

REALISTIC[®]

Service Manual

21-145

TRC-24B

5 WATT SOLID STATE C.B. TRANSCEIVER

Catalog Number 21-145



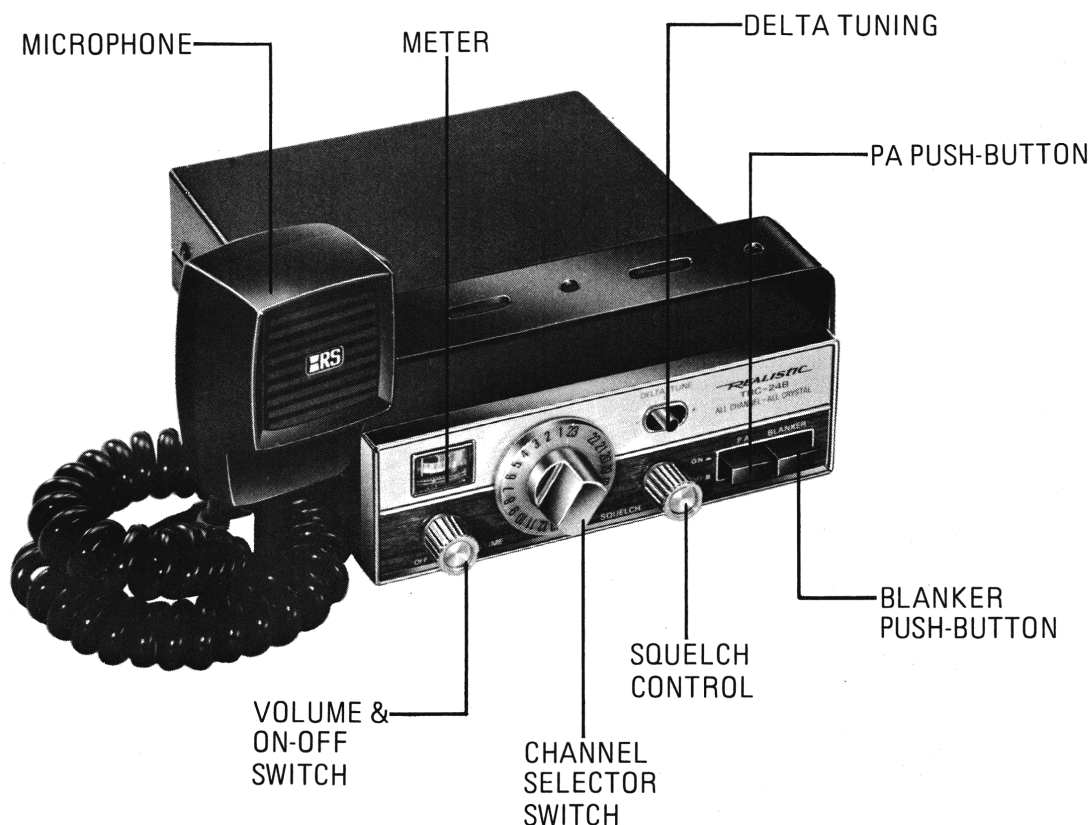
CUSTOM MANUFACTURED FOR RADIO SHACK  A TANDY CORPORATION COMPANY

SPECIFICATIONS

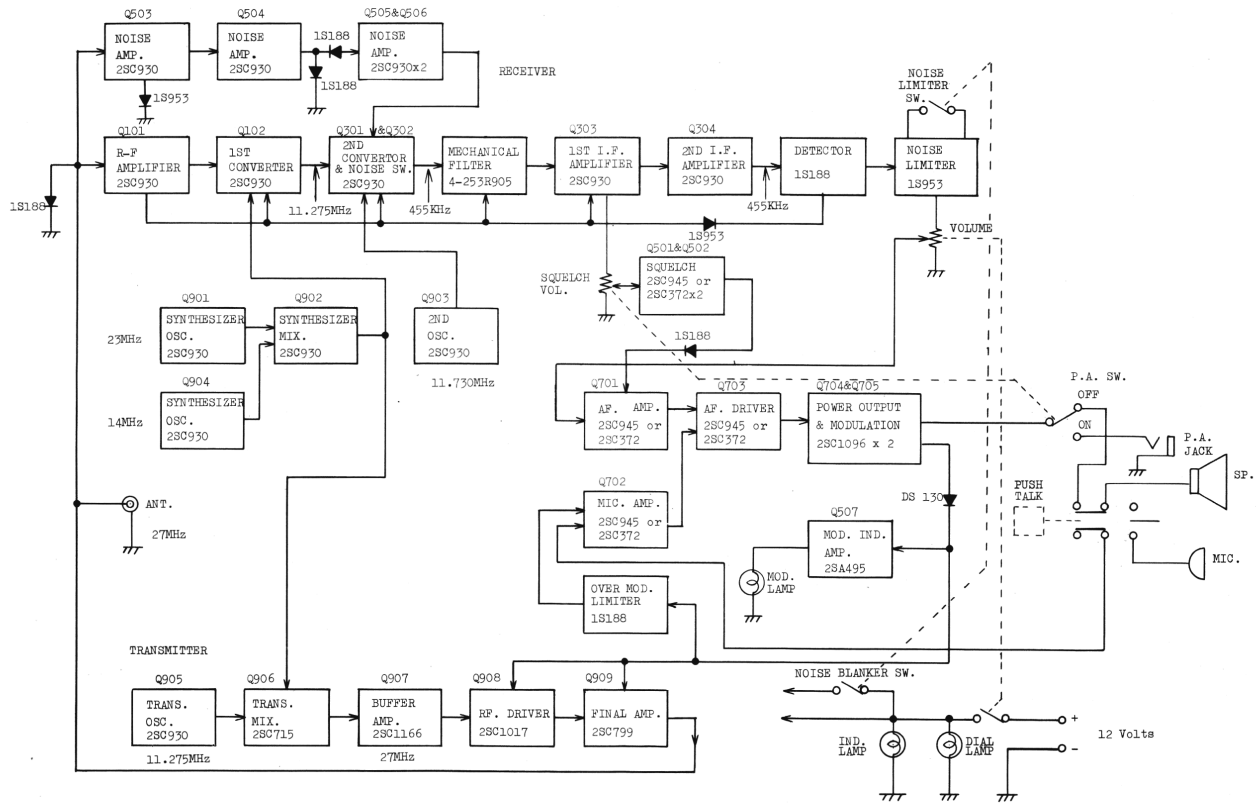
RECEIVER	Nominal	Limit
SENSITIVITY		
10 dB S+N/N	0.5 μ V	1.0 μ V
20 dB S+N/N	1.5 μ V	2.0 μ V
SELECTIVITY		
at \pm 10kHz	60 dB	50 dB
at \pm 3kHz	-8 dB	-6 dB
SQUELCH RANGE		
minimum	0.25 μ V	0.5 μ V
maximum	1000 μ V	100 - 10000 μ V
IF FREQUENCY	11.275 MHz/455 kHz	
AUDIO POWER OUTPUT (in PA, 10% distortion)	4.0 W	3.5 W
AUDIO RESPONSE (compared to 1kHz)	400 Hz: -6 dB	400 Hz: -6 \pm 5 dB
	2 kHz: -8 dB	2 kHz: -8 \pm 5 dB
IMAGE RESPONSE	28 MHz: 46 dB	48 MHz: 40 dB
	other: 51 dB	other: 45 dB
CURRENT DRAIN	230 mA	300 mA
TRANSMITTER		
DC INPUT POWER	12.0 V x 390 mA	
RF OUTPUT POWER	4.0 W	3.5 W
SPURIOUS RADIATION	55 dB	50 dB
MODULATION	+100 -90%	
RF FREQUENCY STABILITY	0.002%	0.005%
POWER REQUIREMENT.....	12-14V DC Negative Ground	
MAX. POWER CONSUMPTION	15 watts	
MICROPHONE	Dynamic	

NOTE: Nominal Specs represent the design specs; all units should be able to approximate these - some will exceed and some may drop slightly below these specs. Limit Specs represent the absolute worst condition which still might be considered acceptable; in no case should a unit perform to less than within any Limit Spec.

CONTROLS



BLOCK DIAGRAM



DISASSEMBLY

Removal of case

After removing mounting brackets, remove four screws holding case as shown in Figure 2.

2. Removal of printed circuit board

Remove six screws holding circuit board as shown in Figure 3.

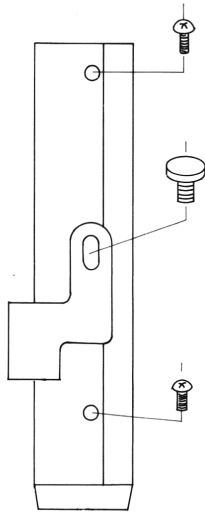


Figure 2

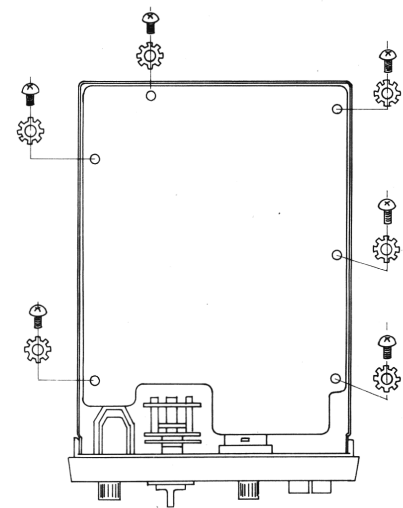


Figure 3

ALIGNMENT OF RECEIVER SECTION

EQUIPMENT REQUIRED

Signal generator 455 kHz and 27 MHz
 Modulated 1000 Hz, 30% AM,
 Output Impedance 50 ohms.
 VTVM
 DC power supply 13.8 volts, 1.5A.
 Oscilloscope, Frequency Meter or Counter.

