

SERVICE MANUAL

AND

PARTS LIST

FOR

CLAIRTONE

STEREOPHONIC

RADIO-PHONOGRAPH

S 600

Printed in Canada

ALIGNMENT PROCEDURE

F.M. DETECTOR CURVE

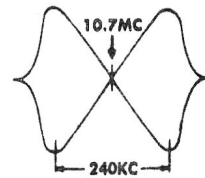


FIG. 1

F.M. I.F. PASSBAND

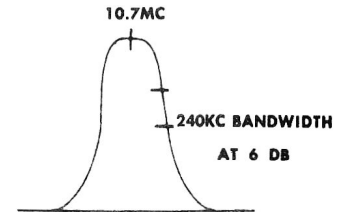


FIG. 2

Preliminary:

Alignment is an exacting procedure and should be undertaken only when necessary. The following equipment is required:

1. Signal generator with a frequency range of at least from 455 kc to 16400 kc.
2. Signal generator with a frequency range covering 10.7 mc. for FM-IF. alignment.
3. Vacuum tube voltmeter,
OR
2. F.M. (sweep) signal generator usable at 10.7 mc
3. 10.7 Crystal or other accurate marker generator
4. Oscilloscope

Notes: Allow at least five minutes for the set to warm up before attempting alignment. An (8 ohm) speaker or dummy load (5-10 ohms) must be connected across the audio output transformer secondaries at all times.

AM IF & RF ALIGNMENT

Step	Signal Generator Coupling	Signal Generator Frequency	Band Switch Position	Radio Dial Setting	Connect VTVM	Adjust	Remarks
1.	High Side to Pin 7 of V6 (6BE6) Low Side to Chassis.	455 KC	A.M.	Tuning Gang Fully Open	High Side to Point 4, Low side to Chassis.	T4-T5 TOP AND BOTTOM	Adjust for maximum deflection.
2.	Loop (Radiated)	535 KC	A.M.	535 KC (A.M. Gang Fully Closed)	Same as in Step 1	RFT-2	Adjust for maximum deflection.
3.	Same as in Step 2	1625 KC	A.M.	1640 KC (A.M. Gang Fully Open)	Same as in Step 1	A.M. Osc. Trimmer C 30 B	Adjust for maximum deflection.
4.							Repeat steps 2 & 3 until no further increase is noted.
5.	Same as in Step 2	1400 KC	A.M.	1400 KC	Same as in Step 1	A.F.-R.F. Trimmer C 30 A	Adjust for maximum deflection.

F.M. - I.F. ALIGNMENT USING UNMODULATED SIGNAL GENERATOR AND VTVM

1.	HIGH AND LOW SIDE TO F.M. ANTENNA	10.7 (Unmod.)	F.M.	Point of Non-Interference	D.C. Probe to Point 1. Common lead to Chassis.	T3 Primary only (bottom) T2 PRI & Sec. GT1 PRI & Sec.	Adjust for maximum deflection.
2.	Same as in Step 1	10.7 (Unmod.)	F.M.	Same as in Step 1	D.C. Probe to Point 2. Common lead to Point 3	T3 Secondary (TOP)	Adjust for zero reading a positive and Negative reading will be obtained on either side of correct setting.

