

# THE FISHER FM-1000 SERVICE MANUAL



MODEL FM-1000

CHASSIS SERIAL NUMBERS  
FROM 21001C TO 21250C INCLUSIVE

PRICE: \$1.00

FISHER RADIO CORPORATION • NEW YORK

**THE FISHER FM-1000**

CHASSIS SERIAL NUMBERS FROM 21001C TO 21250C INCLUSIVE



# 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.
C1	Ceramic, 100, N1500, 1000V	C50070-6
C2	Ceramic Trimmer	C662-123
C3	FM, Variable	C857-115
C4	Ceramic, 10, $\pm 5$ , NPO, 500V	CC20CJ100D5
C5	Ceramic, .02uf, +80 — 20%, 500V	C50089-4
C6	Ceramic, 100, N1500, 1000V	C50070-6
C7, 8, 9, 10, 11, 12	Ceramic Feedthru, 1000, GMV	C592-187
C13	Electrolytic, 25uf, 5V	C639-114
C14	Ceramic Feedthru, 1000, GMV,	C592-187
C15	Mylar, .1uf, 250V	C50197-54
C16	Ceramic, 1000, GMV, 500V	C50089-2
C17	Ceramic Trimmer	C662-123
C18	Ceramic, 3, NPO, 1000V	C50070-28
C19	Ceramic Trimmer	C662-123
C20	Ceramic, 10, $\pm 5$ , NPO, 500V	CC20CJ100D5
C21	Ceramic, 6, $\pm 5$ , N470, 500V	CC20TJ060D5
C22	Ceramic, 8, $\pm 5$ , NPO, 500V	CC20CJ080D5
C23	Ceramic, 100, N1500, 1000V	C50070-6
C24, 25	Electrolytic, 20uf, 250V	C746-145
C26	Ceramic Trimmer	C662-123
C28	Ceramic, 68, 5%, N150, 500V	CC30PJ680J5
C29	Ceramic, 1000, GMV, 500V	C50089-2
C30	Mylar, .1uf, 250V	C50197-54
C31	Ceramic, 5000, +80 — 20%, 500V	C50089-6
C32	Mylar, .1uf, 250V	C50197-54
C33	Ceramic, 15, N75, 1000V	C50070-18
C34	Electrolytic, 1uf, 350V	C50283-3
C35	Ceramic, 82, 5%, N1500, 1000V	C50070-33
C36	Ceramic Feedthru, 1000 GMV	C592-187
C37	Ceramic, 24, 5%, N150, 1000V	C50070-8
C39	Electrolytic, 1uf, 350V	C50283-3
C40, 41	Mylar, .022uf, 250V	C50197-49
C42	Mylar, .1uf, 250V	C50197-54
C43	Ceramic Feedthru, 1000 GMV	C592-187
C44, 45	Electrolytic, 50uf, 3V	C50283-1
C46	Ceramic Feedthru, 1000, GMV	C592-187
C47, 48	Ceramic, 10, 5%, NPO, 1000V	C50070-39
C49	Ceramic, .02uf, +80 — 20%, 500V	C50089-4
C50,	Ceramic, 2700, 1000V	C50072-17
C51	Ceramic, 5000, +80 — 20%, 500V	C50089-6
C52	Ceramic, .02uf, +80 — 20%, 500V	C50089-4
C53	Mylar, .1uf, 250V	C50197-54
C54, 55	Ceramic, 5000, +80 — 20%, 500V	C50089-6
C56	Ceramic Feedthru, 1000, GMV	C592-187
C57	Ceramic, 2700, 1000V	C50072-17
C58	Ceramic, 5000, +80 — 20%, 500V	C50089-6
C59	Ceramic, .01uf, 20%, 500V	C50089-3
C60	Ceramic, .02uf, +80 — 20%, 500V	C50089-4
C61	Ceramic, .02uf, 20%, 500V	C50089-5
C62	Ceramic, 5000, +80 — 20%, 500V	C50089-6
C63	Ceramic, 24, 5%, N150, 1000V	C50070-8
C64	Ceramic, 5000, +80 — 20%, 500V	C50089-6
C65	Ceramic, 2700, 1000V	C50072-17
C66, 67	Ceramic, 5000, +80 — 20%, 500V	C50089-6
C68, 69	Electrolytic, 3-Section: A — 40uf, 300V B — 40uf, 300V C — 40uf, 300V	C50180-24
C70	Ceramic, 5000, +80 — 20%, 500V	C50089-6
C71	Ceramic, .02uf, +80 — 20%, 500V	C50089-4
C72	Ceramic, 330, 1000V	C50072-1
C73	Ceramic, 5000, +80 — 20%, 500V	C50089-6
C74	Ceramic, .02uf, +80 — 20%, 500V	C50089-4
C75	Electrolytic, 25uf, 6V	C639-114
C76	Ceramic, 2700, 1000V	C50072-17
C77	Electrolytic, 1uf, 350V	C50283-3
C78	Mylar, .1uf, 250V	C50197-54
C79	Ceramic, 5000, +80 — 20%, 500V	C50089-6
C80	Ceramic, .02uf, +80 — 20%, 500V	C50089-4
C81	Ceramic, 5000, +80 — 20%, 500V	C50089-6
C82	Ceramic, 100, N1500, 1000V	C50070-6
C83	Electrolytic, 1uf, 350V	C50283-3
C84	Ceramic, 5000, +80 — 20%, 500V	C50089-6
C85	Ceramic, 100, N1500, 1000V	C50070-6
C86	Mylar, .1uf, 125V	C50435-7
C87, 88,		
89	Ceramic, 5000, +80 — 20%, 500V	C50089-6
C90	Ceramic, 2700, 1000V	C50072-17
C91	Ceramic, 7, NPO, 1000V	C50070-20
C93	Ceramic, 5000, +80 — 20%, 500V	C50089-6
C94	Mylar, .1uf, 250V	C50197-54
C95, 96	Molded, .01uf, 20%, 600V	C2747
C97	Ceramic, 2700, 1000V	C50072-17
C98	Ceramic, 5000, +80 — 20%, 500V	C50089-6
C99	Ceramic, 560, 1000V	C50072-14
C100	Ceramic, 5000, +80 — 20%, 500V	C50089-6
C101, 102,		
103	Ceramic, 330, 1000V	C50072-1
C104	Molded, 3000, 5%, 200V	C68P332J2
C105	Electrolytic, 20uf, 250V	C746-145
C106, 107	Electrolytic, 8uf, 50V	C629-138
C108	Ceramic, .02uf, +80 — 20%, 500V	C50089-4
C109, 110	Ceramic, 5000, +80 — 20%, 500V	C50089-6
C112, 113	Electrolytic, 2uf, 70V	C721-142

