

INSTRUCTION MANUAL
FOR
TYPE RS-111-1B-26 RECEIVING SYSTEM

INTRODUCTION

The Type RS-111-1B-26 Receiving System consists of a modified version of the standard RS-111-1B-12. This modification enables the unit to operate with associated CEI Division equipment. These changes, including electrical parts lists and schematic diagrams are contained in supplemental Section VII in the rear of this manual.

ADDENDA

The following changes should be incorporated in the electrical parts lists and schematic diagrams of the RS-111-1B-12 Receiver for serial numbers 192 and above.

Type 8232 Sweep Generator (A5A3)

<u>Part</u>	<u>From</u>	<u>To</u>	<u>Mfr</u>
R34	680 k Ω	100 k Ω (CB1045)	Same
R35	330 k Ω	100 k Ω (CB1045)	Same

SECTION VII

SUPPLEMENT FOR TYPE RS-111-1B-26 RECEIVING SYSTEM

7.1 ELECTRICAL CHARACTERISTICS

The Type RS-111-1B-26 Receiving System consists of a standard Type RS-111-1B-12 which has been modified to operate with a CEI Division Type DRO-302A Electronic Frequency Counter and a Type DRX-1000-2 Digital Readout Extender. The changes include the addition of an AFC amplifier board to the main chassis, an additional wafer on the RANGE switch S1, and minor electrical modifications to the 30-60-MHz RF tuner and the 60-300 MHz RF tuner which enables them to accept the frequency control voltage.

7.2 MECHANICAL CHANGES

The front panel of the RS-111-1B-26 has not been changed except for the nameplate. The rear apron mounts a new multipin connector labeled J25. The jack provides connections to the frequency counter and frequency extender.

7.3 ELECTRICAL CHANGES

7.3.1 The front-panel RANGE-MC switch S1 has an additional two-section wafer adder (S1C-W) to supply a switchable control line for a relay in the DRX-1000-2. This switch section grounds the relay winding when the two higher bands are selected. The relay in the DRX-1000-2 transfers providing a switching function for the counter enabling it to accept LO signals from the high band tuners.

7.3.2 The value of capacitor A1C42 in the 30-60 MHz RF tuner has been changed from 2.0 pF to 2.4 pF. This results in a new type number--71292.

7.3.3 Coupling capacitor A2C44 in the 60-300-MHz RF tuner has been changed from 2.4 pF to 3.6 pF and is the only electrical change in this subassembly. A new type number, 71293, has been assigned. Schematic diagrams and electrical parts lists for both tuners are included in this supplement.

7.3.4 The Type 79407 AFC Amplifier, reference designation prefix A16, functions as a buffer between the tuner local oscillator circuits and the source of DAFC voltage. The AFC board mounts a single NPN transistor, Q1, operating as an emitter follower. The BFO tuning and fine tuning voltages are fed to pin E3 of the board, and passed through isolation resistor A16R5 to pin E4. From this point the tuning voltage is fed to the selected RF tuner. The frequency of the local oscillator in the tuner can be varied by two methods: adjustment of the BFO and FINE TUNING controls on the front panel or by enabling the DAFC source in the counter which in turn supplies a tuning voltage to the receiver. The latter input is fed through A16Q1 and A16R4 to the selected tuner. An explanation of the digital automatic frequency control method is described in the following paragraph.

7.3.5 Although this explanation of DAFC is presented in conjunction with the 30-60-MHz RF tuner, it is entirely applicable to the remaining three bands. Assume that the 30-60-MHz tuner is set to 045.000 MHz, the DAFC circuits in the DRO-302A are enabled, and the LAST DIGIT is selected as 0. If the local oscillator frequency drifts to 066.401 MHz (21.4-MHz above tuned frequency) the DAFC circuit senses the change. At this point the output level of the DAFC, which is normally +10V, begins to go negative. This reduces the reverse bias on varactor diode A1CR1 in the local oscillator circuit. Consequently, the capacitance of A1CR1 increases. As a result, the LO frequency is decreased. When the LO again reaches 066.400 MHz, the DAFC holds until it senses another change. The holding range of the DAFC is approximately 0.1 percent of the tuned frequency.

EQUIPMENT DESCRIPTION

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FIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
1	30-60 MHz TUNER		1	71292	14632
2	60-300 MHz TUNER		1	71293	14632
3	235-500 MHz TUNER		1	7162	14632
4	490-1000 MHz TUNER		1	7163	14632
5	SIGNAL MONITOR		1	79358	14632
6	60-21.4 MHz CONVERTER		1	7120	14632
7	IF AMPLIFIER, 2 MHz BANDWIDTH		1	7233	14632
8	IF AMPLIFIER, 20/75/300 kHz BANDWIDTH		1	7245	14632
9	VIDEO AMPLIFIER		1	7312	14632
10	AUDIO AMPLIFIER		1	7400B	14632
A11	POWER SUPPLY REGULATOR (CRT)		1	7633	14632
A12	POWER SUPPLY REGULATOR (GEN.)		1	7631A	14632
A13	COUPLING NETWORK		2	7917	14632
A14	Same as A13				
A15	AGC MONITOR AMPLIFIER		1	7836	14632
A16	AFC AMPLIFIER		1	79407	14632
C1	CAPACITOR, ELECTROL., ALUMINUM: 500 μ F, -10+75%, 15V	250044	1	34D507G015FJ4	56289
C2	CAPACITOR, ELECTROL., ALUMINUM: 50 μ F, -10+75%, 12V	250038	1	30D506G012CB2	56289
C3	CAPACITOR, ELECTROL., ALUMINUM: 40/40 μ F, -10+75%, 250V	180079	1	TVL-2520	56289
C4	CAPACITOR, ELECTROL., ALUMINUM: 250 μ F, -10+75%, 40V	250043	1	34D257G040FL4	56289
C5	CAPACITOR, ELECTROL., ALUMINUM: 1000 μ F, -10+75%, 15V	250045	1	34D108G015GL4	56289

