



Stereophonic

THE FISHER 202-R

SERVICE

MANUAL



MODEL 202-R

CHASSIS SERIAL NUMBERS
FROM 10001 TO 19999 INCLUSIVE

PRICE: \$1.00

FISHER RADIO CORPORATION • NEW YORK

Fisher
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PARTS DESCRIPTION LIST

CAPACITORS

10% tolerance for all fixed capacitors, unless otherwise noted or marked GMV (guaranteed minimum value.)

Symbol	Description	Part No.
C1	Ceramic, 24uuf, 5%, N150, 1000V	C50070-8
C2	Molded, .01uf, 20%, 600V	C2747
C3	Variable, AM	C799-119
C4	Ceramic, 100uuf, N1500, 1000V	C50070-6
C5	Ceramic, feedthru, .001uf, GMV	C592-187
C6	Molded, .01uf, 20%, 600V	C2747
C7	Ceramic, 10uuf, ± 5 uuf, NPO, 500V	CC20CJ10005
C8	Ceramic, 100uuf, N1500, 1000V	C50070-6
C9	Electrolytic, 25uf, 6V	C639-114
C10	Ceramic, 100uuf, N1500, 1000V	C50070-6
C11	Ceramic, trimmer	C662-123
C12	Ceramic, feedthru, .001uf, GMV	C592-187
C13	Variable, FM	C726-116
C14	Ceramic, feedthru, .001uf, GMV	C592-187
C15	Ceramic, .02uf, +80 -20%, 500V	C50089-4
C16	Ceramic, feedthru, .001uf, GMV	C592-187
C17	Ceramic, 3uuf, NPO, 1000V	C50070-28
C18	Ceramic, feedthru, .001uf, GMV	C592-187
C19	Ceramic, .005uf, 20%, 500V	C50089-1
C20	Ceramic, .02uf, +80 -20%, 500V	C50089-4
C21, 22	Ceramic, trimmer	C662-123
C23	Ceramic, 10uuf, ± 5 uuf, NPO, 500V	CC20CJ10005
C24	Ceramic, 8uuf, ± 5 uuf, N220, 500V	CC20RJ08005
C25	Ceramic, .68uuf, 500V	C50077-6N
C26	Electrolytic, three section A — 40uf 300V B — 40uf 300V C — 40uf 300V	C50180-24
C27	Ceramic, feedthru, .001uf, GMV	C592-187
C28	Ceramic, .001uf, 1000V	C50072-3
C29	Ceramic, feedthru, .001uf, GMV	C592-187
C30	Ceramic, 100uuf, N1500, 1000V	C50070-6
C31	Mylar, .047uf, 250V	C50197-52
C32	Ceramic, 100uuf, N1500, 1000V	C50070-6
C33	Ceramic, 68uuf, N750, 500V	CC20UJ680K5
C34	Ceramic, 100uuf, N1500, 1000V	C50070-6
C35	Mica, 470uuf, 5%, 300V	C3334
C36	Ceramic, 47uuf, N750, 1000V	C50070-4
C37	Ceramic, 24uuf, 5%, N150, 1000V	C50070-8
C38	Ceramic, 100uuf, 5%, N1500, 1000V	C50070-19
C39	Ceramic, 100uuf, N1500, 1000V	C50070-6
C40	Ceramic, 10uuf, ± 5 uuf, NPO, 500V	CC20CJ10005
C41	Ceramic, .001uf, 1000V	C50072-3
C42, 43	Ceramic, feedthru, .001uf, GMV	C592-187
C44	Ceramic, .02uf, +80 -20%, 500V	C50089-4
C45	Mica, 470uuf, 5%, 300V	C3334
C46	Ceramic, .005uf, 20%, 500V	C50089-1
C47	Ceramic, feedthru, .001uf, GMV	C592-187
C48, 49	Ceramic, .02uf, +80 -20%, 500V	C50089-4
C50, 51	Ceramic, .005uf, 20%, 500V	C50089-1
C52	Mylar, .1uf, 250V	C50197-54
C53	Ceramic, .0027uf, 1000V	C50072-17
C54	Mica, 470uuf, 5%, 300V	C3334
C55, 56	Ceramic, .005uf, 20%, 500V	C50089-1
C57	Mylar, .047uf, 250V	C50197-52
C58	Mylar, .1uf, 250V	C50197-54
C59	Ceramic, .005uf, 20%, 500V	C50089-1
C60	Ceramic, 10uuf, ± 5 uuf, NPO, 500V	CC20CJ10005
C61	Mica, 470uuf, 5%, 300V	C3334
C62	Ceramic, .02uf, +80 -20%, 500V	C50089-4
C63	Ceramic, .0027uf, 1000V	C50072-17
C64, 65, 66, 67	Ceramic, .005uf, 20%, 500V	C50089-1
C68	Ceramic, 5uuf, ± 5 uuf, NPO, 500V	CC20CJ05005
C69	Ceramic, .005uf, 20%, 500V	C50089-1
C70	Ceramic, 100uuf, N1500, 1000V	C50070-6
C71	Ceramic, .02uf, +80 -20%, 500V	C50089-4
C72	Ceramic, 100uuf, N1500, 1000V	C50070-6

