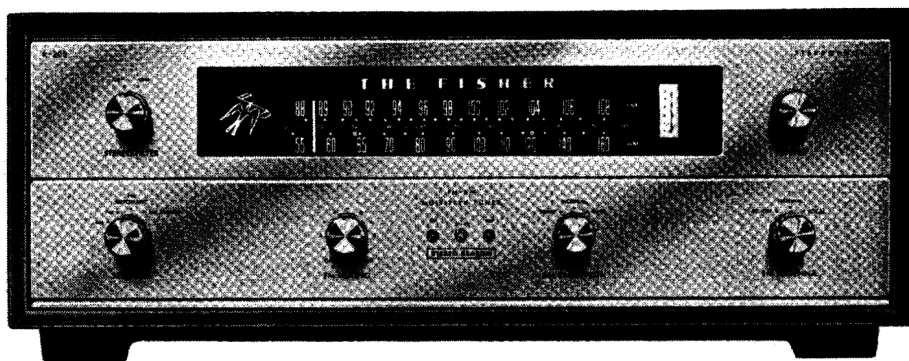


THE FISHER R-200 SERVICE MANUAL



MODEL R-200

FISHER RADIO CORPORATION • NEW YORK



CHASSIS SERIAL NUMBERS
FROM 10001 TO 19999 INCLUSIVE

THE FISHER R-200



ALIGNMENT INSTRUCTIONS

AM

STEPS	CHASSIS			SIGNAL GENERATOR			MEASURING INSTRUMENT	ALIGNMENT	
	AM BANDWIDTH	SELECTOR	STATION SELECTOR	COUPLING	FREQ.	MOD.	TYPE CONNECTION	ADJUST	INDICATION
1	SHARP	AM	Point of no signal and no interference	Audio Gen. with 1V output connected thru 100K resistor to junction of R53 and R54	10 KC	None	AC VTVM to Left Main output	—	Minimum output between 9.5 and 10.5 KC
2	SHARP	AM	Point of no signal and no interference	AM RF Gen. connected thru .01-uf cap. in series with hot lead to V9, Pin 7	455 KC	30% AM at 400 cps.	DC VTVM to the junction of R53 and R54	Z6, Z4, Z2 top & bottom	Maximum negative voltage
3	NORMAL	AM	Point of no signal and no interference	AM Sweep Gen. connected thru .01-uf cap. in series with hot lead to V9, Pin 7	455 KC	30 KC sweep	Scope to Left Main output	Z6 bottom	Adjust slightly for symmetrical curve
4	SHARP	AM	600 KC	AM Gen. connected thru 220-uuf cap. in series with hot lead to AM antenna terminal	600 KC	30% AM at 400 cps.	Scope to Left Main output. DC VTVM to the junction of R53 and R54	L8, L3, L1	Check for sine waveform and maximum negative voltage
5	SHARP	AM	1400 KC	AM Gen. connected thru 220-uuf cap. in series with hot lead to AM antenna terminal	1400 KC	30% AM at 400 cps.	Scope to Left Main output. DC VTVM to the junction of R53 and R54	C23J, C23G, C23D	Check for sine waveform and maximum negative voltage

6 Repeat steps 4 and 5 for proper dial calibration and maximum output.

NOTE: For steps 1 to 3 remove Tube V1.

FM

1	FM Muting switch OFF	FM	Point of no signal and no interference	FM Generator connected to Pin 1 of V5	10.7 MC	None	Connect VTVM to TSP 3	Z7, Z8 top, Z9 bottom & top	Voltage between —15 and —30 volts. See Note 3.
2	FM Muting switch OFF	FM	Point of no signal and no interference	FM Generator connected to Pin 1 of V5	10.7 MC	None	Hot lead of DC VTVM to TSP 4. Ground lead of VTVM to junction of two series-connected 47K resistors wired between TSP 3 and gnd.	Z9 top	Zero reading on zero center scale
3	FM Muting switch OFF	FM	Point of no signal and no interference	FM Gen. connected to ungrounded tube shield of V2	10.7 MC	None	DC VTVM to TSP 2	Z5, Z3, Z1 top & bottom	With DC voltage between —0.5 and —1 volt, adjust for maximum
4	FM Muting switch OFF	FM	90 MC	FM Gen. connected thru two 120-ohm carbon resistors in series with lead to FM antenna terminals	90 MC	30% FM (22.5 KC Dev.) at 400 cps.	DC VTVM to TSP 2 and scope to Left Main output	L9, L6, L5, L2	Check for sine waveform and adjust for maximum negative voltage
5	FM Muting switch OFF	FM	106 MC	FM Gen. connected thru two 120-ohm carbon resistors in series with lead to FM antenna terminals	106 MC	30% FM (22.5 KC Dev.) at 400 cps.	DC VTVM to TSP 2 and scope to Left Main output	C32, C26, C20	Check for sine waveform and adjust for maximum negative voltage

6 Repeat steps 4 and 5 for proper dial calibration and maximum output.

Read These Instructions With Extreme Care Before Attempting Alignment.

CHASSIS: Turn the station selectors completely counter-clockwise, without forcing. Dial pointer should be at zero mark on logging scale. If not, reset the dial pointer. Disconnect the external antennas and the AM antenna link. Swing AM Ferrite Loop antenna rearward to operating position. When using an oscilloscope for alignment, set the output level controls for no overload, as shown by the proper waveform shape. Set FM Antenna switch to NORMAL.

SIGNAL GENERATORS: The signal generator equipment must be able to supply the following: FM RF 22.5 KC deviation at 400 cps; AM RF modulated 30% at 400 cps; AM IF with 30 KC sweep for AM bandwidth adjustment; audio oscillator accurately calibrated for 1 and 10 KC audio output for testing the 10 KC AM whistle filter.

MEASURING INSTRUMENTS: DC VTVM, AC VTVM, and scope for alignment.

ALIGNMENT: Allow the chassis and test instruments to warm up for at least fifteen minutes. Adjust the line voltage for 117 volts AC, 50-60 cycles. Use fully insulated tools; a small screwdriver for all trimming capacitors; a K-tran tool for Z1, Z2, Z3, Z4, Z5 and Z6; a hex tool for Z7, Z8, Z9, L2, L3, L5, L6, L8, L9 and L14.