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FIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
6	CAPACITOR, CERAMIC, DISC: 0.01 μ F, 20%, 1400V	180153	2	U(.01 μ F, M)	91418
7	Same as C6				
8	CAPACITOR, CERAMIC, DISC: 0.01 μ F, 20%, 500V	180031	2	SM(.01 μ F, M)	91418
9	Same as C8				
R1	DIODE, ZENER	190107	1	1N753A	07688
DS1	LAMP, INCANDESCENT: 6.3V, 0.15A	260054	4	47	07688
S2	Same as DS1				
S3	Same as DS1				
S4	Same as DS1				
F1	FUSE, 3AG, SLOW-BLOW: 1/2A	130144	1	F02B250V1/2A	81349
F2	FUSE, 3AG, SLOW-BLOW: 1/4A	130141	1	F02B250V1/4A	81349
J1	CONNECTOR, JACK, N SERIES, Part of W16	180145	2	UG-1052/U	81349
J2	Same as J1, Part of W5				
J3	CONNECTOR, RECEPTACLE, BNC SERIES, Part of W12	220086	8	17825	74868
J4	Same as J3				

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FIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
	Same as J3, Part of W13				
	CONNECTOR, RECEPTACLE, MULTIPIN	140085	1	MRE-14SG7	81312
	CONNECTOR, RECEPTACLE, MULTIPIN	140088	1	MRE-18SG7	81312
	CONNECTOR, RECEPTACLE, MULTIPIN	140078	1	MRE-7-2SG7	81312
	CONNECTOR, RECEPTACLE, MULTIPIN	140082	1	MRE-9SG7	81312
0	CONNECTOR, JACK, TELEPHONE	140061	1	L11	82389
1	CONNECTOR, RECEPTACLE, BNC SERIES, Part of K1		--		
2	CONNECTOR, RECEPTACLE, BNC SERIES, Part of K1		--		
3	CONNECTOR, RECEPTACLE, BNC SERIES, Part of K1		--		
4	CONNECTOR, RECEPTACLE, BNC SERIES, Part of K2		--		
5	CONNECTOR, RECEPTACLE, BNC SERIES, Part of K2		--		
6	CONNECTOR, RECEPTACLE, BNC SERIES, Part of K2		--		
7	Same as J3				
8	NOT USED				
9	NOT USED				
10	NOT USED				
11	NOT USED				
12	NOT USED				
13	NOT USED				
14	NOT USED				
15	CONNECTOR, RECEPTACLE MULTIPIN		1	DS00-7S	11139

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QTY	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
	RELAY	250185	2	318-10382-3	74868
	Same as K1				
1	METER, SIGNAL STRENGTH	220068	1	1632-1	14632
	CONNECTOR, PLUG, BNC SERIES, Part of W1	180131	15	UG-88/U	81349
	CONNECTOR, PLUG, BNC SERIES, Part of W1	180142	3	UG-913/U	81349
	Same as P1, Part of W2				
	Same as P1, Part of W2				
	Same as P1, Part of W3				
	Same as P2, Part of W3				
	Same as P1, Part of W4				
	Same as P1, Part of W4				
	Same as P1, Part of W5				
0	CONNECTOR, PLUG, SUBMINIATURE SERIES, Part of W7	180152	12	UG-1466/U	15558
1	Same as P10, Part of W7				
2	Same as P10, Part of W10				
3	CONNECTOR, PLUG, SUBMINIATURE, Part of W10	240164	8	27-7	74868
4	Same as P13, Part of W6				
5	Same as P13, Part of W6				
6	Same as P10, Part of W8				

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FIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
7	Same as P13, Part of W8				
8	Same as P13, Part of W9				
9	Same as P13, Part of W9				
10	Same as P10, Part of W11				
11	Same as P10, Part of W11				
12	Same as P13, Part of W14				
13	Same as P10, Part of W14				
14	Same as P1, Part of W17				
15	Same as P1, Part of W17				
16	POWER CORD AND PLUG	190031	1	CP91753-162-001	71700
17	Same as P1, Part of W18				
18	Same as P1, Part of W18				
19	Same as P1, Part of W19				
20	Same as P1, Part of W19				
21	Same as P1, Part of W16				
22	Same as P10, Part of W12				
23	Same as P10, Part of W13				
24	Same as P2, Part of W20				
25	Same as P1, Part of W20				

FIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
1	TRANSISTOR	220190	1	2N1544	07688
1	RESISTOR, FIXED, COMPOSITION: 51 kΩ, 5%, 1/4W	160076	1	RC07GF513J	81349
2	RESISTOR, VARIABLE, COMPOSITION: 100 kΩ, 10%, 1/4W	290038	1	70-08460	76055
3	RESISTOR, FIXED, COMPOSITION: 1 MΩ, 5%, 1/4W	160306	1	RC07GF105J	81349
4	RESISTOR, VARIABLE, COMPOSITION: 500 kΩ, 10%, 2W	170192	1	RV4NAYS504A	81349
5	RESISTOR, FIXED, COMPOSITION: 180 kΩ, 5%, 1/4W	160089	1	RC07GF184J	81349
6	RESISTOR, FIXED, COMPOSITION: 150 Ω, 5%, 1/4W	160033	2	RC07GF151J	81349
7	RESISTOR, VARIABLE, COMPOSITION: 10 kΩ, 10%, 2W (CW-LOG)	170183	1	RV4NAYS103C	81349
8	NOT USED				
9	RESISTOR, VARIABLE, COMPOSITION: 10 kΩ, 10%, 1/4W	290039	1	70-08461	76055
10	RESISTOR, VARIABLE, COMPOSITION: 100 kΩ, 10%, 2W (w/switch)	170189	1	RV4NBYS104A	81349
11	Same as R6				
12	RESISTOR, FIXED, COMPOSITION: 240 kΩ, 5%, 1/4W	160092	1	RC07GF244J	81349
13	RESISTOR, FIXED, COMPOSITION: 470 Ω, 5%, 2W	160341	1	RC42GF471J	81349
14	RESISTOR, FIXED, COMPOSITION: 22 kΩ, 5%, 1/4W	160144	1	RC07GF223J	81349
15	RESISTOR, FIXED, COMPOSITION: 62 kΩ, 5%, 1/4W	160078	1	RC07GF623J	81349
R16	RESISTOR, FIXED, COMPOSITION: 100 kΩ, 5%, 1/4W	160083	1	RC07GF104J	81349
R17	RESISTOR, FIXED, COMPOSITION: 10 kΩ, 5%, 1/4W	160136	1	RC07GF103J	81349

FIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
1	SWITCH, ROTARY: 3 Section, 6 Pole, 6 Position		1	1128-02	14632
2	SWITCH, ROTARY: 2 Section, 4 Pole, 6 Position		1	1128-03	14632
3	SWITCH, ROTARY: 1 Section, 1 Pole, 12 Position		1	1128-22	14632
4	SWITCH, SLIDE: DPDT	200015	1	46256-LF	82389
5	SWITCH, SPST, Part of R10		--		
1	TRANSFORMER		1	10775	14632
B1	TERMINAL BOARD	250226	1	353-18-02-001	71785
1	CABLE AND CONNECTOR ASSEMBLY		Ref.	2126-235	14632
2	CABLE AND CONNECTOR ASSEMBLY		Ref.		14632
3	CABLE AND CONNECTOR ASSEMBLY		Ref.	2126-237	14632
4	CABLE AND CONNECTOR ASSEMBLY		Ref.	2126-238	14632
5	CABLE AND CONNECTOR ASSEMBLY		Ref.		14632
6	CABLE AND CONNECTOR ASSEMBLY		Ref.	2126-240	14632
7	CABLE AND CONNECTOR ASSEMBLY		Ref.	2126-241	14632
8	CABLE AND CONNECTOR ASSEMBLY		Ref.	2126-242	14632
9	CABLE AND CONNECTOR ASSEMBLY		Ref.	2126-243	14632
10	CABLE AND CONNECTOR ASSEMBLY		Ref.	2126-244	14632

FIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
711	CABLE AND CONNECTOR ASSEMBLY		Ref.	2126-245	14632
712	CABLE AND CONNECTOR ASSEMBLY		Ref.	2126-246	14632
713	CABLE AND CONNECTOR ASSEMBLY		Ref.	2126-247	14632
714	CABLE AND CONNECTOR ASSEMBLY		Ref.	2126-248	14632
715	NOT USED				
716	CABLE AND CONNECTOR ASSEMBLY		Ref.		14632
717	CABLE AND CONNECTOR ASSEMBLY		Ref.	2126-250	14632
718	CABLE AND CONNECTOR ASSEMBLY		Ref.	2126-251	14632
719	CABLE AND CONNECTOR ASSEMBLY		Ref.	2126-252	14632
720	CABLE AND CONNECTOR ASSEMBLY		Ref.	2126-253	14632
	Accessory connectors are not shown on schematic but are shipped with equipment:				
	CONNECTOR, PLUG, MULTIPIN		1	DS07-7P-059	11139

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REF ESIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
C1	CAPACITOR, CERAMIC, TUBULAR: 5.6 pF, ±0.25 pF, 500V	250095	1	301-000-C0H0-569C	72982
C2	CAPACITOR, CERAMIC, TUBULAR: 8.2 pF, ±0.5 pF, 500V	250102	1	301-000-C0H0-829D	72982
C3	CAPACITOR, CERAMIC, TUBULAR: 1.0 pF, ±0.25 pF, 500V	250071	4	301-000-C0K0-109C	72982
C4	CAPACITOR, CERAMIC, TUBULAR: 6.2 pF, ±0.5 pF, 500V	250098	1	301-000-C0H0-629D	72982
C5	CAPACITOR, VARIABLE, CERAMIC: 0.5-4.5 pF, 500V	120171	1	2068-01	71279
C6	CAPACITOR, CERAMIC, STANDOFF: 1000 pF, GMV, 500V	180029	4	SS5A-102W	01121
C7	CAPACITOR, MICA, DIPPED: 510 pF, ±5%, 500V	130055	1	DM15-511J	72136
C8	Same as C6				
C9	CAPACITOR, COMPOSITION, TUBULAR: 0.47 pF, 10%, 500V	150111	1	QC(.47pF,K)	95121
C10	NOT USED				
C11	CAPACITOR, VARIABLE, GLASS: 0.7-9.0 pF, 750V	180165	4	VC26G	73899
C12	CAPACITOR, CERAMIC, TUBULAR: 47 pF, ±5%, 500V	250110	2	308-000-C0G0-470J	72982
C13	Same as C12				
C14	Same as C3				
C15	Same as C11				
C16	Same as C3				
C17	CAPACITOR, COMPOSITION, TUBULAR: 0.22 pF, ±10%, 500V	150104	1	QC(.22pF,K)	95121
C18	Same as C11				
C19	CAPACITOR, CERAMIC, TUBULAR: 5.1 pF, ±0.5 pF, 500V	250094	1	301-000-C0H0-519D	72982
C20	Same as C3				
C21	CAPACITOR, CERAMIC, DISC: 1000 pF, GMV, 500V	180028	6	SM(1000pF, GMV)	9141
C22	CAPACITOR, CERAMIC, TUBULAR: 1.5 pF, ±0.25 pF, 500V	250075	1	301-000-C0K0-159C	72982
C23*	CAPACITOR, CERAMIC, TUBULAR: 2.7 pF, ±0.25 pF, 500V	250082	1	301-000-C0J0-279C	72982

