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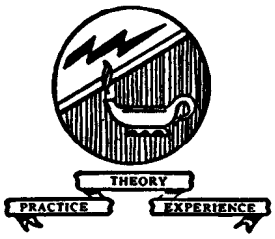

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	TV-17	1960
	TV-16	Late 1959
	TV-15	Early 1959
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	17	1957
	16	1956
	15	1955
	14	1954
	13	1953
	12	1952
	11	1951
	10	1950
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Admiral

5E6 & 5E6A

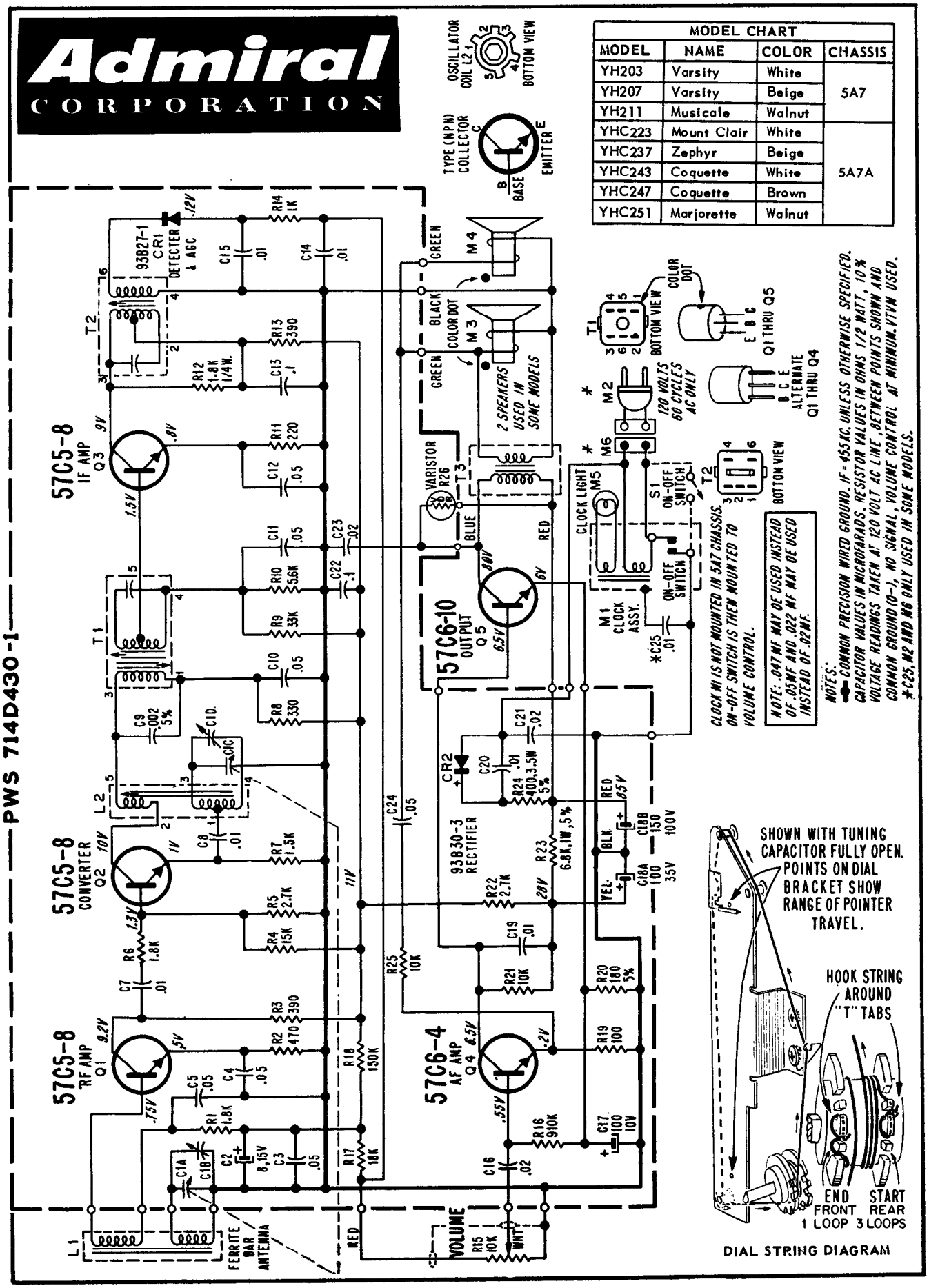
CHASSIS

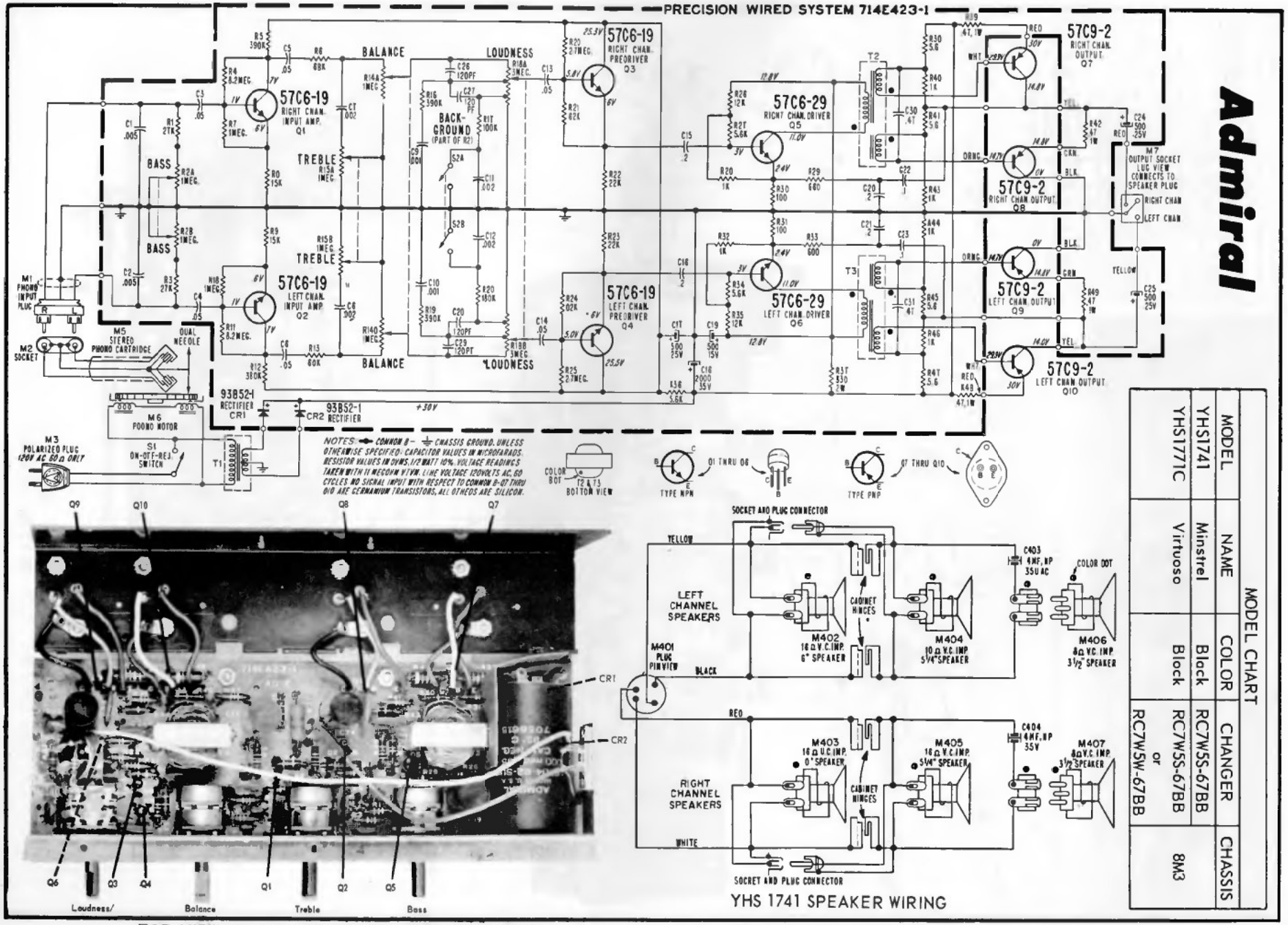
Models: YR503, YH713, YH717, YH723, YH727, YH731, YHC777, YHC793, YHC799, YHC801, YK803.

YHC793, 99

TOP VIEW OF CHASSIS SHOWING COMPONENTS AND ALIGNMENT POINTS

Note: Dashed (- - - -) lines indicate slug nearest chassis.


Admiral
CORPORATION
PWS 714D430-1
MODEL CHART
MODEL | NAME | COLOR | CHASSIS
YH203 | Varsity | White | 5A7
YH207 | Varsity | Beige
YH211 | Musicale | Walnut
YHC223 | Mount Clair | White | 5A7A
YHC237 | Zephyr | Beige
YHC243 | Coquette | White
YHC247 | Coquette | Brown
YHC251 | Marjorette | Walnut
OSCILLATOR COIL L2
BOTTOM VIEW
TYPE (NPN)
COLLECTOR
BASE
EMITTER
57C5-8 IF AMP Q3
57C5-8 CONVERTER Q2
57C5-8 RF AMP Q1
57C6-10 OUTPUT Q5
57C6-4 AF AMP Q4
93B27-1 CR1 DETECTER & AGC
93B30-3 RECTIFIER
VARISTOR R26
2 SPEAKERS USED IN SOME MODELS
120 VOLTS 60 CYCLES AC ONLY
COLOR DOT
Q1 THRU Q5
ALTERNATE Q1 THRU Q4
CLOCK LIGHT
CLOCK ASSY.
ON-OFF SWITCH
FERRITE BAR ANTENNA
VOLUME
NOTE: .047MF MAY BE USED INSTEAD OF .05MF AND .022 MF MAY BE USED INSTEAD OF .02MF.
CLOCK M1 IS NOT MOUNTED IN 5A7 CHASSIS. ON-OFF SWITCH IS THEN MOUNTED TO VOLUME CONTROL.
NOTES:
COMMON PRECISION WIRED GROUND. IF = 455 KC. UNLESS OTHERWISE SPECIFIED.
CAPACITOR VALUES IN MICROFARADS. RESISTOR VALUES IN OHMS 1/2 WATT, 10%
VOLTAGE READINGS TAKEN AT 120 VOLT AC LINE, BETWEEN POINTS SHOWN AND COMMON GROUND (0-), NO SIGNAL, VOLUME CONTROL AT MINIMUM. V1VM USED.
*C25, M2 AND M6 ONLY USED IN SOME MODELS.
SHOWN WITH TUNING CAPACITOR FULLY OPEN. POINTS ON DIAL BRACKET SHOW RANGE OF POINTER TRAVEL.
HOOK STRING AROUND "T" TABS
END FRONT 1 LOOP
START REAR 3 LOOPS
DIAL STRING DIAGRAM

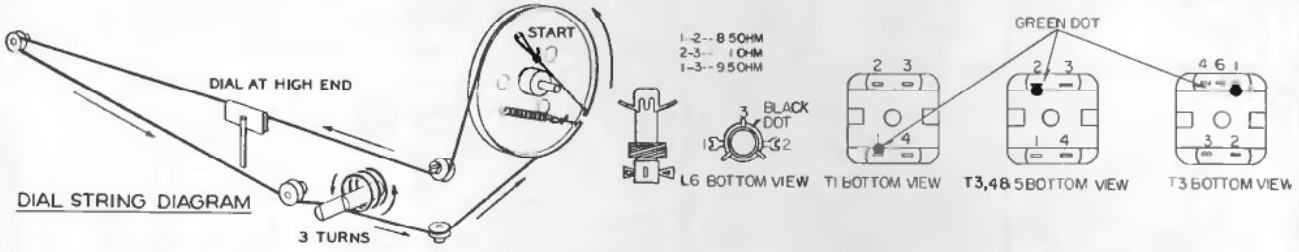


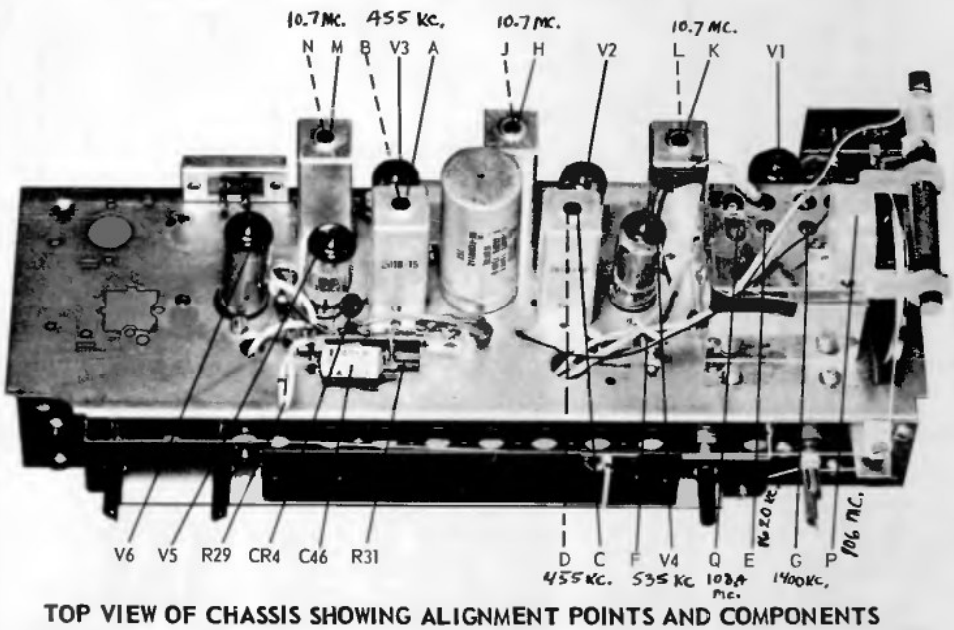
MODEL CHART				
MODEL	NAME	COLOR	CHANGER	CHASSIS
YHS1741	Minstrel	Black	RC7W5S-67BB	8M3
YHS1771C	Virtuoso	Block	RC7W5S-67BB or RC7W5W-67BB	

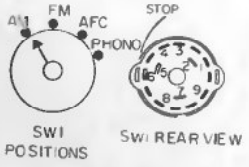
Admiral

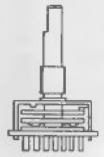
MODEL CHART			
MODEL	NAME	COLOR	CHASSIS
YH601	Celestial	Black	6M4
YH607	Celestial	Brown	
YH611	Melodist	Walnut	
YH619	Polonaise	Cherry	
YHC621	Concerto	Black	6M4A
YHC627	Concerto	Brown	
YHC631	Caprice	Walnut	
YHC641	Reverie	Walnut	
YHC649	Lullaby	Cherry	

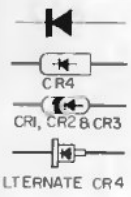
(See page 7 for schematic diagram.)





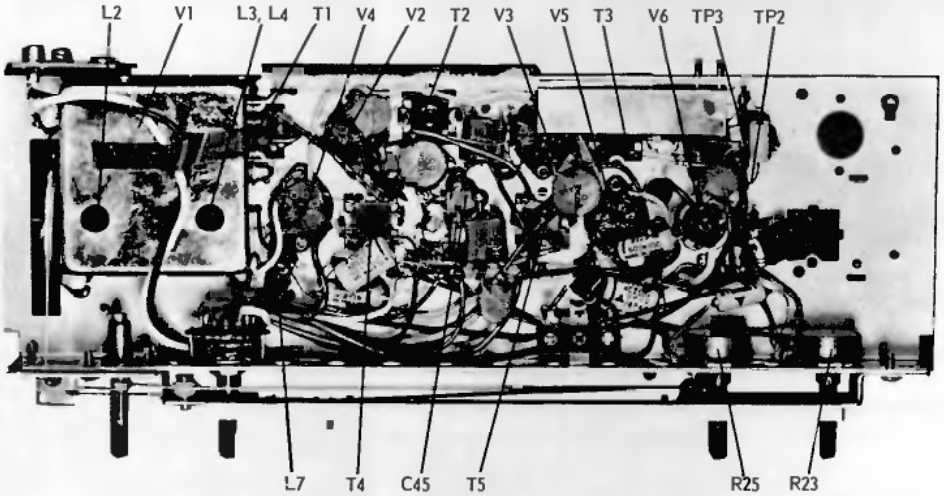




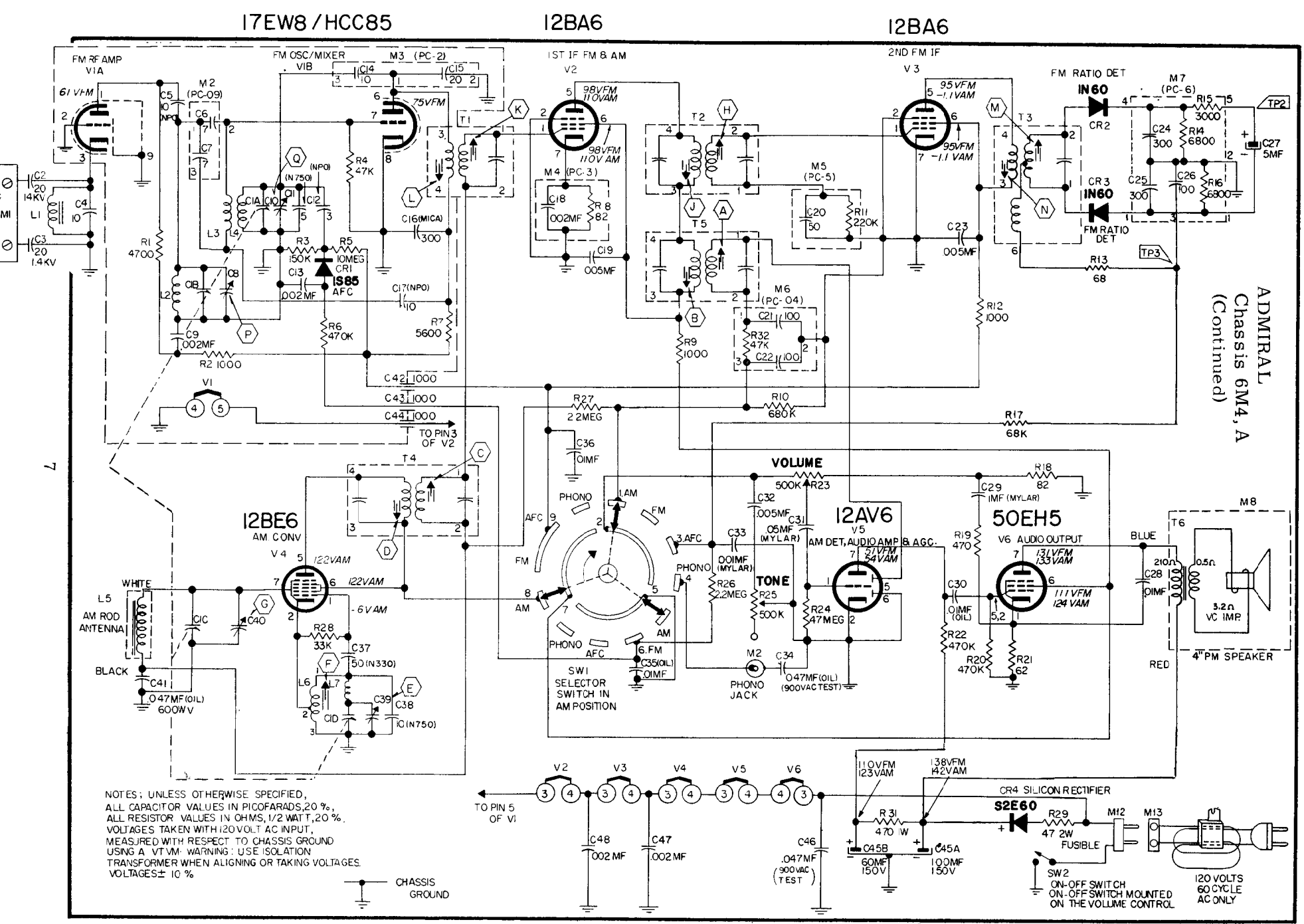


TOP VIEW OF CHASSIS SHOWING ALIGNMENT POINTS AND COMPONENTS

Note: Dashed (— — —) lines indicate slug nearest chassis.

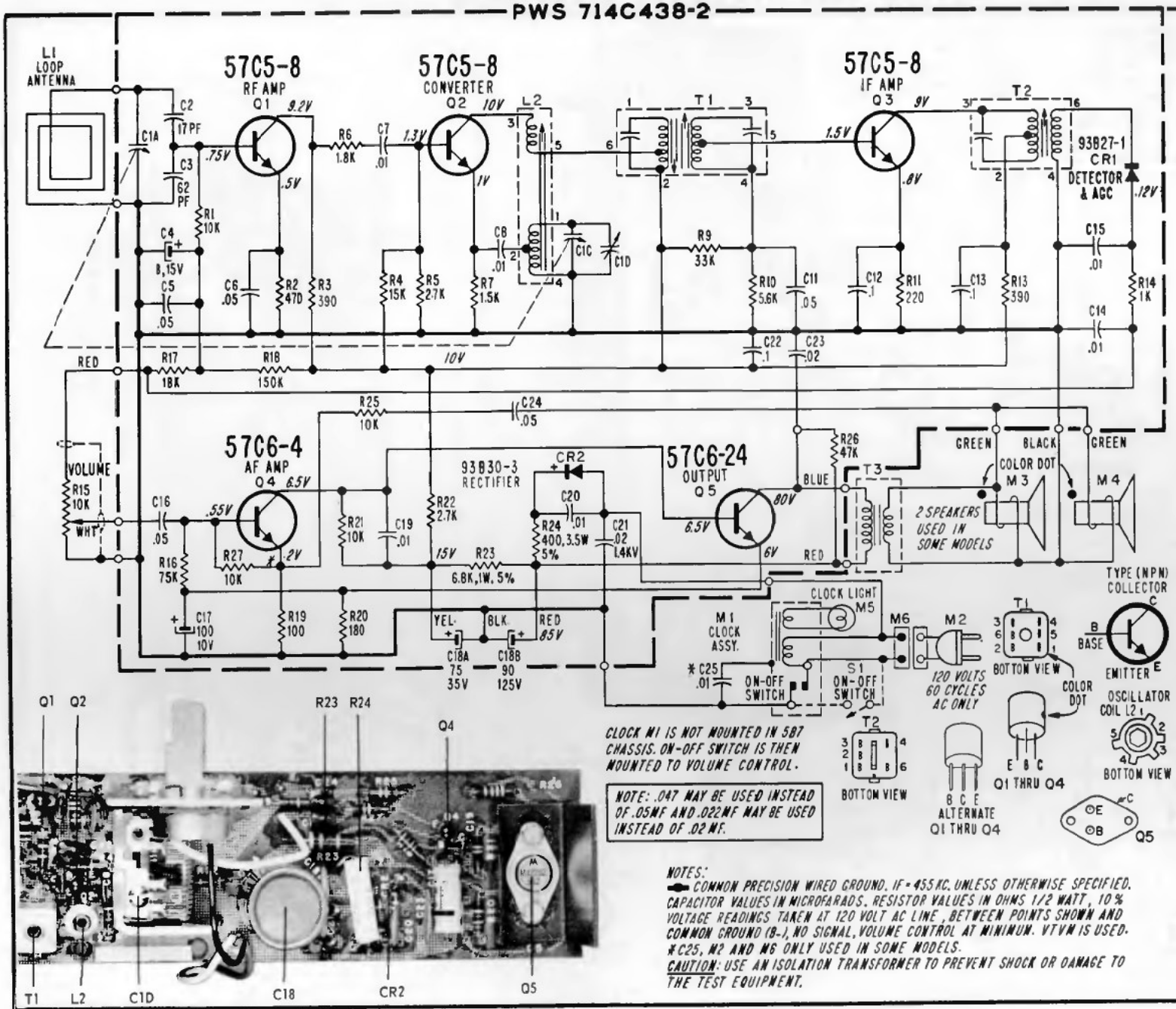


BOTTOM VIEW OF CHASSIS

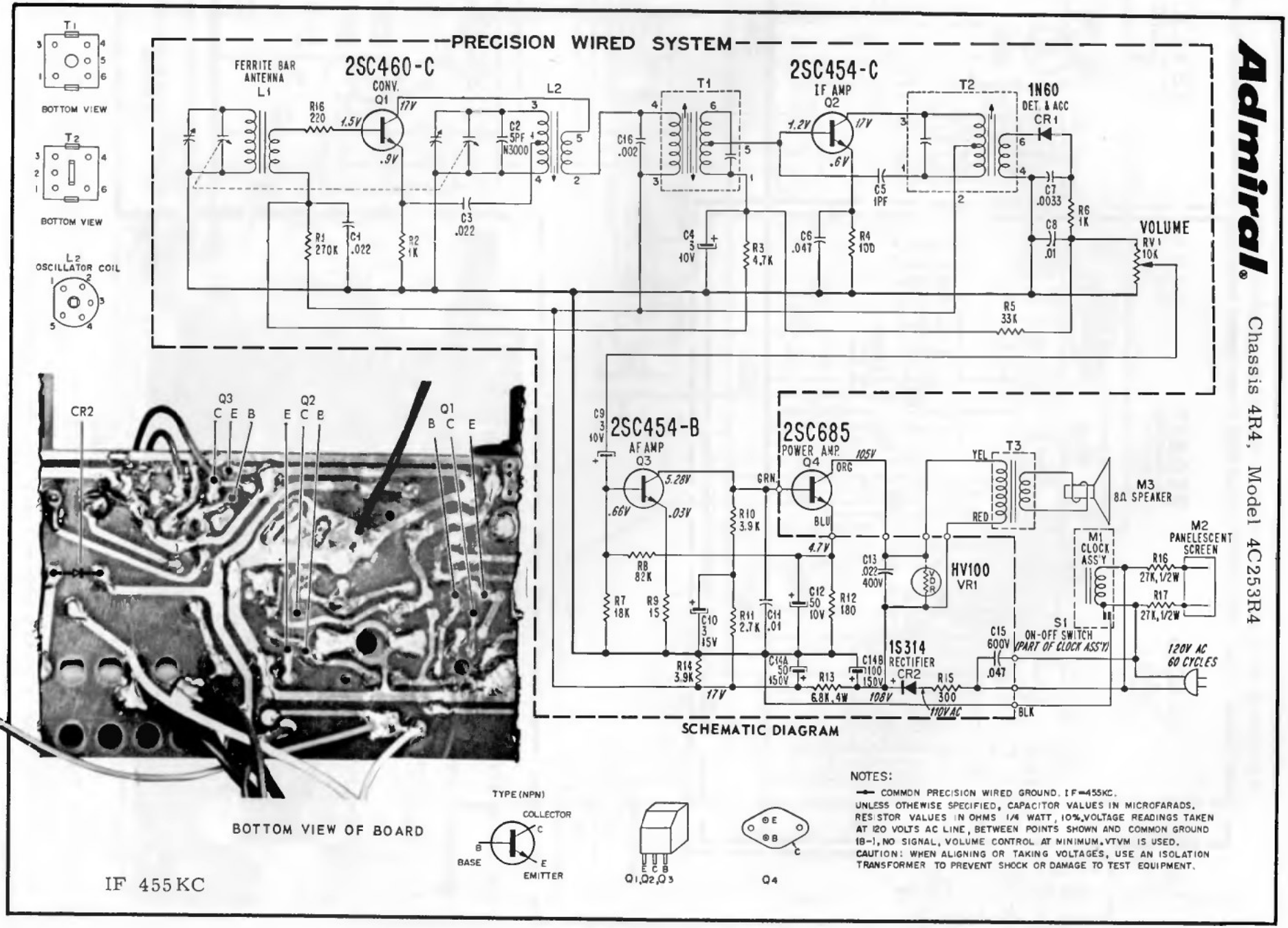


ADMIRAL
Chassis 6M4, A
(Continued)

SCHEMATIC DIAGRAM 6M4 CHASSIS



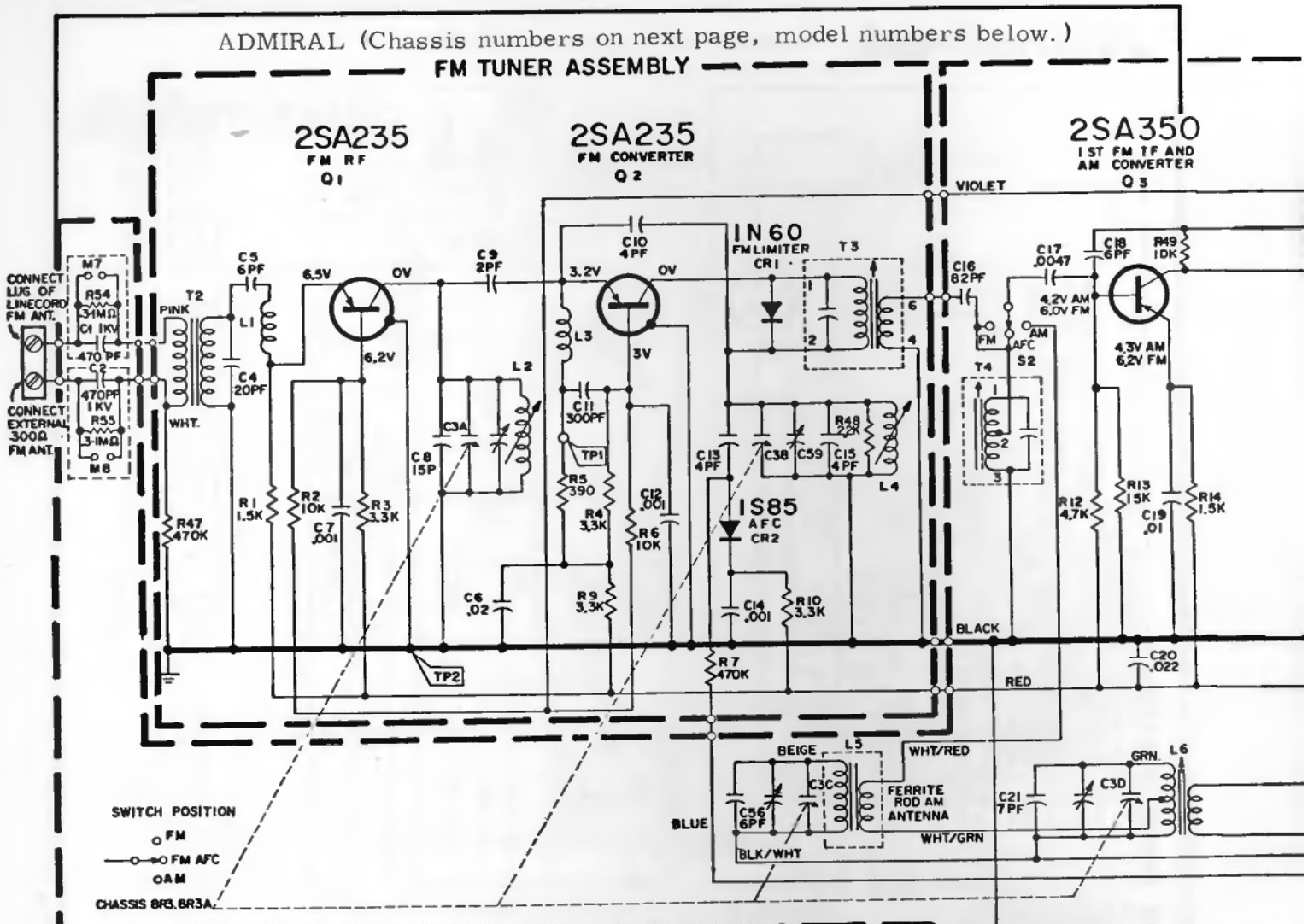
455 Kc. 535 Kc. 1620 Kc. TOP VIEW OF CHASSIS

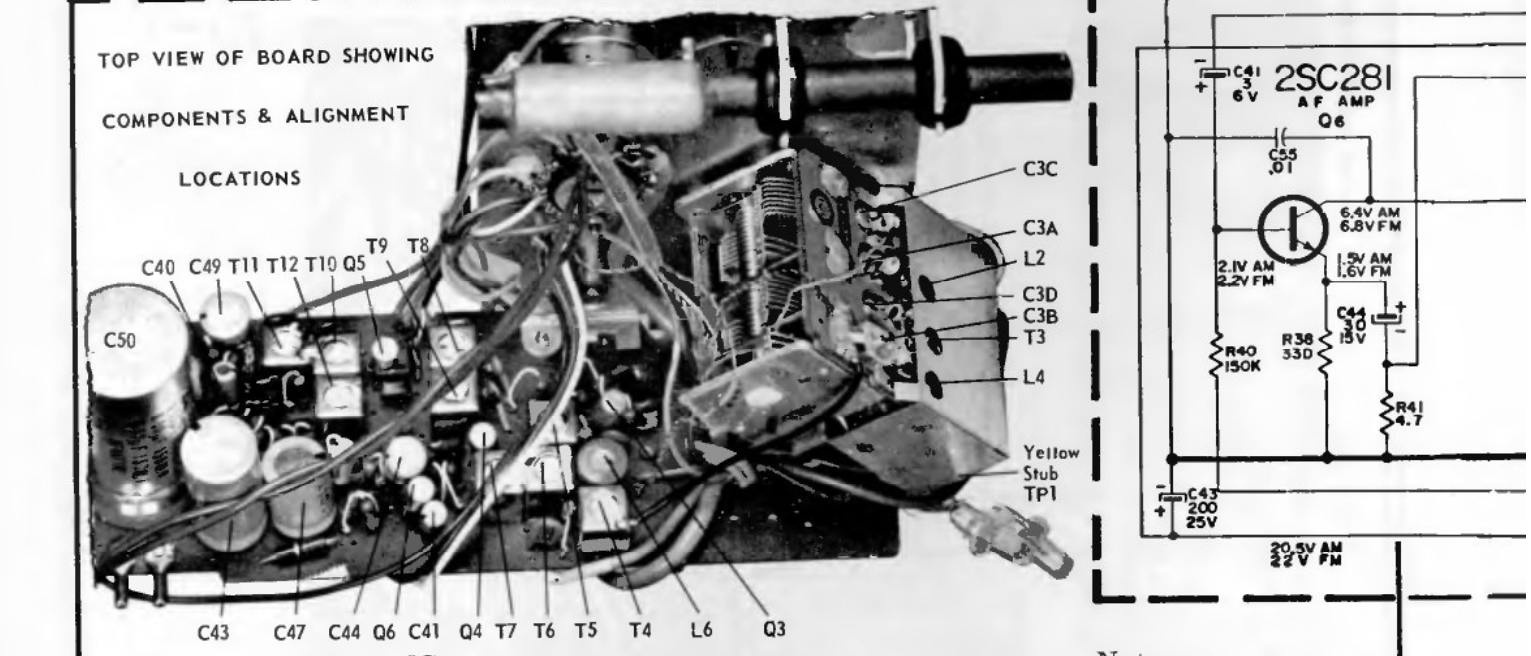


NOTES:

— COMMON PRECISION WIRED GROUND. I F = 455KC.
UNLESS OTHEWISE SPECIFIED, CAPACITOR VALUES IN MICROFARADS, RESISTOR VALUES IN OHMS 1/4 WATT, 10%, VOLTAGE READINGS TAKEN AT 120 VOLTS AC LINE, BETWEEN POINTS SHOWN AND COMMON GROUND (B-), NO SIGNAL, VOLUME CONTROL AT MINIMUM. VTVM IS USED.
CAUTION: WHEN ALIGNING OR TAKING VOLTAGES, USE AN ISOLATION TRANSFORMER TO PREVENT SHOCK OR DAMAGE TO TEST EQUIPMENT.

ADMIRAL (Chassis numbers on next page, model numbers below.)



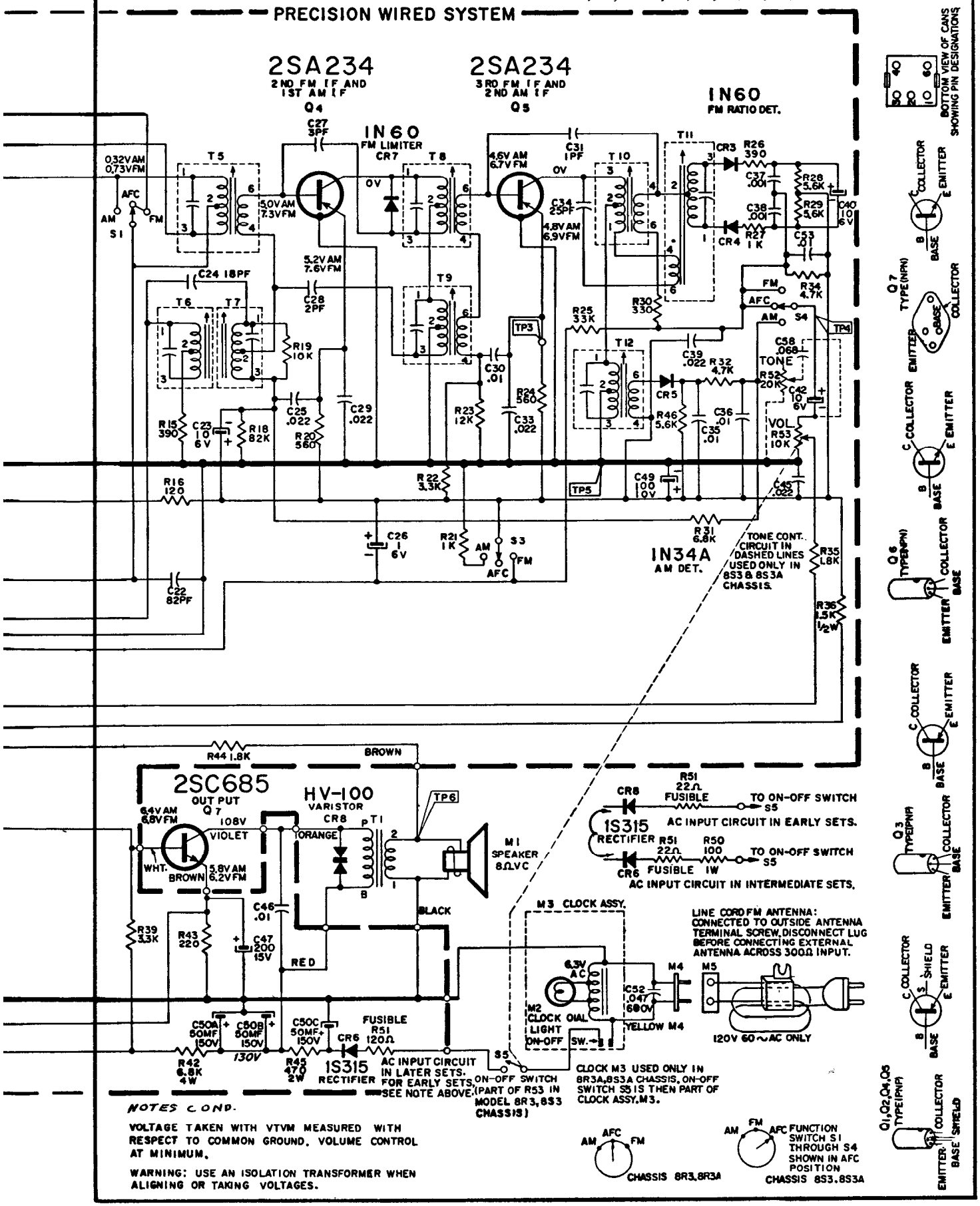


Models: Y441RA YC521, 531, 541, 551, 561RA
Y421RA Y461RA YR407, 703, 717, 718, 721, 731, 733, 741, 743
Y431RA Y471RA YRC417, 803, 817, 818, 821, 831, 833, 841, 843

Notes:
FM IF 10.7MC
AM IF 455KC

ADMIRAL Chassis numbers 8R3, A; 8S3, A, D, E, F, G; 8Y3

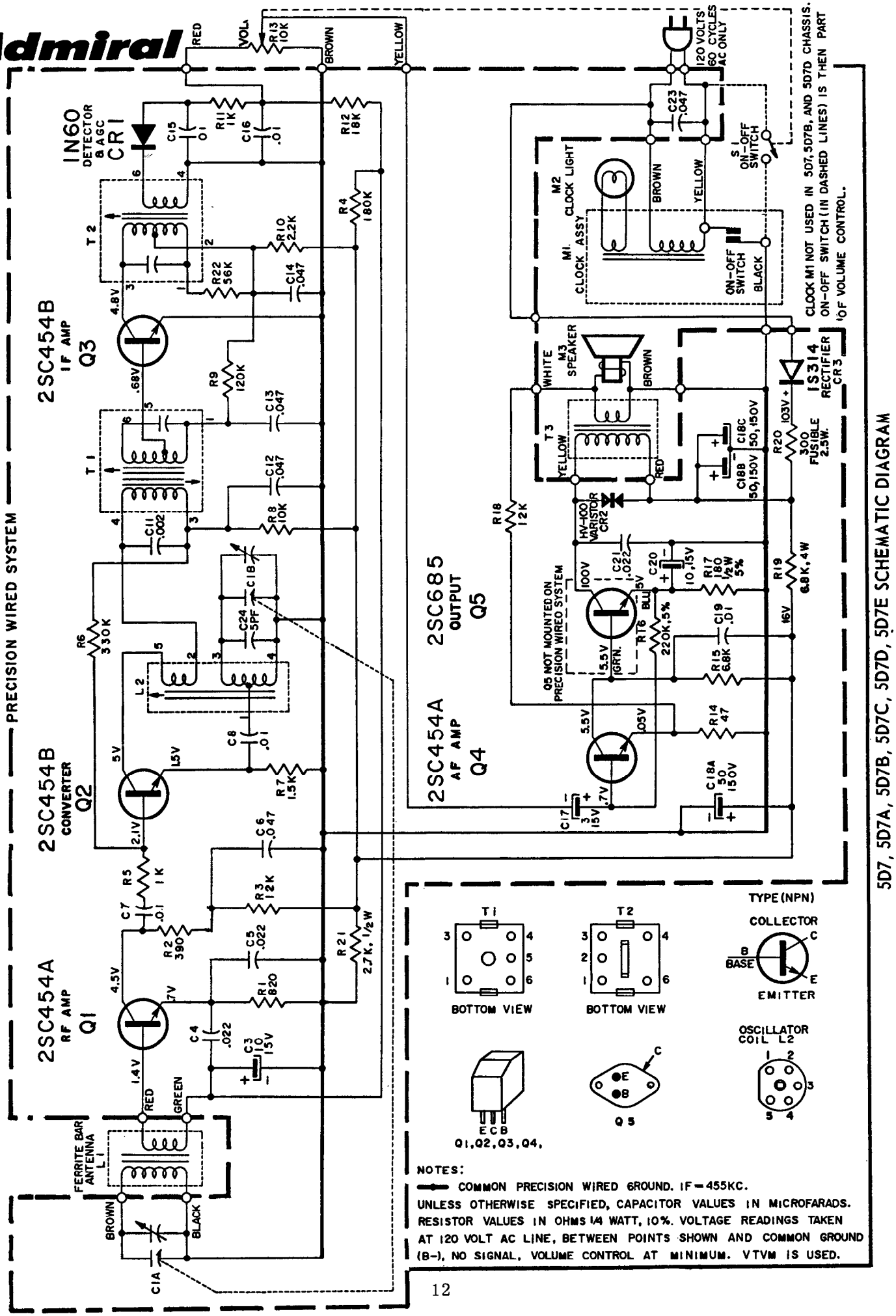
PRECISION WIRED SYSTEM



NOTES COND.

VOLTAGE TAKEN WITH VTVM MEASURED WITH RESPECT TO COMMON GROUND. VOLUME CONTROL AT MINIMUM.

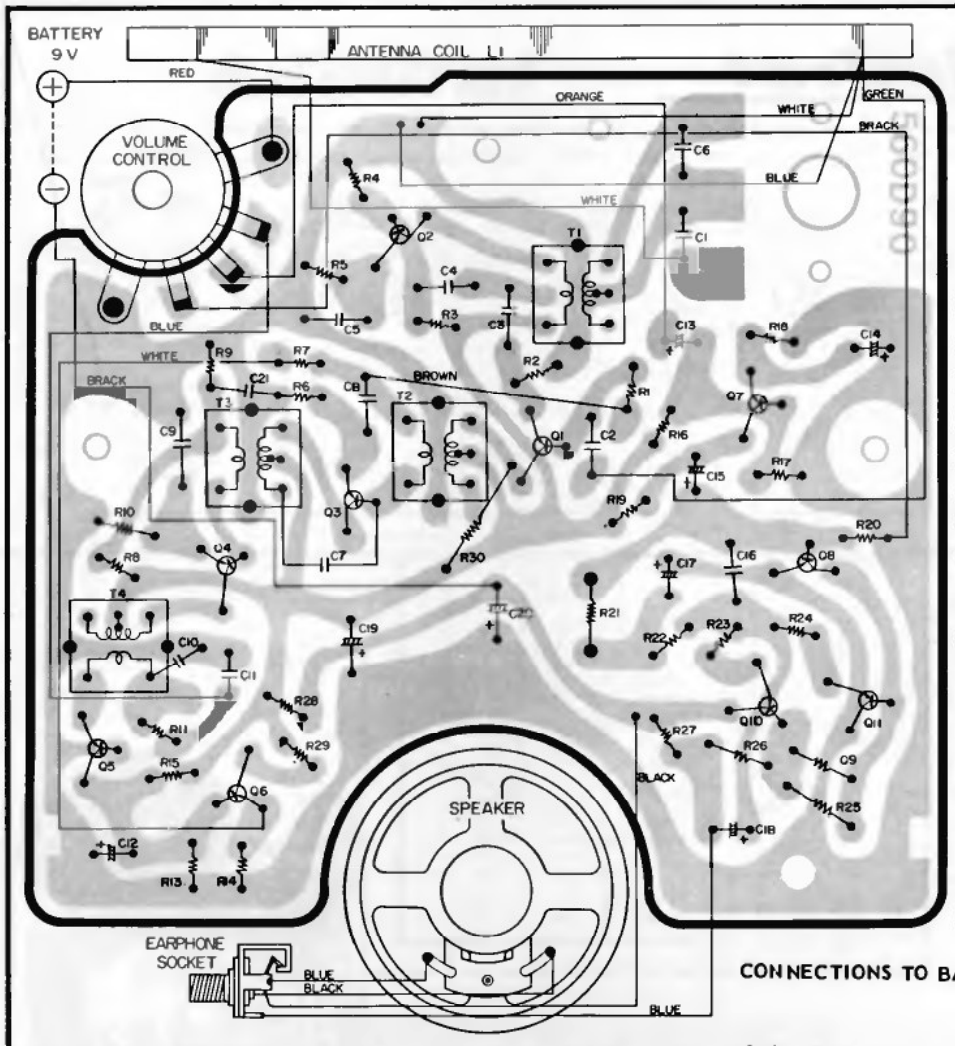
WARNING: USE AN ISOLATION TRANSFORMER WHEN ALIGNING OR TAKING VOLTAGES.



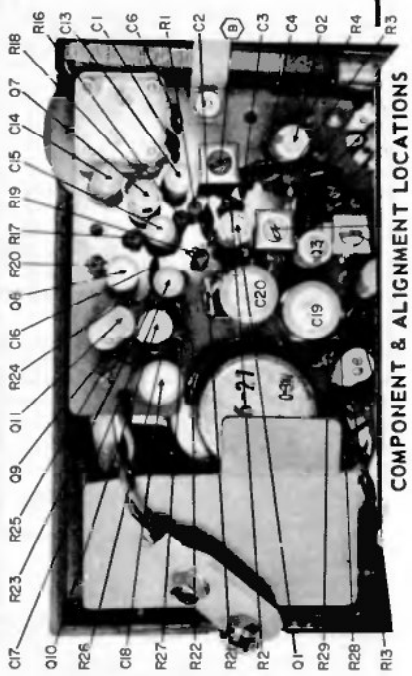
5D7, 5D7A, 5D7B, 5D7C, 5D7D, 5D7E SCHEMATIC DIAGRAM

Admiral

Chassis 10A3
Models: YK211GP,
YK212GP

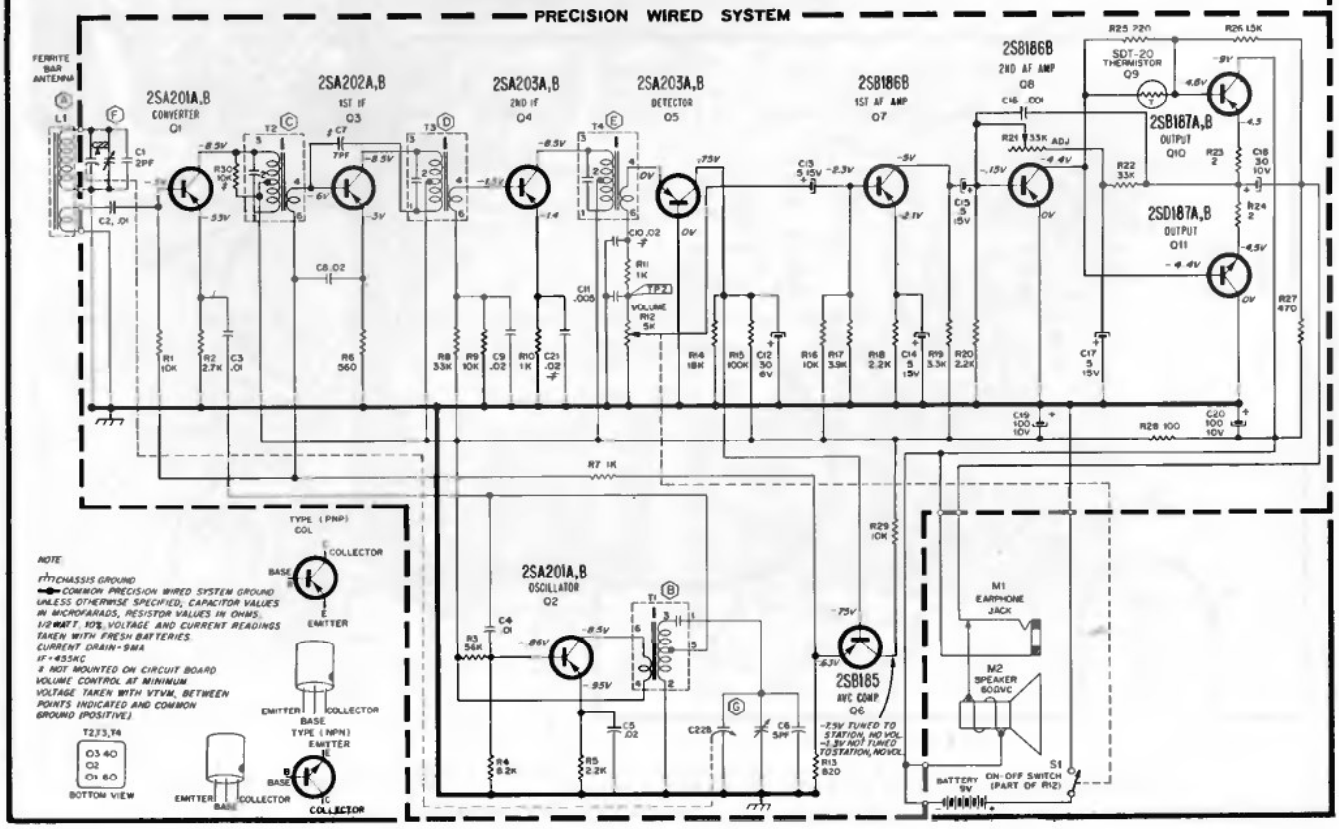


CONNECTIONS TO BACK OF BOARD & WIRING



COMPONENT & ALIGNMENT LOCATIONS

PRECISION WIRED SYSTEM



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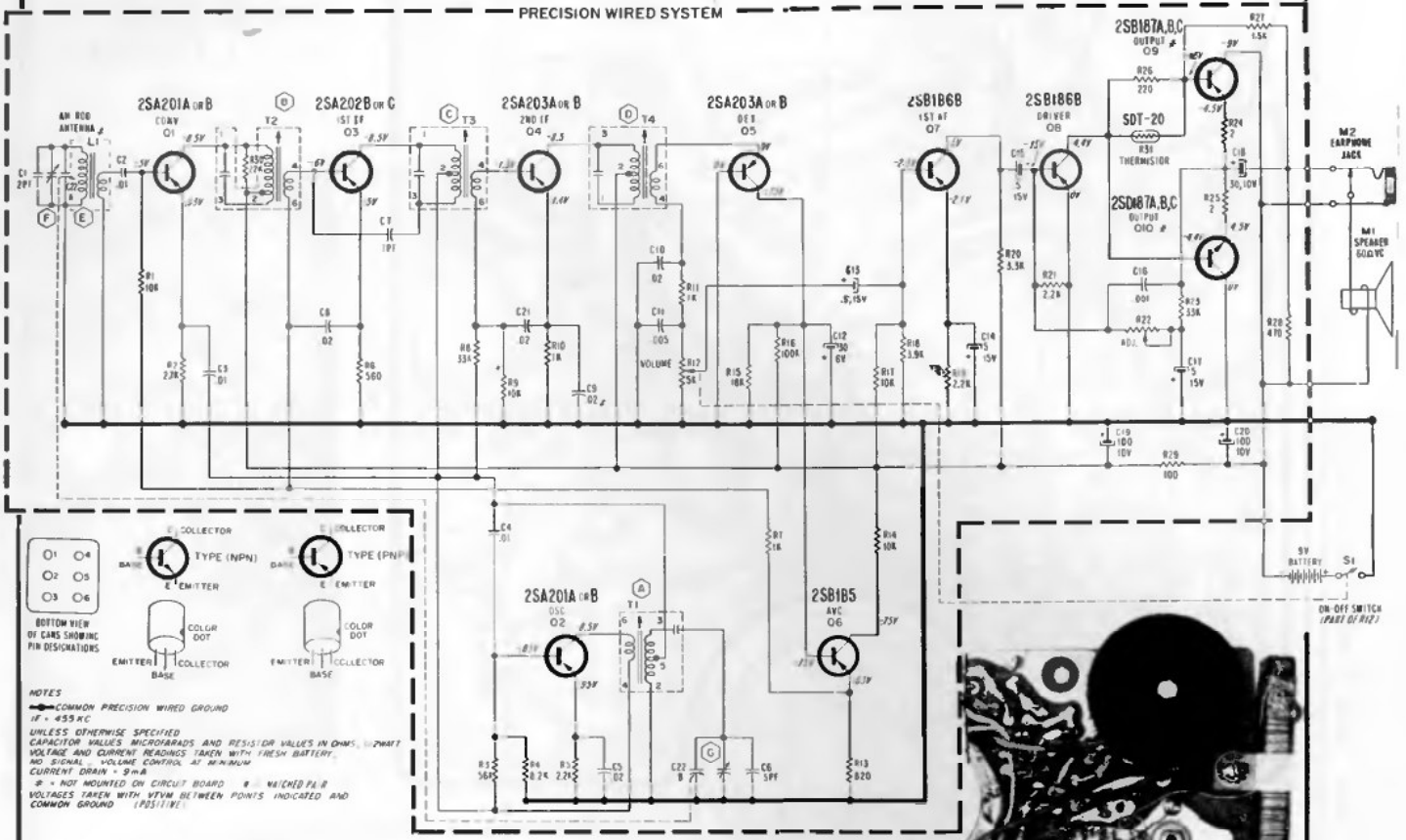
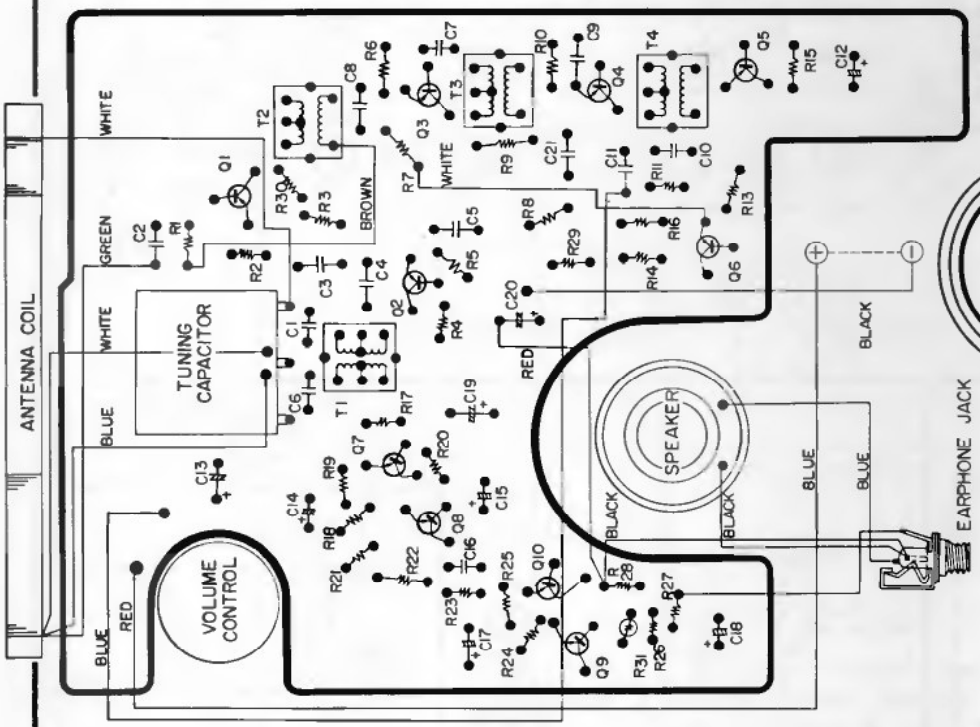
MODEL: YK220
CHASSIS: 10B3

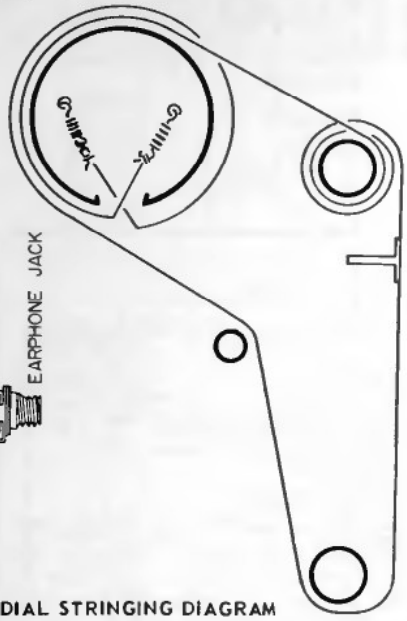
PRECISION WIRED SYSTEM



NOTES
COMMON PRECISION WIRED GROUND
IF = 455 KC
UNLESS OTHERWISE SPECIFIED
CAPACITOR VALUES MICROFARADS AND RESISTOR VALUES IN OHMS, K=1000
VOLTAGE AND CURRENT READINGS TAKEN WITH FRESH BATTERY,
NO SIGNAL, VOLUME CONTROL AT MINIMUM
CURRENT DRAIN = 9 mA
P = NOT MOUNTED ON CIRCUIT BOARD M = MATCHED PAIR
VOLTAGES TAKEN WITH VTVM BETWEEN POINTS INDICATED AND COMMON GROUND (POSITIVE)



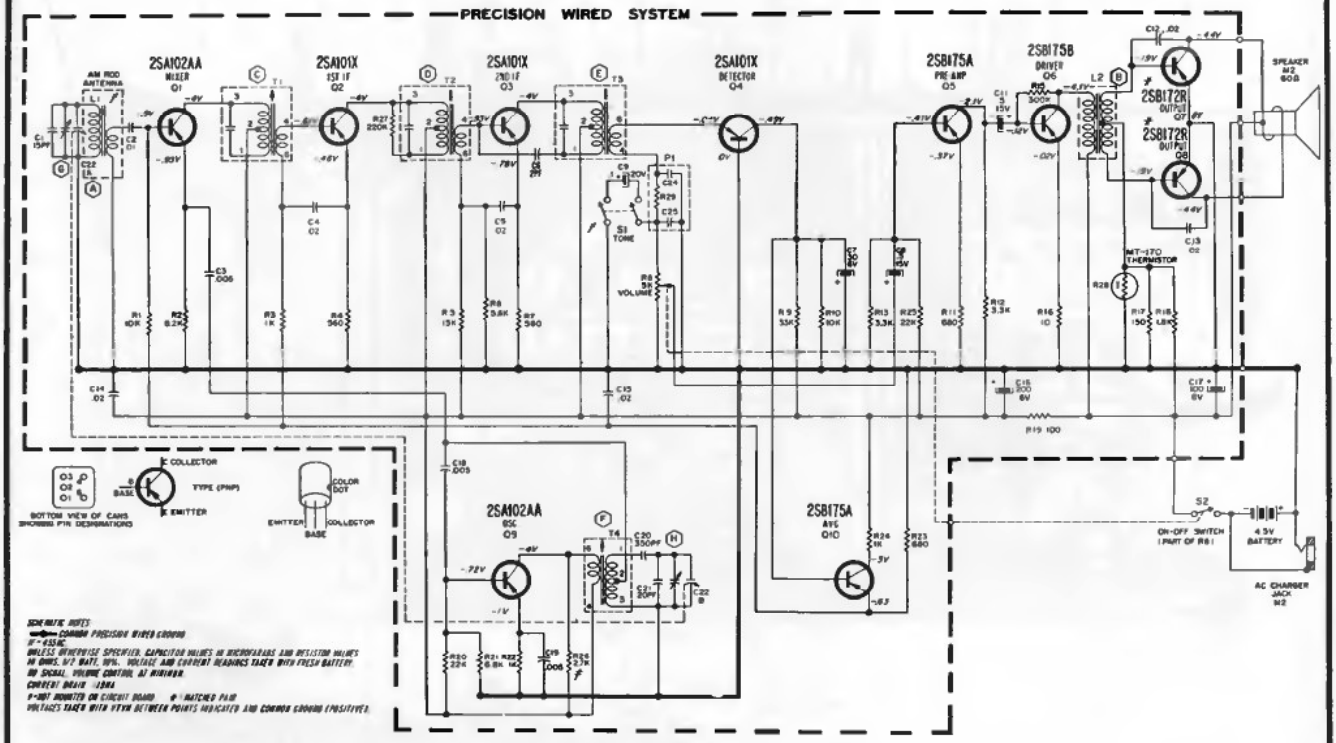
COMPONENT CONNECTIONS TO BACK OF BOARD & WIRING

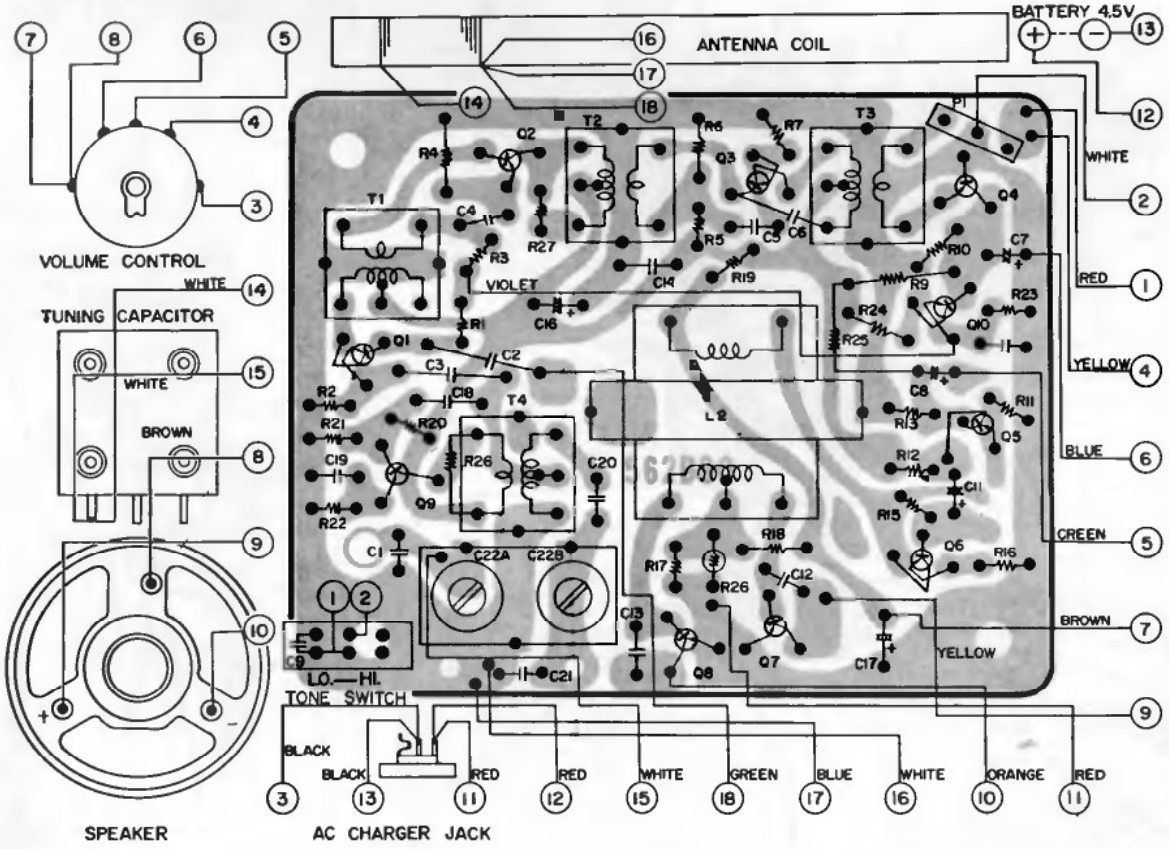


DIAL STRINGING DIAGRAM

Admiral

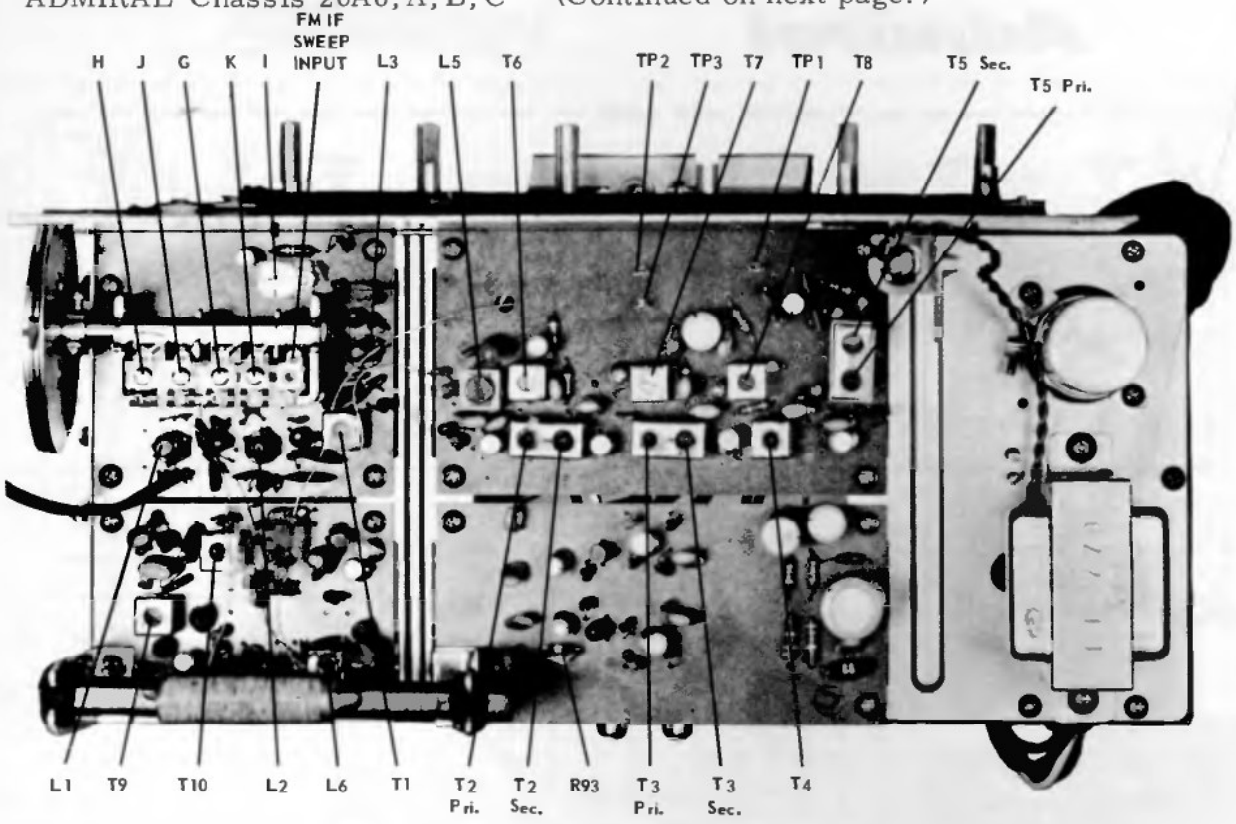
MODEL: YK237
CHASSIS: 10C3

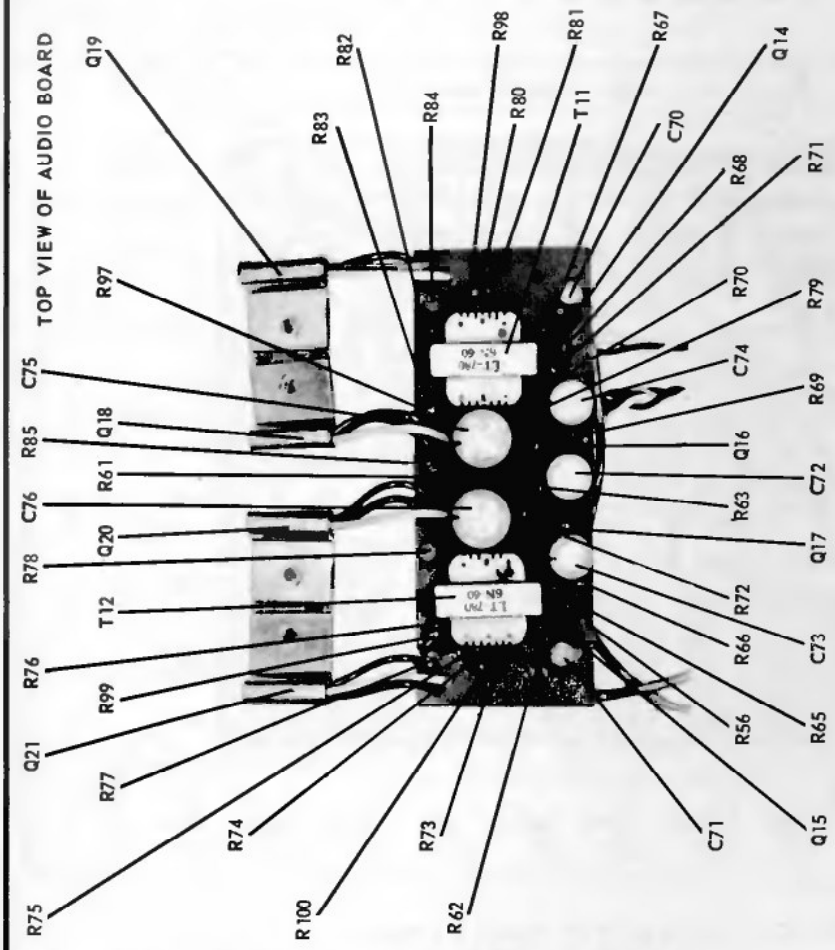


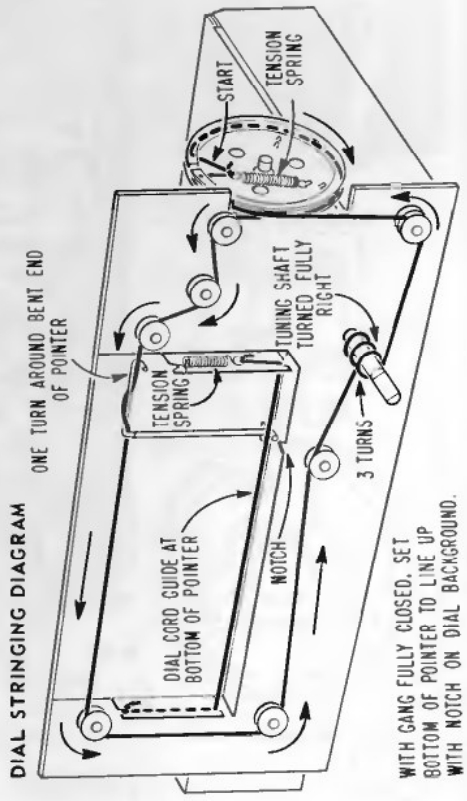


COMPONENT CONNECTIONS TO BACK OF BOARD & WIRING

ADMIRAL Chassis 20A6, A, B, C (Continued on next page.)