NOTES:

- 1 — For AM alignment short out C91.
- 2 — For calibrating both the AM and FM-RF, use as low an output voltage as possible from your signal generator.
- 3 — Decrease FM signal generator output while adjusting FM-IF transformers so that DC VTVM shows noted voltage.
- 4 — The center frequency should be kept constant for FM-IF, limiter and ratio detector alignment.
- 5 — If adjustment of muting oscillator is necessary, adjust it for 3 MC with a Grid-dip Meter.

ALIGNMENT INSTRUCTIONS • MULTIPLEX SECTION

STEPS	GENERATOR			INDICATOR	ALIGNMENT		
	CONNECTION	AUDIO FREQUENCY	RF MODULATION	TYPE & CONNECTION	ADJUST	INDICATION	NOTES
1	Audio oscillator connected to lug 1	80 KC—1 volt	None	AC VTVM to junction of C210 and R228	L100 (Use hex alignment tool)	Minimum voltage	
2	Multiplex generator audio output to lug 1 (See Note 1)	19 KC (± 5 cps) pilot tone, 100 mv	None	DC VTVM to T.S.P. 101	Z100 top and bottom (Use hex alignment tool)	Maximum voltage	1
3	Same as Step 2	19 KC pilot tone, 50 mv	None	Scope horiz. input to 19 KC output of gen.; vert. input to junction of C216 and R209. External sweep	Z101 (Use K-tran alignment tool)	Stable 2:1 Lissajous pattern. Disregard phase of pattern	1
4	Same as Step 2	19 KC	None	Same as Step 3	Vary generator 19 KC output from 50 to 200 mv	Lissajous pattern should remain stationary over the entire 150 mv range	1, 2
5	Same as Step 2	1000 cps on left (A) channel only, 1 volt rms (2.8 P-P)	None	AC VTVM and scope vert. input to channel A output lug. Internal sweep. DC VTVM to T.S.P. 101	Z100 top (Use hex tool)	Maximum indication on AC VTVM. Clean 1000 cps waveform on scope	1, 3
6	Same as Step 2	1000 cps on right (B) channel only, 1 volt rms (2.8 P-P)	None	Same as Step 5	MPX separation R215	Minimum reading on AC VTVM should be at least 33 db below reading obtained in Step 5	1
7	Same as Step 2	Same as Step 6	None	Move scope input and AC VTVM to channel B output lug	-----	Note and record voltage reading on AC VTVM	1
8	Same as Step 2	1000 cps on left (A) channel only, 1 volt rms (2.8 P-P)	None	Same as Step 7	-----	AC VTVM reading should be at least 33 db below reading observed in Step 7	1
9	Same as Step 2	8000 cps on right (B) channel only, 1 volt rms (2.8 P-P)	None	Same as Step 7	-----	AC VTVM reading should be the same as observed in Step 7	1
10	Same as Step 2	8000 cps on left (A) channel only, 1 volt rms (2.8 P-P)	None	Same as Step 7	-----	AC VTVM reading should be at least 18 db below reading observed in Step 9	1
11	Repeat Steps 9 and 10 with scope and AC VTVM connected to channel A output lug, but start with 8000 cps applied to left channel for first reading, then switch to right channel for second reading.						
12	Multiplex generator RF output to 300-ohm antenna terminals	1000 cps on left (A) channel only	100% (75 KC Dev.) No pre-emphasis	Move scope input and AC VTVM to channel A output lug	-----	Note and record voltage reading on AC VTVM	4
13	Same as Step 12	1000 cps on right (B) channel only	Same as Step 12	Same as Step 12	R215	Minimum reading on AC VTVM should be at least 33 db below reading observed in Step 12	4
14	Same as Step 12	8000 cps on left (A) channel only	Same as Step 12	Same as Step 12	-----	AC VTVM reading should be 10 db below reading observed in Step 12	4
15	Same as Step 12	8000 cps on right (B) channel only	Same as Step 12	Same as Step 12	-----	AC VTVM reading should be 28 db below reading observed in Step 12	4

NOTE: The above procedure is based on the use of the FISHER Model 300 Multiplex Generator.

1 — In steps 2 through 11, the audio output of the Multiplex Generator should be connected to lug 1 of the multiplex sub-chassis through a 12,000 ohm, ½-watt, carbon resistor, and a 180 uuf capacitor should be connected between lug 1 and ground. The wiring from the MPX TEST jack on the main chassis to lug 1 must be disconnected during Steps 2 through 11.