PROCEDURE

Allow test equipment and set at least 15 minutes to warm up before starting the alignment.
 Output Level: Keep signal generator as low as possible to prevent AGC overload.
 Output level of test set should be kept under 2 volts.
 See Alignment Set up on page 6 and Alignment points on page 8.

Step	Connect Signal Source to—	Connect Output Indicator to—	Set Signal to—	Adjust	Adjust for—	Step
1	Set Channel Selector to Ch. # 13					1
2	Turn VR7 (Volume) fully clockwise.					2
3	Turn VR3 (Squelch) fully counterclockwise.					3
4		Oscilloscope to L904 Secondary		L901	Maximum Amplitude	4
5				L902		5
6				L903		6
7				L904		7
8	Sig. Gen. Connected to ANT. terminal.	V.T.V.M. connected across ext. speaker jack 8 ohm resistive load.	27.115MHz (Modulated) Signal input should be under 50 μ V	L101	Maximum Output	8
9				L102		9
10				T301		10
11				T302		11
12				T303		12
13				T304		13
14				T305		14
15	T306	15				
16	Repeat steps 8 through 15 as necessary to obtain maximum sensitivity					16
17	Signal Gen. connected to antenna jack	V.T.V.M. connected across ext. speaker jack	27.115MHz Signal input should be 0.25 μ V	VR1	Adjust VR1 for 2.0 volts V.T.V.M. indication	17
18	Same as 17	Same as 17	27.115MHz Signal input should be to 1000 μ V	VR2	Adjust for squelch open with 1000 μ V input	18
19	Signal Gen. connect to antenna jack. Signal generator output 10-100mV	Connect DC voltmeter between R507 hot end ground side.	25MHz modulated with 100Hz pulses.	L501 L502 L503 L504	Adjust for max. DC output across R507	19
20	Signal Gen. connect to antenna jack (100 μ V)	8 ohm resistive load	27.115MHz	VR4	Adjust for zero reading on the S meter	20
21	Signal Gen. connect to antenna jack (100 μ V)	8 ohm resistive load	27.115MHz	VR6	Adjust for S9 reading on the S meter	21

ALIGNMENT OF TRANSMITTER SECTION

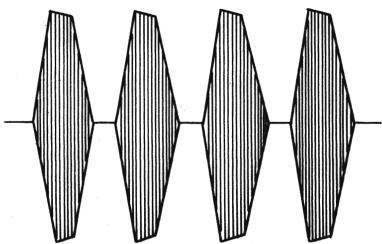
This transceiver meets all requirements of F.C.C. Rules and Regulations, Part 95. Only those persons properly licensed by the F.C.C. are permitted to repair or adjust any malfunctioning unit found to be transmitting illegally (refer to F.C.C. Rules and Regulations, Part 95, Sub part D, Section 95.)

PROCEDURE

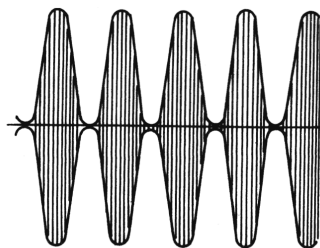
Allow test equipment and set at least 15 minutes to warm up before starting the alignment.
RF Output meter or 50 ohms non-inductive dummy must be connected to the antenna jack.

See Alignment Set up on page 6 and Alignment points on page 8.

Step	Connect Signal Source to—	Connect Output Indicator to—	Adjust	Adjust for—	Step
1	Set Channel Selector to Ch. # 13				1
2		Watt Meter Across Antenna Jack or Oscilloscope may be used as the Output Indicator.	L905	Key Transmitter and adjust for Maximum Output.	2
3			L906		3
4			L907		4
5			L908		5
6			L910		6
7			L912		7
8			L913		8
9	Repeat steps 2 through 8 as necessary to obtain maximum output.				9
10	Audio Generator to microphone Jack	Oscilloscope to antenna jack and observe 80 to 100% modulation signal also watt meter across antenna jack	L910	Maximum Output	10
11	Adjust audio Signal level to obtain 80-100% modulation level.		L912		11
12			L913		12
13	Repeat steps 10 through 12 to obtain 3.5-4 watts output on all Channels				13
14	Check R.F. deviation with Digital Frequency Counter on all Channels				14
15	Audio Generator to microphone jack 100% modulation	Same as above	VR8	No distortion of modulation waveform at 100% modulation with 15mV input at mic jack (See Fig. 4)	15
16	No Modulation	Same as above	VR5	3.5-4.0 on the R.F. meter (depending on output obtained in step 13)	16



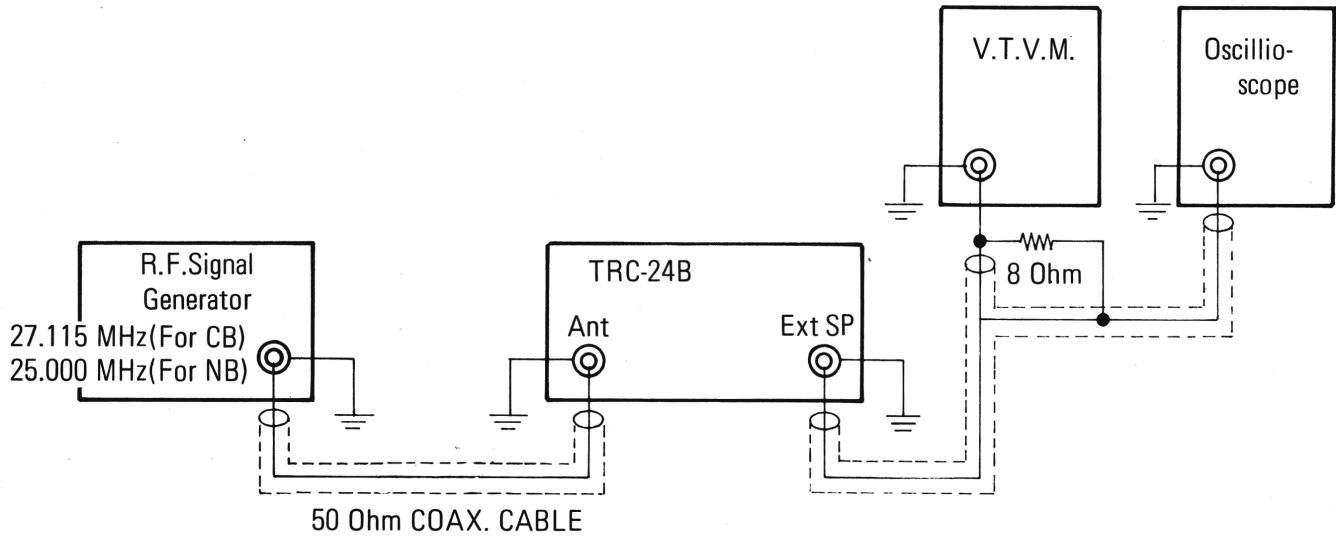
DISTORTION



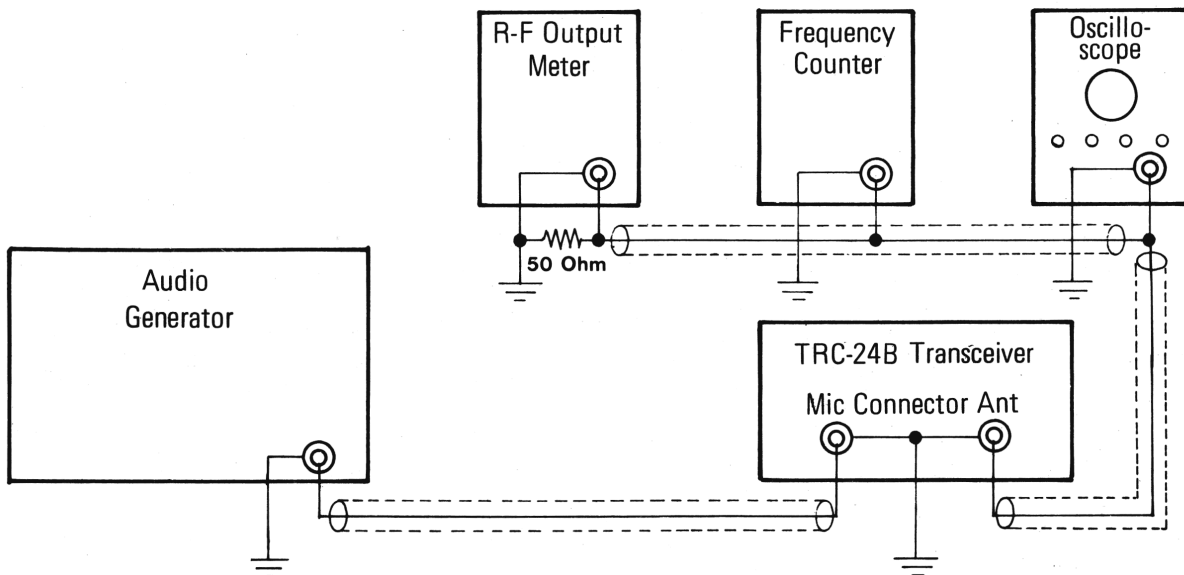
100% MODULATION
NO DISTORTION

Figure 4

Receiver



Transmitter



TEST EQUIPMENT SETUP DIAGRAM

ANTENNA SYSTEM

An antenna system can be considered to include the antenna proper, the feed line, and any coupling devices used for transferring power from the transmitter to the line and from the line to the antenna. Some simple systems may omit the transmission line or one or both of the coupling devices.