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EF SIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
C24	CAPACITOR, CERAMIC, FEEDTHRU: 1000 pF, GMV, 500V	130135	6	FA5C-102W	01121
C25	NOT USED				
C26*	CAPACITOR, CERAMIC, TUBULAR: 2.7 pF, ± 0.25 pF, (TC-N470)	250121	1	301-000-T2J0-279C	72982
C27	CAPACITOR, CERAMIC, TUBULAR: 3.3 pF, ± 0.25 pF, 500V	250086	1	301-000-C0J0-339C	72982
C28	NOT USED				
C29	Same as C11				
C30	Same as C21				
C31	Same as C21				
C32	Same as C21				
C33	Same as C21				
C34	Same as C24				
C35	Same as C24				
C36	Same as C24				
C37	Same as C24				
C38	Same as C6				
C39	Same as C21				
C40	Same as C6				
C41	PART OF CIRCUIT BOARD, CEI #1101		--		
C42	CAPACITOR, CERAMIC, TUBULAR: 4.7 pF, ± 0.25 pF, 500V	250092	1	301-000-C0H0-479C	72982
C43	Same as C24				
C44*	CAPACITOR, CERAMIC, TUBULAR: 3.6 pF, ± 0.25 pF, 500V	250087	1	301-000-C0J0369C	72982

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EF SIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
CR1	DIODE, VARACTOR	180162	1	V27E	01281
CR2	DIODE	190134	1	1N3044B	07688
J1	RECEPTACLE	180146	2	UG1094/U	81349
J2	RECEPTACLE	240165	1	27-9	74868
J3	NOT USED				
J4	Same as J1				
FBI	FERRITE BEAD	270099	1	56-590-65/4A	02214
L1	INDUCTUNER: 4-Section		1	2027-3	14632
L2	INDUCTOR, PADDING		1	10167	14632
L3	COIL, FIXED		1	1129-01	14632
L4	COIL, FIXED		1	1131-36	14632
L5	COIL, FIXED		1	1131-01	14632
L6	INDUCTOR, PADDING		1	10166	14632
L7	COIL, FIXED		1	1131-02	14632
L8	INDUCTOR		1	1200-2	14632
L9	COIL, FIXED		1	1131-27	14632
L10	INDUCTOR, PADDING		1	1107-2	14632

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REF SIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
L11	INDUCTOR, PADDING		1	10169	14632
L12	COIL, FIXED: 27 μ H	180174	1	W270	99848
L13	COIL, FIXED		1	1131-05	14632
R1	RESISTOR, FIXED, COMPOSITION: 100 k Ω , 5%, 1/4W	160083	2	RC07GF104J	81349
R2	RESISTOR, FIXED, COMPOSITION: 13 k Ω , 5%, 1W	160188	1	RC32GF133J	81349
R3	RESISTOR, FIXED, COMPOSITION: 680 k Ω , 5%, 1/4W	160103	1	RC07GF684J	81349
R4	NOT USED				
R5	RESISTOR, FIXED, COMPOSITION: 6.2 k Ω , 5%, 2W	160355	1	RC42GF622J	81349
R6	RESISTOR, FIXED, COMPOSITION: 10 Ω , 5%, 1/4W	160006	1	RC07GF100J	81349
R7	RESISTOR, FIXED, COMPOSITION: 15 k Ω , 5%, 1/4W	160140	1	RC07GF153J	81349
R8	RESISTOR, FIXED, COMPOSITION: 6.8 k Ω , 5%, 2W	160349	1	RC42GF682J	81349
R9	RESISTOR, FIXED, COMPOSITION: 470 k Ω , 5%, 1/4W	160099	2	RC07GF474J	81349
R10	Same as R9				
R11	RESISTOR, FIXED, COMPOSITION: 330 k Ω , 5%, 1/4W	160095	1	RC07GF334J	81349
R12	RESISTOR, FIXED, COMPOSITION: 33 k Ω , 5%, 1/4W	160148	1	RC07GF333J	81349
R13	RESISTOR, FIXED, COMPOSITION: 10 k Ω , 5%, 1/2W	160251	1	RC20GF103J	81349
R14	NOT USED				
R15	RESISTOR, FIXED, COMPOSITION: 47 k Ω , 5%, 1/4W	160150	1	RC07GF473J	81349
R16	RESISTOR, FIXED, COMPOSITION: 4.7 k Ω , 5%, 1/4W	160128	2	RC07GF472J	81349
R17	Same as R16				
R18	RESISTOR, FIXED, COMPOSITION: 22 k Ω , 5%, 1/4W	160144	1	RC07GF223J	81349

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REF SIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
R19	RESISTOR, FIXED, COMPOSITION: 51 Ω , 5%, 1/4W	160022	1	RC07GF510J	81349
R20	Same as R1				
TP1	TEST POINT	180102	1	TJ-6	04013
V1	TUBE, ELECTRON	300047	2	8058	07688
V2	Same as V1				
V3	TUBE, ELECTRON	290055	1	7587	07688
V4	TUBE, ELECTRON	280060	1	6CW4	07688
*	Nominal value, final value to be factory selected.				

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71292 30-60 MHz TUNER

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REF SIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
C1	CAPACITOR, MICA, DIPPED: 15 pF, $\pm 5\%$, 500V	120288	1	CM04CD150J03	81349
C2	CAPACITOR, MICA, DIPPED: 22 pF, $\pm 5\%$, 500V	130025	2	CM04ED220J03	81349
C3	CAPACITOR, VARIABLE, GLASS: 0.7-9.0 pF, 750V	180165	4	VC26G	73899
C4	CAPACITOR, MICA, DIPPED: 270 pF, $\pm 5\%$, 500V	120107	2	CM05FD271J03	81349
C5	CAPACITOR, CERAMIC, DISC: 1000 pF, GMV, 500V	180028	15	SM(1000pF, GMV)	91418
C6	CAPACITOR, COMPOSITION, TUBULAR: 0.33 pF, $\pm 10\%$, 500V	150108	1	QC(.33pF, K)	95121
C7	CAPACITOR, CERAMIC, TUBULAR: 1.5 pF, ± 0.25 pF, 500V	250075	1	301-000-C0K0-159C	72982
C8	Same as C5				
C9	Same as C5				
C10	Same as C5				
C11	Same as C4				
C12	CAPACITOR, MICA, DIPPED: 18 pF, $\pm 5\%$, 500V	130023	1	CM04CD180J03	81349
C13	Same as C3				
C14	CAPACITOR, CERAMIC, TUBULAR: 2.2 pF, ± 0.25 pF, 500V	250080	1	301-000-C0J0-229C	72982
C15	Same as C3				
C16	CAPACITOR, MICA, DIPPED: 12 pF, $\pm 5\%$, 500V	130021	2	CM04CD120J03	81349
C17	CAPACITOR, MICA, DIPPED: 47 pF, $\pm 5\%$, 500V	120267	1	CM04ED470J03	81349
C18	CAPACITOR, CERAMIC, TUBULAR: 1.2 pF, ± 0.25 pF, 500V	250073	1	301-000-C0K0-120C	72982
C19	Same as C5				
C20	Same as C5				
C21	CAPACITOR, CERAMIC, STANDOFF: 1000 pF, GMV, 500V	180029	2	SS5A-102W	01121
C22	CAPACITOR, CERAMIC, FEEDTHRU: 330 pF, 10%, 500V	130131	1	FA5C-3311	01121
C23	Same as C5				