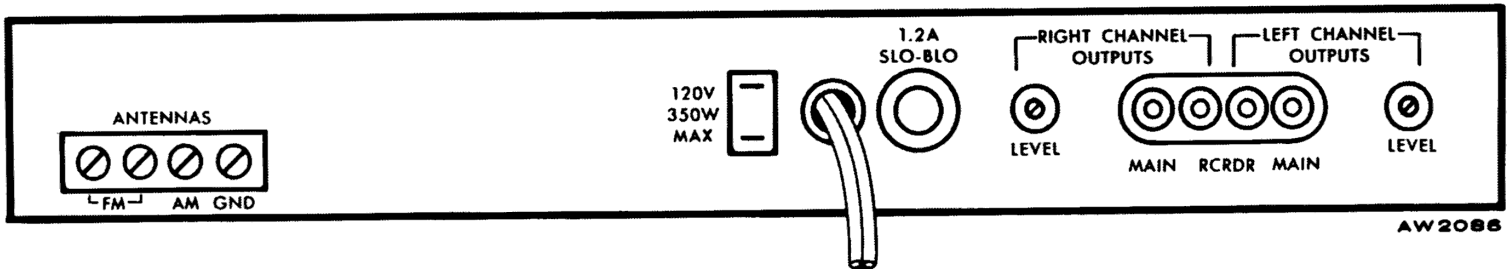
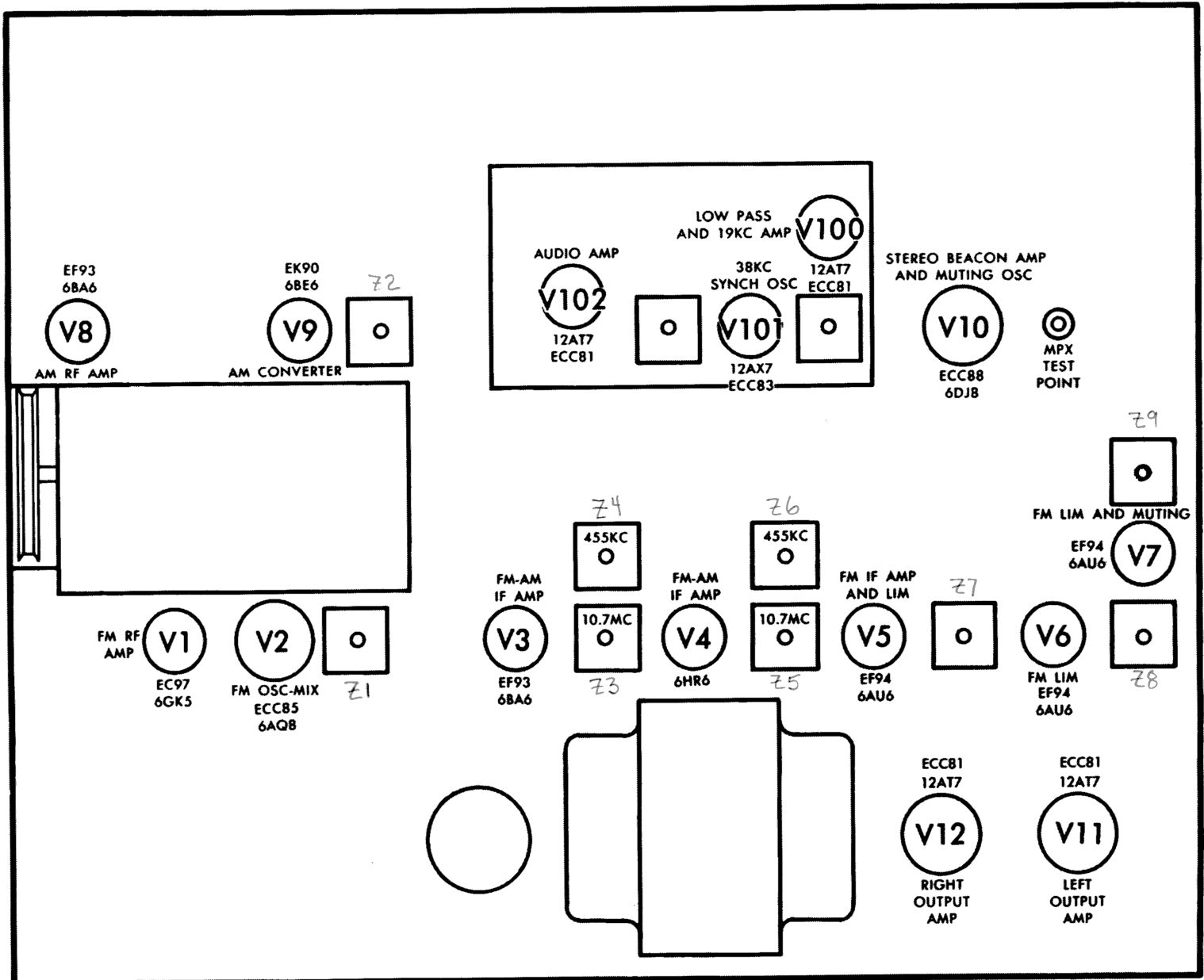
2 — The vertical amplitude of the Lissajous pattern will increase slightly

as the generator output is increased. This is a normal occurrence.

3 — If DC VTVM reading falls below -9 volts when maximum reading is obtained on the AC VTVM, readjust bottom of Z100, then repeat Step 5. Repeat this procedure until maximum AC VTVM reading is obtained with DC VTVM reading greater than -9 volts.

4 — Tune the FISHER to the RF output frequency of the Multiplex Generator.

TUBE LAYOUT



PARTS DESCRIPTION LIST

CAPACITORS

10% tolerance for all fixed capacitors, unless otherwise noted or marked GMV (guaranteed minimum value). All capacitors not marked uf are pf (uuf).

