R.S.ARAO

RADIO RECEIVER SC-910R

SINGLE SIDEBAND COMMUNICATIONS EQUIPMENT

GENERAL DYNAMICS | ELECTRONICS

MILITARY PRODUCTS DIVISION—ROCHESTER

Operation And Service Instructions

for

RADIO RECEIVER SC-910R

GENERAL DYNAMICS | ELECTRONICS

MILITARY PRODUCTS DIVISION—ROCHESTER

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CHAPTER I
GENERAL DESCIPTION

1.1 DESCRIPTION

Radio Receiver SC-910R (Receiver) is a self-contained, digitally tuned unit capable of receiving single sideband, CW, or compatible AM transmissions in the 2 to 30 megacycle range. A total of 28,000 individual channels spaced 1 kilocycle apart are available within the tuning range.

1.1.1 The receiver is housed in a moisture sealed case that incorporates roller-type slides to permit easy withdrawal of the chassis. When extended, the chassis is capable of being tilted forward or backward at a 90 degree angle for inspection or servicing purposes. The chassis is secured to the case by front mounted screws and internal shock pins.

1.1.2 The receiver is 7 inches high, 17-3/8 inches wide, 18-1/8 inches deep inclusive of controls and connectors, and weighs 57 pounds.

1.2 EQUIPMENT REQUIRED BUT NOT SUPPLIED

The receiver is designed to operate in conjunction with a transmitting system such as Exciter SC-910E and Power Amplifier-Power Supply SC-910A. However, it is a self-contained unit requiring only an antenna and a 115 volt AC power source for full operation.

1.2.1 Other equipment required, but not furnished is listed as follows:

1. Headset
2. Remote Unit SC-666208-181
3. Headset connector AN-30-57-6
4. Power connector MS3106-R22-14S(C)
5. RF connectors (3 required) UG58/U
6. RF cable RG58/U
7. Rack adapters
8. Handset H-169/U

1.3 QUICK REFERENCE DATA

Frequency Range	2 to 30 megacycles.
Modes of Operation	Lower Sideband, Upper Sideband, Independent Sideband, Frequency Shift Keying, CW and AM.
Power Input Requirements	115 Volts AC, Single phase, 48-1000 cycles, 43 watts.
Frequency Stability	1 part in 10^7 per week.
Recommended Antenna (with Coupler)	35 foot whip, 15 foot probe, 25 foot center-fed whip.
Receiver Sensitivity	1 microvolt for 10 db S + N/N.
Image Rejection	-80 db.
IF Rejection	-80 db nominal.
Audio Output	60 MW into 600 ohms balanced 15 MW into 600 ohms unbalanced.
Audio Distortion	1% maximum.
Receiver AGC (step type)	3 MS rise time. 600 MS Hang time. 200 MS Discharge time.

1.4 ASSOCIATED EQUIPMENT

The receiver is designed for fixed station use and may be operated with Exciter SC-910E, Power Amplifier-Power Supply SC-910A, Antenna Coupler SC-909C (automatic).

1.5 INSTALLATION

1.5.1 Unpacking and Handling. Because the Receiver is an accurately calibrated piece of precision equipment, rough handling should be avoided. Extreme caution must be exercised when removing the unit from the packing container to prevent damage to the controls and connectors. Handles are provided on the front panel for lifting or carrying the equipment.

1.5.2 Power Requirements. The receiver is designed for operation from 115 volts AC ± 10%, single phase. The supply voltage may have a frequency of 48 to 1000 cycles per second.

1.5.3 Installation Layout. The Receiver may be installed in any convenient location and may be either table or rack mounted. Use adapter plates to install the receiver in a standard 19 inch rack. AC power, remote unit and audio connections should be made through J1 (see figure 1-1), using a type MS3106-R22-14S(C) connector. See figure 6-1. An RF input is obtained by making a connection to J5 using a BNC connector type UG88/U and the necessary length of RG58/U coaxial cable. An external frequency standard can be connected to J3 to synchronize the receiver. Alternately, the internal frequency standard can be used to synchronize other units or for test purposes using J4. Connect the headset or headphones to the Receiver at J2 using an AN30-57-6 connector.

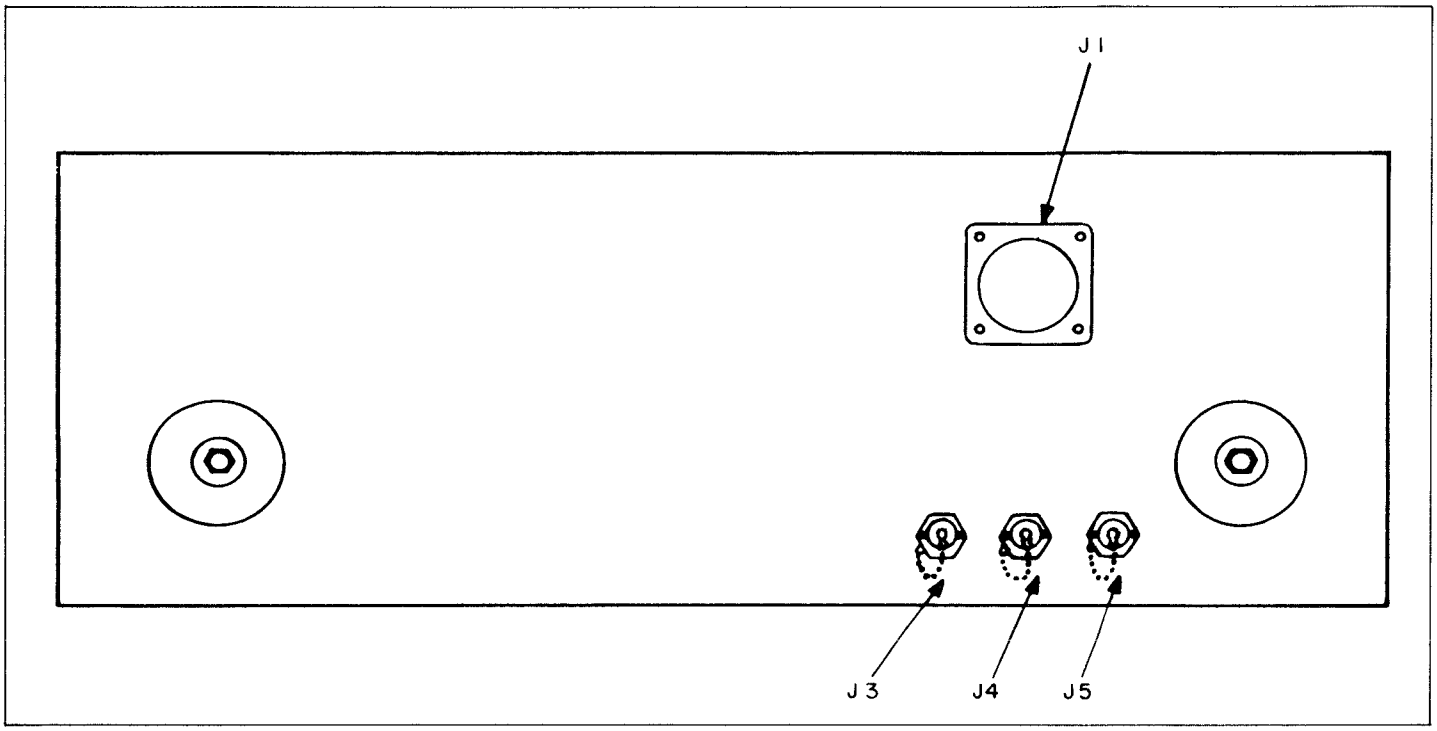


Figure 1-1. Radio Receiver SC-910R, Rear View

Note

The receiver case should be connected to the system ground to insure minimum radiation of RF energy.

1.5.4 Inspection and Adjustments. Because of the nature of the equipment, relocation should have no effect on adjustment. With the equipment in operating condition when packed, the only points to be checked before applying power are as follows:

1. Check for external damage that may have occurred to indicators, switches, lamps, and connectors.
2. Verify that RF amplifier tubes V1 and V2 are secure in their respective sockets.

1.5.5 Interference Reduction. As a precaution against possible interference either with or from the Receiver, operate with the unit drawer fully closed and with front mounting screws tightened. Verify that the Receiver is properly grounded. The use of shielded cables on all connections to J1 is recommended for maximum interference protection.

1.5.6 Preparation for Reshipment. Check to insure that all modules are securely fastened and tubes V1 and V2 are mounted using the vibration-proof shields provided. Operate MODE SELECTOR switch to OFF. If original container is available, repackage the unit in the reverse order of unpacking.

1.5.6.1 If the original packing is unavailable, proceed as follows:

1. Enclose the unit in a cardboard container. Use padding material to protect the rear panel, front panel and both side panels. Use large pads to protect connectors and controls against pressure.
2. Place unit in a packing crate on a large piece of padding. Place pads around unit so it cannot move. Place padding on top of unit and secure crate cover.
3. Mark crate cover "OPEN THIS END".

CHAPTER II
OPERATORS SECTION

2.1 FUNCTIONAL OPERATION

2.1.1 General. Radio Receiver SC-910R is designed to receive single sideband transmissions of upper sideband (USB), lower sideband (LSB) or independent sideband (ISB) as well as conventional transmissions of frequency shift keying (FSK), CW and AM. The Receiver consists of a main frame assembly with eight plug-in electronic modules. (See figure 2-1.) Power and signal connections are made to jacks mounted on the rear panel. All controls required for normal operation are mounted on the front panel.

2.1.2 Operation. Received signals from the antenna (see figure 2-2), are coupled to the antenna tuning circuit by an impedance-matching network. Two stages of RF amplification and four turret-tuned circuits provide an amplified RF signal in the range of 2 to 30 megacycles. The RF signal is converted to an IF of 500 KC in the RF Translator Synthesizer. The RF signal is mixed with injection frequencies originating in the frequency standard and divided down to the proper frequency range by the Frequency Divider, the 1 MC Synthesizer and the 100 KC, 10 KC, and 1 KC Synthesizers.