REF SIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
C24	Same as C5				
C25	Same as C21				
C26	Same as C5				
C27	Same as C3				
C28	CAPACITOR, MICA, DIPPED: 10 pF, ±0.5 pF, 500V	130020	2	CM04CD100D03	81349
C29	Same as C2				
C30	Same as C28				
C31	Same as C5				
C32	Same as C5				
C33	Same as C5				
C34	Same as C5				
C35	Same as C5				
C36	Same as C5				
C37	NOT USED				
C38	CAPACITOR, CERAMIC, FEEDTHRU: 1000 pF, GMV, 500V	130135	4	FA5C-102W	01121
C39	Same as C38				
C40	Same as C38				
C41	Same as C38				
C42	CAPACITOR, CERAMIC, TUBULAR: 2.4 pF, ±0.25 pF, 500V	250081	1	301-000-C0J0-249C	72982
C43	Same as C16				
C44*	CAPACITOR, CERAMIC, TUBULAR: 2.0 pF, ±0.25 pF, 500V	250078	1	301-000-C0K0-209C	72982

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REF SIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
CR1	DIODE, VARACTOR	180162	1	V27E	01281
CR2	DIODE	190134	1	1N3044B	07688
FB1	FERRITE BEAD	270099	7	56-590-65/4A	02114
FB2	Same as FB1				
FB3	Same as FB1				
FB4	Same as FB1				
FB5	Same as FB1				
FB6	Same as FB1				
FB7	Same as FB1				
J1	CONNECTOR, RECEPTACLE, BNC	180146	2	UG-1094/U	81349
J2	CONNECTOR, RECEPTACLE, SUB-MINIATURE	240165	3	27-9	74868
J3	Same as J2				
J4	Same as J2				
J5	Same as J1				
L1	COIL, FIXED		3	1131-06	14632
L2	INDUCTUNER, 4-Section		1	2026	14632
L3	Same as L1				

EQUIPMENT DESCRIPTION

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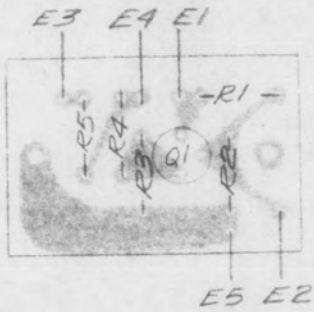
REF ESIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
L4	Same as L1				
L5	COIL, ADJUSTABLE	210054	1	1472-3	14632
L6	COIL, FIXED		1	1131-07	14632
L7	COIL, FIXED		1	1131-08	14632
L8	COIL, FIXED: 3.3 μ H	230066	1	211-11	99848
R1	RESISTOR, FIXED, COMPOSITION: 100 k Ω , 5%, 1/4W	160083	2	RC07GF104J	81349
R2	RESISTOR, FIXED, COMPOSITION: 47 k Ω , 5%, 1/4W	160152	3	RC07GF473J	81349
R3	RESISTOR, FIXED, COMPOSITION: 270 k Ω , 5%, 1/4W	160093	1	RC07GF274J	81349
R4	RESISTOR, FIXED, COMPOSITION: 51 Ω , 5%, 1/4W	160022	1	RC07GF510J	81349
R5	RESISTOR, FIXED, COMPOSITION: 150 Ω , 5%, 1/4W	160033	1	RC07GF151J	81349
R6	Same as R2				
R7	RESISTOR, FIXED, COMPOSITION: 10 Ω , 5%, 1/4W	160006	1	RC07GF100J	81349
R8	RESISTOR, FIXED, COMPOSITION: 6.8 k Ω , 5%, 1W	160182	1	RC32GF682J	81349
R9	RESISTOR, FIXED, COMPOSITION: 4.7 k Ω , 5%, 1/4W	160128	1	RC07GF472J	81349
R10	RESISTOR, FIXED, COMPOSITION: 470 k Ω , 5%, 1/4W	160099	2	RC07GF474J	81349
R11	Same as R10				
R12	RESISTOR, FIXED, COMPOSITION: 330 k Ω , 5%, 1/4W	160095	1	RC07GF334J	81349
R13	RESISTOR, FIXED, COMPOSITION: 33 k Ω , 5%, 1/4W	160148	1	RC07GF333J	81349
R14	RESISTOR, FIXED, COMPOSITION: 13 k Ω , 5%, 1W	160188	1	RC32GF133J	81349
R15	RESISTOR, FIXED, COMPOSITION: 1 k Ω , 5%, 1/4W	160112	1	RC07GF102J	81349
R16	RESISTOR, FIXED, COMPOSITION: 4.7 k Ω , 5%, 1/2W	160243	1	RC20GF472J	81349