Symbol	Description	Part No.	Symbol	Description	Part No.
C1	Ceramic, 4, NPO, 1000V	C50070-36	C64	Ceramic, 5000, +80 -20%, 500V	C50089-6
C2, 3	Mylar, .1uf, 250V	C50197-54	C65	Ceramic, 100, N1500, 1000V	C50070-6
C4	Ceramic, 10, NPO, 1000V	C50070-11	C66, 67,		
C5	Ceramic, 47, 5%, N750, 1000V	C50070-29	68	Ceramic, 5000, +80 -20%, 500V	C50089-6
C6	Ceramic, .02uf, +80 -20%, 500V	C50089-4	C69	Ceramic, 2700, 1000V	C50072-17
C7, 8	Ceramic, 5000, 20%, 500V	C50089-1	C70	Ceramic, 7, NPO, 1000V	C50070-20
C9, 10	Ceramic, 390, 1000V	C50072-6	C71	Ceramic, 5000, +80 -20%, 500V	C50089-6
C11	Ceramic, 1000, GMV, 500V	C50089-2	C72	Ceramic, Feedthru, 1000, GMV	C592-187
C12	Ceramic, Feedthru, 1000, GMV	C592-187	C73	Ceramic, 5000, +80 -20%, 500V	C50089-6
C13	Ceramic, .02uf, +80 -20%, 500V	C50089-4	C74	Ceramic, .02uf, GMV, 1000V	C50071-6
C14	Ceramic, Feedthru, 1000, GMV	C592-187	C75	Ceramic, 12, NPO, 1000V	C50070-12
C15	Ceramic, 7±.5, NPO, 500V	CC20CJ070D5	C76	Ceramic, .05uf, +80 -20%, 100V	C50073-2
C16	Electrolytic, 20uf, 250V	C746-145	C77	Electrolytic, 2uf, 70V	C721-142
C17, 18	Ceramic, 39, N1500, 1000V	C50070-17	C78	Ceramic, 2700, 1000	C50072-17
C19	Ceramic, 1000, GMV, 500V	C50089-2	C79	Ceramic, 5000, +80 -20%, 500V	C50089-6
C20	Ceramic, Trimmer	C662-123	C80	Ceramic, .02uf, GMV, 1000V	C50071-6
C21	Ceramic, 100, GMV, N1500, 1000V	C50070-5	C81	Electrolytic, .5uf, 350V	C50283-7
C22	Ceramic, 56, 5%, N1500, 1000V	C50070-38	C82, 83,		
C23	Variable, FM-AM	C965-115	84	Ceramic, 330, 1000V	C50072-1
C24	Ceramic, 56, 5%, N1500, 1000V	C50070-38	C85	Polystyrene, 2500, 5%, 125V	CP50394-9
C25	Ceramic, .68, 500V	C50077-6N	C86	Molded, .01uf, 20%, 600V	C2747
C26	Ceramic, Trimmer	C662-123	C87	Electrolytic, 8uf, 50V	C629-138
C27	Ceramic, 8±.5, NPO, 500V	CC20CJ080D5	C88	Mylar, .1uf, 125V	C50435-7
C28	Ceramic, 68, N750, 500V	CC20UJ680K5	C89	Ceramic, .05uf, +80 -20%, 100V	C50073-2
C29	Ceramic, .02uf, +80 -20%, 500V	C50089-4	C90	Ceramic, Feedthru, 1000, GMV	C592-187
C30, 31	Ceramic, 100, N1500, 1000V	C50070-6	C91	Ceramic, .05uf, +80 -20%, 100V	C50073-2
C32	Ceramic, Trimmer	C662-123	C92	Polystyrene, 470, 2.5%, 125V	CP50394-6
C33	Ceramic, 24, 5%, N150, 1000V	C50070-8	C93	Ceramic, 2700, 1000V	C50072-17
C34	Ceramic, 100, 5%, N1500, 1000V	C50070-19	C94, 95	Mylar, .1uf, 125V	C50435-7
C35	Polystyrene, 470, 2.5%, 125V	CP50394-6			
C36	Ceramic, 8, NPO, 1000V	C50070-14			
C37	Ceramic, 1000, 1000V	C50072-3			
C38	Ceramic, 8±.5, N330, 500V	CC20SJ080D5			
C39, 40	Ceramic, Feedthru, 1000 GMV	C592-187			
C41	Polystyrene, 470, 2.5%, 125V	CP50394-6			
C42	Ceramic, 5000, +80 -20%, 500V	C50089-6			
C43	Ceramic, 2700, 1000V	C50072-17			
C44	Ceramic, 5000, +80 -20%, 500V	C50089-6			
C45	Polystyrene, 470, 2.5%, 125V	CP50394-6			
C46	Ceramic, 560, 1000V	C50072-14			
C47	Ceramic, .02uf, +80 -20%	C50089-4			
C48	Ceramic, 10, 5%, NPO, 1000V	C50070-39			
C49	Ceramic, 5000, +80 -20%, 500V	C50089-6			
C50	Ceramic, 1, 20%, 1000V	C50070-1			
C51	Ceramic, 100, N1500, 1000V	C50070-6			
C52	Polystyrene, 1000, 5%, 125V	CP50394-7			
C53	Ceramic, .05uf, +80 -20%, 100V	C50073-2			
C54	Ceramic, 24, 5%, N150, 1000V	C50070-8			
C55	Ceramic, 5000, +80 -20%, 500V	C50089-6			
C56	Ceramic, 2700, 1000V	C50072-17			
C57	Ceramic, .02uf, GMV, 1000V	C50071-6			
C58, 59,					
60	Ceramic, 5000, +80 -20%, 500V	C50089-6			
C61	Ceramic, .05uf, +80 -20%, 100V	C50073-2			
C62	Ceramic, 100, N1500, 1000V	C50070-6			
C63	Electrolytic, 4 section:	C670-125B			

RESISTORS AND POTENTIOMETERS

In ohms, 5% tolerance, 1/8 watt, unless otherwise noted. K=Kilohms, M=Megohms.

Symbol	Description	Part No.
R1	Composition, 3.3, 10%, 1/2 W	RC20BF3R3K
R2	Composition, 270, 10%, 1/2 W	RC20BF271K
R3	Composition, 2.7K, 10%, 1/2 W	RC20BF272K
R4	Dep. Carbon, 1.5M, 1/3 W	R33DC155J
R5, 6	Dep. Carbon, 100K, 1/3 W	R33DC104J
R7	Composition, 100K, 10%, 1/2 W	RC20BF104K
R8	Composition, 270, 10%, 1/2 W	RC20BF271K
R9	Dep. Carbon, 1.8M, 1/3 W	R33DC185J
R10, 11	Composition, 22M, 10%, 1/2 W	RC20BF226K
R12	Composition, 100, 10%, 1/2 W	RC20BF101K
R13	Dep. Carbon, 47	R12DC470J
R14	Dep. Carbon, 1.8M, 1/3 W	R33DC185J
R15, 16	Composition, 150K, 10%, 1/2 W	RC20BF154K
R17	Composition, 47K, 10%, 1/2 W	RC20BF473K
R18	Dep. Carbon, 100K	R12DC104J
R19	Dep. Carbon, 100K, 1/3 W	R33DC104J
R20	Composition, 680, 10%, 1/2 W	RC20BF681K
R21	Dep. Carbon, 100K, 1/3 W	R33DC104J
R22	Composition, 680, 10%, 1/2 W	RC20BF681K
R23, 24	Dep. Carbon, 100K, 1/3 W	R33DC104J
R25	Dep. Carbon, 330K	R12DC334J
R26	Composition, 2.2K, 10%, 1/2 W	RC20BF222K
R27, 28	Dep. Carbon, 470K, 1/3 W	R33DC474J
R29	Potentiometer, 500K, Left Output Level	R50103-6