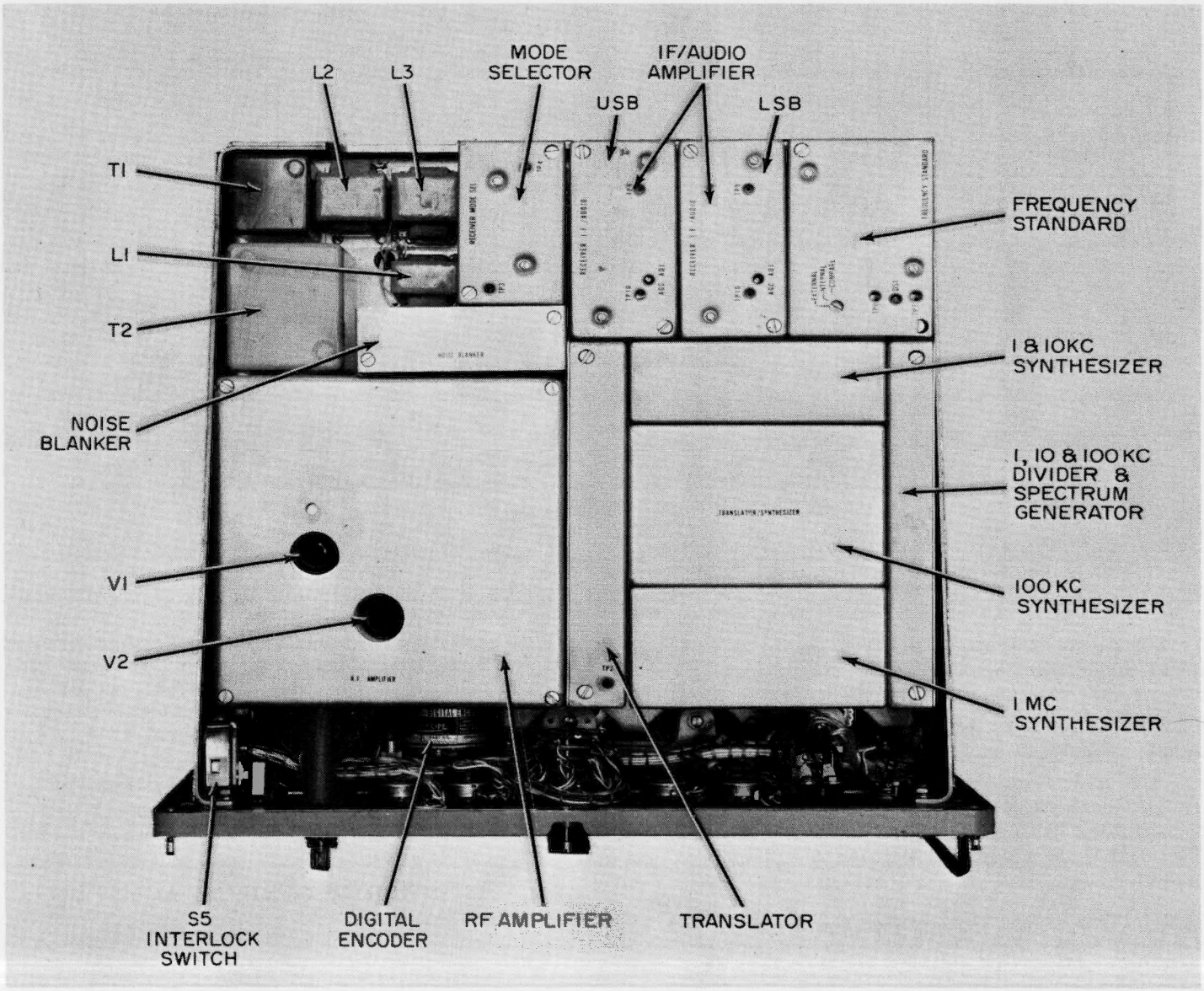


Figure 2-1. Radio Receiver SC-910R, Top View

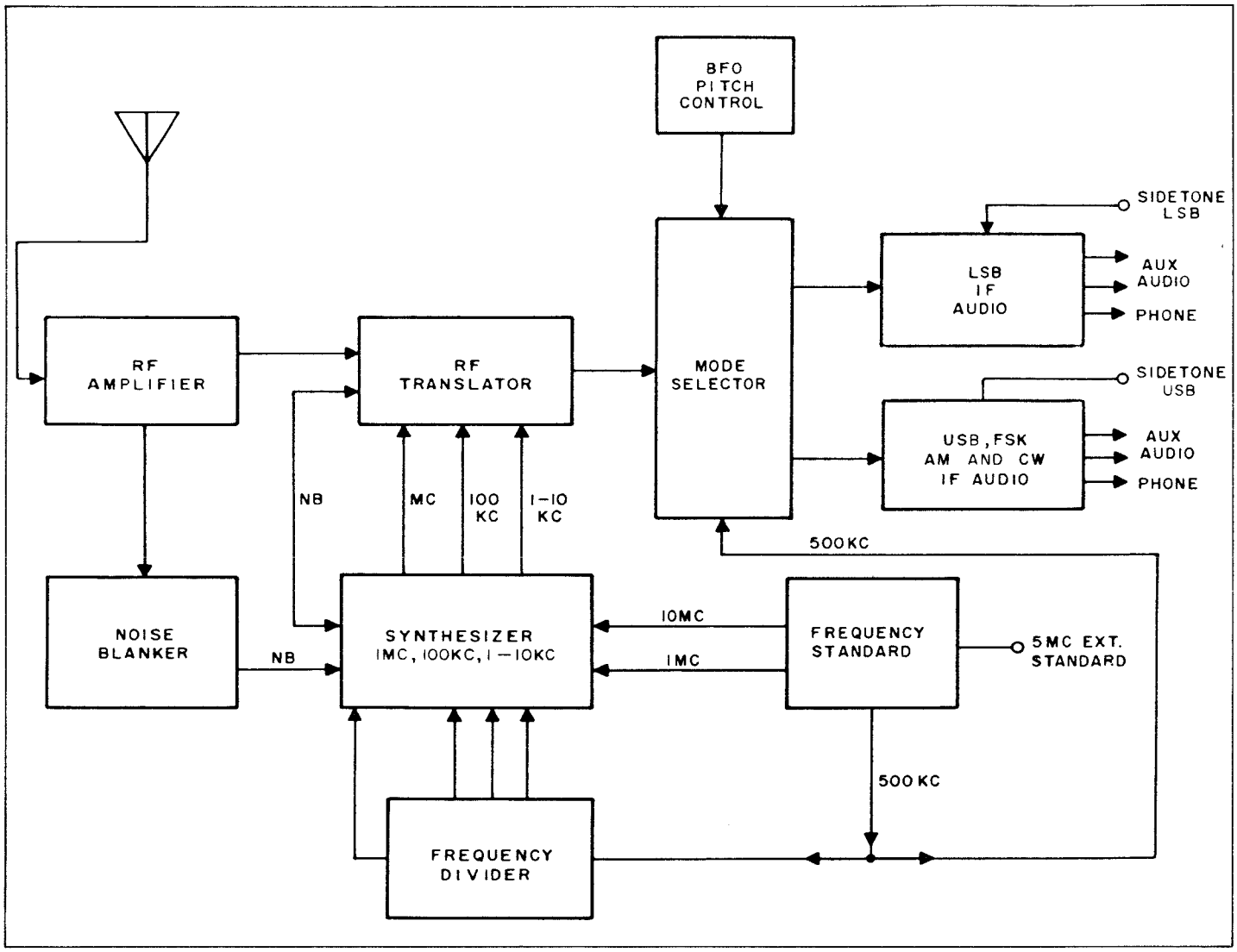


Figure 2-2. Radio Receiver SC-910R, Functional Block Diagram

2.1.2.1 The IF signal passes through the Mode Selector—a gating network—and, depending on the mode of operation, is sent to one of two IF/Audio Amplifiers.

2.1.2.2 In the LSB mode, the IF signal passes through the LSB IF/Audio module.

2.1.2.3 In the CW, AM/FSK, and USB mode, the IF signal passes through the USB IF/Audio module.

2.1.2.4 In the ISB mode of operation, the LSB signal is channeled through the LSB IF/Audio module and the USB signal is channeled through the USB IF/Audio module.

2.1.2.5 The signal is amplified and detected, and the resultant audio signal is amplified and applied to the audio output transformer. Multiple secondaries provide a 600-ohm output for remote listening and a high impedance output for earphones.

2.1.2.6 A Noise Blanker circuit provides gates to reduce impulse-type noise. Overall gain of the RF amplifiers and IF amplifiers is controlled by an AGC voltage developed in the IF/Audio amplifiers. Tuning the Receiver is accomplished by setting the digital tuning knobs on the front panel to the desired frequency. The consequent encoded information operates the RF amplifier turret motor to control the injection frequencies in the RF Translator Synthesizer.

2.1.2.7 A power supply converts the 115-volt AC supply voltage to the necessary DC operating voltages.

2.2 DESCRIPTION OF CONTROLS AND INDICATORS

All controls necessary to operate the receiver are mounted on the front panel. (See figure 2-3.) The controls and indicators are listed in Table 2-1.

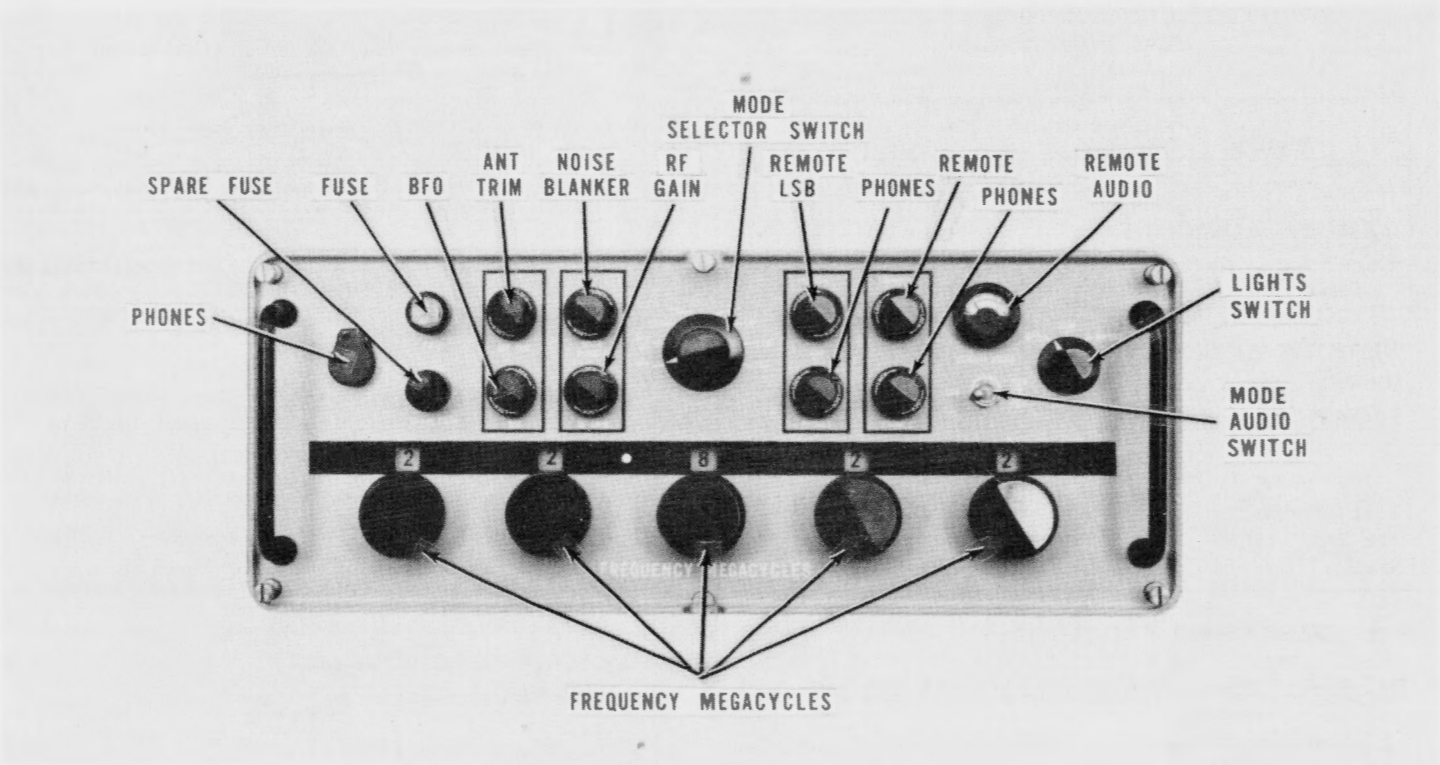


Figure 2-3. Radio Receiver SC-910R, Front View

TABLE 2-1

RADIO RECEIVER SC-910R, CONTROLS AND INDICATORS

Control	Nomenclature	Function
PHONE jack	J2	Connects audio to earphones.
FUSE	X1	Overload protection.
FUSE indicator	DS3	Lights when fuse is blown.
SPARE FUSE	-	Contains spare fuse.
ANT TRIM	R12	Matches Antenna impedance to antenna input circuit for maximum signal.
BFO	R15	Varies BFO pitch when in CW mode.
NOISE BLANKER	R14-S6	Switch turns noise blanker on, potentiometer varies threshold level of noise blanking.

TABLE 2-1 (Cont.)

RADIO RECEIVER SC-910R, CONTROLS AND INDICATORS

Control	Nomenclature	Function
RF GAIN	R18	Adjusts gain of RF amplifiers.
Mode Selector Switch	S4	Selects mode of operation-OFF, STD BY, USB, FSK, AM, CW, LSB, and ISB.
LSB REMOTE	R28	Adjusts volume of remote audio for LSB.
LSB PHONES	R27	Adjusts volume of phones audio for LSB.
REMOTE	R17	Adjusts volume of remote audio for USB, ISB, FSK, CW and AM.
PHONES	R26	Adjusts volume for phones in USB, ISB, FSK, CW and AM.

TABLE 2-1 (Cont.)

RADIO RECEIVER SC-910R, CONTROLS AND INDICATORS

Control	Nomenclature	Function
REMOTE AUDIO switch	S7	When in ISB, switches meter and phones to sideband carrying intelligence.
REMOTE AUDIO meter	M1	Indicates audio supplied to remote lines.
LIGHTS switch	S1	Controls panel lights to OFF, DIM or BRIGHT.
FREQUENCY MEGACYCLE dials		Selects operating frequency in digital form (encoder switches).

2.3 OPERATING PROCEDURES

To operate the Receiver, proceed as follows:

1. Turn the Mode Selector switch to STD BY and allow a two-minute warmup period. Turn LIGHTS switch to desired position.
2. Connect a set of earphones to the PHONES jack.
3. If a remote audio position is required, connect a speaker to the remote 600-ohm output lines.
4. Operate the Mode Selector switch to the desired mode of operation.
5. Adjust the FREQUENCY MEGACYCLE dials to the desired frequency.
6. Adjust RF GAIN control as required.
7. Adjust NOISE BLANKER control to limit noise to a comfortable level.
8. Adjust PHONES and REMOTE volume control for proper mode of operation.