## RESISTORS AND POTENTIOMETERS

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

Symbol	Description	Part No.
R1, 2	Composition, 82	RC20BF820K
R3	Composition, 820	RC20BF821K
R4	Composition, 100K	RC20BF104K
R5	Composition, 1K	RC20BF102K
R6	Dep. Carbon, 820K, 5%, 1/3 W	R33DC824J
R7	Composition, 120	RC20BF121K
R8	Dep. Carbon, 1M, 5%, 1/3 W	R33DC105J
R9, 10	Composition, 1K	RC20BF102K
R11	Composition, 470K, 5%	RC20BF474J
R12	Dep. Carbon, 8.2K, 5%, 1/3 W	R33DC822J
R13, 14	Dep. Carbon, 330K, 5%, 1/3 W	R33DC334J
R15	Dep. Carbon, 470, 5%, 1/3 W	R33DC471J
R16	Dep. Carbon, 1M, 5%, 1/3 W	R33DC105J
R17, 18	Dep. Carbon, 150K, 5%, 1/3 W	R33DC154J
R19	Composition, 27	RC20BF270K
R20	Dep. Carbon, 1M, 5%, 1/3 W	R33DC105J
R21	Composition, 150, 5%	RC20BF151J
R22	Composition, 6.8K, 5%, 1W	RC30BF682J
R23	Composition, 3.6K, 5%, 1W	RC30BF362J
R24	Composition, 150, 5%	RC20BF151J
R25	Composition, 6.8K, 5%, 1W	RC30BF682J
R26	Composition, 3.6K, 5%, 1W	RC30BF362J
R27, 28	Dep. Carbon, 2.7K, 5%, 1/3 W	R33DC272J
R29	Dep. Carbon, 470K, 5%, 1/3 W	R33DC474J
R30	Dep. Carbon, 2.7K, 5%, 1/3 W	R33DC272J
R31	Dep. Carbon, 470K, 5%, 1/3 W	R33DC474J
R32	Composition, 330K, 5%	RC20BF334J
R33, 34	Dep. Carbon, 1M, 5%, 1/3 W	R33DC105J
R35	Composition, 1K	RC20BF102K
R36, 37	Dep. Carbon, 2.2K, 5%, 1/3 W	R33DC222J
R38, 39	Composition, 220K, 5%	RC20BF224J
R40	Composition, 18K, 1W	RC30BF183K
R41, 42	Dep. Carbon, 4.7M, 5%, 1/3 W	R33DC475J
R43	Composition, 56K	RC20BF563K
R44	Dep. Carbon, 1.8M, 5%, 1/3 W	R33DC185J
R45, 46	Dep. Carbon, 470K, 5%, 1/3 W	R33DC474J
R47	Composition, 8.2K, 2W	RC40BF822K
R48	Dep. Carbon, 1M, 5%, 1/3 W	R33DC105J
R49, 50	Potentiometer, Dual, 500K, Audio Level	RS0160-109
R51	Dep. Carbon, 68K, 5%, 1/3 W	R33DC683J
R52	Dep. Carbon, 22K, 5%, 1/3 W	R33DC223J
R53	Dep. Carbon, 68K, 5%, 1/3 W	R33DC683J