C73	Ceramic, 24uuf, 5%, N150, 1000V	C50070-8
C74	Ceramic, 560uuf, 1000V	C50072-14
C75	Mica, trimmer	C629-151-5
C76	Mylar, .047uf, 250V	C50197-52
C77	Ceramic, 100uuf, N1500, 1000V	C50070-6
C78	Ceramic, .005uf, 20%, 500V	C50089-1
C79	Ceramic, .0027uf, 1000V	C50072-17
C80	Ceramic, .01uf, 20%, 500V	C50089-3
C81	Ceramic, .02uf, 20%, 500V	C50089-5
C82	Ceramic, 24uuf, 5%, N150, 1000V	C50070-8
C83	Ceramic, .005uf, 20%, 500V	C50089-1
C84	Ceramic, .02uf, +80 -20%, 500V	C50089-4
C85	Ceramic, 150uuf, 1000V	C50072-18
C86	Ceramic, .005uf, 20%, 500V	C50089-1
C87	Ceramic, .0027uf, 1000V	C50072-17
C88	Ceramic, .005uf, 20%, 500V	C50089-1
C89	Mylar, .1uf, 250V	C50197-54
C90	Ceramic, 15uuf, N75, 1000V	C50070-18
C91, 92	Electrolytic, 20uf, 250V	C746-145
C93, 94	Ceramic, .005uf, 20%, 500V	C50089-1
C95, 96	Mylar, .1uf, 250V	C50197-54
C97	Ceramic, .005uf, 20%, 500V	C50089-1
C98	Ceramic, .0027uf, 1000V	C50072-17
C99, 100	Mylar, .1uf, 250V	C50197-54
C101	Ceramic, 12uuf, NPO, 1000V	C50070-2
C102	Ceramic, .0027uf, 1000V	C50072-17
C103	Ceramic, .005uf, 20%, 500V	C50089-1
C104	Ceramic, 330uuf, 1000V	C50072-1
C105	Molded, .0033uf, 5%, 200V	C68P332J
C106	Ceramic, .005uf, 20%, 500V	C50089-1
C107, 108	Ceramic, 330uuf, 1000V	C50072-1
C109	Electrolytic, 8uf, 50V	C629-138
C110	Ceramic, .005uf, 20%, 500V	C50089-1

RESISTORS AND POTENTIOMETERS

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

Symbol	Description	Part No.
R1	Composition, 1K, 10%, 1/2 W	RC20BF102K
R2	Composition, 330, 10%, 1/2 W	RC20BF331K
R3	Composition, 270, 10%, 1/2 W	RC20BF271K
R4	Composition, 2.7K, 10%, 1/2 W	RC20BF272K
R5	Composition, 820K, 10%, 1/2 W	RC20BF824K
R6	Composition, 4.7, 10%, 1/2 W	RC20BF477K
R7	Composition, 8.2K, 5%, 1/2 W	RC20BF822J
R8	Composition, 820K, 10%, 1/2 W	RC20BF824K
R9	Composition, 100K, 10%, 1/2 W	RC20BF104K
R10	Composition, 100, 10%, 1/2 W	RC20BF101K
R11	Composition, 120, 10%, 1/2 W	RC20BF121K
R12, 13	Composition, 220, 10%, 1/2 W	RC20BF221K
R14	Composition, 47K, 10%, 1/2 W	RC20BF473K
R15	Composition, 1K, 10%, 1/2 W	RC20BF102K
R16, 17	Composition, 330K, 10%, 1/2 W	RC20BF334K
R18	Composition, 4.7, 10%, 1/2 W	RC20BF477K
R19	not used	
R20	Wirewound, 270, 10%, 5W	R684-141
R21	Composition, 820K, 10%, 1/2 W	RC20BF824K
R22	Wirewound, 270, 10%, 5W	R684-141
R23	Composition, 100, 10%, 1/2 W	RC20BF101K
R24	Composition, 2.2K, 10%, 1/2 W	RC20BF222K
R25	Composition, 470K, 10%, 1/2 W	RC20BF474K
R26	Composition, 22K, 10%, 1/2 W	RC20BF223K
R27	Composition, 470, 10%, 1/2 W	RC20BF471K
R28	Composition, 100, 10%, 1/2 W	RC20BF101K
R29	Composition, 1K, 10%, 1/2 W	RC20BF102K
R30	Composition, 18K, 10%, 1W	RC20BF183K
R31	Composition, 82K, 10%, 1/2 W	RC20BF823K
R32	Composition, 150, 10%, 1/2 W	RC20BF151K
R33	Composition, 1M, 10%, 1/2 W	RC20BF105K
R34	Composition, 470, 10%, 1/2 W	RC20BF471K
R35	Composition, 100, 10%, 1/2 W	RC20BF101K
R36	Composition, 22M, 10%, 1/2 W	RC20BF226K