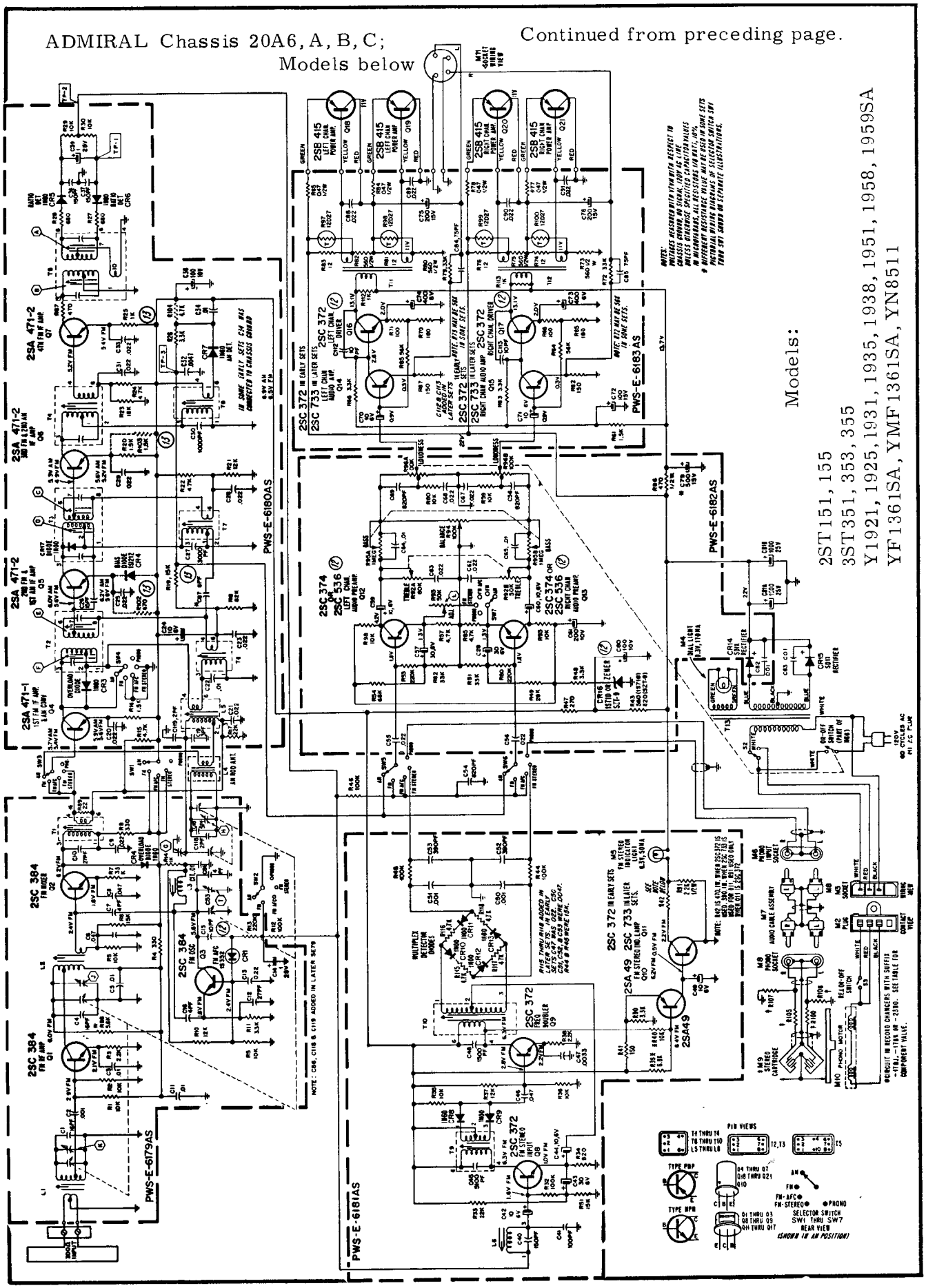




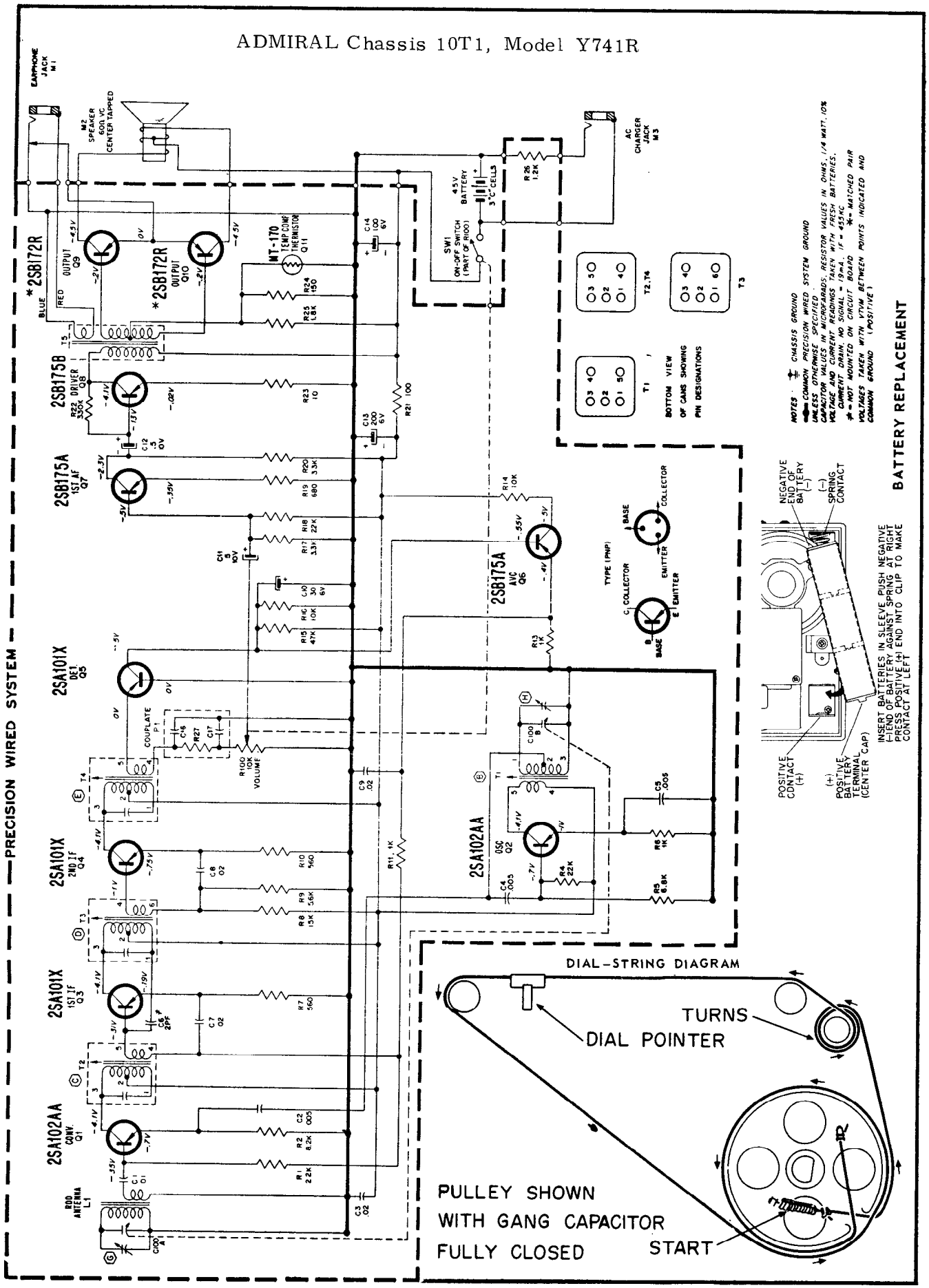


ADMIRAL Chassis 20A6, A, B, C;
Models below

Continued from preceding page.



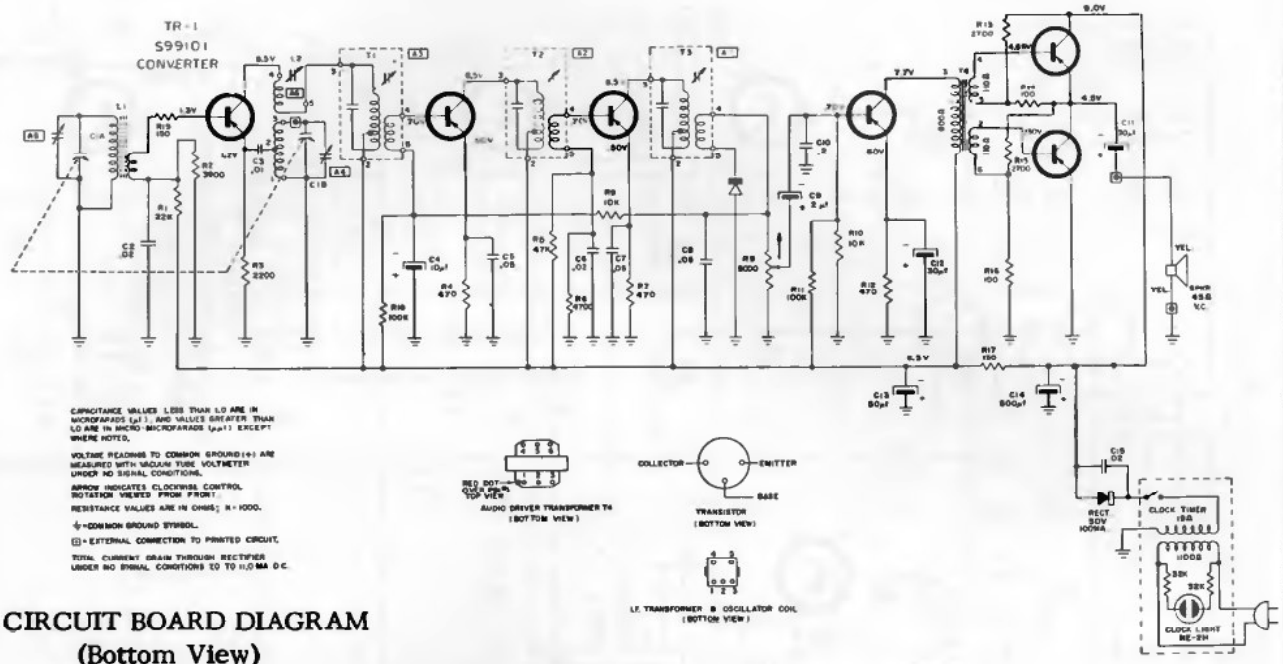
ADMIRAL Chassis 10T1, Model Y741R



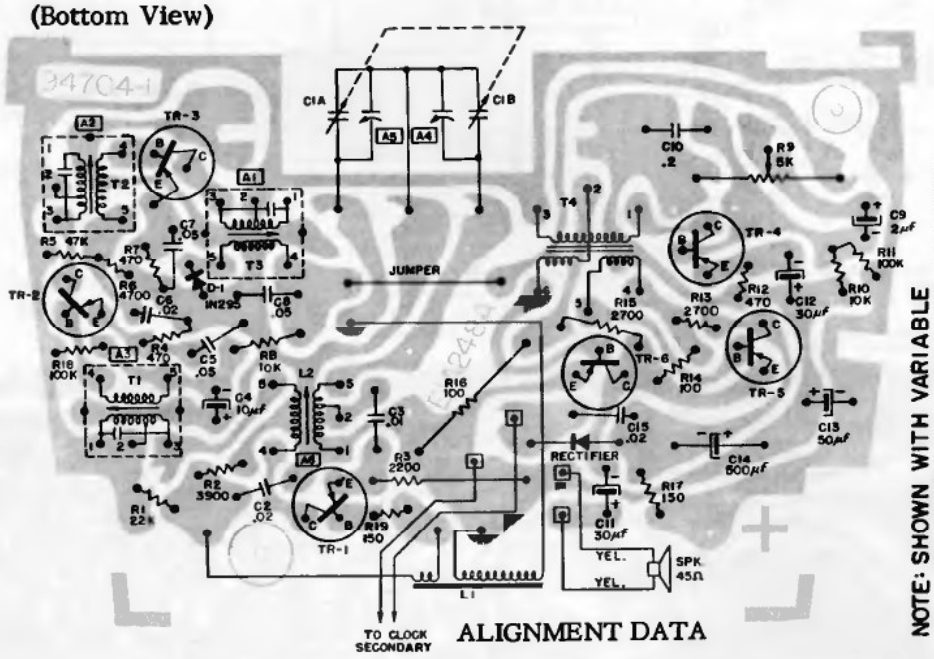
Arvin

Models 57R72, 57R75, 57R78

TR-2	TR-3	D-1	TR-4	TR-5 & 6
S99103	S99102	1N295	S99201	S99203
1ST I.F.	2ND I.F.	DETECTOR	AUDIO DRIVER	AUDIO OUTPUT

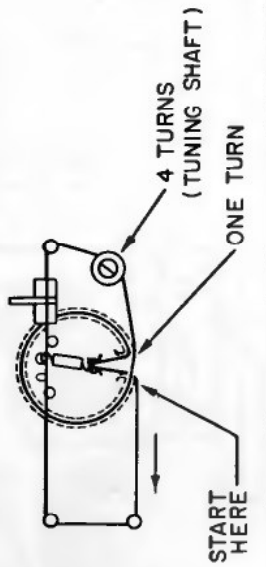


CIRCUIT BOARD DIAGRAM
(Bottom View)



ALIGNMENT DATA

IF.... 455 Kc



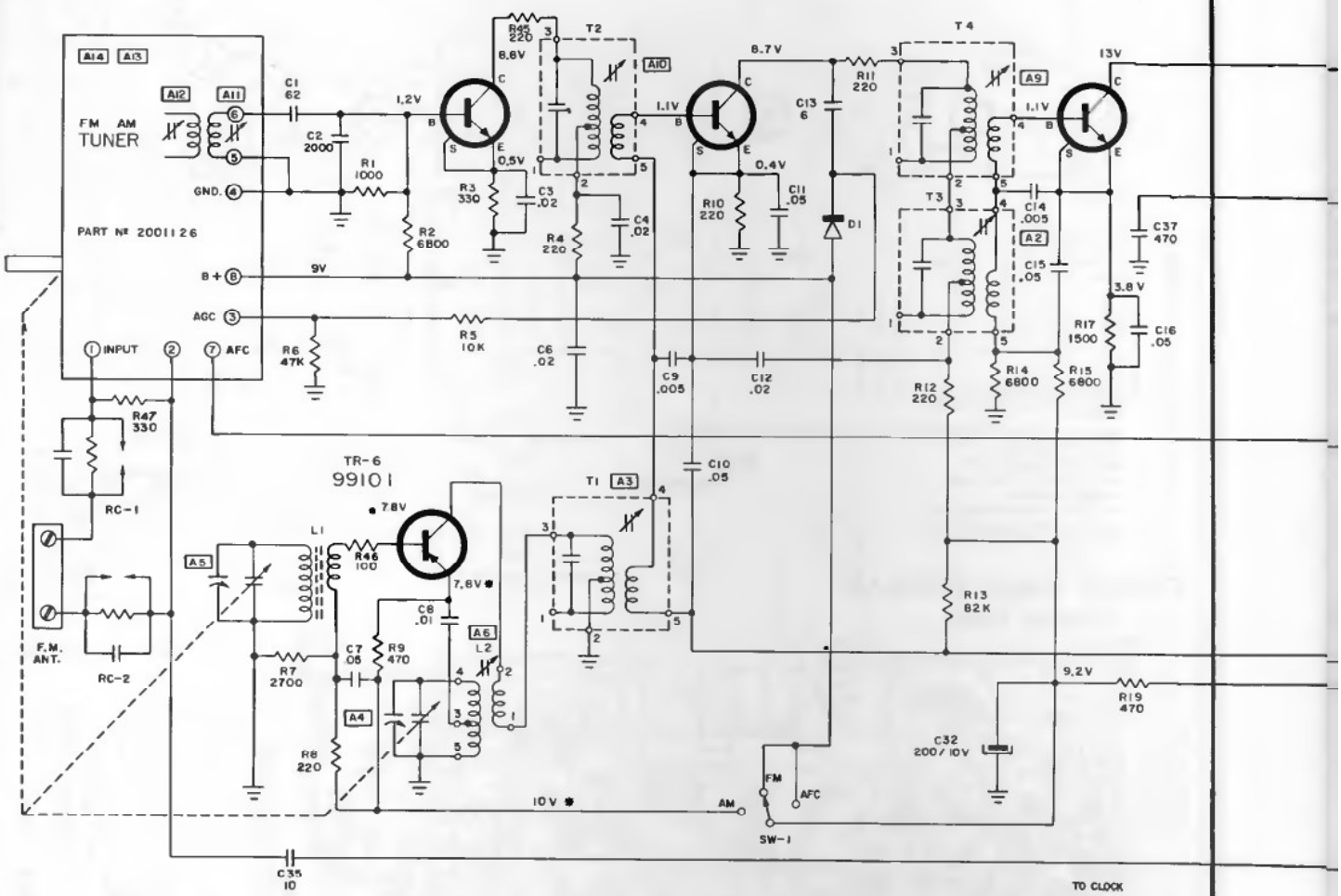
NOTE: SHOWN WITH VARIABLE IN EXTREME CLOCKWISE POSITION.

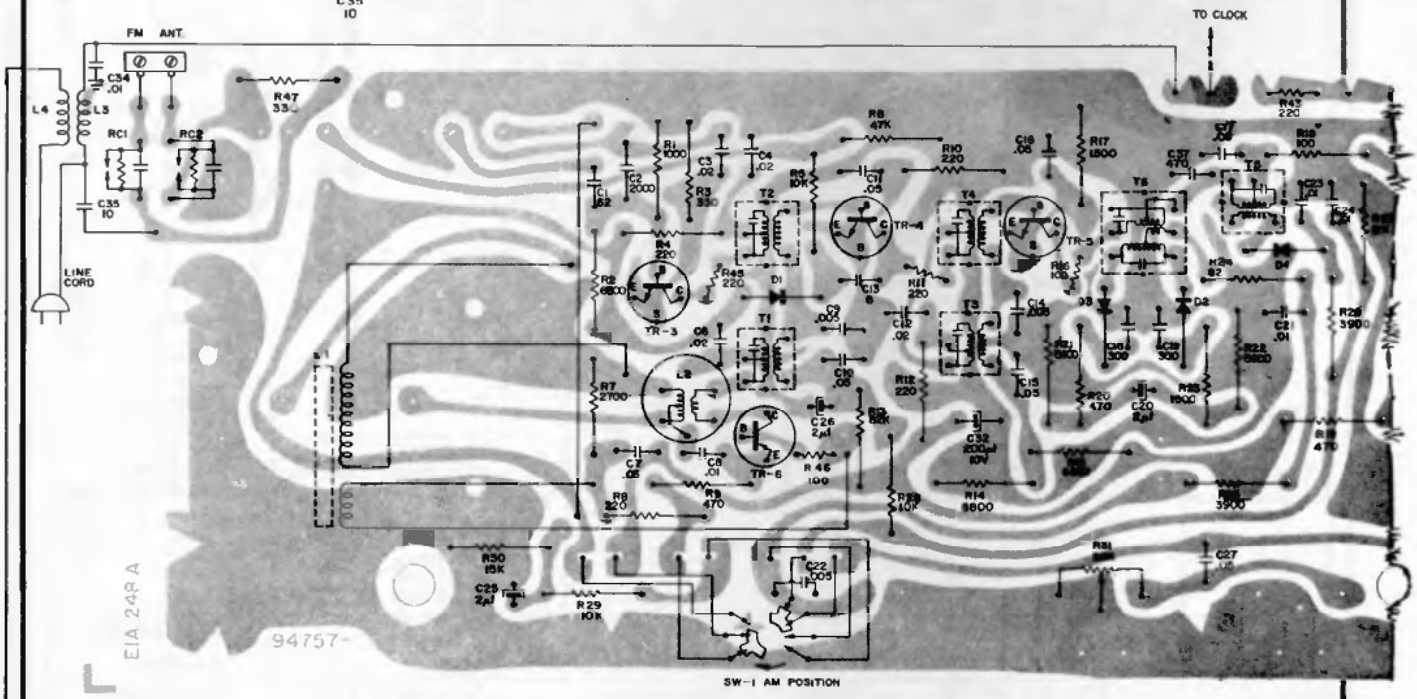
Position of Variable	Frequency of Generator	Dummy Antenna	Generator Output Connection	Trimmer Adj. in order shown for Max. Output	Functions of Trimmer
Open	455 Kc	.05 mf.	C1A	A1 (Top of T3) A2 (Top of T2) A3 (Top of T1)	I.F. I.F.
Open	1640 Kc		Test Loop	A4	Oscillator
1400 Kc	1400 Kc		Test Loop	A5	Antenna
600 Kc	600 Kc		Test Loop	A6 Check Point (LZ)	Oscillator

Recheck A4 at 1640 Kc after adjustment of A6.

ARVIN Models 37R28, 37R29, 37R38, 47R28, 47R29, 47R38

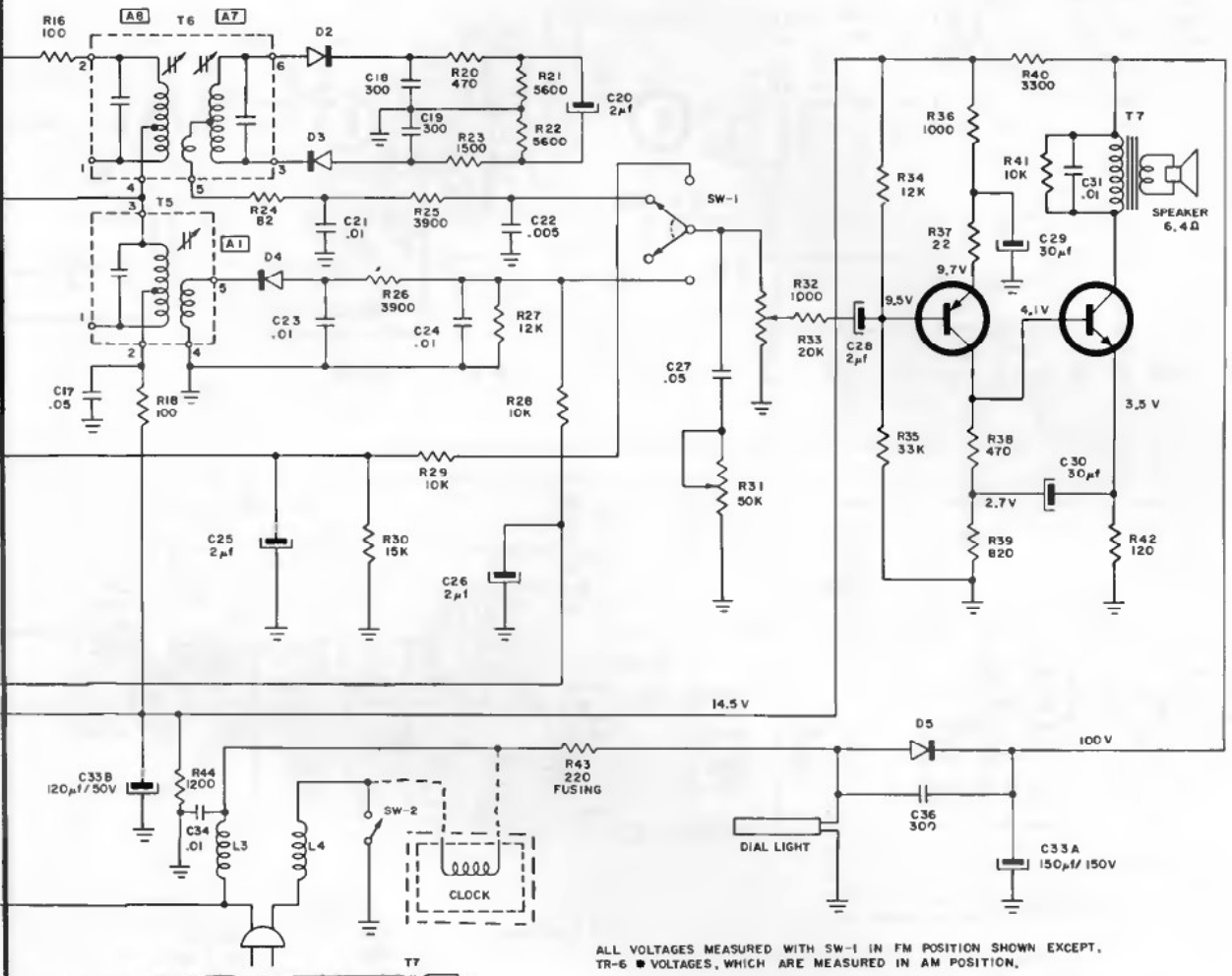
(Continued on next page.)





(Continued from preceding page.)

TR-7 99217 TR-8 99252-2



ALL VOLTAGES MEASURED WITH SW-1 IN FM POSITION SHOWN EXCEPT, TR-6 ✱ VOLTAGES, WHICH ARE MEASURED IN AM POSITION.

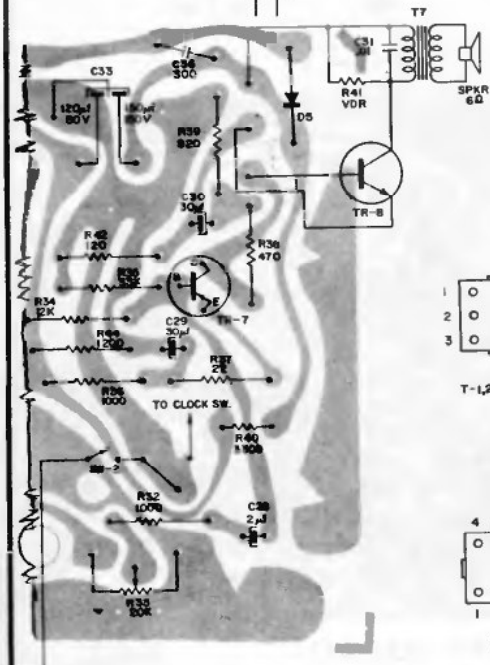
CAPACITANCE VALUES LESS THAN 1.0 ARE IN MICROFARDS (μf), AND VALUES GREATER THAN 1.0 ARE IN PICO-FARADS (pf) EXCEPT WHERE NOTED.

VOLTAGE READINGS TO COMMON GROUND (+) ARE MEASURED WITH VACUUM TUBE VOLTMETER UNDER NO SIGNAL CONDITIONS.

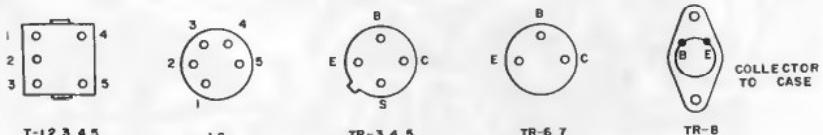
RESISTANCE VALUES ARE IN OHMS, K=1000

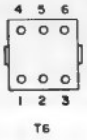
⏚ = COMMON GROUND SYMBOL.

⊡ = EXTERNAL CONNECTION TO PRINTED CIRCUIT.



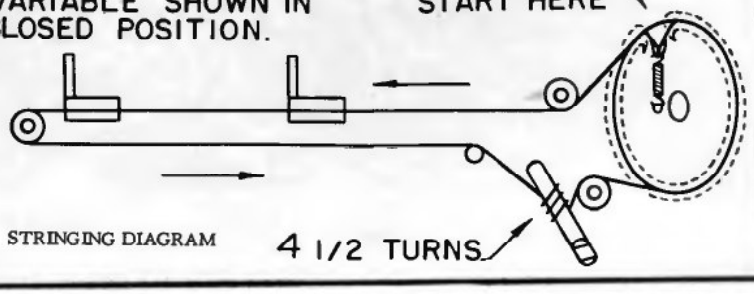
Transistor basing, bottom view.





VARIABLE SHOWN IN CLOSED POSITION.

START HERE



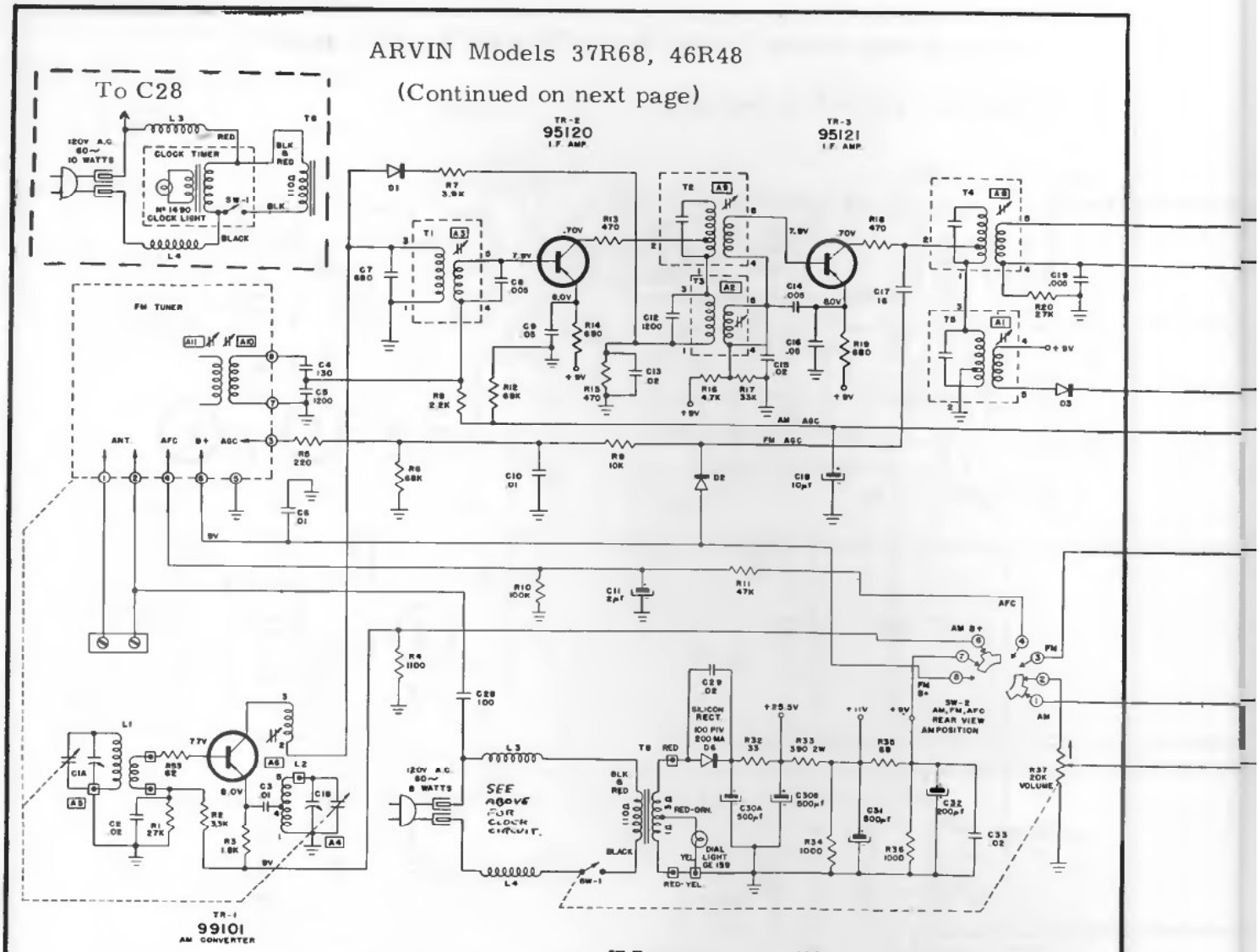
STRINGING DIAGRAM

4 1/2 TURNS

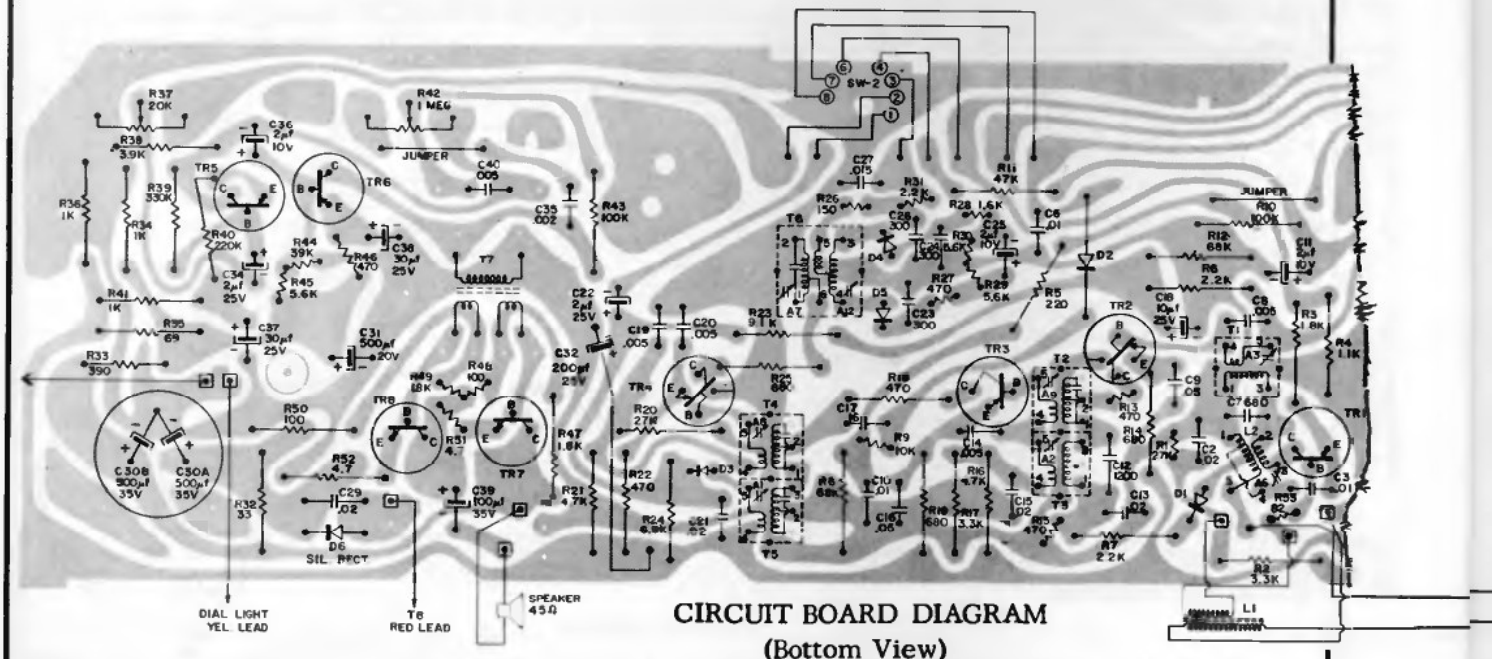
(Continued from preceding page)

ARVIN Models 37R68, 46R48

(Continued on next page)



IF Frequency	AM	455 kc.
	FM	10.7 mc.

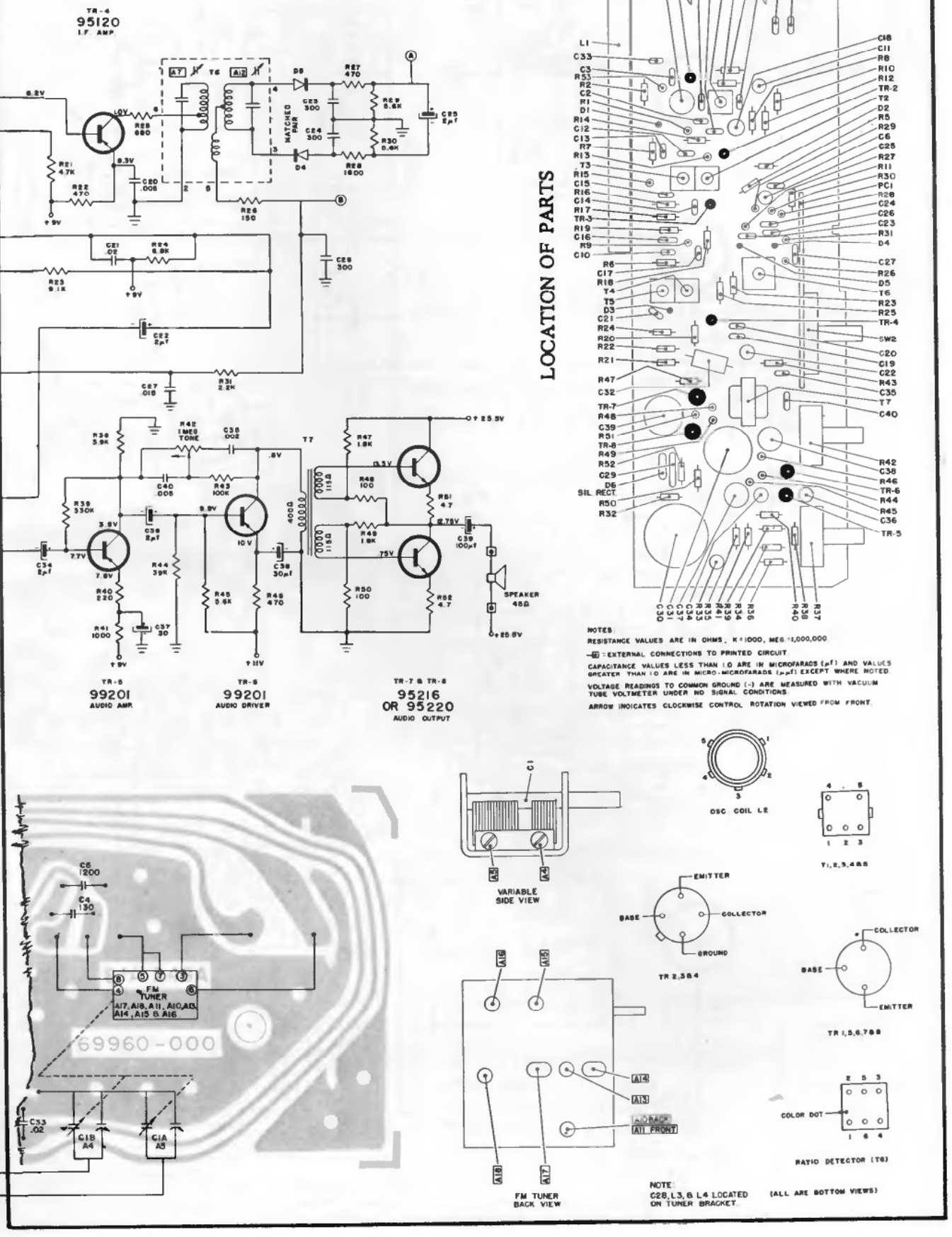


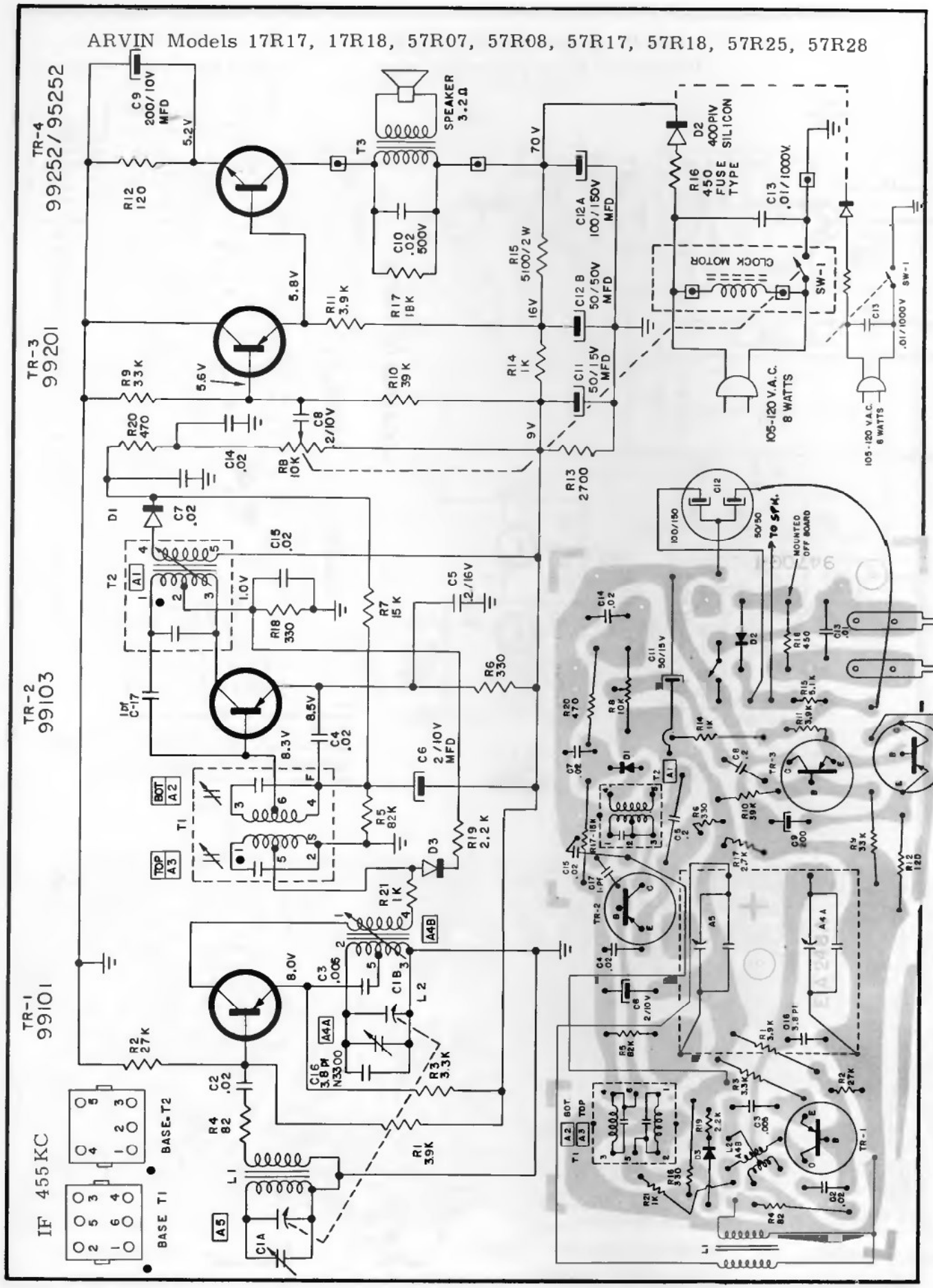
CIRCUIT BOARD DIAGRAM
(Bottom View)

T8
Red-Yellow Lead

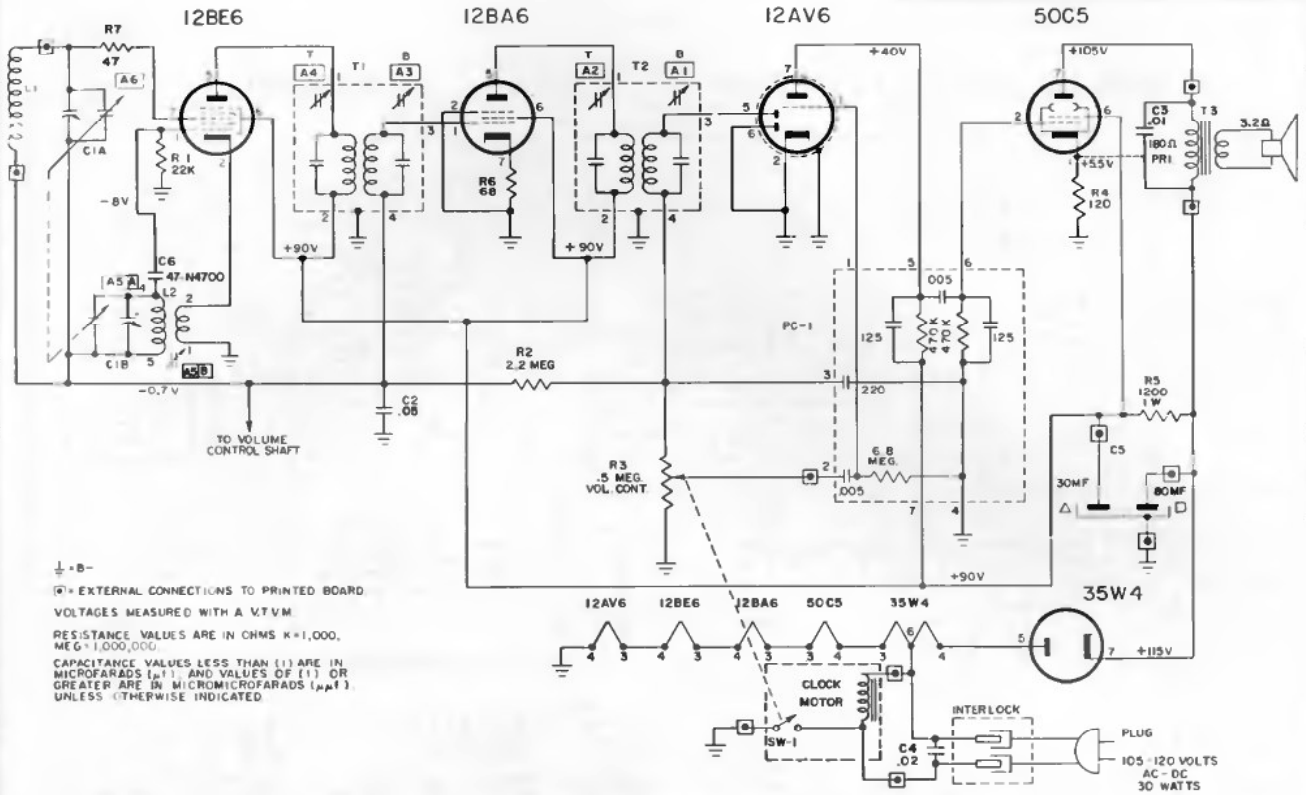
ARVIN Models 37R68, 46R48

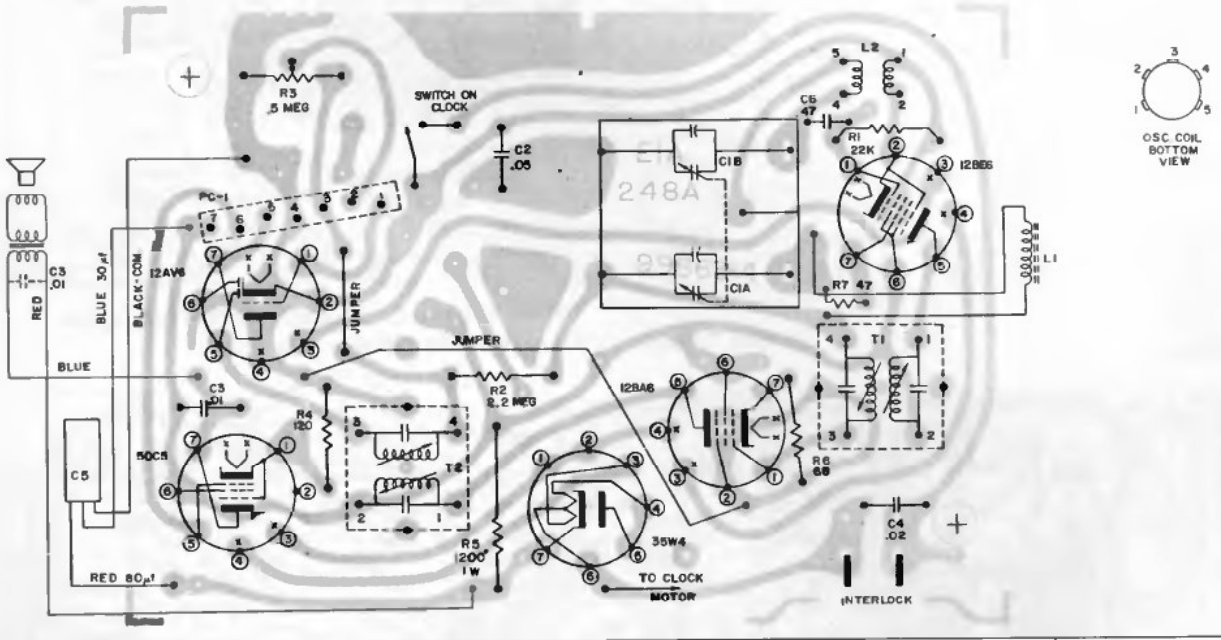
(Continued from preceding page)




ARVIN Models 17R17, 17R18, 57R07, 57R08, 57R17, 57R18, 57R25, 57R28
TR-4
99252/95252
TR-3
99201
TR-2
99103
TR-1
99101
IF 455KC
BASE T2
BASE T1
SPEAKER 3.2Ω
105-120 V.A.C. 8 WATTS
CLOCK MOTOR
SW-1
TO SPK.
MOUNTED OFF BOARD

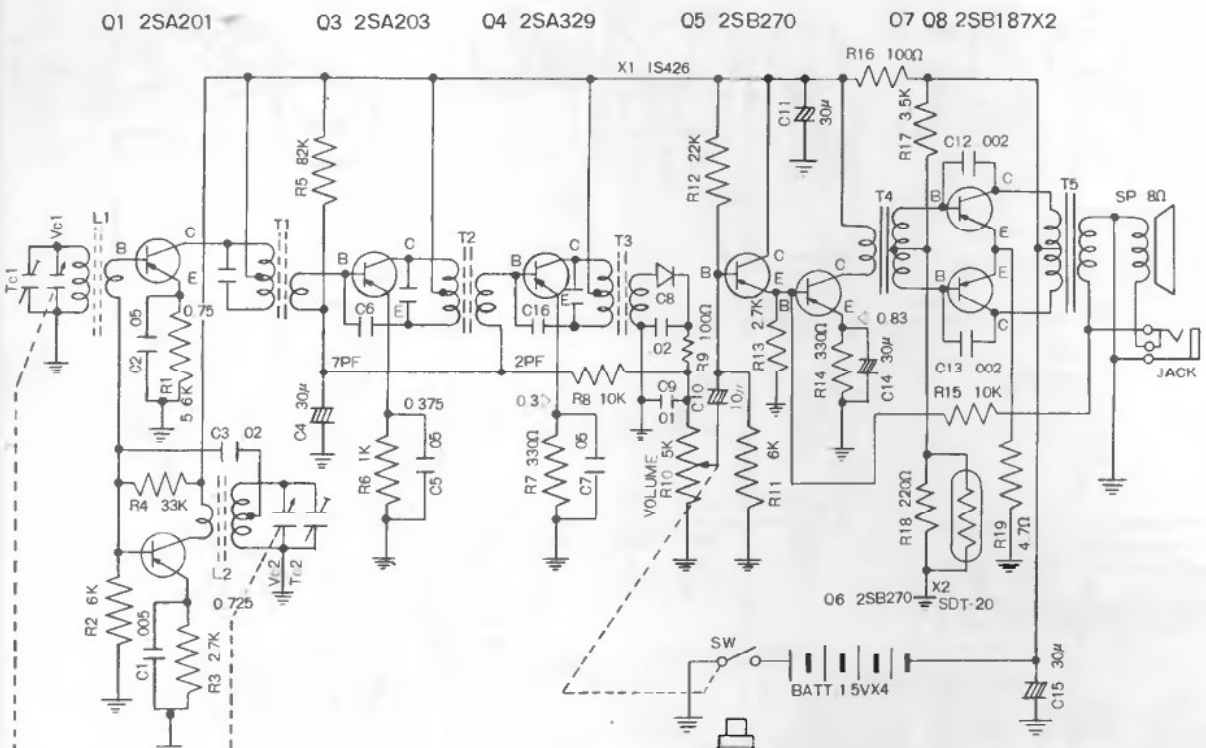
ARVIN Models 55R77, 55R87

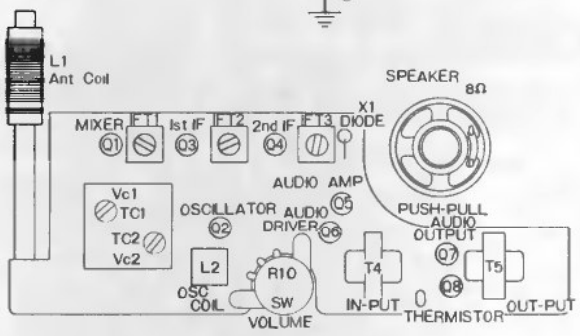




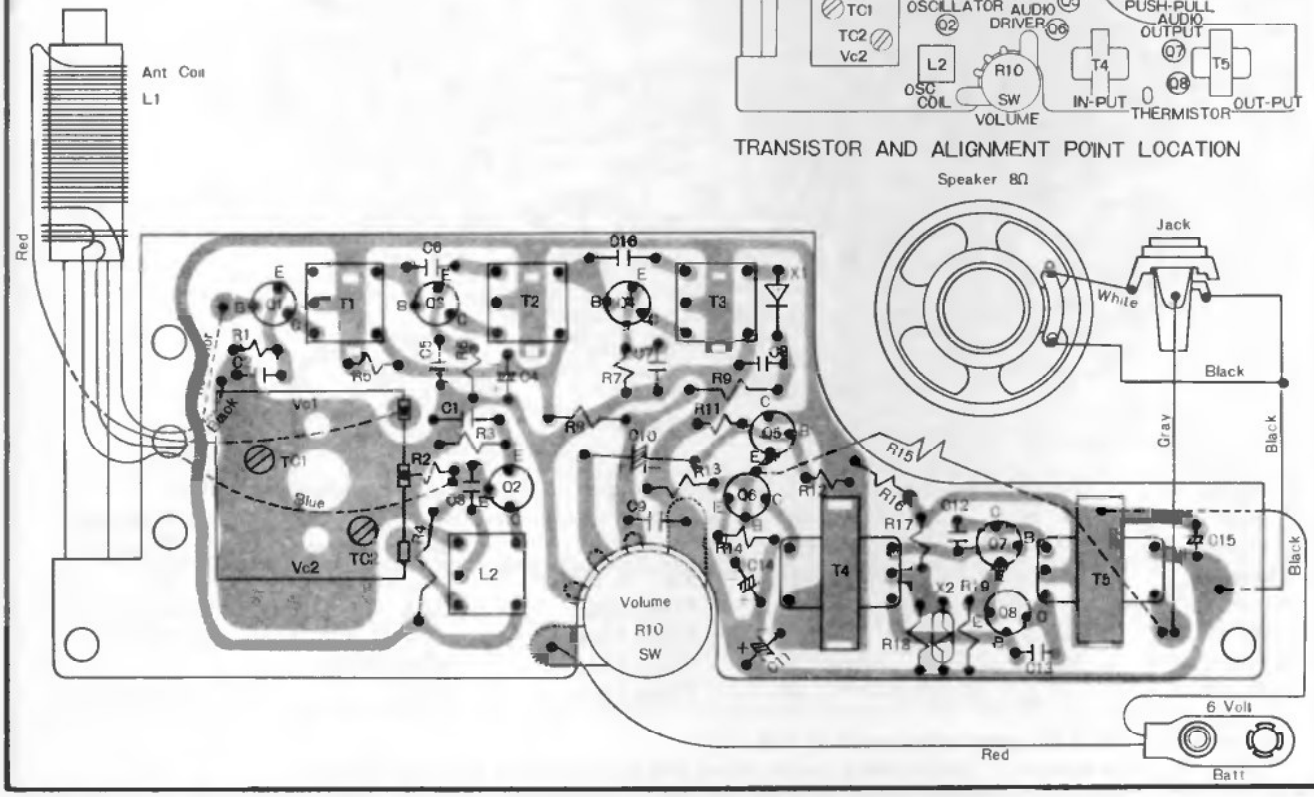
Position of Variable	Frequency of Generator	Dummy Antenna	Generator Output Connection	Adj. Trimmer for Max. Output	Trimmer Function
Open	455 Kc	.05 mfd.	Pin 7 of 12BE6	A1, A2, A3, A4	I. F.
Open	1620 Kc		*Test Loop	A5A	Oscillator
1400 Kc	1400 Kc		*Test Loop	A6	Antenna
600 Kc	600 Kc		*Test Loop	Check Point	
Closed	530 Kc		*Test Loop	A5B	Oscillator

Recheck A5A (1620 kc) after adjustment of A5B.
*Three (3) turns of wire 6" in diameter placed about one foot from the receiver antenna.

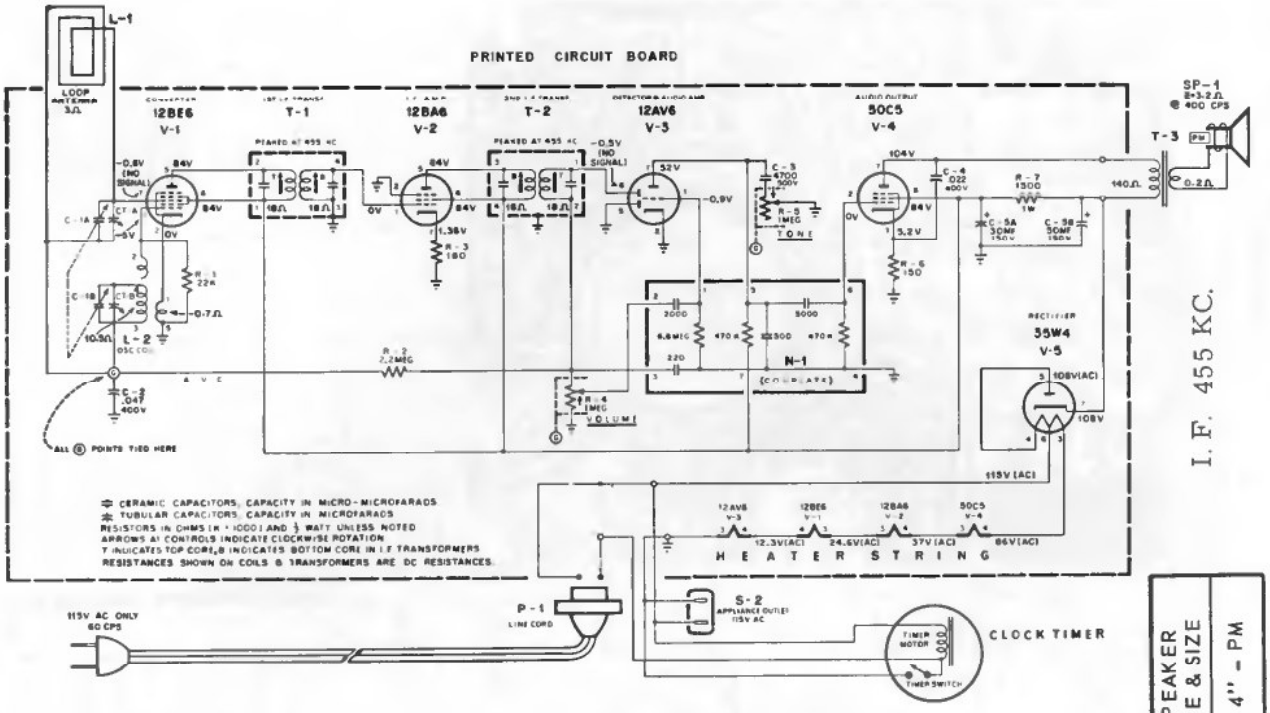


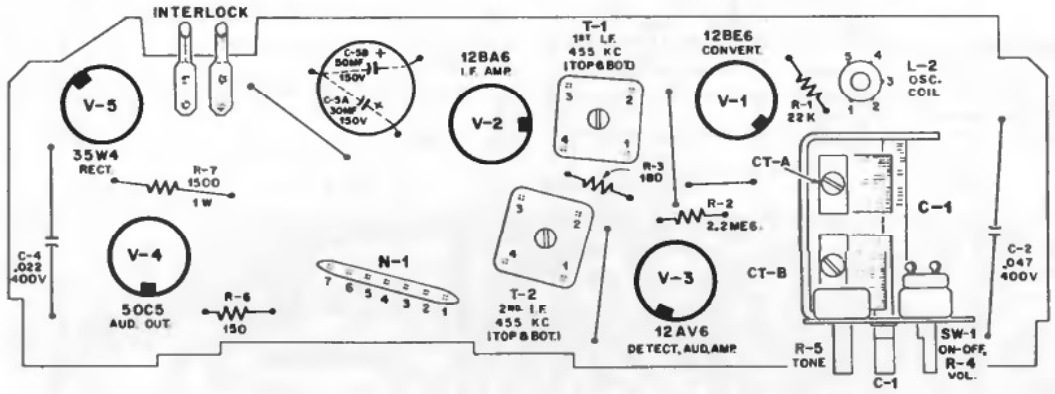


TRANSISTOR AND ALIGNMENT POINT LOCATION



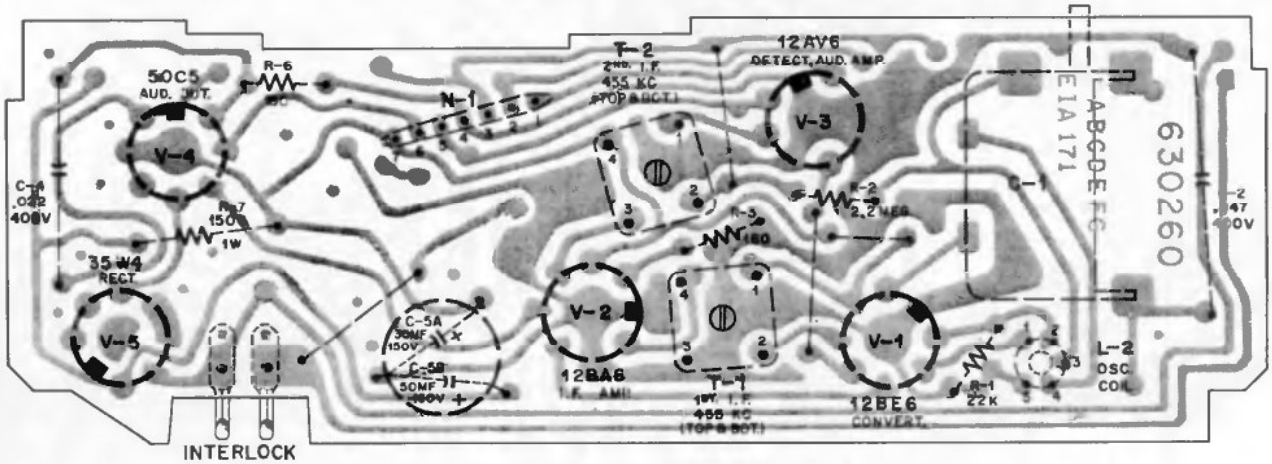
EMERSON Model 31L18, Chassis 120583



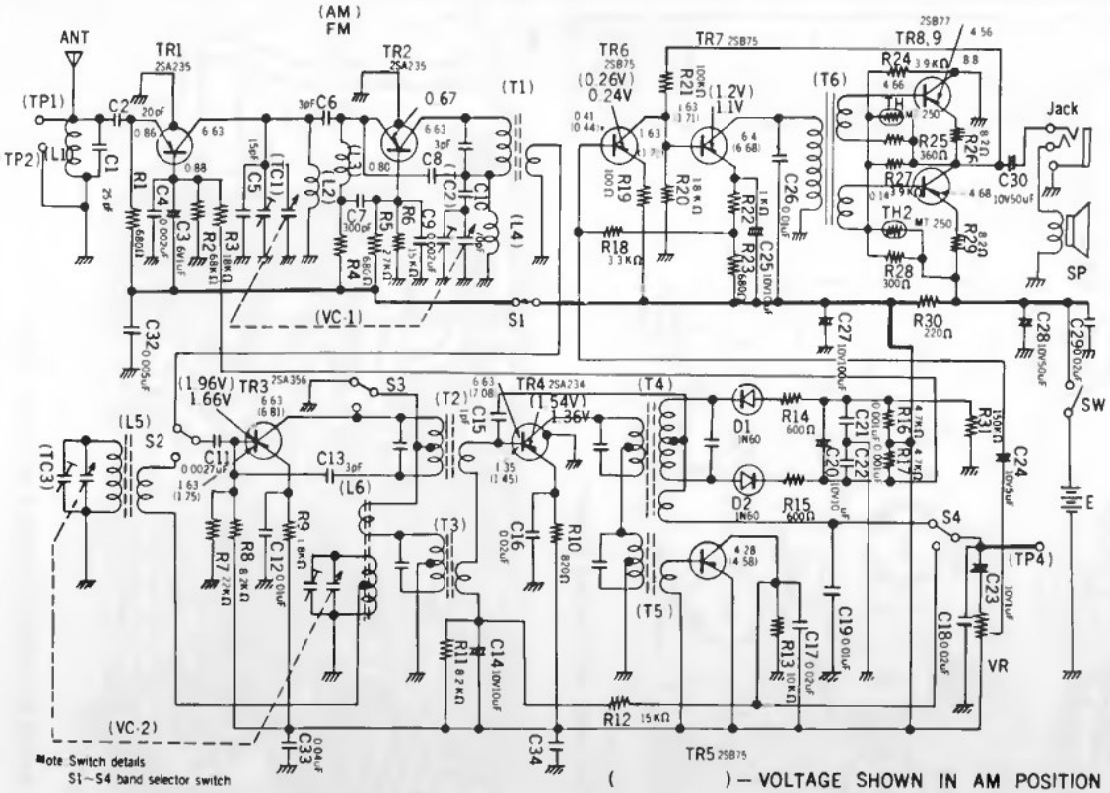


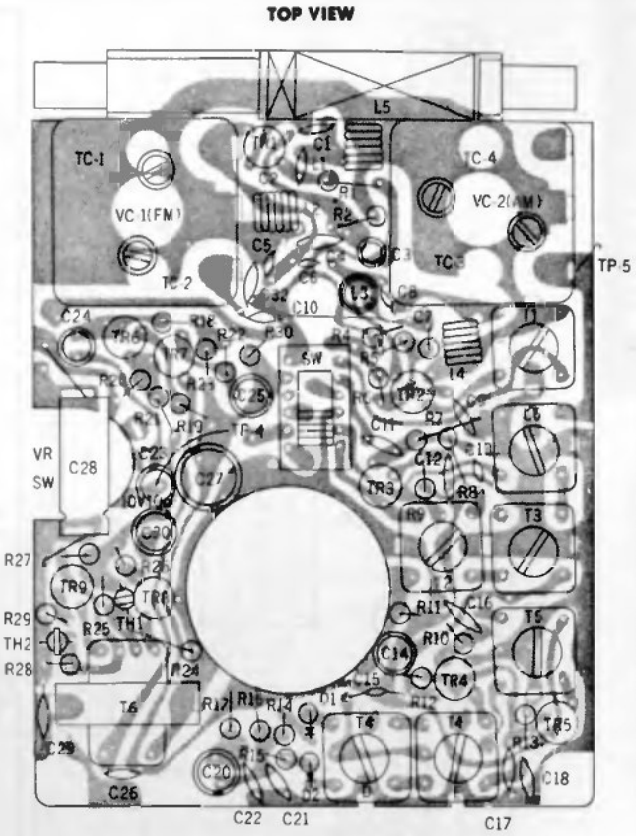
MODEL NO.	CHASSIS NO.	TIMER PART NO.	SPEAKER TYPE & SIZE
31L18	120583	471329	6 x 4" - PM