PARTS DESCRIPTION LIST

<p>R30 Dep. Carbon, 560K R31 Dep. Carbon, 22K R32 Dep. Carbon, 470K R33 Dep. Carbon, 27 R34 Dep. Carbon, 3.9M, 1/3 W R35 Composition, 18K, 10%, 1W R36 Dep. Carbon, 2.7K R37 Composition, 1K, 10%, 1/2 W R38 Dep. Carbon, 47K R39 Composition, 1K, 10%, 1/2 W R40 Composition, 3.3K, 10%, 1W R41 Composition, 150, 10%, 1/2 W R42 Composition, 27K, 10%, 1/2 W R43 Dep. Carbon, 47K R44 Composition, 1K, 10%, 1/2 W R45 Composition, 180, 10%, 1/2 W R46 Dep. Carbon, 820K R47 Dep. Carbon, 47K R48 Composition, 27K, 10%, 1/2 W R49 Potentiometer, 500K, Right Output Level R50 Composition, 1K, 10%, 1/2 W R51 Composition, 82K, 10%, 1/2 W R52 Potentiometer, 100K, Muting R53 Dep. Carbon, 47K R54 Dep. Carbon, 27K R55 Dep. Carbon, 1.8K R56 Dep. Carbon, 68K R57 Composition, 68K, 10%, 1/2 W R58 Dep. Carbon, 1M R59 Dep. Carbon, 15K R60 Composition, 1K, 10%, 1/2 W R61 Dep. Carbon, 1M R62 Dep. Carbon, 100K R63 Dep. Carbon, 220K R64 Composition, 2.2K, 10%, 1/2 W R65 Dep. Carbon, 22K R66 Glass, 270, 10%, 3W R67 Dep. Carbon, 120 R68 Composition, 470K, 10%, 1/2 W R69 Glass, 270, 10%, 3W R70 Composition, 56K, 10% R71 Dep. Carbon, 1M R72 Composition, 1K, 10%, 1/2 W R73 Composition, 18K, 10%, 1/2 W R74 Composition, 150, 10%, 1/2 W R75 Dep. Carbon, 1K R76 Dep. Carbon, 82K R77, 78 Composition, 220, 10%, 1/2 W R79 Dep. Carbon, 47K R80 Dep. Carbon, 270K R81 Dep. Carbon, 820K R82 Dep. Carbon, 56K R83 Composition, 47K, 10%, 1/2 W R84 Dep. Carbon, 820K R85 Composition, 1K, 10%, 1/2 W R86, 87 Dep. Carbon, 820K R88 Dep. Carbon, 150K R89 Dep. Carbon, 100K R90 Dep. Carbon, 470K R91 Composition, 1.5K, 5%, 1/2 W R92 Composition, 1K, 5%, 1/2 W R93 Composition, 270, 5%, 1/2 W R94 Dep. Carbon, 47K</p>	<p>R12DC564J R12DC223J R12DC474J R12DC270J R33DC395J RC30BF183K R12DC272J RC20BF102K R12DC473J RC20BF102K RC30BF332K RC20BF151K RC20BF273K R12DC473J RC20BF102K RC20BF181K R12DC824J R12DC473J RC20BF273K R50703-6 RC20BF102K RC20BF823K R50160-106 R12DC473J R12DC273J R12DC182J R12DC683J RC20BF683K R12DC105J R12DC153J RC20BF102K R12DC105J R12DC104J R12DC224J RC20BF222K R12DC223J RPG3W271K R12DC121J RC20BF474K RPG3W271K RC20BF563K R12DC105J RC20BF102K RC20BF183K RC20BF151K R12DC102J R12DC823J RC20BF221K R12DC473J R12DC274J R12DC824J R12DC563J RC20BF473K R12DC824J RC20BF102K R12DC824J R12DC154J R12DC104J R12DC474J RC20BF152J RC20BF102J RC20BF271J R12DC473J</p>	<p>R95 Composition, 820K, 10%, 1/2 W R96 Dep. Carbon, 15K R97 Dep. Carbon, 470K R98 Composition, 330 R99 Dep. Carbon, 1.8M, 1/3 W R100 Dep. Carbon, 1K</p> <p style="text-align: center;">COILS, CHOKES AND TRANSFORMERS</p> <table border="0" style="width: 100%;"> <thead> <tr> <th style="text-align: left;">Symbol</th> <th style="text-align: left;">Description</th> <th style="text-align: left;">Part No.</th> </tr> </thead> <tbody> <tr><td>L1</td><td>AM Loop Antenna</td><td>L990-132</td></tr> <tr><td>L2</td><td>Coil, FM Antenna</td><td>L965-119</td></tr> <tr><td>L3</td><td>Transformer, AM RF</td><td>L50210-35</td></tr> <tr><td>L4</td><td>Choke, 1.5 Microhenry</td><td>L50066-4</td></tr> <tr><td>L5</td><td>Coil, FM RF</td><td>L965-116</td></tr> <tr><td>L6</td><td>Coil, FM Mixer</td><td>L965-117</td></tr> <tr><td>L7</td><td>Choke, 1 Microhenry</td><td>L50066-2</td></tr> <tr><td>L8</td><td>Coil, AM OSC.</td><td>L50210-28</td></tr> <tr><td>L9</td><td>Coil, FM OSC Assembly</td><td>AS965-120</td></tr> <tr><td>L10, 11,</td><td></td><td></td></tr> <tr><td>12</td><td>Choke, 1 Microhenry</td><td>L50066-2</td></tr> <tr><td>L13</td><td>Coil, 10KC Filter</td><td>L644-120</td></tr> <tr><td>L14</td><td>Coil, Muting OSC</td><td>L50210-22</td></tr> <tr><td>L15</td><td>Choke, 3.3 Microhenries</td><td>L50066-8</td></tr> <tr><td>L16</td><td>Choke, 1 Microhenry</td><td>L50066-2</td></tr> <tr><td>L17, 18, 19,</td><td></td><td></td></tr> <tr><td>20, 21, 22,</td><td></td><td></td></tr> <tr><td>23, 24</td><td>Choke, Ferrite Bead</td><td>L592-189</td></tr> <tr><td>T1</td><td>Transformer, Power</td><td>T1016-115</td></tr> <tr><td>Z1</td><td>Transformer, FM I.F.