PARTS DESCRIPTION LIST

<p>R37 Composition, 47K, 10%, 1/2 W R38 Composition, 470K, 10%, 1/2 W R39 Composition, 33K, 10%, 1/2 W R40 Composition, 1K, 10%, 1/2 W R41 Composition, 470, 10%, 1/2 W R42 Composition, 1K, 10%, 1/2 W R43 Composition, 1M, 10%, 1/2 W R44 Composition, 820K, 10%, 1/2 W R45 Composition, 470K, 10%, 1/2 W R46 Composition, 150, 10%, 1/2 W R47 Composition, 180, 10%, 1/2 W R48 Composition, 47K, 10%, 1/2 W R49 Composition, 1K, 10%, 1/2 W R50 Composition, 27K, 10%, 1/2 W R51 Composition, 1K, 10%, 1/2 W R52 Composition, 68K, 10%, 1/2 W R53 Composition, 470K, 10%, 1/2 W R54, 55 Composition, 47K, 10%, 1/2 W R56 Composition, 22M, 10%, 1/2 W R57 Composition, 27K, 10%, 1/2 W R58 Composition, 3.9K, 10%, 1/2 W R59 Composition, 47K, 10%, 1/2 W R60 Composition, 390K, 10%, 1/2 W R61 Composition, 100K, 10%, 1/2 W R62 Potentiometer, 500K, AM level R63 Composition, 82K, 10%, 1/2 W R64 Composition, 1K, 10%, 1/2 W R65 Composition, 2.7K, 10%, 1/2 W R66 Composition, 220K, 10%, 1/2 W R67 Composition, 100K, 10%, 1/2 W R68 Composition, 6.8K, 10%, 1/2 W R69 Composition, 27K, 10%, 1 W R70 Potentiometer, 25K R71 Composition, 1K, 10%, 1/2 W R72 Composition, 10M, 10%, 1/2 W R73 Dep. Carbon, 470K, 5%, 1/2 W R74 Composition, 10M, 10%, 1/2 W R75, 76 Composition, 220K, 10%, 1/2 W R77 Composition, 1M, 10%, 1/2 W R78 Composition, 47K, 10%, 1/2 W R79 Composition, 560, 10%, 1/2 W R80 Composition, 470K, 10%, 1/2 W R81 Composition, 390K, 10%, 1/2 W R82 Potentiometer, 100K, muting R83 Composition, 100K, 10%, 1/2 W R84 Composition, 4.7K, 10%, 1/2 W R85 Composition, 56K, 10%, 1/2 W R86 Composition, 68K, 5%, 1/2 W R87 Potentiometer, 250K, FM level R88 Dep. Carbon, 470K, 5%, 1/2 W R89 Composition, 2.2M, 10%, 1/2 W R90 Composition, 1K, 10%, 1/2 W R91 Composition, 1.8M, 10%, 1/2 W R92 Composition, 2.2M, 10%, 1/2 W R93, 94 Composition, 560, 10%, 1/2 W R95 Dep. Carbon, 470K, 5%, 1/2 W R96, 97 Dep. Carbon, 100K, 5%, 1/2 W R98 Composition, 330, 10%, 1/2 W R99, 100 Composition, 150K, 10%, 1/2 W R101 Composition, 22M, 10%, 1/2 W R102 Composition, 820K, 5%, 1/2 W R103 Composition, 4.7K, 10%, 1/2 W R104 Composition, 820K, 5%, 1/2 W R105 Composition, 100K, 10%, 1/2 W R106 Composition, 560, 10%, 1/2 W R107 Composition, 1M, 10%, 1/2 W R108 Composition, 5.6K, 10%, 1/2 W R109, 110 Composition, 4.7K, 10%, 1/2 W R111 Composition, 47K, 10%, 1/2 W R112 Composition, 100, 10%, 1/2 W R113 Composition, 1K, 10%, 1/2 W R114 Composition, 15K, 10%, 1/2 W</p>	<p>RC20BF473K RC20BF474K RC20BF333K RC20BF102K RC20BF471K RC20BF102K RC20BF105K RC20BF824K RC20BF474K RC20BF151K RC20BF181K RC20BF473K RC20BF102K RC20BF273K RC20BF102K RC20BF683K RC20BF474K RC20BF473K RC20BF226K RC20BF273K RC20BF392K RC20BF473K RC20BF394K RC20BF104K R50103-6 RC20BF823K RC20BF102K RC20BF272K RC20BF224K RC20BF104K RC20BF682K RC30BF273K R50103-2 