# PARTS DESCRIPTION LIST

**R54** Dep. Carbon, 22K, 5%, 1/3 W  
**R55** Composition, 120  
**R56** Composition, 39K  
**R57** Composition, 1K  
**R58** Dep. Carbon, 1.8M, 5%, 1/3 W  
**R59** Composition, 22M  
**R60** Composition, 390K  
**R61** Composition, 27K  
**R62** Composition, 150  
**R63** Composition, 1.2K  
**R64** Composition, 4.7K  
**R65** Dep. Carbon, 330K, 5%, 1/3 W  
**R66** Dep. Carbon, 82K, 5%, 1/3 W  
**R67** Composition, 39K  
**R68** Composition, 27K, 1W  
**R69** Potentiometer, 25K, Microtune Level  
**R70** Dep. Carbon, 470K, 5%, 1/3 W  
**R71** Dep. Carbon, 150K, 5%, 1/3 W  
**R72** Dep. Carbon, 82K, 5%, 1/3 W  
**R73** Dep. Carbon, 18K, 5%, 1/3 W  
**R74** Composition, 27K  
**R75** Composition, 1K  
**R76, 77** Composition, 10M  
**R78** Dep. Carbon, 22K, 5%, 1/3 W  
**R79** Composition, 68K  
**R80** Composition, 10K  
**R81** Composition, 220K, 5%  
**R82** Composition, 22K  
**R83** Potentiometer, 500, Field-Strength Meter Adjust  
**R84** Composition, 1K  
**R85** Composition, 680  
**R86** Dep. Carbon, 22K, 5%, 1/3 W  
**R87** Composition, 680  
**R88** Glass, 330, 3W  
**R89** Dep. Carbon, 120K, 5%, 1/3 W  
**R90** Dep. Carbon, 560, 5%, 1/3 W  
**R91** Composition, 390, 1W  
**R92** Glass, 330, 3W  
**R93, 94** Composition, 120  
**R95** Composition, 560K  
**R96** Potentiometer, 100K, Muting Control  
**R97** Dep. Carbon, 1M, 5%, 1/3 W  
**R98** Dep. Carbon, 4.7K, 5%, 1/3 W  
**R99** Dep. Carbon, 470K, 5%, 1/3 W  
**R100** Composition, 390, 1W  
**R101** Dep. Carbon, 100K, 5%, 1/3 W  
**R102** Dep. Carbon, 680, 5%, 1/3 W  
**R103** Potentiometer, 500, VU-Meter Adjust  
**R104** Dep. Carbon, 33K, 5%, 1/3 W  
**R105** Composition, 2.2K  
**R106** Composition, 56K  
**R107** Dep. Carbon, 100K, 5%, 1/3 W  
**R108** Composition, 1K  
**R109** Composition, 680  
**R110** Composition, 27K  
**R111** Dep. Carbon, 470K, 5%, 1/3 W  
**R112** Dep. Carbon, 2.7K, 5%, 1/3 W  
**R113** Composition, 270, 5%  
**R114** Dep. Carbon, 470K, 5%, 1/3 W  
**R115** Composition, 2.2K  
**R116** Composition, 22K  
**R117** Composition, 330K  
**R118** Composition, 5.6K  
**R119** Composition, 150  
**R120** Dep. Carbon, 100K, 5%, 1/3 W  
**R121** Dep. Carbon, 82K, 5%, 1/3 W  
**R122** Composition, 1K  
**R124** Dep. Carbon, 270K, 5%, 1/3 W  
**R125** Composition, 20K  
**R126** Composition, 47K  
**R127** Composition, 1K  
**R128** Composition, 270, 5%  
**R129** Composition, 2.2K  
**R130** Dep. Carbon, 33K, 5%, 1/3 W

**R33DC223J**  
**RC20BF121K**  
**RC20BF393K**  
**RC20BF102K**  
**R33DC185J**  
**RC20BF226K**  
**RC20BF394K**  
**RC20BF273K**  
**RC20BF151K**  
**RC20BF122K**  
**RC20BF472K**  
**R33DC334J**  
**R33DC823J**  
**RC20BF393K**  
**RC30BF273K**  
**R50103-2**  
**R33DC474J**  
**R33DC154J**  
**R33DC823J**  
**R33DC183J**  
**RC20BF273K**  
**RC20BF102K**  
**RC20BF106K**  
**R33DC823J**  
**RC20BF683K**  
**RC20BF103K**  
**RC20BF224J**  
**RC20BF223K**  
  
**R50103-10**  
**RC20BF102K**  
**RC20BF681K**  
**R33DC223J**  
**RC20BF681K**  
**RPG3W331K**  
**R33DC124J**  
**R33DC561J**  
**RC30BF391K**  
**RPG3W331K**  
**RC20BF121K**  
**RC20BF564K**  
**R50160-94**  
**R33DC105J**  
**R33DC472J**  
**R33DC474J**  
**RC30BF391K**  
**R33DC104J**  
**R33DC681J**  
**R50103-10**  
**R33DC333J**  
**RC20BF222K**  
**RC20BF563K**  
**R33DC104J**  
**RC20BF102K**  
**RC20BF681K**  
**RC20BF273K**  
**R33DC474J**  
**R33DC272J**  
**RC20BF271J**  
**R33DC474J**  
**RC20BF222K**  
**RC20BF223K**  
**RC20BF334K**  
**RC20BF562K**  
**RC20BF151K**  
**R33DC104J**  
**R33DC823J**  
**RC20BF102K**  
**R33DC274J**  
**RC20BF824K**  
**RC20BF473K**  
**RC20BF102K**  
**RC20BF271J**  
**RC20BF222K**  
**R33DC333J**

**R131** Composition, 820K  
**R132** Composition, 1.5K, 5%  
**R133** Composition, 1K, 5%  
**R134, 135** Composition, 6.8K, 5%  
**R136** Composition, 820K  
**R137** Dep. Carbon, 1M, 5%, 1/3 W  
**R138, 139** Dep. Carbon, 4.7M, 5%, 1/3 W  
**R140, 141** Dep. Carbon, 18K, 5%, 1/3 W

**RC20BF824K**  
**RC20BF152J**  
**RC20BF102J**  
**RC20BF682J**  
**RC20BF824K**  
**R33DC105J**  
**R33DC475J**  
**R33DC183J**