TUBE LOCATIONS AND ALIGNMENT POINTS



ETCHED PRINTED CIRCUIT CHASSIS (BOTTOM VIEW)



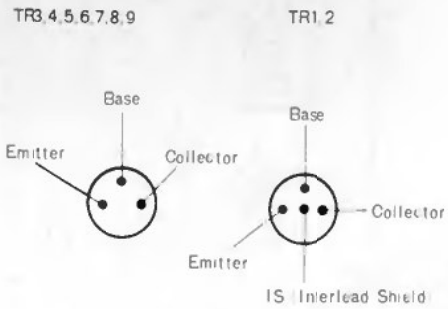


VOLTAGE AND CURRENT AT ELEMENT OF TRANSISTOR

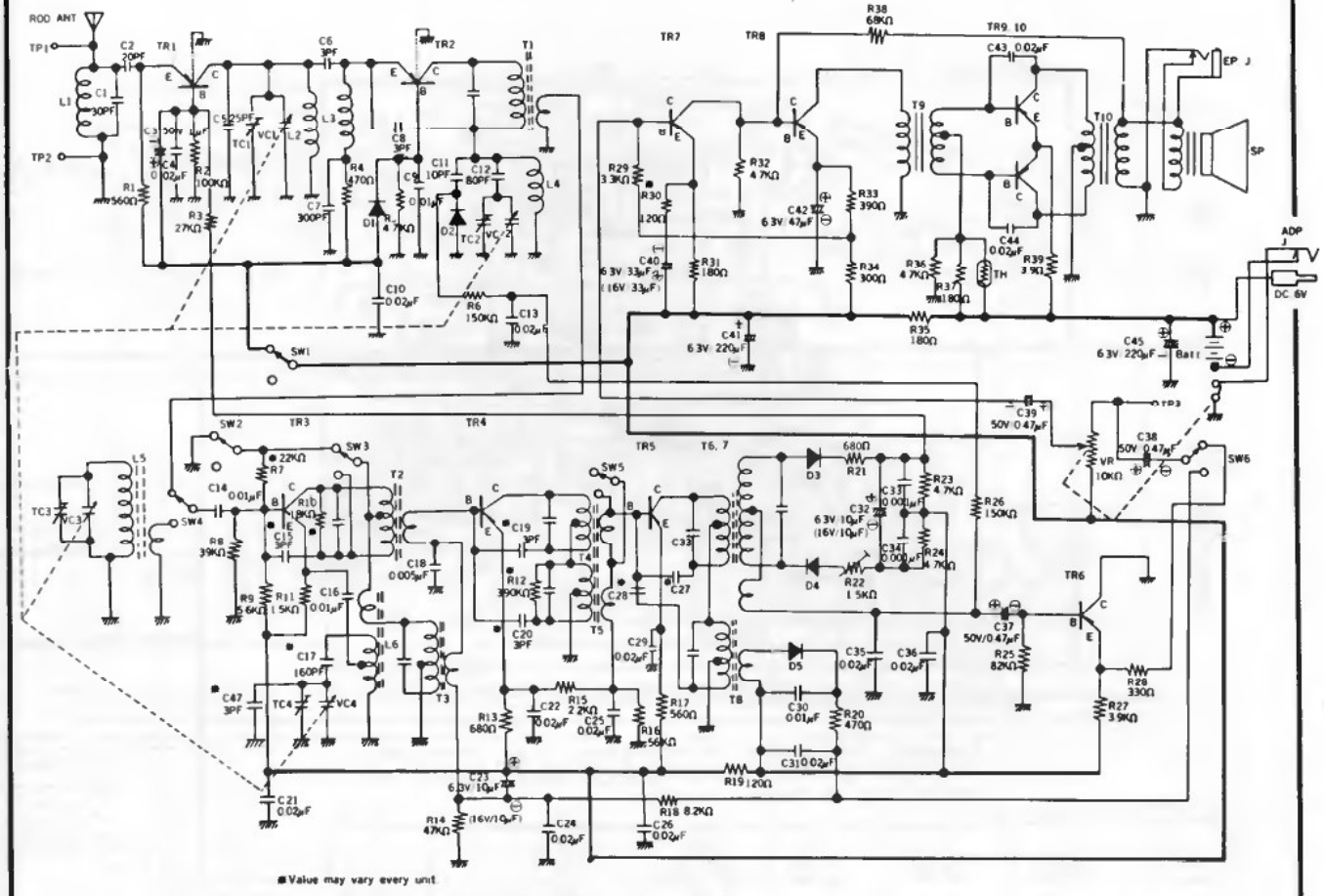
Symbol No.	TRANSISTOR	AM				FM			
		Ve(V)	Vb(V)	Vc(V)	Ie(mA)	Ve(V)	Vb(V)	Vc(V)	Ie(mA)
TR1	2SA235					0.86	0.88	6.63	1.27
TR2	2SA234					0.67	0.80	6.63	1.0
TR3	2SA350	1.96	1.75	6.81	1.09	1.66	1.63	6.63	0.92
TR4	2SA234	1.54	1.45	7.08	1.88	1.36	1.35	6.63	1.66
TR5	2SB75			4.58				4.28	
TR6	2SB75	0.26	0.44	1.71	2.6	0.24	0.41	1.64	2.4
TR7	2SB75	1.2	1.71	6.68	1.2	1.1	1.63	6.4	1.1
TR8	2SB77	(VBE)0.15				(VBE)0.15	4.66	8.8	
TR9	2SB77	(VBE)0.15				(VBE)0.15	0.14	4.68	

LOCAL OSCILLATOR VOLTAGES

SECTION	OSCILLATOR FREQ.	Min. Vosc(mV)	Max. Vosc(mV)
AM	975–2105 KC	150	180
FM	96.7–120.7 MC	193	235

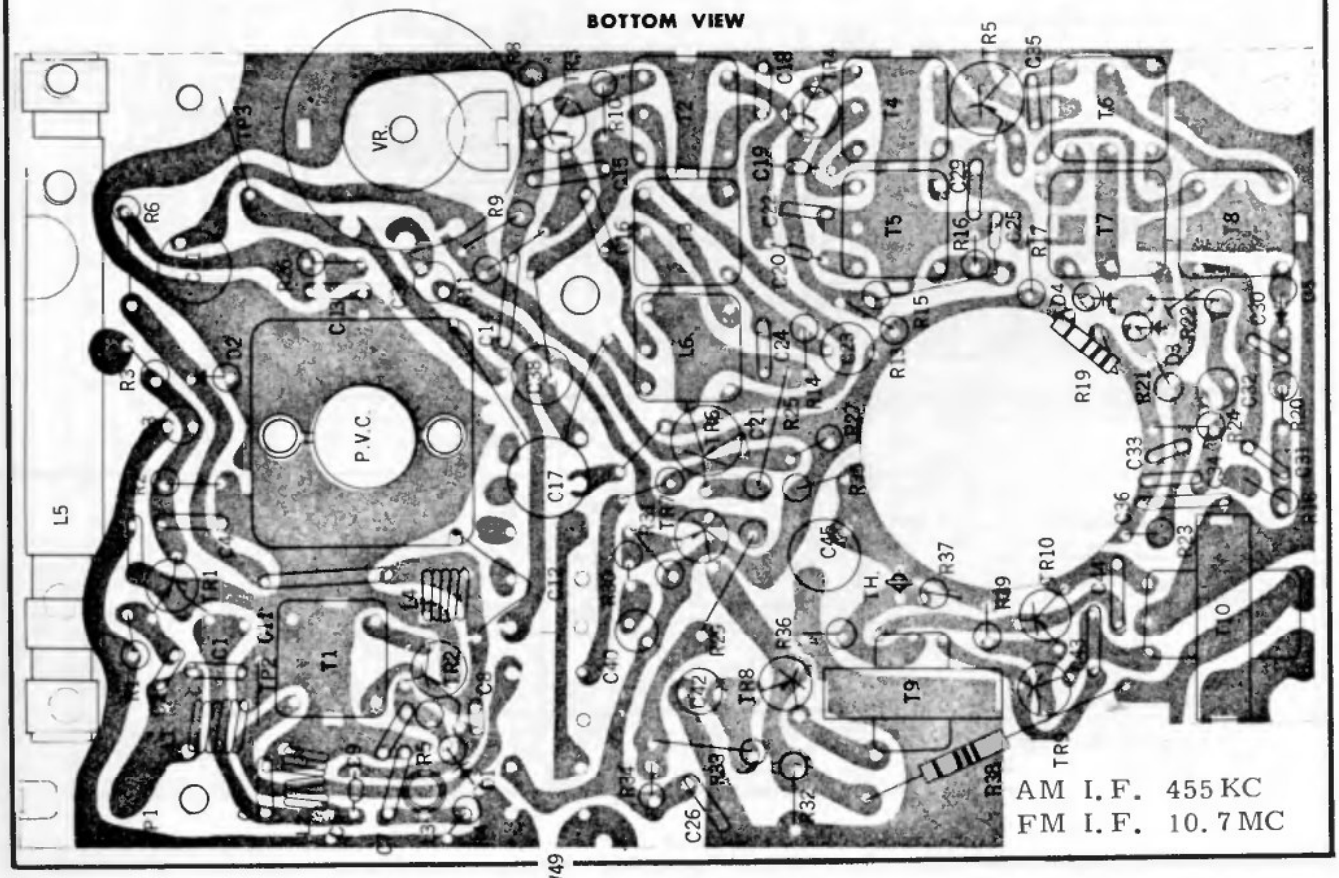


EMERSON Model 31P64



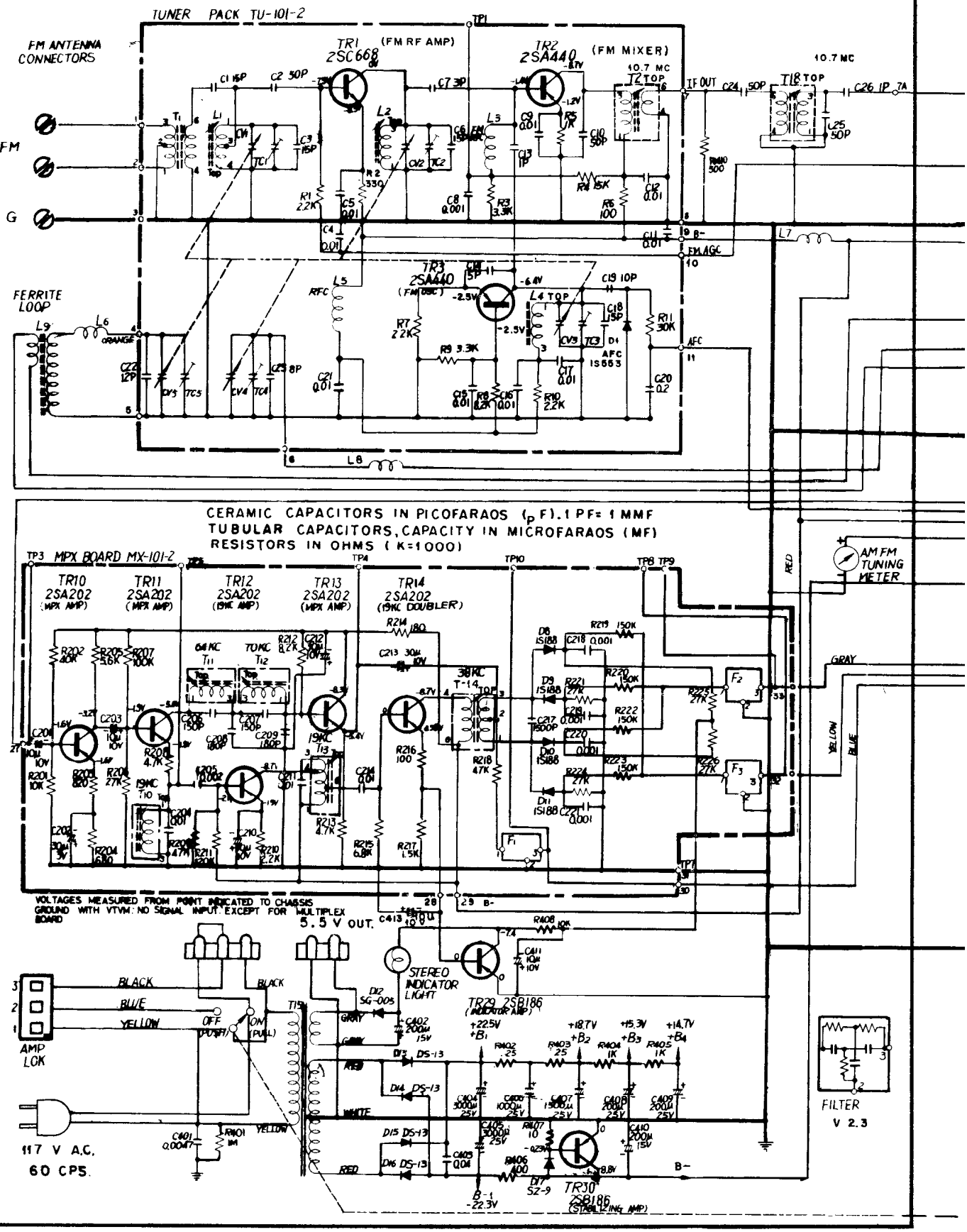
*Value may vary every unit

BOTTOM VIEW



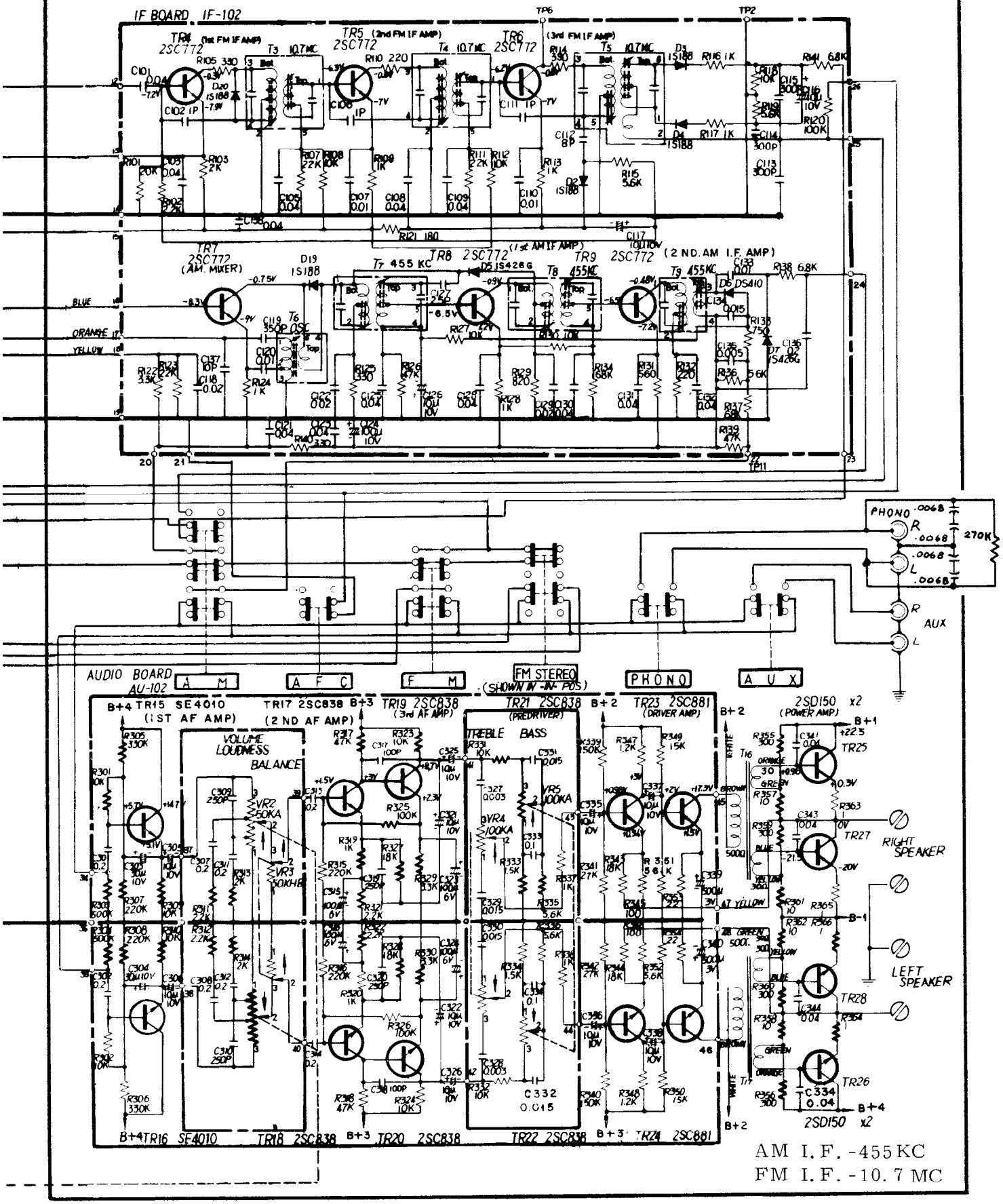
W49

 (Continued on next page.)



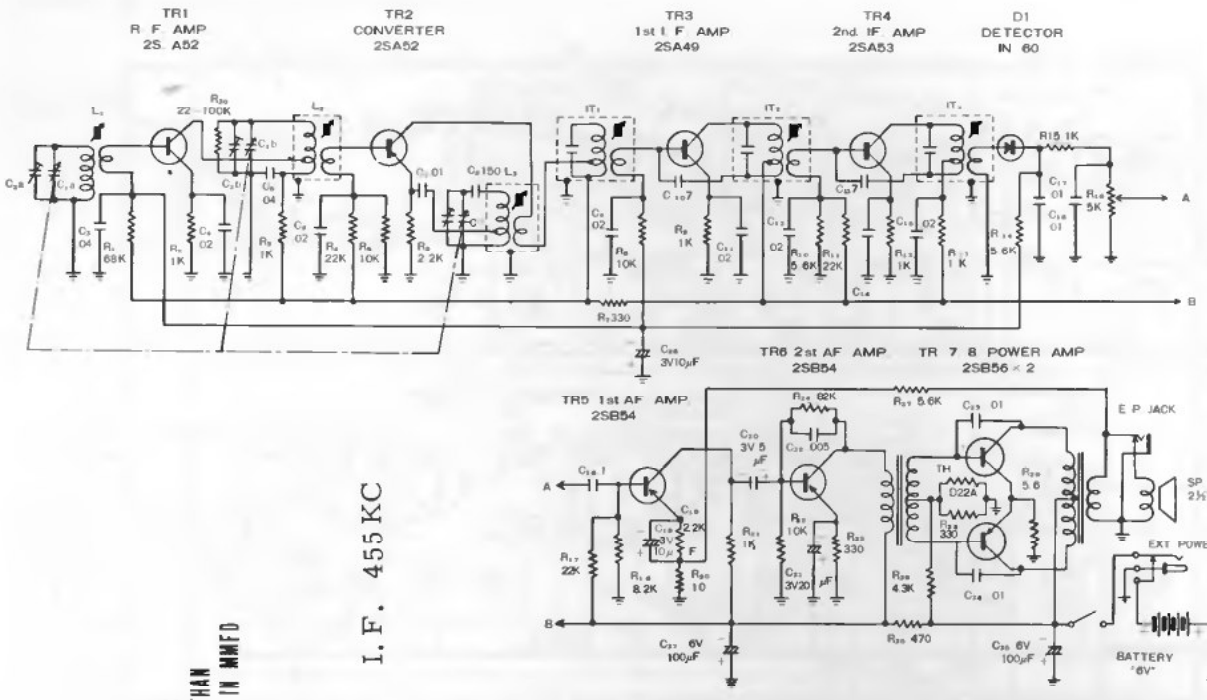
EMERSON Models 33C28, 29, 30; Chassis 121004

(Continued from preceding page.)



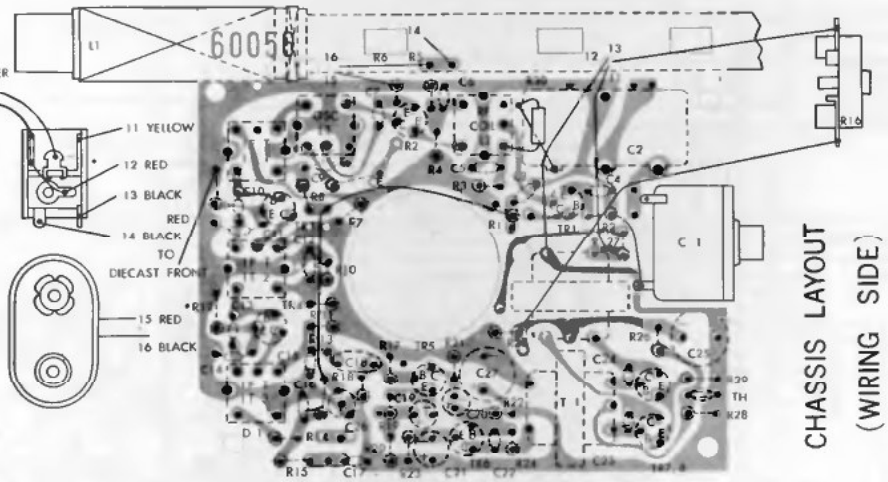
AM I.F. -455KC
FM I.F. -10.7 MC

EMERSON Model 31P66

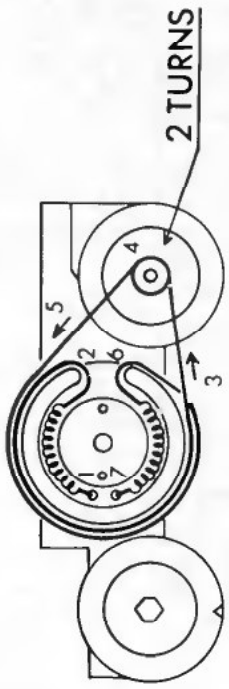


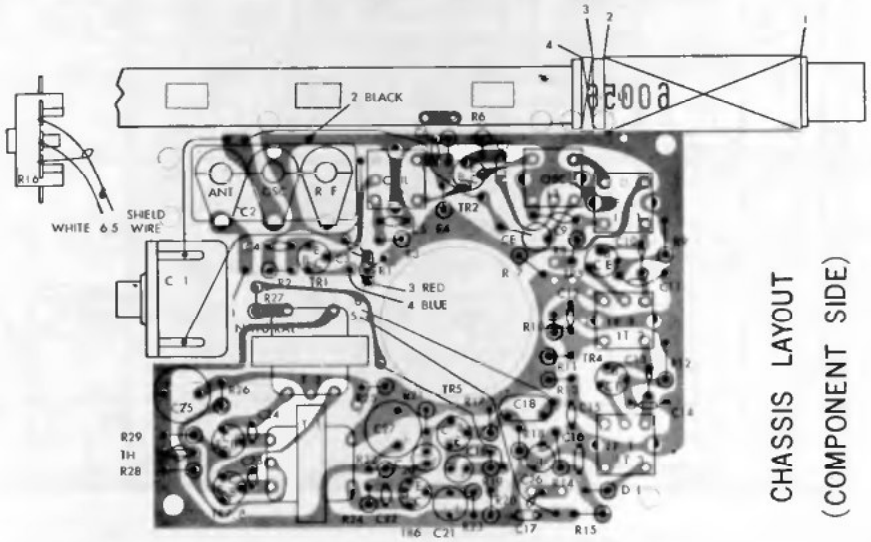
I. F. 455 KC

ALL RESISTANCE VALUES IN OHMS
AL. CAPACITANCE VALUES LESS THAN
1.0 IN MFD. VALUES ABOVE 1.0 IN MMFD
UNLESS OTHERWISE INDICATED



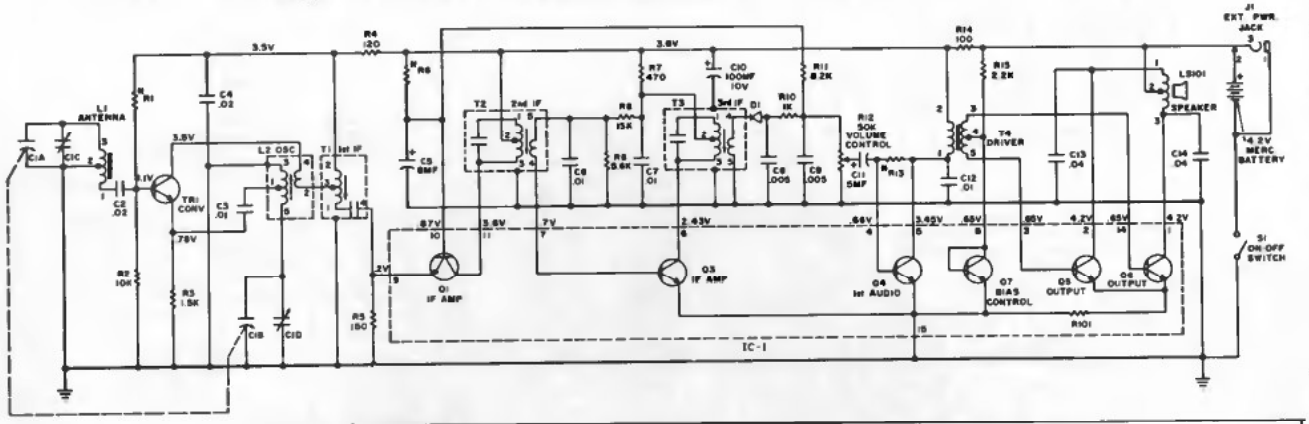
CHASSIS LAYOUT (WIRING SIDE)





CHASSIS LAYOUT (COMPONENT SIDE)

GENERAL ELECTRIC T1170A;T1171A;T1172A



NOTES

1. UNLESS OTHERWISE NOTED
   CAPACITORS MORE THAN 1 = MMF
   CAPACITORS LESS THAN 1 = MF
   RESISTORS ARE 1/2 WATT, K=1000
2. VOLTAGES ARE POSITIVE WITH RESPECT TO GROUND UNDER NO SIGNAL CONDITIONS AND VOLUME CONTROL MINIMUM.
3. SEE TRANSISTOR SUBSTITUTION CHART.
4. KHz = KC

ALIGNMENT

1. SET VOLUME CONTROL AT MAX. CONNECT OUTPUT METER OR SCOPE ACROSS SPEAKER. INDUCTIVELY COUPLE SIGNAL GENERATOR TO RECEIVER.
2. ADJUST T1, T2 AND T3 FOR MAX. 455KHz SIGNAL.
3. ADJUST C1D FOR MAX. 1630KHz WITH GANG OPEN.
4. ADJUST C1C FOR MAX. 1400KHz WHILE ROCKING GANG.
5. ADJUST L2 FOR MAX. 580KHz WHILE ROCKING GANG.
6. REPEAT STEPS 3, 4 AND 5 FOR MAX. SENSITIVITY.

BOTTOM VIEW OF COMPONENTS

TRANSISTORS

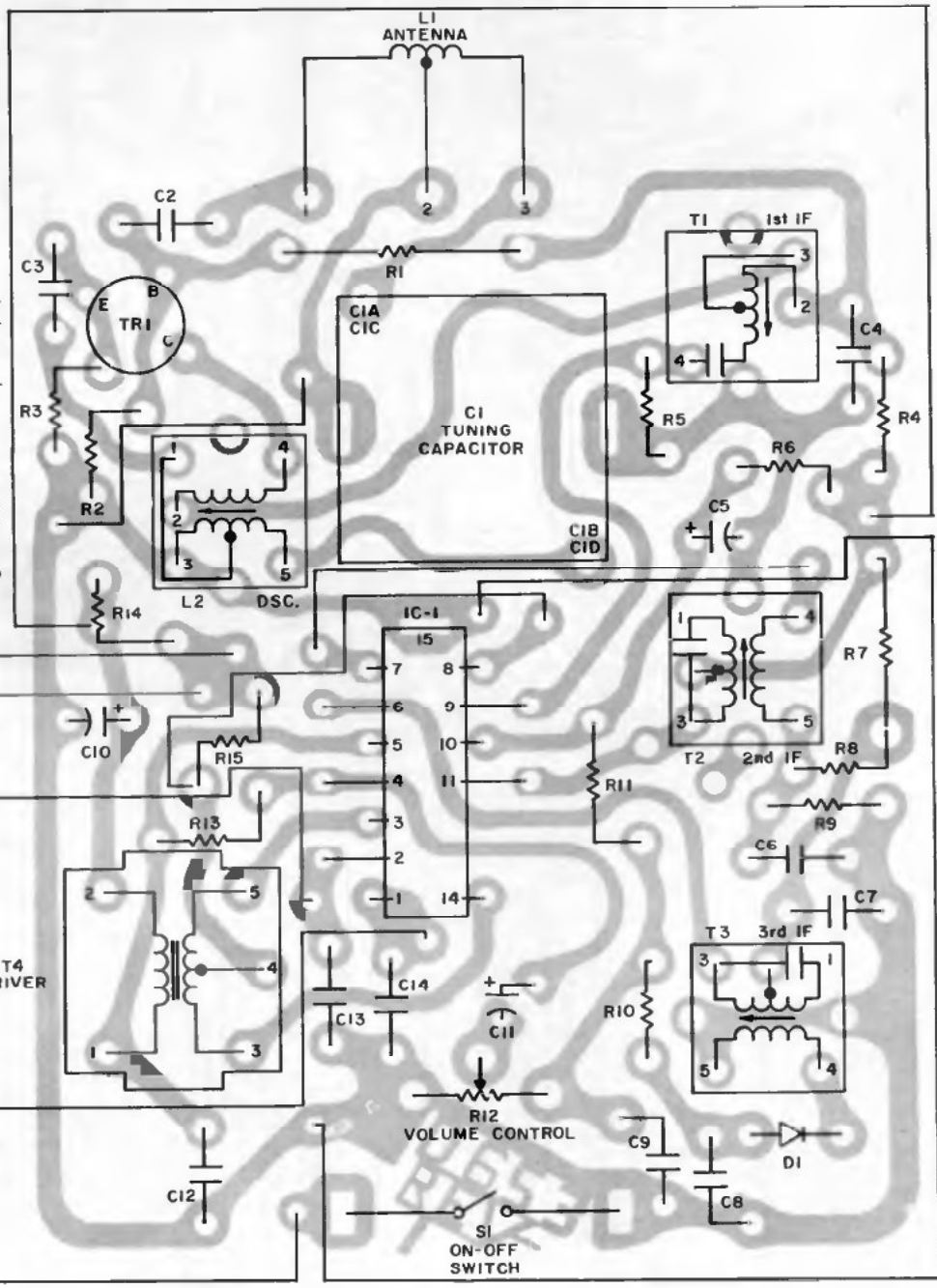
NPN

TRANSFORMERS

T1-T3, L2

T4

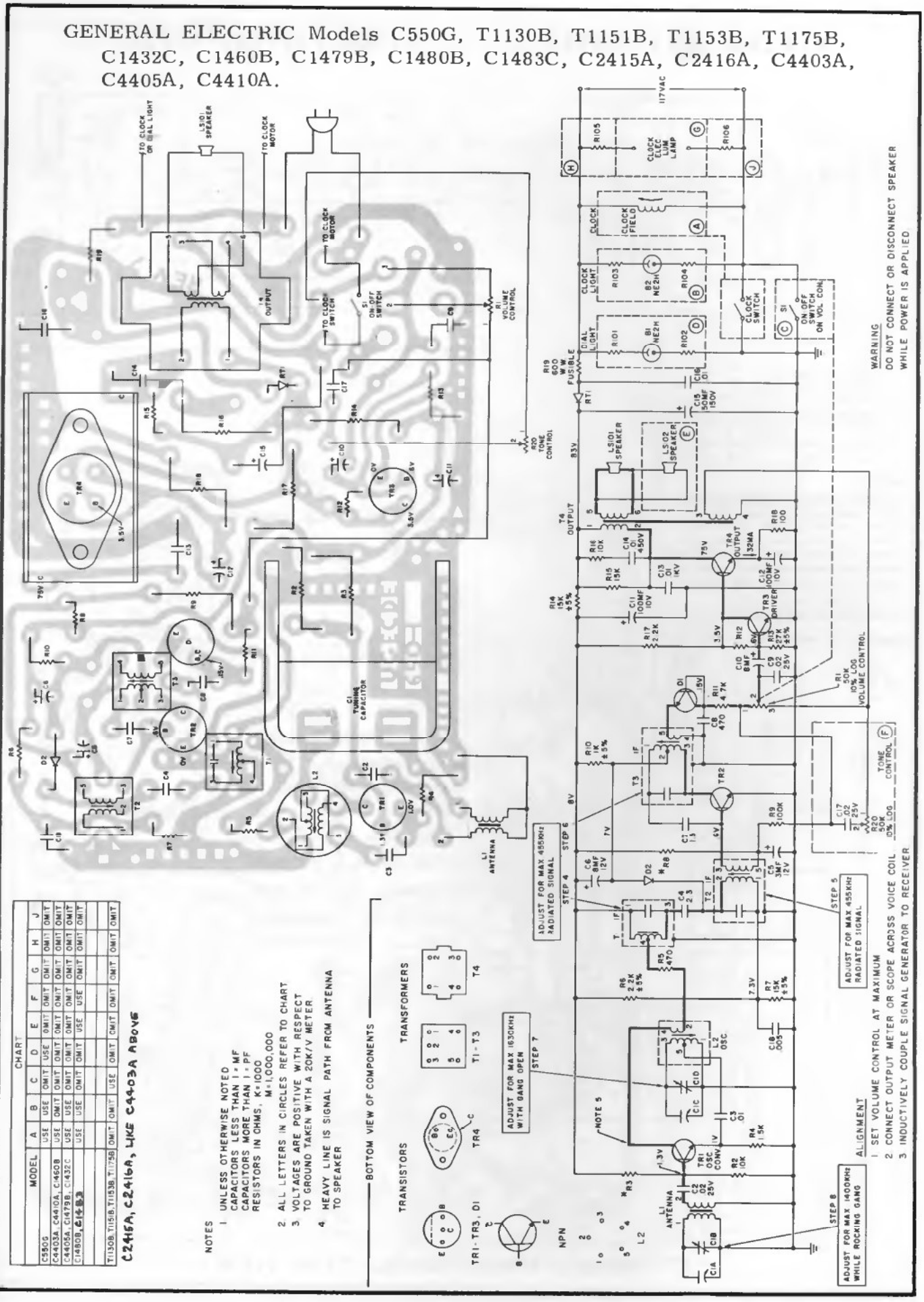
IC-1



WIRING DIAGRAM (BOTTOM VIEW)

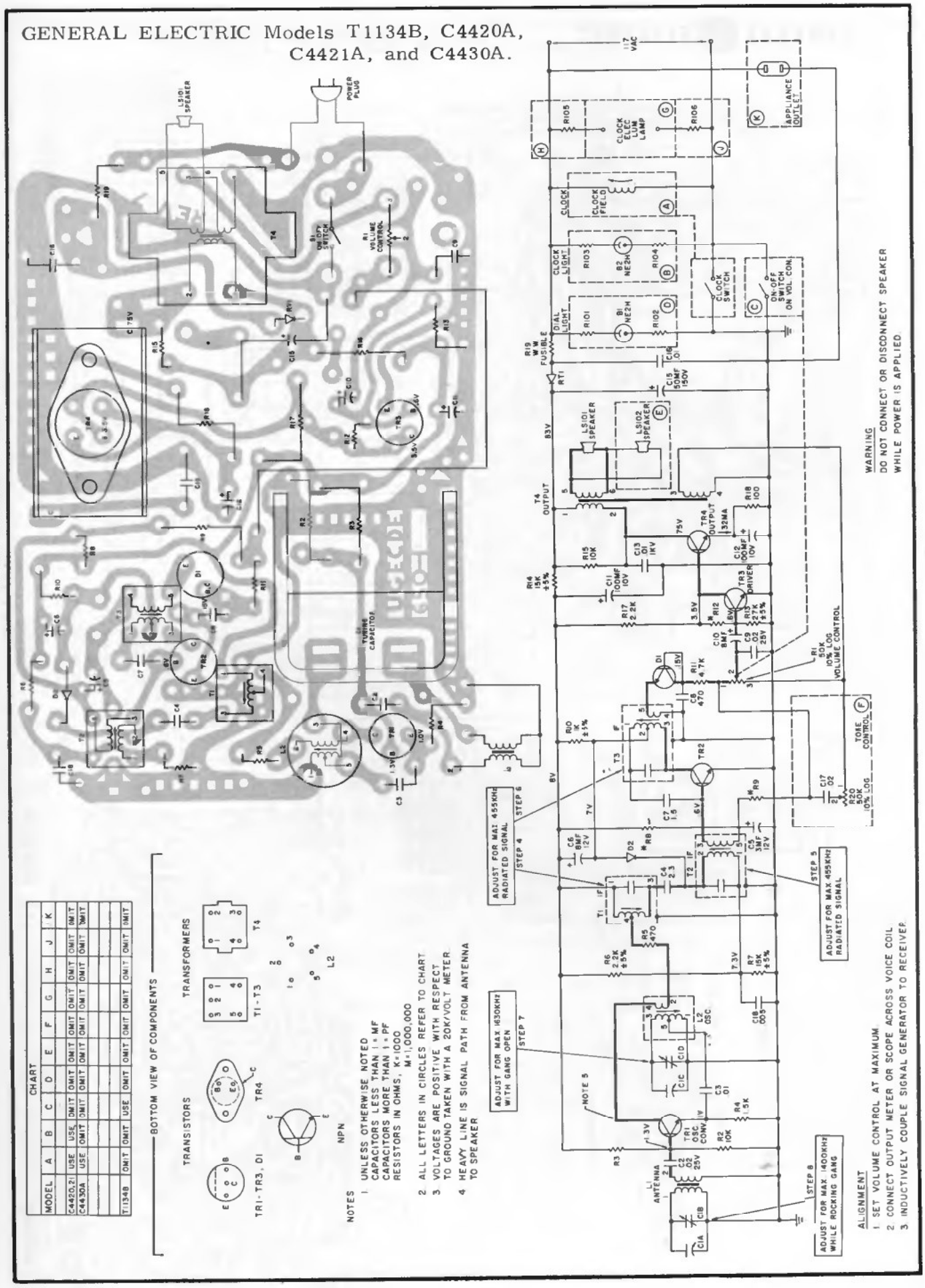
GENERAL ELECTRIC Models C550G, T1130B, T1151B, T1153B, T1175B, C1432C, C1460B, C1479B, C1480B, C1483C, C2415A, C2416A, C4403A, C4405A, C4410A.

WIRING DIAGRAM (BOTTOM VIEW)

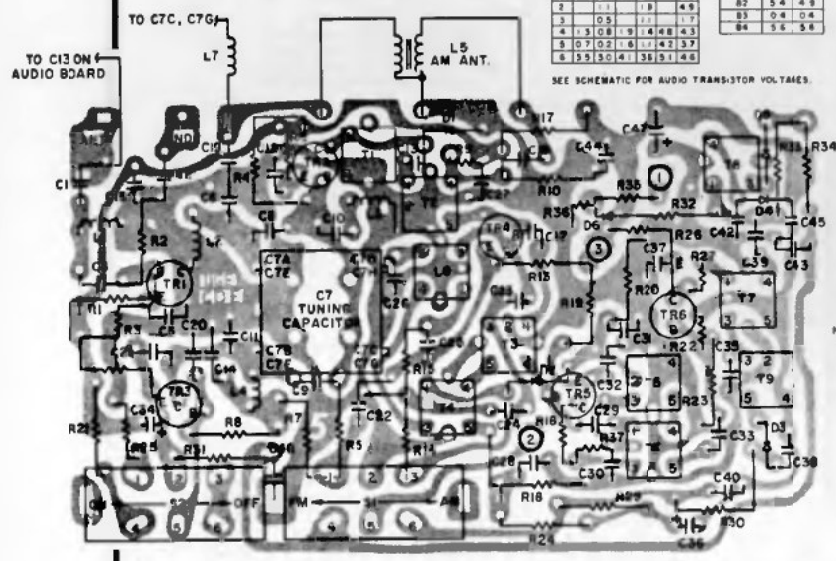


GENERAL ELECTRIC Models T1134B, C4420A, C4421A, and C4430A.

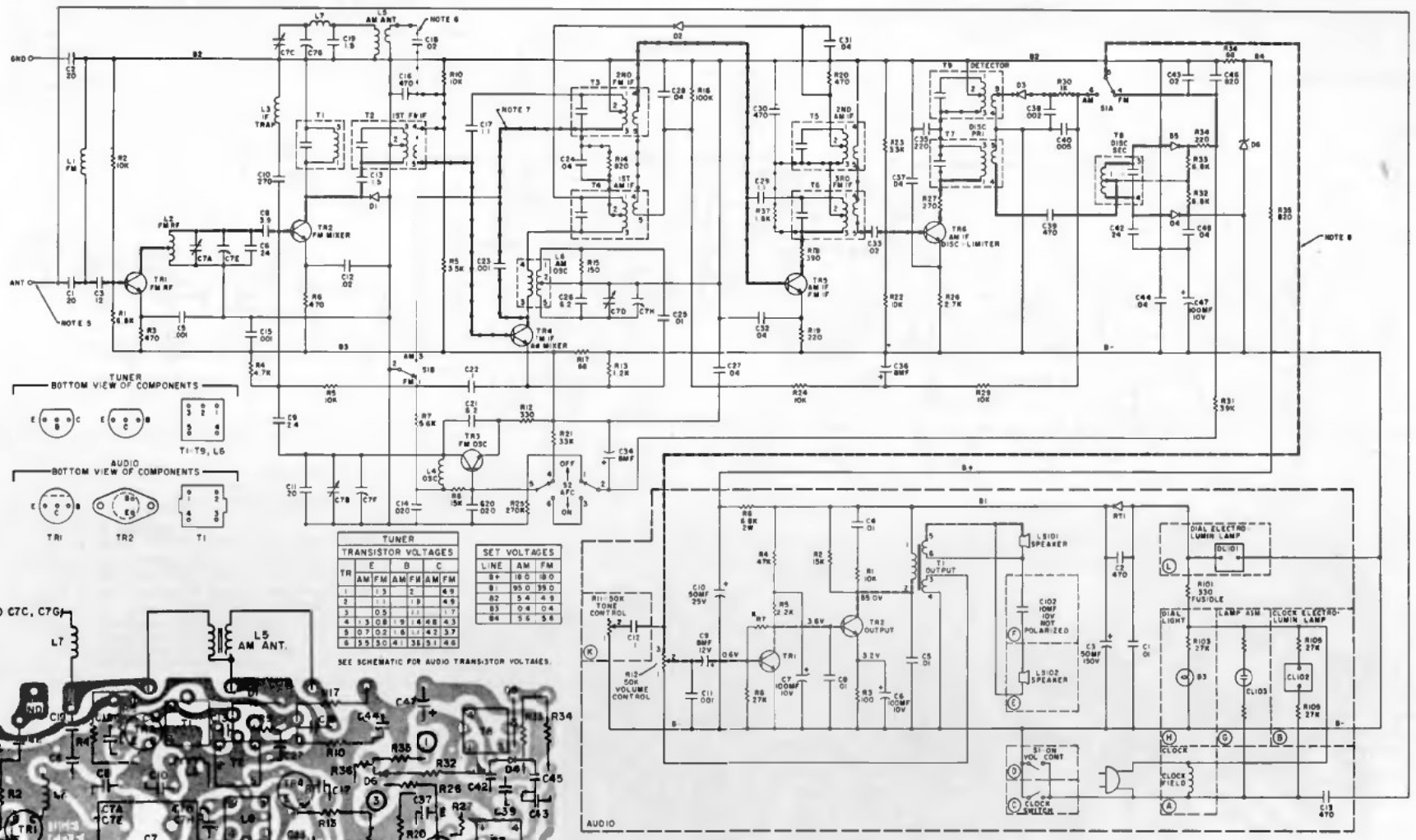
WIRING DIAGRAM (BOTTOM VIEW)



(For list of models see chart at right)



WIRING DIAGRAM (BOTTOM VIEW), LATE VERSION



SCHEMATIC DIAGRAM (LATE VERSION)

TR	E		B		C	
	AM	FM	AM	FM	AM	FM
1		1.3	.2		4.9	
2		.1	.1.9		4.9	
3		0.5				1.7
4	1.3	0.8	1.9	1.4	4.8	4.3
5	0.7	0.2	1.6	1.1	4.2	3.7
6	3.5	3.0	4.1	3.6	5.1	4.6

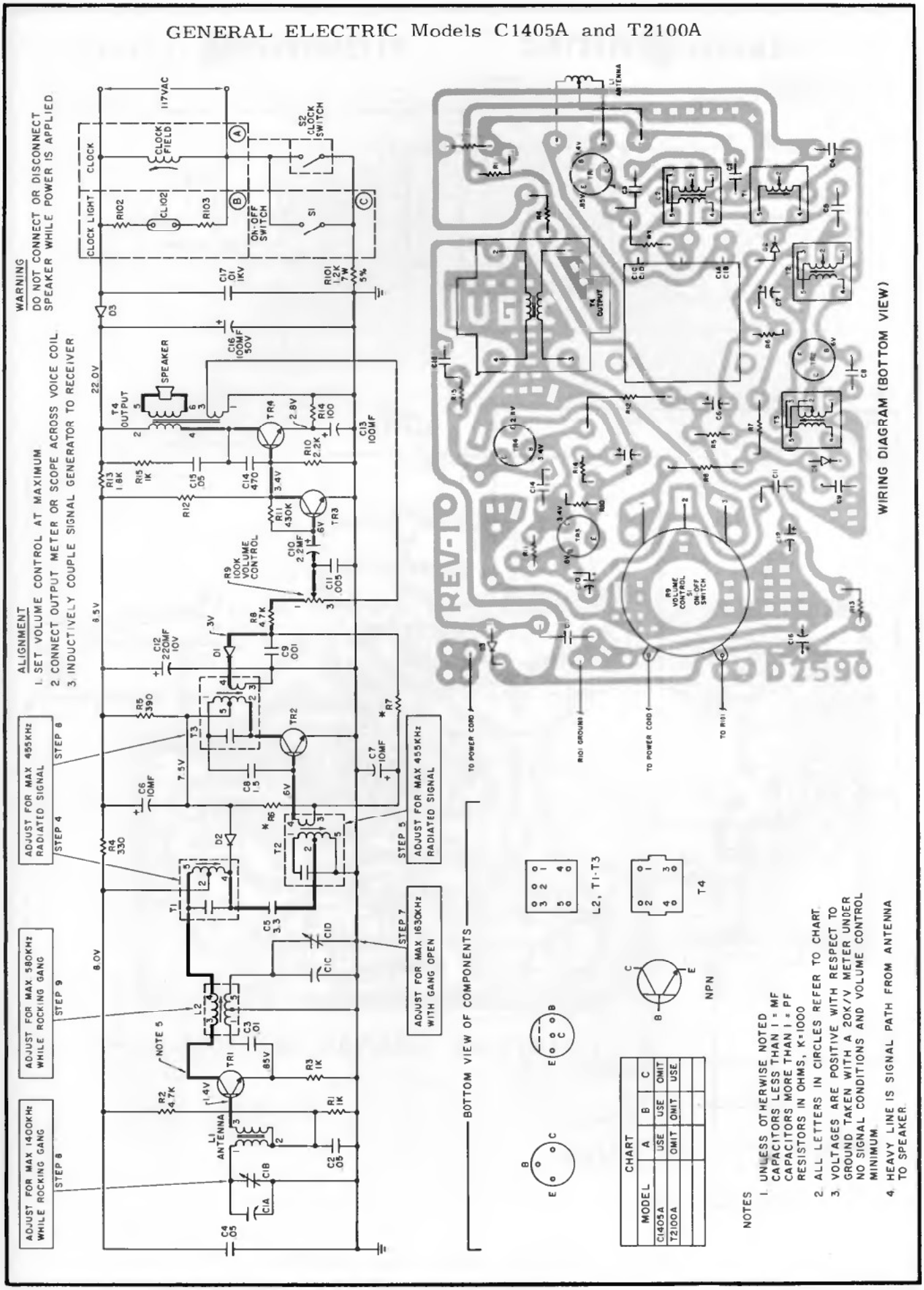
LINE	AM	FM
B+	18.0	18.0
B1	9.5.0	9.5.0
B2	5.4	4.9
B3	0.4	0.4
B4	5.6	5.6

NOTES

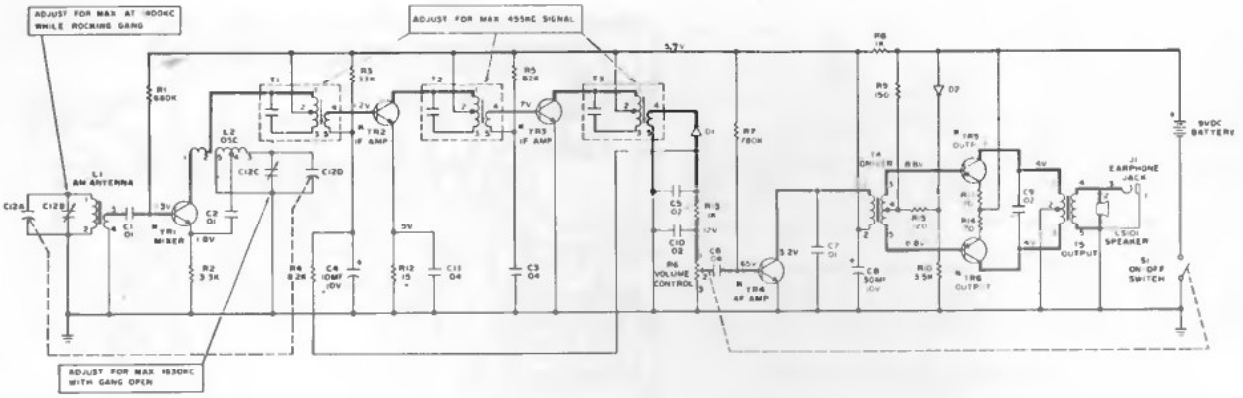
1. UNLESS OTHERWISE NOTED CAPACITORS LESS THAN 1 = MF CAPACITORS MORE THAN 1 = MMF RESISTORS IN OHMS, K=1000
2. VOLTAGES ARE POSITIVE WITH RESPECT TO B- UNDER NO SIGNAL CONDITIONS AND VOLUME CONTROL MINIMUM (CONNECT NEGATIVE LEAD OF METER TO B-)
3. REFER TO TRANSISTOR SUBSTITUTION CHART
4. SI SHOWN IN FM POSITION
5. LINE SHOWN (—) IS FM SIGNAL PATH FROM FM ANTENNA TO SIA
6. LINE SHOWN (—) IS AM SIGNAL PATH FROM AM ANTENNA TO SIA
7. AM-FM SIGNALS SUPERIMPOSED IN SOME AREAS (—)
8. LINE SHOWN (—) IS COMMON AUDIO PATH FROM SIA TO SPEAKER
9. 'X' IN MODEL CHART DESIGNATES PART USAGE OF DOTTED BLOCKS ON SCHEMATIC. CIRCLED LETTERS IN DOTTED BLOCKS REFER TO MODEL CHART
10. DO NOT CONNECT OR DISCONNECT SPEAKER WHILE POWER IS APPLIED. DO NOT APPLY POWER WITHOUT CONNECTING B+ AND B- WIRES TO TUNER

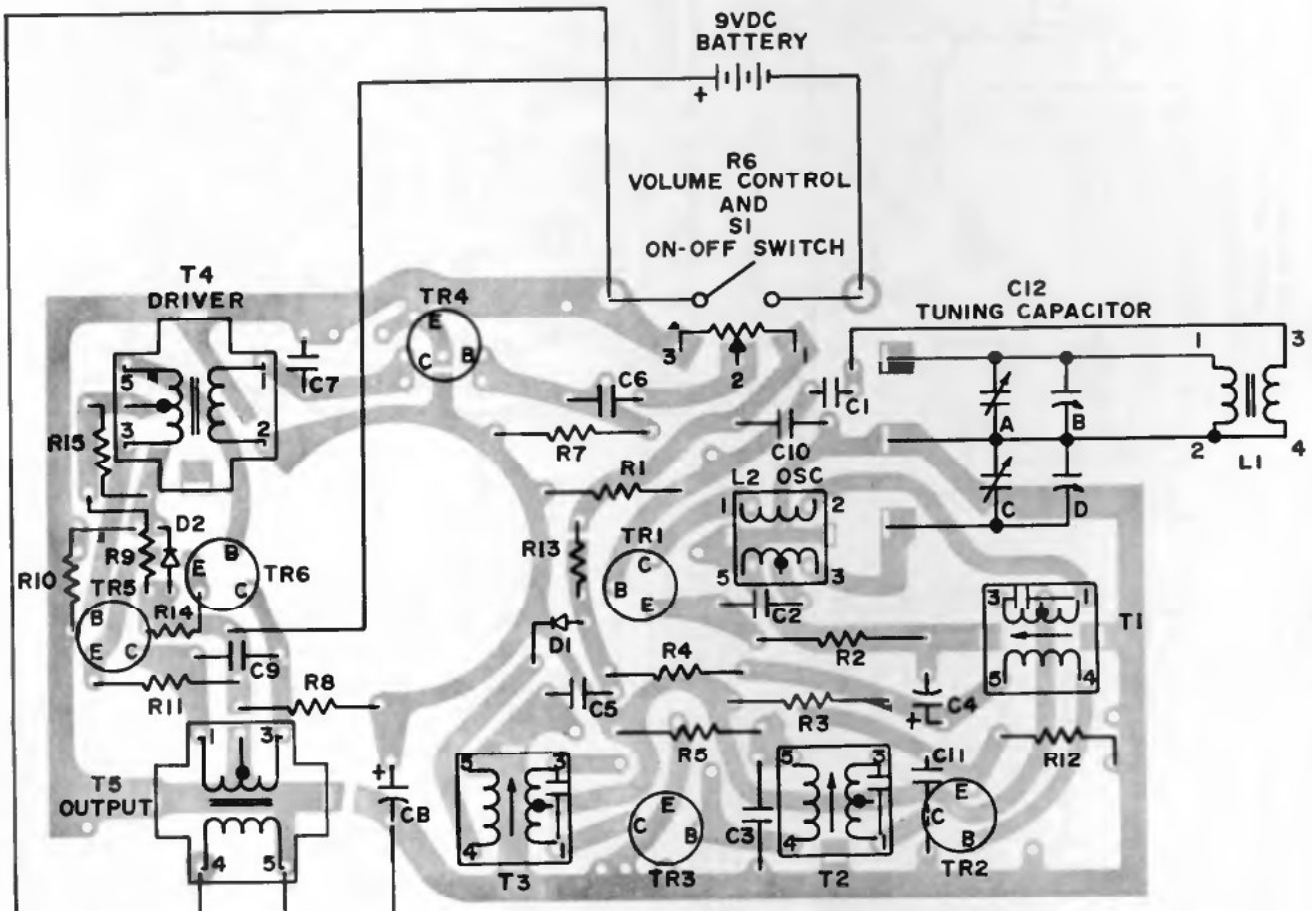
MODEL CHART									
MODEL	A	B	C	D	E	F	G	H	K	L
T1265, 1280				X	X	X			X	X
T1270, 1284, 2235				X					X	
T2220, 2245				X	X				X	
T2231				X						
T2240, 2250				X	X	X			X	
T2260				X	X			X	X	
C1565, 1580	X		X						X	X
C1570, 1574	X		X				X		X	X
C2510, 2511, 2585	X		X							
C2520, 2545	X		X		X		X		X	
C2530, 2515, 2578, 2669	X		X						X	
C2550	X		X				X		X	
C2560	X		X		X		X	X	X	
C2579	X		X		X				X	
C4550	X	X	X		X				X	

GENERAL ELECTRIC Models C1405A and T2100A

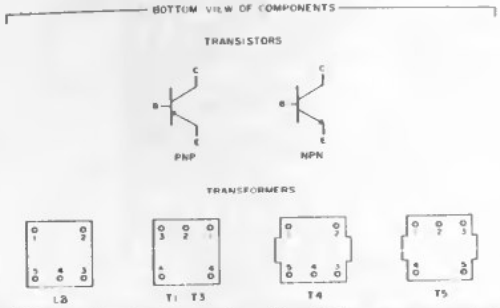


GENERAL ELECTRIC P1735A;P1739A



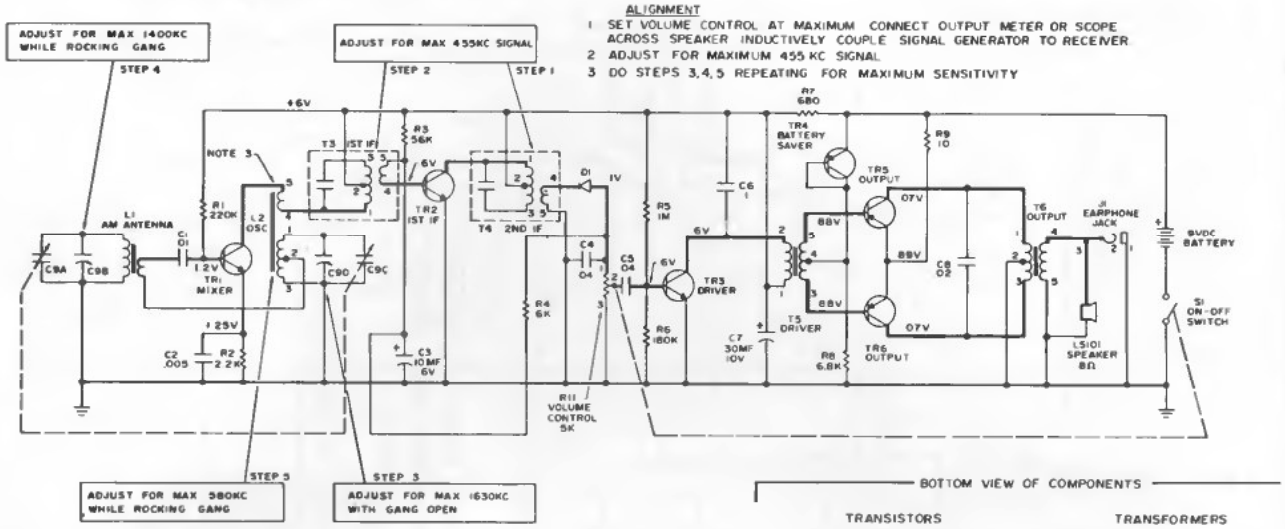


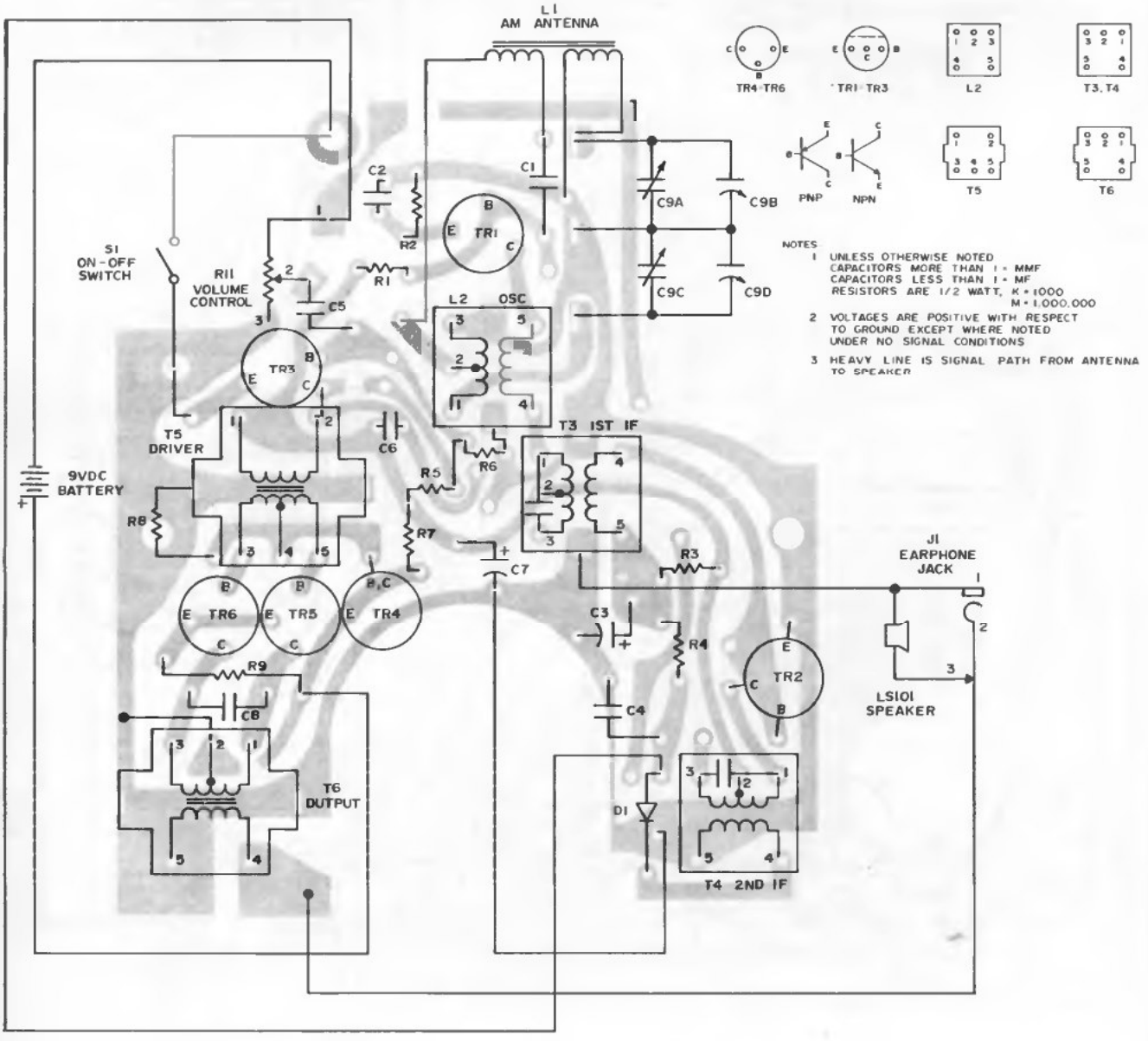
WIRING DIAGRAM (BOTTOM VIEW)



GENERAL ELECTRIC

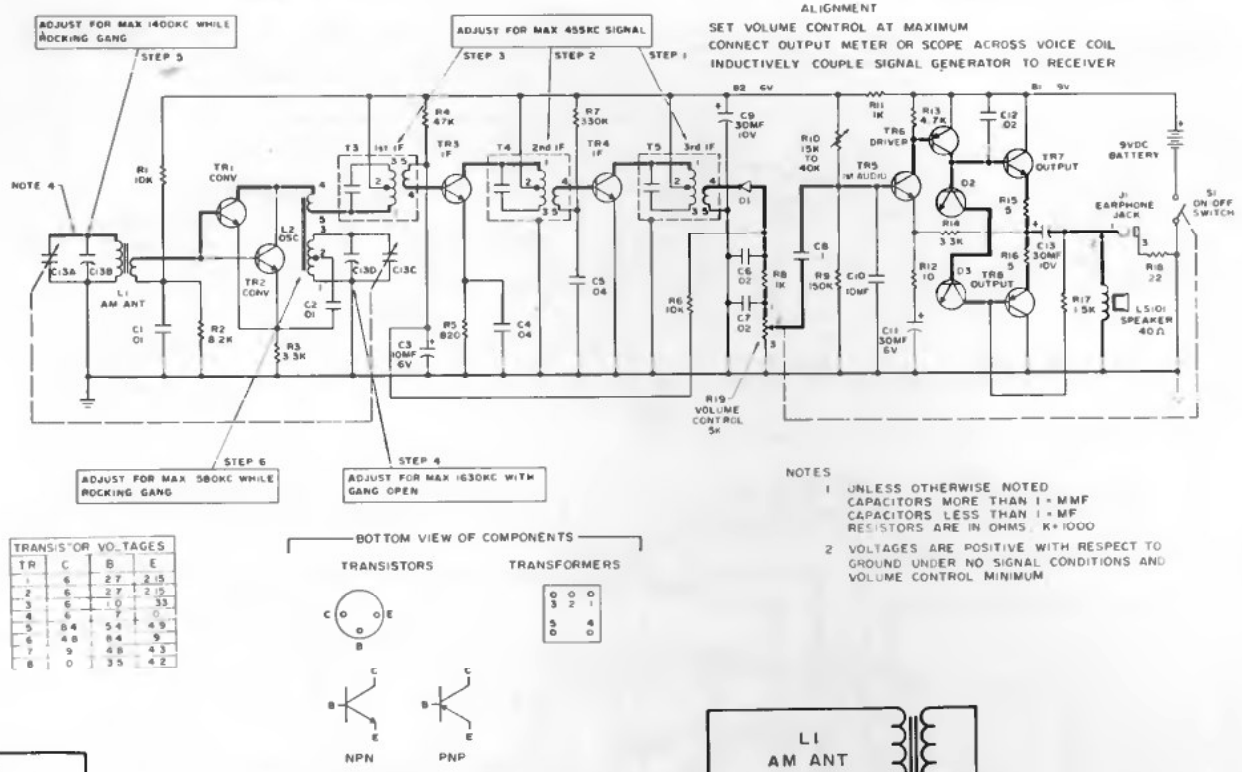
P1755A





WIRING DIAGRAM (BOTTOM VIEW)

GENERAL ELECTRIC P1760A; P1761A



NOTES

1. UNLESS OTHERWISE NOTED
   CAPACITORS MORE THAN 1 = MMF
   CAPACITORS LESS THAN 1 = MF
   RESISTORS ARE IN OHMS, K = 1000
2. VOLTAGES ARE POSITIVE WITH RESPECT TO GROUND UNDER NO SIGNAL CONDITIONS AND VOLUME CONTROL MINIMUM

TRANSISTOR VOLTAGES

TR	C	B	E
1	6	2.7	2.15
2	6	2.7	2.15
3	6	1.0	33
4	6	7	0
5	8.4	5.4	4.9
6	4.8	8.4	9
7	9	4.6	4.3
8	0	3.5	4.2

BOTTOM VIEW OF COMPONENTS

TRANSISTORS

TRANSFORMERS

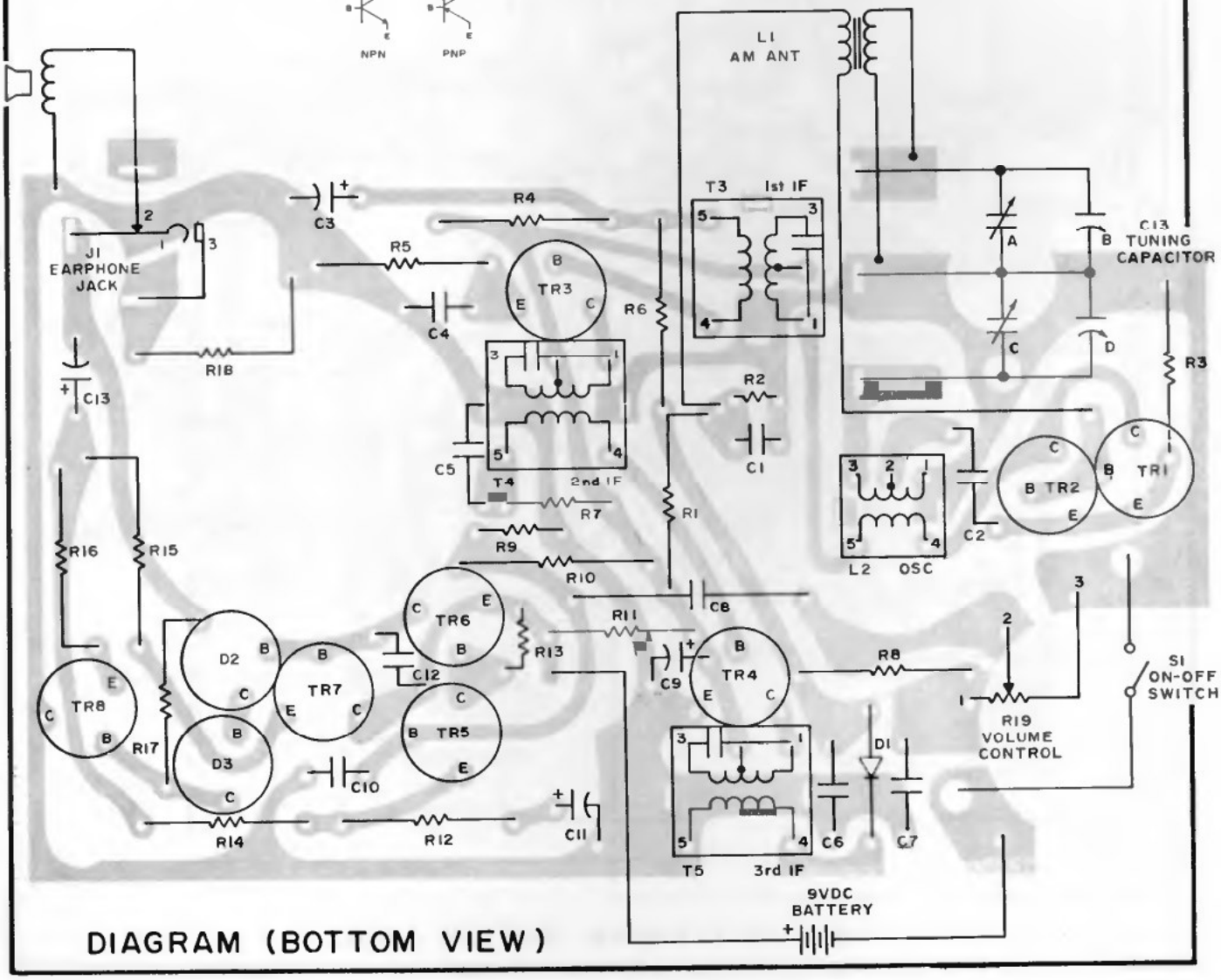


DIAGRAM (BOTTOM VIEW)

GENERAL ELECTRIC

MODELS P1780, P1781, P1782

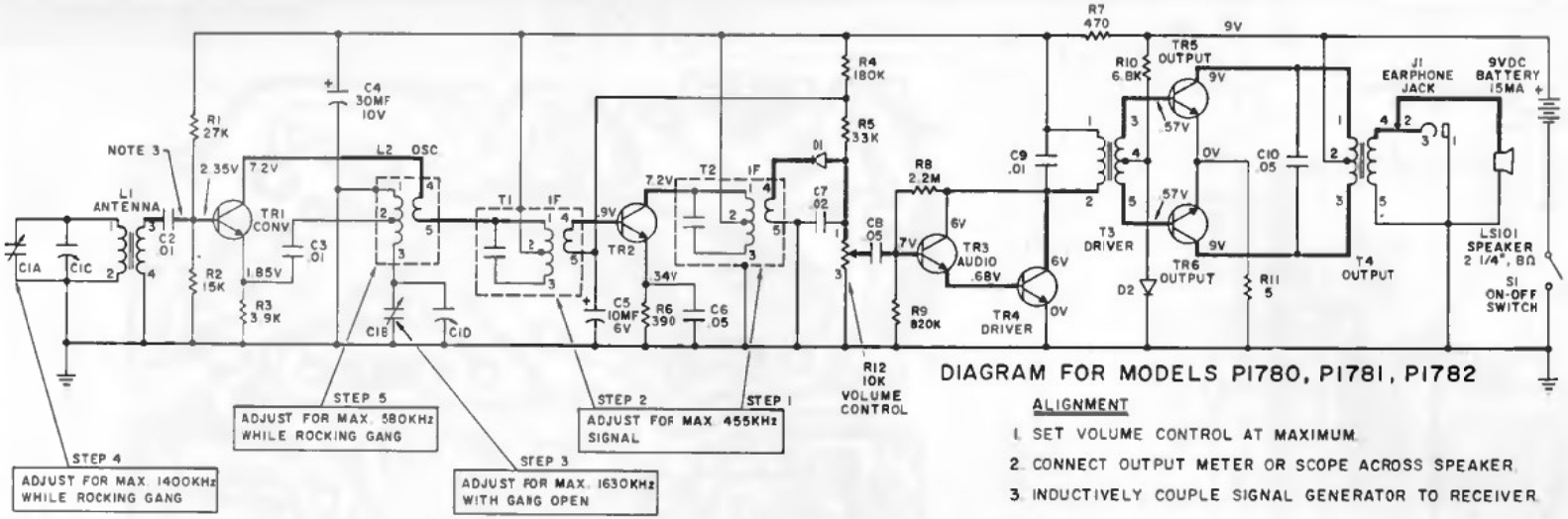
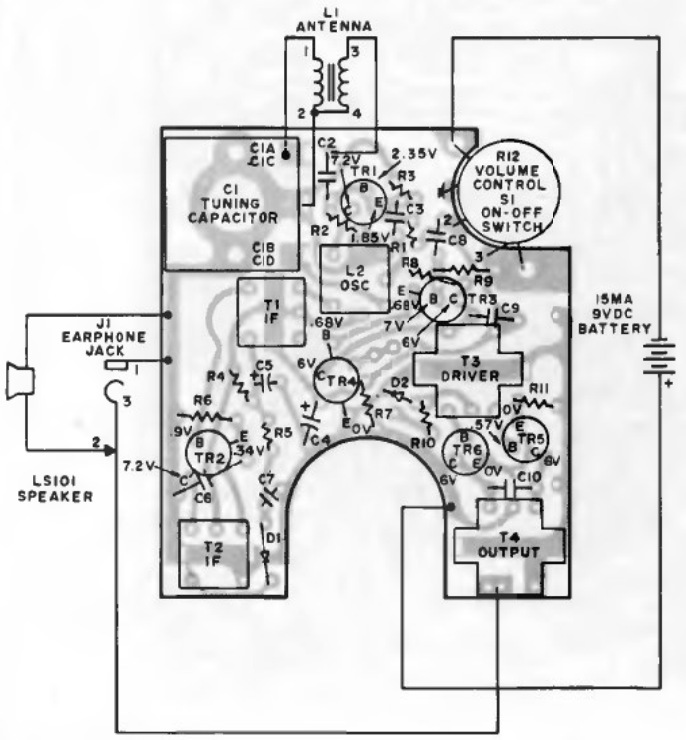


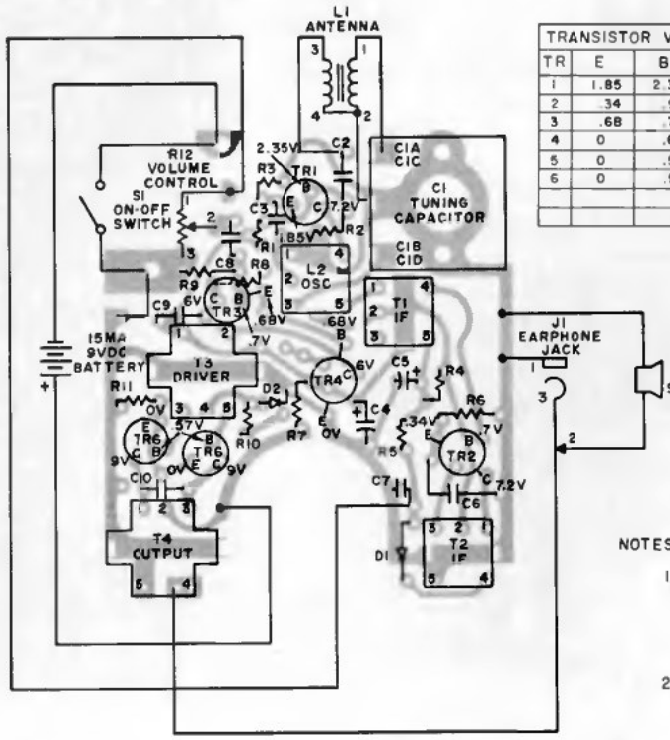
DIAGRAM FOR MODELS P1780, P1781, P1782

ALIGNMENT

1. SET VOLUME CONTROL AT MAXIMUM.
2. CONNECT OUTPUT METER OR SCOPE ACROSS SPEAKER.
3. INDUCTIVELY COUPLE SIGNAL GENERATOR TO RECEIVER.