RC20BF102K RC20BF106K R33DC474J RC20BF106K RC20BF224K RC20BF105K RC20BF473K RC20BF561K RC20BF474K RC20BF394K R50160-63 RC20BF104K RC20BF472K RC20BF563K RC20BF683J R50103-1 R33DC474J RC20BF225K RC20BF102K RC20BF185K RC20BF225K RC20BF561K R33DC474J R33DC104J RC20BF331K RC20BF154K RC20BF226K RC20BF824J RC20BR472K RC20BF824J RC20BF104K RC20BF561K RC20BF105K RC20BF562K RC20BF472K RC20BF473K RC20BF101K RC20BF102K RC20BF153K</p>	<p>R115 Composition, 1K, 10%, 1/2 W R116 Composition, 270, 5%, 1/2 W R117 Dep. Carbon, 22K, 5%, 1/2 W R118 Composition, 1.5K, 10%, 1/2 W R119 Composition, 1K, 10%, 1/2 W R120, 121 Composition, 6.8K, 5%, 1/2 W R122 Composition, 470K, 10%, 1/2 W R123 Composition, 3.3, 10%, 1/2 W R124 Composition, 150K, 10%, 1/2 W R125 Composition, 1M, 10%, 1/2 W R126 Composition, 100K, 10%, 1/2 W</p>	<p>RC20BF102K RC20BF271J R33DC223J RC20BF152K RC20BF102K RC20BF682J RC20BF474K RC20BF393K RC20BF154K RC20BF105K RC20BF104K</p>
COILS, CHOKES AND TRANSFORMERS			
Symbol	Description	Part No.	
L1, 2	FM antenna, matching coils	L509-139	
L3, 4	Choke, filament, ferrite bead	L592-189	
L5	AM ferrite loop	L50210-24	
L6	AM ant., transformer	L670-151	
L7	FM ant., coil	L726-129	
L8	Choke, 1 Micro-henry	L50066-2	
L9, 10	Choke, .56 Micro-henry	L50066-19	
L11	FM, RF coil	L726-126	
L12	FM, osc. coil assembly	AS726-123	
L13	Choke, R.F.	L629-180	
L14	Choke, .56 Micro-henry	L50066-19	
L15	Choke, 1 Micro-henry	L50066-2	
L16	AM osc. coil	L50210-22	
L17, 18	Choke, 1 Micro-henry	L50066-2	
L19	Muting osc. coil	L50210-22	
L20	10Kc filter coil	L644-120	
L21	Choke, 3.3 Micro-henries	L50066-8	
L22	Choke, 1 Micro-henry	L50066-2	
L23, 24,			
25, 26, 27	Choke, filament, ferrite bead	L592-189	
T1	Transformer, power	T766-115	
Z1	FM, I.F. Transformer	ZZ662-117	
Z2, 3	FM, I.F. Transformer	ZZ50210-2	
Z4	FM, I.F. Transformer	ZZ50210-4	
Z5, 6	FM, limiter coil assembly	L670-145	
Z7	FM, Ratio detector	ZZ592-170	
Z8	AM, R.F. Transformer	L670-151	
Z9, 10	AM, I.F. Transformer	ZZ629-135	
Z11	AM, I.F. Transformer	ZZ2984	
MISCELLANEOUS			
Symbol	Description	Part No.	
CR1	Varicap, type 6.8SC20	V-726-130	
CR2, 3	Silicon diode, type 2E4	SR782-117	
CR4, 5	Diode, matched pair, type 1N542	V-1N542	
F1	Fuse, 1.5 amp.	F766-141	
I1, 4	Lamp, dial	1-50082-61	
I2, 3	Lamp, meter, #470F	150009-4	
I5, 6, 7	Lamp, #47	150009-1	
K1	Relay	K50276-1	
M1	Meter, FM	M766-136	
M2	Meter, AM	M766-137	
S1, 2	Switch, slide	S50200-2	
S3	Switch, AM, antenna	S766-133	
S4	Switch, power	S766-133	
S5	Switch, AM, bandwidth	S766-132	
S6	Switch, FM, AFC	S766-134	
S7	Switch, selector	S766-135	
S8	Switch, muting	part of R82	
SR-1	Selenium rectifier bridge	SR740-137	
—	FM dipole assembly	AS50227-1	
—	Knob, tuning	E50224-2	
—	Knob	E50224-1	
—	Jewel, red	I50162-1	
—	Jewel, yellow	I50162-2	
—	Jewel, green	I50162-4	
—	Dial, glass	N766-107	
—	Fuse holder	X1036	