Selecting an Antenna

For mobile operation at 27 MHz, the vertical whip antenna is almost universally used. Since longer whips present mechanical difficulties, the length is usually limited to a dimension that will resonate as a quarter-wave antenna in the CB band; the car body serves as the ground connection. This antenna length is approximately 8.5 feet. With the whip length adjusted to resonance in the CB band, the impedance at the feed point, X, Fig.5, will appear as a pure resistance at the resonant frequency.

Mobile Antenna

Minimizing Losses

There is little that can be done about the nature of the coil. However, poor electrical contact between large surfaces of the car body, and especially between the point where the feed line is grounded and the rest of the body, can add materially to the ground-loss resistance. For example, the feed line, which should be grounded as close to the base of the antenna as possible, might be connected to the bumper, while the bumper may have poor contact with the rest of the body because of rust or paint.

Feeding the Antenna

It is usually found most convenient to feed the whip antenna with coax line. Unless very low-Q loading coils are used the feed-point impedance will always be appreciably lower than 52 ohms—the characteristic impedance of the commonly used coax line, RG-8/U or RG-58/U. One method of obtaining a match is shown in Fig. 6. For detailed information on precise loading and matching of Antennas and Transmission line systems, refer to the latest-edition of the **ARRL Handbook**.

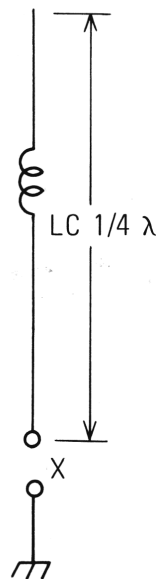


Figure 5

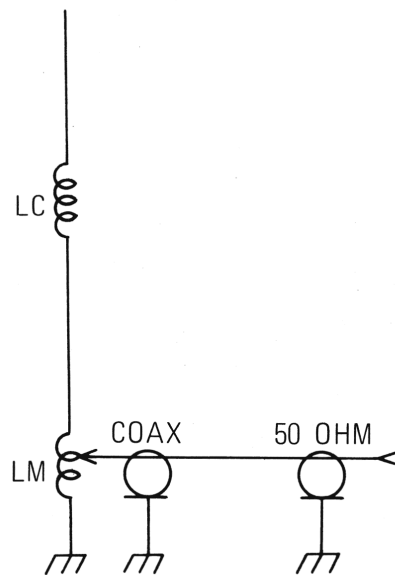
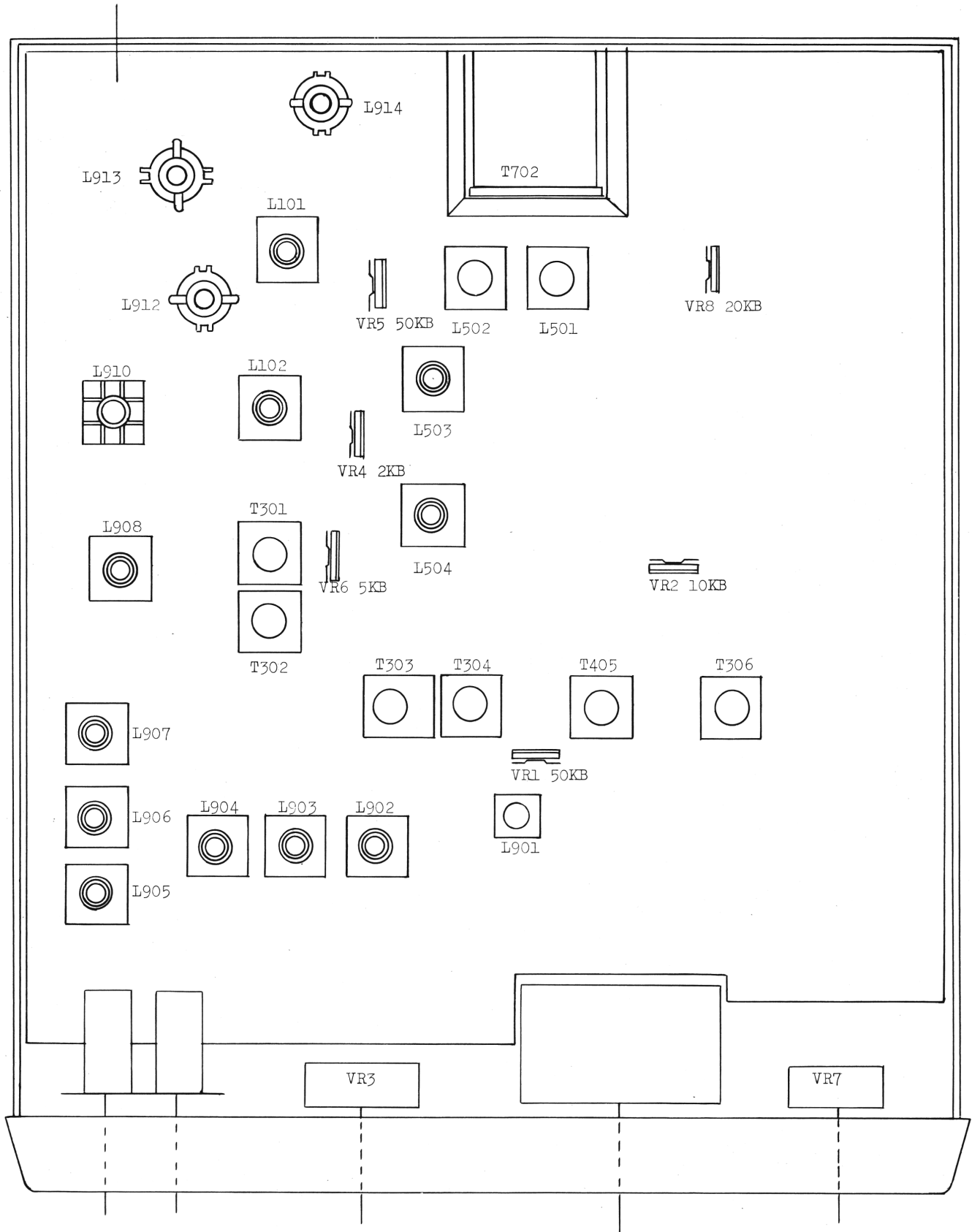


Figure 6

ALIGNMENT POINT (CHASSIS LAYOUT)