## CHOKES, COILS & TRANSFORMERS

Symbol	Description	Part No.
L1	Coil, FM-Antenna Matching	L509-139
L2	FM-Antenna Coil	L857-121
L3	Coil, FM-Antenna Matching	L509-139
L4	Choke, 1 Microhenry	L50066-2
L5	Choke, .68 Microhenry	L50066-1
L6, 7	Choke, 1.2 Microhenries	L50066-3
L8, 9	Transformer, Audio Line	T700-116
L10	Choke, RF	L629-180
L11	FM RF Coil	L857-122
L12	FM Mixer Coil	L857-123
L13	FM Oscillator Coil Ass'y	A5857-125
L14	Choke, .68 Microhenry	L50066-1
L15, 16, 17	Choke, 1.2 Microhenries	L50066-3
L18, 19, 20, 21, 22, 23, 24	Choke, Filament, Ferrite Bead	L592-189
L29	Coil, Muting Oscillator	L50210-22
L30	Choke, 3.3 Microhenries	L50066-8
T1	Transformer, Power	T700-115
Z1	Transformer, FM IF	ZZ662-117
Z2	Transformer, FM IF	ZZ2987
Z3	Transformer, FM IF	ZZ50210-2
Z4	FM Limiter Coil Ass'y	ZZ50210-6
Z5, 6	FM Limiter Coil Ass'y	L670-145
Z7	FM Ratio Detector Transformer Ass'y	ZZ50210-9

## MISCELLANEOUS

Symbol	Description	Part No.
CR1	Diode, Varicap, Type 6.8SC20	V-726-130
CR2, 3	Diode, Type 1112	V-1112
F1	Fuse, 1.5 Amp.	F766-141
I1, 2	Lamp, Dial	I50082-6
I3, 4	Lamp, Meter	Part of M1, 2
I5, 6, 7	Lamp #47	I50009-1
K1	Relay, Microtune	K50314
K2	Relay, Stereo Beacon	K50446
M1	Meter, Tuning	M700-119
M2	Meter, VU	M700-118
S1	Switch, Front End	S700-125
S2	Switch, Slide, Antenna Select.	S50200-2
S3	Switch, AFC	S700-124-1
S4	Switch, Muting	Part of R96
S5	Switch, Selector	S914-126B
S6	Switch, VU Meter	S700-126
S7	Switch, Power	S50358-1
SR1	Selenium Rectifier	SR50253-4

## FM-1000

Symbol	Description	Part No.
—	Dress Panel	A5700-109
—	Knob, Tuning	E50325-2
—	Knobs	E50325-1
—	Dipole Assembly	A550227-1
—	Dial Pointer	A700-130
—	Tube Shield, 7-Pin	E50322-1
—	Tube Shield, 9-Pin	E50322-2
—	Jewel, Red	I50162-1
—	Jewel, Yellow	I50162-2
—	Jewel, Green	I50162-4
—	Fuse Holder	X563-151

# 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 ( $\pm 5$ 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, 1/2-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.

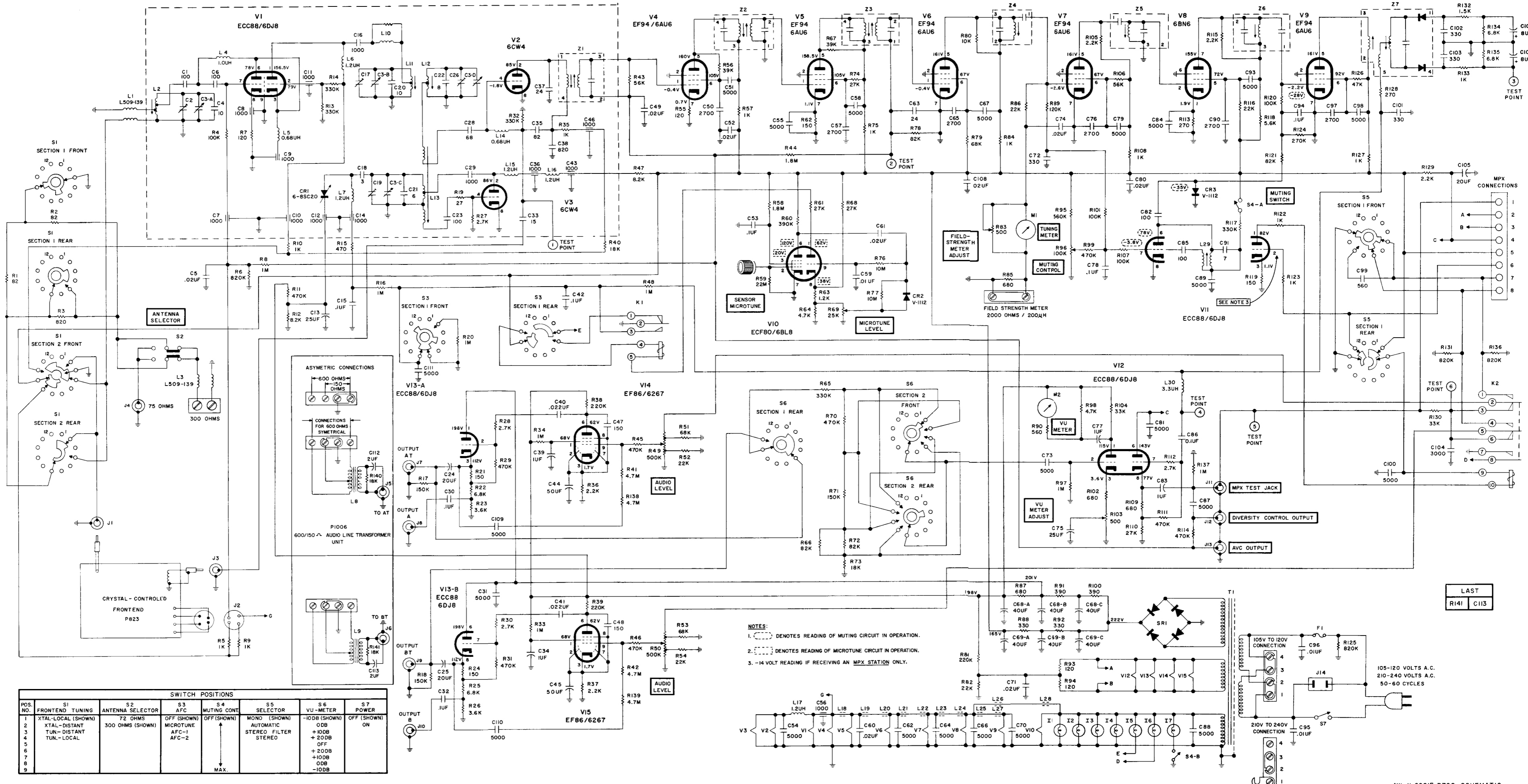
2 — The vertical amplitude of the Lissajous pattern will increase slightly