Note

If mode of operation is ISB, operate REMOTE AUDIO switch to proper position to hear intelligence in phones and view audio level on meter.

9. Adjust ANT TRIM control for maximum signal.
10. Adjust appropriate REMOTE level control to 0 VU when receiving signal.
11. If CW is to be received, adjust BFO control for desired pitch.

2.4 SHUTDOWN PROCEDURES

To shut down the Receiver, operate the Mode Selector switch in the OFF position.

2.4.1 If the Receiver is to be used intermittently, place the Mode Selector switch in the STD BY position.

CHAPTER III
PREVENTIVE MAINTENANCE

3.1 GENERAL

Radio Receiver SC-910R is a precision high stability instrument that requires very little maintenance. Table 3-1 lists the preventive maintenance checks that should be performed on a regular monthly basis.

TABLE 3-1

RADIO RECEIVER SC-910R,
PREVENTIVE MAINTENANCE CHECKS

Inspect For	Remedy
Dust.	Clean exterior with soft, lintless cloth. Clean interior with brush, cloth and suction.
Nicks, burrs, dents, scratches or rust spots.	Smooth burrs with a file. Sandpaper corrosion rust or scratches and refinish.
Smooth operation of drawer slides and cams.	Clean with trichlorethylene.
Loose or broken handles, mounting screws or other hardware.	Tighten loose hardware, replace defective parts.
Broken lugs, frayed leads, split, chipped or broken components.	Repair or replace defective parts.
Solder joints.	Resolder connections.
Cable assemblies broken, frayed or damaged.	Repair or replace.
Interlock switches bent or broken.	Replace.
Circuit boards cracked.	Replace.
Wiring damaged.	Repair or replace.
Chain drive.	Oil lightly.

CHAPTER IV
TROUBLE-SHOOTING

4.1 GENERAL

This chapter contains information pertaining to the trouble-shooting of the receiver. Test equipment required, control settings, and system trouble-shooting to a module level are presented in tabular form.

4.1.1 After determining which module is defective, replace the module, or use the applicable schematic and trace the trouble to the defective component.

4.2 TEST EQUIPMENT AND SPECIAL TOOLS

Test equipment required for trouble-shooting the receiver is listed in table 4-1. Standard hand tools are the only tools required.

TABLE 4-1

RADIO RECEIVER SC-910R,
TEST EQUIPMENT REQUIRED

Name	Description	Alternate
Multimeter	Triplett	Alternate may be used.
RF Meter	Boonton, Model 91CA	None.
Signal Generator	Hewlett-Packard, Model 606A	Alternate may be used.
Probe T Connector	Hewlett-Packard, Model 455A	None.
VTVM	Hewlett-Packard, Model 400D	Alternate may be used.

4.3 CONTROL SETTINGS

Make the following initial control settings preparatory to trouble-shooting the Receiver:

TABLE 4-2

RADIO RECEIVER SC-910R,
INITIAL CONTROL SETTINGS

Control	Location	Setting
Mode Selector Switch	Receiver panel	STD BY.
LIGHTS switch	Receiver panel	DIM or BRIGHT.

Note

Connect headset to PHONES jack and speaker to 600-ohm remote audio connection.

4.4 SYSTEM TROUBLE-SHOOTING

Use table 4-3 if trouble exists in the Receiver.

TABLE 4-3

RADIO RECEIVER SC-910R, SYSTEM TROUBLE-SHOOTING CHART

Step	Action	Normal Indication	Abnormal Procedure
1.	Disconnect antenna input cable at J5. See figure 1-1.		
	Connect Hewlett-Packard model 606A signal generator to J5.		
	Adjust signal generator to 0.5 microvolts at 5MC.		
	Adjust receiver FREQUENCY MEGACYCLES dials to 05.000.		
	Operate receiver Mode Selector switch to USB. Sweep signal generator between 4.997 and 5.003 MC.	Audio tone	Check IF/AUDIO module.
2.	Operate Mode Selector switch to LSB. Sweep signal generator between 4.997 and 5.003 MC.	Audio tone	Check IF/AUDIO module.

TABLE 4-3 (Cont.)

RADIO RECEIVER SC-910R, SYSTEM TROUBLE-SHOOTING CHART

Step	Action	Normal Indication	Abnormal Procedure
3.	If the audio tone is not present during steps 1 and 2, proceed to table 4-4. If the tone is obtained, continue with steps 4 through 6.		
4.	Place Mode Selector switch in ISB position. Place REMOTE AUDIO selector switch in LSB position. Sweep signal generator between 4.997 and 5.003 MC.	Audio tone and meter indication	Proceed to table 4-4.
5.	Operate Mode Selector switch in AM. Adjust signal generator for 1000 cycle INTERNAL modulation. Place signal generator at 5 MC.	Audio tone	Proceed to table 4-4.
6.	Remove AM modulation from signal generator. Place Mode Selector switch to CW. Sweep signal generator from 4.997 to 5.003.	Audio tone	Proceed to table 4-4.

4.5 FUNCTIONAL TROUBLE-SHOOTING

Use table 4-4 to locate a defective module. Figure 4-1 illustrates physical location of all test points.

TABLE 4-4

RADIO RECEIVER SC-910R, FUNCTIONAL TROUBLE-SHOOTING CHART

Step	Preliminary Action	Normal Indication	Next Step
1.	Disconnect receiver input cable and connect to output jack of HP606A signal generator. Adjust output of signal generator to 0.5 micro-volts at 5 MC. NOTE All voltage and frequency measurements are taken with respect to chassis ground.		
2.	Connect Boonton, model 91C, meter probe to TP 2.	80 MV±3 DB	If indication is normal, proceed to next step. If abnormal reading is obtained, replace the RF Amplifier electronic assembly. (See figure 6-2 for schematic diagram).
3.	Connect Hewlett-Packard, model 400 D, meter probe to TP 3	400 MV±3 DB	If indication is normal, proceed to next step. If abnormal reading is obtained, replace the Translator Synthesizer electronic assembly. (See figure 6-4 for schematic diagram).
4.	Connect Hewlett-Packard model 400D, meter probe to TP 4. (CW mode only)	500 MV±3 DB	If indication is normal, proceed to next step. If abnormal reading is obtained, replace the Mode Selector electronic assembly. (See figure 6-11 for schematic diagram).
5.	Connect Boonton, model 91C, meter probe to TP 7, and a Hewlett-Packard counter, model 524B, with head 526A to TP 7.	500 KC 200 MV	If indication is normal, proceed to next step. If abnormal reading is obtained, replace the Frequency Standard Electronic assembly. (See figure 6-10 for schematic diagram).

TABLE 4-4 (Cont.)

RADIO RECEIVER SC-910R, FUNCTIONAL TROUBLE-SHOOTING CHART

Step	Preliminary Action	Normal Indication	Next Step
6.	Connect Boonton, model 91C, meter probe to TP 8 and a Hewlett-Packard counter, model 524B, with head 526A to TP 8.	5 MC	If indication is normal, proceed to next step. If abnormal reading is obtained, replace the Frequency Standard electronic assembly. (See figure 6-10 for schematic diagram).
7.	Connect Hewlett-Packard, model 400D, meter probe to TP 9 (LSB only).	90 MV	If indication is normal, proceed to next step. If abnormal reading is obtained, replace the Mode Selector electronic assembly. (See figure 6-11 for schematic diagram).
8.	Connect Hewlett-Packard, model 400D, meter probe to TP 10 (LSB only).	6 V	If indication is normal, proceed to next step. If abnormal reading is obtained, replace the IF/AUDIO electronic assembly. (See figure 6-12 for schematic diagram).
9.	Connect Hewlett-Packard, model 400D, meter probe to TP 9 (USB only).	90 MV	If indication is normal, proceed to next step. If abnormal reading is obtained, replace the Mode Selector electronic assembly. (See figure 6-11 for schematic diagram).
10.	Connect Hewlett-Packard, model 400D, meter probe to TP 10 (USB only).	6V	If indication is normal, proceed to next step. If abnormal reading is obtained, replace the IF/AUDIO electronic assembly. (See figure 6-12 for schematic diagram).
11.	Connect Hewlett-Packard, model 400D, meter probe to PHONE jack.	2 V minimum	If abnormal reading is obtained, replace the IF/AUDIO electronic assembly. (See figure 6-12 for schematic diagram).

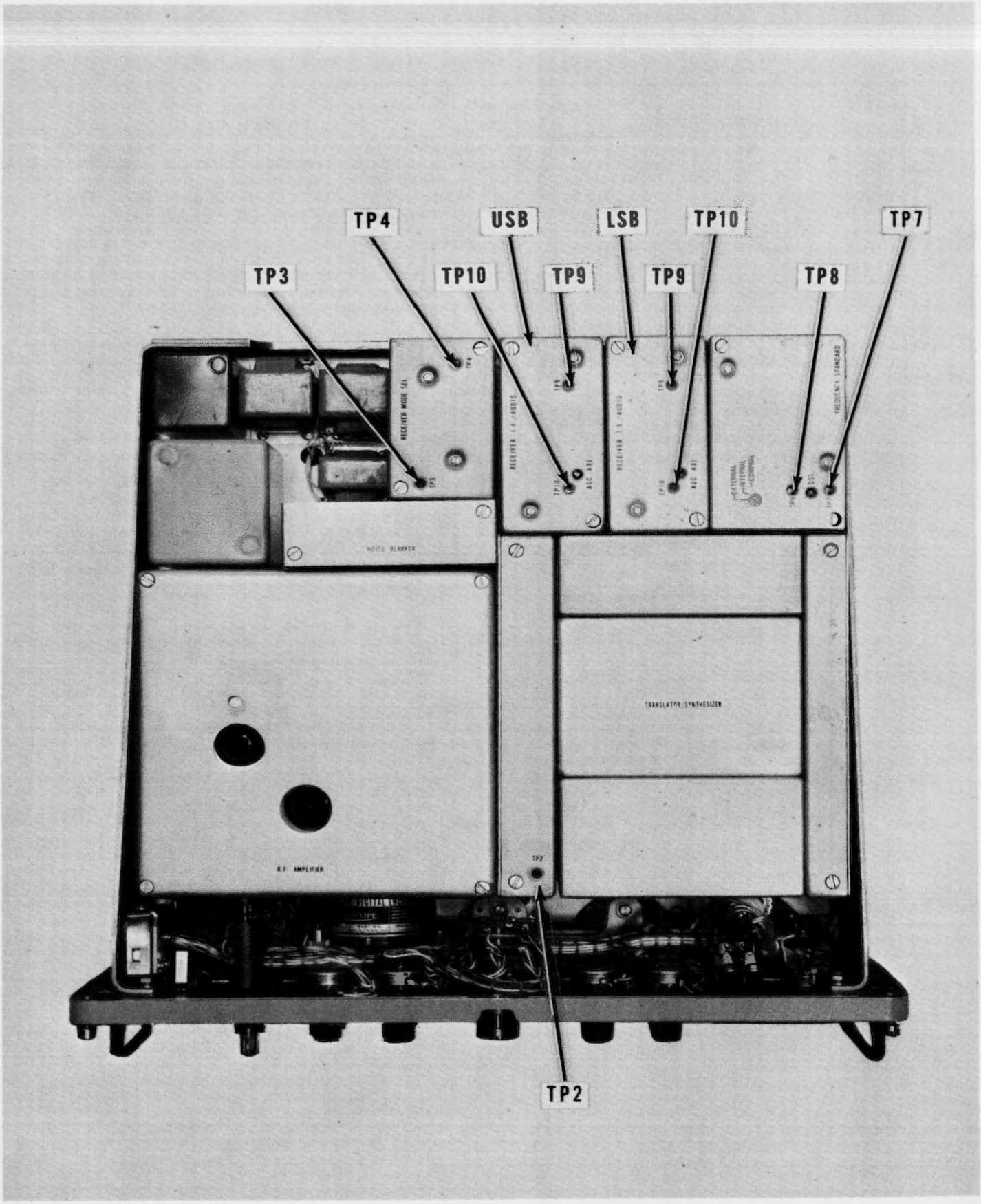


Figure 4-1. Radio Receiver SC-910R, Test Point Location

CHAPTER V
REPLACEABLE PARTS

5.1 GENERAL

(Replaceable Parts List to be supplied at a later date.)

CHAPTER VI
SCHEMATIC DIAGRAMS

6.1 GENERAL

This chapter contains a complete set of schematic diagrams for Radio Receiver SC-910R.