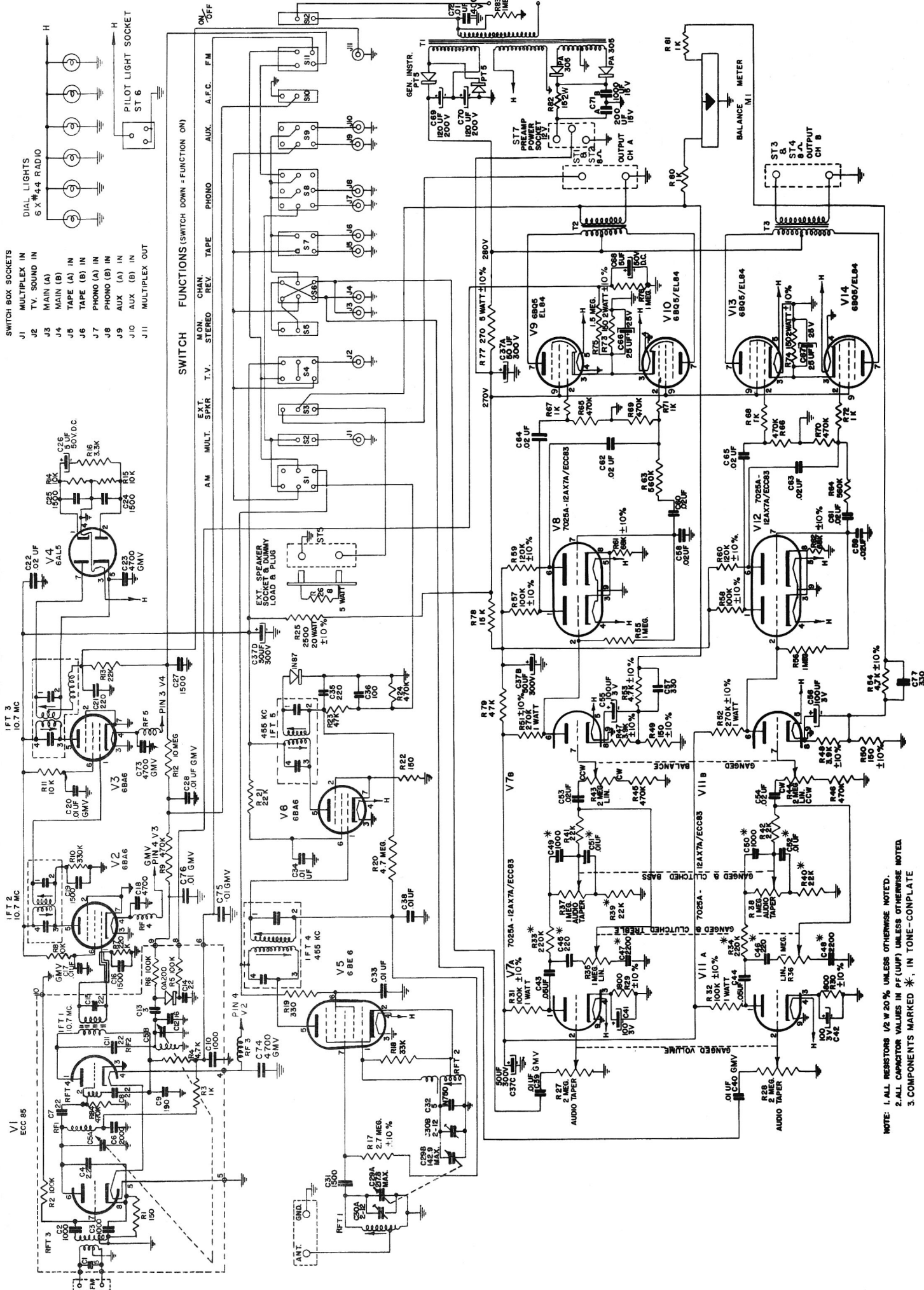
F.M. - I.F. ALIGNMENT USING F.M. SIGNAL GENERATOR AND OSCILLOSCOPE

FREQUENCY MODULATE THE I.F. SIGNAL WITH 60 CYCLE SINE WAVE TO A TOTAL DEVIATION OF 450 KC. ADJUST THE SCOPE INTERNAL HORIZONTAL DEFLECTION VOLTAGE TO 120 CYCLES, AND SYNCHRONIZE IT WITH THE 60 CYCLE SINE WAVE.