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.

SCHEMATIC DIAGRAM

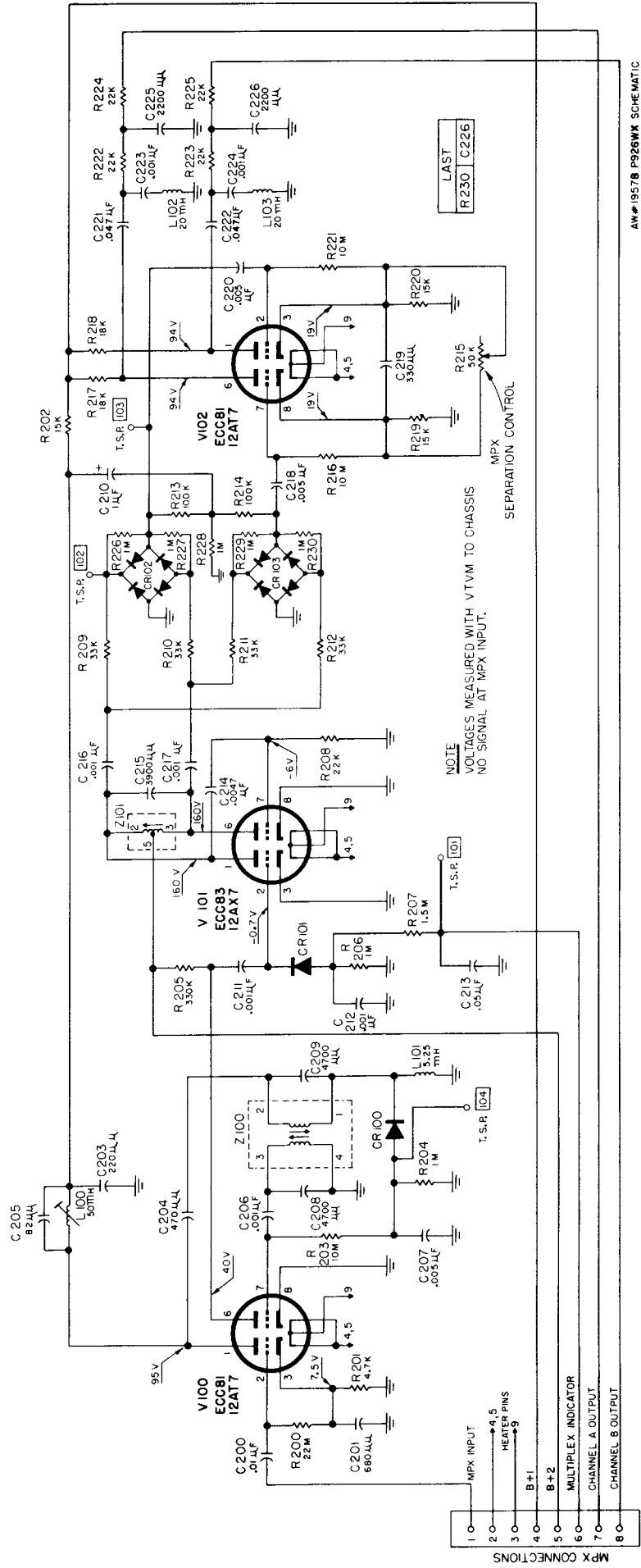


SWITCH POSITIONS						
POS. NO.	S1 FRONTEND TUNING	S2 ANTENNA SELECTOR	S3 AFC	S4 MUTING CONT.	S5 SELECTOR	S6 VU-METER
1	XTAL-LOCAL	72 OHMS	OFF (SHOWN)	OFF (SHOWN)	MONO	0DB
2	XTAL-DISTANT	300 OHMS (SHOWN)	MICROTUNE AFC-1	MAX.	STEREO	+10DB
3	TUN-DISTANT		AFC-2		STEREO FILTER	+20DB
4	TUN-LOCAL					OFF
5						+20DB
6						+10DB
7						0DB
8						-10DB
9						ON

**NOTES:**  
 1. [Symbol] DENOTES READING OF MUTING CIRCUIT IN OPERATION.  
 2. [Symbol] DENOTES READING OF MICROTUNE CIRCUIT IN OPERATION.  
 3. -14 VOLT READING IF RECEIVING AN MPX STATION ONLY.

