215
22	0	1	0	0	0	1	16.530	16.533	27.225
23	1	1	0	0	0	1	16.560	16.563	27.255
24	0	0	1	0	0	1	16.540	16.543	27.235
25	1	0	1	0	0	1	16.550	16.553	27.245
26	0	1	1	0	0	1	16.570	16.573	27.265
27	1	1	1	0	0	1	16.580	16.583	27.275
28	0	0	0	1	0	1	16.590	16.593	27.285
29	1	0	0	1	0	1	16.600	16.603	27.295
30	0	0	0	0	1	1	16.610	16.613	27.305
31	1	0	0	0	1	1	16.620	16.623	27.315
32	0	1	0	0	1	1	16.630	16.633	27.325
33	1	1	0	0	1	1	16.640	16.643	27.335
34	0	0	1	0	1	1	16.650	16.653	27.345
35	1	0	1	0	1	1	16.660	16.663	27.355
36	0	1	1	0	1	1	16.670	16.673	27.365
37	1	1	1	0	1	1	16.680	16.683	27.375
38	0	0	0	1	1	1	16.690	16.693	27.385
39	1	0	0	1	1	1	16.700	16.703	27.395
40	0	0	0	0	0	0	16.710	16.713	27.405

(1) Clarifier Control (VR3) set at center position (0).

Channel Frequency Table

ALIGNMENT INSTRUCTIONS

CAUTION: Use isolation transformer or observe polarity when connecting test equipment. Maintain line voltage at 120V AC. Allow a 15-minute warm-up period. Adjustments made with 13.8 volt DC input. Connect low sides of test equipment to ground unless specified otherwise. Connect 50-ohm dummy load or antenna before keying transmitter. Connect microphone.

Suggested Alignment Tools: GC Electronics:
 L5.....9091
 T1,T2,T3,T5 thru T8,T12.....9440
 T9,T10,T11.....5009,8276
 CT3.....5000

SYNTHESIZER ALIGNMENT

TEST EQUIPMENT	TRANSCIVER	ADJUST	REMARKS
Input of DC meter to TP1 (Junction of R6 and R7).	Ch. 40, AM Xmit	T1	Adjust for 3.40V.
	Ch. 1, AM Xmit	T1	Adjust for 2.00V ±0.3V.
Input of frequency counter to TP3 (Q11 collector).	Ch. 20, LSB Xmit	CT4	Adjust for 10.695MHz +50/-0Hz.
	Ch. 20, USB Xmit	CT3	Adjust for 10.692MHz +0/-50Hz.
Input of frequency counter to TP2 (Q2 base).	Ch. 20, USB Xmit	CT1	Adjust for 16.513MHz ±50Hz.
	Ch. 20, LSB Xmit	CT2	Adjust for 16.510MHz ±50Hz.

TRANSMITTER ALIGNMENT

Connect an RF wattmeter and 50-ohm, 25-watt dummy load to antenna connector.
 NOTE: Be sure to check transmit frequency and power on all active channels after alignment of transmitter.
 See page 5 for channel frequencies.

SSB

TEST EQUIPMENT	TRANSCIVER	ADJUST	REMARKS
Inject a 2400Hz, 3mV signal at the MIC input.	Ch. 20, LSB, TX	T2,T3,T5 T12	Adjust for Maximum.
	Ch. 1, LSB, TX	T3	Adjust for Maximum.
	Ch. 40, LSB, TX	T5	Adjust for Maximum.
Input of RF Wattmeter to antenna input.	Ch. 20, AM, TX	L5	Adjust for Maximum.

TRANSMITTER ADJUSTMENTS

Connect an RF wattmeter and 50-ohm, 25-watt dummy load to antenna connector.
 NOTE: Be sure to check transmit frequency and power on all active channels after alignment of transmitter.
 See page 5 for channel frequencies.

TEST EQUIPMENT	TRANSCIVER	ADJUST	REMARKS
0-3 Amp DC Ammeter in series with 13.80V DC power line.	Ch. 20, LSB, TX No modulation	RV1	BIAS Adjust for MINIMUM current, then adjust for an increase of 50mA.
Input of RF wattmeter to antenna input.	Ch. 20, LSB, TX No modulation	RV10, RV11	BALANCE Preset RV5 Maximum counterclockwise and RV10 Maximum clockwise. Adjust RV11 for Maximum carrier leakage. Adjust RV10 for MINIMUM carrier leakage.

TRANSMITTER ADJUSTMENTS (Continued)

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Inject a 2400Hz, 3mV signal at the MIC input.	Ch. 20, LSB, TX	RV5, RV2	SSB RF POWER Preset RV2 Maximum clockwise. Adjust RV5 for 7.5 watts RF output. Increase the 2400Hz signal level to 5mV. Adjust RV2 for 12.25 watts RF output Maximum.
Input of RF wattmeter to antenna input.	Ch. 20, AM, TX	RV7	AM RF POWER Adjust for 4.0 watts RF output Maximum.
Modulation meter to antenna input. Inject a 1000Hz, 3mV signal at the MIC input.	Ch. 20, AM, TX	RV6	AMC Adjust for 90% modulation.
Input of RF wattmeter to antenna input.	Ch. 20, AM, TX	RV4	AM TX POWER Adjust RV4 so that TX Power meter agrees with RF wattmeter.