</td><td>ZZ50210-42</td></tr> <tr><td>Z2</td><td>Transformer, AM I.F.</td><td>ZZ50210-38</td></tr> <tr><td>Z3</td><td>Transformer, FM I.F.</td><td>ZZ50210-39</td></tr> <tr><td>Z4</td><td>Transformer, AM I.F.</td><td>ZZ50210-38</td></tr> <tr><td>Z5</td><td>Transformer, FM I.F.</td><td>ZZ50210-2</td></tr> <tr><td>Z6</td><td>Transformer, AM I.F.</td><td>ZZ50210-40</td></tr> <tr><td>Z7, 8</td><td>Coil, FM Limiter</td><td>ZZ50210-6</td></tr> <tr><td>Z9</td><td>Transformer, FM Ratio Detector</td><td>ZZ50210-9</td></tr> </tbody> </table> <p style="text-align: center;">MISCELLANEOUS</p> <table border="0" style="width: 100%;"> <thead> <tr> <th style="text-align: left;">Symbol</th> <th style="text-align: left;">Description</th> <th style="text-align: left;">Part No.</th> </tr> </thead> <tbody> <tr><td>CR1, 2, 3</td><td>Diode, Type 1112</td><td>V-1112</td></tr> <tr><td>CR4</td><td>Selenium Rectifier Bridge</td><td>SR50253-4</td></tr> <tr><td>CR5, 6, 7, 8</td><td>Diode, Type 1112</td><td>V-1112</td></tr> <tr><td>F1</td><td>Fuse, 1.2A; Slo-Blo</td><td>F1016-119</td></tr> <tr><td>11, 2, 3</td><td>Bulb #47</td><td>I50009-1</td></tr> <tr><td>I4</td><td>Bulb #470F</td><td>I50009-4</td></tr> <tr><td>15, 6</td><td>Bulb, Dial</td><td>I50082-6</td></tr> <tr><td>M1</td><td>Meter</td><td>M766-137</td></tr> <tr><td>RL1</td><td>Relay</td><td>K50314</td></tr> <tr><td>PC1</td><td>Printed Circuit</td><td>PC50434</td></tr> <tr><td>S1</td><td>Switch, FM Antenna</td><td>S1016-117</td></tr> <tr><td>S2</td><td>Switch, AM Bandwidth</td><td>S1016-118</td></tr> <tr><td>S3</td><td>Switch, Selector</td><td>S1016-116</td></tr> <tr><td>S4</td><td>Switch, Muting</td><td>Part of R52</td></tr> <tr><td>S5</td><td>Switch, Filter</td><td>S1016-113</td></tr> <tr><td>—</td><td>Dress Panel</td><td>AS1016-108</td></tr> <tr><td>—</td><td>FM Dipole</td><td>AS50227-1</td></tr> <tr><td>—</td><td>Tube Shield, 7-Pin</td><td>E3330</td></tr> <tr><td>—</td><td>Tube Shield, 9-Pin</td><td>E3287</td></tr> <tr><td>—</td><td>Knob</td><td>E50325-1</td></tr> <tr><td>—</td><td>Knob, Tuning</td><td>E50325-2</td></tr> <tr><td>—</td><td>Jewel, Red</td><td>I50162-1</td></tr> <tr><td>—</td><td>Jewel, Yellow</td><td>I50162-2</td></tr> <tr><td>—</td><td>Jewel, Green</td><td>I50162-4</td></tr> </tbody> </table>	Symbol	Description	Part No.	L1	AM Loop Antenna	L990-132	L2	Coil, FM Antenna	L965-119	L3	Transformer, AM RF	L50210-35	L4	Choke, 1.5 Microhenry	L50066-4	L5	Coil, FM RF	L965-116	L6	Coil, FM Mixer	L965-117	L7	Choke, 1 Microhenry	L50066-2	L8	Coil, AM OSC.	L50210-28	L9	Coil, FM OSC Assembly	AS965-120	L10, 11,			12	Choke, 1 Microhenry	L50066-2	L13	Coil, 10KC Filter	L644-120	L14	Coil, Muting OSC	L50210-22	L15	Choke, 3.3 Microhenries	L50066-8	L16	Choke, 1 Microhenry	L50066-2	L17, 18, 19,			20, 21, 22,			23, 24	Choke, Ferrite Bead	L592-189	T1	Transformer, Power	T1016-115	Z1	Transformer, FM I.F.	ZZ50210-42	Z2	Transformer, AM I.F.	ZZ50210-38	Z3	Transformer, FM I.F.	ZZ50210-39	Z4	Transformer, AM I.F.	ZZ50210-38	Z5	Transformer, FM I.F.	ZZ50210-2	Z6	Transformer, AM I.F.	ZZ50210-40	Z7, 8	Coil, FM Limiter	ZZ50210-6	Z9	Transformer, FM Ratio Detector	ZZ50210-9	Symbol	Description	Part No.	CR1, 2, 3	Diode, Type 1112	V-1112	CR4	Selenium Rectifier Bridge	SR50253-4	CR5, 6, 7, 8	Diode, Type 1112	V-1112	F1	Fuse, 1.2A; Slo-Blo	F1016-119	11, 2, 3	Bulb #47	I50009-1	I4	Bulb #470F	I50009-4	15, 6	Bulb, Dial	I50082-6	M1	Meter	M766-137	RL1	Relay	K50314	PC1	Printed Circuit	PC50434	S1	Switch, FM Antenna	S1016-117	S2	Switch, AM Bandwidth	S1016-118	S3	Switch, Selector	S1016-116	S4	Switch, Muting	Part of R52	S5	Switch, Filter	S1016-113	—	Dress Panel	AS1016-108	—	FM Dipole	AS50227-1	—	Tube Shield, 7-Pin	E3330	—	Tube Shield, 9-Pin	E3287	—	Knob	E50325-1	—	Knob, Tuning	E50325-2	—	Jewel, Red	I50162-1	—	Jewel, Yellow	I50162-2	—	Jewel, Green	I50162-4
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PARTS DESCRIPTION LIST • MULTIPLEX SECTION