COMPONENT LAYOUT (TOP VIEW)

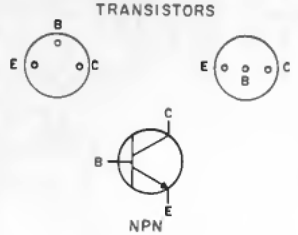


WIRING DIAGRAM (BOTTOM VIEW)

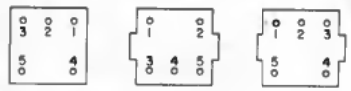
TRANSISTOR VOLTAGES			
TR	E	B	C
1	1.85	2.35	7.2
2	.34	.9	7.2
3	.68	.7	6.0
4	0	.68	6.0
5	0	.57	9.0
6	0	.57	9.0

BOTTOM VIEW OF COMPONENTS

TRANSISTORS



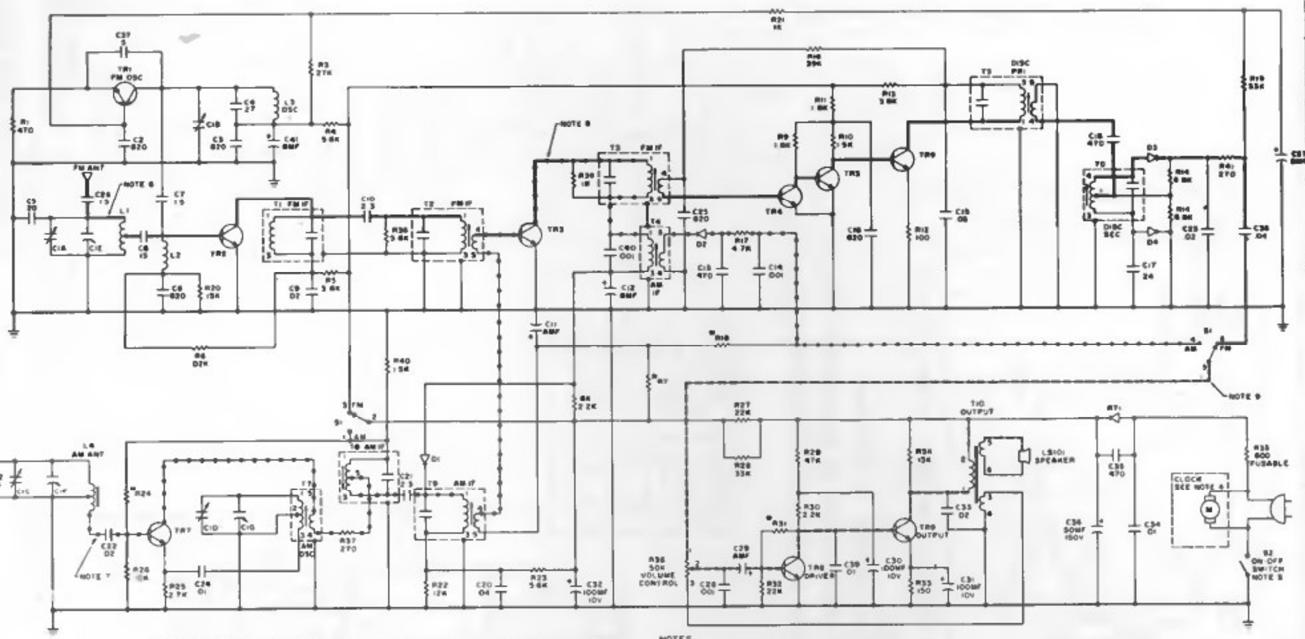
TRANSFORMERS

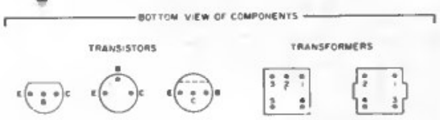


NOTES

1. UNLESS OTHERWISE NOTED
   CAPACITORS LESS THAN 1 = MF
   CAPACITORS MORE THAN 1 = PF
   RESISTORS IN OHMS, K=1000
   M=1,000,000
2. VOLTAGES ARE POSITIVE WITH RESPECT TO GROUND UNDER NO SIGNAL CONDITIONS AND VOLUME CONTROL MINIMUM.
3. HEAVY LINE IS SIGNAL PATH FROM ANTENNA TO SPEAKER.

GENERAL ELECTRIC T2205A;T2208A

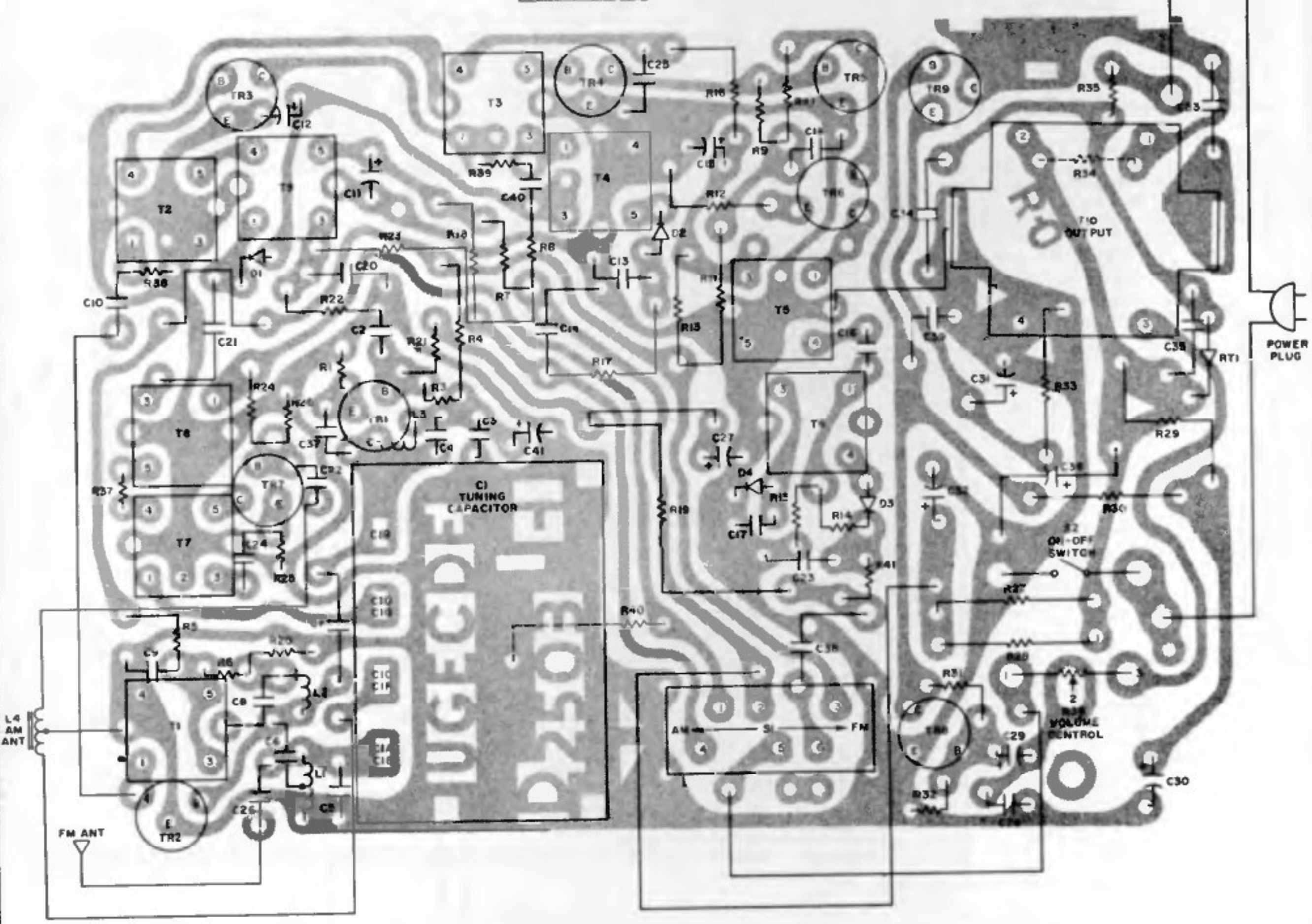




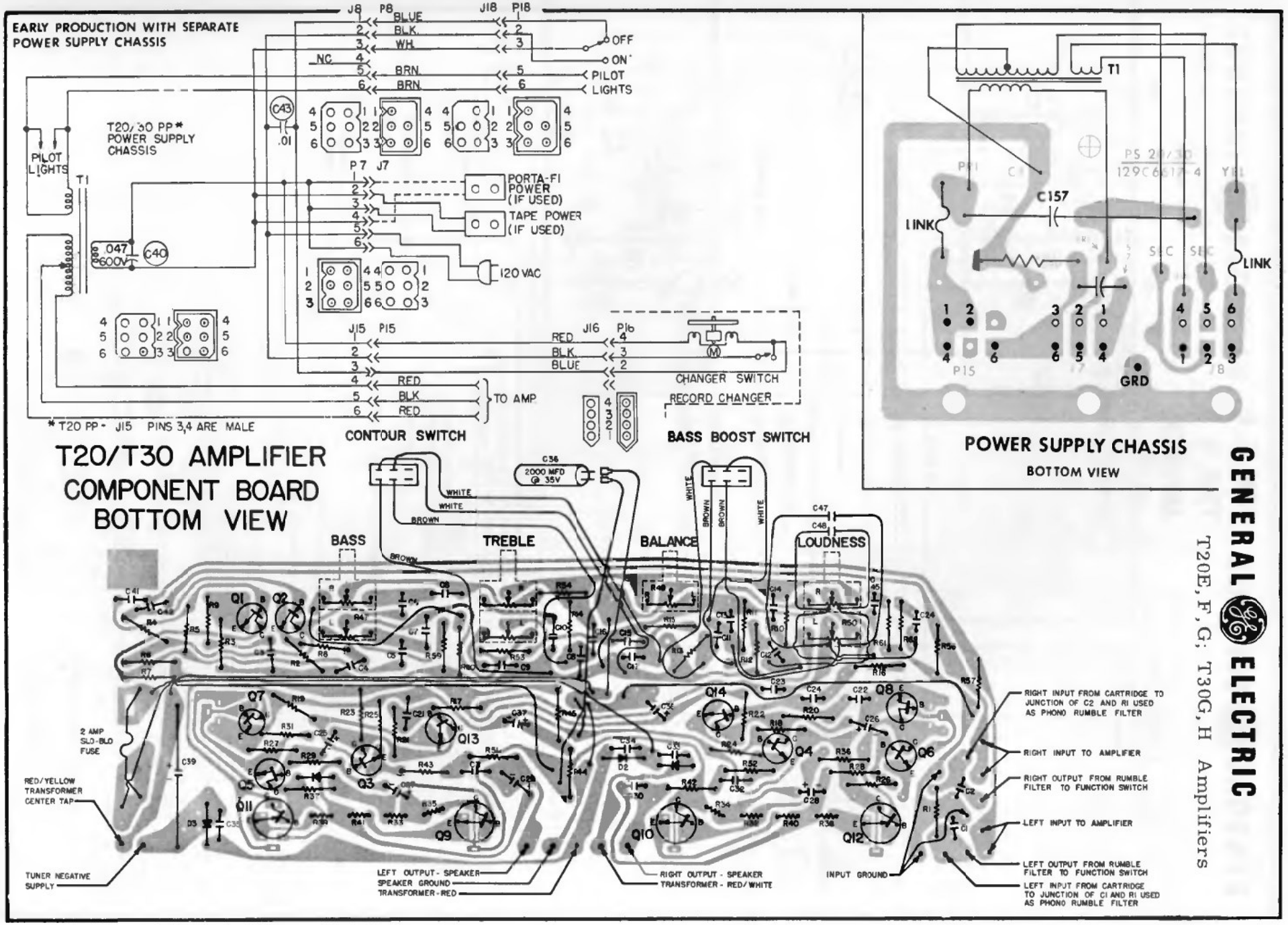
TRANSISTOR VOLTAGES						
TR	E		B		C	
	FM	AM	FM	AM	FM	AM
1	.51	0	.87	0	2.44	0
2	0	0	.87	0	5.26	0
3	0	0	.73	.72	3.70	3.60
4	0	0	.73	0	7	0
5	0	0	.7	0	.81	0
6	.1	0	.81	0	2.53	0
7	0	1.20	0	1.51	0	6.11
8	0	0	.58	.58	4.38	4.39
9	3.86	3.85	4.58	4.55	8.3	8.3

NOTES

1. UNLESS OTHERWISE NOTED CAPACITORS LESS THAN 1 = MF CAPACITORS MORE THAN 1 = MMF RESISTORS IN OHMS, K=1000
2. VOLTAGES ARE POSITIVE WITH RESPECT TO GROUND UNDER NO SIGNAL CONDITIONS AND VOLUME CONTROL MINIMUM
3. * REFER TO TRANSISTOR SUBSTITUTION CHART
4. USED ON CLOCK SETS ONLY
5. S2 IS INTEGRAL WITH CLOCK ON CLOCK SETS S2 IS INTEGRAL WITH R36 ON TABLE SETS
6. LINE SHOWN (▬) IS FM SIGNAL PATH FROM FM ANTENNA TO S1-6
7. LINE SHOWN (-•-) IS AM SIGNAL PATH FROM AM ANTENNA TO S1-4
8. SIGNAL PATHS SUPERIMPOSED IN SOME AREAS (▬)
9. LINE SHOWN (-•-) IS COMMON AUDIO PATH FROM S1-5 TO SPEAKER



WIRING DIAGRAM (BOTTOM VIEW)

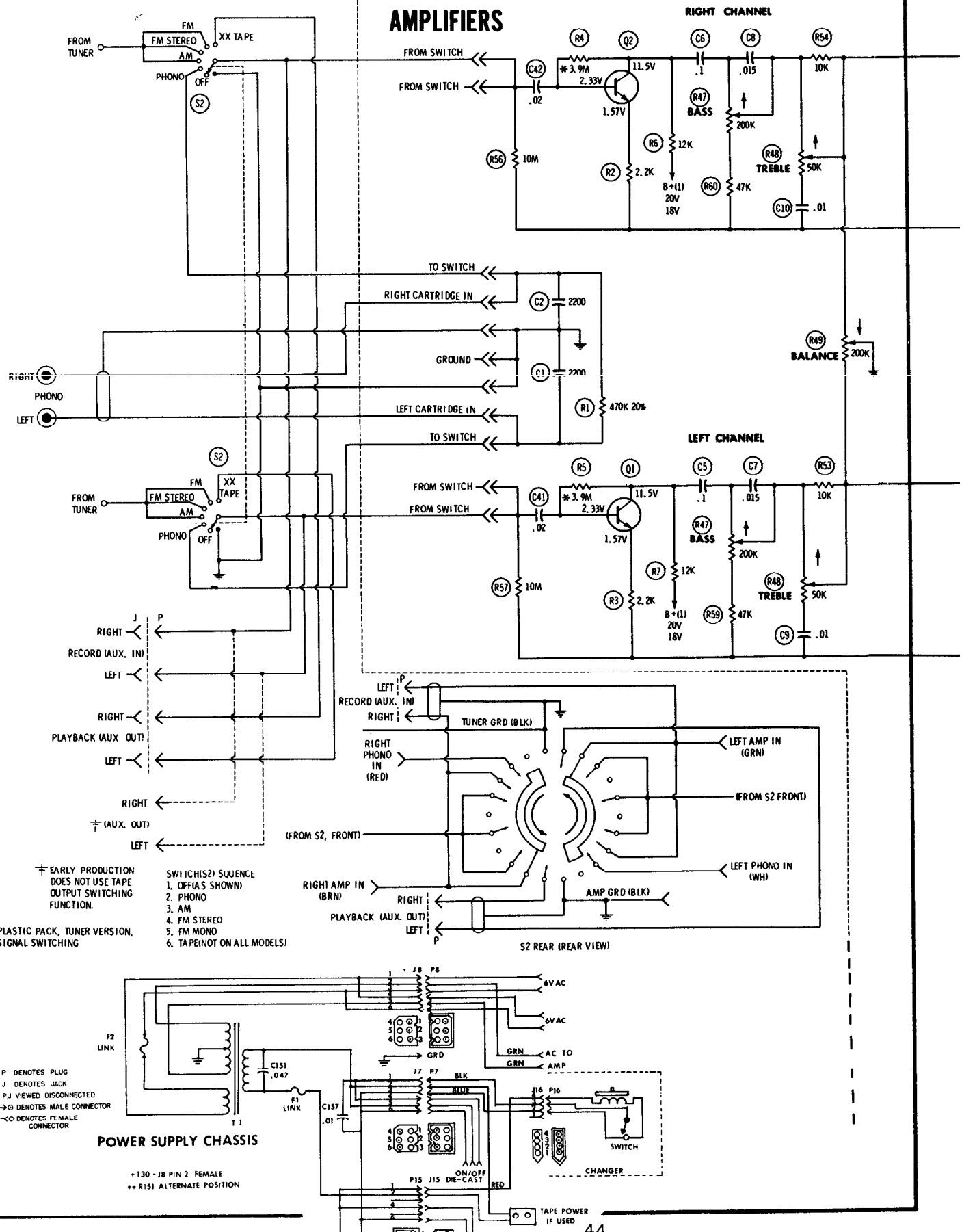


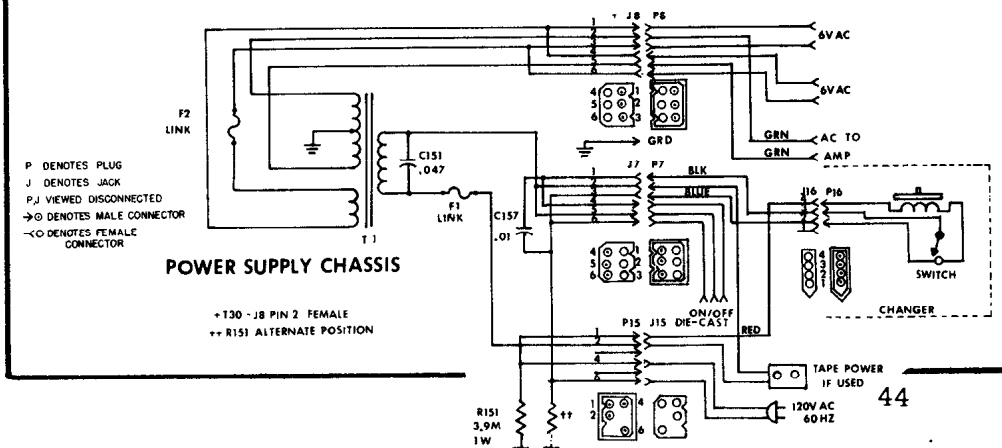
GENERAL ELECTRIC

T20E, F, G; T30G, H Amplifiers

GENERAL ELECTRIC

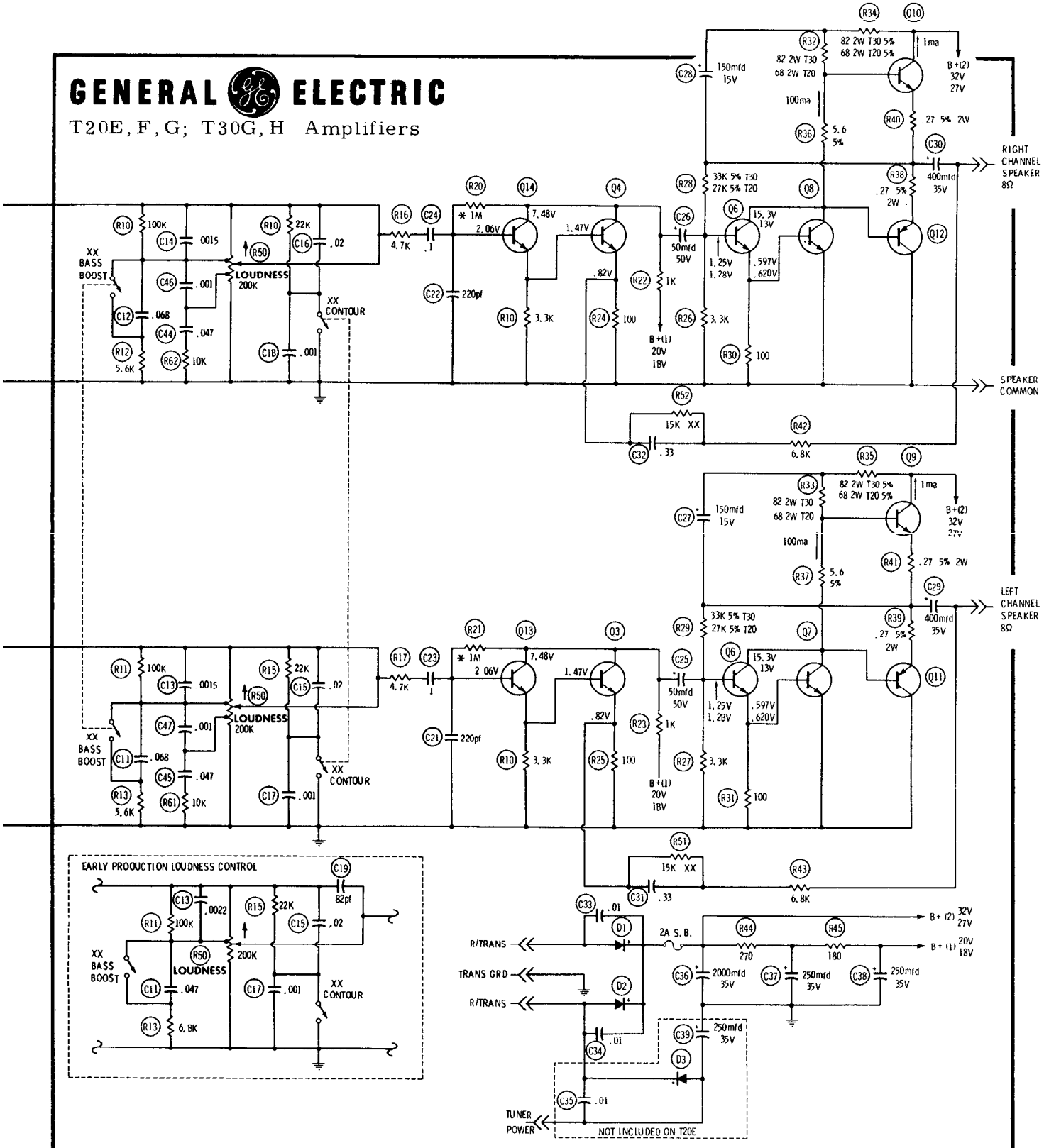
T20E, F, G
T30G, H
AMPLIFIERS





GENERAL ELECTRIC

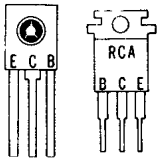
T20E, F, G; T30G, H Amplifiers



UNLESS OTHERWISE NOTED:

RESISTORS SHOWN ARE 1/2 WATT, 10%; K = 1000Ω; M = 1 MEGOHM.
CAPACITOR VALUES LESS THAN 1 IN mfd, MORE THAN 1 IN pf.
* DENOTES LOW NOISE TYPE RESISTOR.
P DENOTES PLUGS.
WHERE TWO VOLTAGES ARE SHOWN, THE UPPER READINGS ARE T30, LOWER READINGS ARE T20.
J DENOTES JACKS
MEASUREMENTS SHOWN MAY DEVIATE 10%.
ARROWS ON POTENTIOMETERS INDICATE CLOCKWISE ROTATION.

ALL VOLTAGES AND CURRENTS SHOWN ARE TYPICAL WITH NO SIGNAL APPLIED TO CIRCUIT
DC VOLTAGES MEASURED WITH 10 MEGOHM ELECTRONIC DC VOLTMETER.
LINE VOLTAGE MAINTAINED AT 120 VAC, 60 CYCLES.
XX DENOTES OMISSION ON SOME MODELS.
ARROW DENOTES TYPICAL NO SIGNAL CURRENT.
→ DENOTES MALE CONNECTOR.
≺ DENOTES FEMALE CONNECTOR



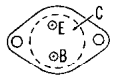
Q9, Q10

SILVER LEADS

GOLD LEADS

Q1 THRU Q6, Q13 AND Q14

Q7, Q8



Q11, Q12

GENERAL ELECTRIC TU200, TU205 AND TU210

SENSITIVITY:

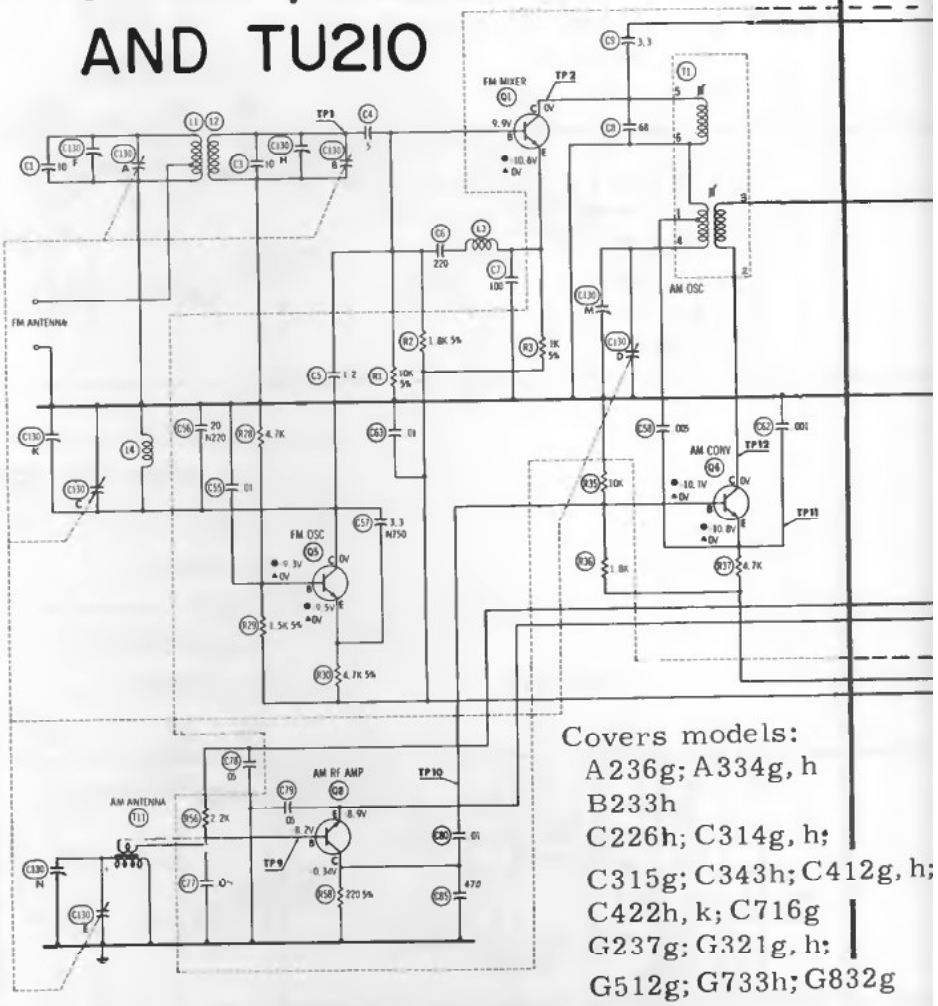
AM - 250 uv/m FM - 7 uv Antenna Voltage for 30db quieting	

TRANSISTOR COMPLIMENT:

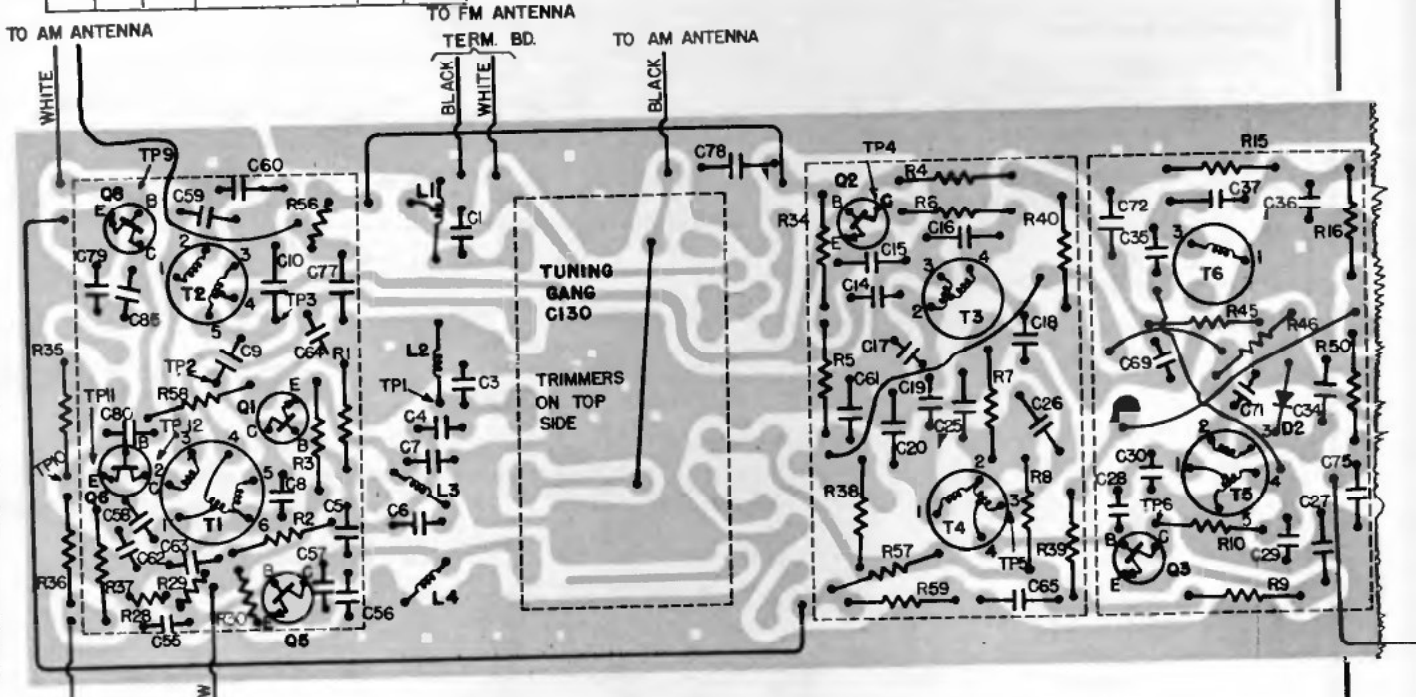
SYMBOL	DESCRIPTION
Q1	FM Mixer
Q2	1st FM IF, 1st AM IF
Q3	2nd FM IF, 2nd AM IF
Q4	3rd FM IF
Q5	FM Oscillator
Q6	AM Convertor
Q8	AM RF Amplifier
Q9,10	Voltage Regulator
Q11	Stereo Indicator Amp.
Q12	38 KC Doubler
Q13	19 KC Pilot Amplifier
Q14	Composite Stereo Amp.

SPECIFICATIONS

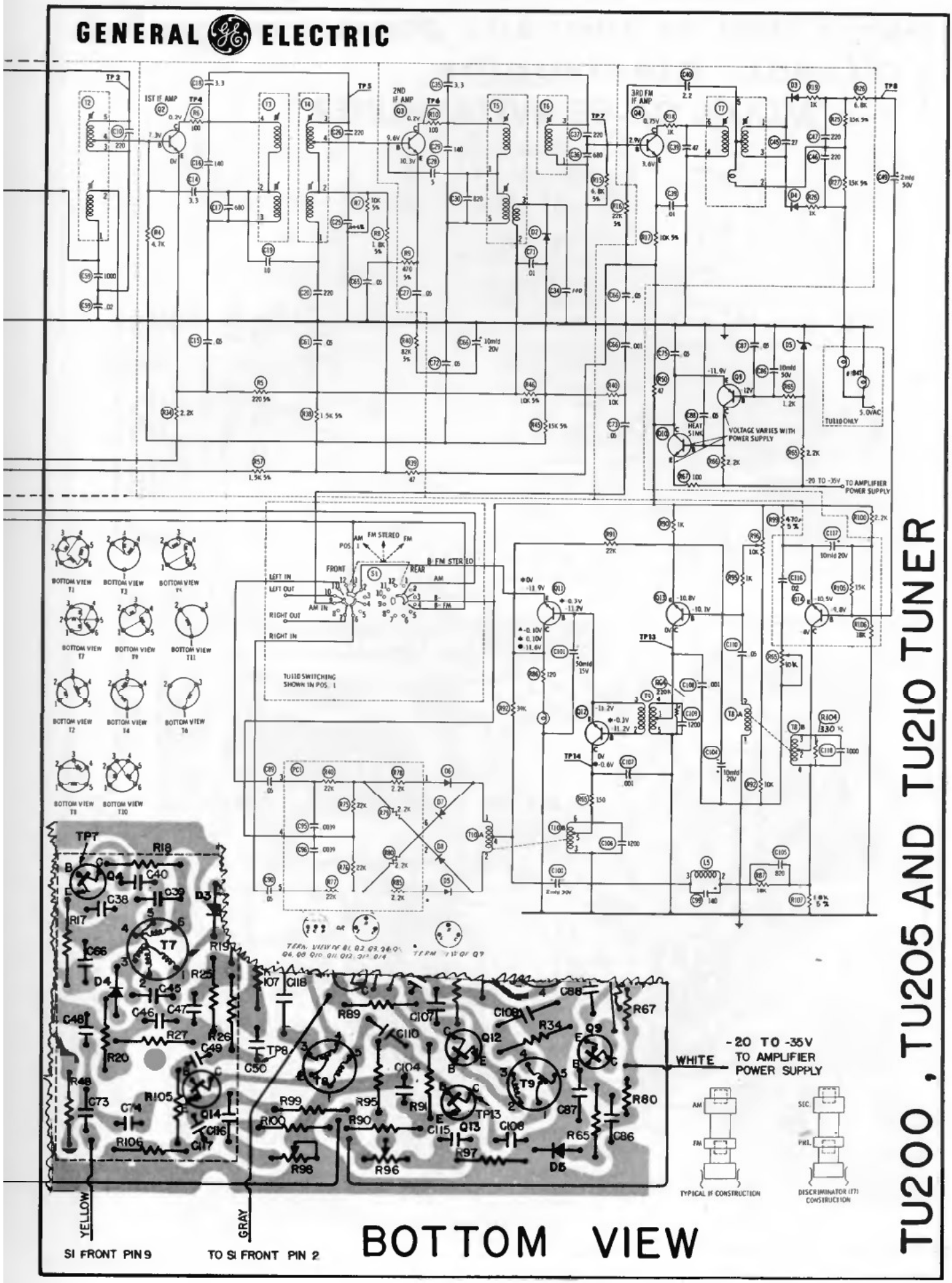
INPUT VOLTAGE RATING:	-22 Volts to -35 Volts @ 50ma
TUNING RANGE:	AM - 530 KC to 1630 KC FM - 88 MC to 108 MC
INTERMEDIATE FREQUENCIES:	AM - 455 KC FM - 10.7 MC
DIODES:	D1 - FM AGC D2,D3 - Discriminator D4 - AM Detector D5 - Voltage Regulator Zener D8,D9,D10,D11 - Stereo Detector
FM STEREO SEPARATION:	25db Minimum @ 1 KC
FM STEREO FREQUENCY:	50 cps to 15 KC



Covers models:
A236g; A334g, h
B233h
C226h; C314g, h;
C315g; C343h; C412g, h;
C422h, k; C716g
G237g; G321g, h;
G512g; G733h; G832g

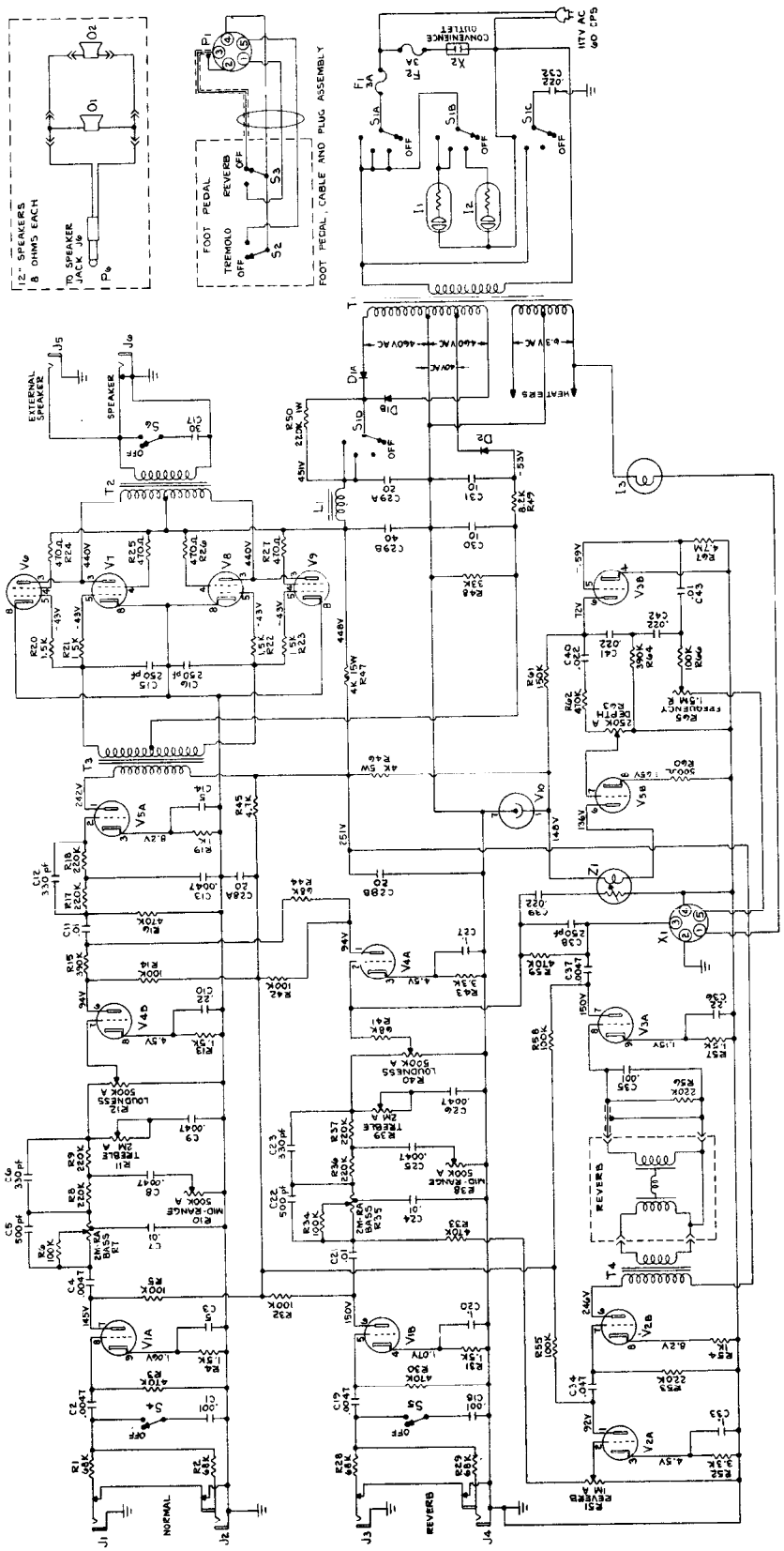


TUNER COMPONENT LAYOUT


GENERAL ELECTRIC
TU200 , TU205 AND TU210 TUNER
BOTTOM VIEW
-20 TO -35V
TO AMPLIFIER
POWER SUPPLY
WHITE
YELLOW
GRAY
SI FRONT PIN 9
TO SI FRONT PIN 2
TYPICAL IF CONSTRUCTION
DISCRIMINATOR (T7) CONSTRUCTION
VOLTAGE VARIES WITH POWER SUPPLY
TU110 SWITCHING SHOWN IN POS. 1
TU110 ONLY
1ST IF AMP
2ND IF AMP
3RD FM IF AMP

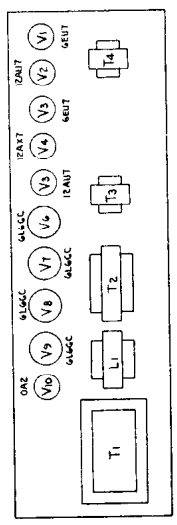
Gibson Electronics

MODEL GA-95 RVT AMPLIFIER

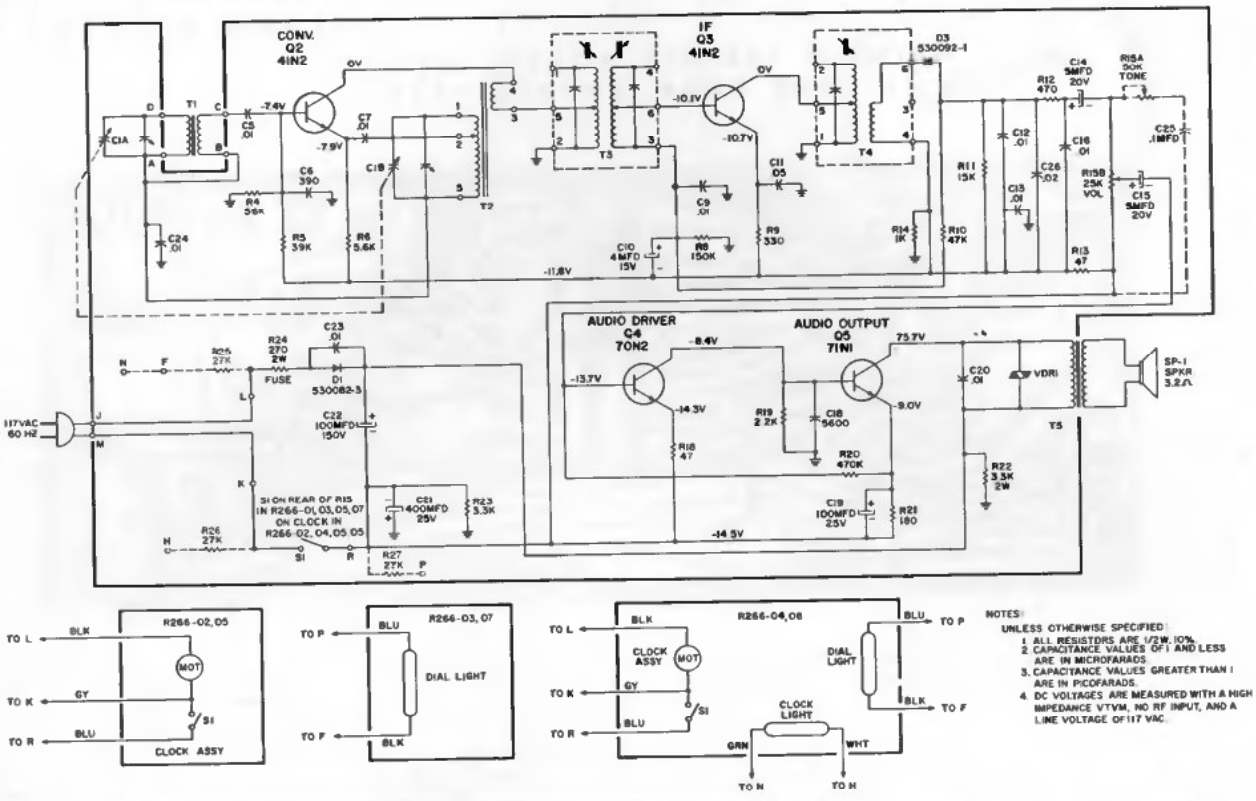


Parts list:

T1	Power Transformer	TF-103P	D1,D2	Diode - 1200 PIV	DI-57
T2	Output Transformer	TF-503-C		Diode - 200 PIV	DI-405
T3	PP Driver Transformer	TF-100LD			
T4	Reverb Transformer	TF-RB4100	J1	Foot Pedal Socket	CN-78P03-5
			J2	Convenience Outlet	CN-303
L1	Filter Choke	TF-100QC	R39	Control - 2 meg audio w/switch	CBA-4005-1
S1A,B,C,D	Switch	SW-78A-1	R10,R12,R18,R40	Control - 500K audio	CBA-4007
S2	Switch SPST	SW-82U03	R43	Control - 250K audio	CBA-4008
S3	Switch SPDT	SW-82U22	R11	Control - 2 meg, audio	CBA-811-3702-1
S4,S5	Switches DPDT Slide	SW-129	R51	Control - 1 meg, audio	CBA-811-3709-1
			R65	Control - 1.5 meg, BA	CBA-811-3711-1
I1	Pilot Light (Red)	PL-37R	R7,R35	Control - 2 meg, BA	CBA-811-3222-1
I2	Pilot Light (Amber)	PL-38A			
I3	Pilot Light (Red) w/clip	PL-38R	C1,C2	Speakers - 12" 8 ohms each	S-20011

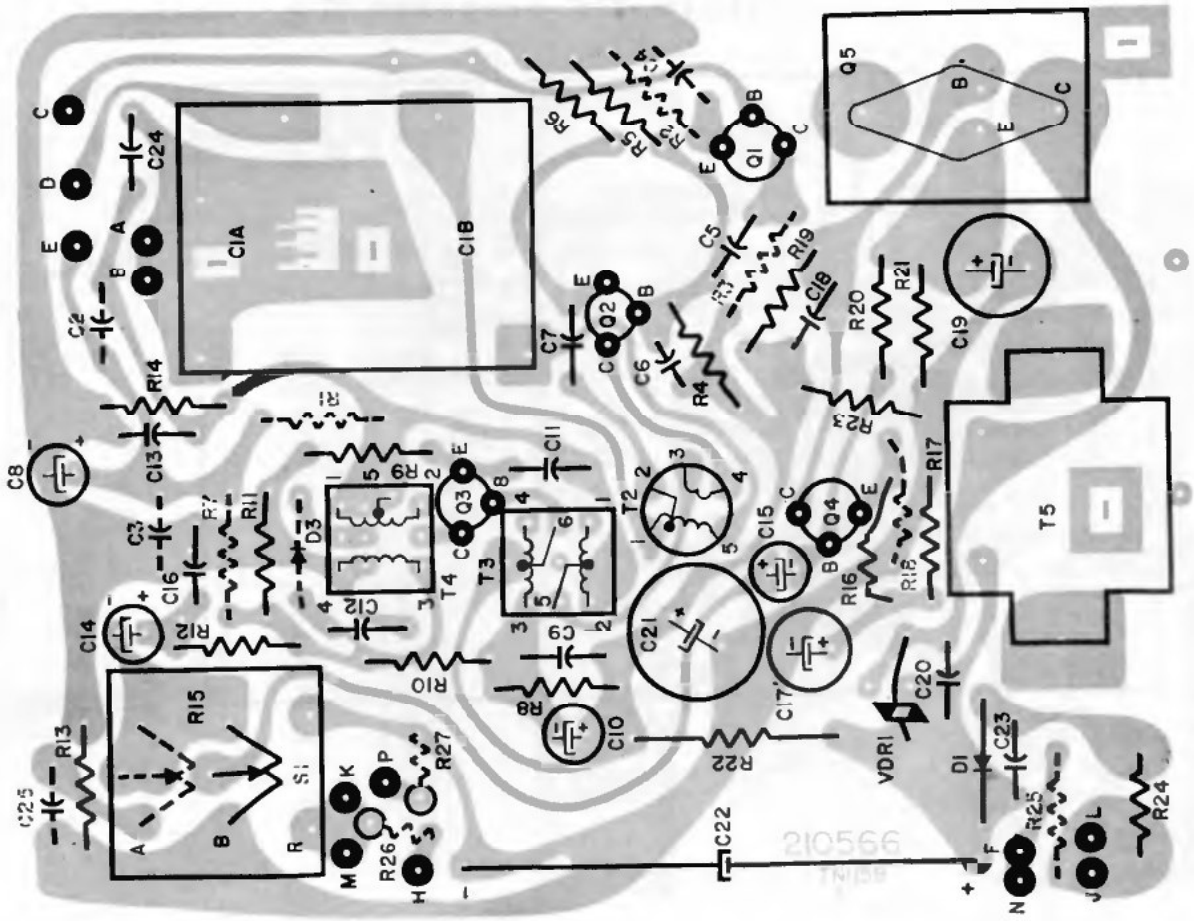


Magnavox R266 SERIES AM RADIO CHASSIS



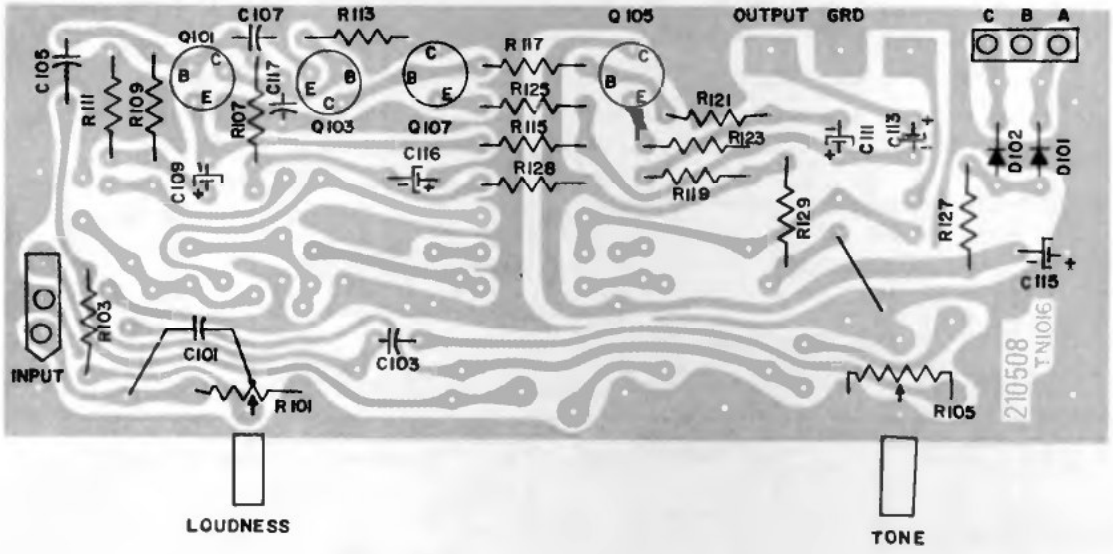
NOTES:
UNLESS OTHERWISE SPECIFIED:
1. ALL RESISTORS ARE 1/2W, 10%.
2. CAPACITANCE VALUES OF 1 AND LESS ARE IN MICROFARADS.
3. CAPACITANCE VALUES GREATER THAN 1 ARE IN PICOFARADS.
4. DC VOLTAGES ARE MEASURED WITH A HIGH IMPEDANCE VTVM, NO RF INPUT, AND A LINE VOLTAGE OF 117 VAC.

CIRCUIT BOARD LAYOUT
(VIEWED FROM COPPER SIDE)

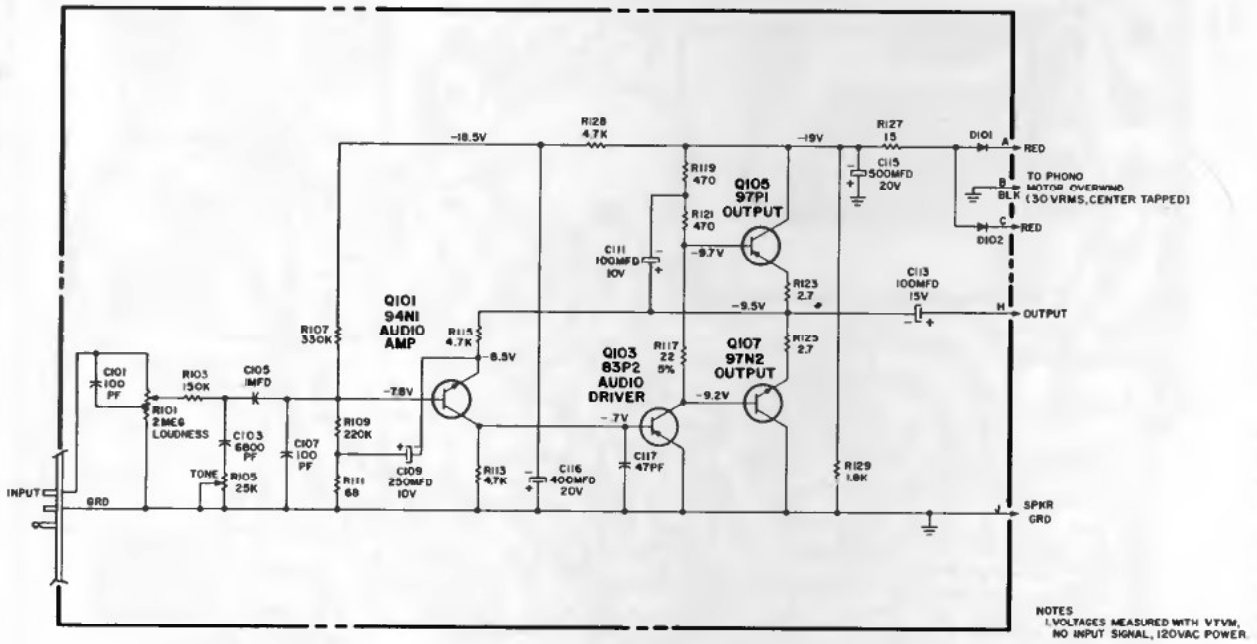


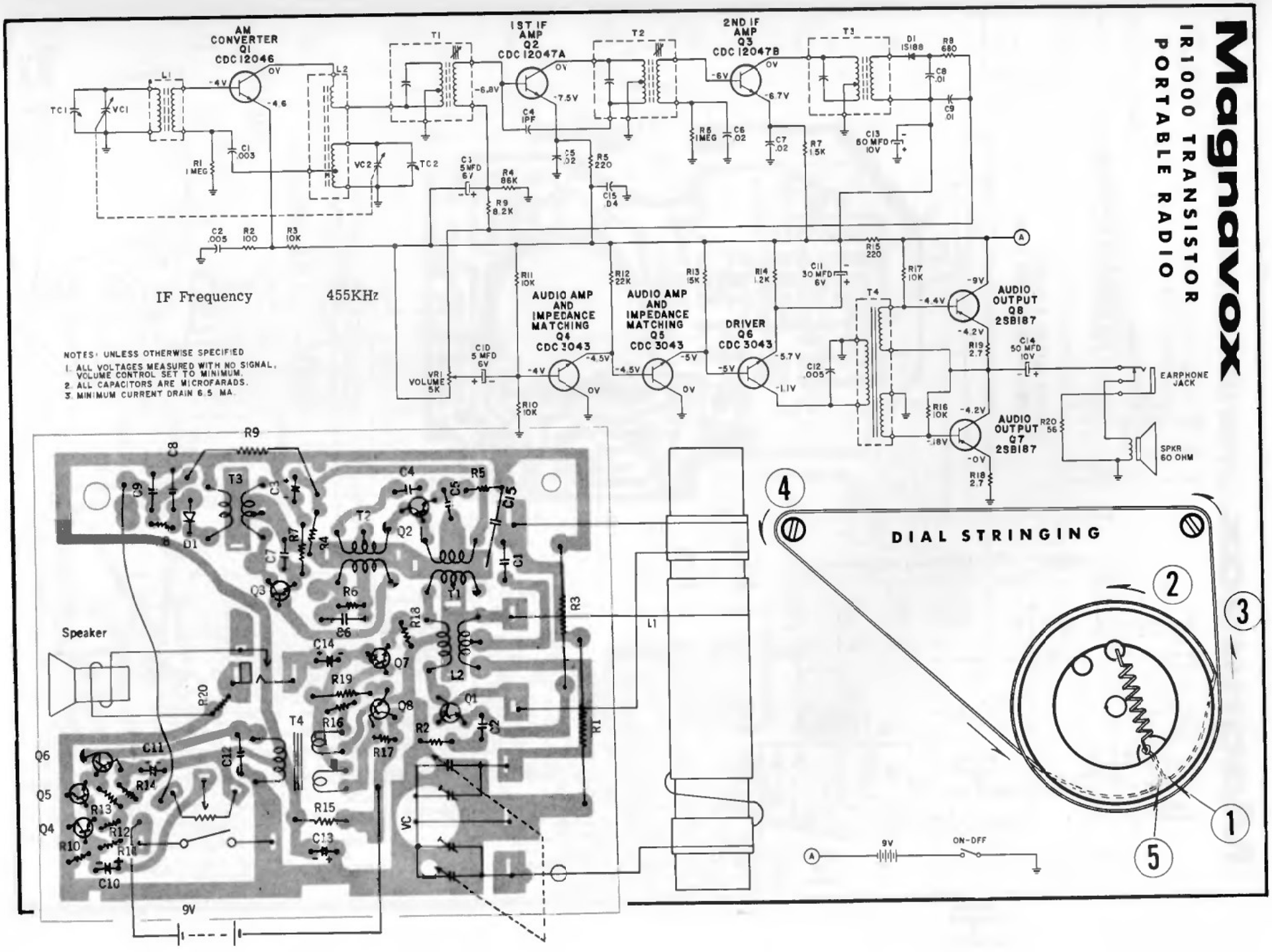
Intermediate Frequency 455 KHz

PRINTED CIRCUIT BOARD LAYOUT (VIEWED FROM COPPER SIDE)



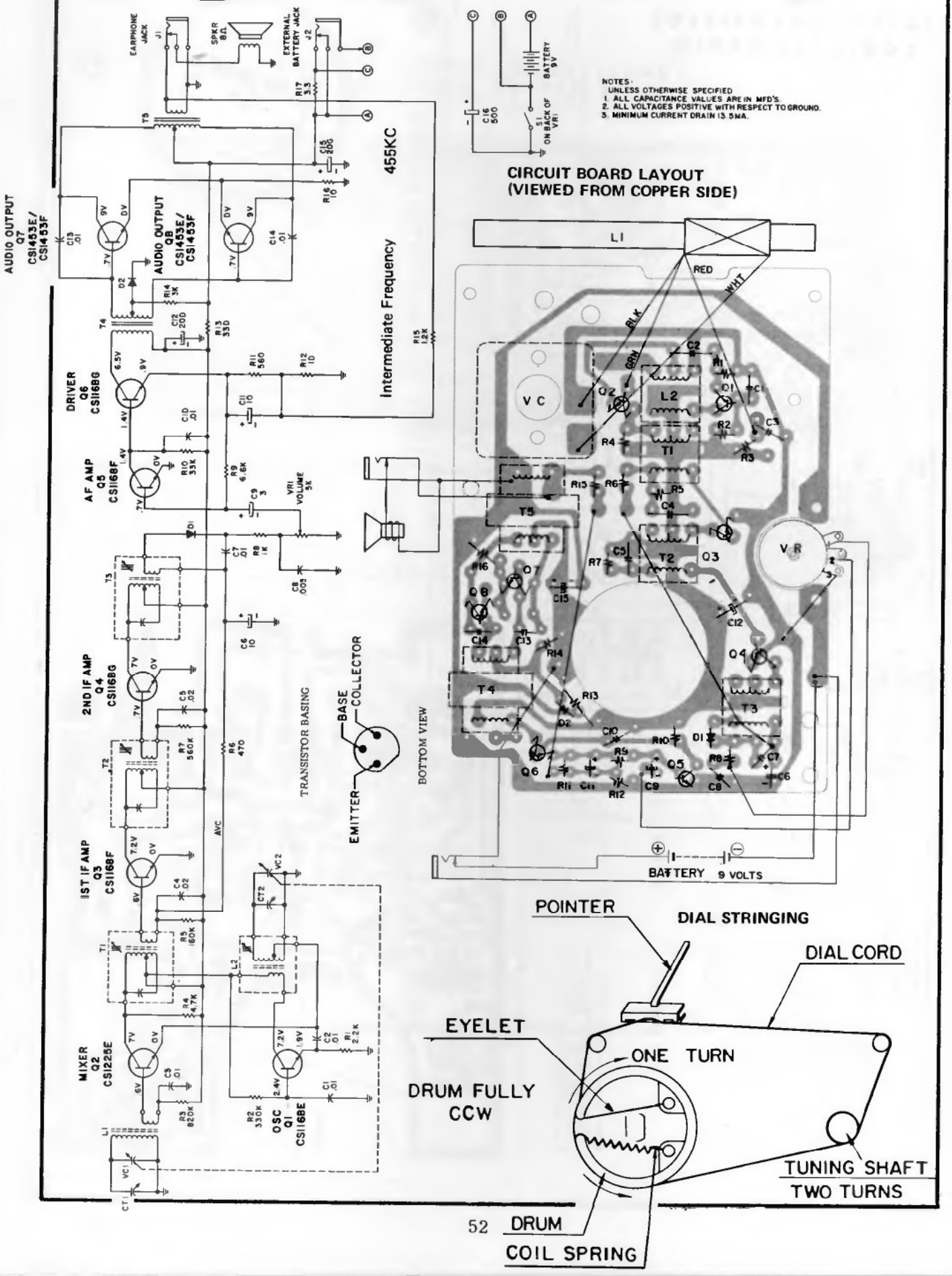
SCHEMATIC DIAGRAM




Magnavox
IR1000 TRANSISTOR
PORTABLE RADIO
AM CONVERTER Q1 CDC12046
1ST IF AMP Q2 CDC12047A
2ND IF AMP Q3 CDC12047B
AUDIO AMP AND IMPEDANCE MATCHING Q4 CDC3043
AUDIO AMP AND IMPEDANCE MATCHING Q5 CDC3043
DRIVER Q6 CDC3043
AUDIO OUTPUT Q8 2SB187
AUDIO OUTPUT Q7 2SB187
IF Frequency 455KHz
NOTES: UNLESS OTHERWISE SPECIFIED
1. ALL VOLTAGES MEASURED WITH NO SIGNAL, VOLUME CONTROL SET TO MINIMUM.
2. ALL CAPACITORS ARE MICROFARADS.
3. MINIMUM CURRENT DRAIN 6.5 MA.
EARPHONE JACK
SPKR 60 OHM
DIAL STRINGING
Speaker
9V
ON-OFF