LAST  
R141 C113

# SCHEMATIC DIAGRAM • MULTIPLEX SECTION



# 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  $\mu$  are pF ( $\mu$ uf).

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	Mica, 470, 5 %, 300V	C50332-4
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, .005uf, 20 %, 500V	C50089-1
C219	Ceramic, 330, 1000V	C50072-1
C220	Ceramic, .005uf, 20 %, 500V	C50089-1
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,  $\frac{1}{2}$  watt, unless otherwise noted. K = Kiloohm, 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 %, $\frac{1}{3}$ W	R33DC105J
R205	Dep. Carbon, 330K, 5 %, $\frac{1}{3}$ W	R33DC334J
R206	Dep. Carbon, 1M, 5 %, $\frac{1}{3}$ W	R33DC105J
R207	Dep. Carbon, 1.5M, 5 %, $\frac{1}{3}$ W	R33DC155J
R208	Dep. Carbon, 22K, 5 %, $\frac{1}{3}$ W	R33DC223J
R209, 210,		
211, 212	Composition, 33K, 5 %	RC20BF333J
R213, 214	Dep. Carbon, 100K, 5 %, $\frac{1}{3}$ W	R33DC104J
R215	Potentiometer, 50K, MPX-separation	R50150-4
R216	Composition, 10M	RC20BF106K
R217, 218	Dep. Carbon, 18K, 5 %, $\frac{1}{3}$ W	R33DC183J
R219, 220	Dep. Carbon, 15K, 5 %, $\frac{1}{3}$ W	R33DC153J
R221	Composition, 10M	RC20BF106K
R222, 223,		
224, 225	Dep. Carbon, 22K, 5 %, $\frac{1}{3}$ W	R33DC223J
R226, 227,		
228, 229,		
230	Dep. Carbon, 1M, 5 %, $\frac{1}{8}$ 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

# ALIGNMENT INSTRUCTIONS • RF, IF, and Ratio Detector

STEPS	CHASSIS	SIGNAL GENERATOR			INDICATOR	ALIGNMENT	
	TUNING	COUPLING	FREQ.	MOD.	TYPE CONNECTION	ADJUST	INDICATION
1	Point of no signal and no interference	FM generator connected to pin 1 of V6	10.7 MC	None	Connect DC VTVM to test point 3	Z4, Z5, Z6 top, Z7 top and bottom for max. indication	Between +5 and +9 volts
2	Point of no signal and no interference	FM generator connected to pin 1 of V6	10.7 MC	None	Connect DC VTVM to test point 4	Z7 top for 0 indication	Zero reading on zero center scale
3	Point of no signal and no interference	FM generator connected to pin 1 of V5	10.7 MC	None	Connect DC VTVM to test point 2	Z3 top and bottom for max. indication	Between -0.5 and -1.0 volt
4	Point of no signal and no interference	FM generator connected to test point 1 through wire "gimmick" (less than 0.5 uuf)	10.7 MC	None	Connect DC VTVM to test point 2	Z1 and Z2 top and bottom for max. indication	Between -0.5 and -1.0 volt
5	90 MC	FM generator connected to 300 ohm terminals through 120 ohm carbon resistors	90 MC	30% FM (22.5 KC Dev.) at 400 cps.	DC VTVM to test point 2 and scope to A or B OUTPUT jack	L13, L12, L11 and L1 for sine waveform and max. neg. voltage	Less than -3 volts
6	106 MC	FM generator connected to 300 ohm terminals through 120 ohm carbon resistors	106 MC	30% FM (22.5 KC Dev.) at 400 cps.	DC VTVM to test point 2 and scope to A or B OUTPUT jack	C19, C26, C17 and C2 for sine waveform and max. neg. voltage	Less than -3 volts
7	Repeat steps 5 and 6 for proper dial calibration and maximum output.						