1.	High Side to Pin. 1 of V3 (second 6BA6 F/M—I.F. Amplifier)	10.7 mc 450 KC Total Sweep Deviation	F.M.	Point of non-interference	Vert. Amp. Input to Point 1, Common to Chassis	T3 Primary only (bottom)	Disconnect 2 MFD. Stabilizing capacitor, adjust for curve of maximum amplitude & symmetry.
2.	Same as in step 1	Same	F.M.	Same as in Step 1	Vert. Amp. Input to Point 2, Common to Chassis	T3 Secondary only (top)	Re-connect 2 MFD. Stabilizing capacitor, adjust so that 10.7 mc. occurs at centre of cross-over lines, similar to Fig. 1. Slightly re-touch T4 Primary for maximum amplitude & straightness of cross-over lines.
3.	Repeat Step No. 1						
4.	High Side to Pin 1 of V2 (first 6BA6 F/M—I.F. Amplifier)	Same	F.M.	Same as in Step 1	Vert. Amp. Input to point 1, Common to Chassis	T2 Primary & Secondary	With Stabilizing capacitor remaining disconnected (from step 3), Adjust T3 Top and Bottom for maximum amplitude and symmetry similar to Fig. 2.
5.	HIGH AND LOW SIDE TO F.M. ANTENNA	Same	F.M.	Same as in Step 1	Same as in Step 4	T1 Primary & Secondary	Adjust for maximum amplitude and symmetry.
6.	Same as in Step 5	Same	F.M.	Same as in Step 1	Vert. Amp. Input to Point 2, Common to Chassis	T3 Secondary (Top)	Re-connect 2 MFD. Stabilizing Capacitor and Trim Secondary for maximum symmetry while maintaining 10.7 mc. at cross-over lines (Fig. 1).