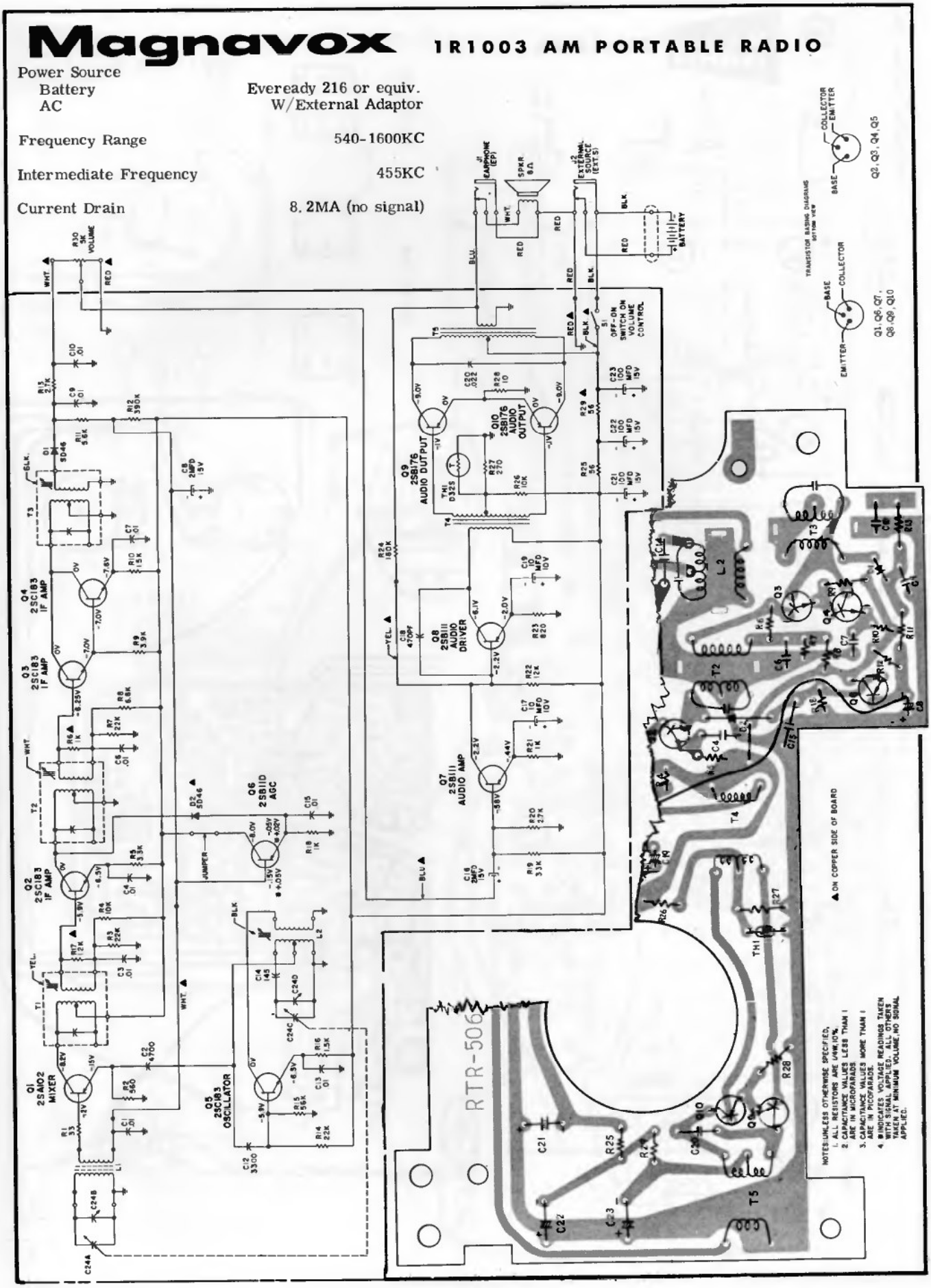
Magnavox

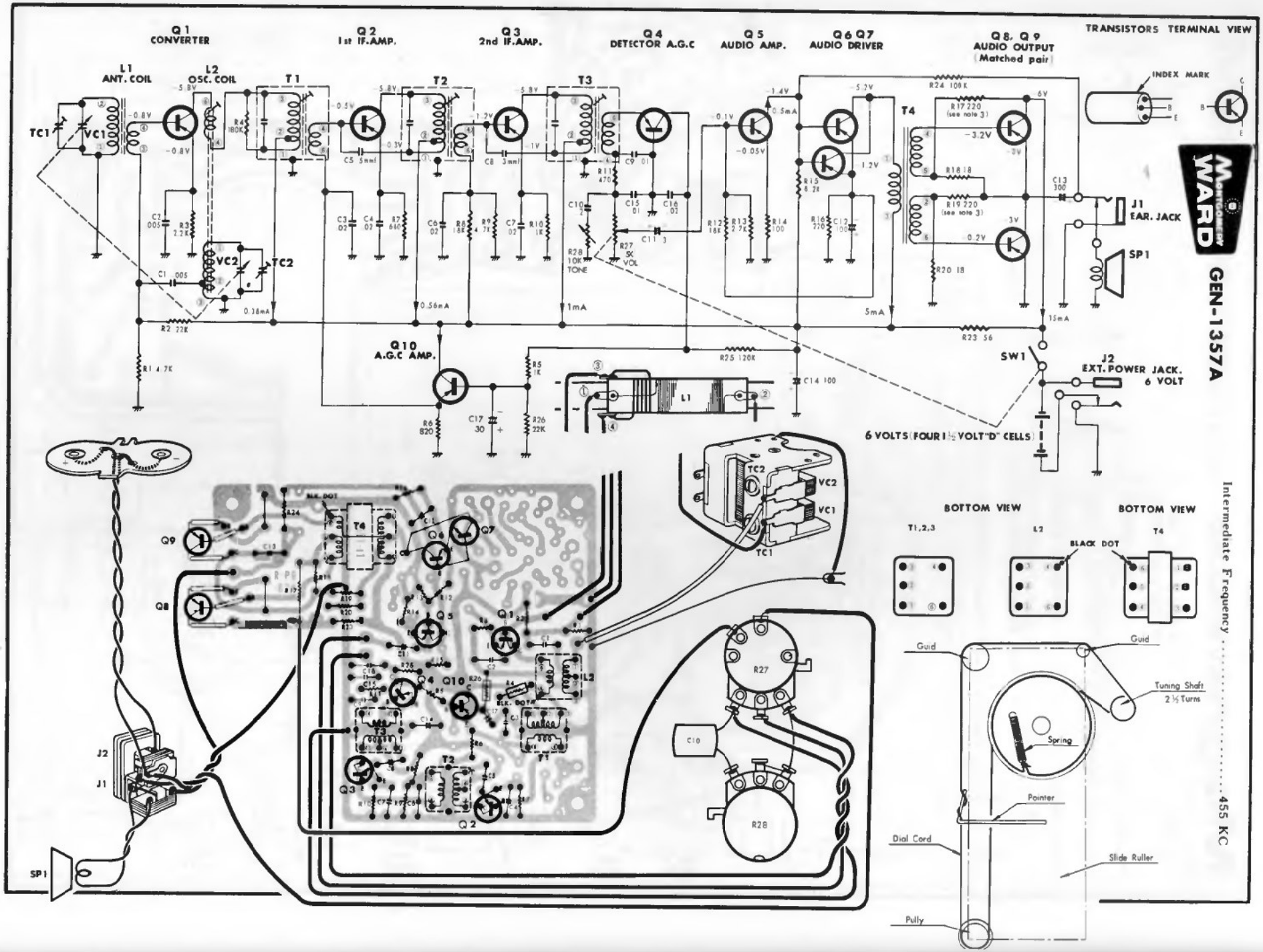
1R1002 AM SOLID-STATE RADIO



Magnavox 1R1003 AM PORTABLE RADIO

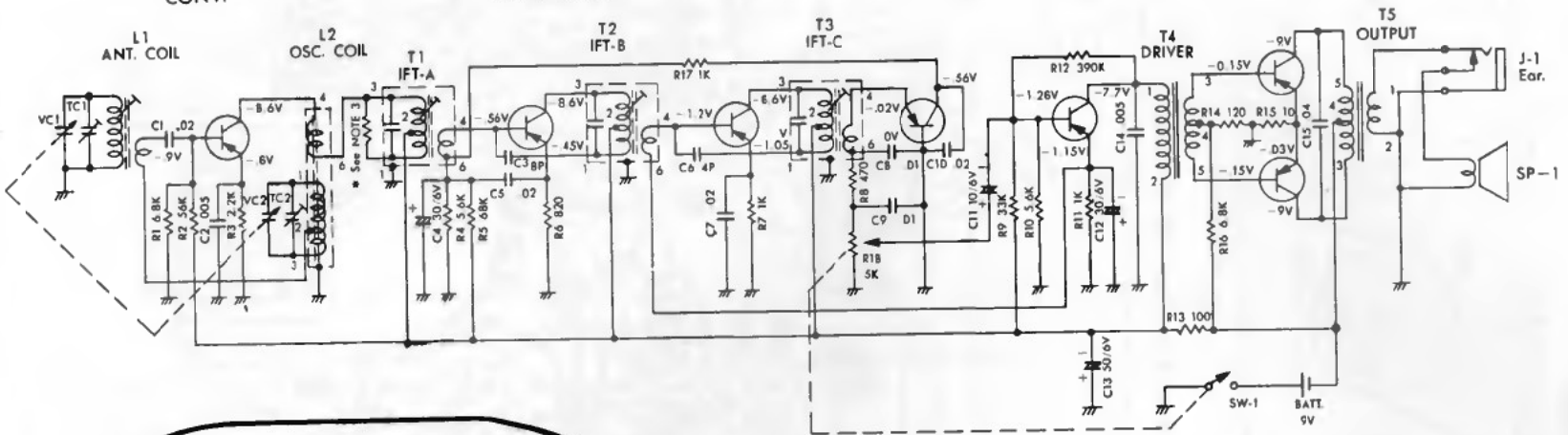
Power Source	
Battery	Eveready 216 or equiv.
AC	W/External Adaptor
Frequency Range	540-1600KC
Intermediate Frequency	455KC
Current Drain	8.2MA (no signal)

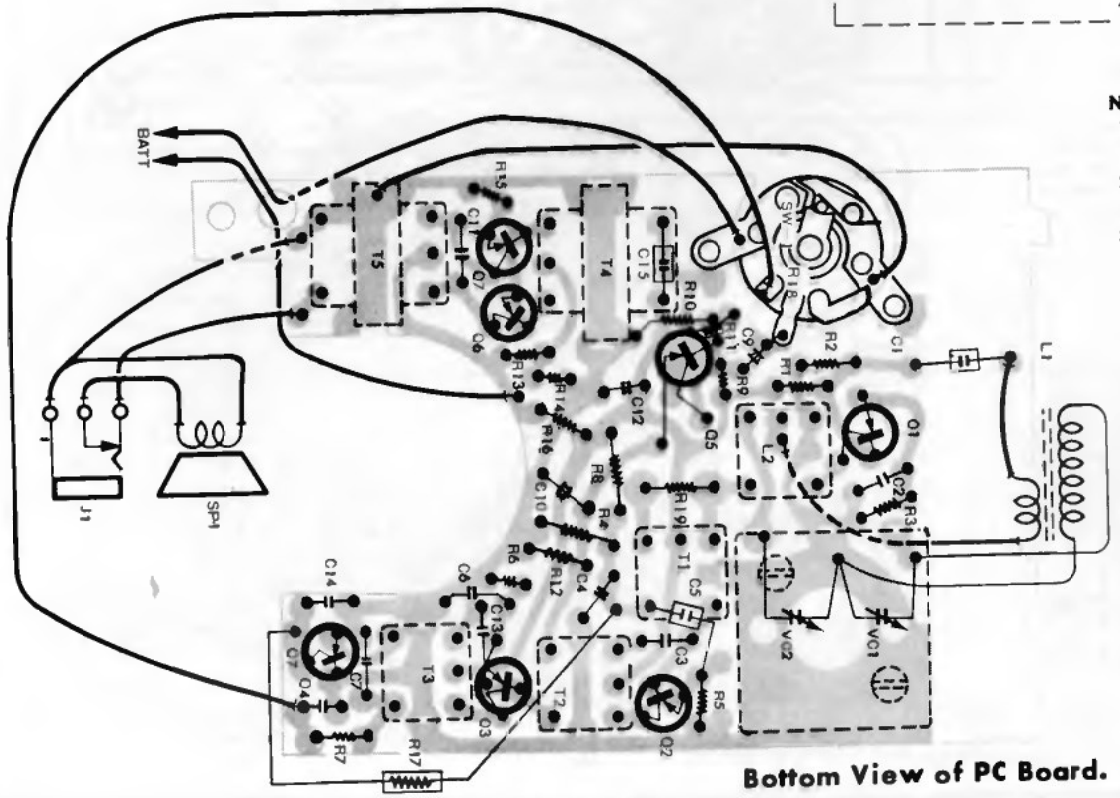



Q1 CONVERTER
Q2 1st IF.AMP.
Q3 2nd IF.AMP.
Q4 DETECTOR A.G.C
Q5 AUDIO AMP.
Q6 Q7 AUDIO DRIVER
Q8, Q9 AUDIO OUTPUT (Matched pair)
TRANSISTORS TERMINAL VIEW
L1 ANT. COIL
L2 OSC. COIL
T1
T2
T3
T4
TC1
VC1
VC2
TC2
Q10 A.G.C AMP.
INDEX MARK
J1 EAR. JACK
SP1
SW1
J2 EXT. POWER JACK. 6 VOLT
6 VOLTS (FOUR 1½ VOLT "D" CELLS)
GEN-1357A
Intermediate Frequency ..... 455 KC
BOTTOM VIEW
T1,2,3
L2
T4
BLACK DOT
Guid
Tuning Shaft 2½ Turns
Spring
Pointer
Dial Cord
Slide Ruller
Pully

MONTGOMERY WARD

MODEL GEN-1119A



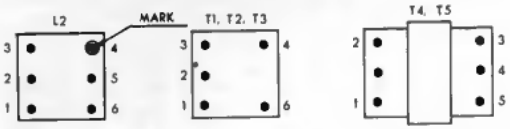


Bottom View of PC Board.

NOTE

1. All capacitance values are in Mfd unless otherwise specified. P = Mmfd.
2. All resistance values are in ohms unless otherwise specified. K = 1000 ohms.
3. The following component may have alternative values within the range shown. R_b from 100K ohm through 250K ohm.
4. Curent drain: Approx 8 mA

BOTTOM VIEW



TRANSISTOR CONNECTION

Q1 ~ Q7

IF 455 KC

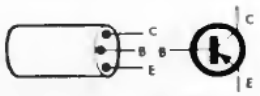
MONTGOMERY WARD

Model: GEN-1129A

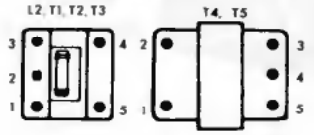
IF 455 KC

TRANSISTOR CONNECTION

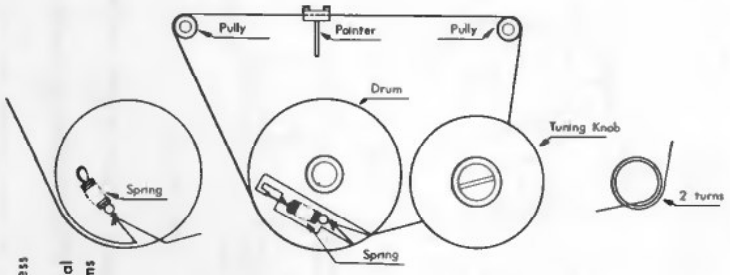
Q1 ~ 8



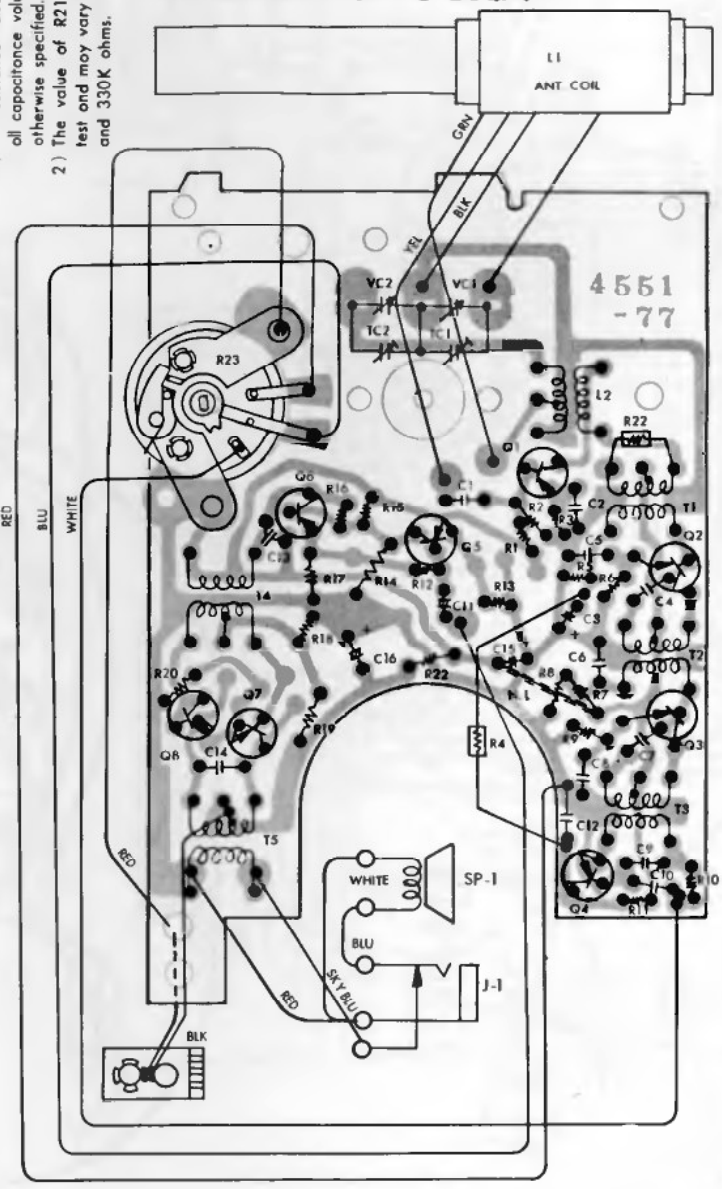
BOTTOM VIEW



Dial Cord Stringing.

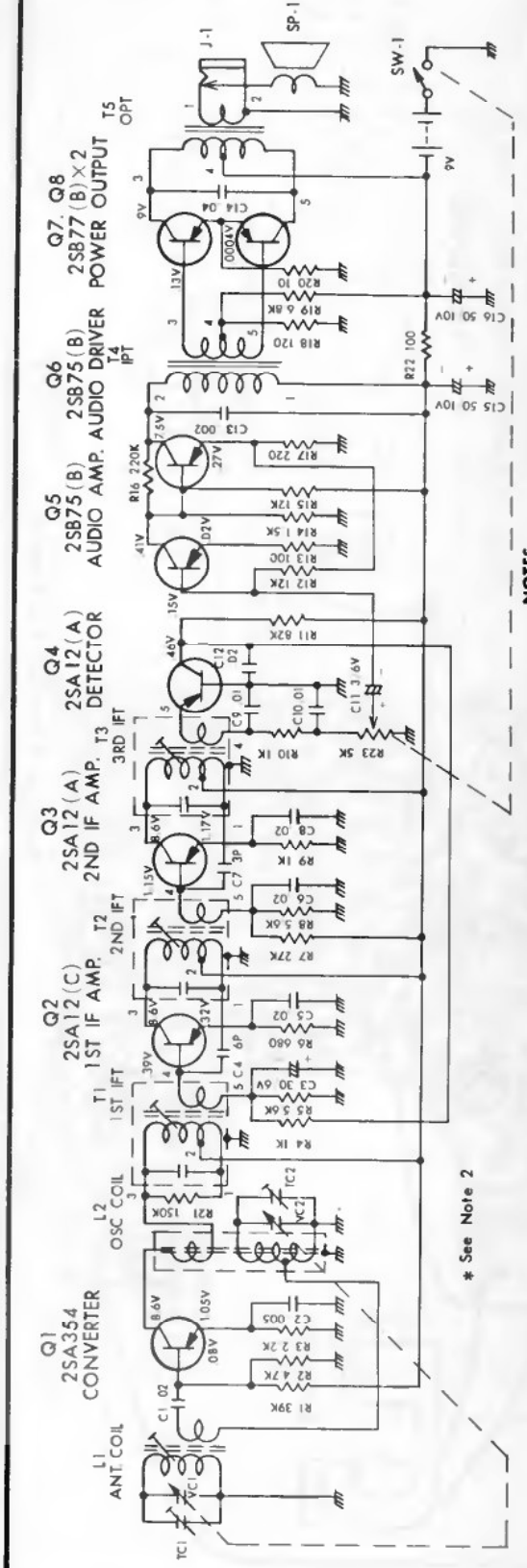


Bottom View of PC Board.



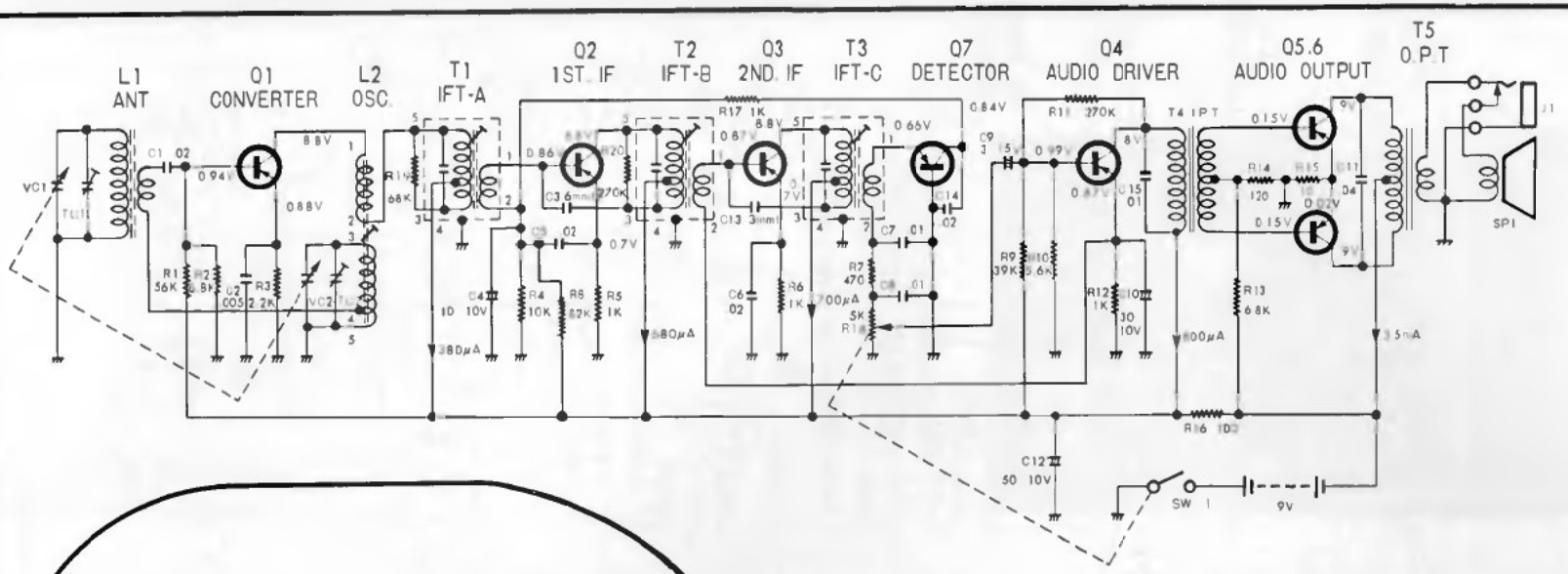
NOTES

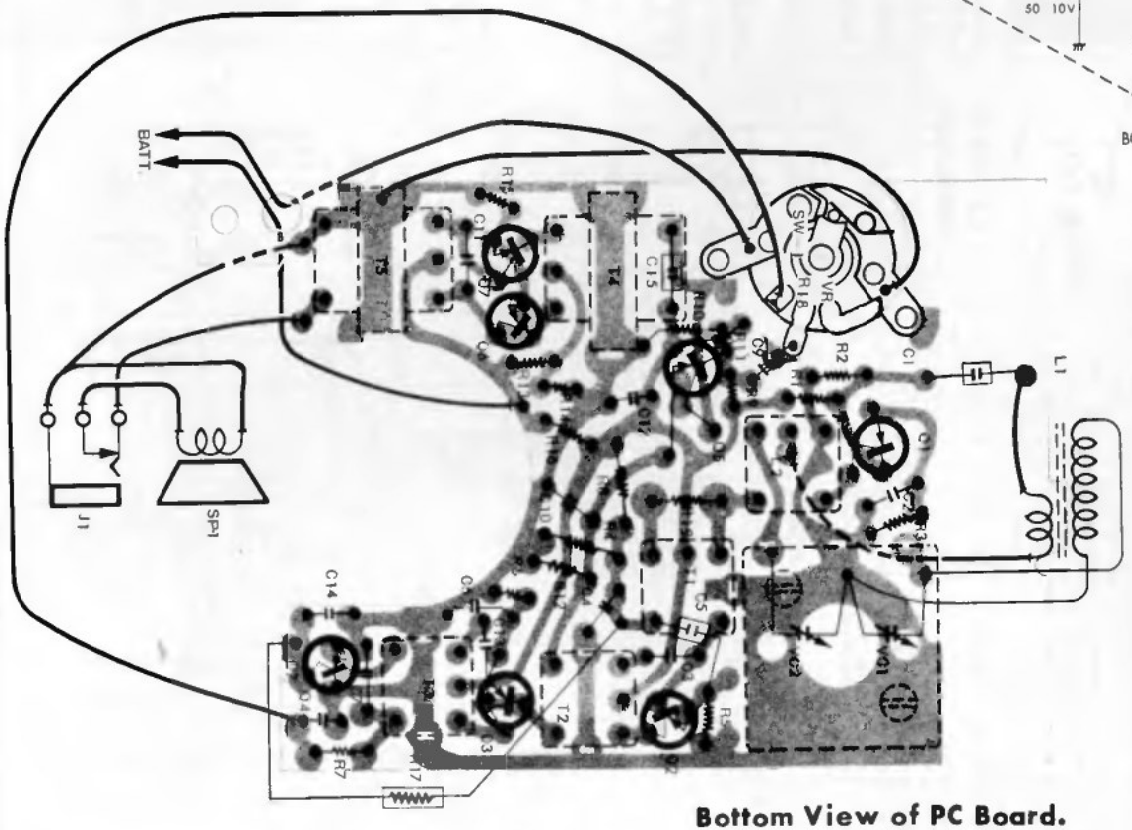
1) All resistance values are in ohms, all capacitance values are in MF unless otherwise specified.
2) The value of R21 is chosen in final test and may vary between 100K ohms and 330K ohms.



MONTGOMERY WARD

MODELS
GEN-1158A GEN-1158B
GEN-1158C



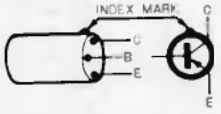


Bottom View of PC Board.

BOTTOM VIEW L2

BOTTOM VIEW T1.2.3

BOTTOM AND SIDE VIEW 01.2.3.4.5.6.7



NOTES:

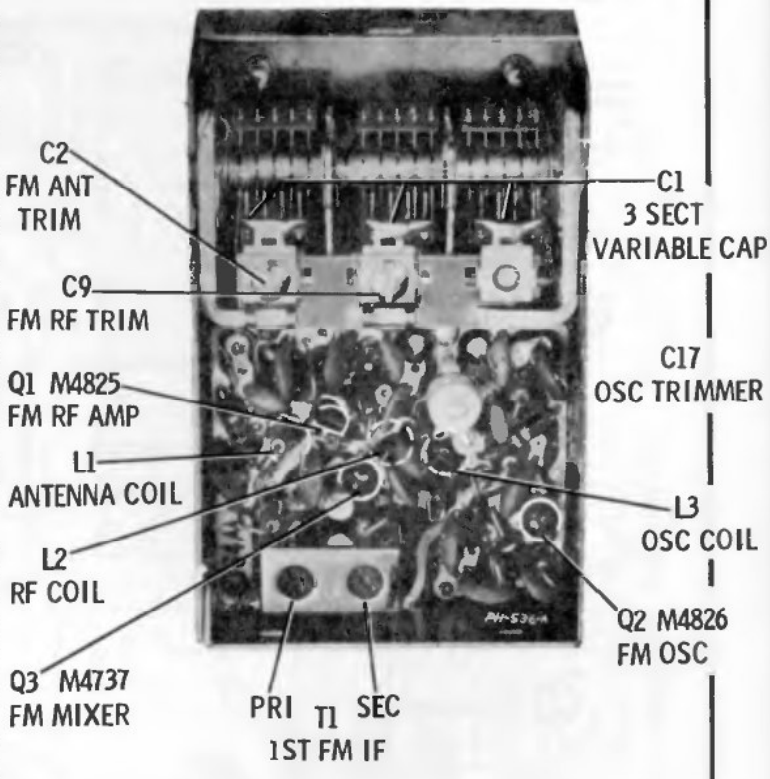
1) All resistance values are in ohms; all capacitance values are in MF unless otherwise specified.
2) Voltage measurements made with V.T.V.M. from indicated points to ground and with volume control at minimum, no signal input. Current measurement made at indicated points under the same conditions.
3) The following components may have alternate values within the ranges shown.
   R1 : from 47K ohm to 56K ohm
   R13 : from 6.8K ohm to 12K ohm
   R19 : from 82K ohm to 270K ohm
   R20 : from 180K ohm to ohm

IF 455 KC

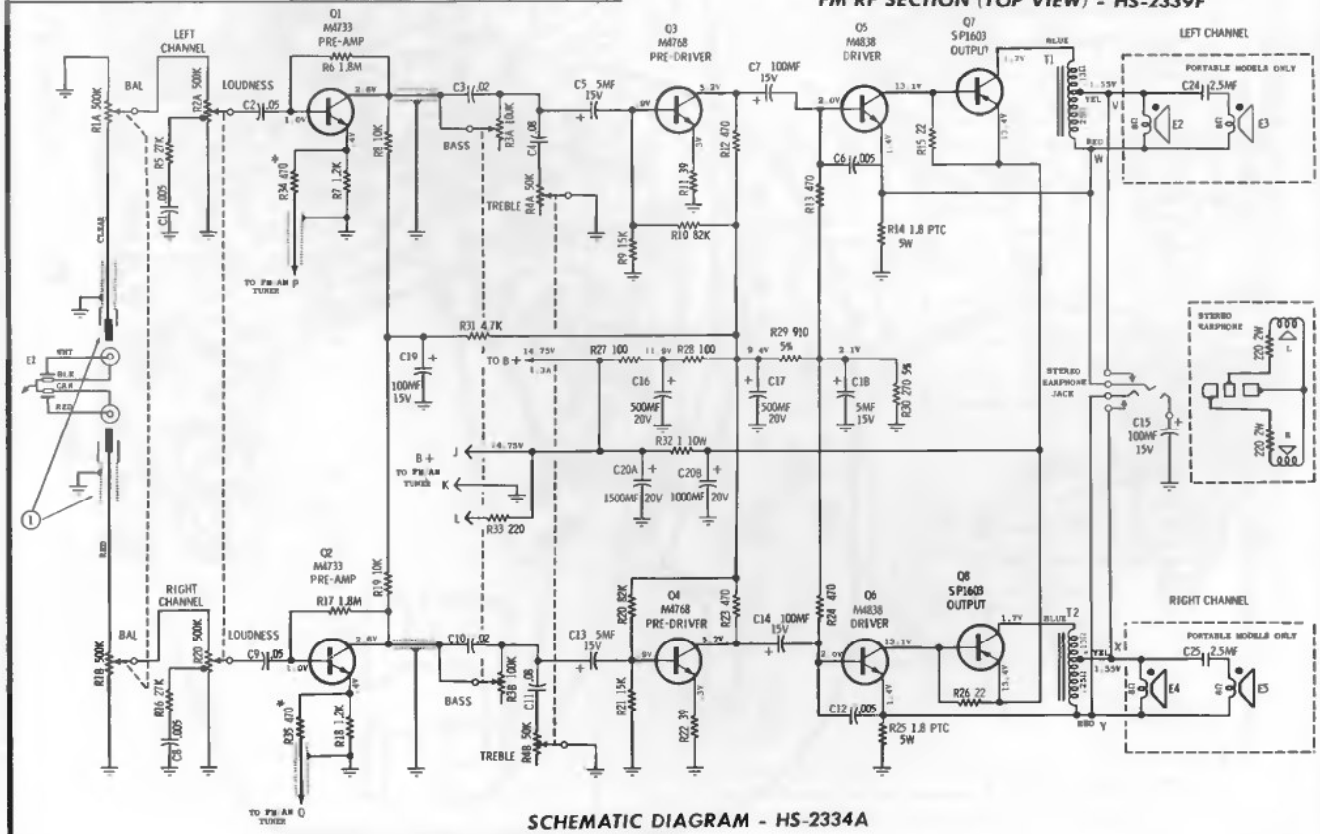
MOTOROLA MODELS PP207C, PP209C, PK403C, SK455C, SK456C, SK457C CHASSIS HS-2334A, HS-2339F, HS-2349C

(Continued on next two pages.)

MODEL NUMBER	PP 207C	PP 209C	PK 403C	SK 455C	SK 456C	SK 457C
CHANNELS	2	2	2	2	2	2
WATTS-MUSIC POWER OUTPUT	5	5	5	5	5	5
MOTOROLA 4-SPEED AUTOMATIC RECORD CHANGER	M 113RC	M 114RC	VM 124RC	VM 124RC	VM 119RC	VM 119RC
CARTRIDGE	Cer.	Cer.	Cer.	Cer.	Cer.	Cer.
STYLII	Saph.	Dia.	Dia.	Dia.	Dia.	Dia.
CHANGER COMPARTMENT LIGHT						
RECORD STORAGE			Yes	Yes	Yes	Yes
OUTPUT STAGE	S.E.	S.E.	S.E.	S.E.	S.E.	S.E.
LOUDNESS CONTROL	Yes	Yes	Yes	Yes	Yes	Yes
TONE CONTROL						
BASS AND TREBLE CONTROL	Yes	Yes	Yes	Yes	Yes	Yes
BALANCE CONTROL	Yes	Yes	Yes	Yes	Yes	Yes
TRANSFORMER POWER SUPPLY	Yes	Yes	Yes	Yes	Yes	Yes
ON-OFF INDICATOR				Yes	Yes	Yes
STEREO HEADPHONE JACK			Yes	Yes	Yes	Yes
TAPE INPUT AND OUTPUT JACKS				Yes	Yes	Yes
NOISE FILTER						
LDC/DIST. SWITCH				Yes	Yes	Yes
EXTENDED BASS						
FM MUTE						
NUMBER OF TRANSISTORS	8	8	8	21	21	21
45 R.P.M. SPINDLE AND STORAGE	Yes	Yes	Yes	Yes	Yes	Yes
TUNER CHASSIS				HS 2339F	HS 2339F	HS 2339F
AMPLIFIER CHASSIS	HS 2349C	HS 2349C	HS 2234	HS 2334	HS 2334	HS 2334
MODEL NUMBER	PP 207C	PP 209C	PK 403C	SK 455C	SK 456C	SK 457C



FM RF SECTION (TOP VIEW) - HS-2339F

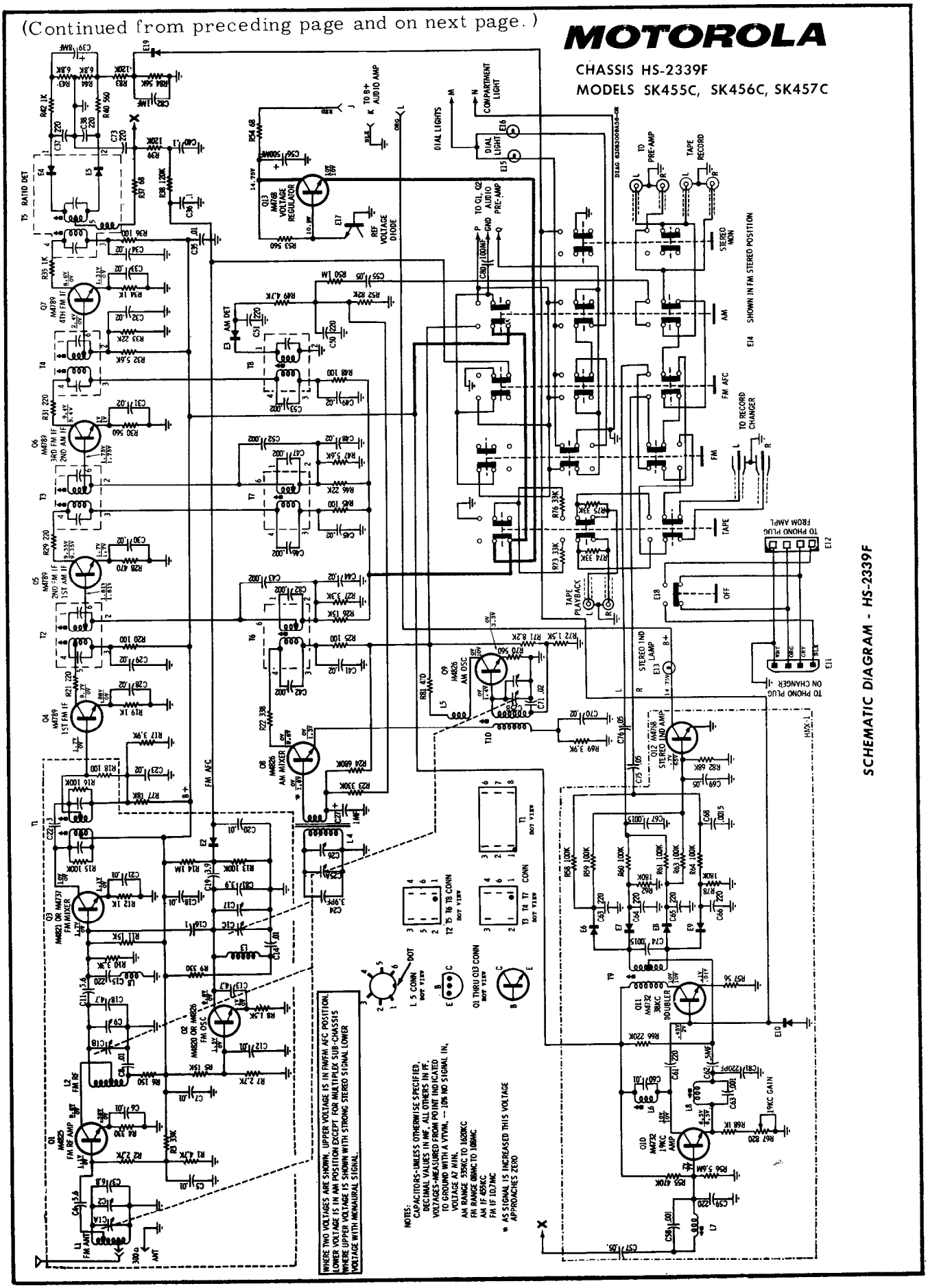


SCHEMATIC DIAGRAM - HS-2334A

(Continued from preceding page and on next page.)

MOTOROLA

CHASSIS HS-2339F
MODELS SK455C, SK456C, SK457C



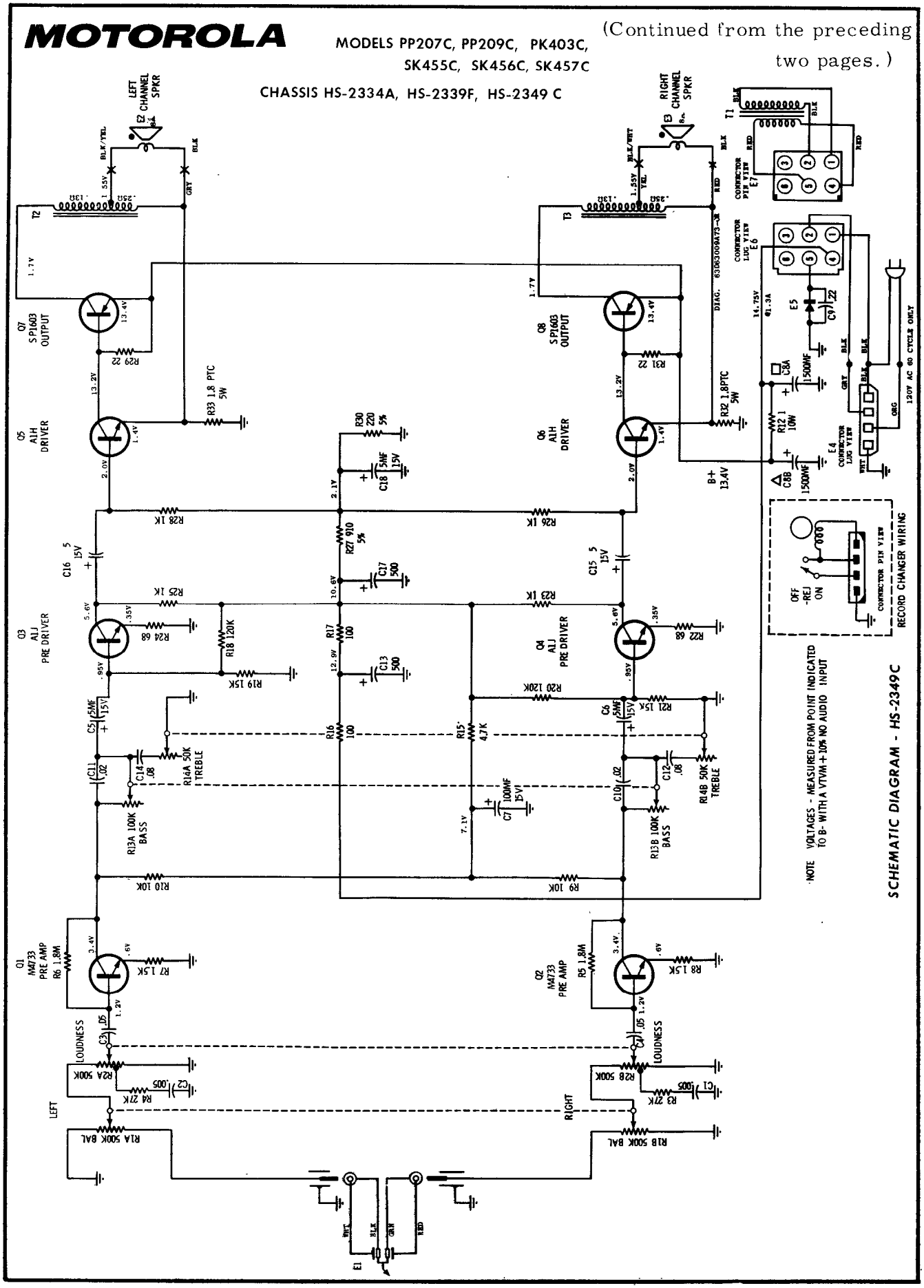
SCHEMATIC DIAGRAM - HS-2339F

MOTOROLA

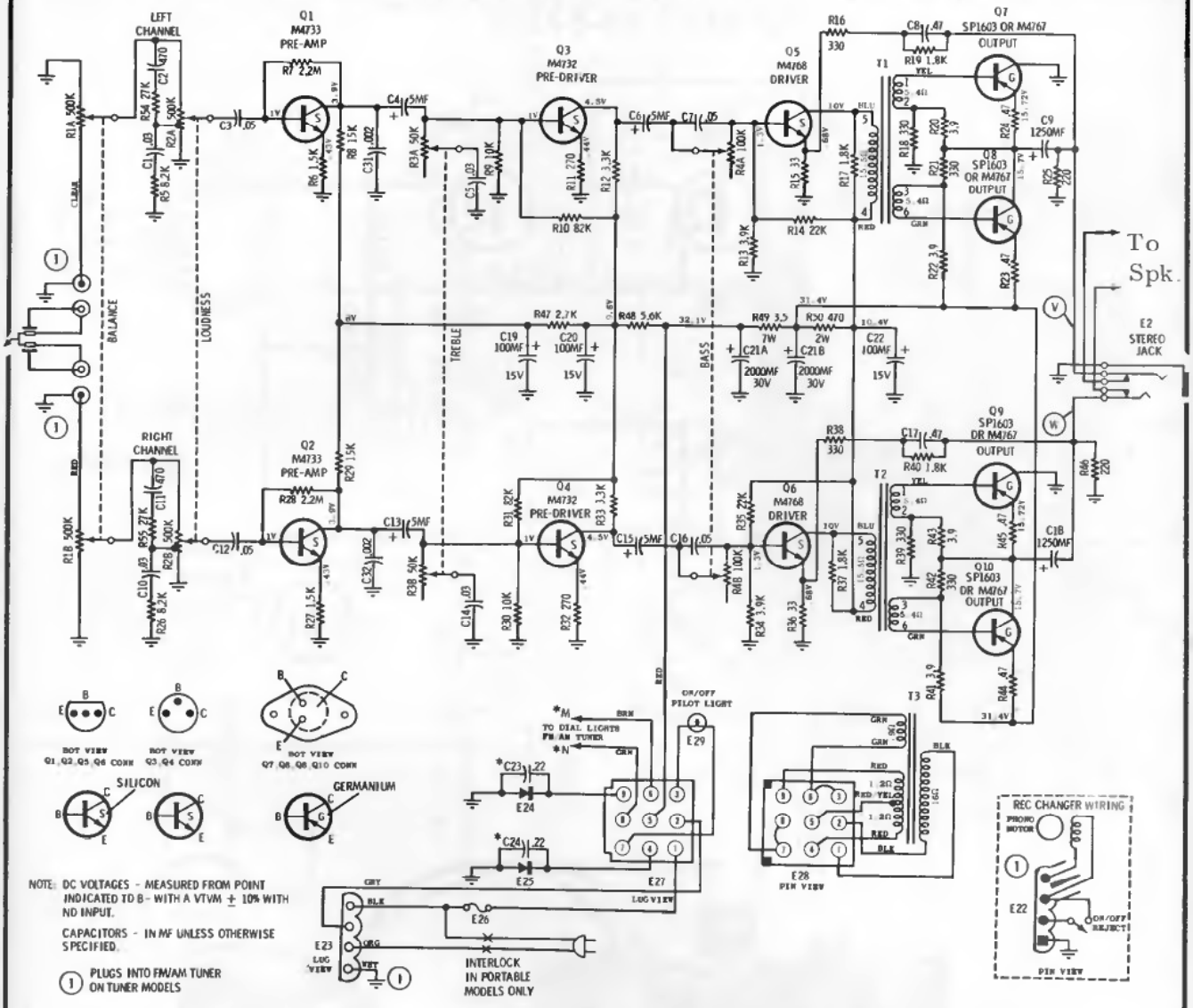
MODELS PP207C, PP209C, PK403C, SK455C, SK456C, SK457C

CHASSIS HS-2334A, HS-2339F, HS-2349 C

(Continued from the preceding two pages.)



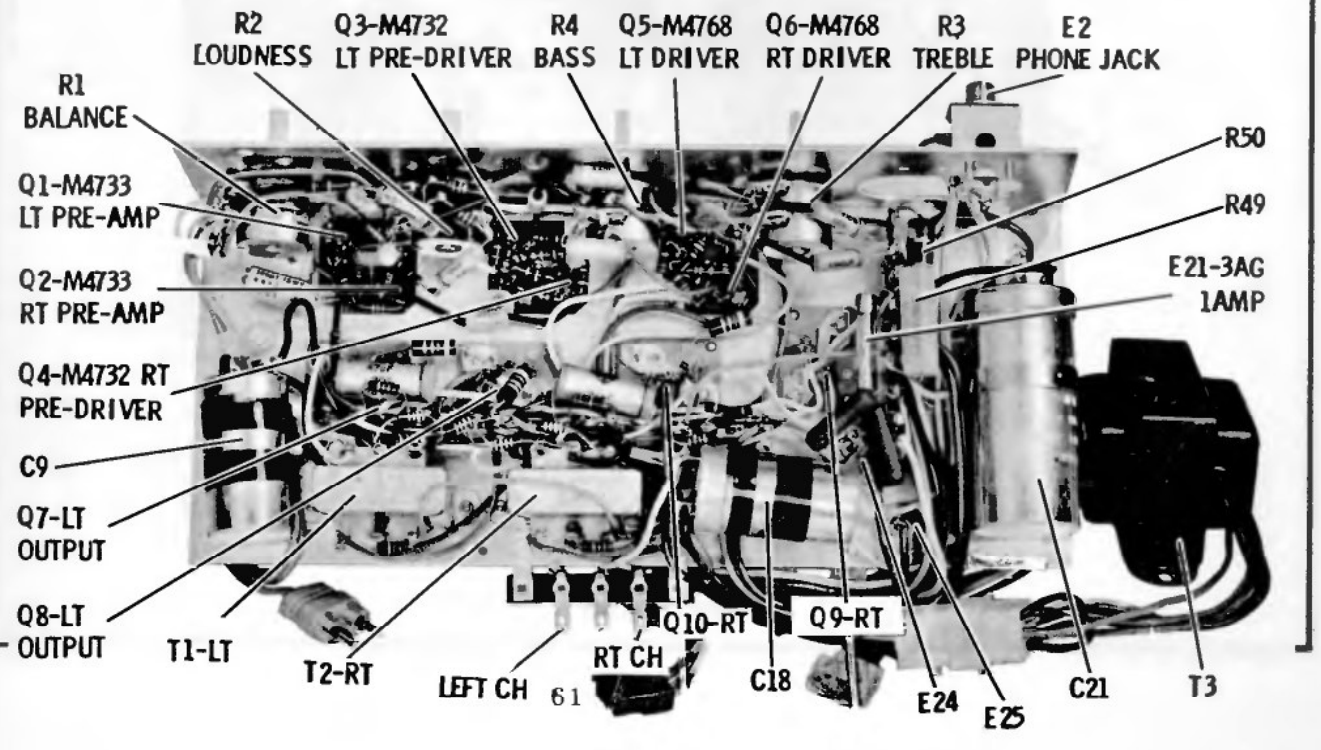
MOTOROLA CHASSIS HS-62250; MODEL PK15C



NOTE: DC VOLTAGES - MEASURED FROM POINT INDICATED TO B- WITH A VTVM ± 10% WITH NO INPUT.

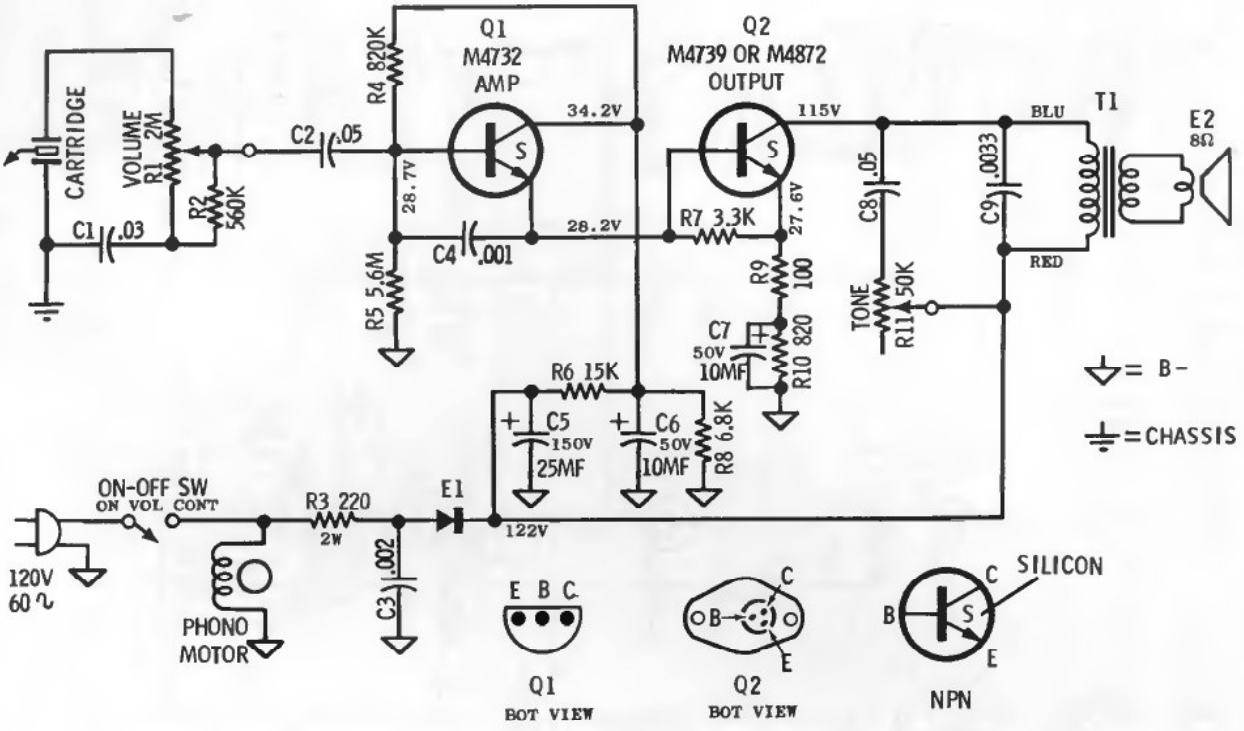
CAPACITORS - IN MF UNLESS OTHERWISE SPECIFIED.

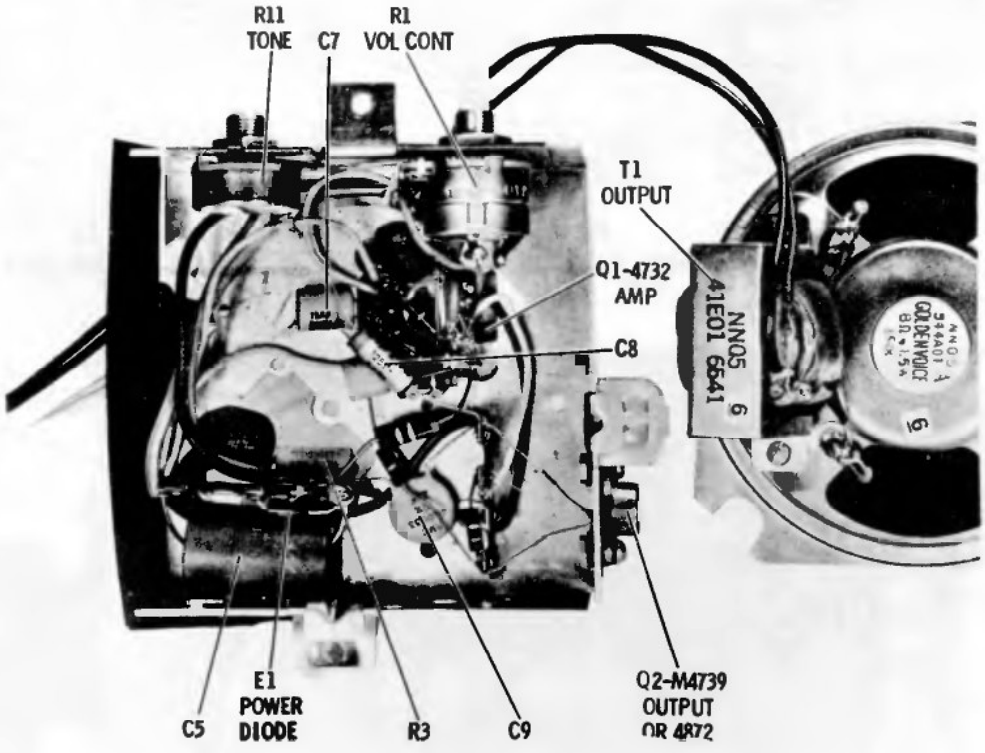
(1) PLUGS INTO FM/AM TUNER ON TUNER MODELS



MOTOROLA

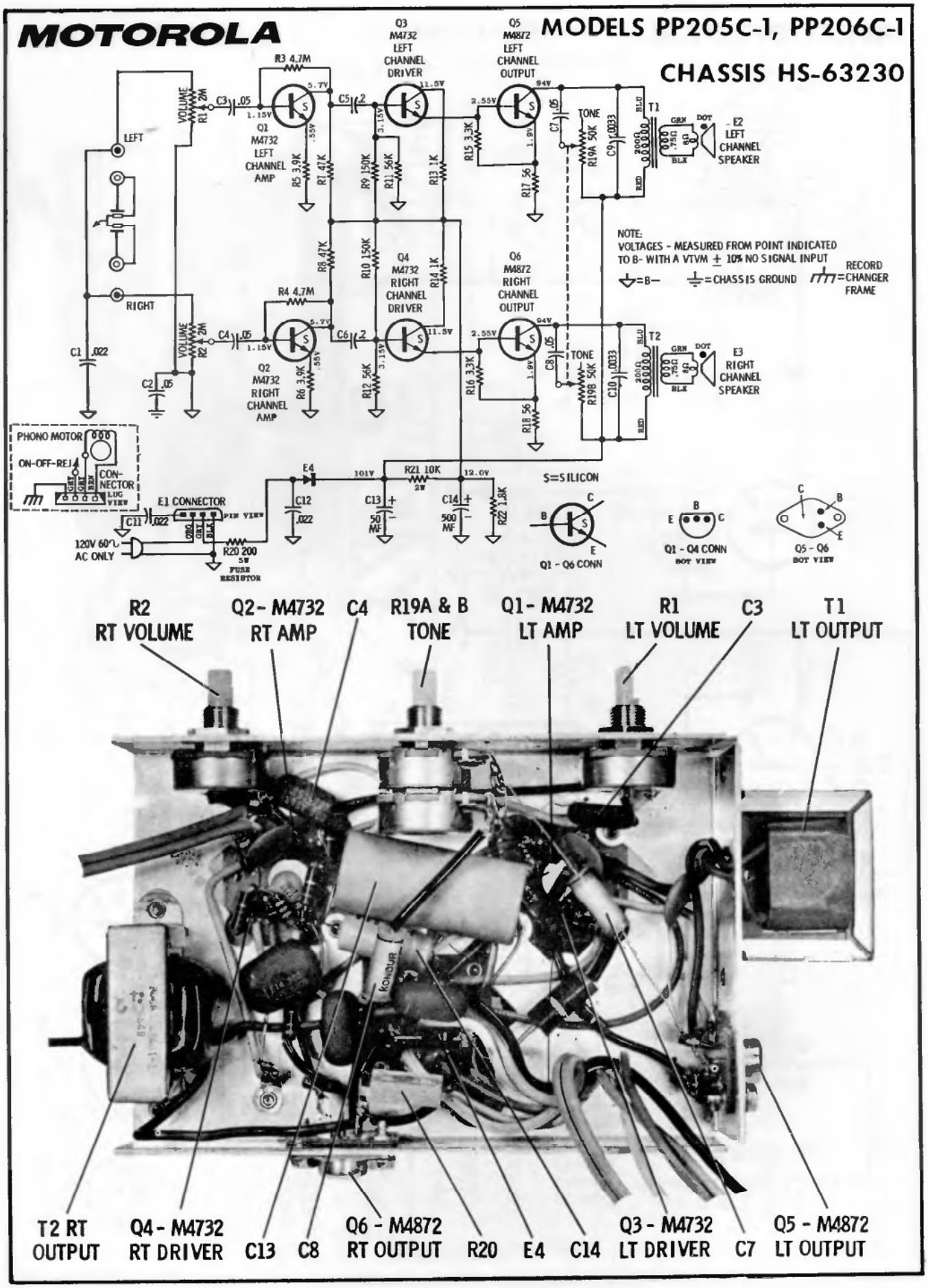
MODEL MP10C
CHASSIS HS-63213





PARTS LOCATION

MOTOROLA
MODEL MP102C
CHASSIS HS-63226
= B-
= CHASSIS
RECORD CHANGER FRAME
E1 8Ω
T1
C8 .003
R7 50K TONE
C7 .05
Q2 M4872 OUTPUT
121V
30.7V
R4 3.3K 1/2W
R5 100 1/2W
27.7V
R6 820 1W
C6 50V 50MF
R8 6.8K 5%-1/4W
37.7V
C5 50V DC 50MF
R9 15K 1W
126V
Q1 M4732 DRIVER
37.7V
31.0V
31.6V
C3 .001
C4 150V DC 25MF
E2 A05
C9 .022
R2 820K 1/4W
R3 5.6M 1/4W
R10 220 2W
C2 .05
R1 2M VOLUME
C1 .05
CARTRIDGE
WHT-GRA
WHT
BLK
WHT-BLK
RECORD CHANGER WIRING
PHONO MOTOR
BRN
ON-OFF-REJ
BLK
GRA
BARE
CONNECTOR LUG VIEW
E3
CONNECTOR PIN VIEW
BLK
GRA
ORG
C10 .022 WHT
120V 60~ AC ONLY
SILICON
NPN
C
B
E
Q2 BOT VIEW
Q1 BOT VIEW
E B C
T1
C1
R1
C3
C2
R9
Q1
C8
R2
Q2
R3
R4
R8
R5
C10
C7
C6
R6
C4
C9
R10
E2
C5


MOTOROLA
MODELS PP205C-1, PP206C-1
CHASSIS HS-63230
Q3 M4732 LEFT CHANNEL DRIVER
Q5 M4872 LEFT CHANNEL OUTPUT
Q1 M4732 LEFT CHANNEL AMP
Q4 M4732 RIGHT CHANNEL DRIVER
Q6 M4872 RIGHT CHANNEL OUTPUT
Q2 M4732 RIGHT CHANNEL AMP
E2 LEFT CHANNEL SPEAKER
E3 RIGHT CHANNEL SPEAKER
NOTE:
VOLTAGES - MEASURED FROM POINT INDICATED TO B- WITH A VTVM ± 10% NO SIGNAL INPUT
=B-
=CHASSIS GROUND
RECORD CHANGER FRAME
S=SILICON
Q1 - Q4 CONN
Q5 - Q6
R2 RT VOLUME
Q2 - M4732 RT AMP
C4
R19A & B TONE
Q1 - M4732 LT AMP
R1 LT VOLUME
C3
T1 LT OUTPUT
T2 RT OUTPUT
Q4 - M4732 RT DRIVER
C13
C8
Q6 - M4872 RT OUTPUT
R20
E4
C14
Q3 - M4732 LT DRIVER
C7
Q5 - M4872 LT OUTPUT

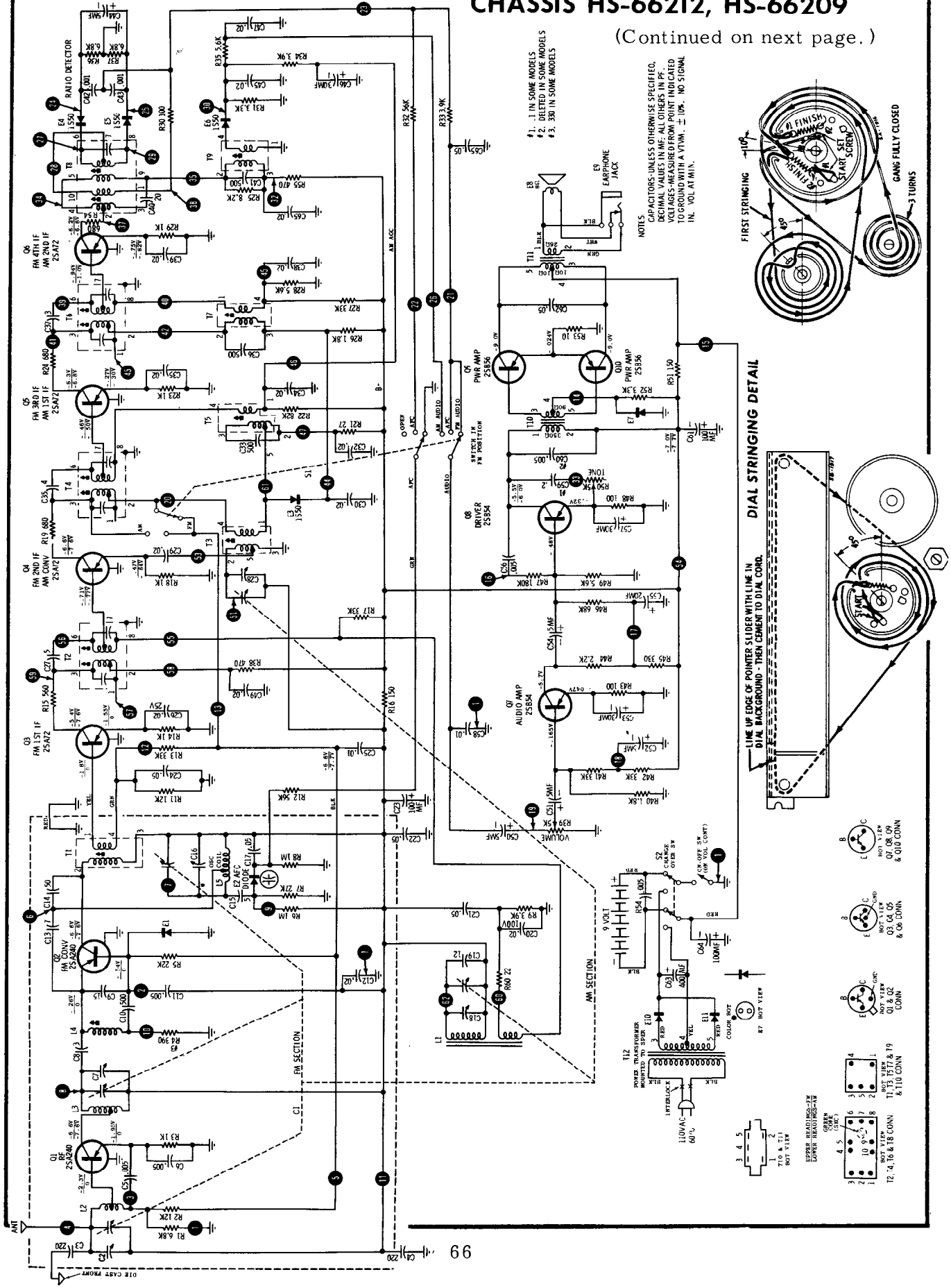
MOTOROLA
CHASSIS HS-67216
MODELS: XC15C, XC16C, XC24D, XC25D, XT4C, XT10D
ALIGNMENT POINTS
T2 TOP BOT
T1 TOP BOT
L2 RF CORE
L3 OSC CORE
L4
C28
C30
C29
NOTES:
CAPACITORS - UNLESS OTHERWISE SPECIFIED, DECIMAL VALUES IN MF, ALL OTHERS IN PF.
VOLTAGES MEASURED FROM POINT INDICATED TO CHASSIS WITH A VTVM.
WHEN TWO VOLTAGES ARE SHOWN, UPPER V - WITH NO SIGNAL INPUT. LOWER V - WITH STRONG SIGNAL INPUT.
VOL AT MIN.
AM RANGE - 535KC TO 1630KC, AM IF 455KC.
TONE
VOLUME
ON BOTTOM OF BOARD
(ON HEAT SINK)
(ON MODELS WITH SOLID STATE DIAL LIGHT ONLY)
(ON VOL CONT)
CLOCK WIRING
(CLOCK MODELS ONLY)
E4 CLOCK MOTOR
HEAT SINK
IF 455 KC
BOTTOM VIEW
PLATED CHASSIS REFERENCE POINTS AND PARTS LOCATION (VIEW FROM WIRING SIDE OF BOARD)
BM-0 © 1966

MOTOROLA

MODELS TP11C & TP12C

CHASSIS HS-66212, HS-66209

(Continued on next page.)



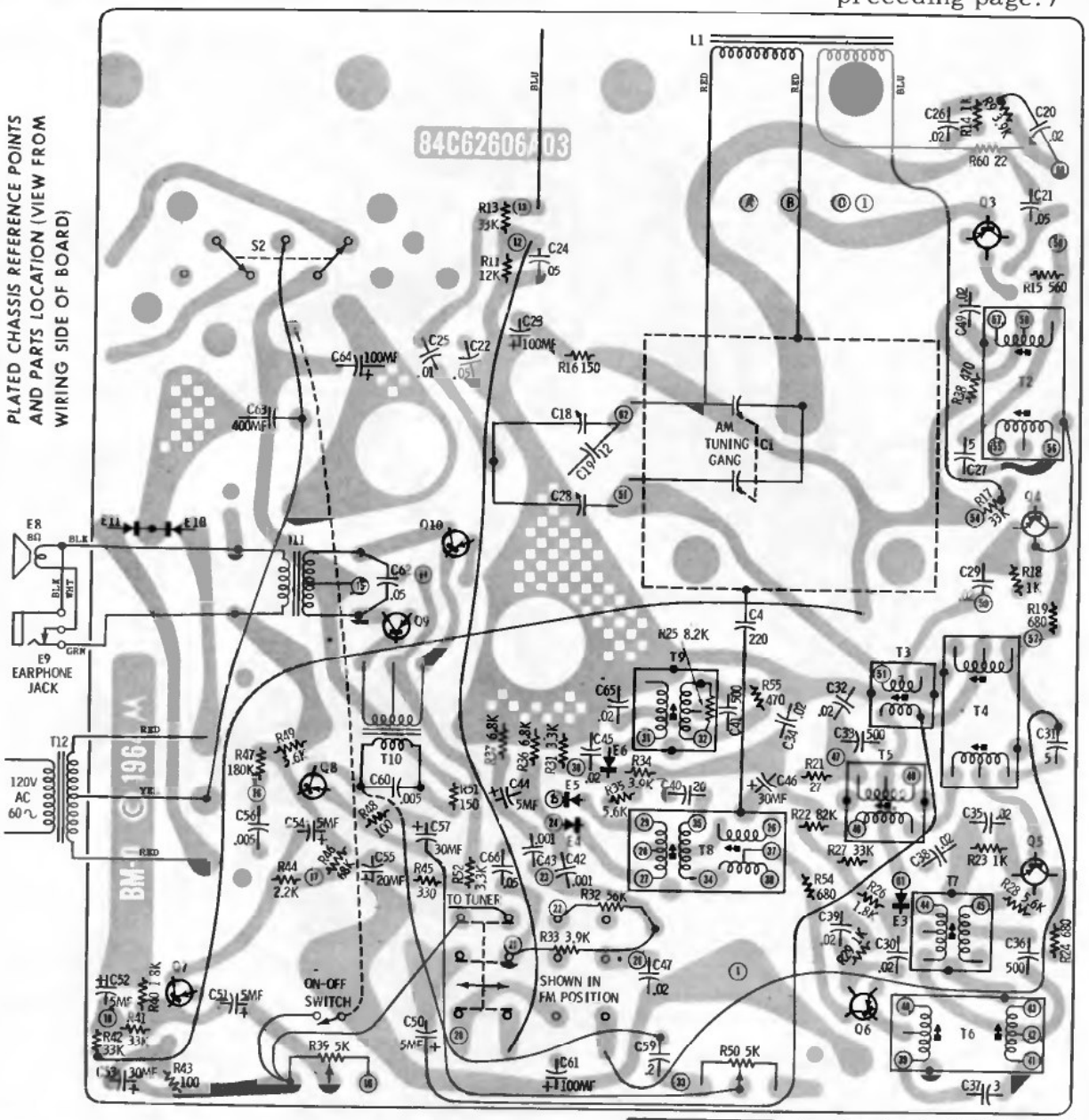
MOTOROLA CHASSIS HS-66212, HS-66209

(Continued from preceding page.)