ALIGNMENT INSTRUCTIONS

Read These Instructions With Extreme Care Before Attempting Alignment.

CHASSIS: Turn the station selectors completely counterclockwise, without forcing. Dial pointers should be at zero index mark on logging scale. If not, reset the dial pointers. Disconnect the external antennas and the antenna link. Set Ferrite Loop to normal position, parallel to rear panel. When using an oscilloscope for alignment, set the output level controls for no overload, as shown by the proper waveform shape. Set FM antenna switches to "Distant" and 300 ohms.

SIGNAL GENERATORS: The signal generator equipment must be able to supply the following: FM RF ± 22.5 KC deviation at 400 cps; FM-IF deviation ± 250 KC at 50-100 cps; AM RF modu-

lated 30% at 400cps; 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.

INDICATOR: 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, Z8, Z9, Z10 and Z11; a hex tool for Z7, Z5, Z6, L7, L12, L11, L19 and L16.

NOTES: 1—For AM Alignment connect lead between the junction of R21, R8 & C31 and ground.

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. The use of a sweep generator with marker is recommended.

5—If adjustment of muting oscillator is necessary, adjust it for 3 MC with a Grid-dip Meter.

AM ALIGNMENT

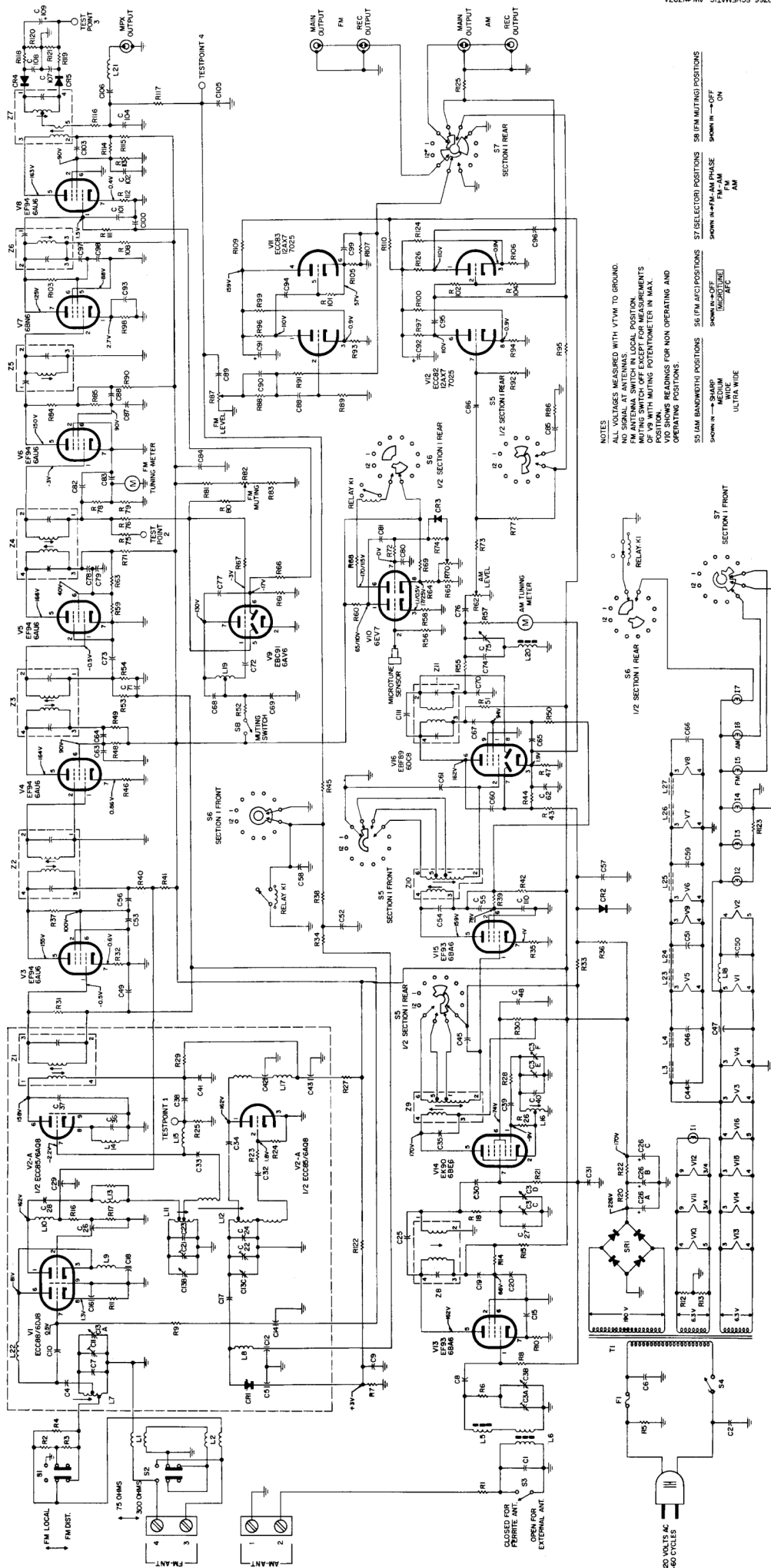
STEPS	CHASSIS			SIGNAL GENERATOR			INDICATOR		ALIGNMENT	
	AM BANDWIDTH	SELECTOR	STATION SELECTOR	COUPLING	FREQ.	MOD.	TYPE	CONNECTION	ADJUST	INDICATION
1	SHARP	AM	Point of no signal and no interference	Audio Gen. with 1V Output connected to Pin 7 of V16	10 KC	None	AC VTVM to AM Main Output		C75	Minimum Output
2	SHARP	AM	Point of no signal and no interference	AM RF Gen. connected thru .01-uf cap. in series with hot lead to V14, Pin 7	455 KC	30% AM at 400 cps	DC VTVM to the Junction of R55 & C70		Z9, Z10, Z11, top & bottom	Maximum negative voltage
3	WIDE	AM	Point of no signal and no interference	AM Sweep Gen. connected thru .01-uf cap. in series with hot lead to V14, Pin 7	455 KC	30 KC sweep	Scope to AM Main Output		Z11	Adjust slightly for symmetrical curve
4	SHARP	AM	600 KC	AM Gen. connected thru 220-uf cap. in series with hot lead to antenna terminal 2	600 KC	30% AM at 400 cps	Scope to AM Main output. DC VTVM to the Junction of R55 & C70		L16, Z8, L5	Check for sine waveform Maximum negative voltage