CAPACITORS

10 % tolerance for all fixed capacitors, unless otherwise noted or marked GMV (guaranteed minimum value). All capacitors not marked uf are pF (uuf).

Symbol	Description	Part No.
C200	Ceramic, .01uf, +80 — 20 %, 500V	C50089-7
C201	Ceramic, 680, 1000V	C50072-2
C203	Ceramic, 220, 1000V	C50183-3
C204	Polystyrene, 470, 5 %, 500V	C50394-1
C205	Ceramic, 82, N1500, 1000V	C50070-7
C206	Ceramic, .001uf, GMV, 500V	C50089-2
C207	Ceramic, .005uf, +80 — 20 %, 500V	C50089-6
C208, 209	Mica, 4700, 5 %, 500V	C50332-5
C210	Electrolytic, 1uf, 350V	C50283-3
C211, 212	Ceramic, .001uf, GMV, 500V	C50089-2
C213	Ceramic, .05uf, +80 — 20 %, 100V	C50073-2
C214	Mylar, .0047uf, 400V	C50197-25
C215	Mica, 3900, 5 %, 500V	C50332-6
C216, 217	Ceramic, .001uf, GMV, 500V	C50089-2
C218	Ceramic, .02uf, 20 %, 500V	C50089-5
C219	Ceramic, 330, 1000V	C50072-1
C220	Ceramic, .02uf, 20 %, 500V	C50089-5
C221, 222	Mylar, .047uf, 10 %, 250V	C50197-52
C223, 224	Ceramic, .001uf, 1000V	C50072-3
C225, 226	Ceramic, 2200, 1000V	C50072-5

RESISTORS AND POTENTIOMETERS

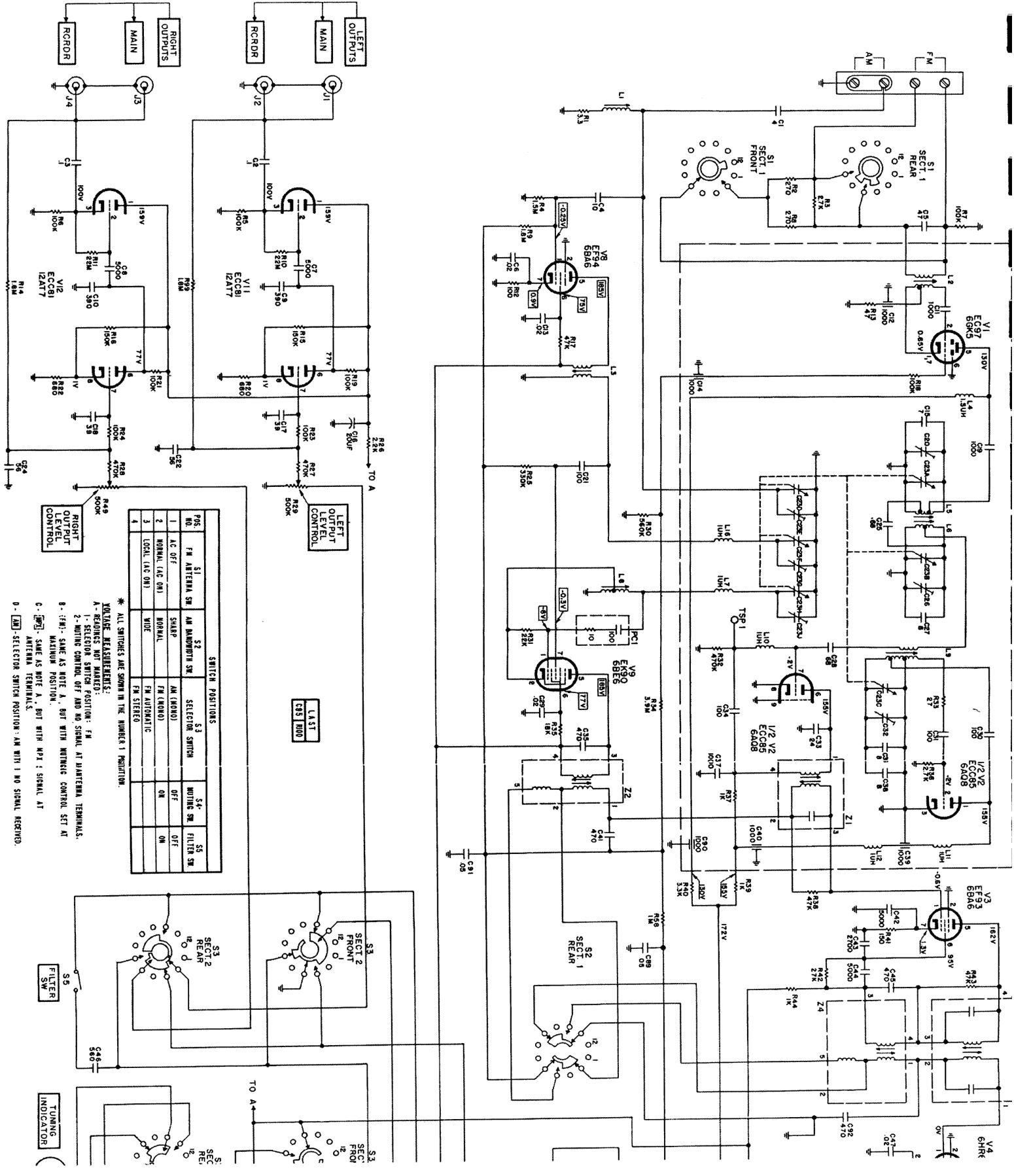
In ohms, 10 % tolerance, 1/2 watt, unless otherwise noted. K=Kilohm, M=Megohm.

Symbol	Description	Part No.
R200	Composition, 22M	RC20BF226K
R201	Composition, 4.7K, 5 %	RC20BF472J
R202	Composition, 15K, 5 %	RC20BF153J
R203	Composition, 10M	RC20BF106K
R204	Dep. Carbon, 1M, 5 %, 1/8 W	R12DC105J
R205	Dep. Carbon, 330K, 5 %, 1/3 W	R33DC334J
R206	Dep. Carbon, 1M, 5 %, 1/8 W	R12DC105J
R207	Dep. Carbon, 1.5M, 5 %, 1/3 W	R33DC155J
R208	Dep. Carbon, 22K, 5 %, 1/8 W	R12DC223J
R209, 210,		
211, 212	Dep. Carbon, 33K, 5 %, 1/8 W	R12DC333J
R213, 214	Dep. Carbon, 100K, 5 %, 1/8 W	R12DC104J
R215	Potentiometer, 50K, MPX-separation	R50150-4
R216	Composition, 10M	RC20BF106K
R217, 218	Dep. Carbon, 18K, 5 %, 1/3 W	R33DC183J
R219, 220	Dep. Carbon, 15K, 5 %, 1/3 W	R33DC153J
R221	Composition, 10M	RC20BF106K
R222, 223,		
224, 225	Dep. Carbon, 22K, 5 %, 1/8 W	R12DC223J
R226, 227,		
228, 229,		
230	Dep. Carbon, 1M, 5 %, 1/8 W	R12DC105J