MODELS TP11C & TP12C

BOTTOM VIEW

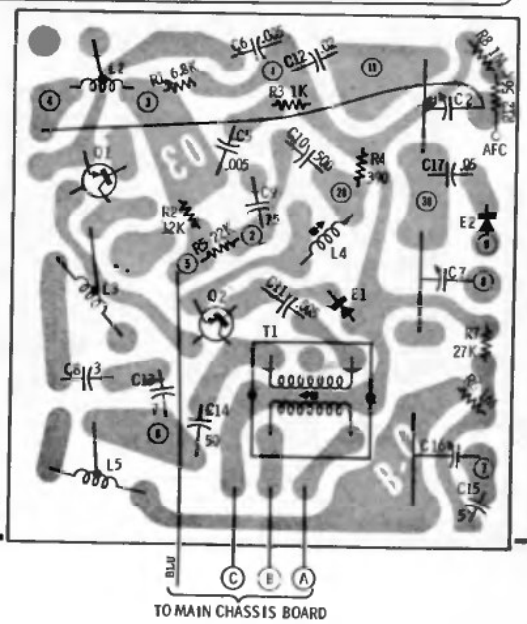
PLATED CHASSIS REFERENCE POINTS AND PARTS LOCATION (VIEW FROM WIRING SIDE OF BOARD)



ALIGNMENT POINTS

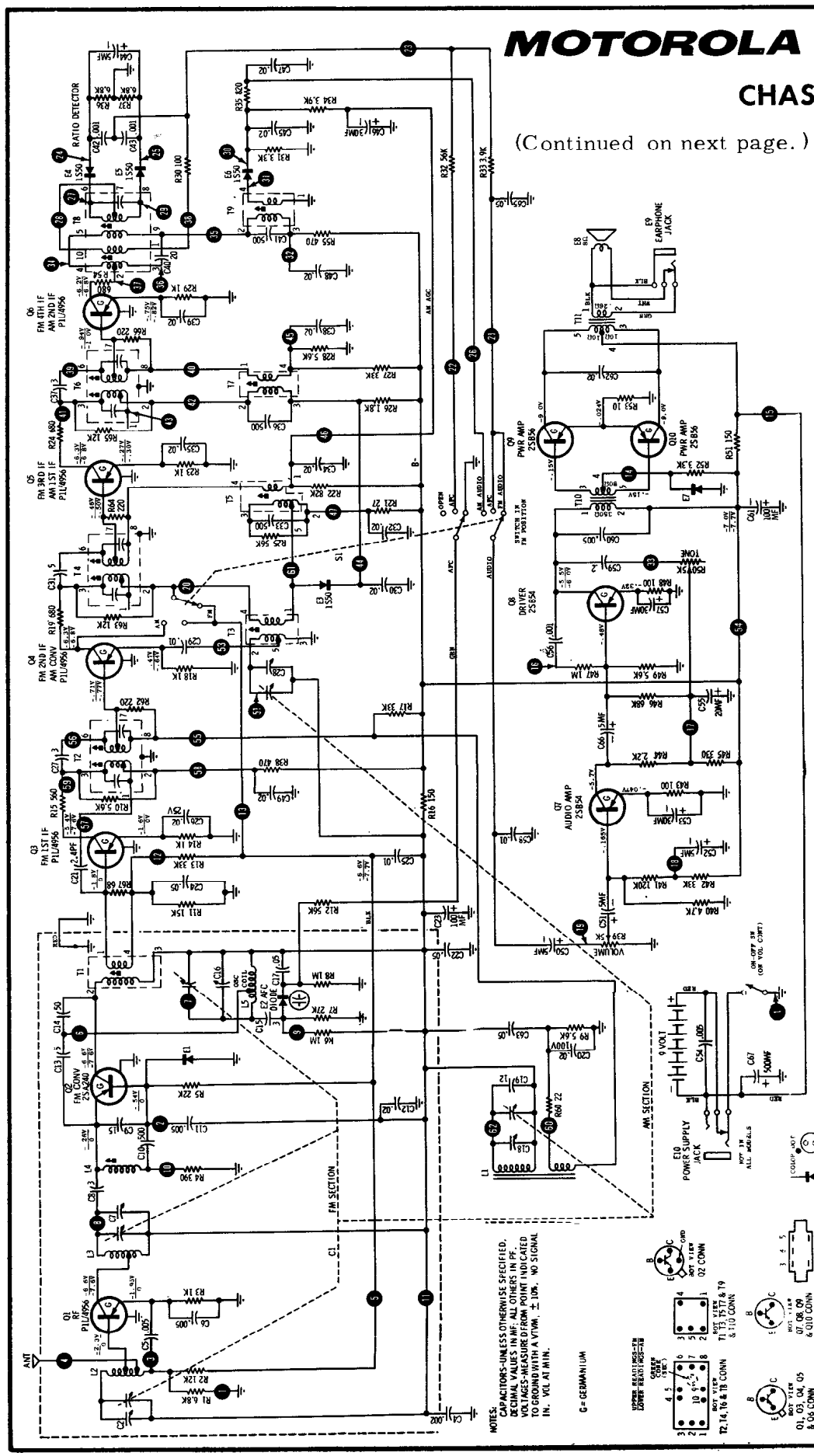
1. RATIO DET 10.7MC
2. 10.7MC
3. IF 10.7MC
4. 10.7MC
5. IF 10.7MC
6. 10.7MC
7. IF 10.7MC
8. 10.7MC
9. IF 10.7MC
10. OSC TRIM 108.5MC
11. OSC COIL 87.5MC
12. RF TRIM 106MC
13. ANT TRIM 106MC
14. RF COIL (PRI) 90MC
15. ANT COIL 90MC
16. RF CORE (SEC) 98MC
17. IF 455KC
18. IF 455KC
19. IF 455KC
20. OSC TRIM 1620KC
21. ANT TRIM 1400KC
22. OSC CORE 532KC

FM TUNER BOARD REFERENCE POINTS BOTTOM VIEW



MOTOROLA MODEL TP10D

CHASSIS HS-66227



(Continued on next page.)

CHASSIS REMOVAL

1. Remove 3 cabinet back mounting screws; 2 are located at top of cabinet (under carrying handle), the other screw is located on bottom of cabinet.

2. Remove the earphone jack mounting nut (a special tool is available - order Part Number 66A646211).

3. Separate cabinet back from front escutcheon far enough to gain access to chassis, then unsolder yellow lead from monopole FM antenna.

4. To remove chassis completely, first remove control knobs from front of radio.

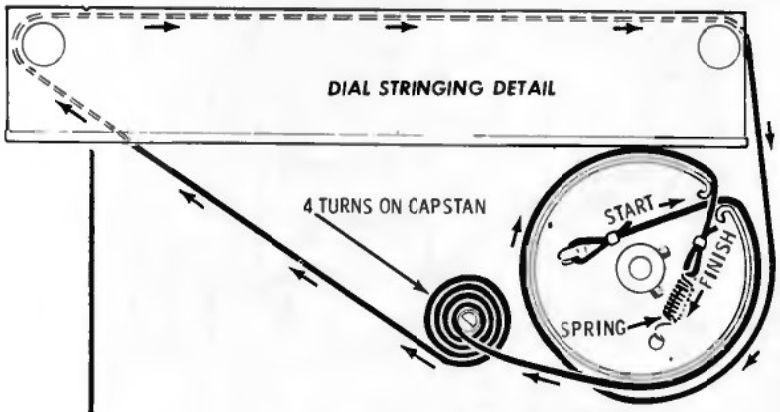
5. Remove 6 chassis and 1 dial background mounting screws.

6. If necessary, unsolder speaker leads, then remove chassis from escutcheon.

TUNING RANGE

FM - 88 to 108Mc (FM IF - 10.7Mc).

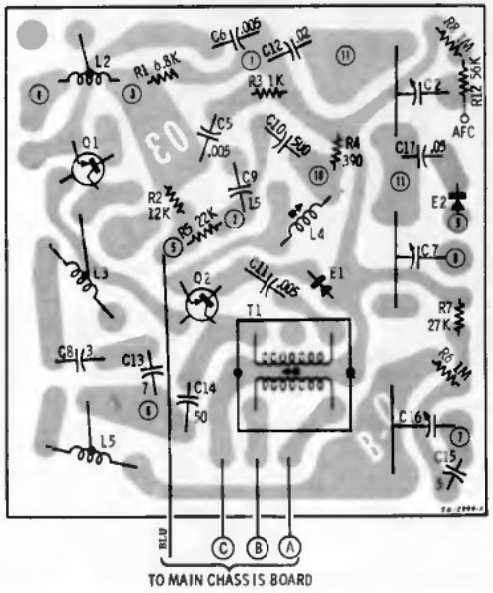
AM - 535 to 1620Kc (AM IF - 455Kc).



1. GANG FULLY OPEN (LARGE PULLEY CW). INSTALL STRING.
2. CLOSE GANG (LARGE PULLEY CCW) AND FASTEN POINTER SLIDE TO STRING WITH POINTER DIRECTLY OVER ZERO (0) ON LOG SCALE.

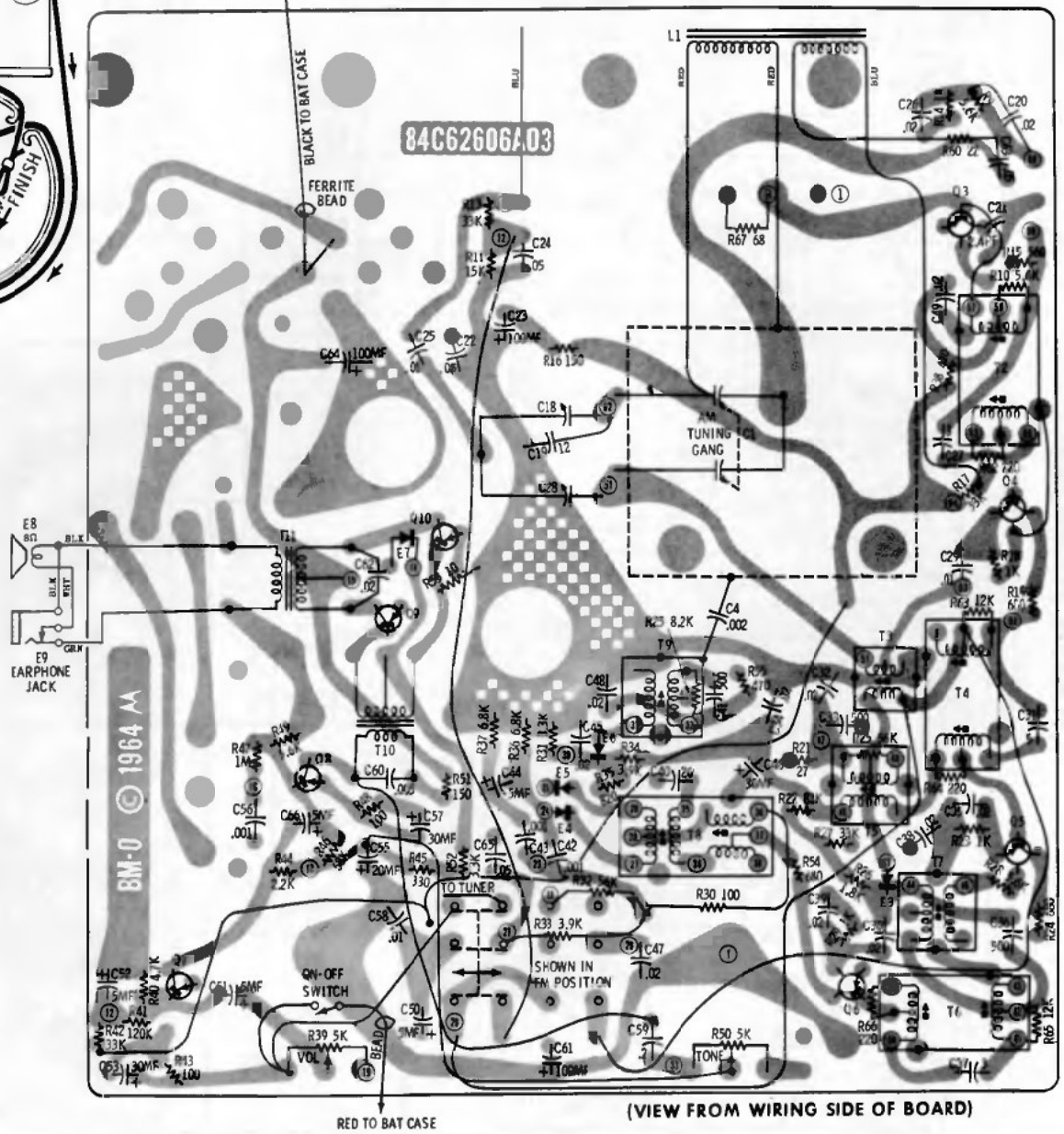
BOTTOM VIEW

PARTS LOCATION - FM TUNER



BOTTOM VIEW

PLATED CHASSIS REFERENCE POINTS AND PARTS LOCATION

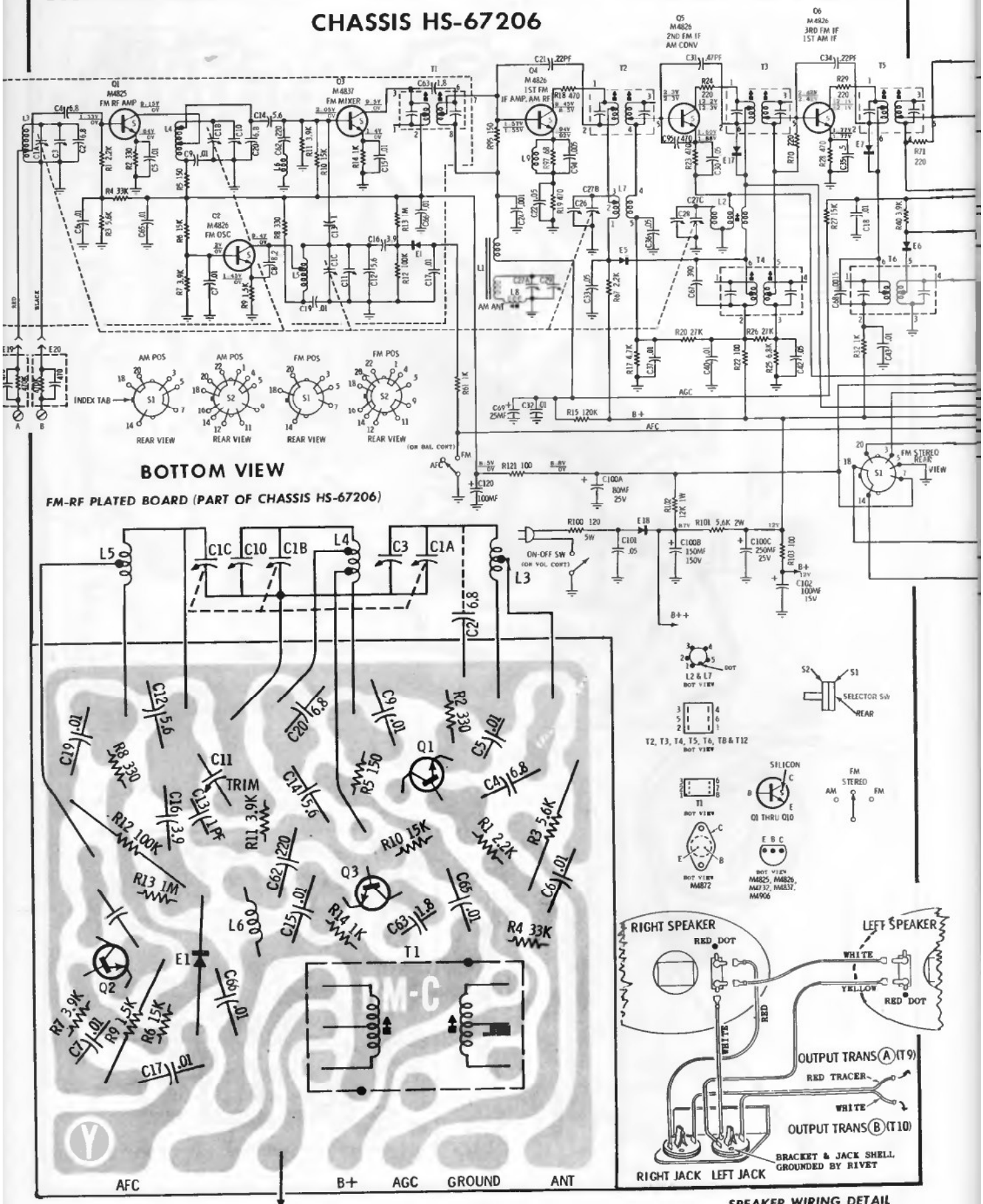


(Continued from preceding page.)

MOTOROLA MODEL TT22C

CHASSIS HS-67206

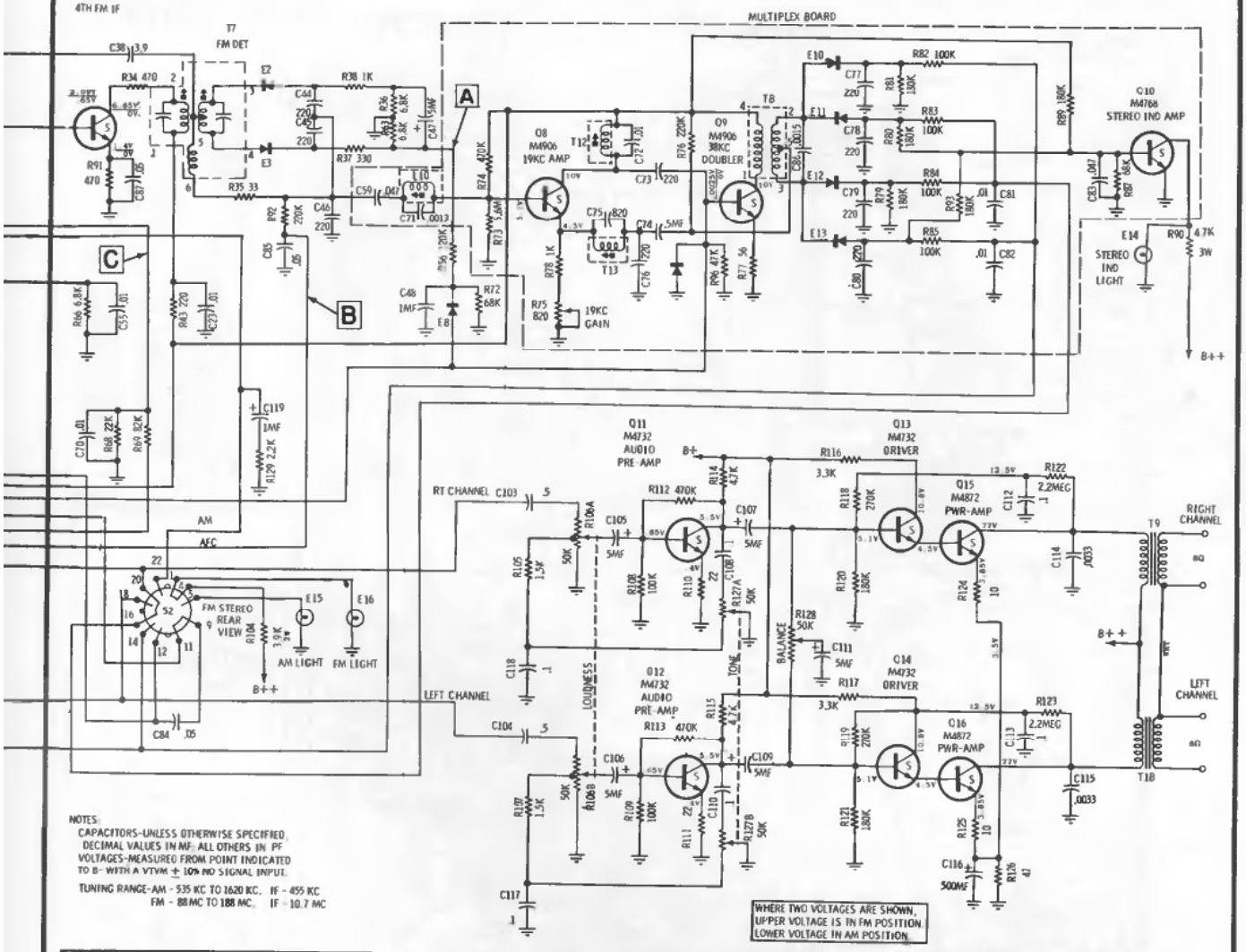
(Continued on next page.)

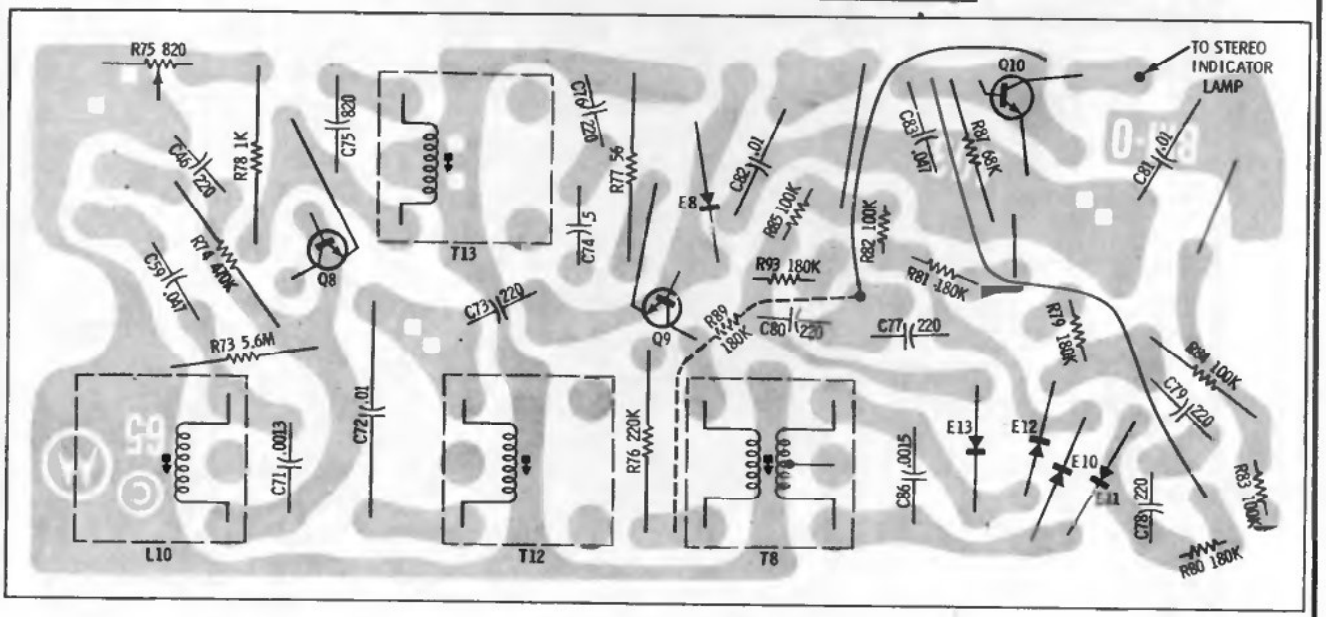


SPEAKER WIRING DETAIL

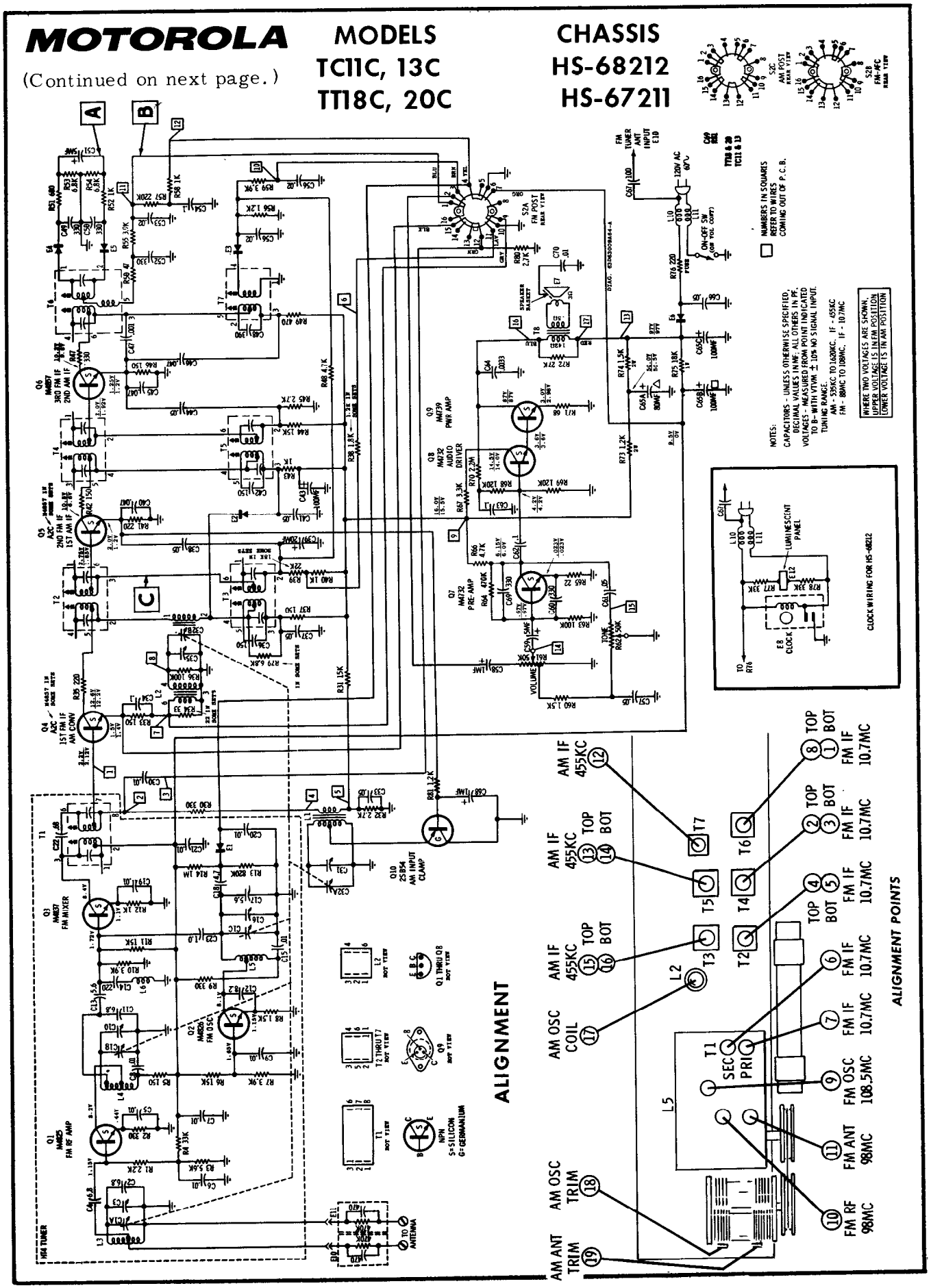
MOTOROLA **MODEL TT22C**
CHASSIS HS-67206

(Continued from preceding page.)





BOTTOM VIEW
MULTIPLEX CIRCUIT BOARD (PART OF HS-67206)

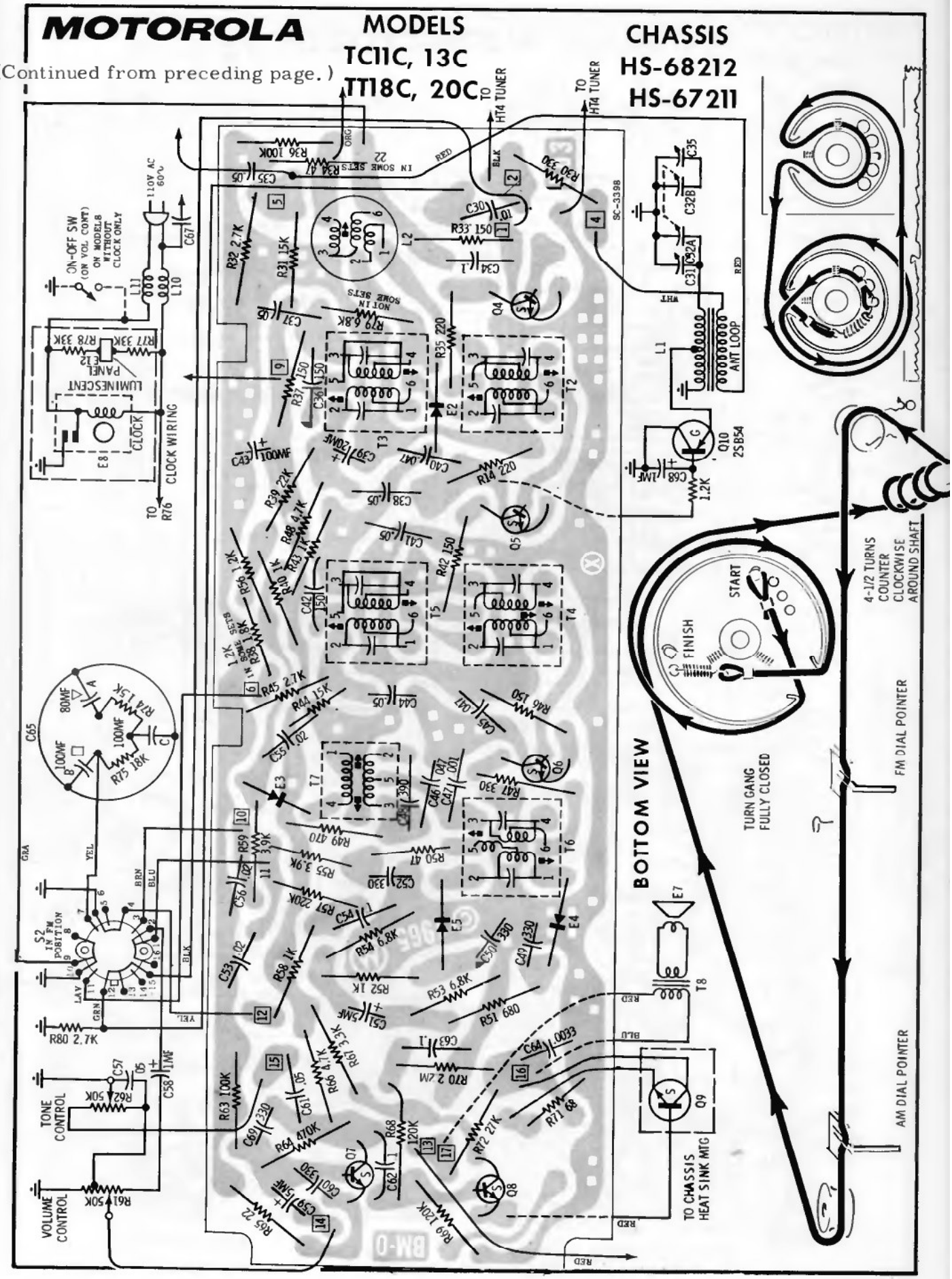

MOTOROLA
MODELS
TC11C, 13C
TT18C, 20C
CHASSIS
HS-68212
HS-67211
(Continued on next page.)
ALIGNMENT
ALIGNMENT POINTS
AM IF 455KC TOP
AM IF 455KC BOT
AM OSC COIL
AM OSC TRIM
AM ANT TRIM
FM IF 10.7MC
FM OSC 108.5MC
FM ANT 98MC
FM RF 98MC
NOTES:
CAPACITORS - UNLESS OTHERWISE SPECIFIED, DECIMAL VALUES IN MF; ALL OTHERS IN PF.
VOLTAGES - MEASURED FROM POINT INDICATED TO B- WITH VTVM ± 10% NO SIGNAL INPUT.
TUNING RANGE:
AM - 535KC TO 1620KC. IF - 455KC
FM - 88MC TO 108MC. IF - 10.7MC
WHERE TWO VOLTAGES ARE SHOWN, UPPER VOLTAGE IS IN FM POSITION LOWER VOLTAGE IS IN AM POSITION
NUMBERS IN SQUARES REFER TO WIRES COMING OUT OF P.C.B.
CLOCK WIRING FOR HS-68212

(Continued from preceding page.)

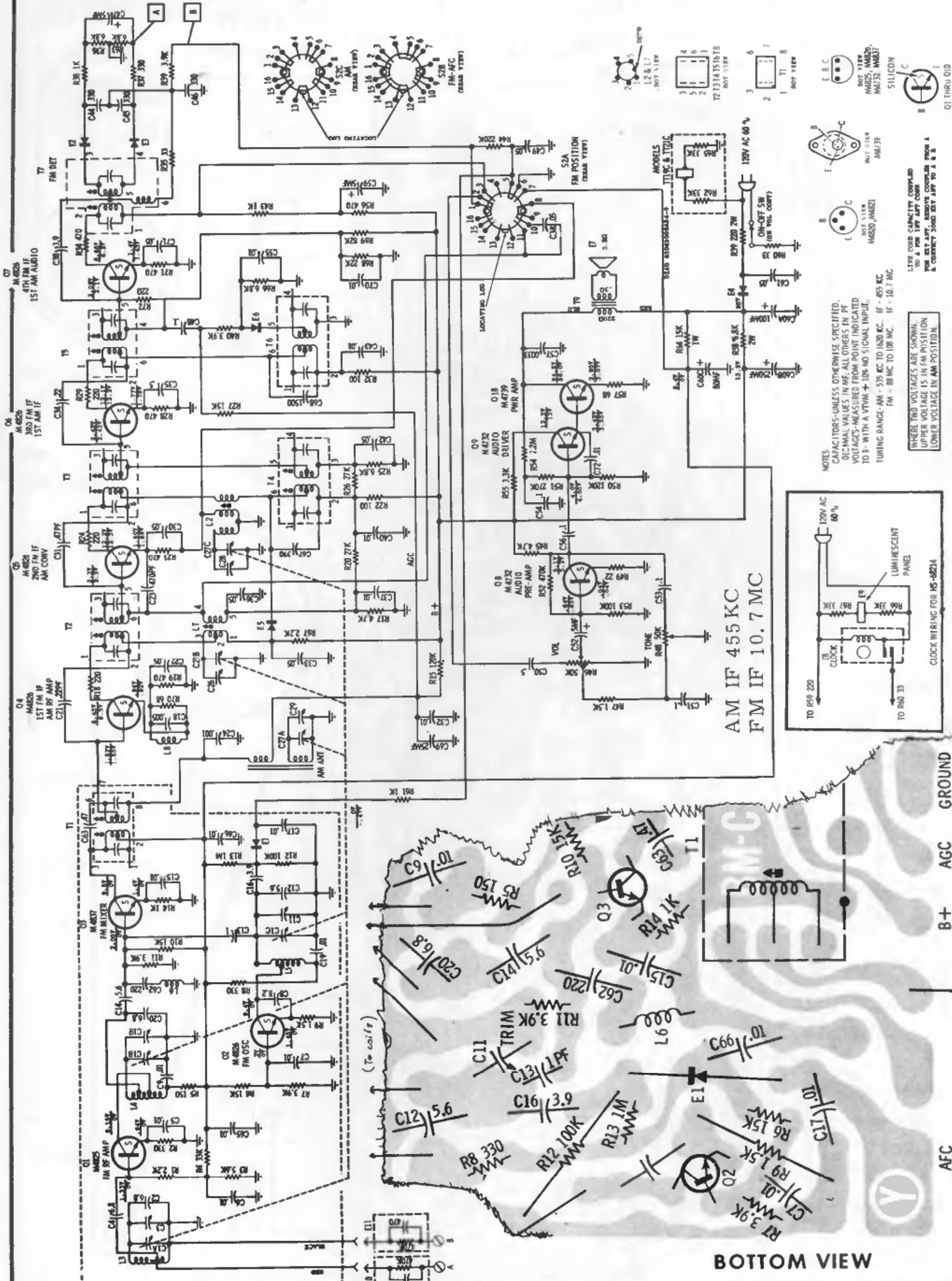
MOTOROLA

MODELS
TC11C, 13C
TT18C, 20C

CHASSIS
HS-68212
HS-67211

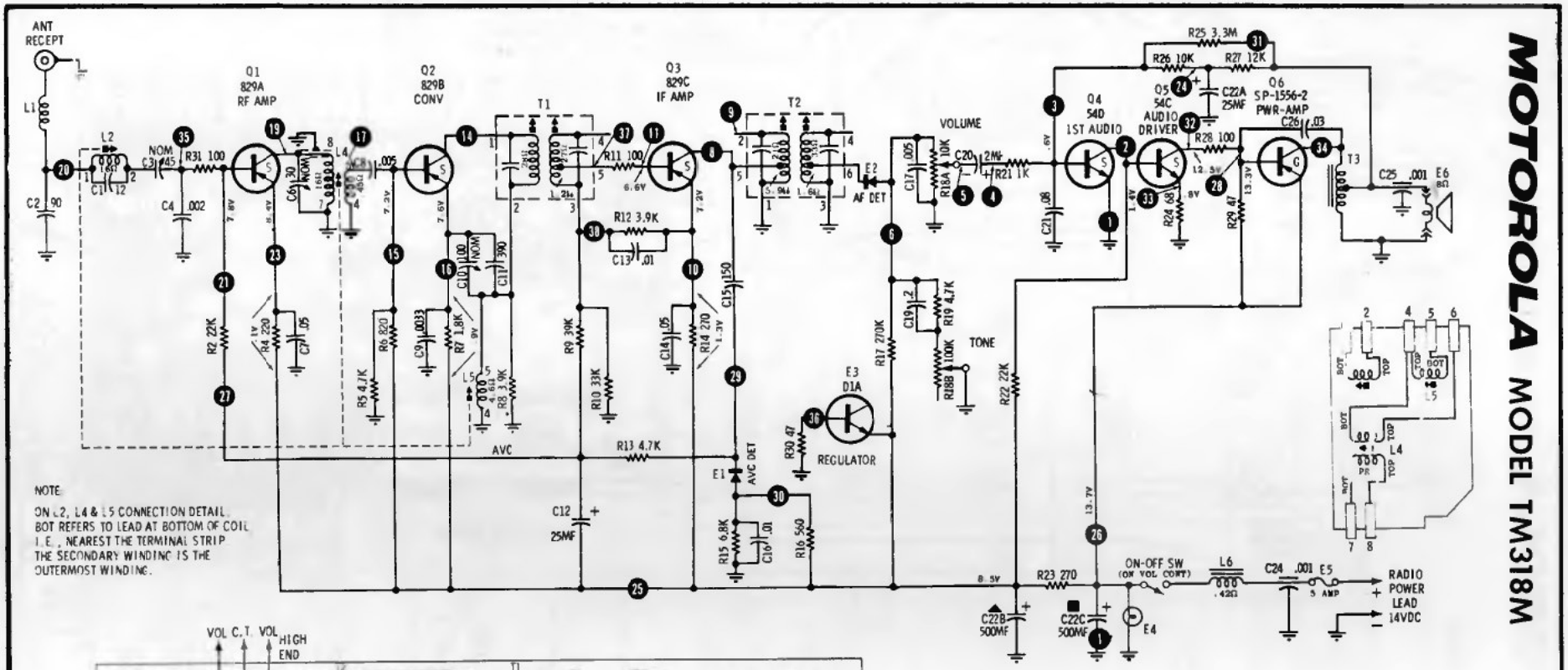


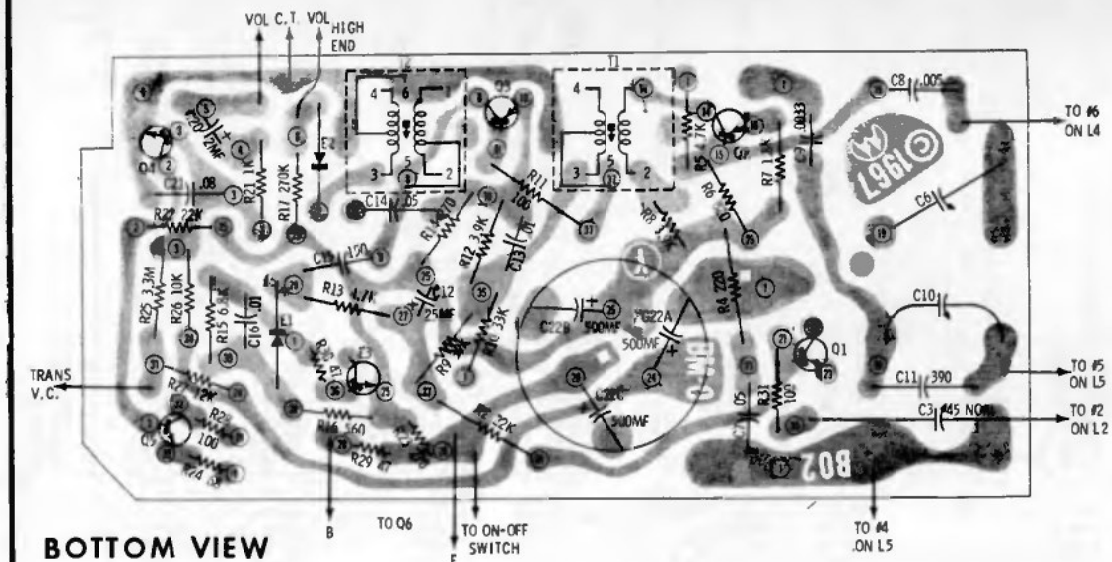
MOTOROLA Chassis HS-68214, HS-67214; Models TC12C, TC14C, TT19C, TT21C



MOTOROLA MODEL TP1D
AM IF 455 KC
FM IF 10.7 MC
NOTES:
CAPACITORS-UNLESS OTHERWISE SPECIFIED DECIMAL VALUES IN MF, ALL OTHER IN PF.
VOLTAGES-MEASURED FROM POINT INDICATED TO GROUND WITH VTVM ±10% NO SIGNAL IN.
INPUT VOLTAGE- 9V
TUNING RANGE-
FM 88MC TO 108MC IF 10.7MC
AM 540KC TO 1600KC IF 455KC
ZERO SIGNAL CURRENT-APPROX 11MA
E1 SHOWN IN FM POSITION
DIAL STRINGING DETAIL
2 TURNS
START
FINISH
GANG CLOSED
POINTER
PARTS LOCATION
E6
L6
CHASSIS MTG SCREW
C1
E1
L3
Q1
L2
Q2
C23
L5
L7
Q3
L4
T1
CHASSIS MTG SCREW
T5
T9
C25
Q10
Q9
R38
E5
T8
Q8
C35
T2
Q5
T3
T6
C38
Q7
C32
T.P.
Q6
BATTERY
CHASSIS MTG SCREW
T4
T7
NOTE: REMOVE DIAL BACKGROUND BEFORE RESTRINGING.
WITH GANG FULLY CLOSED SET POINTER AT NOTCH ON DIAL BACKGROUND.

MOTOROLA MODEL TM318M





BOTTOM VIEW

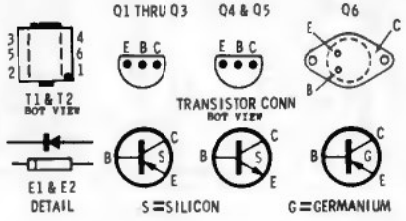
NOTES:

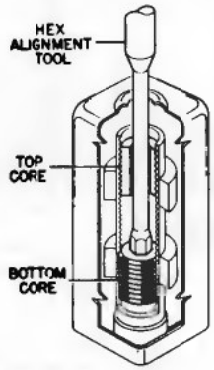
CAPACITORS - UNLESS OTHERWISE SPECIFIED, VALUES LESS THAN 1 IN MF, ALL OTHERS IN PF.
VOLTAGES - MEASURED FROM POINT INDICATED TO ⏚ WITH VTVM ± 10%, NO SIGNAL IN

INPUT VOLTAGE - 14V DC.

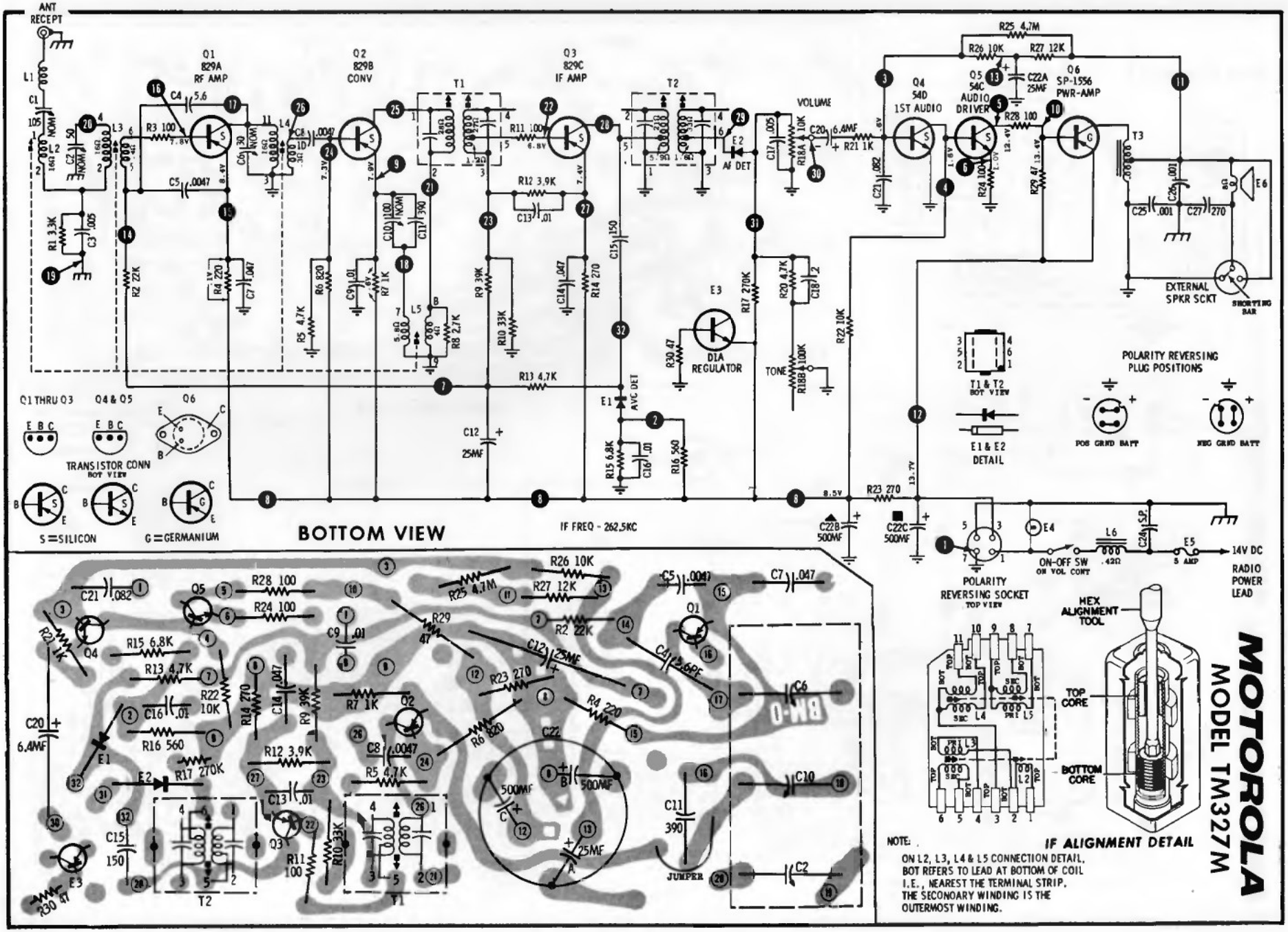
TUNING RANGE - 540KC TO 1610KC

IF FREQ - 262.5KC

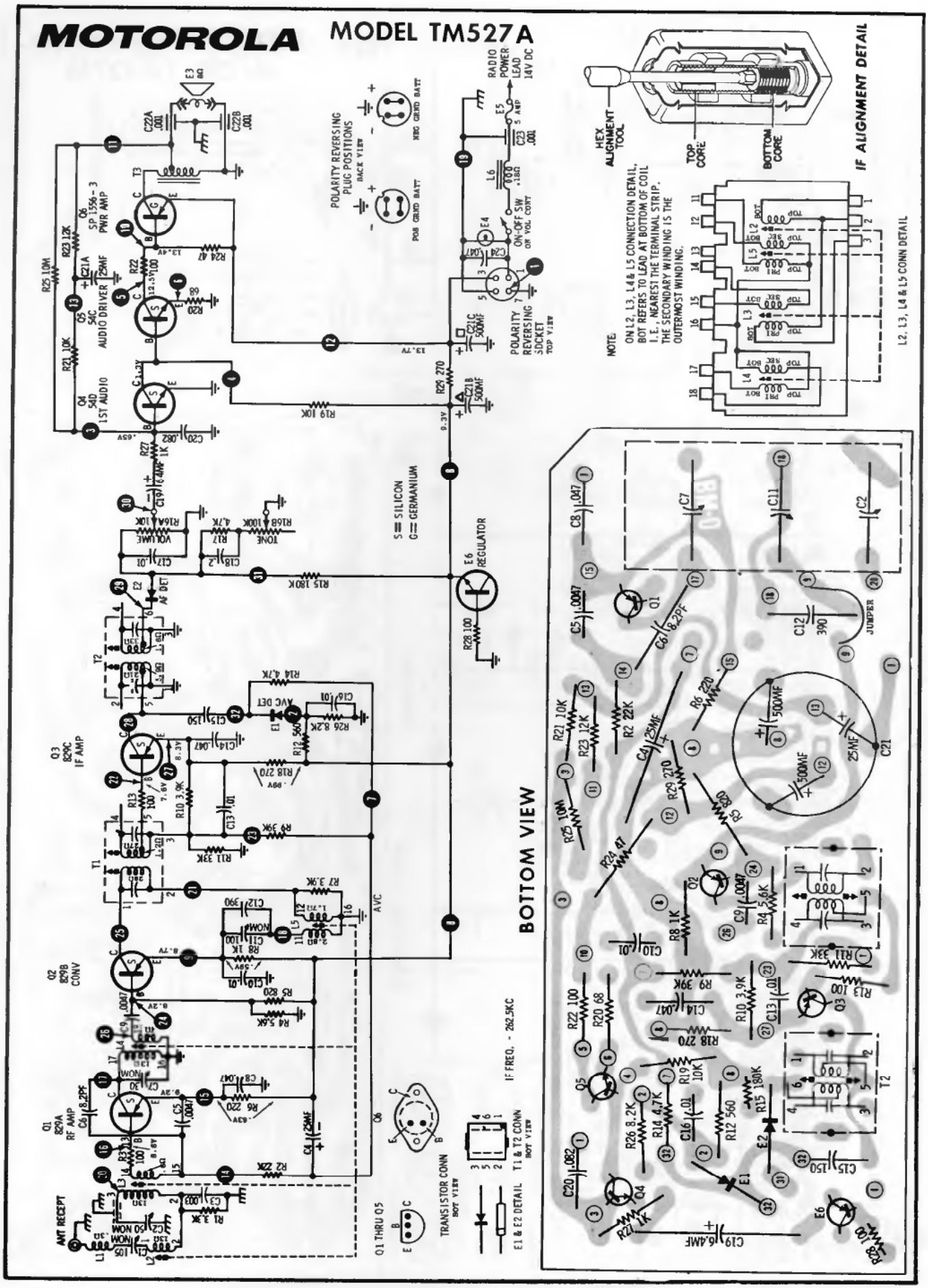


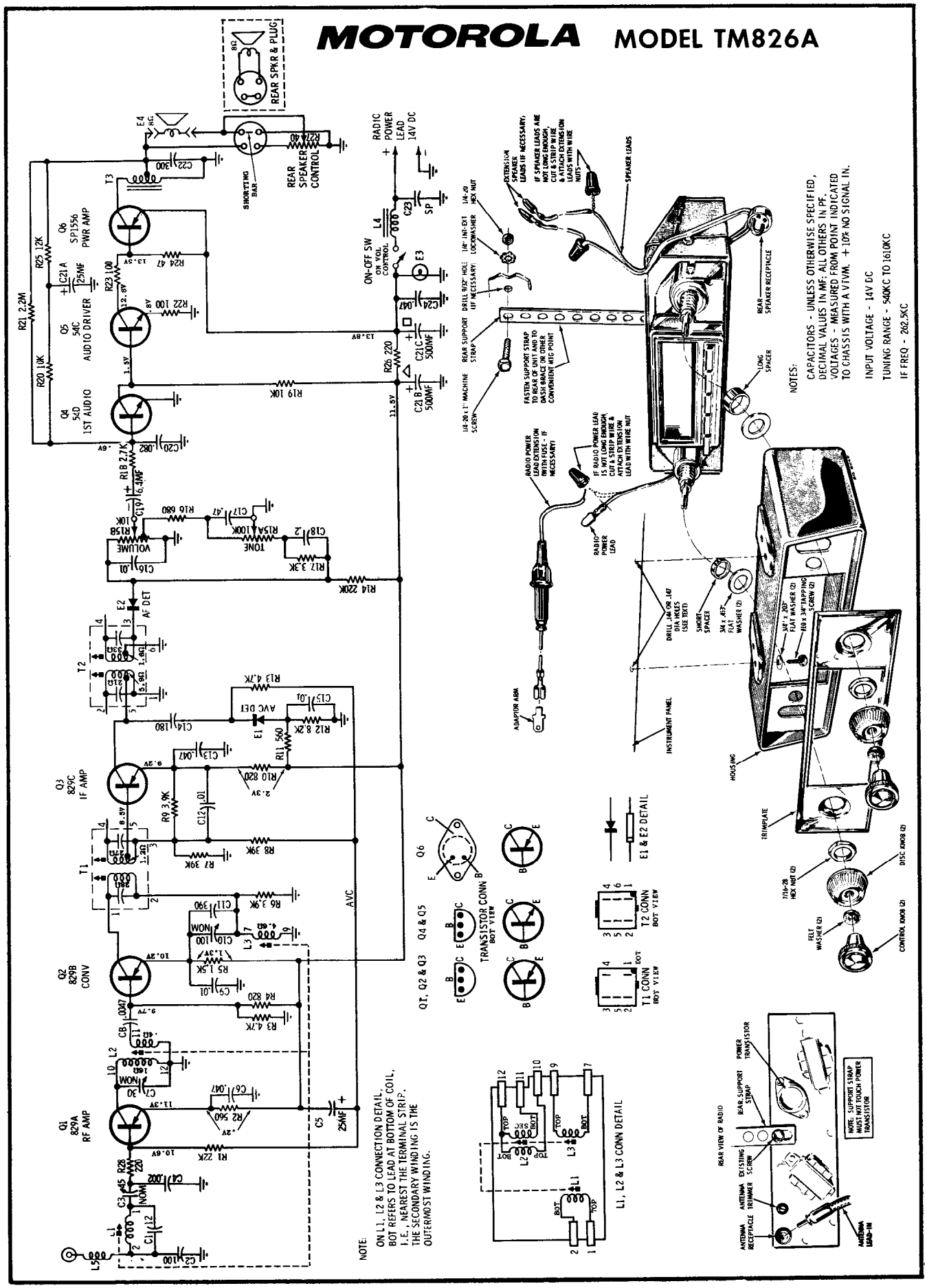


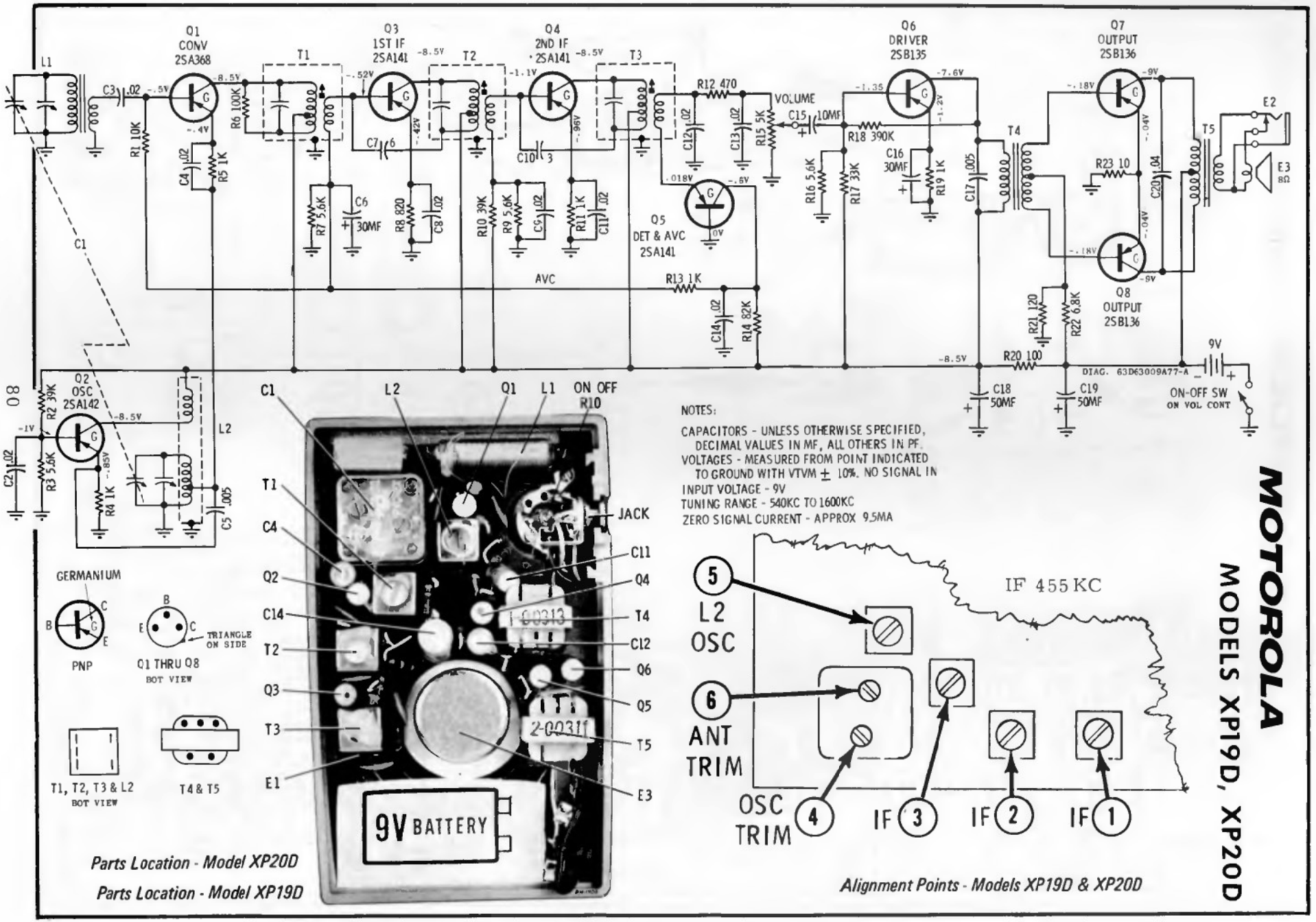
IF ALIGNMENT DETAIL



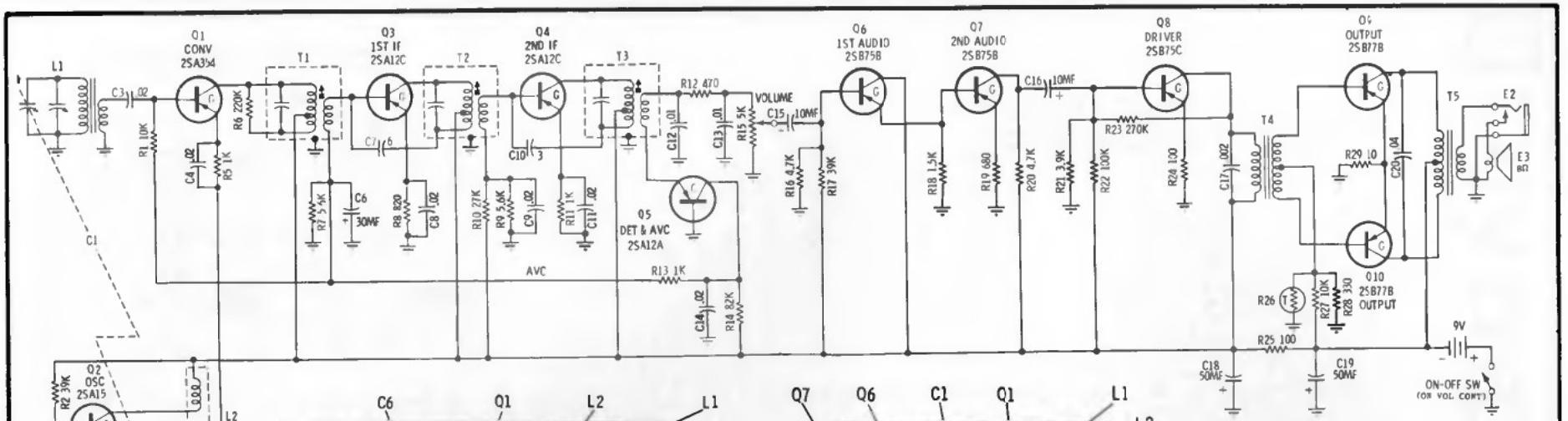
NOTE:
ON L2, L3, L4 & L5 CONNECTION DETAIL, BOT REFERS TO LEAD AT BOTTOM OF COIL I.E., NEAREST THE TERMINAL STRIP. THE SECONDARY WINDING IS THE OUTERMOST WINDING.