TRANSISTOR VOLTAGE CHART

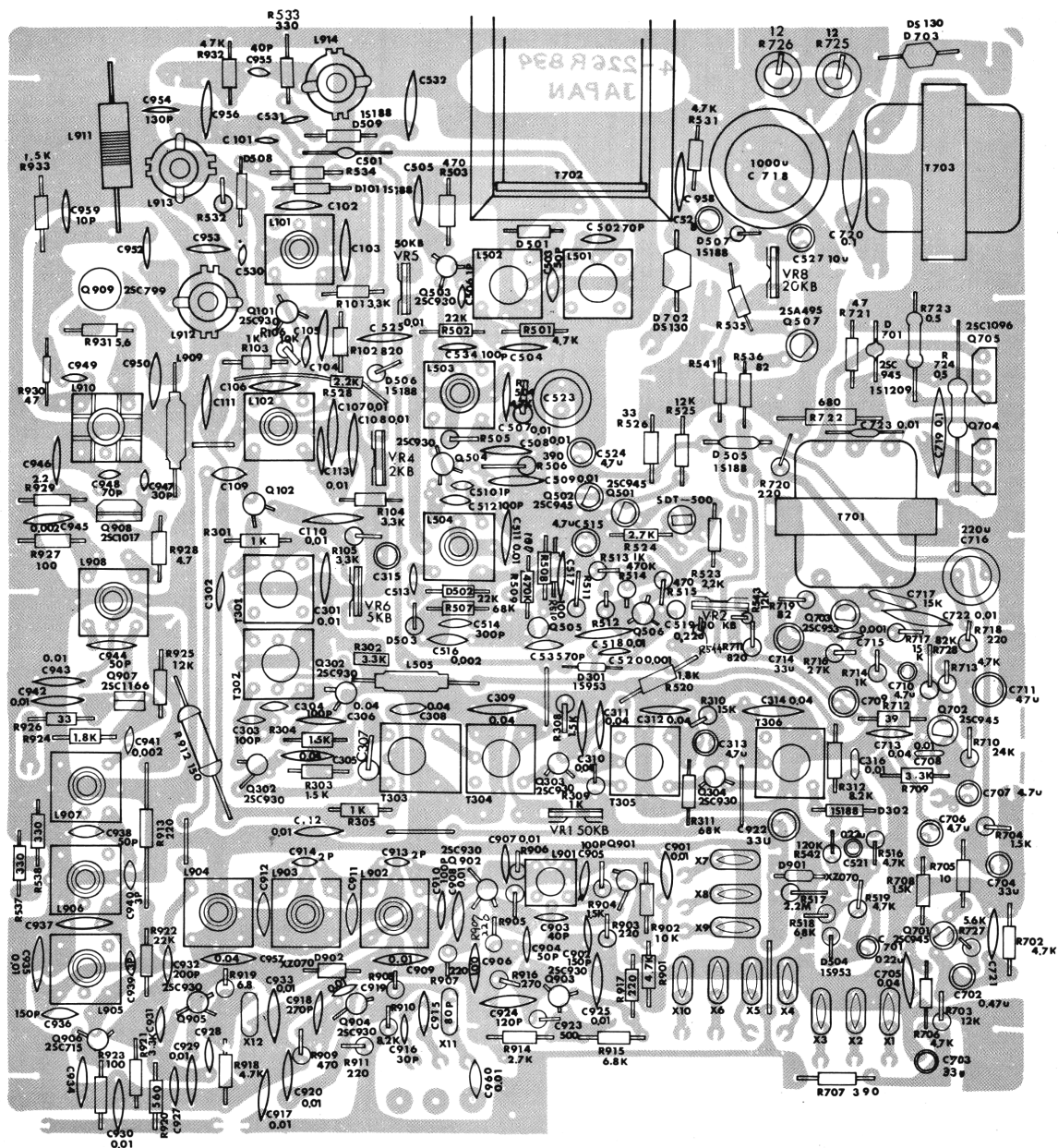
1. Power supply voltage = 13.8V
2. All voltage measurements are with no signal input.
3. Measured with VTVM

		RX(V)	TX(V)			RX(V)	TX(V)			RX(V)		TX(V)				
Q101	B	1.9	—	Q702	B	1.3	1.2	Q904	B	1.6	1.6	Q502	B	0.7	—	
	C	5.5	—		C	11.0	7.5		C	6.0	6.0		C	0	—	
	E	1.4	—		E	7.0	0.6		E	1.0	1.1		E	0	—	
Q102	B	2.0	—	Q703	B	1.6	1.6	Q905	B	—	1.6	NOISE BLANKER				
	C	6.6	—		C	10.0	10.0		C	—	5.8					
	E	1.5	—		E	1.0	1.0		E	—	1.1	ON	OFF			
Q301	B	2.0	—	Q704	B	0.63	0.63	Q906	B	—	2.6	Q503	B	2.5	0	—
	C	5.2	—		C	13.8	13.3		C	—	7.0		C	13.8	0	—
	E	1.65	—		E	—	—		E	—	2.1		E	1.8	0	—
Q302	B	2.0	—	Q705	B	0.63	0.63	Q907	B	—	1.4	Q504	B	2.25	0	—
	C	5.2	—		C	13.8	13.3		C	—	13.3		C	13.8	0	—
	E	1.65	—		E	—	—		E	—	0.9		E	1.6	0	—
Q303	B	2.1	—	Q901	B	2.0	2.0	Q908	B	—	—	Q505	B	0.75	0	—
	C	6.0	—		C	7.0	7.0		C	—	12.1		C	8.9	0	—
	E	1.5	—		E	1.5	1.5		E	—	0.3		E	0.15	0	—
Q304	B	0.7	—	Q902	B	1.5	1.5	Q909	B	—	—	Q506	B	0.66	0	—
	C	7.0	—		C	7.0	7.0		C	—	12.0		C	13.0	0	—
	E	0	—		E	1.0	1.0		E	—	—		E	0	0	—
Q701	B	1.9	—	Q903	B	1.5	—	Q501	B	0.5	—	Q507	B	—	13.5	
	C	2.3	—		C	7.0	—		C	0.72	—		C	—	0	
	E	1.3	—		E	0.8	—		E	0	—		E	—	13.8	

CRYSTAL SYNTHESIS TABLE

Transmit/Receive						
	23.290	23.340	23.390	23.440	23.490	23.540
14.950	1	5	9	13	17	21
14.960	2	6	10	14	18	22
14.970	3	7	11	15	19	—
14.990	4	8	12	16	20	23
		2nd local	Transmit	11.275 MHz		
			Receive	11.730 MHz		
		1st IF	11.275 MHz			
		2nd IF	455 kHz			

CIRCUIT BOARD DIAGRAM (TOP VIEW)



TROUBLE SHOOTING

RECEIVER SECTION

- (1) Pilot lamp does not light when power switch is turned on.
 - a. Check that power supply is connected with correct polarity.
 - b. Check if power supply circuit is shorted.
 - c. Check if power supply circuit is open because of accidental wire disconnection.
 - d. Check if the Diode D703 is shorted.
 - e. Check fuse.
- (2) No sound (noise) from speaker.
 - a. Check with an external speaker.
 - b. Check if speaker leads are broken. Also, check other leads.
 - c. Check that microphone switching is operating correctly.
 - d. Check to be sure the audio circuit is functioning. Check the terminal voltage of transistor Q701, 703 and 704.

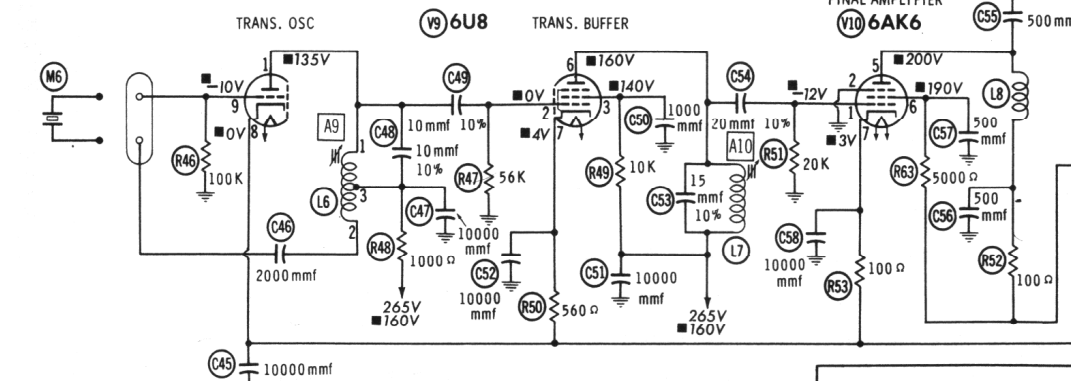
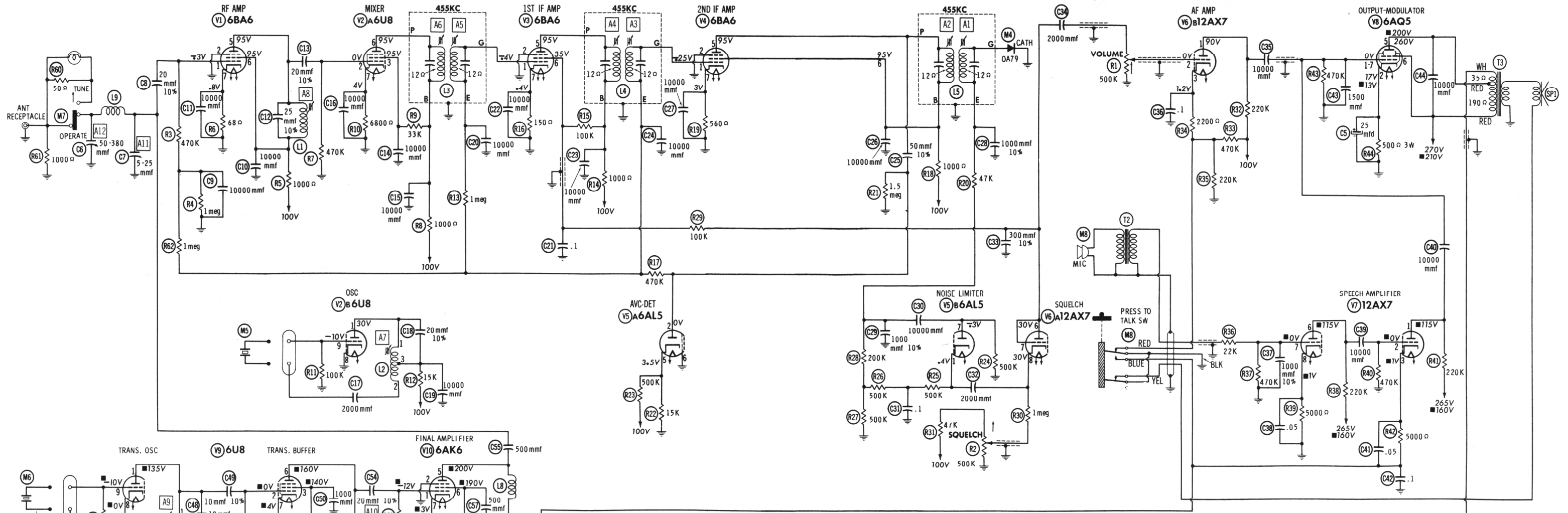
(If you touch the terminals of volume control (VR7) with your finger, you should hear noise. Thus, you know the audio circuit is functioning.)
 - e. Check that Squelch circuit is operating in a normal condition.
 - f. Check for presence of 23MHz, 14MHz and 11.730 MHz oscillation. If so, check that all oscillations are strong enough.
 - g. 11.730MHz: Check for presence of oscillation. Emitter voltages of Q301 and Q302 will be higher with XII installed (11,730 MHz) than when Xtal is shorted out.
 - h. Check the connection of Channel Selector switch and Delta Tune switch.
- (3) RF meter ("S" meter) operation is abnormal.
 - a. Check that the emitter voltage of Q102 corresponds to incoming signal.
 - b. Check if connections of VR5 and VR3 are broken.
 - c. Check if C533 is shorted.
- (4) Noise Blanker operation is abnormal.
 - a. Check the voltages of Transistors Q503, Q504, Q505 and Q506. (ref: Transistor voltage chart).
 - b. Check if coils L501, L502, L503, L504 and L505 are broken.