PARTS LIST

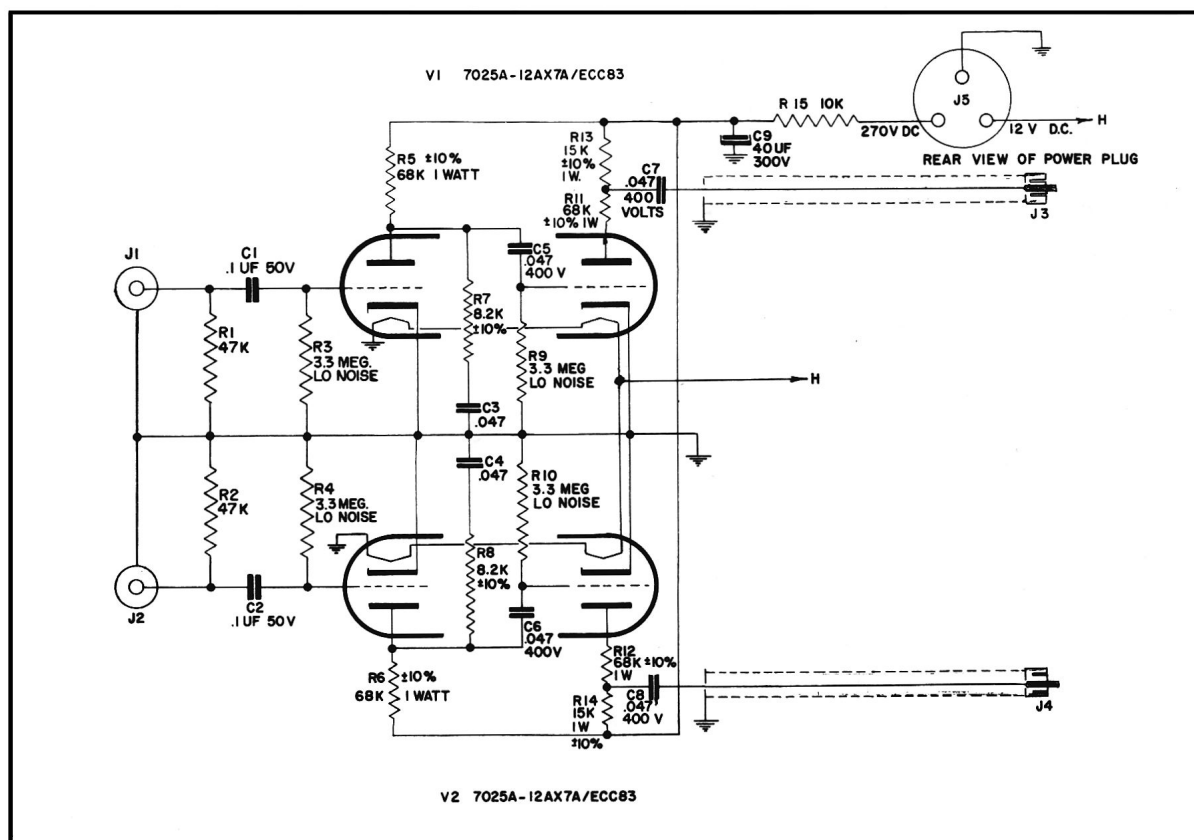
Schematic Location	Part Number	Description	Schematic Location	Part Number	Description
CAPACITORS					
C1 to C15		Included in torotor tuner FA531BB	R59-R60	33-41233	120 K ohm
C16-C24-			R61-R62	33-36833	68 K ohm
C25-C27-		1500 pF G.M.V.	R63-R64	33-456633	560 K ohm
C31-C19	32-9575-18	ceramic disc	R67-R68-		
C17-C20-			R71-R72-		
C28-C33-			R80-R81	33-21035	1000 ohm
C34-C38-			R73-R74	33-11563	150 ohm 2 W
C39-C40-			R75	33-51035	1.5 meg ohm
C75-C76	32-200044-6B	.01 μ F ceramic disc	R33-R34-		
C18-C73-			R77	33-254644-7	270 ohm 5 W wire wound
C23-C74	32-250950-42	4700 pF ceramic disc	R78	33-31535	15 K ohm
C21-C35	32-250950-41	220 pF ceramic disc	R82	33-01563	15 ohm 2 W
C22-C53-C54			R39-R40	32A254557-1	Included in tone couplate
C58 to C65	32-200044-43	.02 μ F ceramic disc	TRANSFORMERS AND COILS		
C26-C68	32-254587-2	5 μ F 50 V DCW tub. elect.	RFT1	83A254591-1	Antenna coil
C29-A & B	38-254594-1	AM tuning gang	RFT2	83A254592-2	Oscillator coil AM
C30-A & B		Trimmer to C29	RFT3		
C36	32-250950-44	100 pF ceramic disc	RFT4		
C37-A, B, C & D	32-254599-4	50+50+50+50 μ F 300 V WDC	RF1		
C41-C42-			RF2		Included in torotor tuner FA531BB
C55-C56	32-254587-6	100 μ F 3 V WDC tub. elect.	1FT1		
C43-C44	32-254588-1	.05 μ F 400 V paper tub.	RF3-RF4 and RF5	39-12595-1	Heater choke F.M.
C57-C77	32-250950-50	330 pF	1FT2	1607-4	10.7 Mc transformer
C66-C67	32-254587-7	25 μ F 25 V DCW tub. elect.	1FT3	2607-5	10.7 Mc ratio detector
C69-C70	32-254587-8	120 μ F 200 V DCW tub. elect.	1FT4-IFT5	1655-6	455 Kc transformer
C71-A, B	32-254599-6	200+1000 μ F 15 V DCW	T1	75-254564-1	Power transformer
C72	32-250950-43	.01 μ F 1400 V ceramic disc	T2-T3	75-254565-1	Audio output transformer
C51-C52-			MISCELLANEOUS PARTS		
C45-C46-			IN87	63-251913-6	Germanium diode IN87
C47-C48	32-A254557-1	Tone couplate	M1	52-254704-1	Balance meter
RESISTORS				103A200S-TB-1	Push button
R1 to R6 and R84		Included in torotor tuner FA531BB	PT5		Rectifier
R7	33-42235	220 K ohm	PA-305	78-254566-2	Rectifier 150 mA Silicon diode PA-305
R8-R11-R14	33-31035	10 K ohm		78-254566-1	500 ma Silicone diode PT5
R9-R24-R45-R46-R65-R66-			S1-S4-S6	58-254780-4	Switch DPDT
R69-R70	33-44735	470 K ohm	S2-S5-S10	58-254780-1	Switch SPST
R10	33-43335	330 K ohm	S3	58-254780-3	Switch SPDT
R12	33-61035	10 meg ohm	S7-S9-S11	58-254780-5	Switch DPST
R13-R21-			S8	58-254781-1	Switch TPDT
R41-R42	33-32235	22 K ohm	S12	58-254780-2	Switch SPST (3 amp)
R16	33-23335	3.3 K ohm		116-254724-1	Torotor tuner FA531BB
R17	33-52733	2.7 meg ohm	CABINET PARTS		
R18	33-33335	33 K ohm	Part Number	Description	
R19	33-13335	330 ohm	12ALM7D-2	Garrad auto turntable type A large with Shure M7D cartridge	
R20	33-54735	4.7 meg ohm	14-149-2	C100-138 E.M.I. Woofer 14x9	
R22-R49-			14-212-23	TW 34-2 Tweeter 2 1/2"	
R50	33-11533	150 ohm	20-149-23	Dial plate 14 7/8" x 11"	
R23	33-34735	47 K ohm	21-134-23	Dial glass 13 3/4" x 3 3/4"	
R26	33-254644-6	8 ohm wire wound	22-16-1-23	Knob, Loudness, Bass and Treble	
R25	33-11573	470 ohm 1 W	22-16-2-23	Knob, AM, FM, Tuning and Balance	
R29-R30	33-21833	1800 ohm	24-1-1234	I MFD 20 V AC TCC	
R31-R32	33-41073	100 K ohm 1 W	30-8-234	Capacitor Type CE 30 CR	
R27-R28	33-254595-2	2 meg ohm volume control	35-1-234	Pilot light lead and socket	
R35-R36	33-254596-1	1 meg ohm treble control	26-5-42	Lens for pilot light	
R37-R38	33-254596-2	1 meg ohm bass control		Grille Cloth 17 1/4" x 17 3/4"	
R43-R44	33-254595-3	2 meg ohm balance control			
R47-R48-					
R51-R52	33-42773	270 K ohm 1 W			
R53-R54	33-24733	4.7 K ohm			
R55-R56-					
R76-R83	33-51035	1 meg ohm			