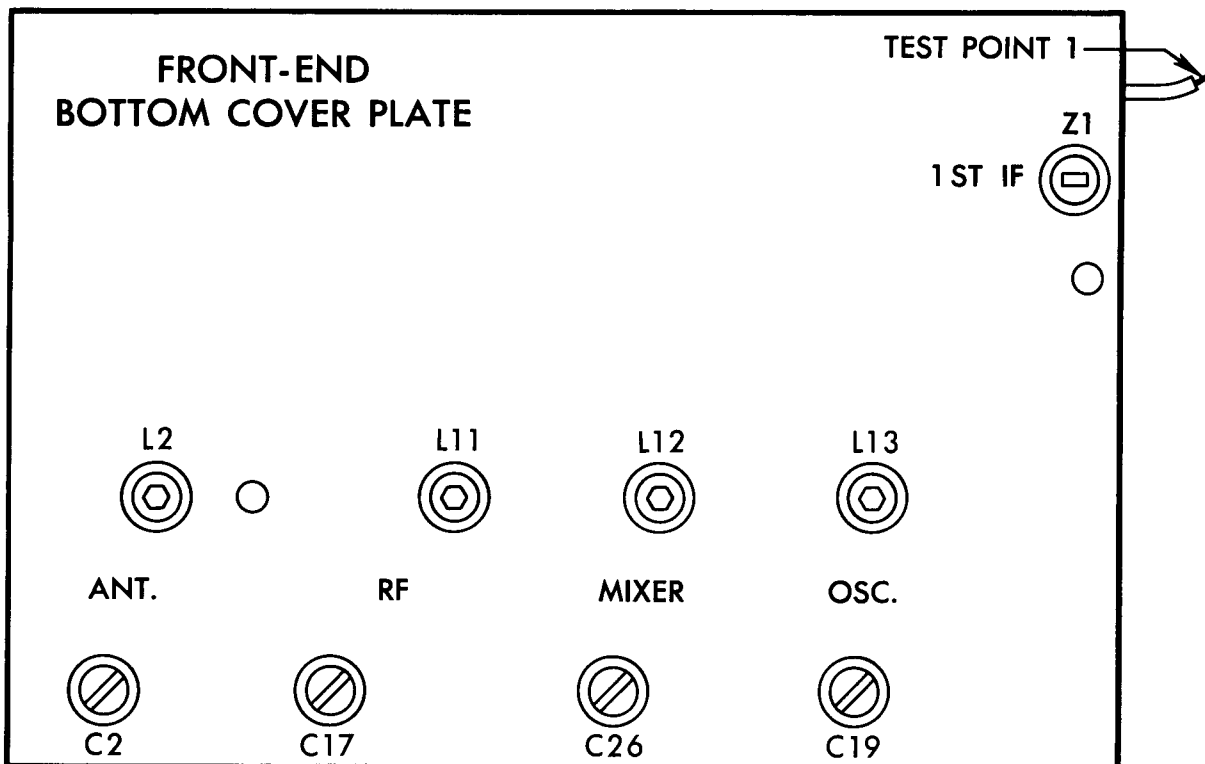
**NOTES:** 1 — For accurate alignment, signal generator output voltage must be adjusted to produce meter readings within the range specified in the INDICATION column for each step.

2 — Signal generator frequency must be held constant for IF, limiter,

and ratio detector alignment (Z1 through Z7).

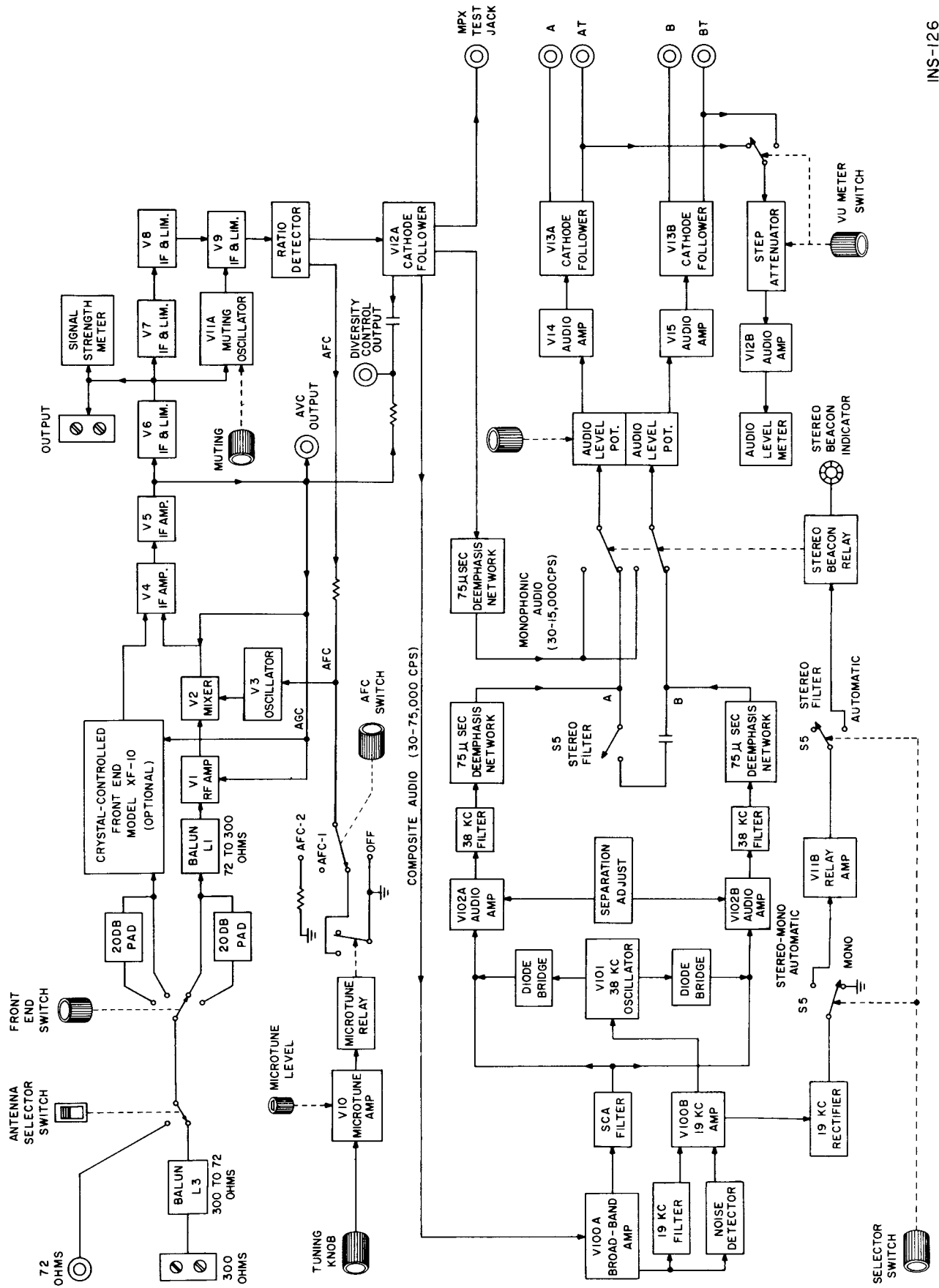
3 — If adjustment of the muting oscillator is necessary, turn the MUTING control fully clockwise, then adjust L29 for 3 megacycle oscillation using a grid-dip meter.