RECEIVER ALIGNMENT

Connect an AC VTVM or AF wattmeter across speaker voice coil.
Adjust volume control to obtain a suitable indication.
Set generator output low enough to prevent AGC limiting.

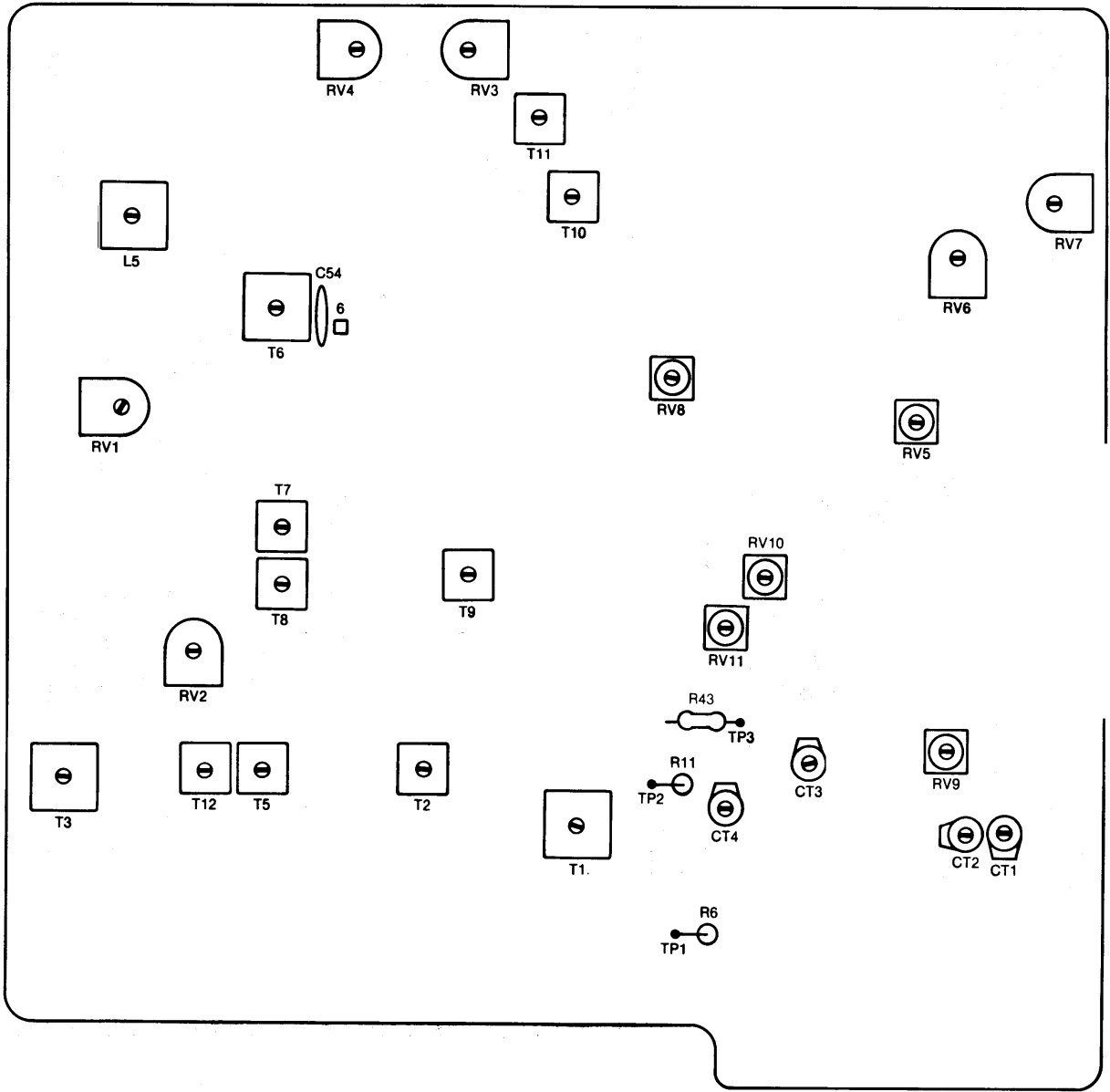
AM

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Output of signal generator to antenna input. 27.185MHz, 1000Hz @ 30% modulation.	Ch. 19, AM Clarifier Midrange RF Gain Maximum Squelch MINIMUM NB & ANL Off	T6, T7, T8 T9, T10, T11	Adjust for Maximum output.

RECEIVER ADJUSTMENTS

Connect an AC VTVM or AF wattmeter across speaker voice coil.
Adjust volume control to obtain a suitable indication.

TEST EQUIPMENT	TRANSCEIVER	ADJUST	REMARKS
Input of DC Voltmeter to Terminal 6 on Main board.	Ch. 19, USB No signal. RF Gain Maximum	RV8	SSB AGC Adjust for 2.00V ±.1V.
Output of signal generator to antenna input. 27.185MHz, 1000Hz @ 30% modulation. Output 1000uV.	Ch. 19, AM RF Gain Maximum NB & ANL Off	RV9	SQUELCH RANGE Set Squelch Control VR2 fully clockwise. Adjust RV3 so that squelch just breaks.
Output of signal generator to antenna input. 27.185MHz, 1000Hz @ 30% modulation. Output 100uV.	Ch. 19, AM RF Gain Maximum NB & ANL Off	RV3	RX S METER Adjust for 9 on RX Signal scale of meter.



ALIGNMENT TEST POINTS AND COMPONENT LOCATION