TRANSMITTER SECTION

- (1) No output
 - a. Insure microphone plug is inserted correctly.
 - b. Try replacing microphone.
 - c. Check for the presence of 23MHz, 14MHz and 11MHz oscillation. If so, are they strong enough?
 - d. Insure PA switch is not pushed to PA position.
 - e. Check that each transistor is operating normally.
- (2) No Modulation (Modulation lamp does not light)
 - a. Check if the direct current resistance of third coil of modulation transformer (T702) is from 1 to 1.2 ohm.
 - b. Try replacing microphone.
 - c. Check the terminal voltages of Q702.
 - d. Check if value C708 and C528 are shorted.
 - e. Check if value of C709, 710 and C707 are normal.

NO RECEIVING AND NO TRANSMITTING

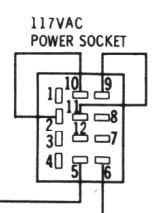
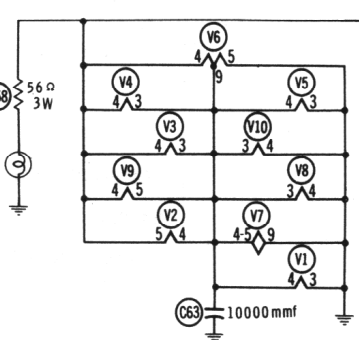
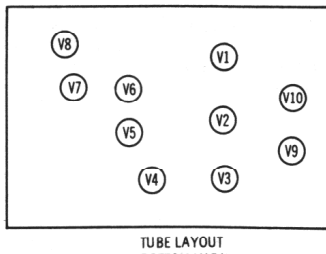
- (1) Check if microphone circuit is abnormal.
- (2) Check for presence of 23MHz and 14MHz oscillation.
- (3) Check if circuit voltages of Q901 and Q904 are OK.
- (4) Check if voltages of Q902 are OK.
- (5) Check if wire leads of coil L902, 903 and L904 are disconnected.



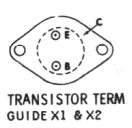
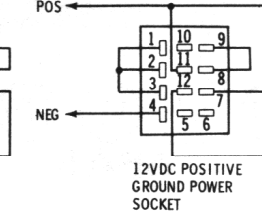
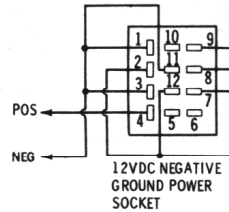
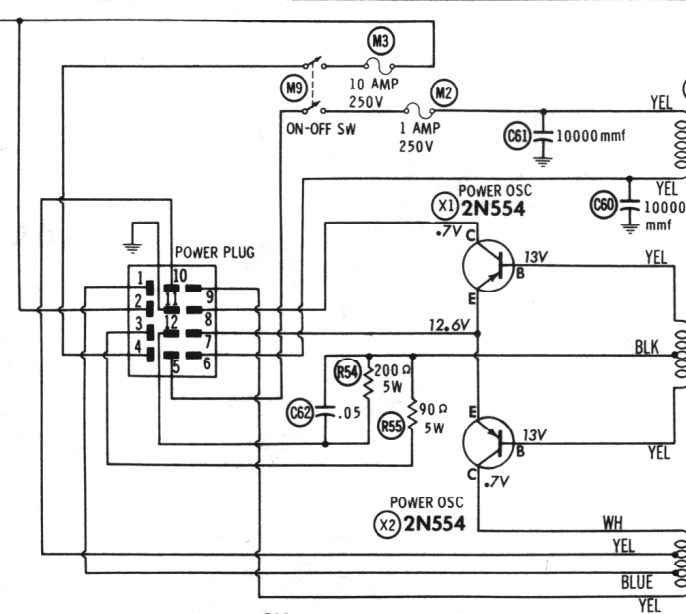
RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6BA6	1.3 meg	0 Ω	0 Ω	.1 Ω	+1000 Ω	+1000 Ω	68 Ω		
V2	6U8	+15K	470K	+34K	1 Ω	.1 Ω	+1000 Ω	6800 Ω	0 Ω	100K
V3	6BA6	2 meg	0 Ω	.1 Ω	.1 Ω	+1000 Ω	+100K	150 Ω		
V4	6BA6	1 meg	0 Ω	.1 Ω	.1 Ω	+1000 Ω	+1000 Ω	560 Ω		
V5	6AL5	1.3 meg	1 meg	0 Ω	.1 Ω	15K	0 Ω	500K		
V6	12AX7	+220K	0 Ω	27K	.1 Ω	0 Ω	+200K	+200K	1 meg	.1 Ω
V7	12AX7	+225K	470K	5000 Ω	.1 Ω	.1 Ω	+225K	22K	5000 Ω	0 Ω
V8	6AQ5	470K	500 Ω	.1 Ω	0 Ω	+1700 Ω	+1500 Ω	470K		
V9	6U8	+7500 Ω	56K	+16K	.1 Ω	.1 Ω	+6500 Ω	560 Ω	0 Ω	100K
V10	6AK6	20K	0 Ω	.1 Ω	0 Ω	+1800 Ω	+6700 Ω	100 Ω		

TRANSISTOR CIRCUIT RESISTANCE NOT GIVEN BECAUSE OF THE WIDE VARIATION IN INTERNAL TRANSISTOR RESISTANCE. ALL MEASUREMENTS TAKEN IN "RECEIVE" POSITION UNLESS OTHERWISE INDICATED.
 † MEASURED FROM JUNCTION OF R56 AND C31 (100VOLT SOURCE).
 ‡ MEASURED FROM OUTPUT OF M1.
 ■ MEASURED IN "TRANSMIT" POSITION.



117VAC
42 WATTS (RECEIVE)
50 WATTS (TRANSMIT)



NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

- DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
 - Socket connections are shown as bottom views.
 - Measured values are from socket pin to common ground.
 - Line voltage maintained at 117 volts for voltage readings.
 - Nominal tolerance on component values makes possible a variation of +15% in voltage and resistance readings.
 - Volume control at maximum, no signal applied for voltage measurements.
- DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM
 ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

A PHOTOFACE STANDARD NOTATION SCHEMATIC
 ©Howard W. Sams & Co., Inc. 1961

REALISTIC
 MODEL TRC-27 (94L595)