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REF SIG	DESCRIPTION	CEI CONTROL NUMBER	UNITS PER ASS'Y	MANUFACTURER'S PART NO.	MFG. CODE
R17	RESISTOR, FIXED, COMPOSITION: 2.2 k Ω , 5%, 1/4W	160120	1	RC07GF222J	81349
R18	Same as R2				
R19	RESISTOR, FIXED, COMPOSITION: 22 k Ω , 5%, 1/2W	160259	1	RC20GF223J	81349
R20	Same as R1				
R21	RESISTOR, FIXED, COMPOSITION: 1.5 M Ω , 5%, 1/4W	160309	1	RC07GF155J	81349
T1	TRANSFORMER		1	1134	14632
TP1	TEST POINT	180102	1	TJ6	04013
V1	TUBE, ELECTRON	280060	3	6CW4	07688
V2	Same as V1				
V3	ELECTRON, TUBE	290055	1	7587	07688
V4	Same as V1				
	Nominal value, final value to be factory selected from: 2.0 pF, 2.4 pF, 2.7 pF;				
	TC-NPO				

SYM. NO.	DESCRIPTION	UNITS PER ASS'Y	VENDOR PART NO.	VENDOR NAME / CODE
Q1	TRANSISTOR	1	2N929	07688
R1	RESISTOR, FIXED, COMPOSITION: 150 k Ω , 5%, 1/4W	1	RC07GF154J	81349
R2	RESISTOR, FIXED, COMPOSITION: 100 k Ω , 5%, 1/4W	2	RC07GF104J	81349
R3	RESISTOR, FIXED, COMPOSITION: 4.7 k Ω , 5%, 1/4W	1	RC07GF472J	81349
R4	RESISTOR, FIXED, COMPOSITION: 12 k Ω , 5%, 1/4W	1	RC07GF123J	81349
R5	Same as R2			