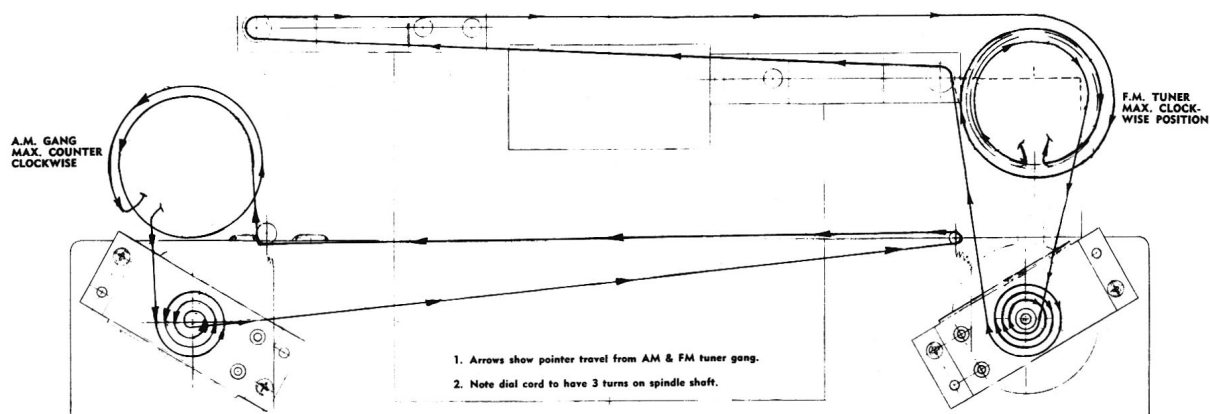
NOTE: 1. ALL RESISTORS 1/2 W 20% UNLESS OTHERWISE NOTED.
2. ALL CAPACITOR VALUES IN PF (UF) UNLESS OTHERWISE NOTED.
3. COMPONENTS MARKED *, IN TONE-CONTROL.