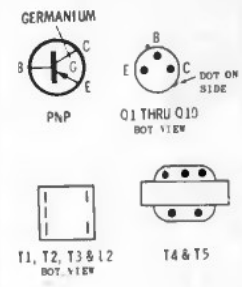

MOTOROLA
MODEL TM527A
BOTTOM VIEW
IF ALIGNMENT DETAIL
HEX ALIGNMENT TOOL
TOP CORE
BOTTOM CORE
NOTE:
ON L2, L3, L4 & L5 CONNECTION DETAIL, BOT REFERS TO LEAD AT BOTTOM OF COIL I.E., NEAREST THE TERMINAL STRIP. THE SECONDARY WINDING IS THE OUTERMOST WINDING.
L2, L3, L4 & L5 CONN DETAIL
POLARITY REVERSING PLUG POSITIONS
BACK VIEW
POLARITY REVERSING SOCKET
TOP VIEW
RADIO POWER LEAD 14V DC
ON-OFF SW ON VOL CONT
S = SILICON
G = GERMANIUM
E6 REGULATOR
Q1 829A RF AMP
Q2 829B CONV
Q3 829C IF AMP
Q4 540 1ST AUDIO
Q5 54C AUDIO DRIVER
Q6 SP 1556-3 PWR AMP
AVC
AF DET
ANT RECEPT
IF FREQ. - 262.5KC
TRANSISTOR CONN
BOT VIEW
Q1 THRU Q5
T1 & T2 CONN
BOT VIEW
E1 & E2 DETAIL
JUMPER

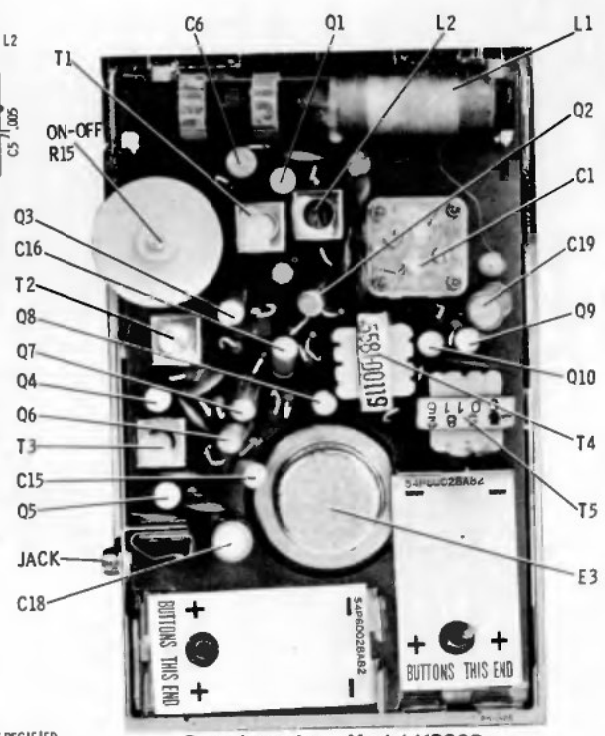

MOTOROLA MODEL TM826A
REAR SPKR & PLUG
REAR SPEAKER CONTROL
SHORTING BAR
RADIO POWER LEAD 14V DC
ON-OFF SW ON VOL CONTROL
Q1 829A RF AMP
Q2 829B CONV
Q3 829C IF AMP
Q4 542D 1ST AUDIO
Q5 541C AUDIO DRIVER
Q6 SP1556 PWR AMP
E1 AVC DET
E2 AF DET
VOLUME
TONE
AVC
NOTE:
ON L1, L2 & L3 CONNECTION DETAIL, BOT REFERS TO LEAD AT BOTTOM OF COIL, I.E., NEAREST THE TERMINAL STRIP. THE SECONDARY WINDING IS THE OUTERMOST WINDING.
Q1, Q2 & Q3
Q4 & Q5
Q6
TRANSISTOR CONN BOT VIEW
T1 CONN BOT VIEW
T2 CONN BOT VIEW
E1 & E2 DETAIL
L1, L2 & L3 CONN DETAIL
REAR SUPPORT STRAP
LONG SPACER
REAR SPEAKER RECEPTACLE
SPEAKER LEADS
RADIO POWER LEAD
ADAPTOR ARM
INSTRUMENT PANEL
HOUSING
TRIMPLATE
FELT WASHER (2)
CONTROL KNOB (2)
DISC KNOB (2)
REAR VIEW OF RADIO
POWER TRANSISTOR
NOTE: SUPPORT STRAP MUST NOT TOUCH POWER TRANSISTOR
ANTENNA RECEPTACLE
ANTENNA TRIMMER
EXISTING SCREW
ANTENNA LEAD-IN
NOTES:
CAPACITORS - UNLESS OTHERWISE SPECIFIED, DECIMAL VALUES IN MF; ALL OTHERS IN PF.
VOLTAGES - MEASURED FROM POINT INDICATED TO CHASSIS WITH A VTVM. + 10% NO SIGNAL IN.
INPUT VOLTAGE - 14V DC
TUNING RANGE - 540KC TO 1610KC
IF FREQ - 262.5KC


Q1 CONV 2SA368
Q2 OSC 2SA142
Q3 1ST IF 2SA141
Q4 2ND IF 2SA141
Q5 DET & AVC 2SA141
Q6 DRIVER 2SB135
Q7 OUTPUT 2SB136
Q8 OUTPUT 2SB136
T1
T2
T3
T4
T5
L1
L2
C1
VOLUME
AVC
E2
E3 8Ω
9V
ON-OFF SW ON VOL CONT
DIAG. 63D63009A77-A
NOTES:
CAPACITORS - UNLESS OTHERWISE SPECIFIED, DECIMAL VALUES IN MF, ALL OTHERS IN PF.
VOLTAGES - MEASURED FROM POINT INDICATED TO GROUND WITH VTVM ± 10%. NO SIGNAL IN
INPUT VOLTAGE - 9V
TUNING RANGE - 540KC TO 1600KC
ZERO SIGNAL CURRENT - APPROX 9.5MA
GERMANIUM
PNP
Q1 THRU Q8
BOT VIEW
TRIANGLE ON SIDE
T1, T2, T3 & L2
BOT VIEW
T4 & T5
C1
L2
Q1
L1
ON OFF R10
T1
C4
Q2
C14
T2
Q3
T3
E1
JACK
C11
Q4
T4
C12
Q6
Q5
T5
E3
9V BATTERY
IF 455 KC
5
L2 OSC
6
ANT TRIM
OSC TRIM
4
IF
3
IF
2
IF
1
Parts Location - Model XP20D
Parts Location - Model XP19D
Alignment Points - Models XP19D & XP20D
MOTOROLA
MODELS XP19D, XP20D

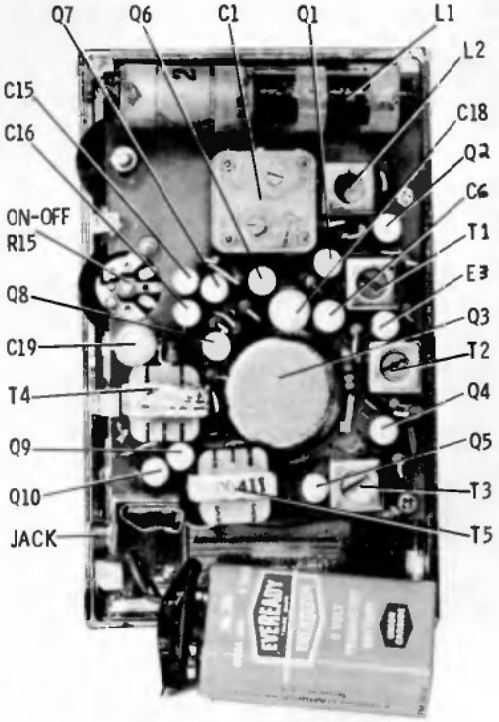
MOTOROLA MODELS XP22D, XP23D



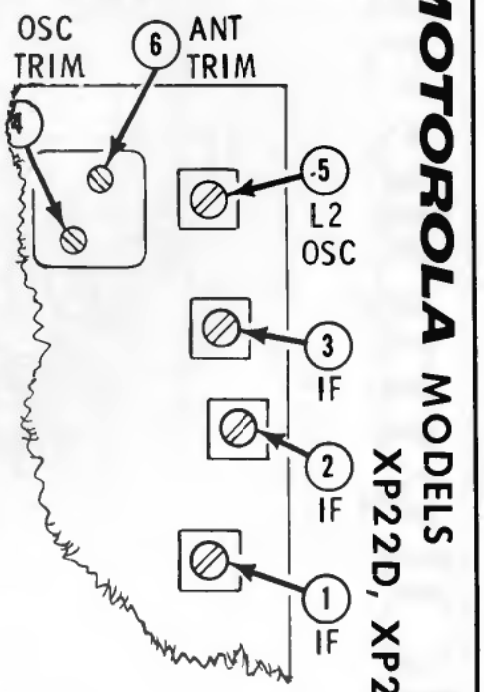




Parts Location - Model XP23D



Parts Location - Model XP22D



IF 455 KC

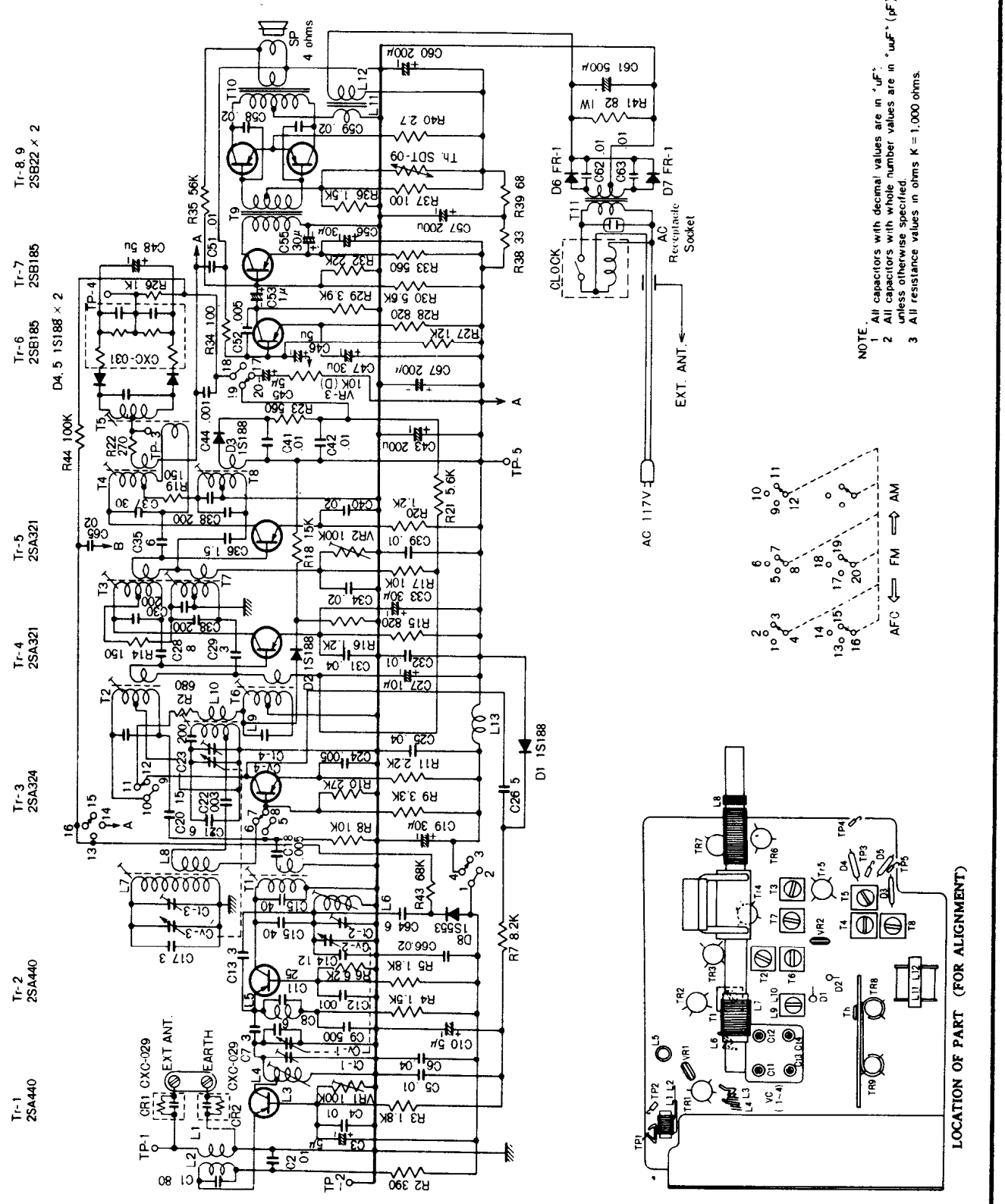
NOTES:

CAPACITORS - UNLESS OTHERWISE SPECIFIED, DECIMAL VALUES IN MF, ALL OTHERS IN PF.
VOLTAGES - MEASURED FROM POINT INDICATED TO GROUND WITH VTVM ± 10%, NO SIGNAL IN
INPUT VOLTAGE - 9V
TUNING RANGE - 540KC TO 1600KC
ZERO SIGNAL CURRENT - APPROX 9.3MA

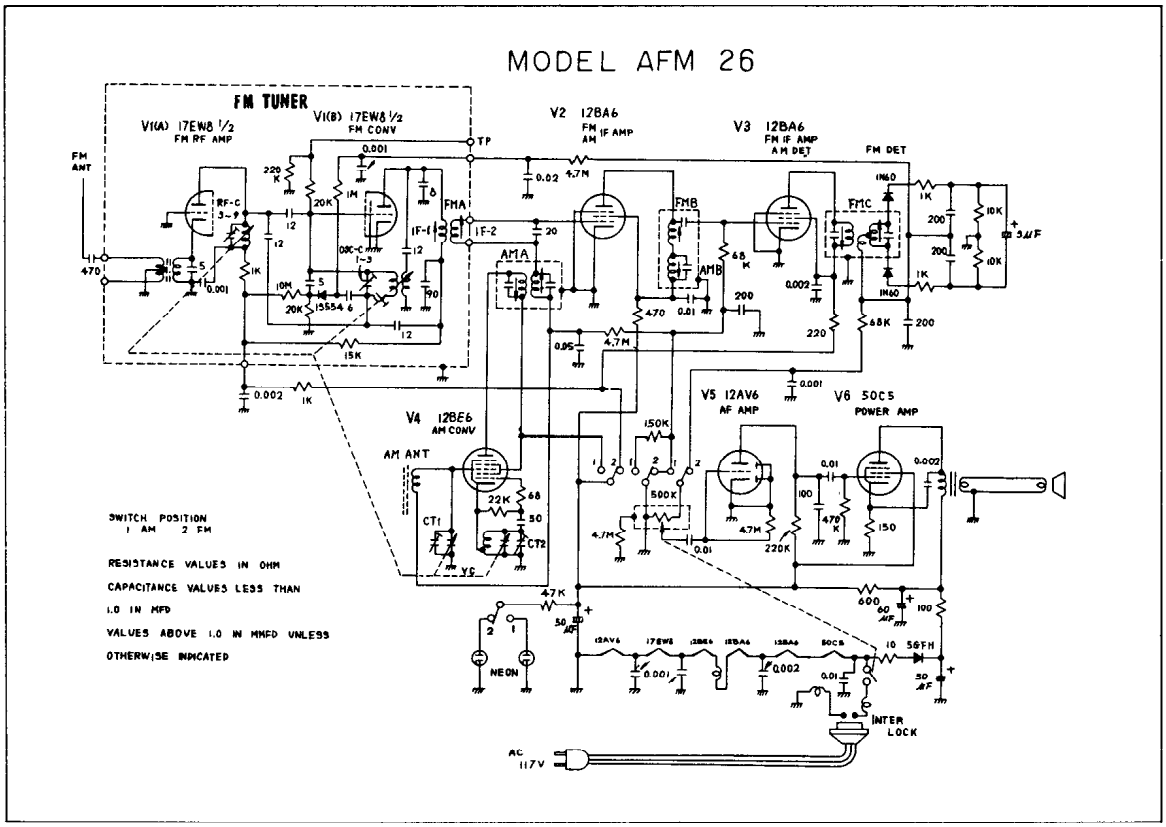
Olympic

Models:
AFM 32, 33
CF 34, 35

AM IF 455 KC
FM IF 10.7 MC



Olympic MODEL AFM 26

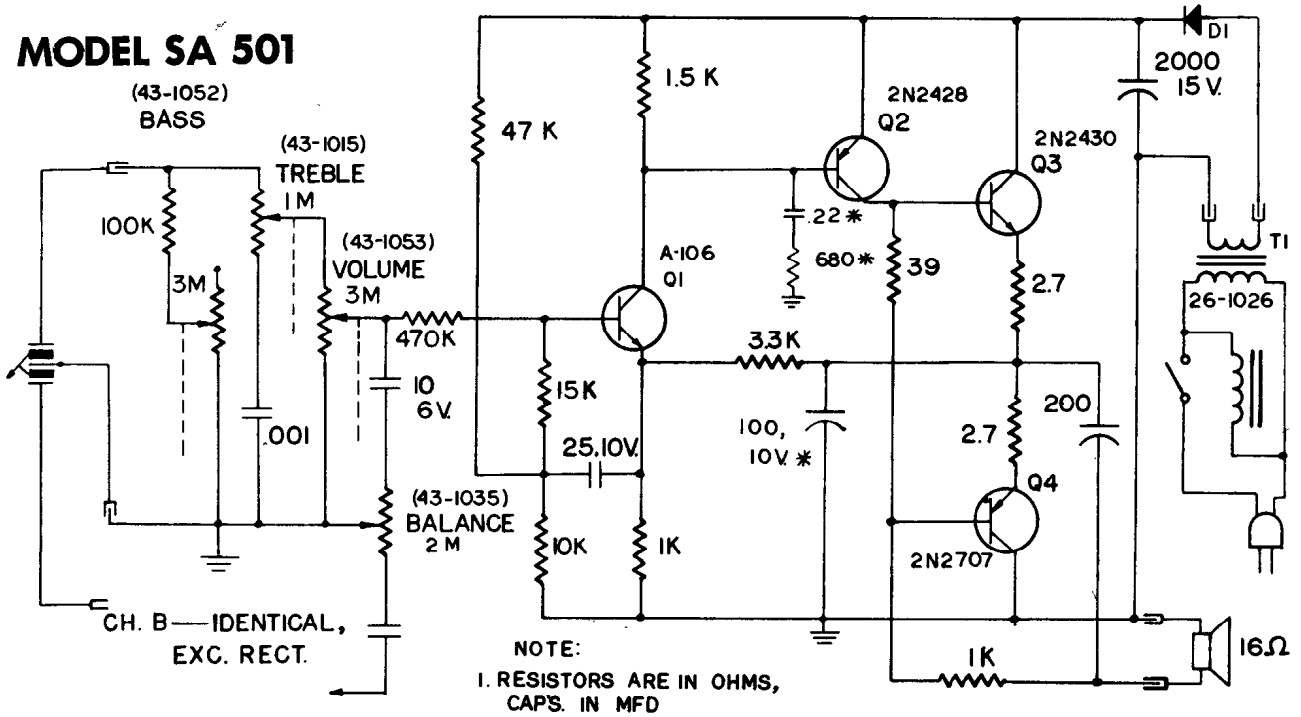


	STEP	Connect high side signal generator to	Set signal generator to	Turn pointer to	Read output on	Adjust the following (keep signal from signal generator as low as possible)
	Before aligning close variable cendenser fully counter-clockwise (plates fully closed) and adjust pointer to coincide with the beginning of dial scale					
AM	1	R F. Section of variable condenser or pin 7 of the 12BE6	455 KC	Extreme right hand position (condenser fully open)	Output meter across speaker voice-coil	AMA (Slug on top of chassis. Slug on underside of chassis for maximum reading)
	2	Tube in series with a 0.1 MFD., 400 volt condenser				AMB (Slug on underside of chassis for maximum reading)
	3	Use radiated signal (connect both sides of signal generator to radiation loop)	1400 KC	1400 KC on dial		CT2 (Oscillator trimmer for maximum output)
	4					CT1 (Antenna trimmer for maximum output)
	5		600 KC	600 KC on dial		Check that 600KC resonanec corresponds with 600KC point on dial
FM	1	R F. section of the "TP" on FM Tuner	10.7 MC	Extreme right hand position (condenser fully open)	Connect oscilloscope across condenser (200MMFD) of FM DET maximum view of S curve	FMA (Slug on IF-1 of tuner. Slug on IF-2 of tuner for maximum)
	2	"TP" in series with a 0.1 MFD 1400 volt condenser				FMB (Slug on top of chassis for maximum)
	3					FMC (Slug on top of chassis. Slug on underside of chassis for maximum reading)
	4	**Connect high side signal generator to Antenna screw.**	108 MC	108 MC	Output meter across speaker voice-coil	OSC-C (oscillator trimer for maximum output)
	5		98 MC	98 MC		RF-C (FM.RF. Amp trimmer for maximum output)
	6		90 MC	90 MC		Check that 90MC resonance corresponds with 90MC point on dial.

NOTE: This Chassis is connected to one side of the power line. On AC operation an isolation transformer should be used to prevent shock hazard. To protect the signal generator, if no isolation transformer available or if the radio is operated on DC, connect a 0.1 μF capacitor between the high side of the signal generator and the radio. The output of the signal generator be no higher than necessary to obtain a usable output reading. Connect signal generator ground to chassis.

Olympic

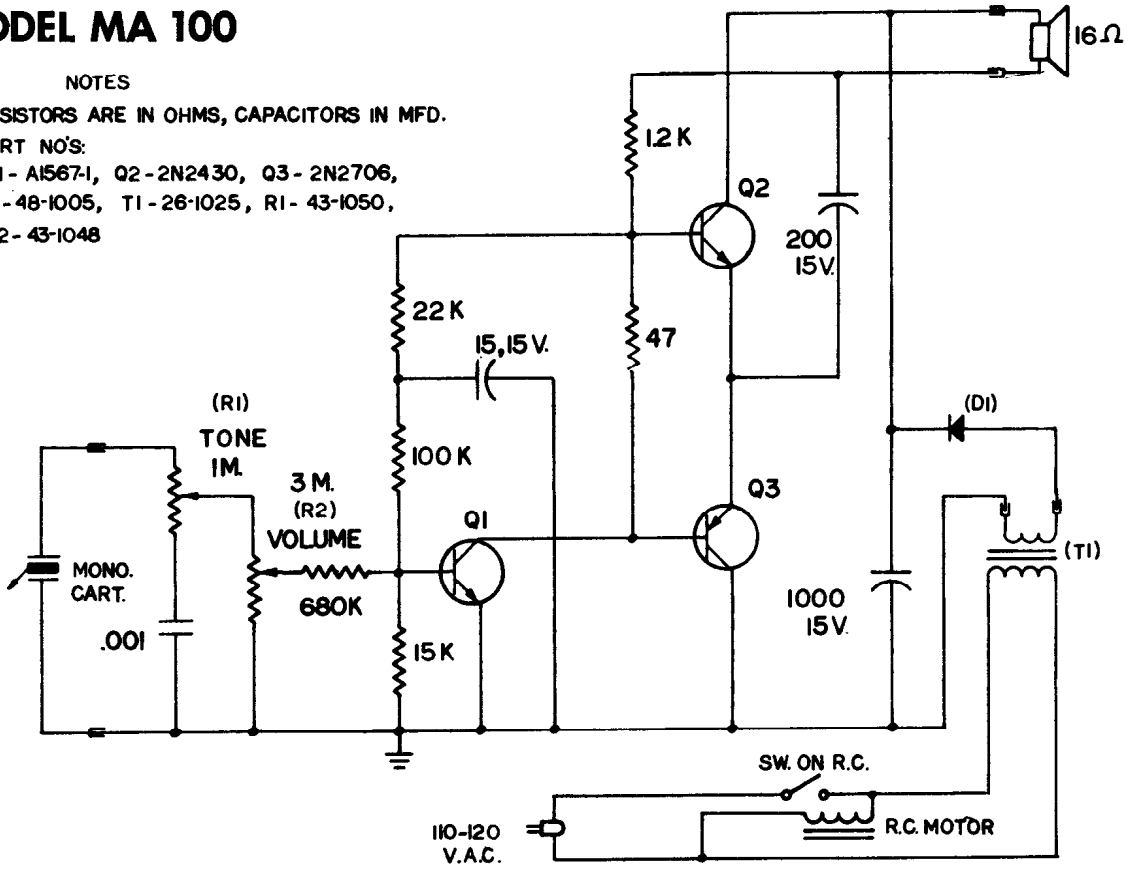
MODEL SA 501



NOTE:
1. RESISTORS ARE IN OHMS, CAP'S. IN MFD
2. PARTS MARKED WITH * NOT PRESENT IN ALL MODELS.

MODEL MA 100

NOTES
1. RESISTORS ARE IN OHMS, CAPACITORS IN MFD.
2. PART NO'S:
Q1 - A1567-1, Q2 - 2N2430, Q3 - 2N2706,
D1 - 48-1005, T1 - 26-1025, R1 - 43-1050,
R2 - 43-1048



PHILCO

MODEL P670TBE

TURNTABLE SPEED: 33 1/3 rpm –45 rpm
POWER OUTPUT: 2 peak music watts
POWER SUPPLY: 9 VDC with 6 "D" cells or 120 V.A.C. operation with built-in supply.

IF 455 KC

TRANSISTOR COMPLEMENT

Q1	2SA52	AM Conv.
Q2	2SA49	1st AM IF
Q3	2SA53	2nd AM IF
Q4	2SB54	Pre-amp
Q5	2SB54	Driver
Q6	2SB365	Output
Q7	2SB365	Output

NOTES:
- ALL VOLTAGES MEASURED WITH 455 KC MODEL 175 VTVM, NO SIGNAL APPLIED, VOLUME AT MINIMUM, SW IN THE AM POSITION & 54 MTR IN A.C. POSITION.
- ALL CURRENTS TAKEN IN THE A.C. POSITION WITH NO SIGNAL APPLIED.
- SOURCE VOLTAGE -9.0 V
- MOTOR VOLTAGE (NO LOAD) -6.7 V
- CURRENT DRAIN
  - AM 15 MA
  - PHONO | SONALINE LOAD
- ALL RESISTORS MARKED WITH AN * ARE PRINTED ON TOP OF THE AUDIO P.W. PANEL.

TRANSISTOR BASING BOTTOM VIEW

01 TO 00

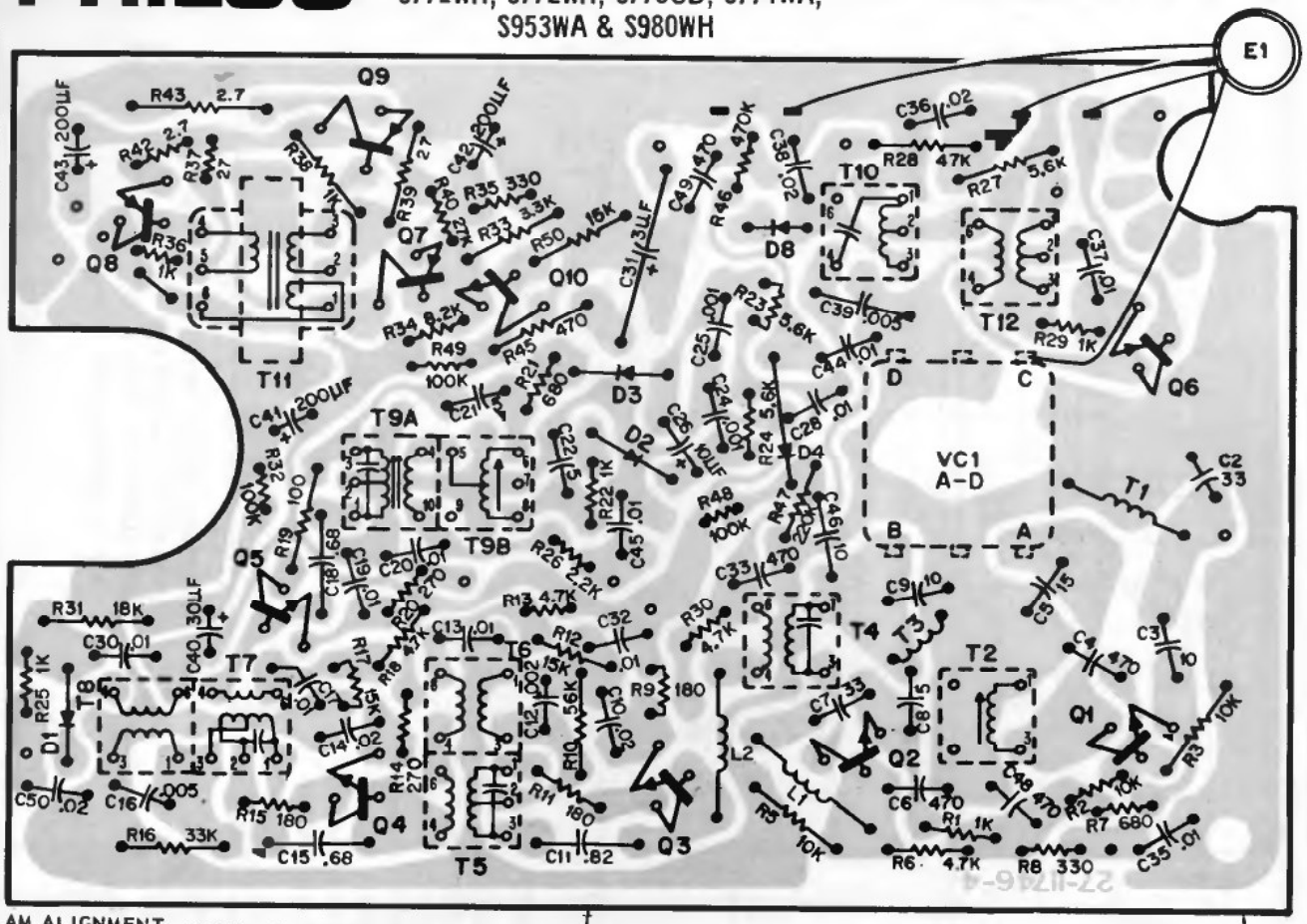
BOTTOM VIEW COMPONENTS–AUDIO PANEL

NOTE: RESISTORS MARKED WITH AN * ARE PRINTED ON TOP OF THE P.W. PANEL, REPLACE WITH CARBON TYPE.

PHILCO

AM-FM TRANSISTOR RADIO MODELS S771WH, S772WH, S773CB, S774WA, S953WA & S980WH

(Continued on next page.)



AM ALIGNMENT

SIGNAL GENERATOR			RADIO		
STEP	CONNECTION TO RADIO	DIAL SETTING	DIAL SETTING	SPECIAL INSTRUCTIONS	ADJUST
1	RADIATING LOOP (SEE NOTE 1)	455 KHZ	TUNING GANG FULLY OPEN	ADJUST FOR MAX. OUTPUT IN ORDER GIVEN.	T8, T6 & T10
2	SAME AS STEP 1	1650 KHZ	TUNING GANG FULLY OPEN	ADJUST FOR MAX. OUTPUT.	C1D AM OSC.
3	SAME AS STEP 1	1400 KHZ	1400 KHZ	ADJUST FOR MAX. OUTPUT.	C1C ANT. TRIM.
4	SAME AS STEP 1	600 KHZ	600 KHZ	ADJUST FOR MAX. OUTPUT. ROCK TUNING GANG DURING ADJUSTMENT.	T12 AM OSC.
5	REPEAT STEPS 2, 3 & 4 UNTIL NO FURTHER IMPROVEMENT IS OBTAINED.				

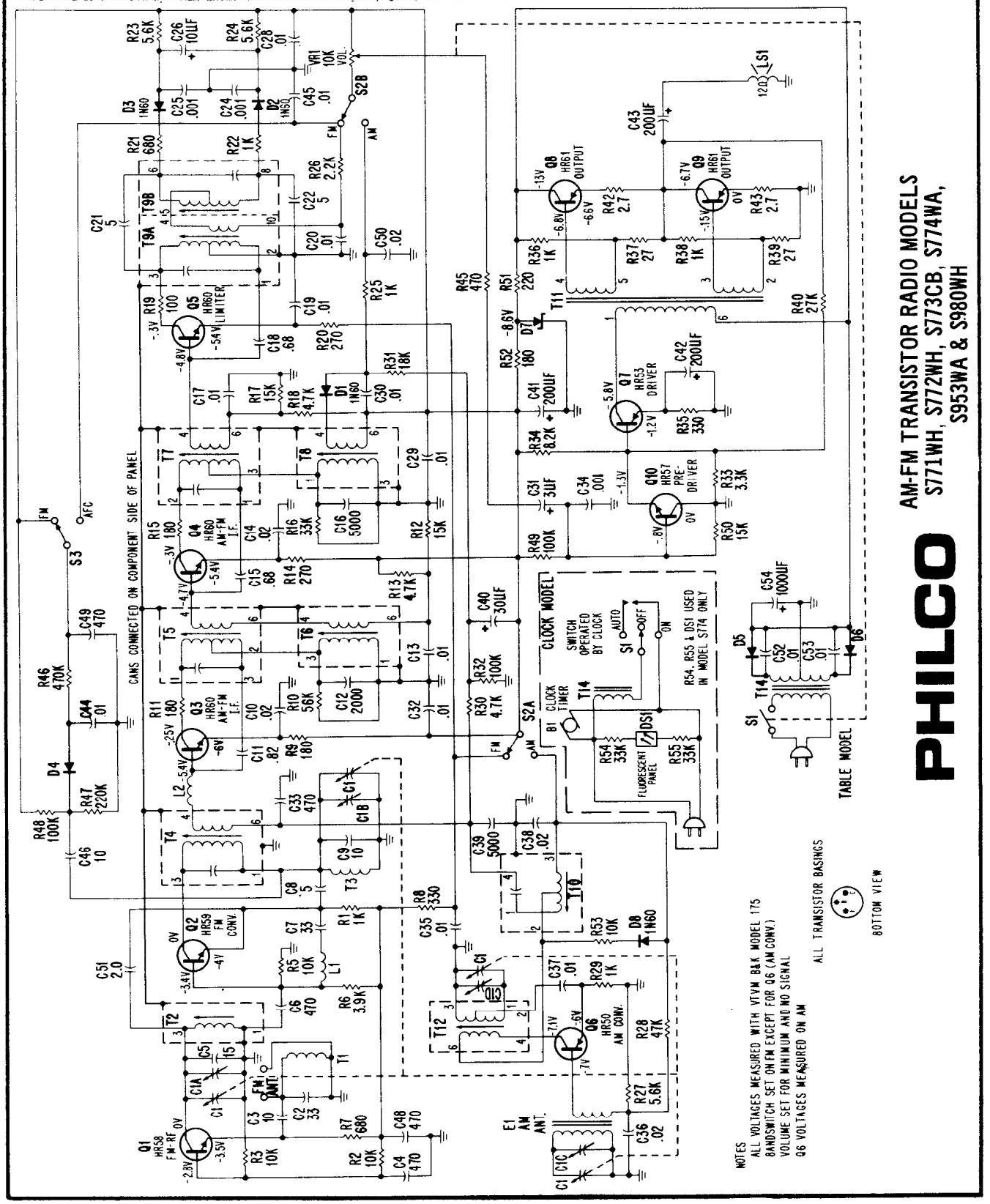
FM ALIGNMENT

SIGNAL GENERATOR			RADIO		
STEP	CONNECTION TO RADIO	DIAL SETTING	DIAL SETTING	SPECIAL INSTRUCTIONS	ADJUST
1	COLLECTOR OF Q1 THRU .01 MF CAPACITOR	10.7 MHZ ±75 KHZ SWEEP	TUNING GANG FULLY OPEN	ADJUST FOR MAXIMUM OUTPUT IN ORDER GIVEN. REDUCE GENERATOR OUTPUT AS NECESS.	T9A, T7, T5 & T4
2	SAME AS STEP 1	10.7 MHZ 30% AM	TUNING GANG FULLY OPEN	ADJUST FOR MINIMUM OUTPUT (A NULL BETWEEN TWO PEAKS)	T9B
3	REPEAT STEPS 1 AND 2 UNTIL NO FURTHER IMPROVEMENT IS OBTAINED.				
4	CONNECT TO ANTENNA TERMINAL THRU 47 OHM RESISTOR	87.5 MHZ ±75 KHZ	TUNING GANG FULLY CLOSED	ADJUST FOR MAX. OUTPUT.	T3 (SEE NOTE "A") FM OSC.
5	SAME AS STEP 4	108.5 MHZ ±75 KHZ	TUNING GANG FULLY OPEN	ADJUST FOR MAX. OUTPUT.	C1B FM OSC.

(FM Alignment continued on next page.)

(FM Alignment continued.)

6	REPEAT STEPS 4 AND 5 UNTIL NO FURTHER IMPROVEMENT IS OBTAINED.				
7	SAME AS STEP 4	90 MHZ ±75 KHZ	90 MHZ	ADJUST FOR MAX. OUTPUT.	T2
8	SAME AS STEP 4	105 MHZ ±75 KHZ	105 MHZ	ADJUST FOR MAX. OUTPUT.	C1A
9	REPEAT STEPS 7 AND 8 UNTIL NO FURTHER IMPROVEMENT IS OBTAINED.				



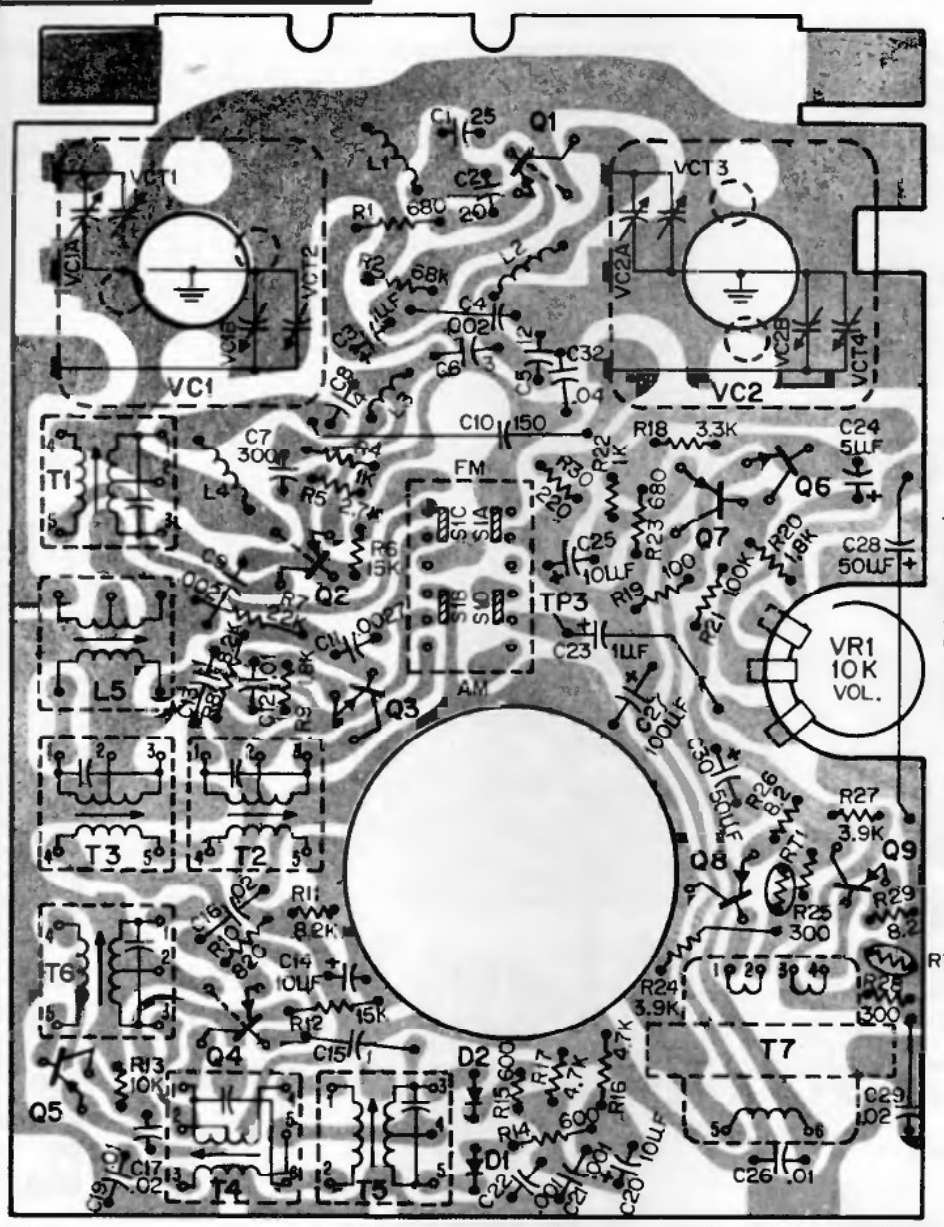
(Continued from preceding page.)

PHILCO

AM-FM TRANSISTOR PORTABLE RADIO MODEL ST-919

(Continued on next page.)

Bottom View Perma Circuit for Components—Model ST-919



FM Alignment

RADIO				
STEP	SIGNAL GENERATOR CONNECTION TO RADIO	SIGNAL GENERATOR DIAL SETTING	DIAL SETTING	SPECIAL INSTRUCTIONS	ADJUST
1	TP1 (RF INPUT) INPUT IMP. 75Ω	10.7MHz ± 75KHZ SWEEP	TUNING GANG FULLY OPEN	ADJUST FOR MAX. OUTPUT AND BEST SYMMETERY IN ORDER GIVEN.	T1, T2, T4, T5
2	SAME AS STEP 1	86MHZ 400HZ @ 75KHZ DEV.	TUNING GANG FULLY CLOSED	ADJUST FOR MAX. OUTPUT.	L4
3	SAME AS STEP 1	110MHZ 400HZ @	TUNING GANG FULLY OPEN	ADJUST FOR MAX. OUTPUT.	VCT4

AM ALIGNMENT

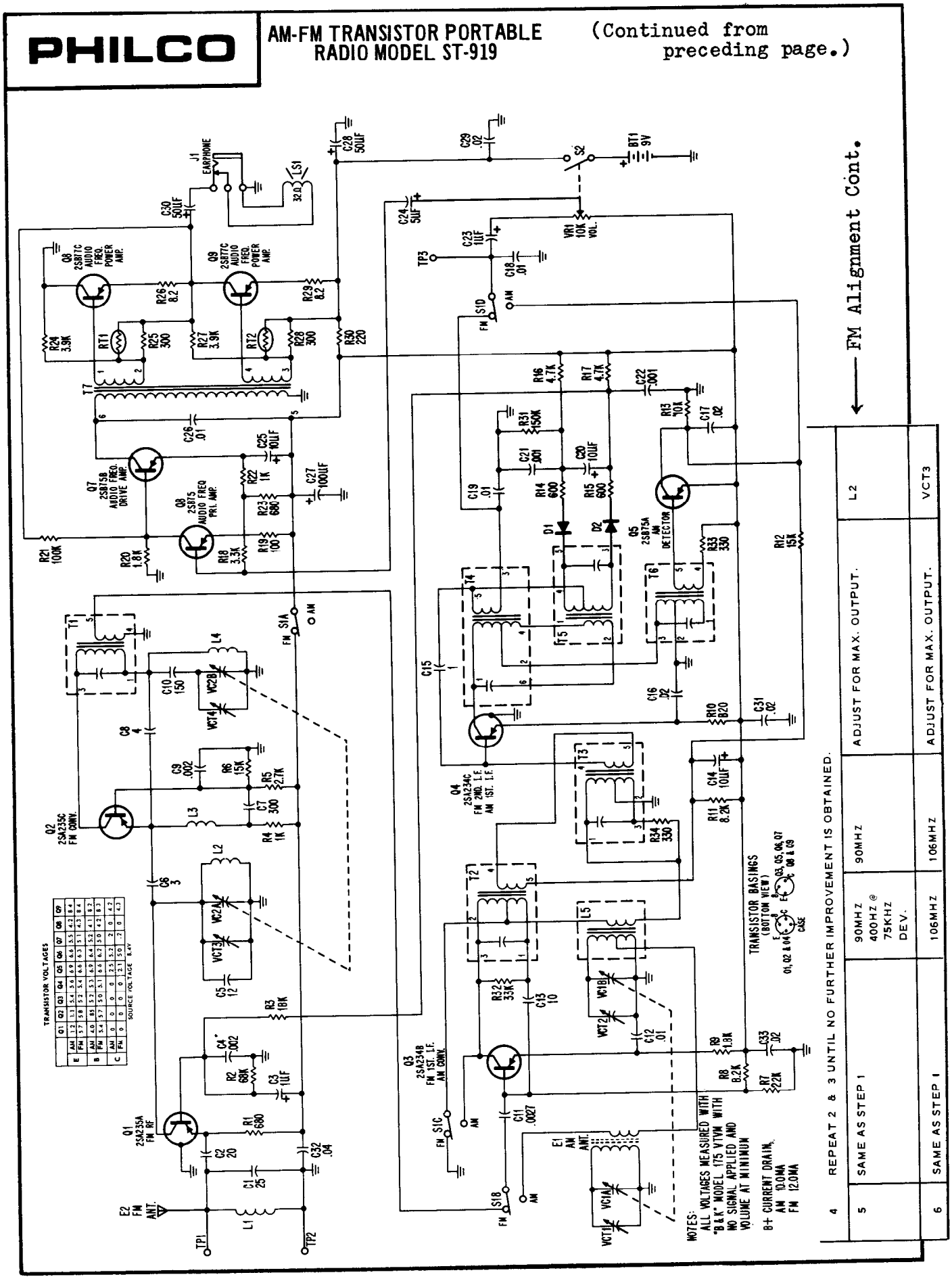
SIGNAL GENERATOR			RADIO		
STEP	CONNECTION TO RADIO	DIAL SETTING	DIAL SETTING	SPECIAL INSTRUCTIONS	ADJUST
1	TEST LOOP – LOOSE COUPLED	455KHZ 400HZ @ 30% MOD.	TUNING GANG FULLY OPEN	ADJUST FOR MAX. OUTPUT IN ORDER GIVEN.	T3–1ST IF T6–2ND IF
2	SAME AS STEP 1	525KHZ 400HZ @ 30% MOD.	TUNING GANG FULLY CLOSED	ADJUST FOR MAX. OUTPUT.	L5–OSC. COIL
3	SAME AS STEP 1	1650KHZ 400HZ @ 30% MOD.	TUNING GANG FULLY OPEN	ADJUST FOR MAX. OUTPUT.	VCT2
4	SAME AS STEP 1	600KHZ 400HZ @ 30% MOD.	600KHZ	ADJUST FOR MAX. OUTPUT (MOVE COIL ON CORE)	E1–ANT. COIL
5	SAME AS STEP 1		1400KHZ	ADJUST FOR MAX. OUTPUT	VCT1

FM Alignment continued

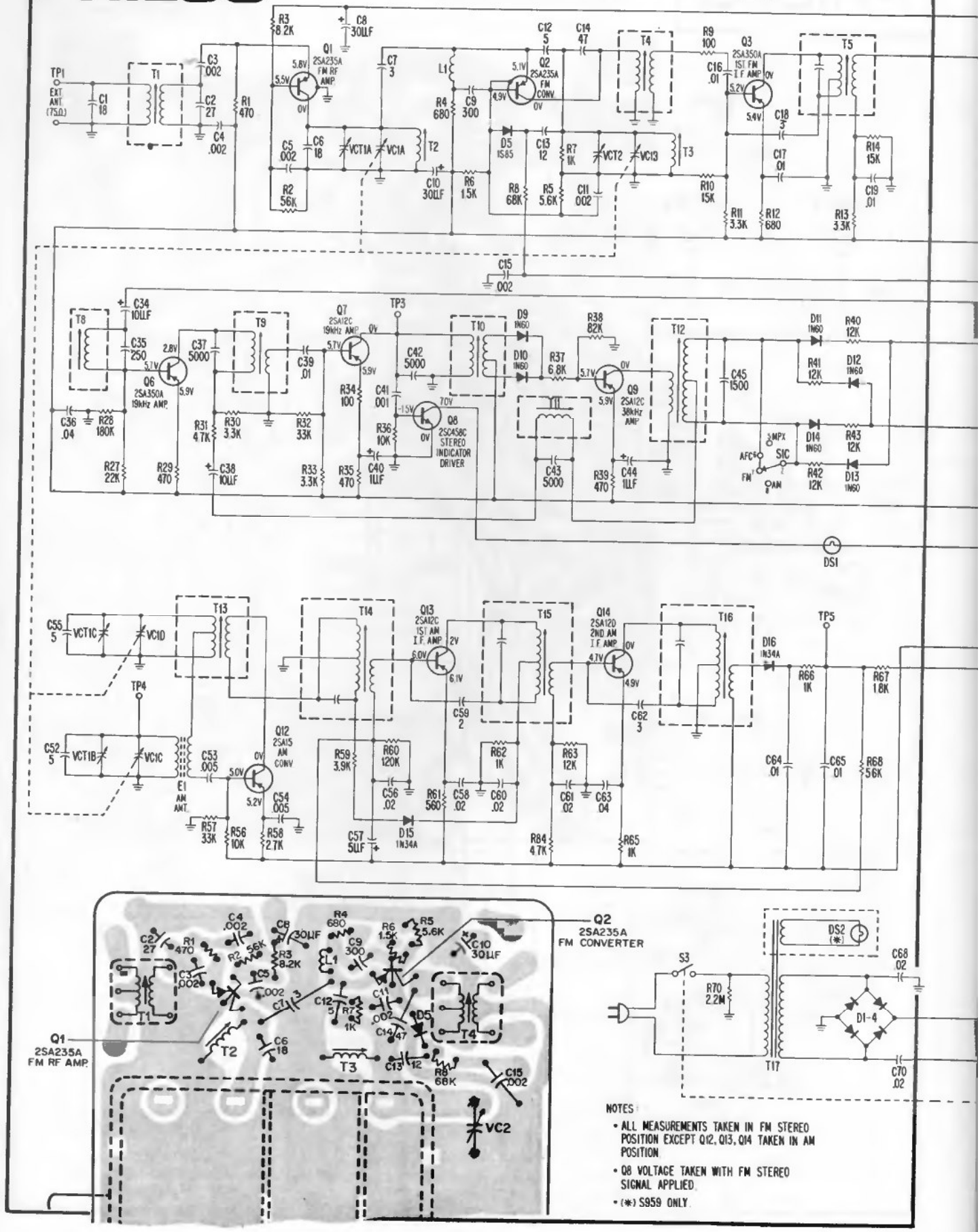
PHILCO

AM-FM TRANSISTOR PORTABLE RADIO MODEL ST-919

(Continued from preceding page.)



PHILCO MODELS ST958 & ST959 (Continued on next two pages.)

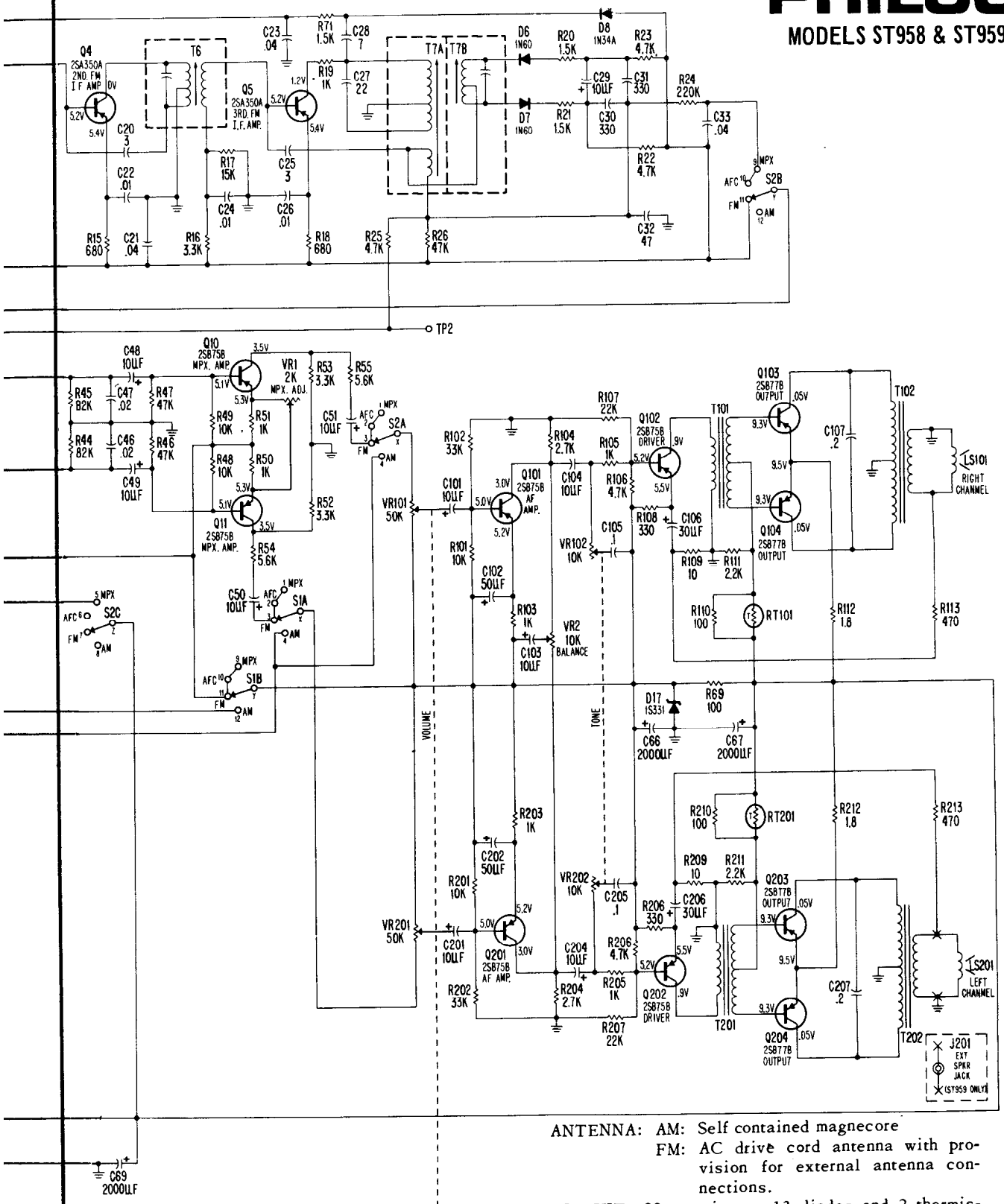


Bottom View–FM Tuner–ST958 and ST959

(Continued on next page and from preceding page.)

PHILCO

MODELS ST958 & ST959



SPEAKERS:

ST958: Two 4" round, 8 ohms, contained in cabinet.

ST959: Two 4 x 6, 8 ohms, one in cabinet, one extension speaker

POWER: 120 volts alternating current (AC) only.

ANTENNA: AM: Self contained magnecore

FM: AC drive cord antenna with provision for external antenna connections.

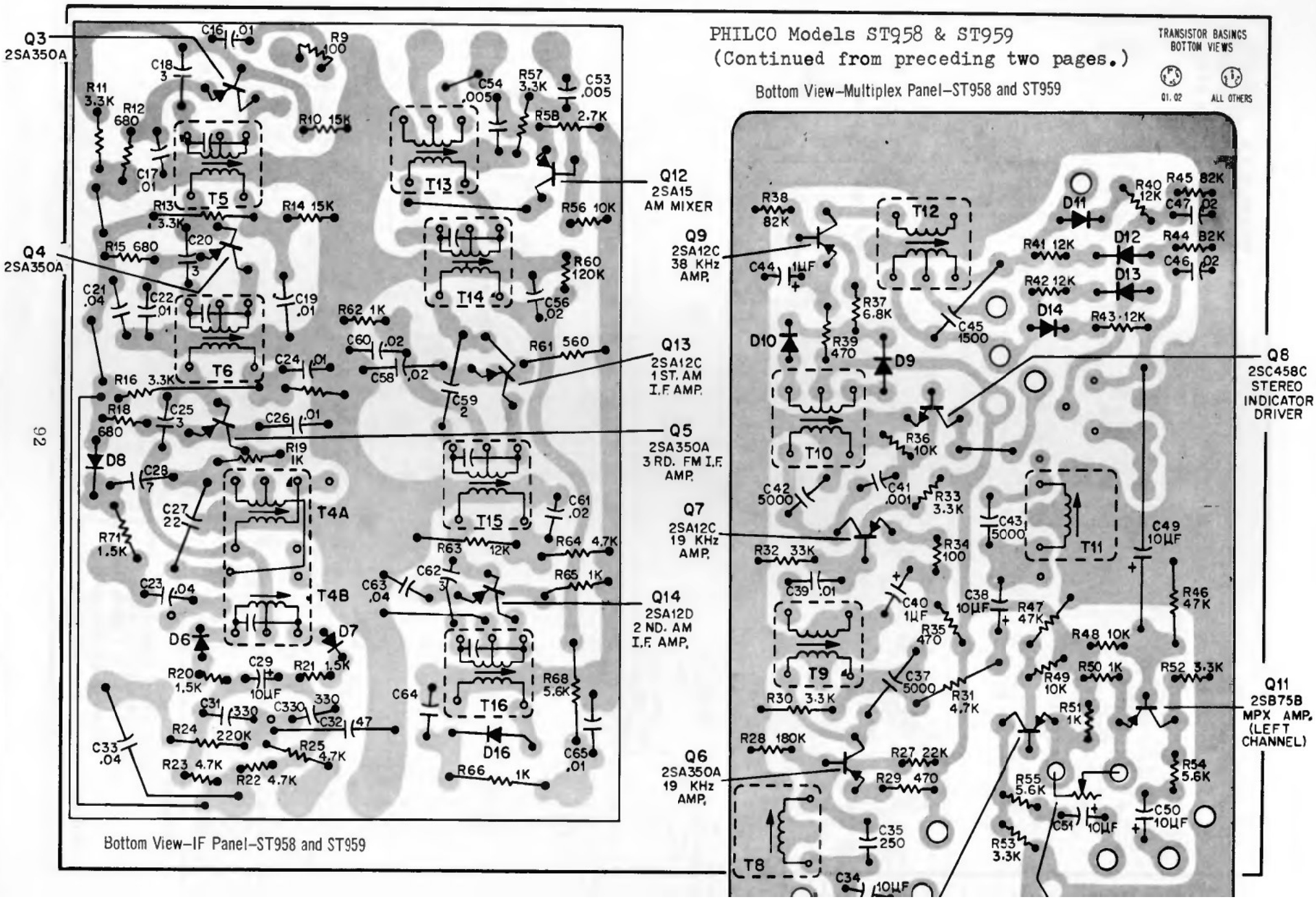
CIRCUIT: 22 transistors, 13 diodes and 2 thermistors in a superheterodyne FM-AM receiver.

FREQUENCY COVERAGE: FM-88MHz to 108MHz
AM-540MHz to 1620MHz
LW-150KHz to 350KHz

INTERMEDIATE FREQUENCY: AM - 455KHz
FM - 10.7MHz

PHILCO Models ST958 & ST959

(Continued from preceding two pages.)

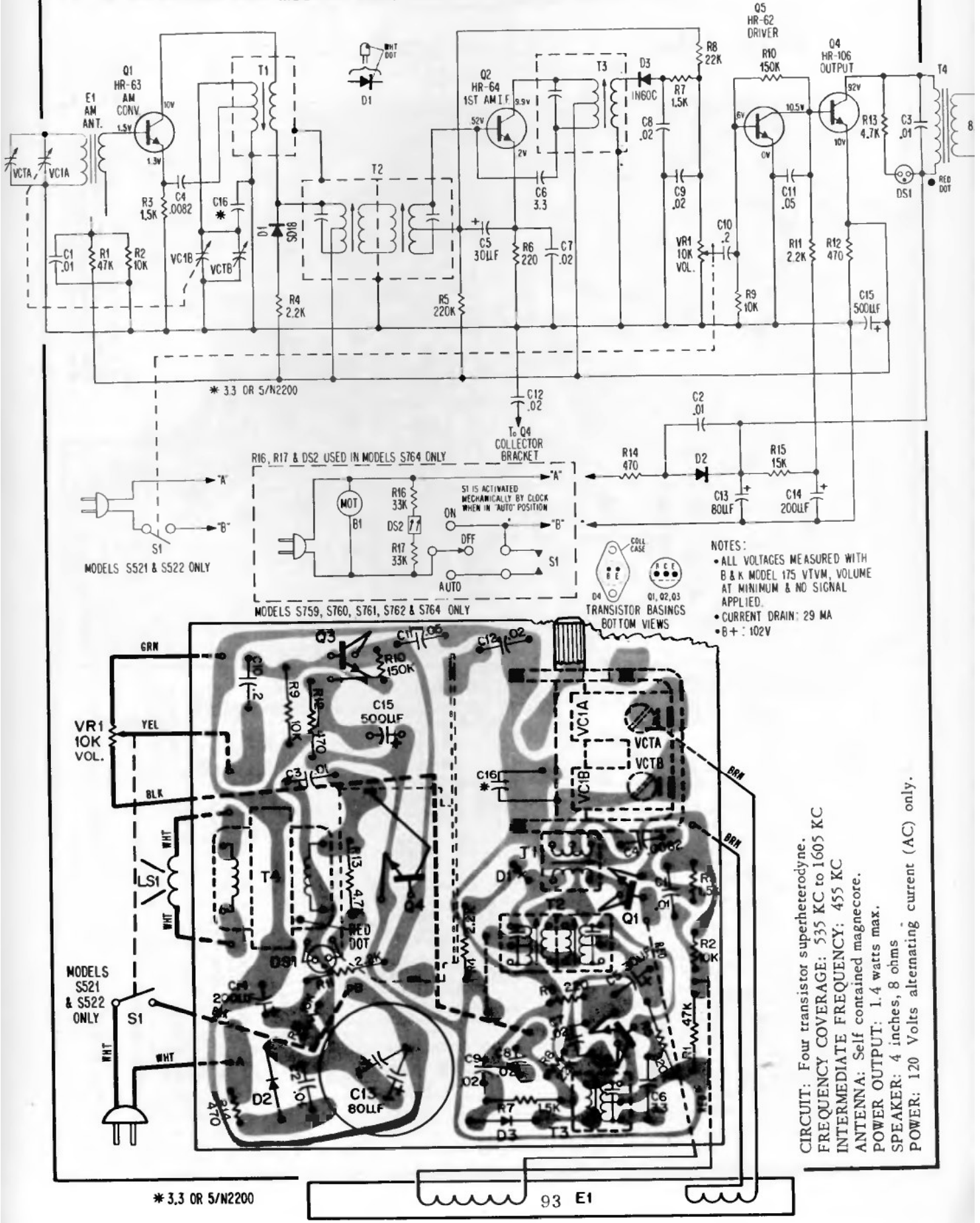


Bottom View–IF Panel–ST958 and ST959

Bottom View–Multiplex Panel–ST958 and ST959

PHILCO

CLOCK/TABLE AM TRANSISTOR RADIO
MODELS S521, S522, S759, S760, S761, S762, & S764

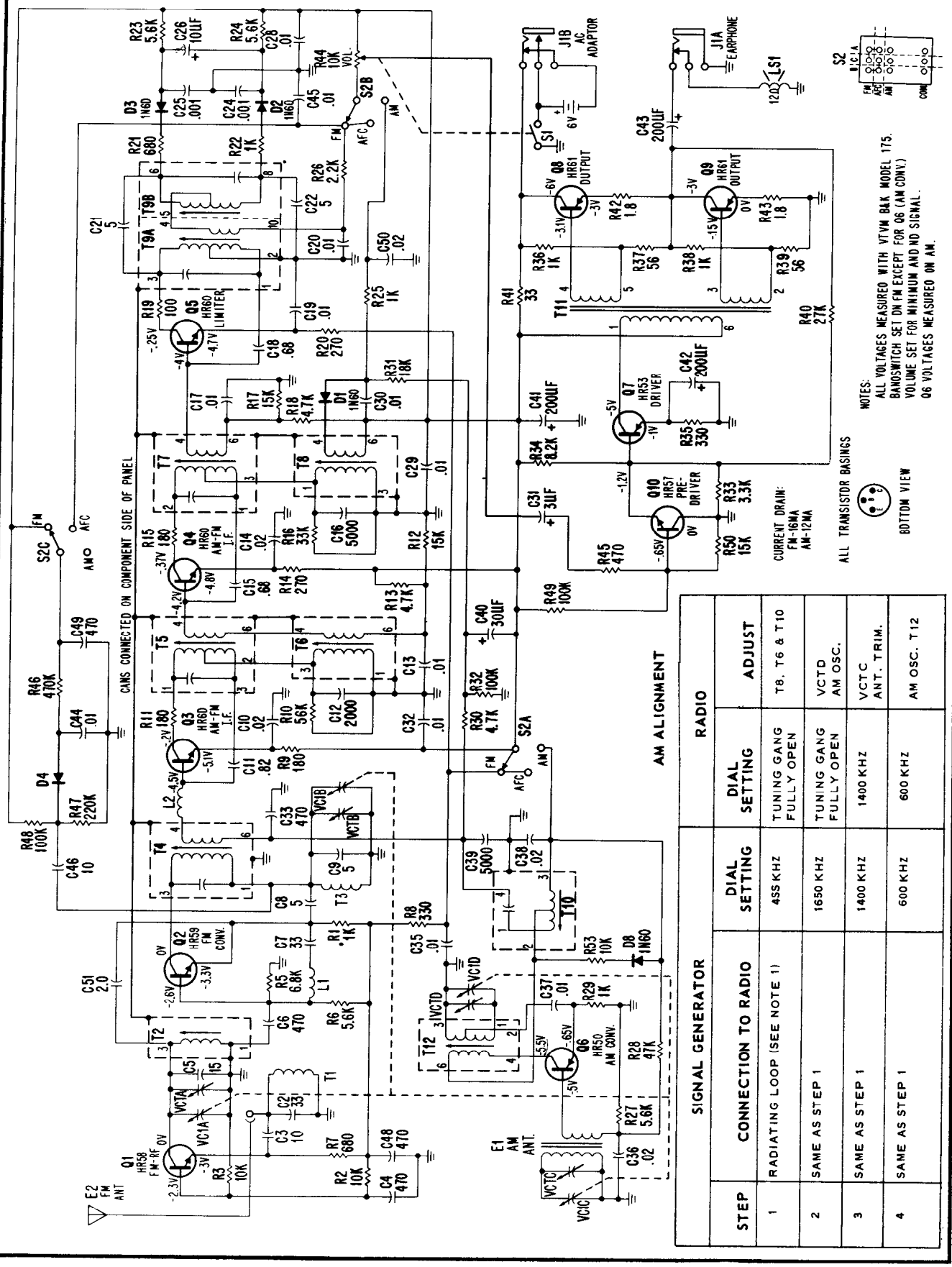


NOTES:
- ALL VOLTAGES MEASURED WITH B & K MODEL 175 VTVM, VOLUME AT MINIMUM & NO SIGNAL APPLIED.
- CURRENT DRAIN: 29 MA
- B+ : 102V

CIRCUIT: Four transistor superheterodyne.
FREQUENCY COVERAGE: 535 KC to 1605 KC
INTERMEDIATE FREQUENCY: 455 KC
ANTENNA: Self contained magnecore.
POWER OUTPUT: 1.4 watts max.
SPEAKER: 4 inches, 8 ohms
POWER: 120 Volts alternating current (AC) only.

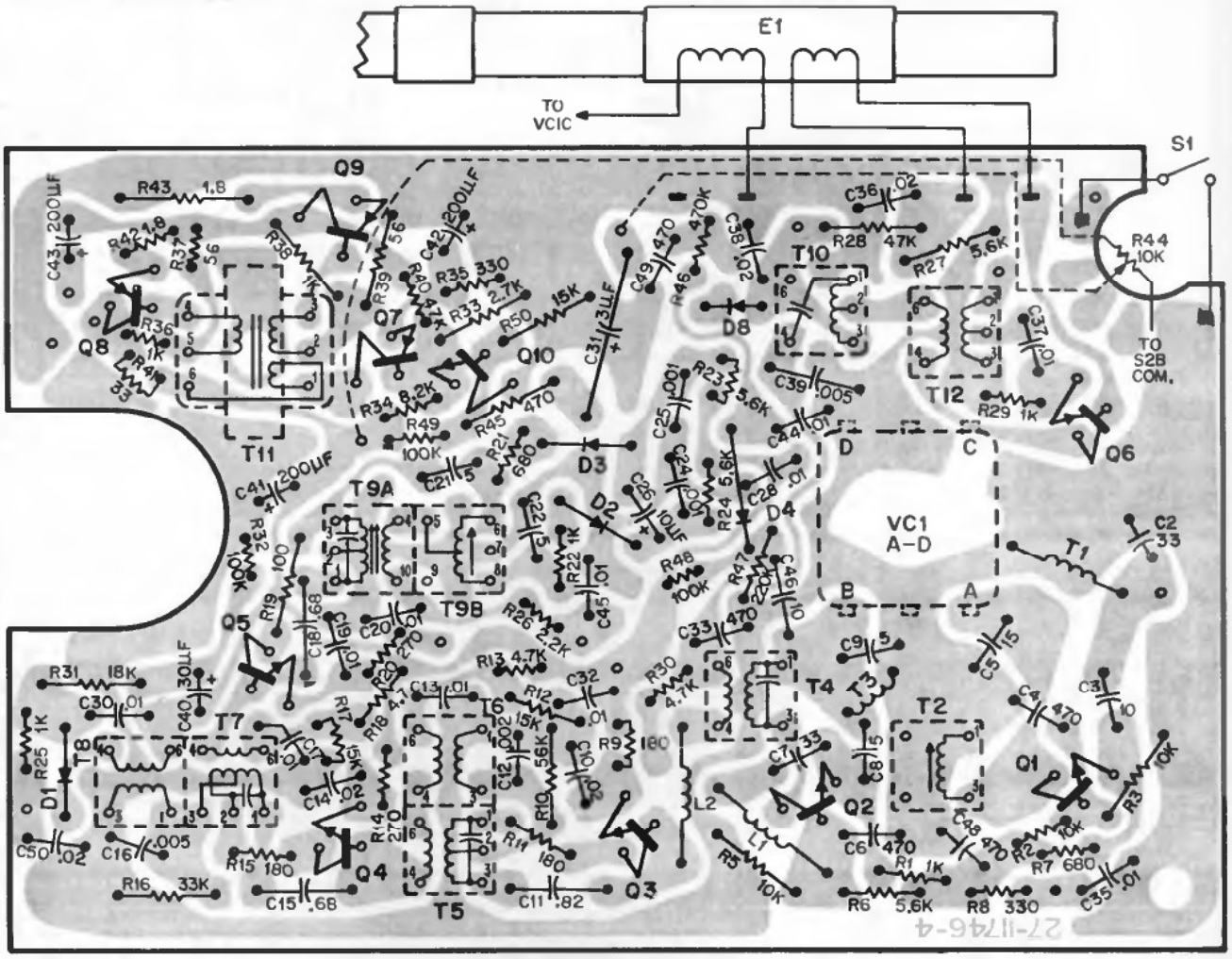
PHILCO MODEL ST984

(Continued on next page.)



STEP	SIGNAL GENERATOR CONNECTION TO RADIO	SIGNAL GENERATOR DIAL SETTING	RADIO DIAL SETTING	RADIO ADJUST
1	RADIATING LOOP (SEE NOTE 1)	455 KHZ	TUNING GANG FULLY OPEN	T8, T6 & T10
2	SAME AS STEP 1	1650 KHZ	TUNING GANG FULLY OPEN	VCTD AM OSC.
3	SAME AS STEP 1	1400 KHZ	1400 KHZ	VCTC ANT. TRIM.
4	SAME AS STEP 1	600 KHZ	600 KHZ	AM OSC. T12

(Continued from preceding page.)



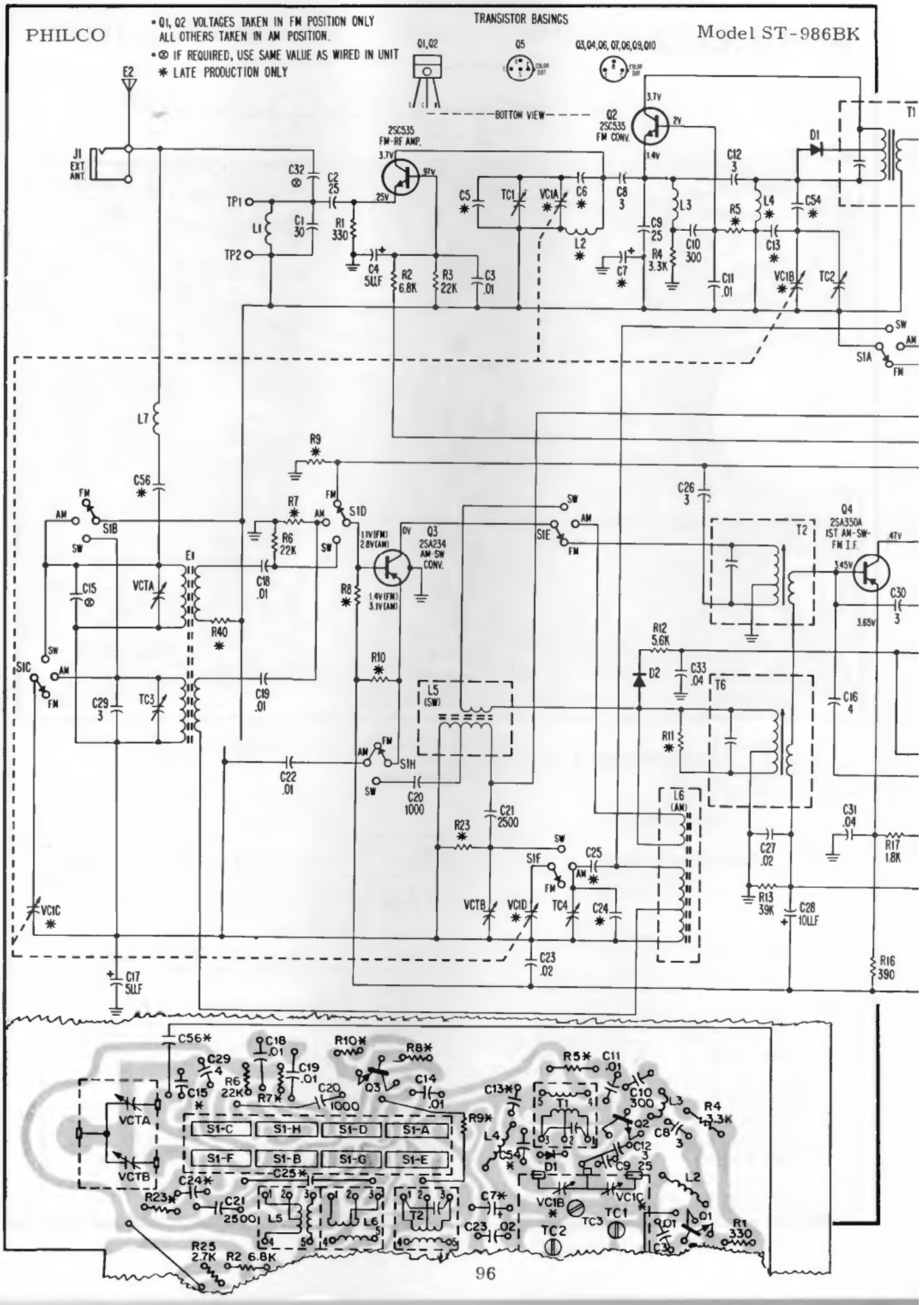
Bottom View–Perma Circuit Panel Component Layout–Model ST984

INTERMEDIATE FREQUENCY: AM, 455 KHz
FM, 10.7 MHz

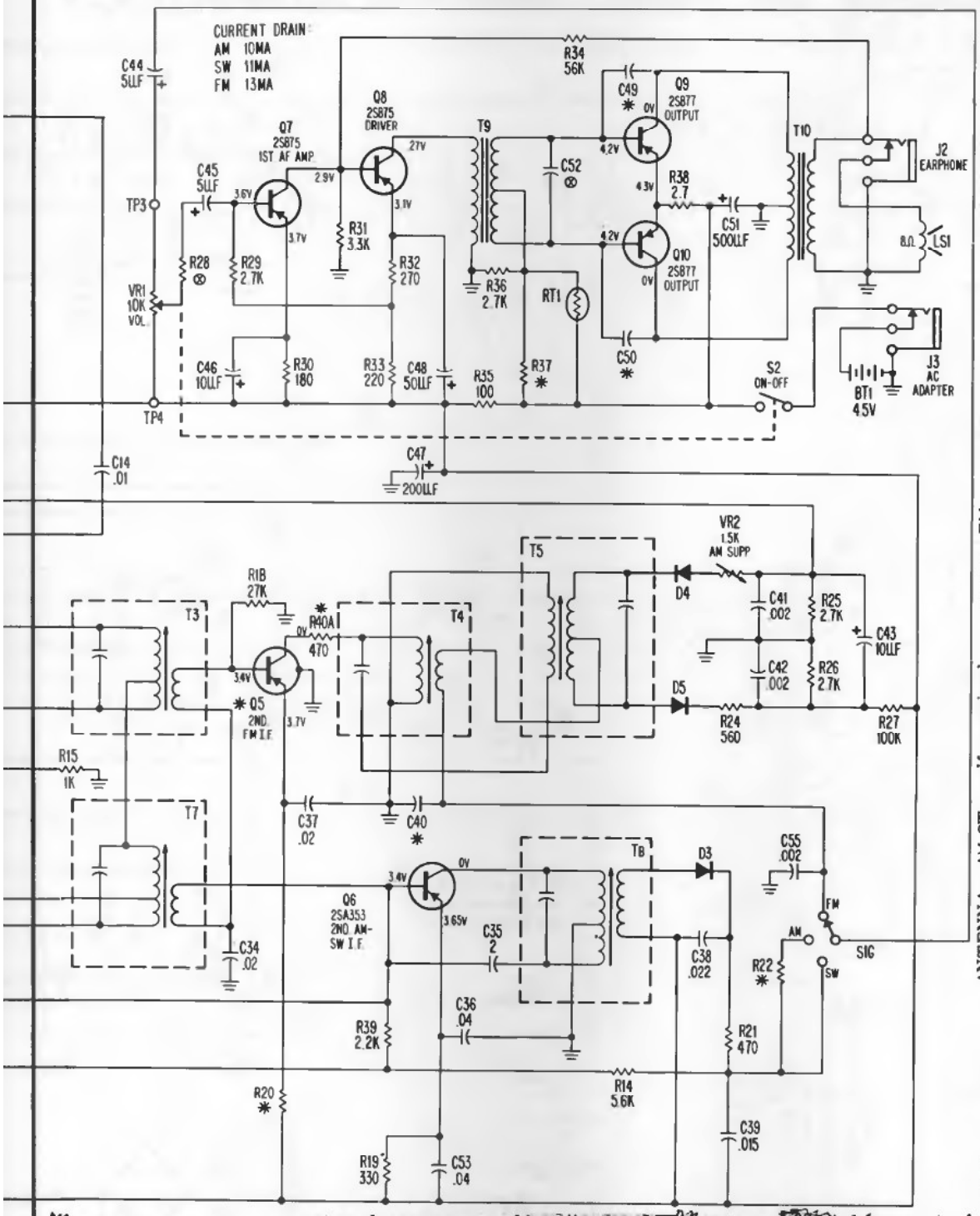
FM ALIGNMENT

SIGNAL GENERATOR			RADIO		
STEP	CONNECTION TO RADIO	DIAL SETTING	DIAL SETTING	SPECIAL INSTRUCTIONS	ADJUST
1	COLLECTOR OF Q1 THRU .01 MF CAPACITOR	10.7 MHZ ±75 KHZ SWEEP	TUNING GANG FULLY OPEN	ADJUST FOR MAXIMUM OUTPUT IN ORDER GIVEN. REDUCE GENERATOR OUTPUT AS NECESS.	T9A, T7, T5 & T4
2	SAME AS STEP 1	10.7 MHZ 30% AM	TUNING GANG FULLY OPEN	ADJUST FOR MINIMUM OUTPUT (A NULL BETWEEN TWO PEAKS)	T9B
3	REPEAT STEPS 1 AND 2 UNTIL NO FURTHER IMPROVEMENT IS OBTAINED.				
4	CONNECT TO ANTENNA TERMINAL THRU 47 OHM RESISTOR	87.5 MHZ ±75 KHZ	TUNING GANG FULLY CLOSED	ADJUST FOR MAX. OUTPUT.	T3 (SEE NOTE "A") FM OSC.
5	SAME AS STEP 4	108.5 MHZ ±75 KHZ	TUNING GANG FULLY OPEN	ADJUST FOR MAX. OUTPUT.	VCTB FC OSC.
6	REPEAT STEPS 4 AND 5 UNTIL NO FURTHER IMPROVEMENT IS OBTAINED.				
7	SAME AS STEP 4	90 MHZ ±75 KHZ	90 MHZ	ADJUST FOR MAX. OUTPUT.	T2
8	SAME AS STEP 4	105 MHZ ±75 KHZ	105 MHZ	ADJUST FOR MAX. OUTPUT.	VCTA
9	REPEAT STEPS 7 AND 8 UNTIL NO FURTHER IMPROVEMENT IS OBTAINED.				