REPLACEMENT PARTS LIST

Symbol No.	Description	RS Part No.	Mfr's Part No.	Symbol No.	Description	RS Part No.	Mfr's Part No.
CAPACITORS				CAPACITORS			
C101	16 pfd ±5% 50V Ceramic		R-CKD160J	C312	0.04 mfd ±20% 50V Ceramic		R-CKD403M
C102	40 pfd ±5% 50V Ceramic		R-CKD400J	C313	4.7 mfd 6.3V Electrolytic		R-C9882
C103	0.04 mfd ±20% 50V Ceramic		R-CKD403M	C314	0.04 mfd ±20% 50V Ceramic		R-CKD403M
C104	0.01 mfd ±20% 50V Ceramic		R-CKD103M	C315	10 mfd 16V Electrolytic		R-C9889
C105	1 pfd ±0.25 pfd 50V Ceramic		R-CKD010C	C316	0.01 mfd ±20% 50V Mylar		R-CQS103M
C106	80 pfd ±5% 50V Ceramic		R-CKD800J	C501	16 pfd ±5% 50V Ceramic		R-CKD160J
C107	0.01 mfd ±20% 50V Ceramic		R-CKD103M	C502	70 pfd ±5% 50V Ceramic		R-CKD700J
C108	0.01 mfd ±20% 50V Ceramic		R-CKD103M	C503	50 pfd ±5% 50V Ceramic		R-CKD500J
C109	30 pfd ±5% 50V Ceramic		R-CKD300J	C504	0.01 mfd ±20% 50V Ceramic		R-CKD103M
C110	0.01 mfd ±20% 50V Ceramic		R-CKD103M	C505	0.01 mfd ±20% 50V Ceramic		R-CKD103M
C111	0.01 mfd ±20% 50V Ceramic		R-CKD103M	C506	1 pfd ±0.25 pfd 50V Ceramic		R-CKD010C
C112	0.01 mfd ±20% 50V Ceramic		R-CKD103M	C507	0.01 mfd ±20% 50V Ceramic		R-CKD103M
C113	0.01 mfd +80%—20% 50V Ceramic		R-CKD103Z	C508	0.01 mfd ±20% 50V Ceramic		R-CKD103M
C301	0.01 mfd ±20% 50V Ceramic		R-CKD103M	C509	0.01 mfd ±20% 50V Ceramic		R-CKD103M
C302	3 pfd ±0.25 pfd 50V Ceramic		R-CKD030C	C510	1 pfd ±0.25 pfd 50V Ceramic		R-CKD010C
C303	100 pfd ±5% 50V Ceramic		R-CKD101J	C511	0.01 mfd ±20% 50V Ceramic		R-CKD103M
C304	100 pfd ±5% 50V Ceramic		R-CKD101J	C512	100 pfd ±5% 50V Ceramic		R-CKD101J
C305	0.04 mfd ±20% 50V Ceramic		R-CKD403M	C513	0.0033 mfd ±10% 50V Ceramic		R-CKD332K
C306	0.04 mfd ±20% 50V Ceramic		R-CKD403M	C514	300 pfd ±5% 50V Ceramic		R-CKD301J
C307	1000 mfd ±5% 50V Styrol		R-CQA102J	C515	4.7 mfd 16V Electrolytic		R-C9883
C308	0.04 mfd ±20% 50V Mylar		R-CQS403M	C516	0.002 mfd ±10% 16V Ceramic		R-CKD202K
C309	0.04 mfd ±20% 50V Ceramic		R-CKD403M	C517	0.01 mfd ±20% 50V Ceramic		R-CKD103M
C310	0.04 mfd ±20% 50V Ceramic		R-CKD403M	C518	0.01 mfd ±20% 50V Ceramic		R-CKD103M
C31-1	0.04 mfd ±20% 50V Ceramic		R-CKD403M	C519	0.22 mfd 16V Electrolytic		

Symbol No.	Description	RS Part No.	Mfr's Part No.	Symbol No.	Description	RS Part No.	Mfr's Part No.
CAPACITORS				CAPACITORS			
C520	0.001 mfd ±5% 50V Ceramic		R-CKD102J	C713	0.04 mfd +80%–20% 50V Ceramic		R-CKD403Z
C521	0.22 mfd Electrolytic		R-C9120	C714	33 mfd 6.3V Electrolytic		R-C9881
C523	100 mfd Electrolytic		R-C9907	C715	0.01 mfd ±20% 50V Mylar		R-CQS103M
C524	4.7 mfd Electrolytic		R-C9883	C716	220 mfd 16V Electrolytic		R-C9877
C525	0.01 mfd ±10% 50V Ceramic		R-CKD103M	C717	0.04 mfd ±20% 50V Mylar		R-CQS403M
C527	10 mfd Electrolytic		R-C9889	C718	1000 mfd 16V Electrolytic		R-C9878
C528	1 mfd Electrolytic		R-C9235	C719	0.1 mfd +80%–20% 50V Ceramic		R-CKD104Z
C529	0.04 mfd ±20% 50V Ceramic		R-CKD403M	C720	0.1 mfd +80%–20% 50V Ceramic		R-CKD104Z
C530	6 pfd ±0.25% 50V Ceramic		R-CKD060C	C721	0.01 mfd ±20% 50V Ceramic		R-CKD103M
C531	5 pfd ±0.25 pfd 50V Ceramic		R-CKD050C	C722	0.01 mfd ±20% 50V Ceramic		R-CKD103M
C532	0.01 mfd ±5% 50V Ceramic		R-CKD103J	C723	0.01 mfd ±20% 50V Mylar		R-CQS103M
C533	4.7 mfd 6.3V Electrolytic		R-C9882	C901	0.01 mfd ±20% 50V Ceramic		R-CKD103M
C534	100 pfd ±5% 50V Ceramic		R-CKD101J	C902	150 pfd ±5% 50V Ceramic		R-CKD151J
C535	50 pfd ±5% 50V Ceramic		R-CKD700J	C903	40 pfd ±5% 50V Ceramic		R-CKD400J
C701	0.22 mfd 10V Electrolytic		R-C9120	C904	50 pfd ±5% 50V Ceramic		R-CKD500J
C702	0.47 mfd 10V Electrolytic			C905	100 pfd ±5% 50V Ceramic		R-CKD101J
C703	33 mfd 6.3V Electrolytic		R-C9881	C906	0.01 mfd ±20% 50V Ceramic		R-CKD103M
C704	33 mfd 10V Electrolytic		R-C9934	C907	0.01 mfd +80%–20% 50V Ceramic		R-CKD103Z
C705	0.04 mfd ±20% 50V Ceramic		R-CKD403M	C908	0.01 mfd ±20% 50V Ceramic		R-CKD103M
C706	4.7 mfd 6.3V Electrolytic		R-C9882	C909	0.01 mfd ±20% 50V Ceramic		R-CKD103M
C707	4.7 mfd 6.3V Electrolytic		R-C9882	C910	100 pfd ±5% 50V Ceramic		R-CKD101J
C708	0.01 mfd ±20% 50V Mylar		R-CQS103M	C911	50 pfd ±5% 50V Ceramic		R-CKD500J
C709	33 mfd 10V Electrolytic		R-C9934	C912	100 pfd ±5% 50V Ceramic		R-CKD101J
C710	4.7 mfd 6.3V Electrolytic		R-C9882	C913	2 pfd ±0.25 pfd 50V Ceramic		R-CKD020C
C711	47 mfd 16V Electrolytic		R-C9886				


Symbol No.	Description	RS Part No.	Mfr's Part No.	Symbol No.	Description	RS Part No.	Mfr's Part No.
CAPACITORS				CAPACITORS			
C914	2 pfd ±0.25 pfd 50V Ceramic		R-CKD020C	C938	50 pfd ±5% 50V Ceramic		R-CKD500J
C915	80 pfd ±5% 50V Ceramic		R-CKD800J	C939	3 pfd ±0.25 pfd 50V Ceramic		R-CKD030C
C916	30 pfd ±5% 50V Ceramic		R-CKD300J	C940	3 pfd ±0.25 pfd 50V Ceramic		R-CKD030C
C917	0.01 mfd ±20% 50V Ceramic		R-CKD103M	C941	0.002 mfd ±10% 50V Ceramic		R-CKD202K
C918	270 pfd ±5% 50V Ceramic		R-CKD271J	C942	0.01 mfd ±20% 50V Ceramic		R-CKD103M
C919	0.001 mfd ±5% 50V Ceramic		R-CKD102J	C943	0.01 mfd ±20% 50V Ceramic		R-CKD103M
C920	0.01 mfd ±20% 50V Ceramic		R-CKD103M	C944	50 pfd ±5% 50V Ceramic		R-CKD500J
C921	0.01 mfd +80%–20% 50V Ceramic		R-CKD103Z	C945	0.002 mfd ±10% 50V Ceramic		R-CKD202K
C922	33 mfd 10V Electrolytic		R-C9934	C946	0.01 mfd ±20% 50V Ceramic		R-CKD103M
C923	500 pfd ±10% 50V Ceramic		R-CKD501K	C947	30 pfd ±5% 50V Ceramic		R-CKD300J
C924	120 pfd ±5% 50V Ceramic		R-CKD121J	C948	70 pfd ±5% 50V Ceramic		R-CKD700J
C925	0.01 mfd ±20% 50V Ceramic		R-CKD103M	C949	0.001 mfd ±20% 50V Mylar		R-CSQ102M
C926	0.01 mfd +80%–20% 50V Ceramic		R-CKD103Z	C950	0.04 mfd ±20% 50V Ceramic		R-CKD403M
C927	200 pfd ±5% 50V Ceramic		R-CKD201J	C951	0.04 mfd ±20% 50V Ceramic		R-CKD403M
C928	0.001 mfd ±5% 50V Ceramic		R-CKD102J	C952	130 pfd ±5% 50V Ceramic		R-CKD131J
C929	0.01 mfd ±20% 50V Ceramic		R-CKD103M	C953	270 pfd ±5% 50V Ceramic		R-CKD271J
C930	0.01 mfd ±20% 50V Ceramic		R-CKD103M	C954	130 pfd ±5% 50V Ceramic		R-CKD131J
C931	130 pfd ±5% 50V Ceramic		R-CKD131J	C955	40 pfd ±5% 50V Ceramic		R-CKD400J
C932	200 pfd ±5% 50V Ceramic		R-CKD201J	C956	0.01 mfd ±20% 50V Ceramic		R-CKD103M
C933	0.01 mfd ±20% 50V Styrol		R-CQA103M	C957	0.04 mfd ±20% 50V Ceramic		R-CKD403M
C934	0.01 mfd ±20% 50V Ceramic		R-CKD103M	C958	0.04 mfd ±20% 50V Ceramic		R-CKD403M
C935	0.01 mfd ±20% 50V Ceramic		R-CKD103M	C959	10 pfd ±5% 50V Ceramic		R-CKD100J
C936	150 pfd ±5% 50V Ceramic		R-CKD151J	C960	0.01 mfd +80%–20% 50V Ceramic		R-CKD103Z
C937	150 pfd ±5% 50V Ceramic		R-CKD151J	C961	270 pfd ±5% 50V Ceramic		R-CKD271J