5	SHARP	AM	1400 KC	AM Gen. connected thru 220-uf cap. in series with hot lead to antenna terminal 2	1400 KC	30% AM at 400 cps	Scope to AM Main output. DC VTVM to the Junction of R55 & C70		C3E, C3C, C3A	Check for sine waveform Maximum negative voltage
6	Repeat steps 4 and 5 for proper dial calibration and maximum output.									

NOTE: For steps 1 to 6 remove Tube VI.

FM ALIGNMENT

1	FM Muting & AFC Switch Off	FM	Point of no signal and no interference	FM Generator connected to Pin 1 of V6	10.7 MC	None	Connect VTVM to test point 3		Z5, Z6 top, Z7 bottom & top	Noted Volt. between +5 and +9 Volt, See Note 2
2	FM Muting & AFC Switch Off	FM	Point of no signal and no interference	FM Generator connected to Pin 1 of V6	10.7 MC	None	DC VTVM to test point 4		Z7 top	Zero reading on zero center scale
3	FM Muting & AFC Switch Off	FM	Point of no signal and no interference	FM Generator connected to Pin 1 of V5	10.7 MC	± 250 K deviation	DC VTVM and Scope to test point 2		Z4 top & bottom	With DC voltage between -2 and -4 volts, adjust for symmetrical curve
4	FM Muting & AFC Switch Off	FM	Point of no signal and no interference	FM Generator connected to Pin 1 of V4	10.7 MC	± 250 K deviation	DC VTVM and Scope to test point 2		Z3 top & bottom	With DC voltage between -2 and -4 volts, adjust for symmetrical curve
5	FM Muting & AFC Switch Off	FM	Point of no signal and no interference	FM Generator connected to Pin 1 of V3	10.7 MC	± 250 K deviation	DC VTVM and Scope to test point 2		Z2	With DC voltage between -2 and -4 volts, adjust for symmetrical curve
6	FM Muting & AFC Switch Off	FM	Point of no signal and no interference	FM Generator connected to ungrounded tube shield of V2	10.7 MC	± 250 K deviation	DC VTVM and Scope to test point 2		Z1	With DC voltage between -2 and -4 volts, adjust for symmetrical curve
7	FM Muting & AFC Switch Off	FM	90 MC	FM Gen. connected thru two 120-ohm carbon resistors in series with lead to antenna terminals 3 and 4	90 MC	30% FM (22.5 KC Dev.) at 400 cps.	DC VTVM to test point 2 and scope to FM Main Output		L12, L11, L7	Check for sine waveform and adjust for maximum negative voltage
8	FM Muting & AFC Switch Off	FM	106 MC	FM Gen. connected thru two 120-ohm carbon resistors in series with lead to antenna terminals 3 and 4	106 MC	30% FM (22.5 KC Dev.) at 400 cps.	DC VTVM to test point 2 and scope to FM Main Output		C22, C21, C11	Check for sine waveform and adjust for maximum negative voltage
9	Repeat steps 7 and 8 for proper dial calibration and maximum output.									