TABLE 6-1

RADIO RECEIVER SC-910R, SCHEMATIC DIAGRAMS

Figure No.	Title
6-1	Radio Receiver SC-910R, Main Frame, Schematic Diagram (Sheet 1 of 2)
6-1	Radio Receiver SC-910R, Main Frame, Schematic Diagram (Sheet 2 of 2)
6-2	Radio Receiver SC-910R, RF Amplifier, Schematic Diagram
6-3	Radio Receiver SC-910R, Noise Blanker, Schematic Diagram
6-4	Radio Receiver SC-910R, Translator Synthesizer, Schematic Diagram
6-5	Radio Receiver SC-910R, 1 and 10 KC Synthesizer, Schematic Diagram
6-6	Radio Receiver SC-910R, 100 KC Synthesizer, Schematic Diagram
6-7	Radio Receiver SC-910R, 1 MC Synthesizer, Schematic Diagram
6-8	Radio Receiver SC-910R, 1, 10, 100 KC, Divider and Spectrum Generator, Schematic Diagram
6-9	Radio Receiver SC-910R, RF Translator, Schematic Diagram
6-10	Radio Receiver SC-910R, Frequency Standard, Schematic Diagram
6-11	Radio Receiver SC-910R, Receiver Mode Selector, Schematic Diagram
6-12	Radio Receiver SC-910R, Receiver IF/Audio, Schematic Diagram
6-13	Radio Receiver SC-910R, Unit Interconnection Diagram

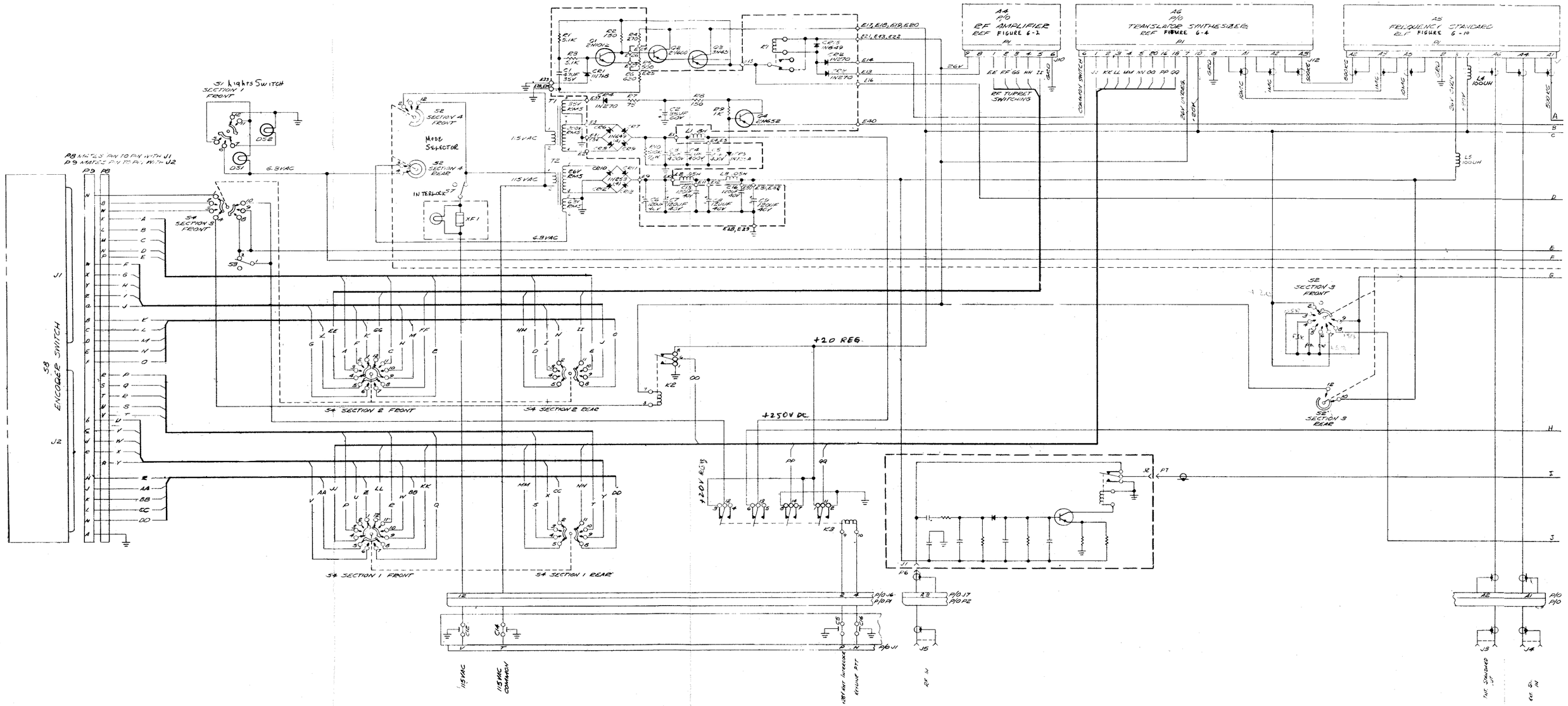
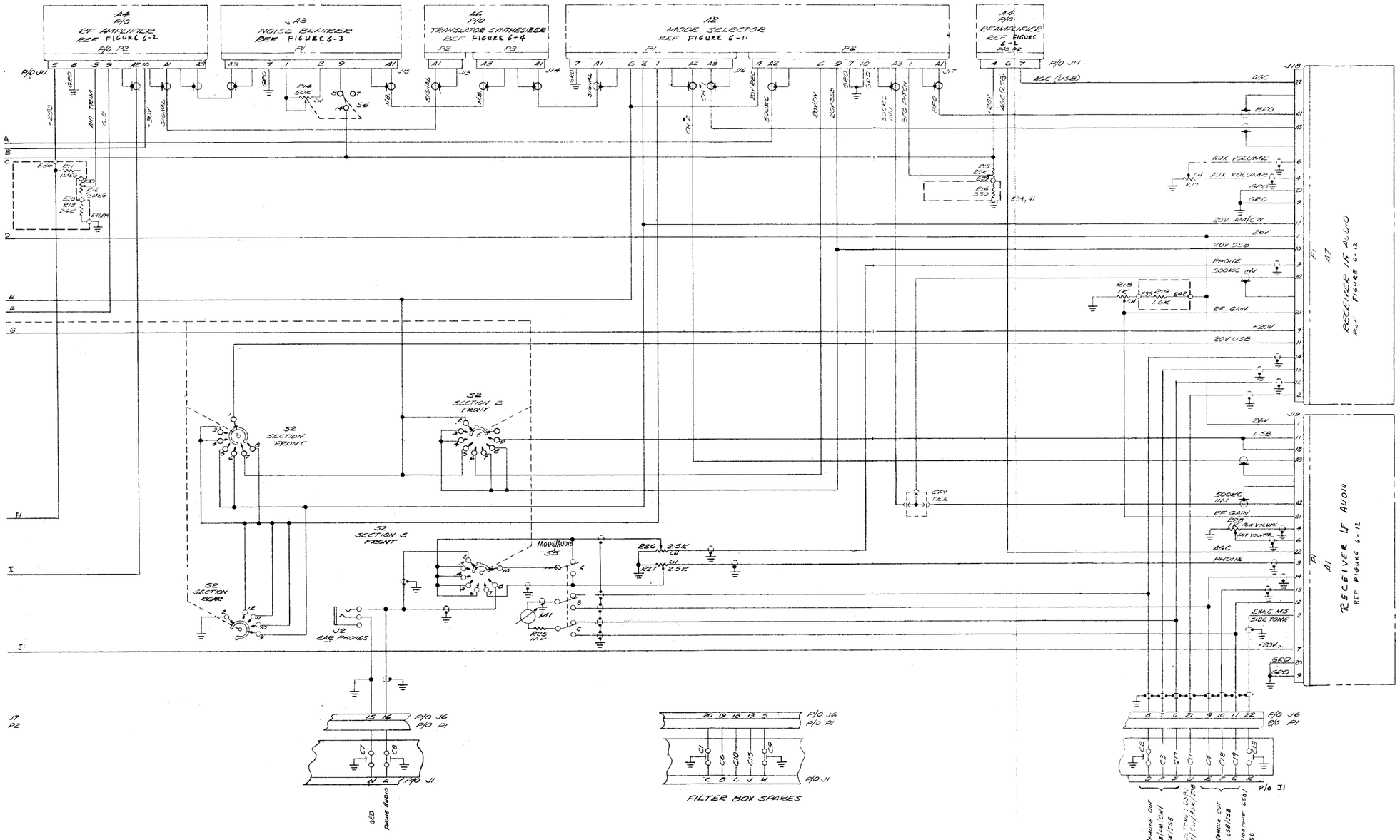


Figure 6-1. Radio Receiver SC-910R, Main Frame, Schematic Diagram (Sheet 1 of 2)



NOTES:
1. REFERENCE DESIGNATIONS ARE ABBREVIATED. PREFIX THE DESIGNATION WITH THE UNIT NO. OR ASSY DESIGNATION OR BOTH.
2. UNLESS OTHERWISE SPECIFIED:
   A RESISTOR VALUES IN OHMS.
   B CAPACITOR VALUES IN MICRO MICRO FARADS.
   C RESISTORS ARE 1/2W, 5%.
3. FILTER BOX FEED THRU CAPACITORS (C1 THRU C9) ARE .004 UF.

Figure 6-1. Radio Receiver SC-910R, Main Frame, Schematic Diagram (Sheet 2 of 2)

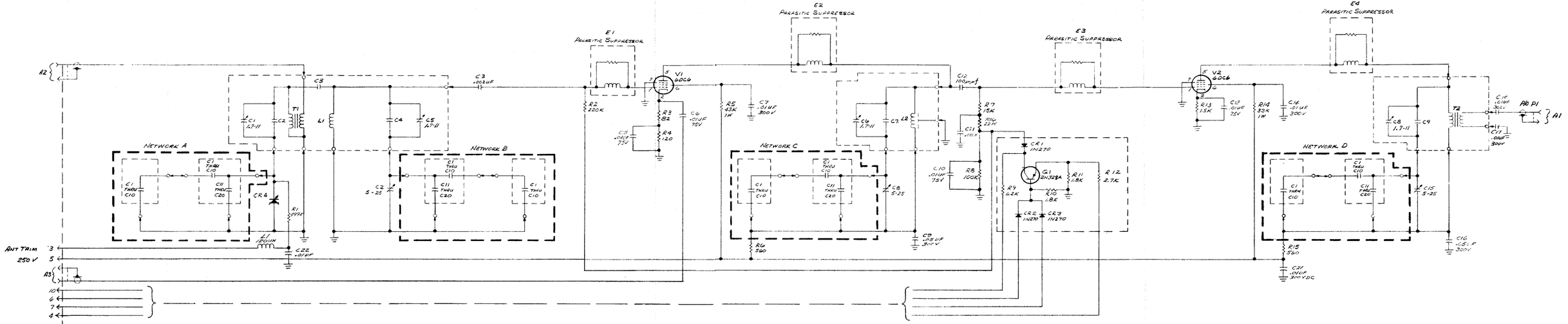
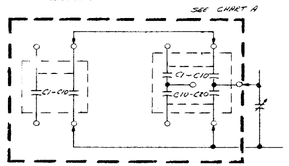


CHART A

FREQUENCY MC	CAPACITOR REF DESIG	NETWORK A	NETWORK A	NETWORK B	NETWORK C	NETWORK D
.00	C1	1034	1034	1036	1034	
.01	C2	998	998	998	998	
.02	C3	964	964	964	964	
.03	C4	932	932	932	932	
.04	C5	902	902	902	902	
.05	C6	874	874	874	874	
.06	C7	847	847	844	847	
.07	C8	821	821	818	821	
.08	C9	797	797	793	797	
.09	C10	774	774	770	774	
.0	C1	874	874	856	874	
	C11	246	246	249	246	
.10	C2	761	761	767	761	
	C12	212	212	219	212	
.20	C3	673	673	661	673	
	C13	183	183	184	183	
.30	C4	601	601	591	601	
	C14	157	157	158	157	
.40	C5	542	542	534	542	
	C15	135	135	136	135	
.50	C6	492	492	485	492	
	C16	117	117	117	117	
.60	C7	451	451	444	451	
	C17	101	101	100	101	
.70	C8	415	415	402	415	
	C18	86	86	86	86	
.80	C9	384	384	372	384	
	C19	73	73	73	73	
.90	C10	357	357	352	357	
	C20	62	62	62	62	