Symbol No.	Description	RS Part No.	Mfr's Part No.	Symbol No.	Description	RS Part No.	Mfr's Part No.
SEMI-CONDUCTORS				TRANSISTORS & CRYSTALS			
D101	1S188 FM Diode		1S188	Q101	2SC930 D Transistor		2SC930
D301	1S953 Diode		1S953	Q102	2SC930 D Transistor		2SC930
D302	1S188 AM Diode		1S188	Q301	2SC930 D Transistor		2SC930
D501	1S953 Diode		1S953	Q302	2SC930 D Transistor		2SC930
D502	1S188 FM Diode		1S188	Q303	2SC930 D Transistor		2SC930
D503	1S188 FM Diode		1S188	Q304	2SC930 D Transistor		2SC930
D504	1S953 Diode		1S953	Q501	2SC372 Y or Transistor		2SC372 or
D505	1S188 AM Diode		1S188		2SC945 R or Q		2SC945
D506	1S188 AM Diode		1S188	Q502	2SC372 Y or Transistor		2SC372 or
D507	1S188 AM Diode		1S188		2SC945 R or Q		2SC945
D508	1S188 AM Diode		1S188	Q503	2SC930 E Transistor		2SC930
D509	1S188 AM Diode		1S188	Q504	2SC930 E Transistor		2SC930
D701	1S1209 Varistor		1S1209	Q505	2SC930 D Transistor		2SC930
D702	DS-130 E Diode		DS-130	Q506	2SC930 D Transistor		2SC930
D703	DS-130 E Diode		DS-130	Q507	2SA495 O Transistor		2SA495
D901	ZX070 Diode		ZX070	Q701	2SC372 Y or Transistor		2SC372
D902	ZX070 Diode		ZX070		2SC945 R or Q		2SC945
COILS				Q702	2SC372 Y or Transistor		2SC372
L101	Antenna Coil	CA-2991	4-275R326		2SC945 R or Q		2SC945
L102	RF Coil	CA-4498	4-259R828	Q703	2SC372 Y or Transistor		2SC372
L501	Antenna Coil	CA-2991	4-275R326		2SC945 R or Q		2SC945
L502	Antenna Coil	CA-2991	4-275R326	Q704	2SC1096 4ZL Transistor		2SC1096
L503	RF Coil	CA-4498	4-259R828	Q705	2SC1096 4ZL Transistor		2SC1096
L504	RF Coil	CA-4498	4-259R828	Q901	2SC930 D Transistor		2SC930
L505	RF Choke Coil	CB-2206	4-253R701	Q902	2SC930 E Transistor		2SC930
L506	Choke Coil	CB-2209	4-253R131	Q903	2SC930 D Transistor		2SC930
L901	OSC Coil	CA-4509	4-259R813	Q904	2SC930 D Transistor		2SC930
L902	RF Coil	CA-4499	4-259R825	Q905	2SC930 E Transistor		2SC930
L903	RF Coil	CA-4500	4-259R826	Q906	2SC715 D or E Transistor		2SC715
L904	RF Coil	CA-4501	4-259R827	Q907	2SC1166 O Transistor		2SC1166
L905	RF Coil	CA-4502	4-259R801	Q908	2SC1017 Transistor		2SC1017
L906	RF Coil	CA-4502	4-259R801	Q909	2SC799 Transistor		2SC799
L907	RF Coil	CA-4503	4-259R802		Crystal 23.290MHz HC-18U		4-225R809
L908	RF Coil	CA-4504	4-259 R10904A		Crystal 23.340MHz HC-18U		4-225R810
L909	RF Choke Coil	CB-2206	4-253R701		Crystal 23.390MHz HC-18U		4-255R811
L910	RF Coil	CA-4508	4-259R823		Crystal 23.440MHz HC-18U		4-225R812
L911	Choke Coil	CB-2207	4-255R103		Crystal 23.490MHz HC-18U		4-225R813
L912	RF Coil	CA-4505	4-259R805		Crystal 23.540MHz HC-18U		4-225R814
L913	RF Coil	CA-4506	4-259R806		Crystal 14.950MHz HC-18U		4-225R805
L914	RF Coil	CA-4507	4-259R807		Crystal 14.960MHz HC-18U		4-225R806
					Crystal 14.970MHz HC-18U		4-225R807
					Crystal 14.990MHz HC-18U		4-225R808
					Crystal 11.730MHz HC-18U		4-225R803
					Crystal 11.275MHz HC-18U		4-225R804

Symbol No.	Description	RS Part No.	Mfr's Part No.	Symbol No.	Description	RS Part No.	Mfr's Part No.
RESISTORS				RESISTORS			
R101	3.3 Kohm ±10% ¼W		R-R332KB	R537	330 ohm ±10% ¼W		R-R331KB
R102	820 ohm ±10% ¼W		R-R821KB	R538	330 ohm ±10% ¼W		R-R331KB
R103	1 Kohm ±10% ¼W		R-R102KB	R541	4.7 Kohm ±10% ¼W		R-R472KB
R104	3.3 Kohm ±10% ¼W		R-R332KB	R542	120 Kohm ±10% ¼W		R-R124KB
R105	3.3 Kohm ±10% ¼W		R-R332KB	R543	10 Kohm ±10% ¼W		R-R103KB
R106	10 Kohm ±10% ¼W		R-R103KB	R544	3.3 Kohm ±10% ¼W		R-R332KB
R301	1 Kohm ±10% ¼W		R-R102KB	R702	4.7 Kohm ±10% ¼W		R-R472KB
R302	3.3 Kohm ±10% ¼W		R-R332KB	R703	12 Kohm ±10% ¼W		R-R123KB
R303	1.5 Kohm ±10% ¼W		R-R152KB	R704	1.5 Kohm ±10% ¼W		R-R152KB
R304	1.5 Kohm ±10% ¼W		R-R152KB	R705	10 ohm ±10% ¼W		R-R100KB
R305	1 Kohm ±10% ¼W		R-R102KB	R706	4.7 Kohm ±10% ¼W		R-R472KB
R308	1.5 Kohm ±10% ¼W		R-R152KB	R707	390 ohm ±10% ¼W		R-R391KB
R309	1 Kohm ±10% ¼W		R-R102KB	R708	1.5 Kohm ±10% ¼W		R-R152KB
R310	15 Kohm ±10% ¼W		R-R153KB	R709	3.3 Kohm ±10% ¼W		R-R332KB
R311	68 Kohm ±10% ¼W		R-R683KB	R710	24 Kohm ±10% ¼W		R-R243KB
R312	8.2 Kohm ±10% ¼W		R-R822KB	R711	820 ohm ±10% ¼W		R-R821KB
R501	4.7 Kohm ±10% ¼W		R-R472KB	R712	39 ohm ±10% ¼W		R-R390KB
R502	22 Kohm ±10% ¼W		R-R223KB	R713	4.7 Kohm ±10% ¼W		R-R472KB
R503	470 ohm ±10% ¼W		R-R471KB	R714	1 Kohm ±10% ¼W		R-R102KB
R504	4.7 Kohm ±10% ¼W		R-R472KB	R716	2.7 Kohm ±10% ¼W		R-R272KB
R505	22 Kohm ±10% ¼W		R-R223KB	R717	15 Kohm ±10% ¼W		R-R153KB
R506	390 ohm ±10% ¼W		R-R391KB	R718	220 ohm ±10% ¼W		R-R221KB
R507	68 Kohm ±10% ¼W		R-R683KB	R719	82 ohm ±10% ¼W		R-R820KB
R508	100 Kohm ±10% ¼W		R-R104KB	R720	220 ohm ±10% ¼W		R-R221KB
R509	470 Kohm ±10% ¼W		R-R474KB	R721	47 ohm ±10% ¼W		R-R470KB
R510	100 ohm ±10% ¼W		R-R101KB	R722	680 ohm ±5% ½W		R-R681JC
R511	2.7 Kohm ±10% ¼W		R-R272KB	R723	0.5 ohm ±5% ½W		R-R0050JC
R512	56 Kohm ±10% ¼W		R-R563KB	R724	0.5 ohm ±5% ½W		R-R0050JC
R513	1 Kohm ±10% ¼W		R-R102KB	R725	12 ohm ±5% 1W		R-R120JD
R514	470 Kohm ±10% ¼W		R-R474KB	R726	12 ohm ±5% 1W		R-R120JD
R515	470 ohm ±10% ¼W		R-R471KB	R727	5.6 Kohm ±10% ¼W		R-R562KB
R516	47 Kohm ±10% ¼W		R-R473KB	R728	82 Kohm ±10% ¼W		R-R823KB
R517	2.2 Mohm ±10% ¼W		R-R225KB	R901	4.7 Kohm ±10% ¼W		R-R472KB
R518	68 Kohm ±10% ¼W		R-R683KB	R902	10 Kohm ±10% ¼W		R-R103KB
R519	47 Kohm ±10% ¼W		R-R473KB	R903	220 ohm ±10% ¼W		R-R221KB
R520	1.8 Kohm ±10% ¼W		R-R182KB	R904	1.5 Kohm ±10% ¼W		R-R152KB
R523	2.2 Kohm ±10% ¼W		R-R222KB	R905	2.2 Kohm ±10% ¼W		R-R222KB
R524	2.7 Kohm ±10% ¼W		R-R272KB	R906	8.2 Kohm ±10% ¼W		R-R822KB
R525	12 Kohm ±10% ¼W		R-R123KB	R907	220 ohm ±10% ¼W		R-R221KB
R526	3.3 Kohm ±10% ¼W		R-R332KB	R908	4.7 Kohm ±10% ¼W		R-R472KB
R528	2.2 Kohm ±10% ¼W		R-R222KB	R909	470 ohm ±10% ¼W		R-R471KB
R531	4.7 Kohm ±10% ¼W		R-R472KB	R910	8.2 Kohm ±10% ¼W		R-R822KB
R532	560 ohm ±10% ¼W		R-R561KB	R911	220 ohm ±10% ¼W		R-R221KB
R533	330 ohm ±10% ¼W		R-R331KB	R912	150 ohm ±10% 2W		R-R151KE
R534	220 ohm ±10% ¼W		R-R221KB	R913	220 ohm ±10% ¼W		R-R221KB
R535	8.2 Kohm ±10% ¼W		R-R822KB	R914	2.7 Kohm ±10% ¼W		R-R272KB
R536	82 ohm ±10% ¼W		R-R820KB	R915	6.8 Kohm ±10% ¼W		R-R682KB
				R916	270 ohm ±10% ¼W		R-R271KB