SCHEMATIC DIAGRAM



NOTES
 ALL VOLTAGES MEASURED WITH VTVM TO GROUND.
 NO SIGNAL AT ANTENNAS.
 METER IN NORMAL POSITION.
 MUTING SWITCH OFF EXCEPT FOR MEASUREMENTS
 OF V9 WITH MUTING POTENTIOMETER IN MAX.
 V10 SHOWS READINGS FOR NON OPERATING AND
 OPERATING POSITIONS.

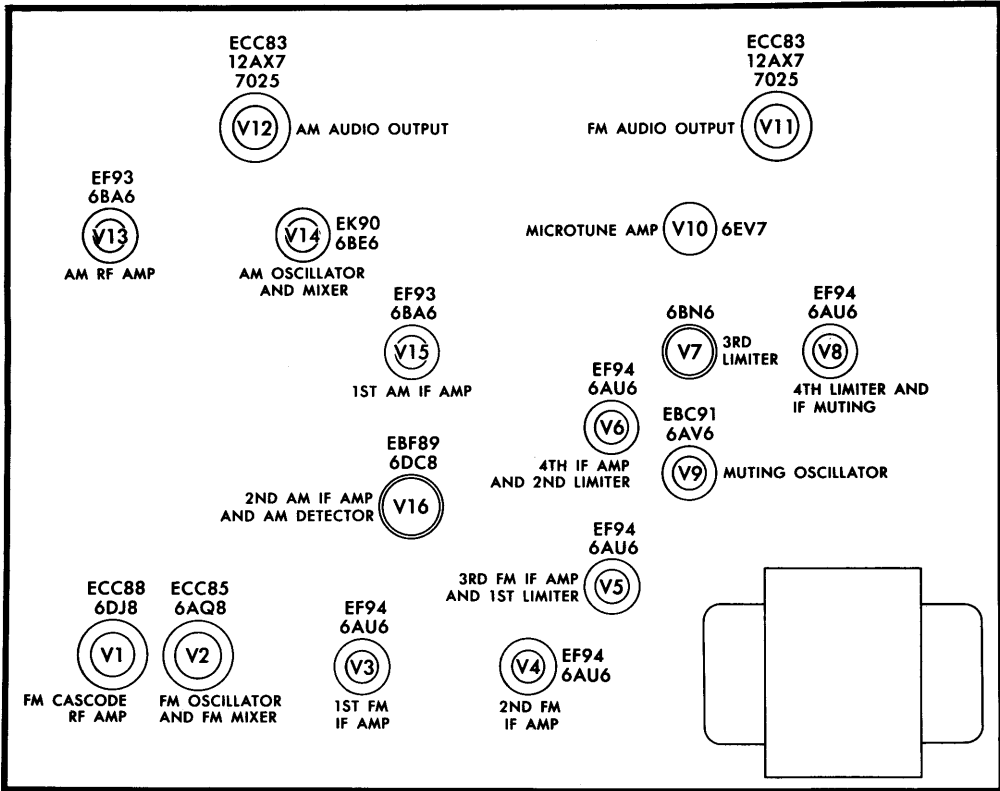
S1 I AM BANDWIDTH POSITIONS
 SHOWN IN — SHARP
 M M M
 ULTRA WIDE

S6 (FM AFC) POSITIONS
 SHOWN IN — OFF
 (MUTING) (MUTING)
 (MUTING) (MUTING)