TYPICAL VIEW OF NETWORKS A-D



TYPICAL VIEW OF 100 KC DECK

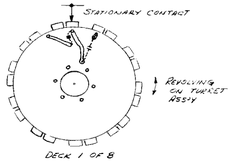
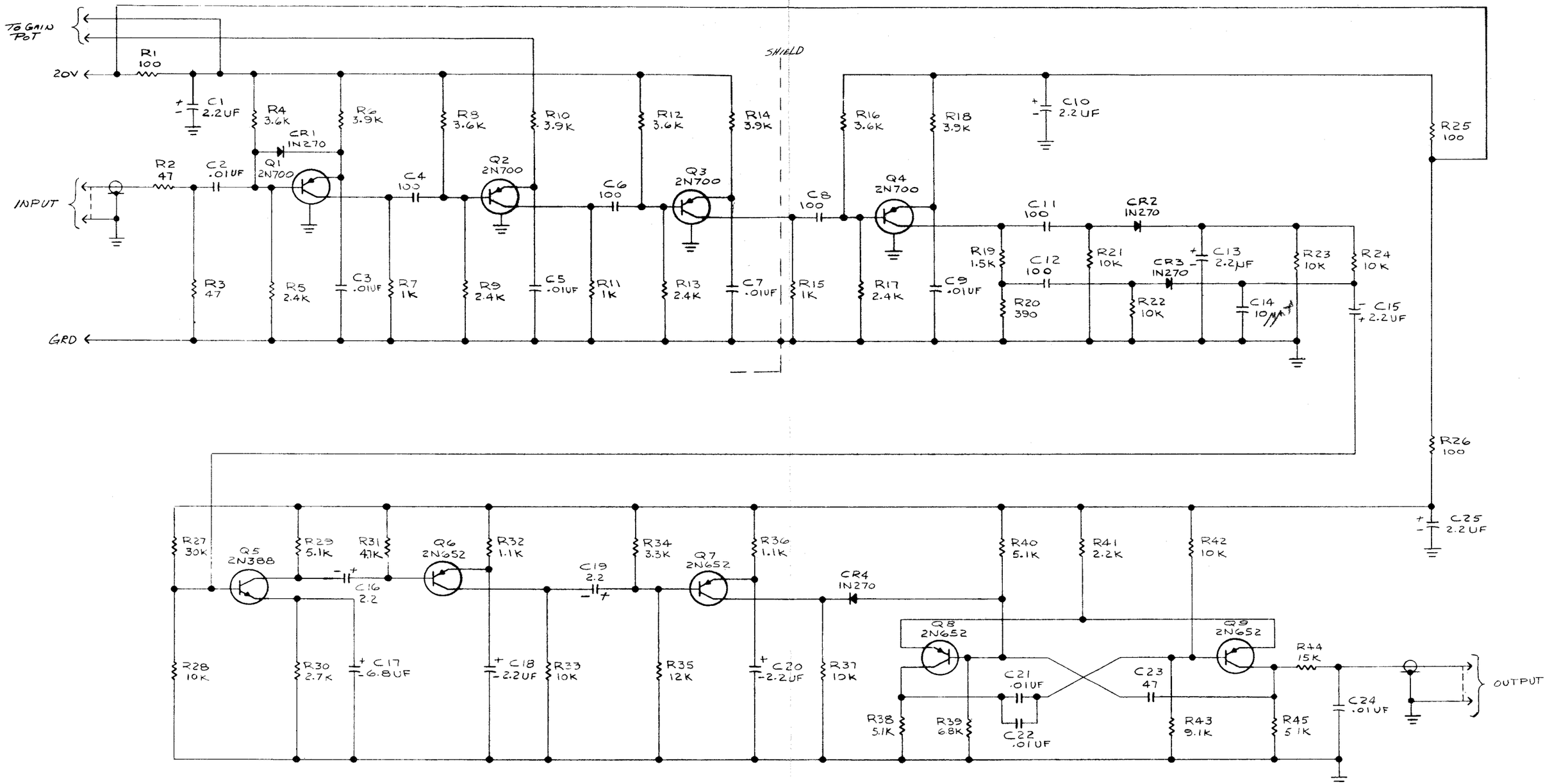


CHART B

FREQUENCY MC	ON ASS'Y	C2	ON ASS'Y	C3	ON ASS'Y	C4	ON ASS'Y	C7	ON ASS'Y	C9
2	A2	.1UF	A2	12	A2	ON HOUSING	A2	GROUND	A2	GROUND
3	A5	1249	A3	10	A5	1249	A5	1249	8	1242
4	A6	626	A4	6	A6	626	A6	626	9	626
5	A5	918	A5	7	A5	918	A5	921	10	918
6	A6	314	A6	6	A6	314	A6	314	11	314
7	A7	252	A7	4	A7	252	A7	252	12	252
8	A8	209	A8	4	A8	209	A8	212	13	209
9	A9	180	A9	3.9	A9	180	A9	183	14	180
10	A10	160	A10	2.2	A10	160	A10	160	15	160
11	A11	142	A11	2.7	A11	142	A11	142	16	142
12	A12	128	A12	2.7	A12	128	A12	130	17	128
13	A13	116	A13	2.4	A13	116	A13	118	18	116
14	A14	106	A14	2.7	A14	106	A14	109	19	106
15	A15	97	A15	2.2	A15	97	A15	101	20	97
16	A16	93	A16	2.2	A16	93	A16	93	21	93
17	A17	86	A17	2.2	A17	86	A17	86	22	86
18	A18	81	A18	2.7	A18	81	A18	81	23	81
19	A19	75	A19	2.7	A19	75	A19	78.9	24	75
20	A20	73	A20	2.0	A20	73	A20	73	25	73
21	A21	70	A21	1.8	A21	70	A21	70	26	70
22	A22	65	A22	2.2	A22	65	A22	67	27	65
23	A23	62	A13	1.8	A23	62	A23	65	28	62
24	A24	62	A24	2.0	A24	62	A24	62	29	62
25	A25	57	A25	2.0	A25	57	A25	57	2	57
26	A26	55	A26	2.0	A26	55	A26	57	3	55
27	A27	53	A27	2.2	A27	53	A27	55	4	53
28	A28	51	A28	2.4	A28	51	A28	53	5	51
29	A29	49	A29	2.4	A29	49	A29	51	A6	49

NOTES:
1. REFERENCE DESIGNATIONS NOT ABBREVIATED. PREFIX THE DESIGNATION WITH UNIT NUMBER OR ASSEMBLY DESIGNATION OR BOTH.
2. UNLESS OTHERWISE SPECIFIED:
   A. RESISTOR VALUES IN OHMS.
   B. CAPACITOR VALUES IN MICRO-MICROFARADS.
   C. RESISTORS ARE 1/2 W, 5 %.

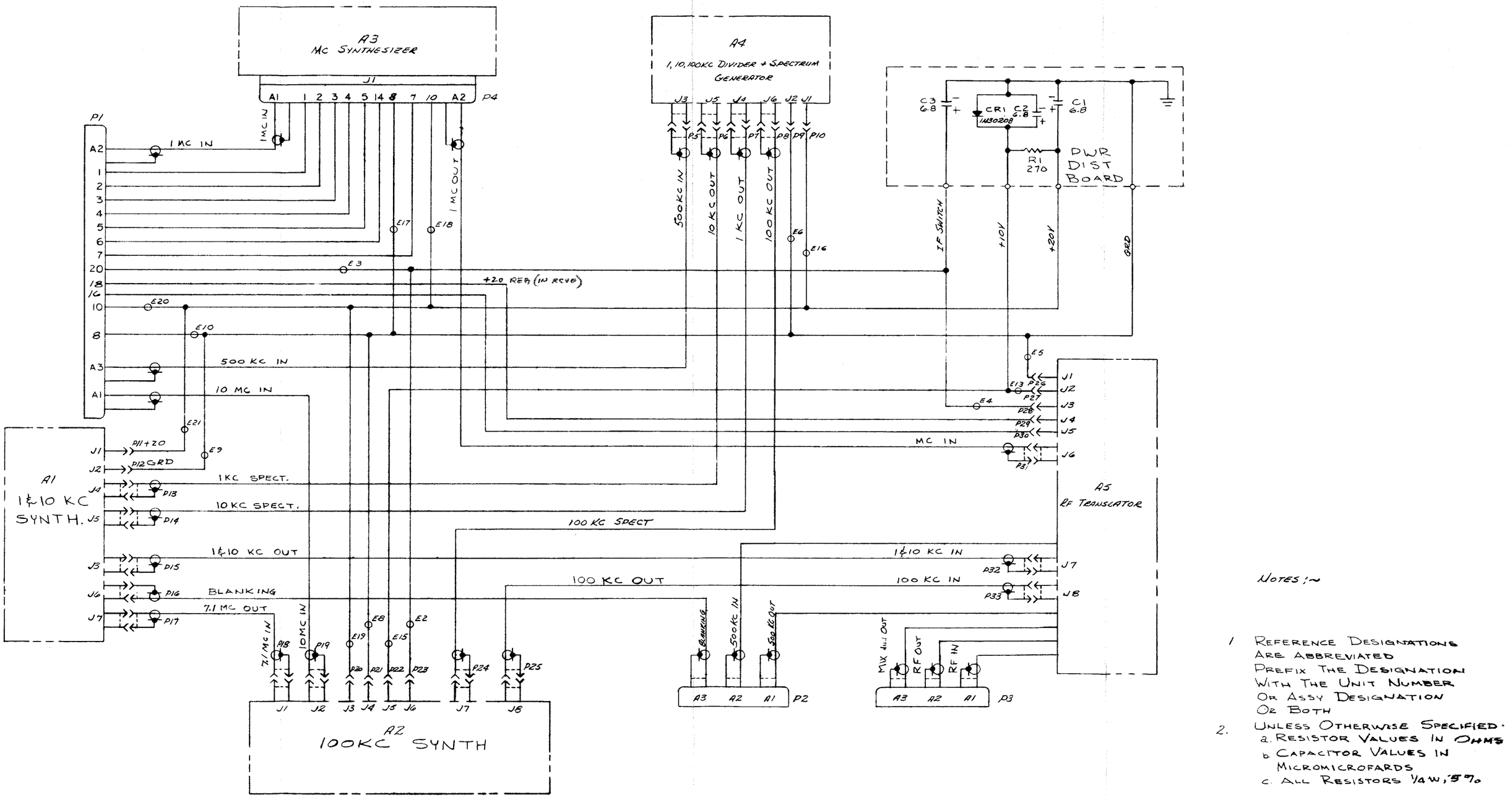
Figure 6-2. Radio Receiver SC-910R, RF Amplifier, Schematic Diagram



NOTES

1. REFERENCE DESIGNATIONS ARE ABBREVIATED. PREFIX THE DESIGNATION WITH THE UNIT NUMBER OR ASSEMBLY DESIGNATION OR BOTH.
2. UNLESS OTHERWISE SPECIFIED,
   a. ALL RESISTOR VALUES ARE IN OHMS.
   b. ALL RESISTORS ARE 1/4 W 5%
   c. ALL CAPACITOR VALUES ARE IN MICROMICROFARADS.