Symbol No.	Description	RS Part No.	Mfr's Part No.	Symbol No.	Description	RS Part No.	Mfr's Part No.
RESISTORS				for Cabinet Assembly			
R917	220 ohm ±10% ¼W		R-R221KB	SP	Speaker, 8 ohms 3W	S-4501	4-151R801
R918	4.7 Kohm ±10% ¼W		R-R472KB	Mic.	Microphone	M-2236	4-153R804
R919	6.8 Kohm ±10% ¼W		R-R682KB		Front Panel	Z-1879	176-2-122R112
R920	560 ohm ±10% ¼W		R-R561KB		Cabinet	Z-1880	176-2-111R123A
R921	3.3 Kohm ±10% ¼W		R-R332KB		Back Lid	Z-1881	176-2-126R120A
R922	22 Kohm ±10% ¼W		R-R223KB		Marking Plate	HB-0811	176-2-143R132
R923	100 ohm ±10% ¼W		R-R101KB		Marking Plate	HB-0812	176-2-143R133B
R924	1.8 Kohm ±10% ¼W		R-R182KB		Cover	Z-1882	176-2-244R107
R925	12 Kohm ±10% ¼W		R-R123KB		Lug		R-112432
R926	33 ohm ±10% ¼W		R-R330KB		Rotary Knob Assembly, for VOL. and SQ.	K-1599	176-0-163R109
R927	100 ohm ±10% ¼W		R-R101KB		Rotary Knob		176-2-163R119
R928	4.7 ohm ±10% ¼W		R-R0470KB		Inlay		R-262232
R929	2.2 ohm ±10% ¼W		R-R0220KB		Rotary Knob Assembly	K-1600	176-0-163R110
R930	47 ohm ±10% ¼W		R-R470KB		Rotary Knob		176-2-163R129
R931	5.6 ohm ±10% ¼W		R-R0560KB		Dial Scale		176-2-146R108
R932	47 Kohm ±10% ¼W		R-R473KB		Spring		123-2-481R124
R933	1.5 Kohm ±10% ¼W		R-R152KB		Mounting Bracket	MB-0103	176-2-310R135
R935	4.7 Kohm ±10% ¼W		R-R472KB		Screw for Mounting Bracket	HS-1474	176-2-421R102A
R936	6.8 Kohm ±10% ¼W		R-R682KB		Microphone Bracket		176-2-385R102
POTENTIOMETERS					Rating plate		176-2-141R136
VR1	PC trimmer 50 KB	P-6203	R-R11010		Insert Nut		176-2-413R113
VR2	PC trimmer 10 KB	P-6202	R-R11013		Lug		123-2-472R004
VR3	Potentiometer SQUELCH 10 KB	P-0742	4-222R512		Lug		R-23275
VR4	PC trimmer 2 KB	P-6200	R-R110809		Lug		123-2-472R006
VR5	PC trimmer 50 KB	P-6203	R-R11010		Lug		123-2-472R004
VR6	PC trimmer 5 KB	P-6201	R-R11012		Control Bracket/Chassis Fixwe	Z-1883	176-2-311R110
VR7	Potentiometer VOLUME 50 KD	P-1434	4-222R511		PC Board	HB-0816	176-2-464R114
VR8	PC trimmer 20 KB		R-R11016		Bracket	X-4740	4-226R839B
TRANSFORMERS					Knob, for Slide Slide Knob	HB-0817	176-2-210R101A
T301	IFT	CA7438	4-256R717		Holder, for AC and DC Cord	K-1601	123-2-155R105
T302	IFT	CA-7439	4-256R715		Push Button	HB-0818	176-2-164R103
T303	HF Filter	C-0540	4-253R905		Slide Knob	K-1602	176-2-161R120
T304	IFT	CA-7352	4-256R367		Holder, for AC and DC Cord	K-1602	176-2-161R120
T305	IFT	CA-7350	4-256R703		Push Button	J-6254	4-235R002
T306	IFT	CA-7351	4-256R711		Cushion, for PC Board		4-235R002
T701	IPT	TN-0066	4-254R118		Socket, for Ext. SP. and PA.		4-235R806
T702	OPT	TD-0119	4-254R804		Jack	J-6255	4-235R101A
T703	Choke Coil		4-255R102		Receptacle, for Ext. Ant	J-6256	4-236R803
					Socket, for Microphone	J-6257	4-511R10592
					Plug, for Microphone	M-0242	4-231R504A
					Meter	S-1138	4-231R140
					Rotary Switch	S-2227	176-2-368R106
					Slide Switch, for Delta Tune		176-2-368R112B
					Heat Sink, for Q704, 705		4-612R10691
					Heat Sink, for Q909		4-612R10691
					Lamp	L-0499	123-2-383R104
					Fuse Holder, for DC	F-1096	4-234R809
					Fuse 2A, for DC	HF-0087	4-231R810
					Push Switch, for Noise Blanker and Noise Limiter	S-7166	4-231R810

Symbol No.	Description	RS Part No.	Mfr's Part No.	Symbol No.	Description	RS Part No.	Mfr's Part No.
for Cabinet Assembly				for Cabinet Assembly			
	Lug Lug, for C951 Screw, 5x16mm, Set Mtg. Washer, 5mm, Set Mtg. Screw, 3x4mm, Microphone Bracket Mtg. Screw, 3x8mm, Front Panel Mtg. Washer, 3mm, Front Panel Mtg. Screw, 2.6x4mm, Chassis Mtg. Screw, 3x6mm, Push Switch Mtg. Screw, 3x4mm, Microphone Socket Mtg. Screw, 3x6mm, PC Board Mtg. Washer, 3mm, PCB Mtg. Screw, 3x6mm, Transformer Mtg. Washer, 3mm, Transformer Mtg.	HS-1475 HW-0782	123-2-472R006 123-2-472R004 R-Y115016B R-Y335000 R-Y013004 R-Y113008B R-Y323000 R-Y022604 R-Y113006 R-Y013004 R-Y013006 R-Y34300002 R-Y013006 R-Y323000		Washer, 3mm, Transformer Mtg. Nut, 3mm, Transformer Mtg. Screw, 3x6mm, Bracket Mtg. Nut, 3mm, Bracket Mtg. Screw, 2.6x4mm, Slide Switch Mtg. Screw, 3x6mm, Heat Sink Mtg. Screw, 3x6mm, Heat Sink Mtg. Nut, 3mm, Heat Sink Mtg. Screw, 3x6mm, Heat Sink Mtg. Screw, 3x6mm, Chassis Mtg. Screw, 3x10mm, 2SC799 Mtg. Nut, 3mm, 2SC799 Mtg. Screw, 3x6mm, Speaker Mtg. Washer, 3mm, Speaker Mtg. Nut, 3mm, Speaker, Mtg. Nut, 3mm, Heat Sink Mtg.		R-Y333000 R-Y23300001 R-Y103006 R-Y23300001 R-Y022604 R-Y013006 R-Y013006 R-Y23300001 R-Y013006 R-Y083006 R-Y013010 R-Y2330001 R-Y033006 R-Y323000 R-Y23300001 R-Y23300001

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