S7 (SELECTOR) POSITIONS SE (FM MUTING) POSITIONS
 SHOWN IN — FM-AM PHASE
 FM AM
 FM AM

R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	R20	R21	R22	R23	R24	R25	R26	R27	R28	R29	R30	R31	R32	R33	R34	R35	R36	R37	R38	R39	R40	R41	R42	R43	R44	R45	R46	R47	R48	R49	R50	R51	R52	R53	R54	R55	R56	R57	R58	R59	R60	R61	R62	R63	R64	R65	R66	R67	R68	R69	R70	R71	R72	R73	R74	R75	R76	R77	R78	R79	R80	R81	R82	R83	R84	R85	R86	R87	R88	R89	R90	R91	R92	R93	R94	R95	R96	R97	R98	R99	R100
C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16	C17	C18	C19	C20	C21	C22	C23	C24	C25	C26	C27	C28	C29	C30	C31	C32	C33	C34	C35	C36	C37	C38	C39	C40	C41	C42	C43	C44	C45	C46	C47	C48	C49	C50	C51	C52	C53	C54	C55	C56	C57	C58	C59	C60	C61	C62	C63	C64	C65	C66	C67	C68	C69	C70	C71	C72	C73	C74	C75	C76	C77	C78	C79	C80	C81	C82	C83	C84	C85	C86	C87	C88	C89	C90	C91	C92	C93	C94	C95	C96	C97	C98	C99	C100
L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12	L13	L14	L15	L16	L17	L18	L19	L20	L21	L22	L23	L24	L25	L26	L27	L28	L29	L30	L31	L32	L33	L34	L35	L36	L37	L38	L39	L40	L41	L42	L43	L44	L45	L46	L47	L48	L49	L50	L51	L52	L53	L54	L55	L56	L57	L58	L59	L60	L61	L62	L63	L64	L65	L66	L67	L68	L69	L70	L71	L72	L73	L74	L75	L76	L77	L78	L79	L80	L81	L82	L83	L84	L85	L86	L87	L88	L89	L90	L91	L92	L93	L94	L95	L96	L97	L98	L99	L100
S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15	S16	S17	S18	S19	S20	S21	S22	S23	S24	S25	S26	S27	S28	S29	S30	S31	S32	S33	S34	S35	S36	S37	S38	S39	S40	S41	S42	S43	S44	S45	S46	S47	S48	S49	S50	S51	S52	S53	S54	S55	S56	S57	S58	S59	S60	S61	S62	S63	S64	S65	S66	S67	S68	S69	S70	S71	S72	S73	S74	S75	S76	S77	S78	S79	S80	S81	S82	S83	S84	S85	S86	S87	S88	S89	S90	S91	S92	S93	S94	S95	S96	S97	S98	S99	S100
RELAY K1	RELAY K2	RELAY K3	RELAY K4	RELAY K5	RELAY K6	RELAY K7	RELAY K8	RELAY K9	RELAY K10	RELAY K11	RELAY K12	RELAY K13	RELAY K14	RELAY K15	RELAY K16	RELAY K17	RELAY K18	RELAY K19	RELAY K20	RELAY K21	RELAY K22	RELAY K23	RELAY K24	RELAY K25	RELAY K26	RELAY K27	RELAY K28	RELAY K29	RELAY K30	RELAY K31	RELAY K32	RELAY K33	RELAY K34	RELAY K35	RELAY K36	RELAY K37	RELAY K38	RELAY K39	RELAY K40	RELAY K41	RELAY K42	RELAY K43	RELAY K44	RELAY K45	RELAY K46	RELAY K47	RELAY K48	RELAY K49	RELAY K50	RELAY K51	RELAY K52	RELAY K53	RELAY K54	RELAY K55	RELAY K56	RELAY K57	RELAY K58	RELAY K59	RELAY K60	RELAY K61	RELAY K62	RELAY K63	RELAY K64	RELAY K65	RELAY K66	RELAY K67	RELAY K68	RELAY K69	RELAY K70	RELAY K71	RELAY K72	RELAY K73	RELAY K74	RELAY K75	RELAY K76	RELAY K77	RELAY K78	RELAY K79	RELAY K80	RELAY K81	RELAY K82	RELAY K83	RELAY K84	RELAY K85	RELAY K86	RELAY K87	RELAY K88	RELAY K89	RELAY K90	RELAY K91	RELAY K92	RELAY K93	RELAY K94	RELAY K95	RELAY K96	RELAY K97	RELAY K98	RELAY K99	RELAY K100

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