Figure 6-3. Radio Receiver SC-910R, Noise Blanker, Schematic Diagram



NOTES:-

1. REFERENCE DESIGNATIONS ARE ABBREVIATED PREFIX THE DESIGNATION WITH THE UNIT NUMBER OR ASSY DESIGNATION OR BOTH
2. UNLESS OTHERWISE SPECIFIED:
   a. RESISTOR VALUES IN OHMS
   b. CAPACITOR VALUES IN MICROMICROFARDS
   c. ALL RESISTORS 1/4W, 5%

Figure 6-4. Radio Receiver SC-910R, Translator Synthesizer, Schematic Diagram

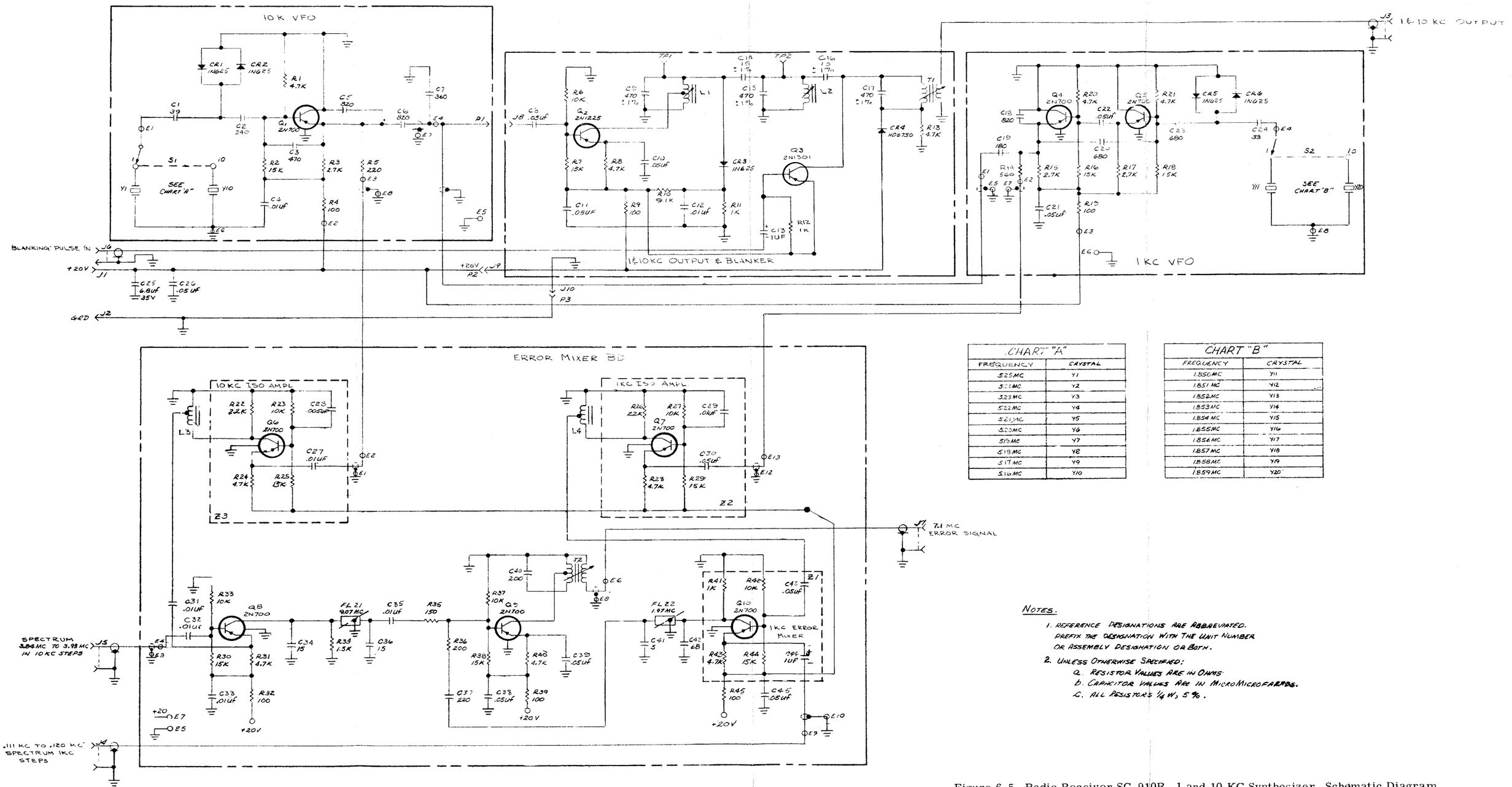


CHART "A"	
FREQUENCY	CRYSTAL
5.25MC	Y1
5.?1MC	Y2
5.23MC	Y3
5.22MC	Y4
5.21MC	Y5
5.20MC	Y6
5.19MC	Y7
5.18MC	Y8
5.17MC	Y9
5.16MC	Y10

CHART "B"	
FREQUENCY	CRYSTAL
1.850MC	Y11
1.851 MC	Y12
1.852MC	Y13
1.853MC	Y14
1.854 MC	Y15
1.855MC	Y16
1.856MC	Y17
1.857 MC	Y18
1.858MC	Y19
1.859MC	Y20

NOTES.

1. REFERENCE DESIGNATIONS ARE ABBREVIATED. PREFIX THE DESIGNATION WITH THE UNIT NUMBER OR ASSEMBLY DESIGNATION OR BOTH.
2. UNLESS OTHERWISE SPECIFIED:
   a. RESISTOR VALUES ARE IN OHMS
   b. CAPACITOR VALUES ARE IN MICROMICROFARADS.
   c. ALL RESISTORS 1/4 W, 5 %.

Figure 6-5. Radio Receiver SC-910R, 1 and 10 KC Synthesizer, Schematic Diagram

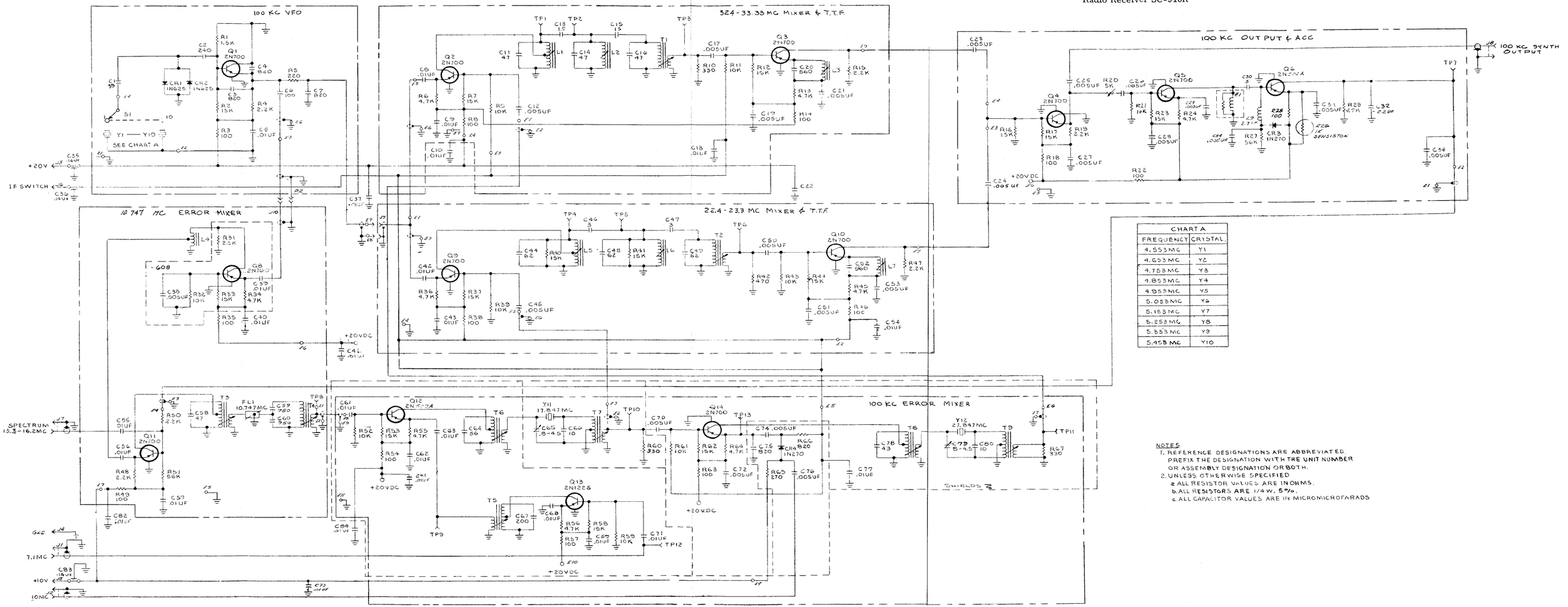


CHART A	
FREQUENCY	CRYSTAL
4.553 MC	Y1
4.653 MC	Y2
4.753 MC	Y3
4.853 MC	Y4
4.953 MC	Y5
5.053 MC	Y6
5.153 MC	Y7
5.253 MC	Y8
5.353 MC	Y9
5.453 MC	Y10

NOTES

1. REFERENCE DESIGNATIONS ARE ABBREVIATED. PREFIX THE DESIGNATION WITH THE UNIT NUMBER OR ASSEMBLY DESIGNATION OR BOTH.
2. UNLESS OTHERWISE SPECIFIED
   a. ALL RESISTOR VALUES ARE IN OHMS.
   b. ALL RESISTORS ARE 1/4 W, 5%.
   c. ALL CAPACITOR VALUES ARE IN MICROMICROFARADS

Figure 6-6. Radio Receiver SC-910R, 100 KC Synthesizer, Schematic Diagram

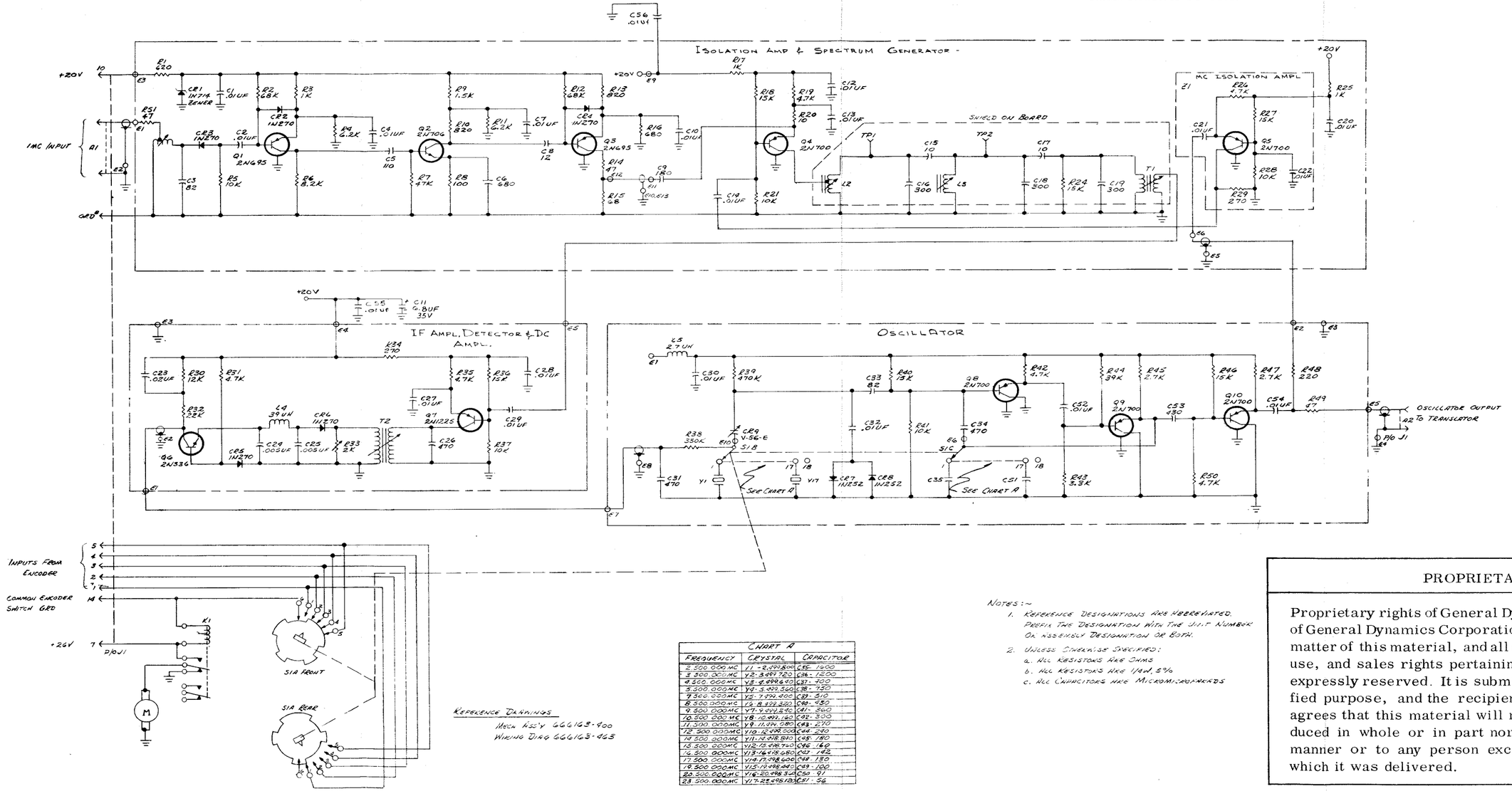


CHART A		
FREQUENCY	CRYSTAL	CAPACITOR
2.500 000 MC	Y1 - 2.499 800	C55 - 1400
3.500 000 MC	Y2 - 3.499 720	C56 - 1200
4.500 000 MC	Y3 - 4.499 640	C57 - 900
5.500 000 MC	Y4 - 5.499 560	C58 - 750
7.500 000 MC	Y5 - 7.499 400	C59 - 510
8.500 000 MC	Y6 - 8.499 320	C60 - 450
9.500 000 MC	Y7 - 9.499 240	C61 - 360
10.500 000 MC	Y8 - 10.499 160	C62 - 300
11.500 000 MC	Y9 - 11.499 080	C63 - 270
13.500 000 MC	Y10 - 12.498 920	C64 - 240
14.500 000 MC	Y11 - 14.498 840	C65 - 180
15.500 000 MC	Y12 - 15.498 760	C66 - 160
16.500 000 MC	Y13 - 16.498 680	C67 - 150
17.500 000 MC	Y14 - 17.498 600	C68 - 130
19.500 000 MC	Y15 - 19.498 440	C69 - 100
20.500 000 MC	Y16 - 20.498 360	C70 - 91
23.500 000 MC	Y17 - 23.498 200	C71 - 56