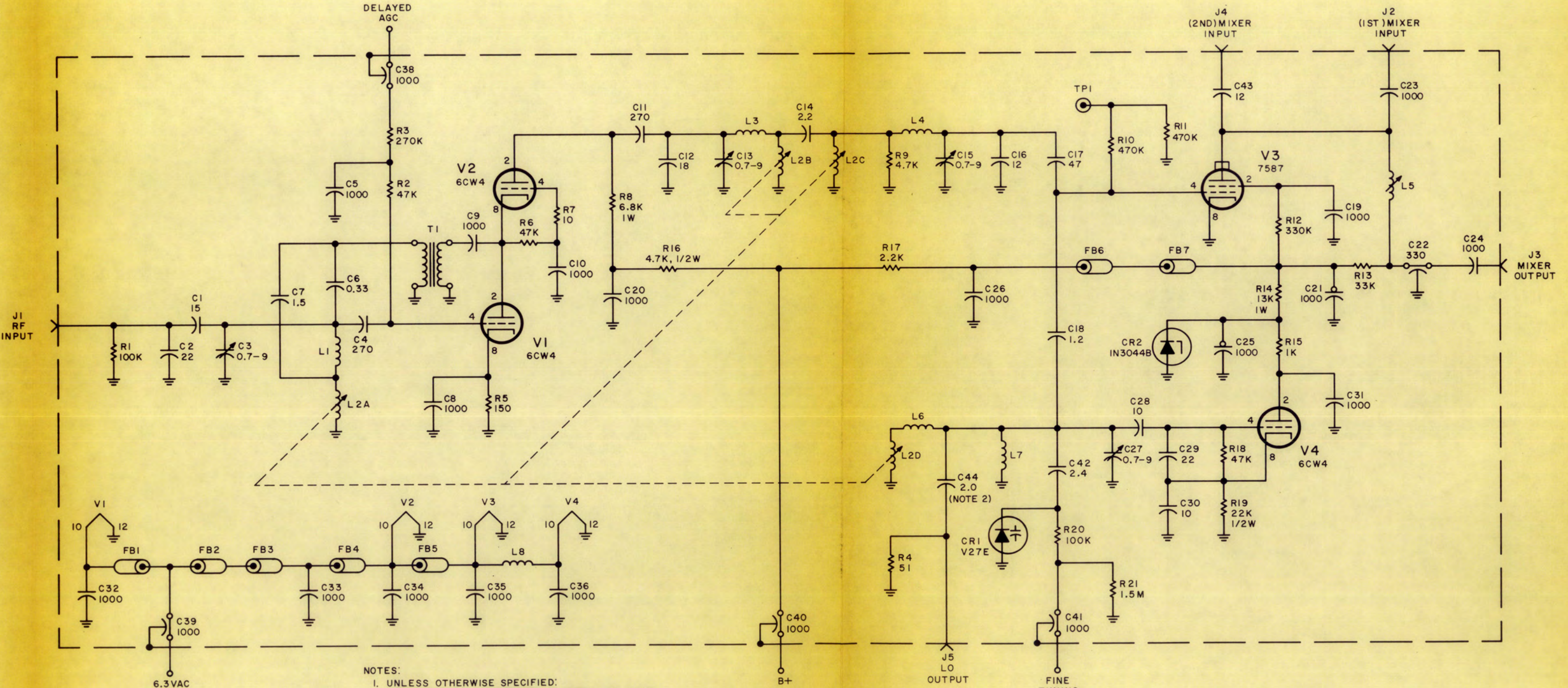
REVISION		DATE	APP'D
LTR	DESCRIPTION		



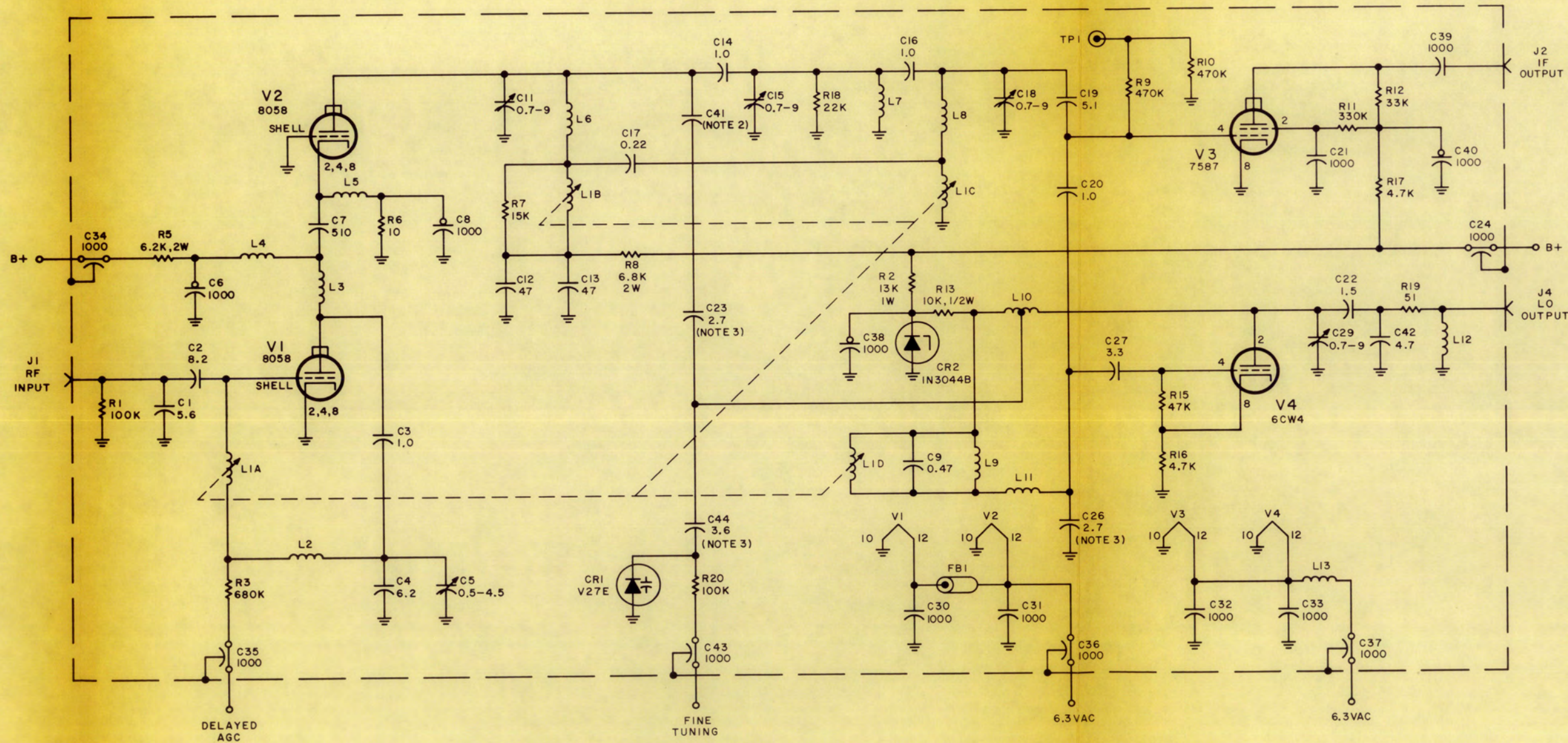
NOTE:
1. SCHEMATIC REF 21671.

2	10036DAP	TRANSIPAD	M. ROSS	1
1	14636	PRINTED CIRCUIT	CEI	1
ITEM	PART NO.	DESCRIPTION		QTY
ORIGINAL JOB NO 2198		COMMUNICATION CEI ELECTRONICS, INC. ROCKVILLE, MARYLAND MANUFACTURER'S CODE NO. 14632		
UNIT	NEXT ASS'Y NO			
975-68		AFC AMPLIFIER PRINTED CIRCUIT ASS'Y		
		MATERIAL: _____		
		FINISH: FLOW SOLDER		
APPROVED FOR SAMPLES		D 17 5 Dec 67	C	SCALE NONE REV
APPROVED FOR PRODUCTION		DWG. LIST		79407
R. J. [Signature] 14 DEC 67				

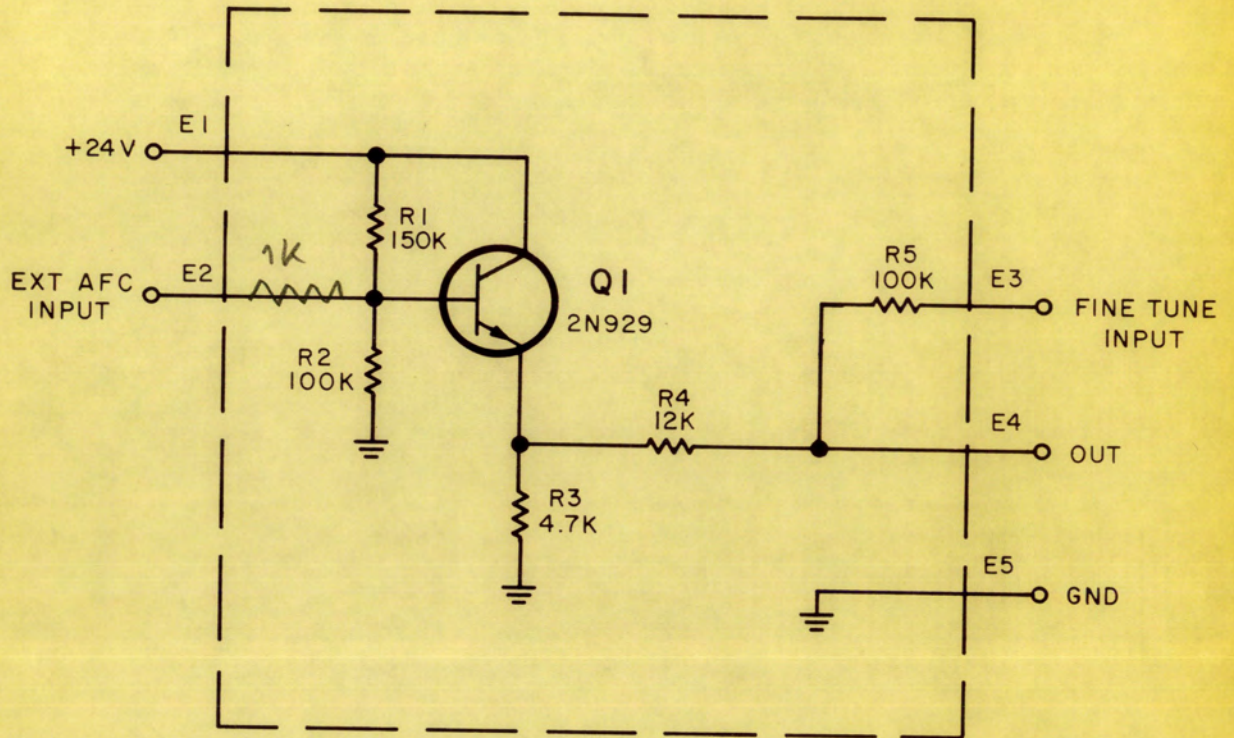
DO NOT SCALE DRAWING
TOLERANCES UNLESS OTHERWISE SPECIFIED.
FRACTIONS ±.015
2 PLACE DECIMALS ±.010
3 PLACE DECIMALS ±.005
4 PLACE DECIMALS ±.0005
ANGLES ±30'