MISCELLANEOUS

Symbol	Description	Part No.
CR100, 101,		
102, 103	Diode, Type 1112	V-1112
L100	Coil, Low Pass	L50210-30
L101	Coil, 5.25 M.H., 5 %	L50334-1
L102, 103	Coil, 20 M.H., 5 %	L50334-2
Z100	Transformer, 19Kc	ZZ50210-34
Z101	Coil, 38Kc	ZZ50210-33

SCHEMATIC DIAGRAM



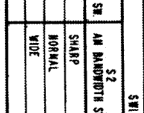
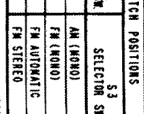
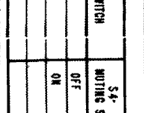
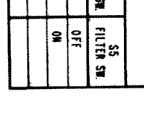
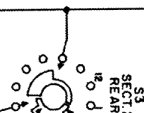
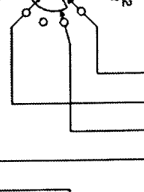
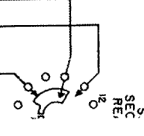
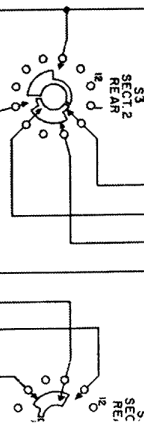
SWITCH POSITIONS

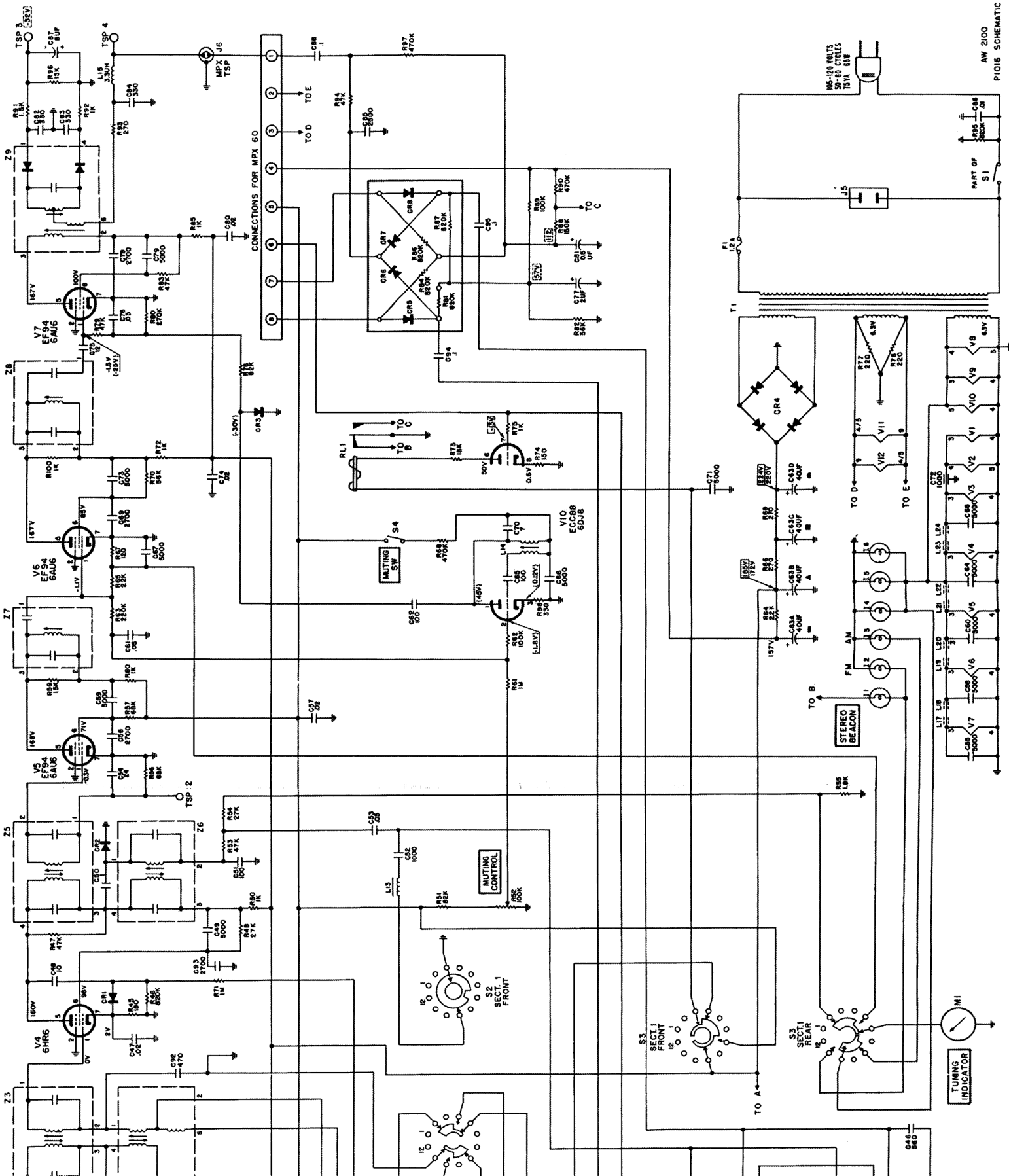
POS. NO.	S1	S2	S3	S4	S5
1	FM ANTENNA SW	AM ANTENNA SW	SELECTION SWITCH	MUSIC SW	FILTER SW
2	LC OFF	SHARP	FM (AUTO)	OFF	OFF
3	NORMAL (LC ON)	NORMAL	FM (MANUAL)	ON	ON
4	LOCAL (LC ON)	WIDE	FM AUTOMATIC	OFF	OFF

* ALL SWITCHES ARE SHOWN IN THE NUMBER 1 POSITION.

VOLTAGE MEASUREMENTS:

- A - RESOURCES NOT MADE;
- 1 - SELECTION SWITCH POSITION: FM
- 2 - MUSIC CONTROL OFF AND NO SIGNAL AT MAINTERNA TERMINALS.
- B - (FM) - SAME AS NOTE A, BUT WITH MUSIC CONTROL SET AT MAXIMUM POSITION.
- C - (FM) - SAME AS NOTE A, BUT WITH MP1; SIGNAL AT ANTENNA TERMINALS
- D - (LC) - SELECTION SWITCH POSITION: AM WITH 1 NO SIGNAL RECEIVED.





PI016 SCHEMATIC

SCHEMATIC DIAGRAM • MULTIPLEX SECTION