Reference Drawings

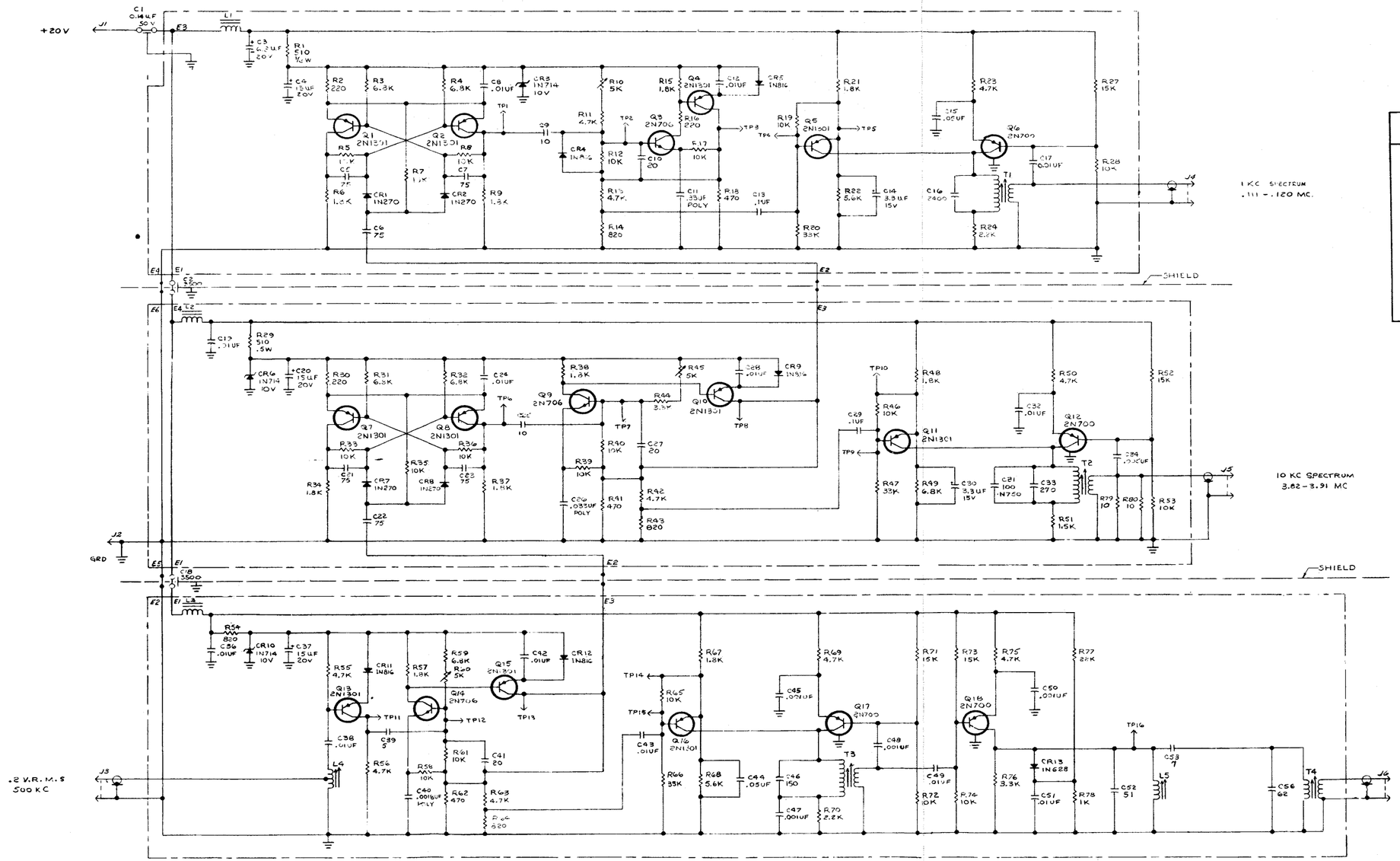
Mech Ass'y 666163-400

Wiring Diag 666163-463

Notes:-

1. Reference designations are abbreviated. Prefix the designation with the unit number or assembly designation or both.
2. Unless otherwise specified:
   a. All resistors are ohms
   b. All resistors are 1/4w, 5%
   c. All capacitors are micromicrofarads

Figure 6-7. Radio Receiver SC-910R, 1MC Synthesizer, Schematic Diagram



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Notes

1. Reference Designations are abbreviated. Prefix the designation with the unit number or assembly designation or both.
2. Unless otherwise specified
   a. All resistors are in ohms
   b. All resistors are 1/2W, 5%
   c. All capacitors are microfarads

3. Wave form at TP3, TP8, TP13 are as follows

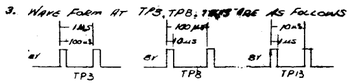
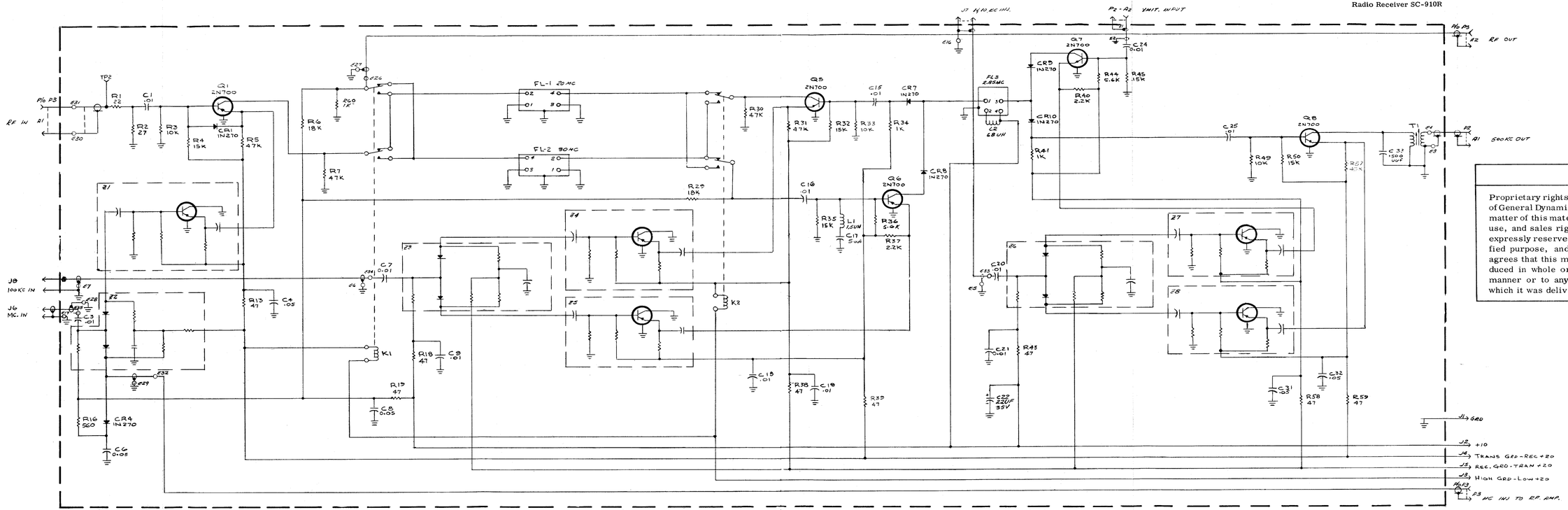
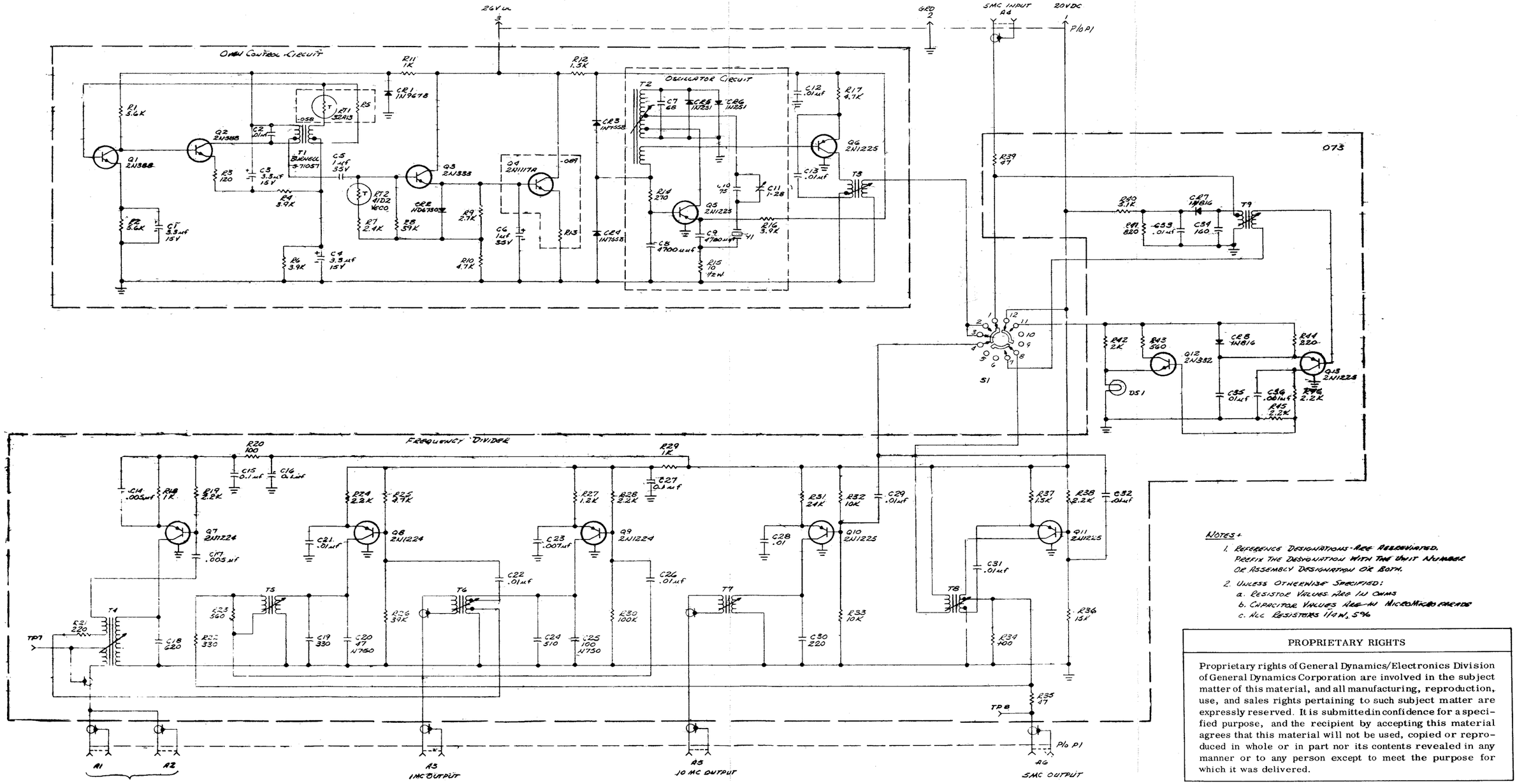


Figure 6-8. Radio Receiver SC-910R, 1, 10, 100 KC Divider and Spectrum Generator, Schematic Diagram



NOTES:
1. REFERENCE DESIGNATIONS ARE ABBREVIATED PREFIX THE DESIGNATION WITH THE UNIT NUMBER OR ASSEMBLY DESIGNATION OR BOTH
2. UNLESS OTHERWISE SPECIFIED
   a. RESISTOR VALUES IN OHMS
   b. CAPACITOR VALUES IN MICROFARADS
   c. ALL RESISTORS ½ W, 5%