## FRONT-END ADJUSTMENTS

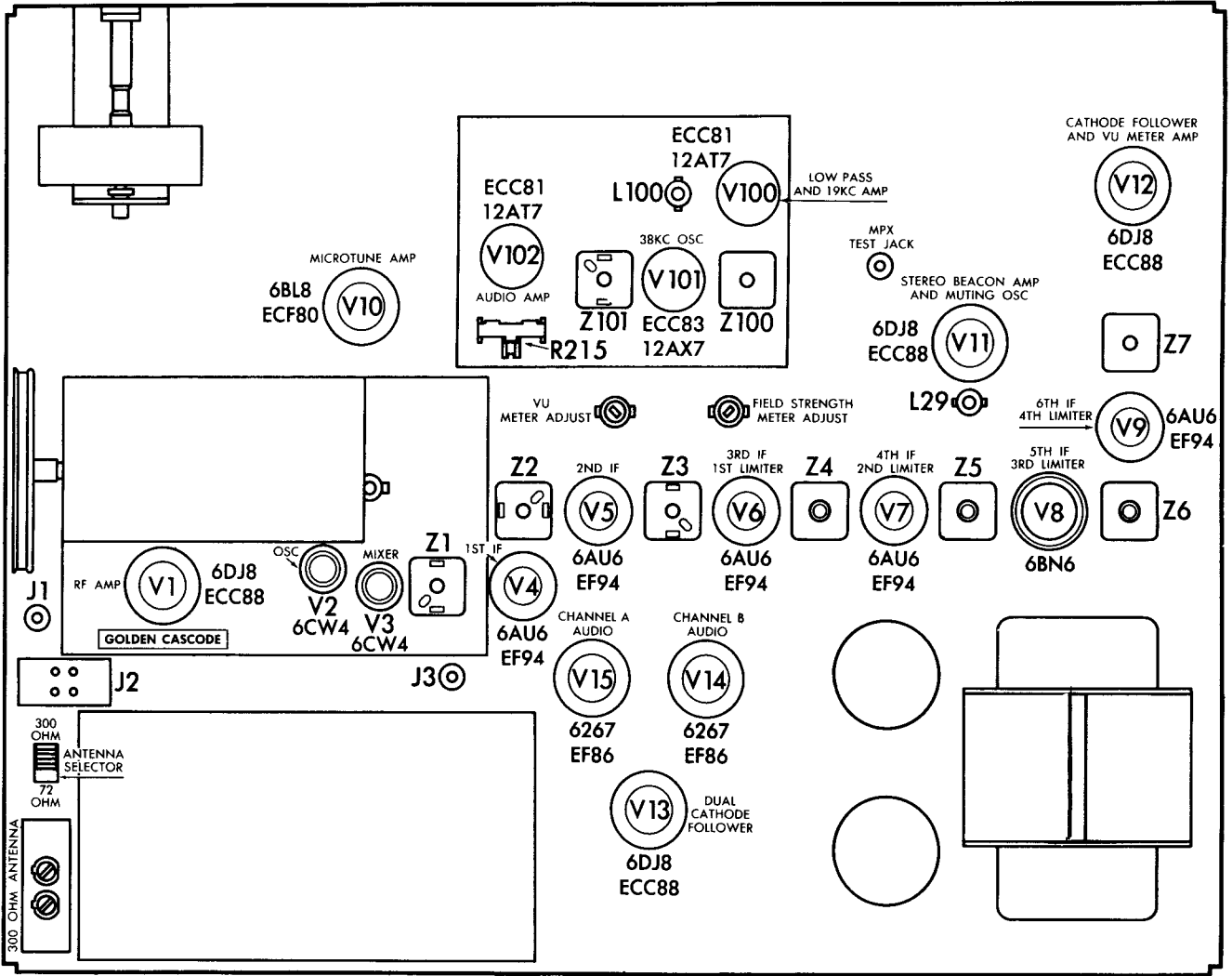




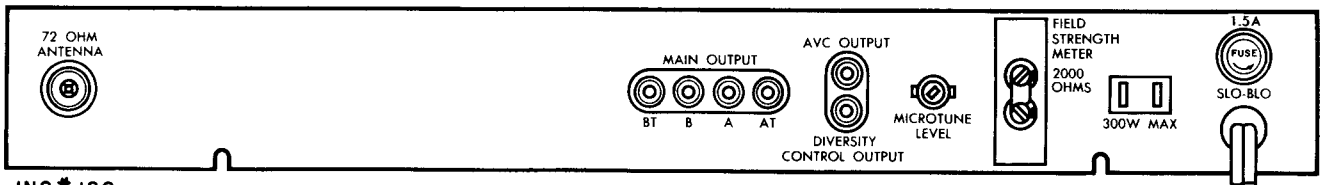
# BLOCK DIAGRAM



# TUBE LAYOUT



INS # 118



INS # 120



FISHER RADIO CORPORATION • NEW YORK