NOTES:
 1. UNLESS OTHERWISE SPECIFIED:
 a) RESISTANCE IS MEASURED IN OHMS, ±5%, 1/4W.
 b) CAPACITANCE IS MEASURED IN pF.
 2. NOMINAL VALUE; FINAL VALUE TO BE FACTORY SELECTED.



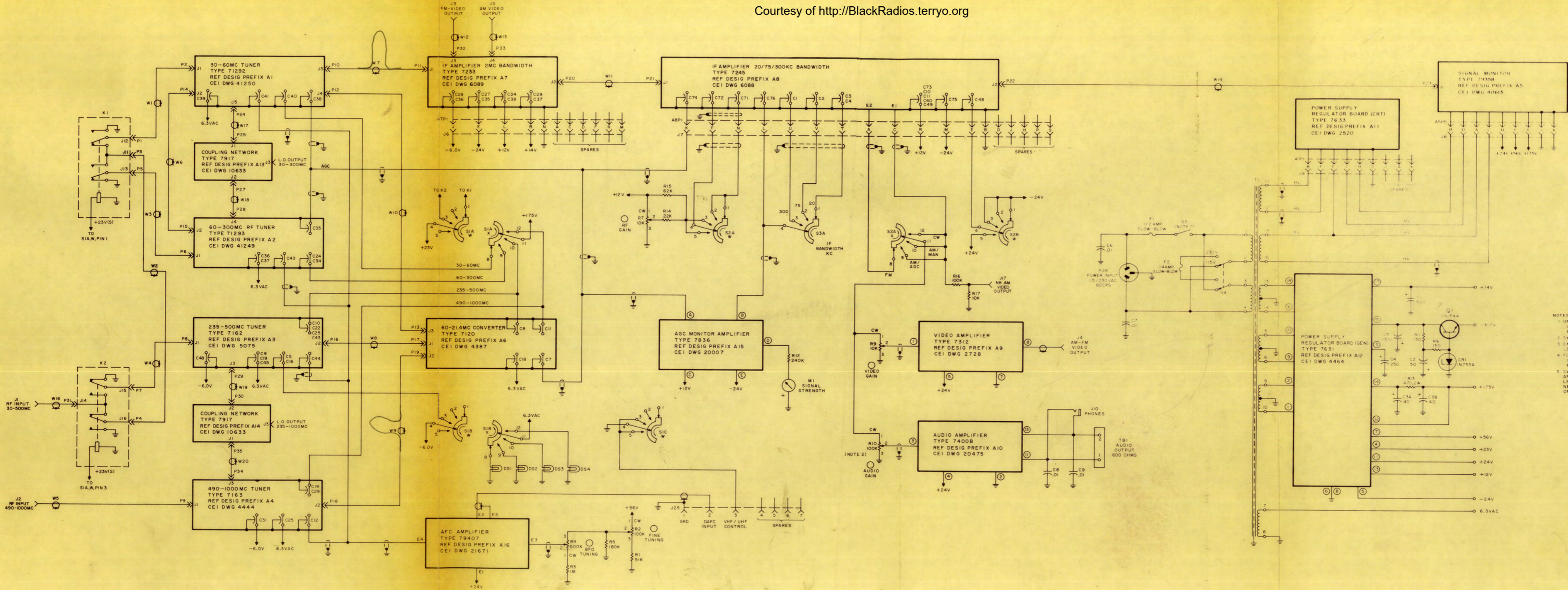
- NOTES:
1. UNLESS OTHERWISE SPECIFIED:
 - a) RESISTANCE IS MEASURED IN OHMS, $\pm 5\%$, 1/4W.
 - b) CAPACITANCE IS MEASURED IN pF.
 2. PART OF CIRCUIT BOARD, CE1 TYPE 1101.
 3. NOMINAL VALUE; FINAL VALUE TO BE FACTORY SELECTED.



NOTES:

I. UNLESS OTHERWISE SPECIFIED:

a. RESISTANCE IS MEASURED IN OHMS, $\pm 5\%$, 1/4W.



- NOTES
- 1 UNLESS OTHERWISE SPECIFIED: RESISTANCE IS MEASURED IN OHMS, ± 5%, 1/4W. CAPACITANCE IS MEASURED IN μF.
 - 2 SWITCH S5 IS GANGED WITH AUDIO GAIN CONTROL. R10 LETTERS ARE FOR REFERENCE ONLY.
 - 3 ENCLOSED NUMBERS ARE MODULE PIN NUMBERS. ENCLOSED LETTERS ARE FOR REFERENCE ONLY.
 - 4 FOLLOWING NOTATIONS ARE USED ON POTENTIOMETERS:
 a) CW INDICATES CLOCKWISE ROTATION OF CONTROL KNOB.
 b) CCW INDICATES COUNTERCLOCKWISE ROTATION OF CONTROL KNOB.
 c) ARROW INDICATES FRONT PANEL CONTROL.
 - 5 SWITCHES S1, S2, S3 ARE SHOWN IN EXTREME CCW POSITION AND ARE VIEWED FROM END OPPOSITE CONTROL KNOB. LETTERS W, X, DENOTE SEGMENTS OF WAFER. SECTION A IS NEAREST CONTROL KNOB. ARROW INDICATES CW ROTATION OF CONTROL KNOB.