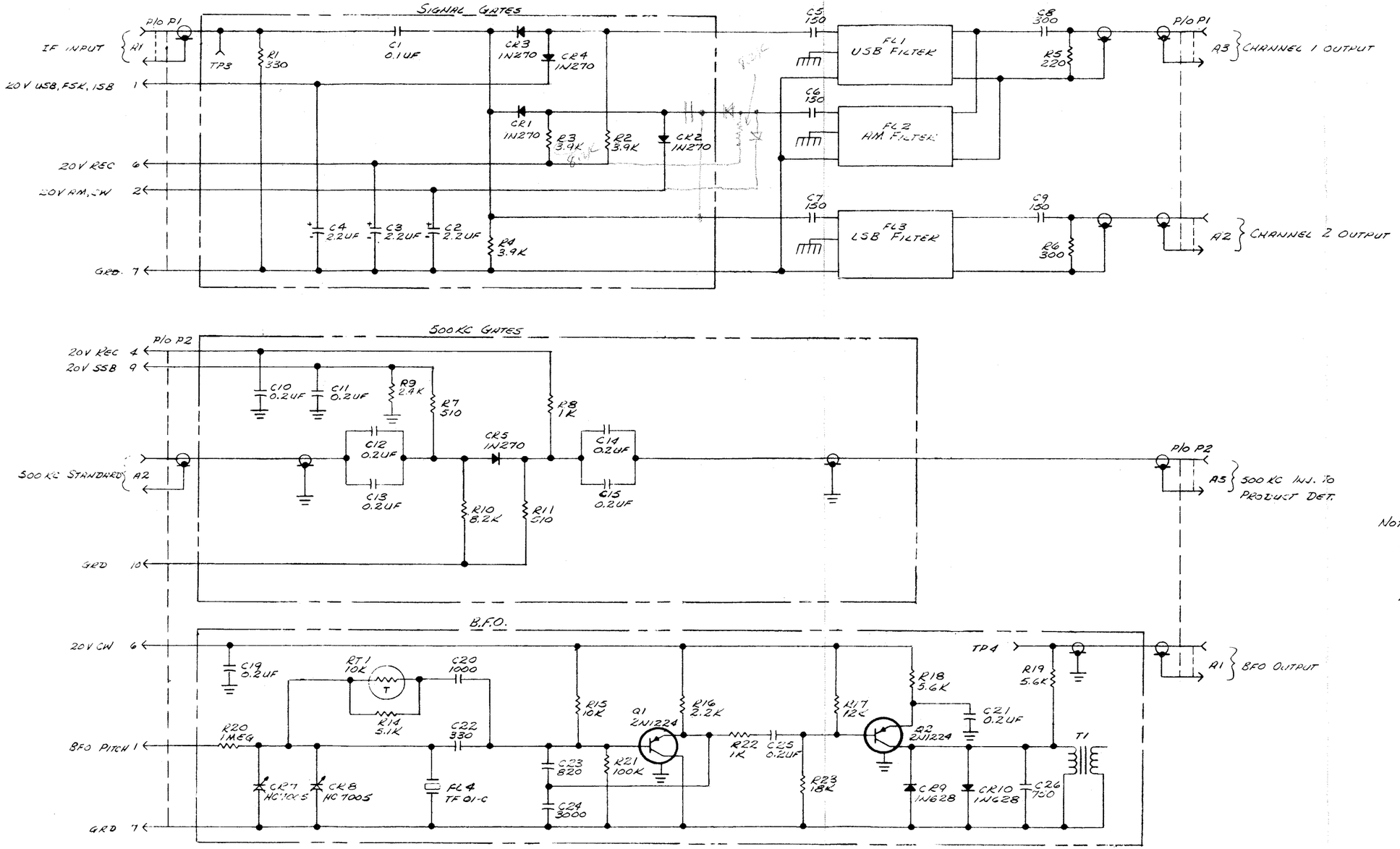
Figure 6-9. Radio Receiver SC-910R, RF Translator, Schematic Diagram



NOTES:

1. REFERENCE DESIGNATIONS ARE ABBREVIATED. PREFIX THE DESIGNATION WITH THE UNIT NUMBER OR ASSEMBLY DESIGNATION OR BOTH.
2. UNLESS OTHERWISE SPECIFIED:
   a. RESISTOR VALUES ARE IN OHMS
   b. CAPACITOR VALUES ARE IN MICROMICROFARADS
   c. ALL RESISTORS 1/4W, 5%

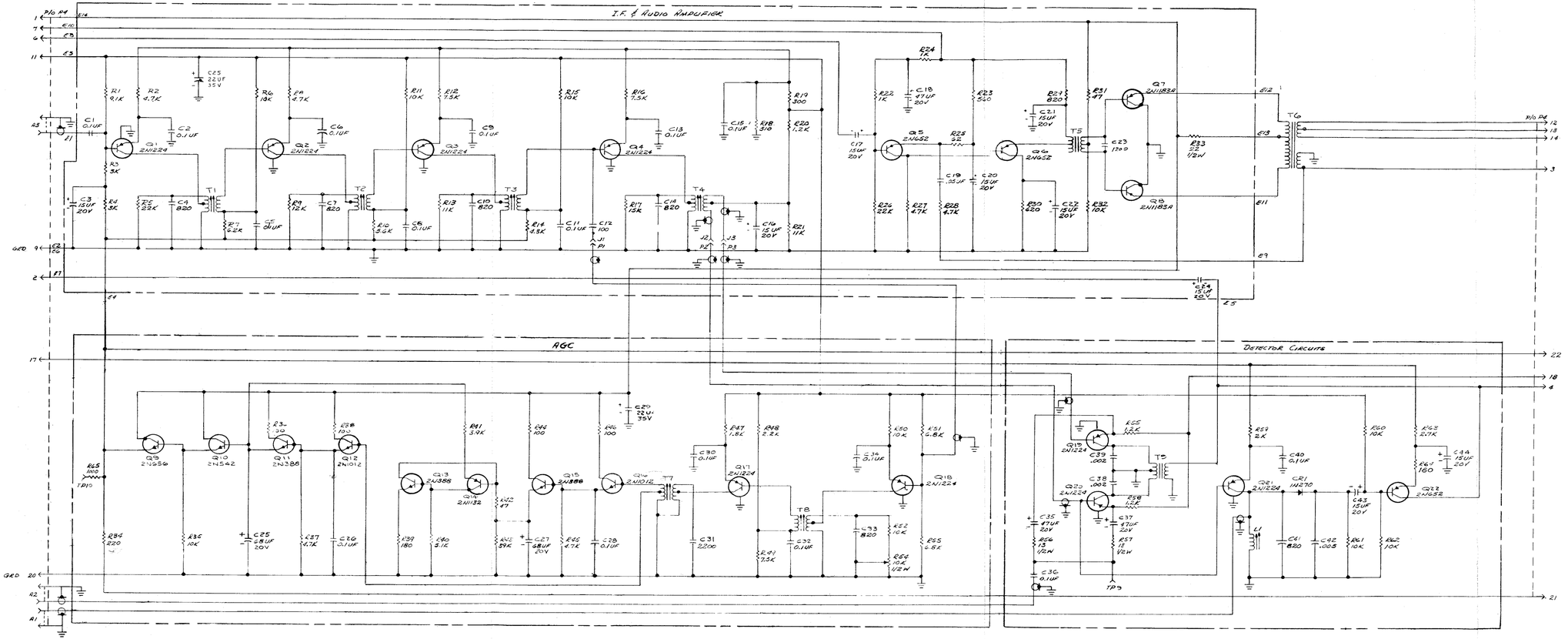
Figure 6-10. Radio Receiver SC-910R, Frequency Standard, Schematic Diagram



NOTES:

1. REFERENCE DESIGNATIONS ARE ABBREVIATED. PREFIX THE DESIGNATION WITH THE UNIT NUMBER OR ASSEMBLY DESIGNATION OR BOTH.
2. UNLESS OTHERWISE SPECIFIED:
   a. ALL RESISTORS ARE OHMS
   b. ALL RESISTORS ARE 1/4 W, 5%
   c. ALL CAPACITORS ARE IN MICROMICROFARADS

Figure 6-11. Radio Receiver SC-910R, Receiver Mode Selector, Schematic Diagram



NOTES :—

1. REFERENCE DESIGNATIONS ARE ABBREVIATED. PREFIX THE DESIGNATION WITH THE UNIT NUMBER OF ASSEMBLY DESIGNATION OF BOTH.
2. UNLESS OTHERWISE SPECIFIED :—
   a. ALL RESISTORS ARE OHMS
   b. ALL RESISTORS ARE 1/4 W, 5%
   c. ALL CAPACITORS ARE MICROMICROFARADS

Figure 6-12. Radio Receiver SC-910R, Receiver IF/Audio, Schematic Diagram

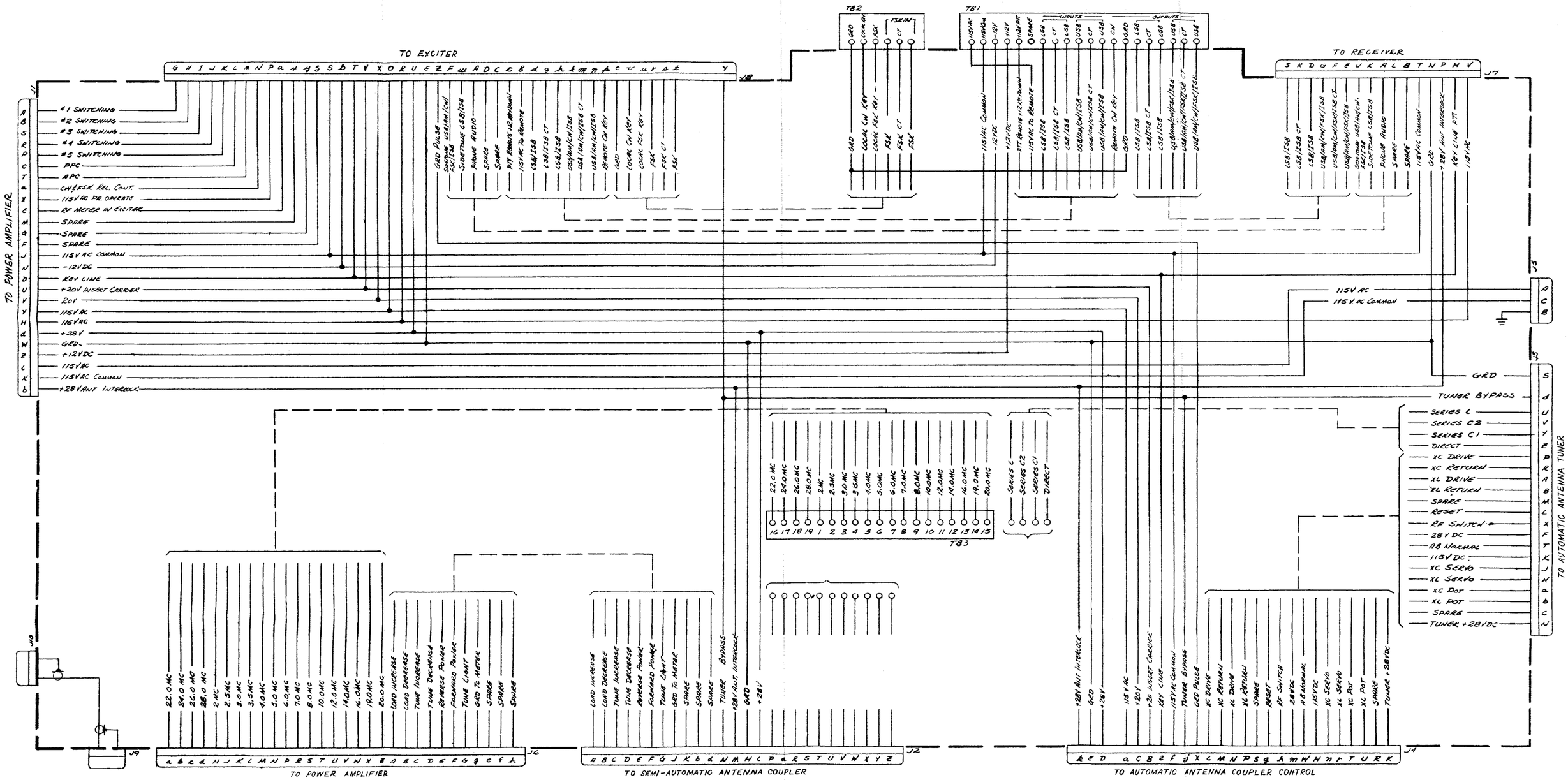


Figure 6-13. Radio Receiver SC-910R, Unit Interconnection Diagram