Pre-Amp Parts List & Schematic Diagram

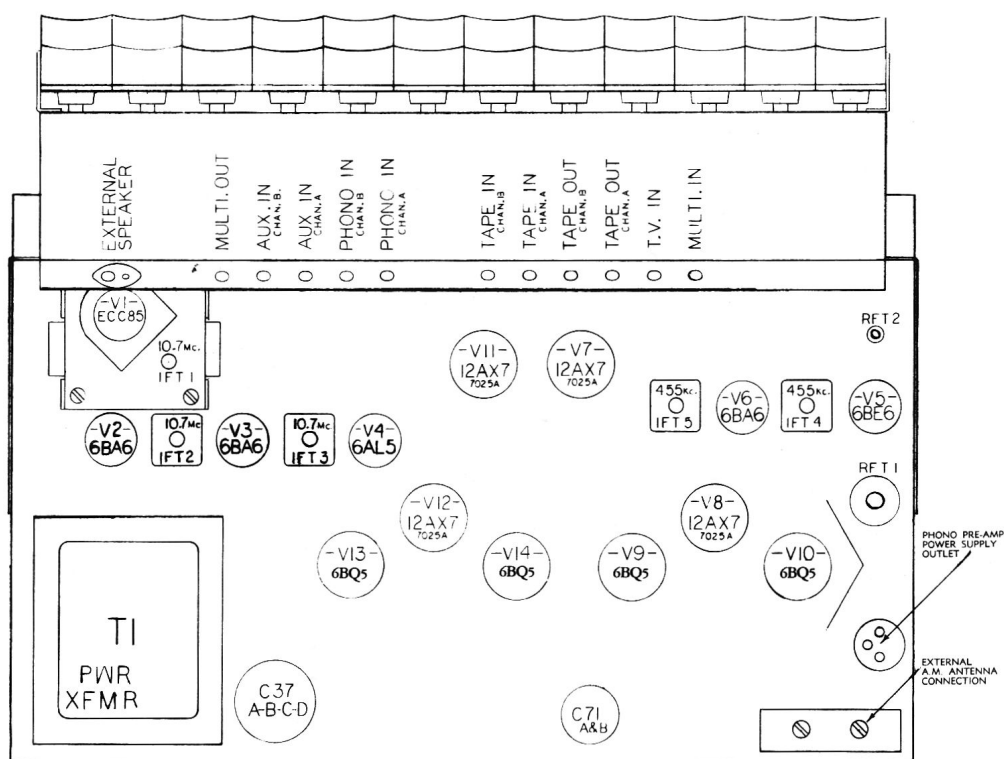
Schematic Location	Capacitors	Part Number	Schematic Location	RESISTORS	Part Number
C1, C2	1 μ F 200v	32-253659-6	R1, R2	47 K ohm	33-34735
C3, C4, C5	.05 μ F 400v	32-254588-1	R3, R4, R9	33 Meg ohm	33-254807-4
C6, C7, C8	Electrolytic	32-254599-5	R10	68 K ohm	33-368125
C9	40 μ F 300v		R5, R6, R11	1W	33-28233
			R7, R8	8,2 K ohm	33-31575
			R13, R14	10 K ohm	33-31035
			R15		



A. M. — F. M. DIAL STRINGING



TOP VIEW OF CHASSIS



BACK VIEW OF CHASSIS