(Continued on next page.)



PHILCO MODEL ST-986BK (Continued from preceding page.)



CIRCUIT: 10 transistors, 5 diodes and 1 thermistor in a supertheterodyne FM-AM-SW receiver covering 3 bands.

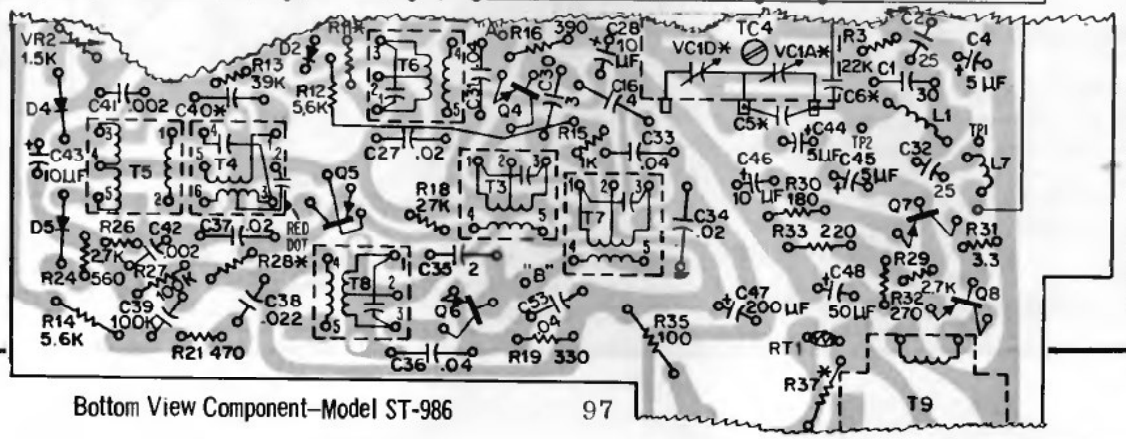
SPEAKER: 3½ inch 8 ohms voice coil, jack provided for optional private listening unit (Part number 429-0919-19).

ANTENNA: AM-SW, self-contained magnecore. FM-SW, telescopic adjustable monopole. External antenna jack provided for use with an antenna other than the monopole.

BATTERY: 3 "D" cells provide a 4.5-volt supply with a jack provided for optional external power supply (Philco part no. 423-1009-4).

FREQUENCY RANGE: FM, 88MHz to 108MHz
SW, 4.5MHz to 12MHz
AM, 540KHz to 1600KHz

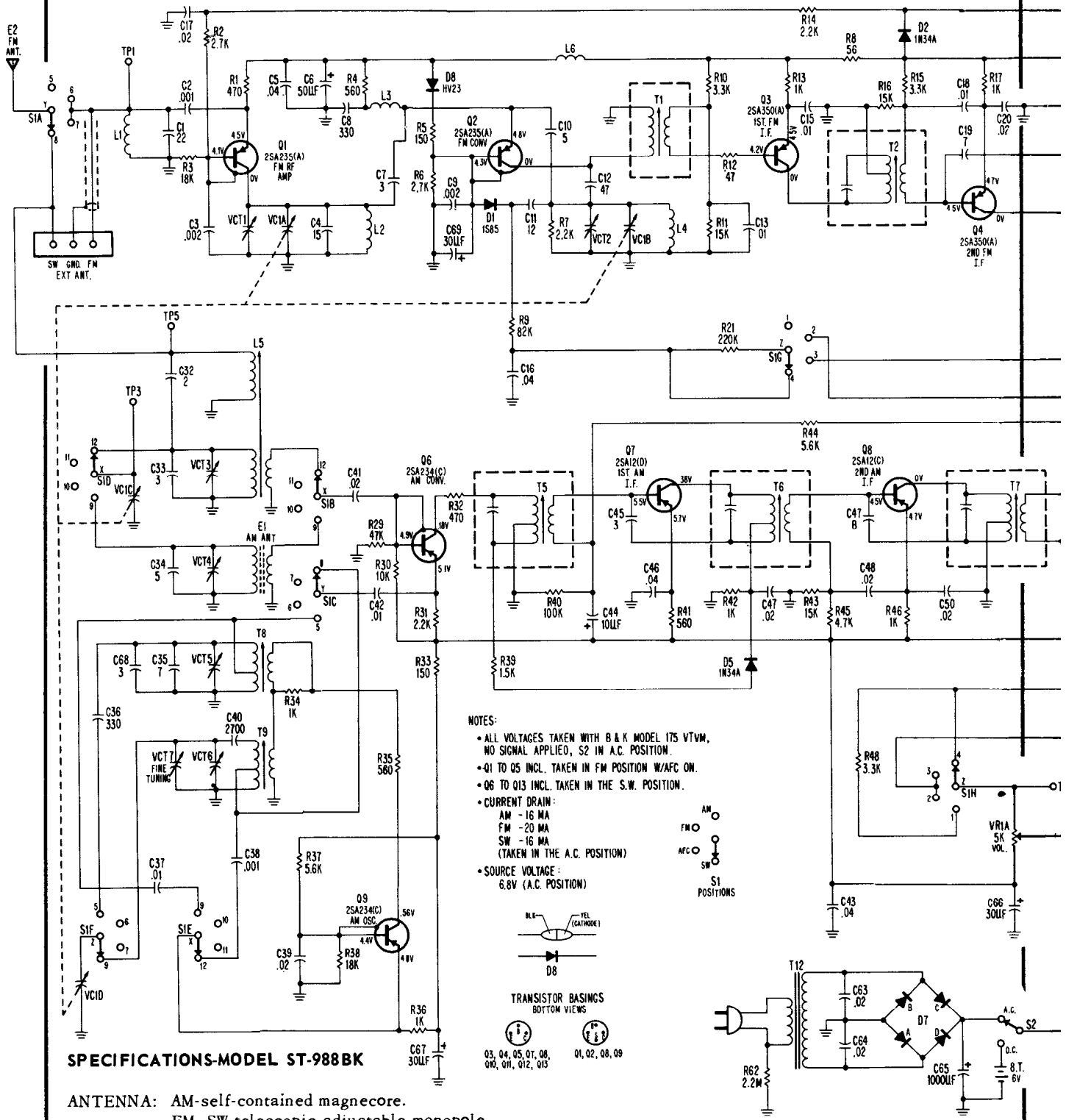
INTERMEDIATE FREQUENCY: FM, 10.7MHz
SW, 460KHz
AM, 460KHz



Bottom View Component–Model ST-986

PHILCO MODEL ST-988BK

(Continued on next page.)



SPECIFICATIONS-MODEL ST-988BK

ANTENNA: AM-self-contained magnecore.
FM, SW-telescopic adjustable monopole.
Terminal panel provided for FM and SW antennas.

CIRCUIT: 13 transistors, 8 diodes and 1 thermistor in a superheterodyne FM-AM-SW receiver.

FREQUENCY COVERAGE: FM-88MHz to 108MHz
AM-540KHz to 1620KHz
SW-6MHz to 18MHz

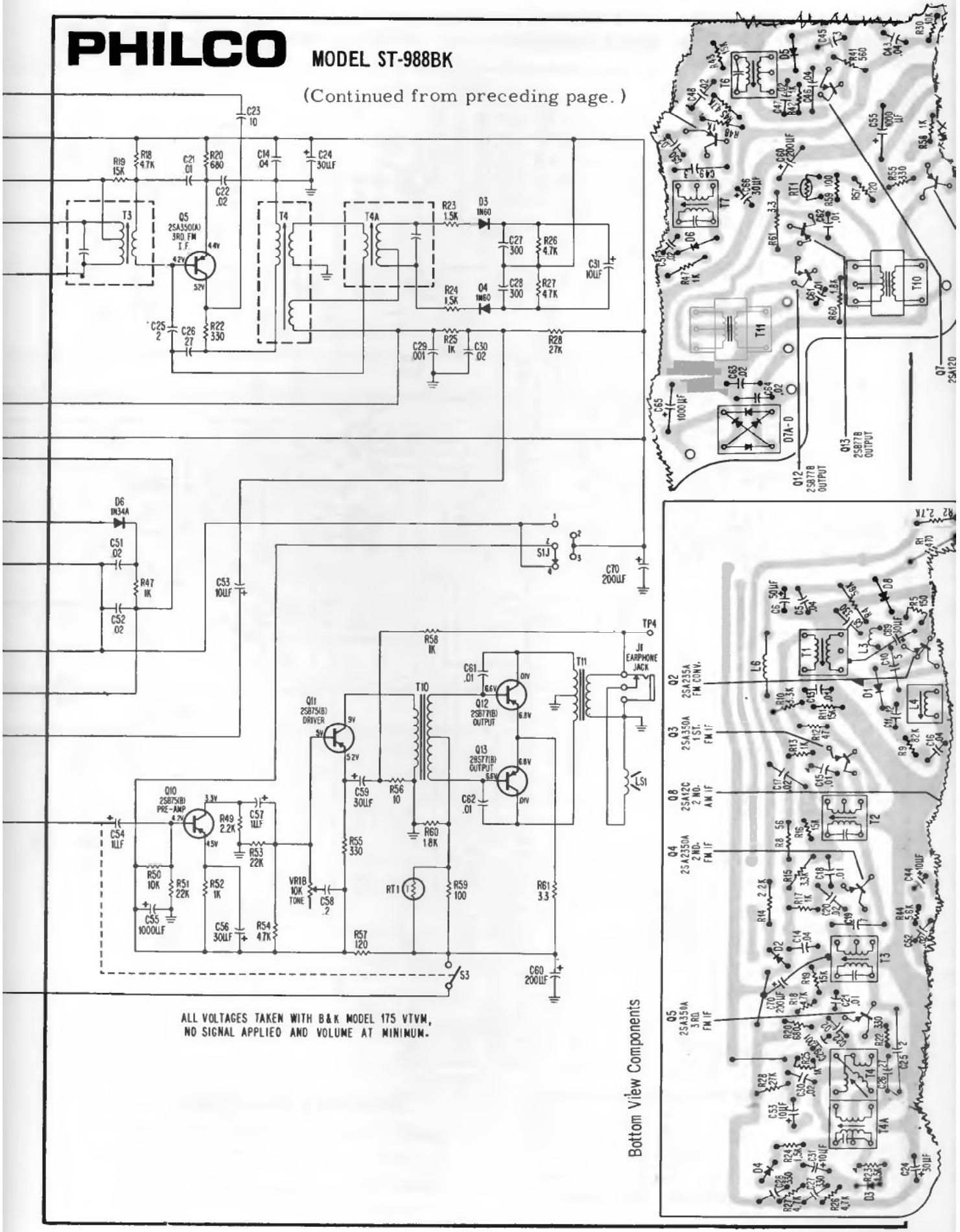
INTERMEDIATE FREQUENCY: AM-455KHz
FM-10.7MHz

POWER SUPPLY: 4 "C" cells in a 6 volt supply with a built-in A.C. power supply for optional A.C. operation.

SPEAKER: 4 inches, 8 ohms, jack provided for optional private listening unit (Philco Part No. 326-8007-1).

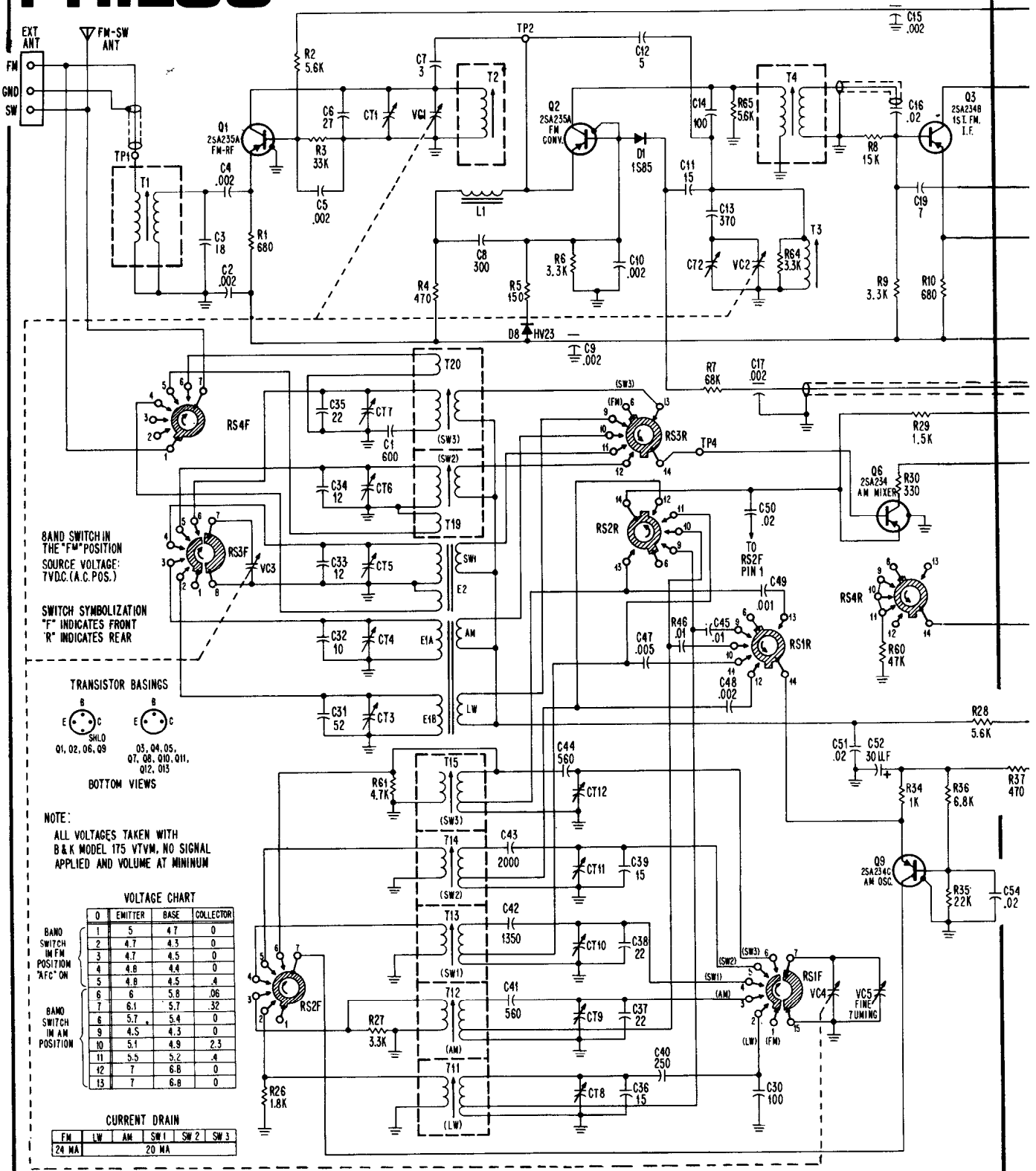
PHILCO MODEL ST-988BK

(Continued from preceding page.)



PHILCO MODEL ST989BK

(Continued on next two pages.)



0	EMITTER	BASE	COLLECTOR
1	5	4.7	0
2	4.7	4.3	0
3	4.7	4.5	0
4	4.8	4.4	0
5	4.8	4.5	.4
6	6	5.8	.06
7	6.1	5.7	.32
8	5.7	5.4	0
9	4.5	4.3	0
10	5.1	4.9	2.3
11	5.5	5.2	.4
12	7	6.8	0
13	7	6.8	0

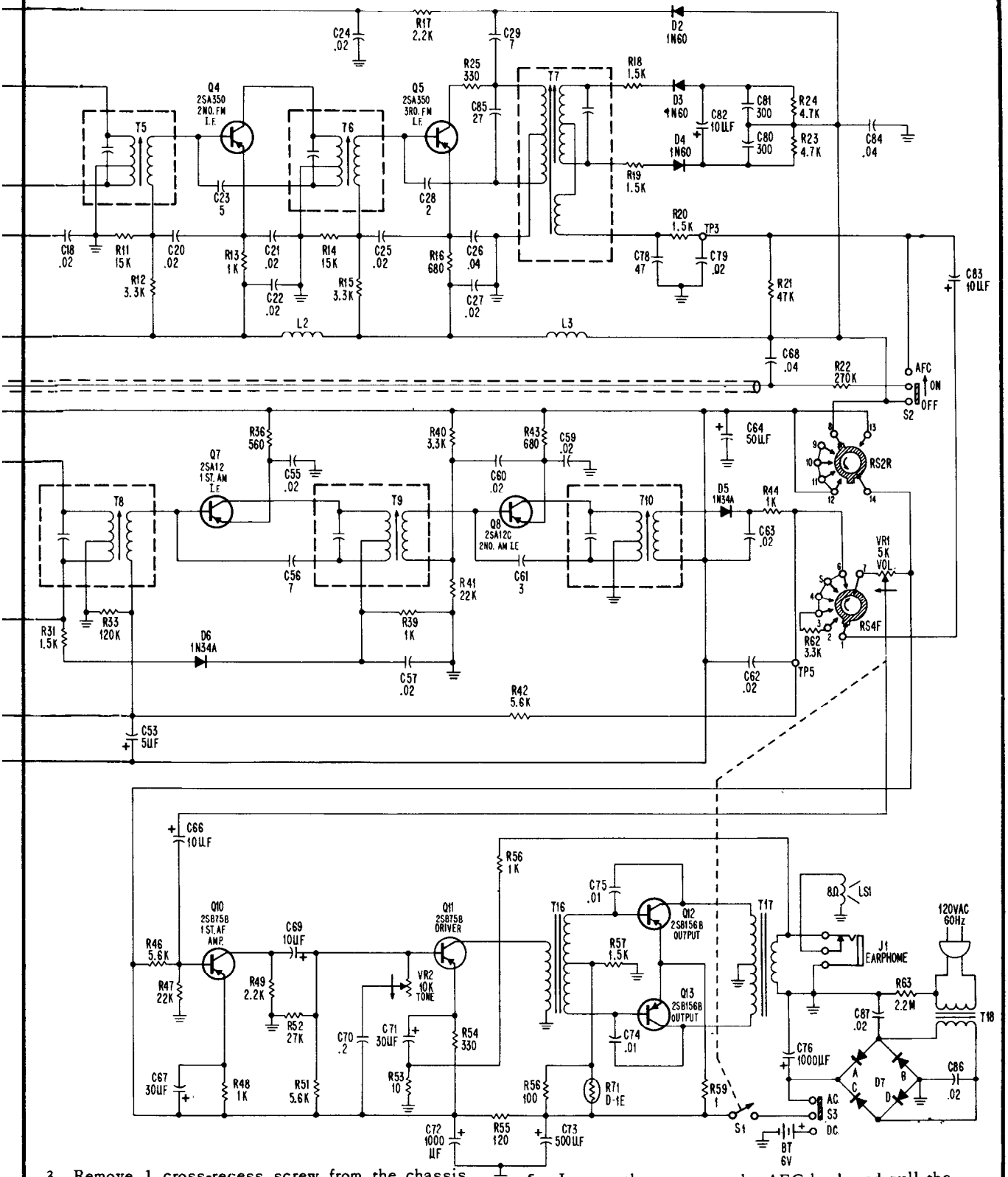
FREQUENCY COVERAGE: FM-88MHz to 108MHz
AM-540KHz to 1620KHz
LW-150KHz to 350KHz
SW1-1.5MHz to 4.5MHz
SW2-3MHz to 9MHz
SW3-9MHz to 22MHz

INTERMEDIATE FREQUENCY: AM - 455KHz
FM - 10.7MHz

DISASSEMBLY INSTRUCTIONS

1. Remove 2 cross-recess screws from the rear of the cabinet and unsnap the battery compartment lid.
2. Carefully pull the line cord box out of the unit. Also remove the battery case.

 Continued on next page and from preceding page



3. Remove 1 cross-recess screw from the chassis next to the power transformer and 1 cross-recess screw from the front of the tuner mounting bracket.
4. Remove 3 nuts, 2 on the left hand side of the chassis and 1 between the rotary switch bracket and the P.W. Panel.
5. Loosen the screw on the AFC knob and pull the knob off.
6. Remove J1 and S3 from the jack panel on the right-hand side. Do not remove the panel itself.
7. Lift the chassis on the right side slightly and pull to the right to clear the rotary switch shaft from the side of cabinet. Lift the chassis straight up to clear cabinet.

(Continued from preceding two pages.)

Bottom View Components–SW Ant. Panel

PHILCO

MODEL ST989BK

Bottom View Components–FM Tuner

Bottom View Components–IF & Audio Panel

ANTENNA: AM-LW-SW1, self contained magnecore
SW2, SW3, FM, telescopic adjustable monopole
Terminal panel provided for external FM and SW antennas

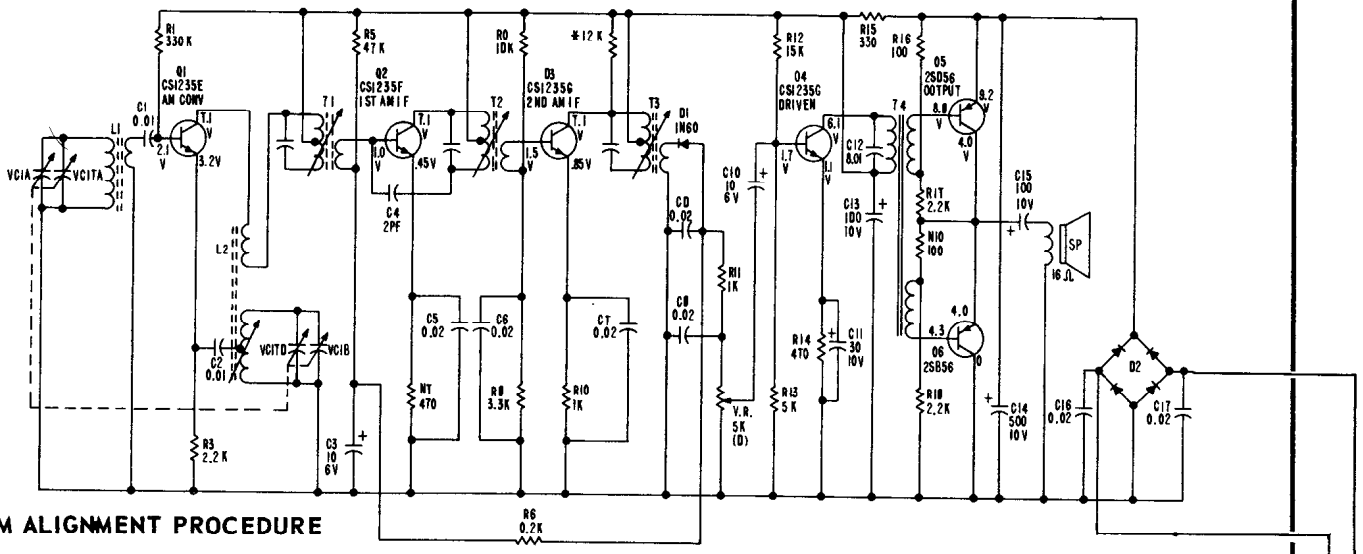
FREQUENCY COVERAGE: FM-88MHz to 108MHz
AM-540KHz to 1620KHz
LW-150KHz to 350KHz
SW1-1.5MHz to 4.5MHz
SW2-3MHz to 9MHz
SW3-9MHz to 22MHz

INTERMEDIATE FREQUENCY: AM - 455KHz
FM - 10.7MHz

PHILCO

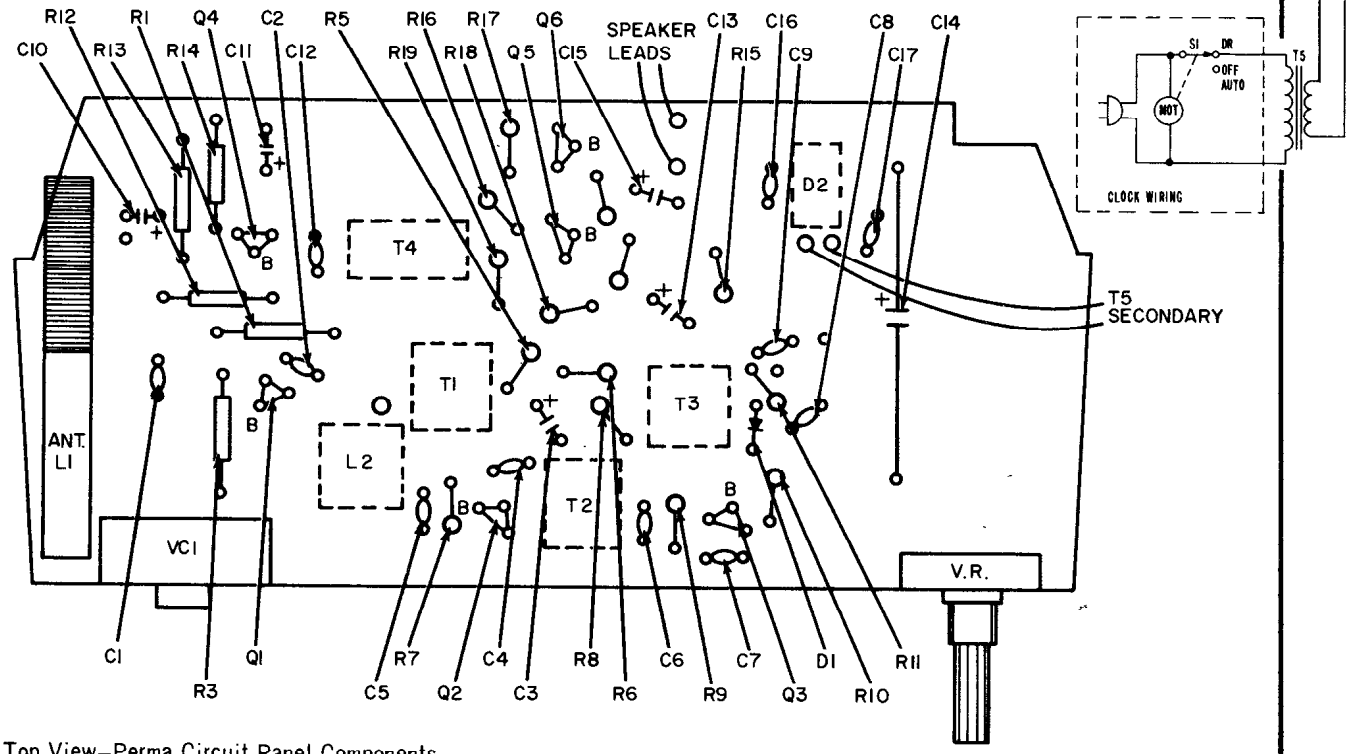
TABLE/CLOCK AM RADIO
MODEL S-790BR

NOTES:
1. ALL VOLTAGES MEASURED WITH 8+K MODEL 175 VTVM, VOLUME AT MINIMUM AND NO SIGNAL APPLIED.
2. CURRENT DRAIN 8.5 MA.
3. D+ 8.2 VDC
* USED AS REQUIRED



AM ALIGNMENT PROCEDURE

SIGNAL GENERATOR			RADIO		
STEP	CONNECTION TO RADIO	DIAL SETTING	DIAL SETTING	SPECIAL INSTRUCTIONS	ADJUST
1	USE RADIATING LOOP (SEE NOTE BELOW)	455KHz	GANG FULLY OPEN	ADJUST FOR MAX. OUTPUT IN ORDER GIVEN.	T1 1ST IF T2 2ND IF T3 3RD IF
2	SAME AS STEP 1	1620KHz	GANG OPEN	ADJUST FOR MAX. OUTPUT.	VC1TB OSC. TRIMMER
3	SAME AS STEP 1	1400KHz	1400KHz	ADJUST FOR MAX. OUTPUT.	VC1TA ANT. TRIMMER
4	SAME AS STEP 1	580KHz	580KHz	ADJUST FOR MAX. OUTPUT. ROCK GANG WHILE MAKING ADJUSTMENT	L2 OSC. COIL

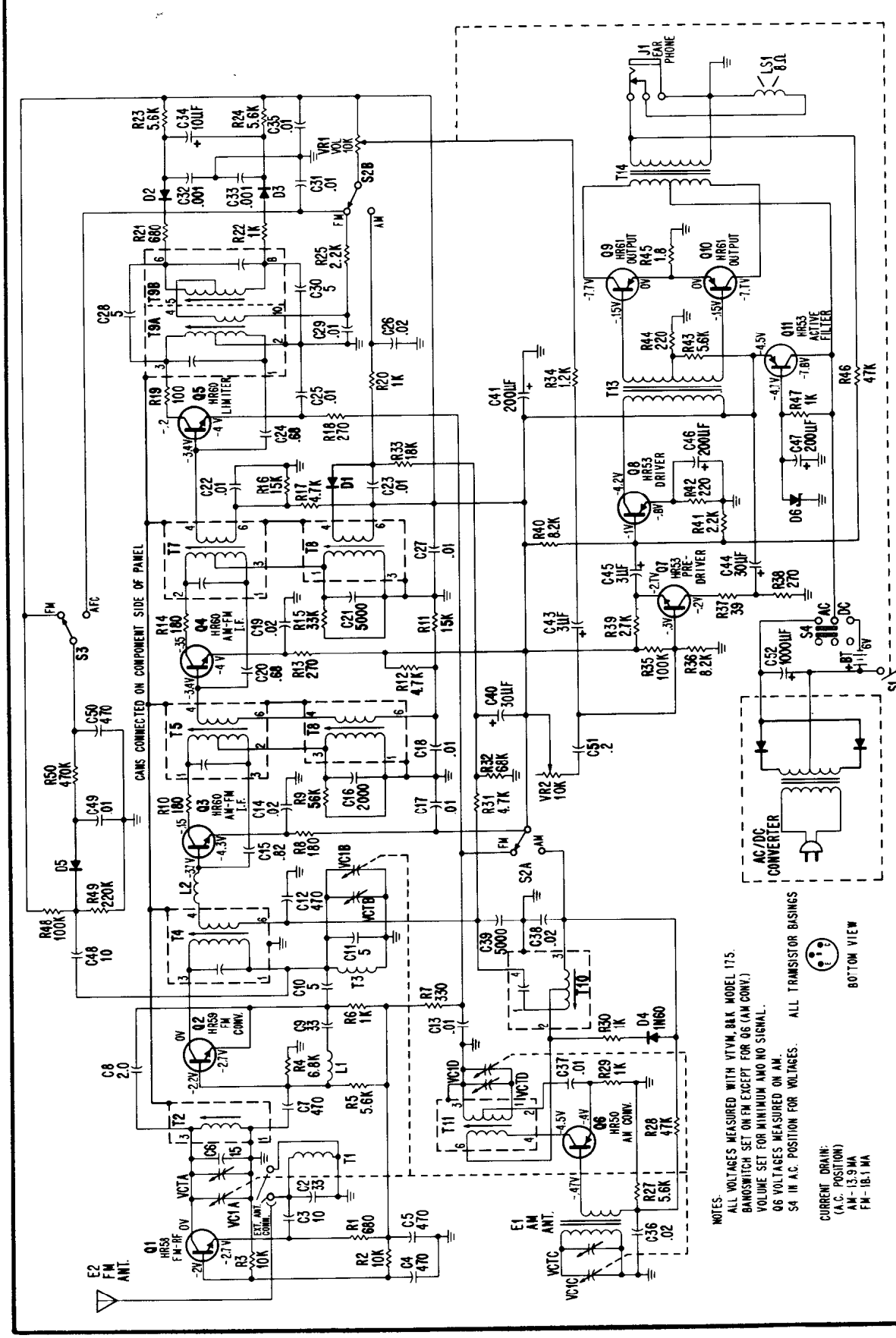


Top View–Perma Circuit Panel Components

PHILCO

AM/FM RADIO
MODELS ST997 AND ST998

(Continued on next page.)



CIRCUIT: 11 transistors, 6 diodes in an AM-FM superheterodyne circuit.

FREQUENCY COVERAGE: AM, 520 KHz to 1620 KHz
FM, 88 MHz to 108 MHz

INTERMEDIATE FREQUENCY: AM, 455 KHz
FM, 10.7 MHz

POWER: AC, 117 volts, 60Hz through AC/DC converter, part no. 76-14128-1.

DC, ST998–4 type "D" cells (Eveready types 920 or 1050) in a 6-volt supply.

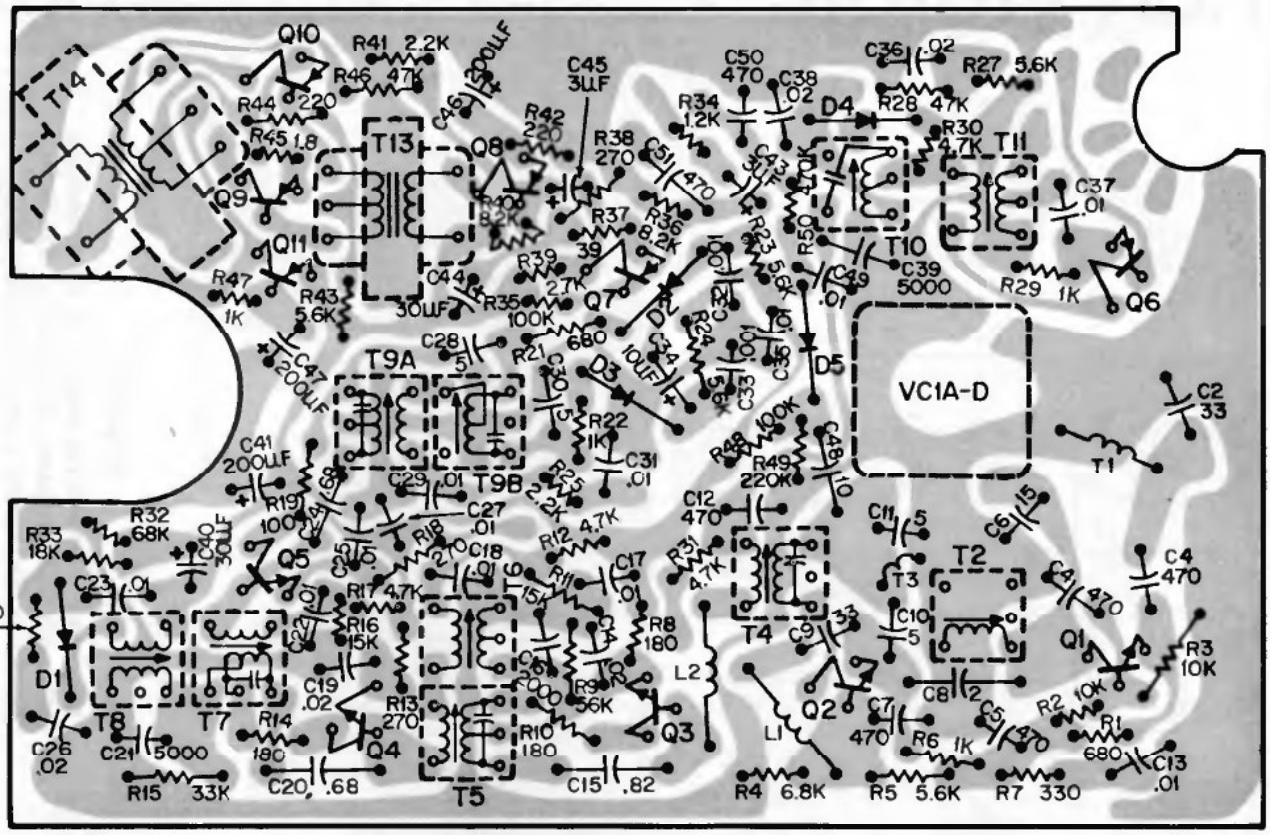
ST997–4 type "C" cells (Eveready type 1035) in a 6-volt supply

PHILCO

AM/FM RADIO
MODELS ST997 AND ST998

(Continued from preceding page.)

Bottom View–Perma-Circuit Panel–Models ST997 and ST998



AM ALIGNMENT

SIGNAL GENERATOR			RADIO		
STEP	CONNECTION TO RADIO	DIAL SETTING	DIAL SETTING	SPECIAL INSTRUCTIONS	ADJUST
1	RADIATING LOOP (SEE NOTE 1)	455 KHZ	TUNING GANG FULLY OPEN	ADJUST FOR MAX. OUTPUT IN ORDER GIVEN.	T8, T6 & T10
2	SAME AS STEP 1	1650 KHZ	TUNING GANG FULLY OPEN	ADJUST FOR MAX. OUTPUT.	VCTD AM OSC.
3	SAME AS STEP 1	1400 KHZ	1400 KHZ	ADJUST FOR MAX. OUTPUT.	VCTC ANT. TRIM.
4	SAME AS STEP 1	600 KHZ	600 KHZ	ADJUST FOR MAX. OUTPUT. ROCK TUNING GANG DURING ADJUSTMENT.	T11 AM OSC.

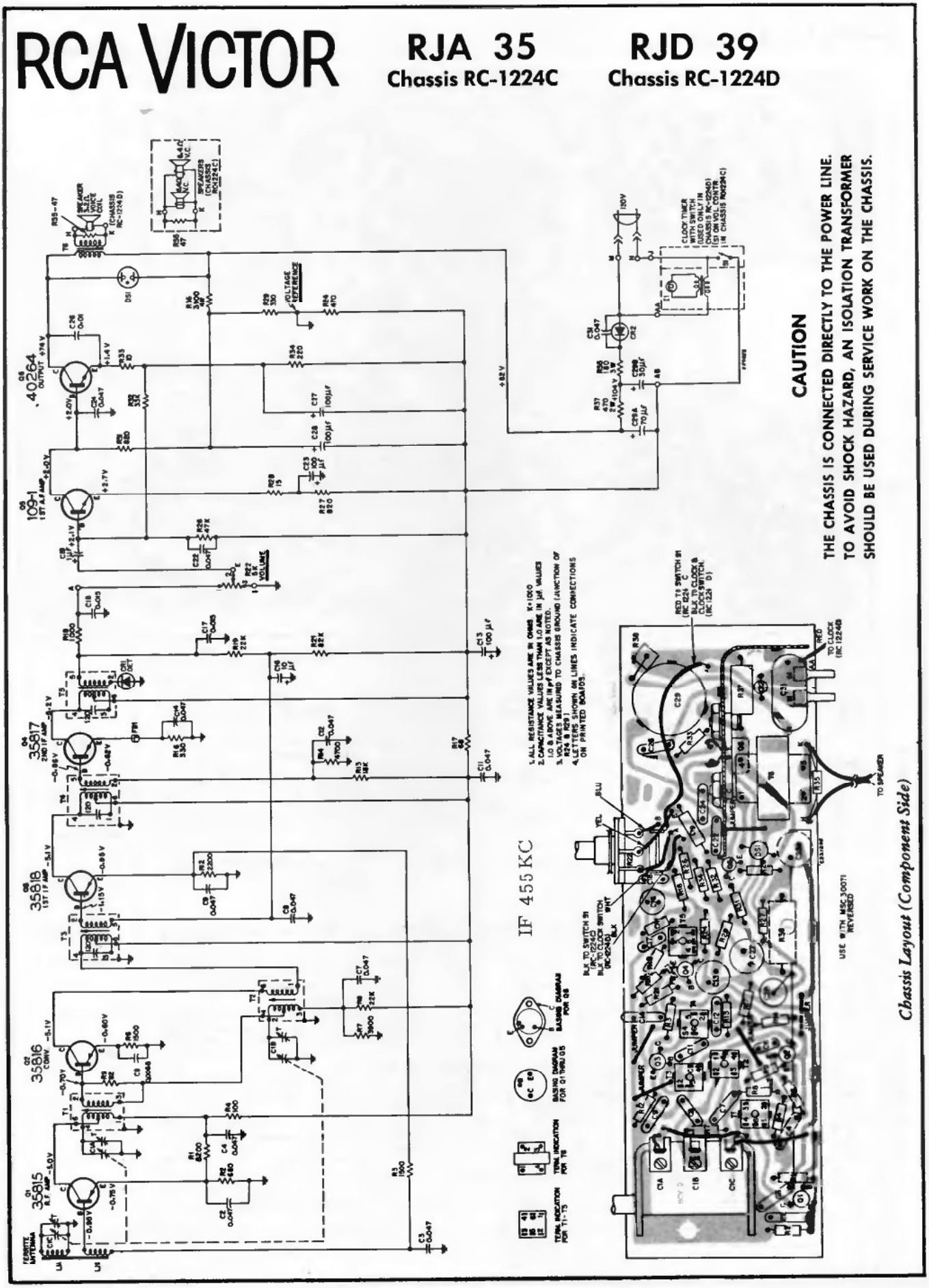
FM ALIGNMENT

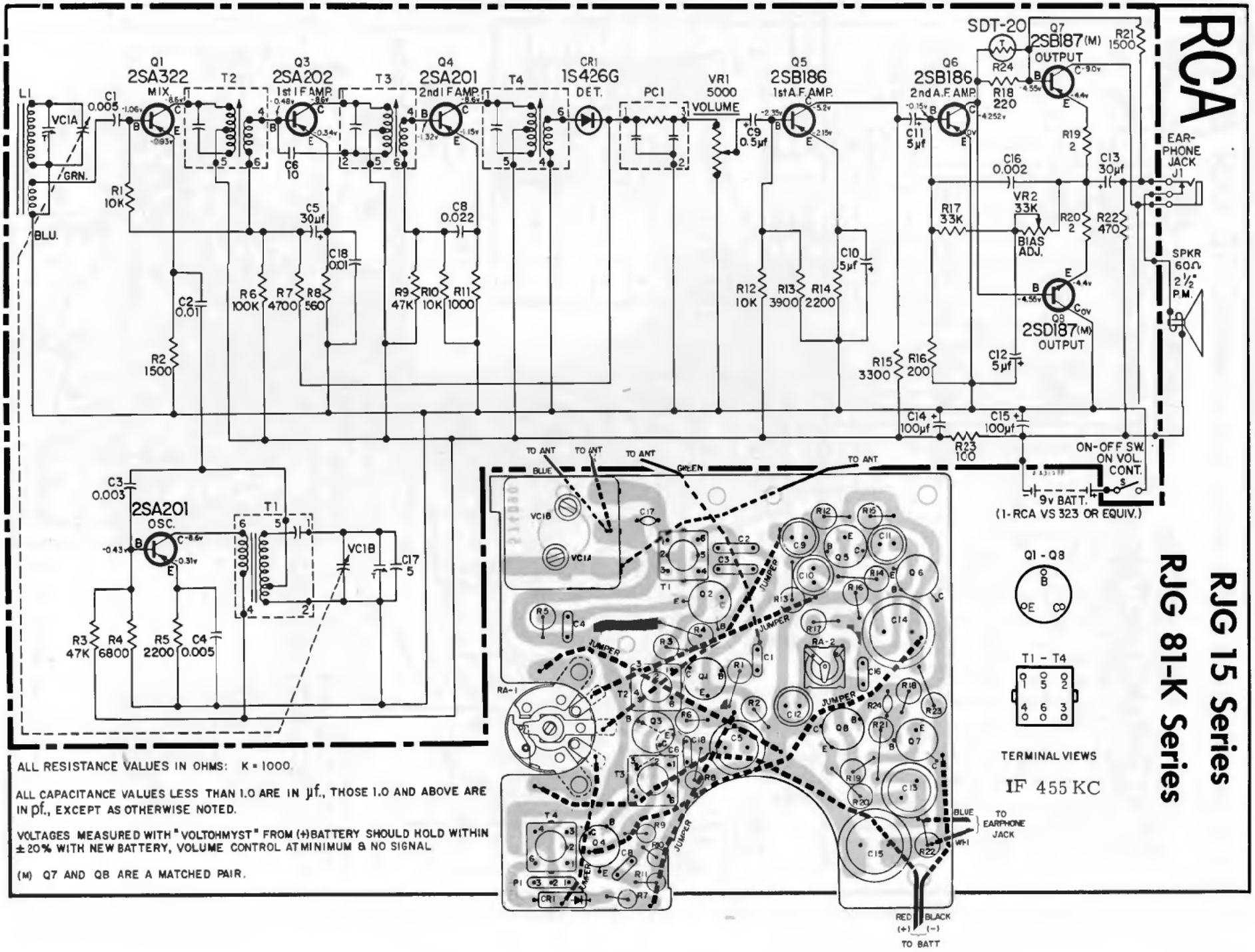
STEP	CONNECTION TO RADIO	DIAL SETTING	DIAL SETTING	SPECIAL INSTRUCTIONS	ADJUST
1	COLLECTOR OF Q1 THRU .01 MF CAPACITOR	10.7 MHZ ±75 KHZ SWEEP	TUNING GANG FULLY OPEN	ADJUST FOR MAXIMUM OUTPUT IN ORDER GIVEN. REDUCE GENERATOR OUTPUT AS NECESS.	T9A, T7, T5 & T4
2	SAME AS STEP 1	10.7 MHZ 30% AM	TUNING GANG FULLY OPEN	ADJUST FOR MINIMUM OUTPUT (A NULL BETWEEN TWO PEAKS)	T9B
3	REPEAT STEPS 1 AND 2 UNTIL NO FURTHER IMPROVEMENT IS OBTAINED.				
4	CONNECT TO ANTENNA TERMINAL THRU 47 OHM RESISTOR	87.5 MHZ ±75 KHZ	TUNING GANG FULLY CLOSED	ADJUST FOR MAX. OUTPUT.	T3 (SEE NOTE "A") FM OSC.
5	SAME AS STEP 4	108 5 MHZ ±75 KHZ	TUNING GANG FULLY OPEN	ADJUST FOR MAX. OUTPUT.	VCTB FM OSC.
6	REPEAT STEPS 4 AND 5 UNTIL NO FURTHER IMPROVEMENT IS OBTAINED.				
7	SAME AS STEP 4	90 MHZ ±75 KHZ	90 MHZ	ADJUST FOR MAX. OUTPUT.	T2
8	SAME AS STEP 4	105 MHZ ±75 KHZ	105 MHZ	ADJUST FOR MAX. OUTPUT.	VCTA

RCA VICTOR

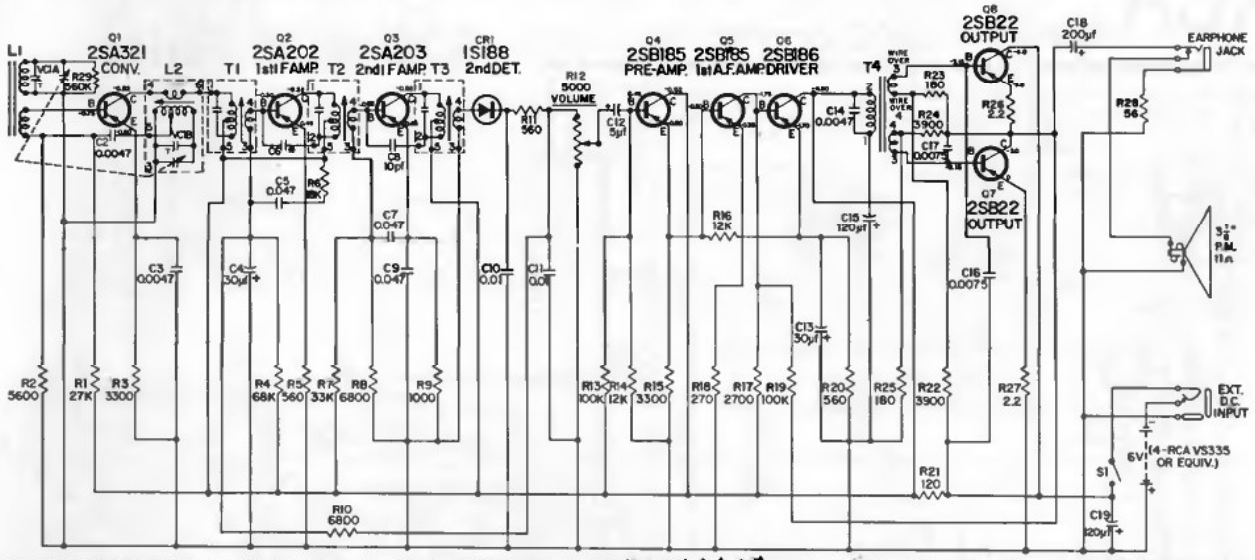
RJA 35
Chassis RC-1224C

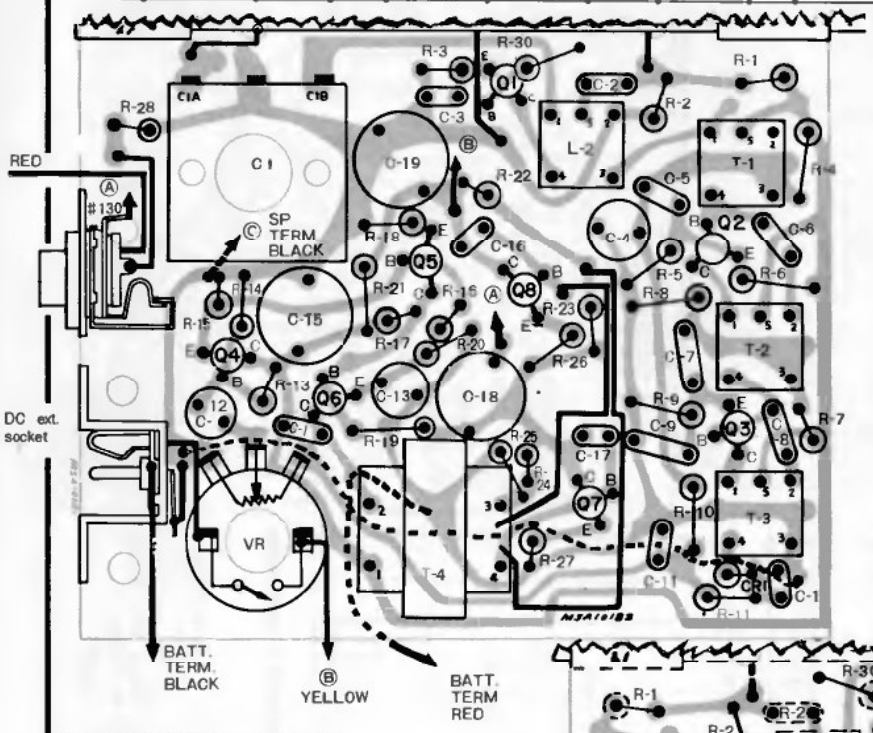
RJD 39
Chassis RC-1224D




RCA
RJG 15 Series
RJG 81-K Series
Q1
2SA322
MIX.
T2
Q3
2SA202
1st I.F AMP.
T3
Q4
2SA201
2nd I.F AMP.
T4
CR1
1S426G
DET.
PC1
VR1
5000
VOLUME
Q5
2SB186
1st A.F. AMP.
Q6
2SB186
2nd A.F. AMP.
SDT-20
Q7
2SB187(M)
OUTPUT
Q8
2SD187(M)
OUTPUT
L1
VC1A
GRN.
BLU.
C1
0.005
R1
10K
C2
0.01
R2
1500
C3
0.003
2SA201
OSC.
T1
VC1B
C17
5
R3
47K
R4
6800
R5
2200
C4
0.005
C5
30µf
C6
10
C8
0.022
C18
.001
R6
100K
R7
4700
R8
560
R9
47K
R10
10K
R11
1000
C9
0.5µf
C10
5µf
R12
10K
R13
3900
R14
2200
C11
5µf
R15
3300
R16
200
C12
5µf
R17
33K
R18
220
R19
2
R20
2
R21
1500
R22
470
R23
100
R24
C13
30µf
C14
100µf
C15
100µf
C16
0.002
VR2
33K
BIAS
ADJ.
EAR-
PHONE
JACK
J1
SPKR
60Ω
2½"
P.M.
ON-OFF SW.
ON VOL.
CONT.
S
9v BATT.
(1-RCA VS 323 OR EQUIV.)
TO ANT
BLUE
GREEN
JUMPER
RA-1
RA-2
Q1 - Q8
B
OE
CO
T1 - T4
TERMINAL VIEWS
IF 455 KC
TO
EARPHONE
JACK
RED
BLACK
(+)
(-)
TO BATT
ALL RESISTANCE VALUES IN OHMS: K = 1000.
ALL CAPACITANCE VALUES LESS THAN 1.0 ARE IN µf., THOSE 1.0 AND ABOVE ARE IN pf., EXCEPT AS OTHERWISE NOTED.
VOLTAGES MEASURED WITH "VOLTOHMYST" FROM (+)BATTERY SHOULD HOLD WITHIN ±20% WITH NEW BATTERY, VOLUME CONTROL AT MINIMUM & NO SIGNAL.
(M) Q7 AND Q8 ARE A MATCHED PAIR.

RCA VICTOR Models RJG 25 Series, RJG 86 Series





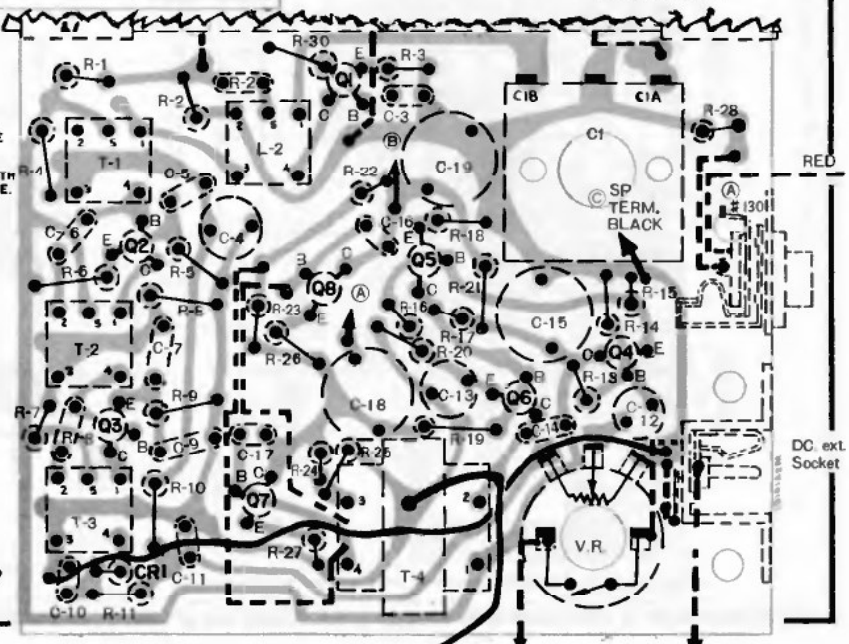
Step	Signal Gen. Output	Dial Pointer Setting	Adjust for Max. Output
1	455 kc	Gang open	T3 (3rd IF)
2			T2 (2nd IF)
3			T1 (1st IF)
4	Repeat Steps 1, 2, and 3		
5	520 kc	Gang closed	L2 (Osc. coil)
6	1650 kc	Gang open	CIB-T (Osc. trim.)
7	1400 kc	1400 kc (rock gang)	CIA-T (Ant. trim.)
8	Repeat Steps 5, 6, and 7		

Connect Signal Generator to—

Loop of wire placed near antenna for radiated signal

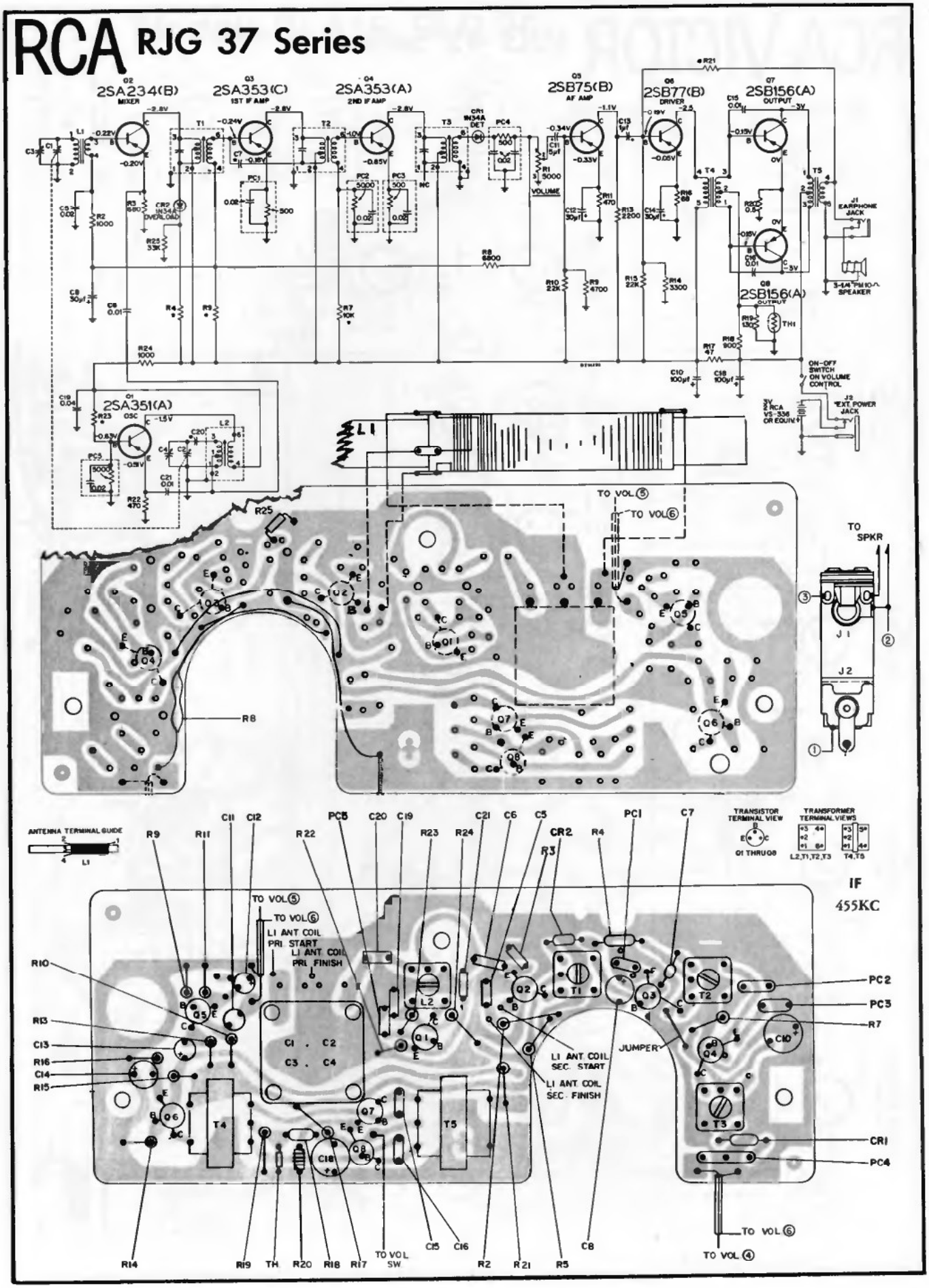
1. RESISTANCE VALUES ARE IN OHMS: K = 1000.
2. CAPACITANCE VALUES LESS THAN 1.0 ARE IN µf., VALUES 1.0 AND ABOVE ARE IN µf., EXCEPT AS OTHERWISE NOTED.
3. VOLTAGES ARE MEASURED WITH A "VOLTOHMYST" TO CHASSIS GROUND WITH NO SIGNAL AND SHOULD HOLD WITHIN ± 20% AT RATED SUPPLY VOLTAGE.

TERMINAL VIEWS

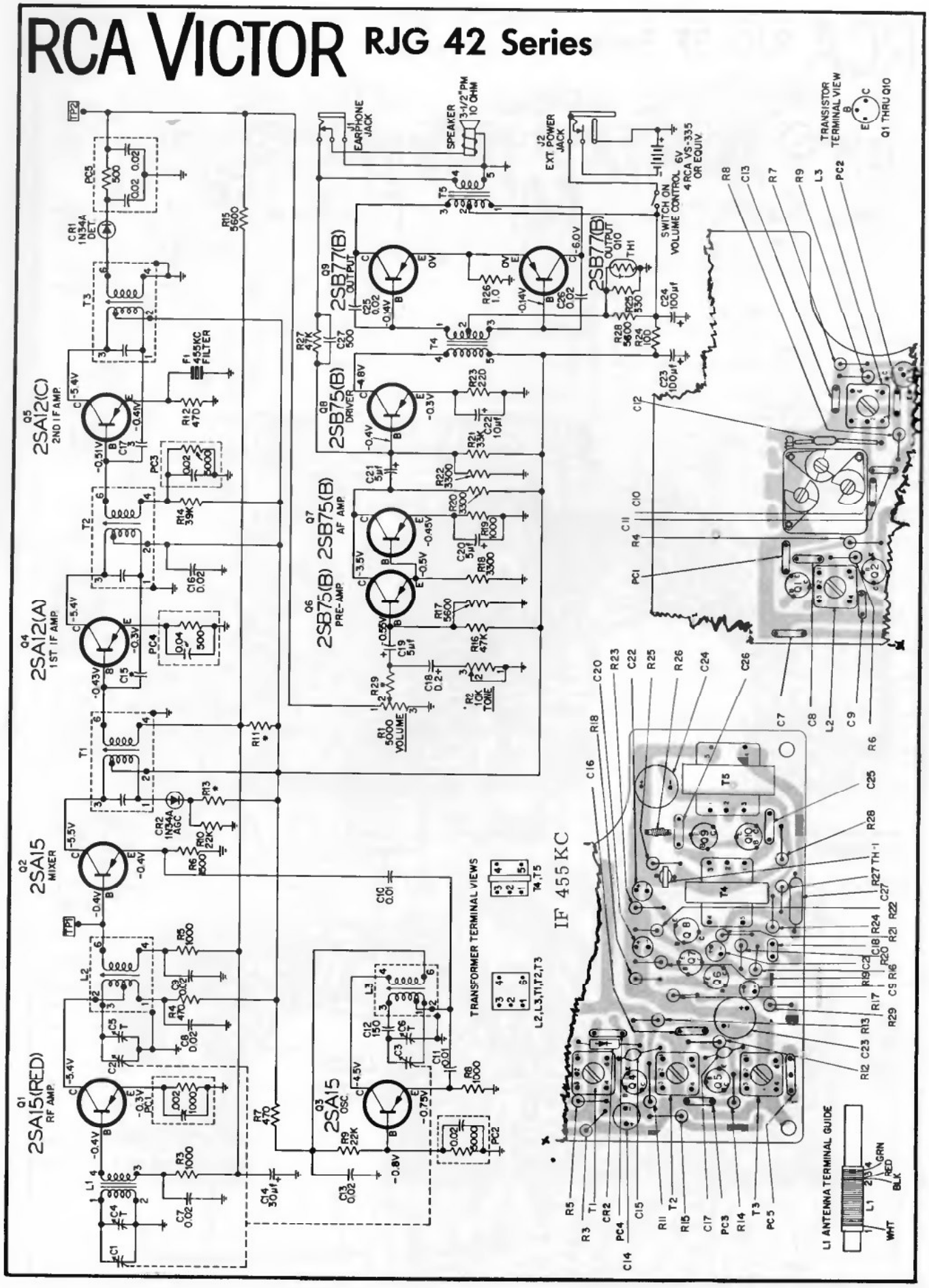


Chassis Layout—Wiring Side →

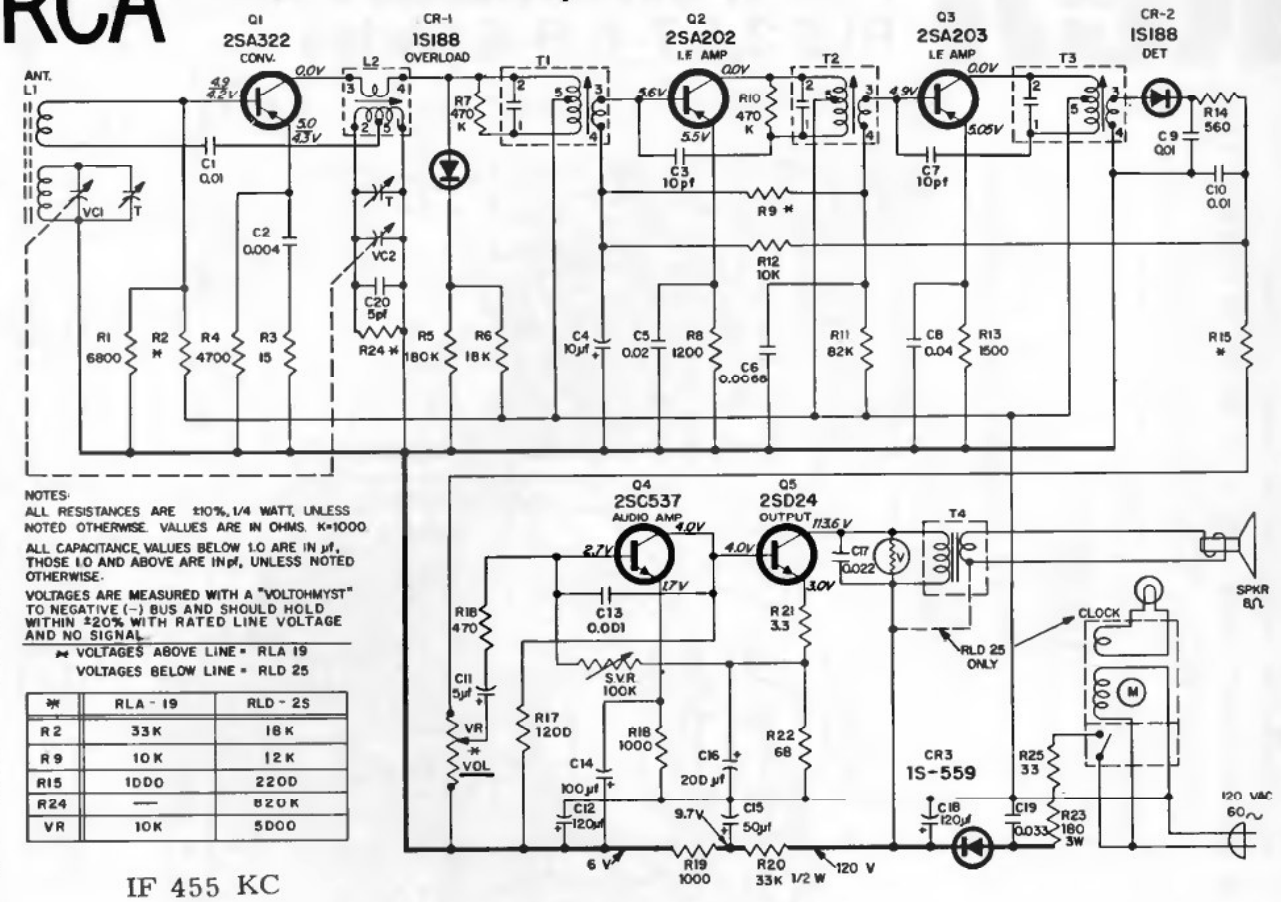
RCA RJG 37 Series



RCA VICTOR RJG 42 Series



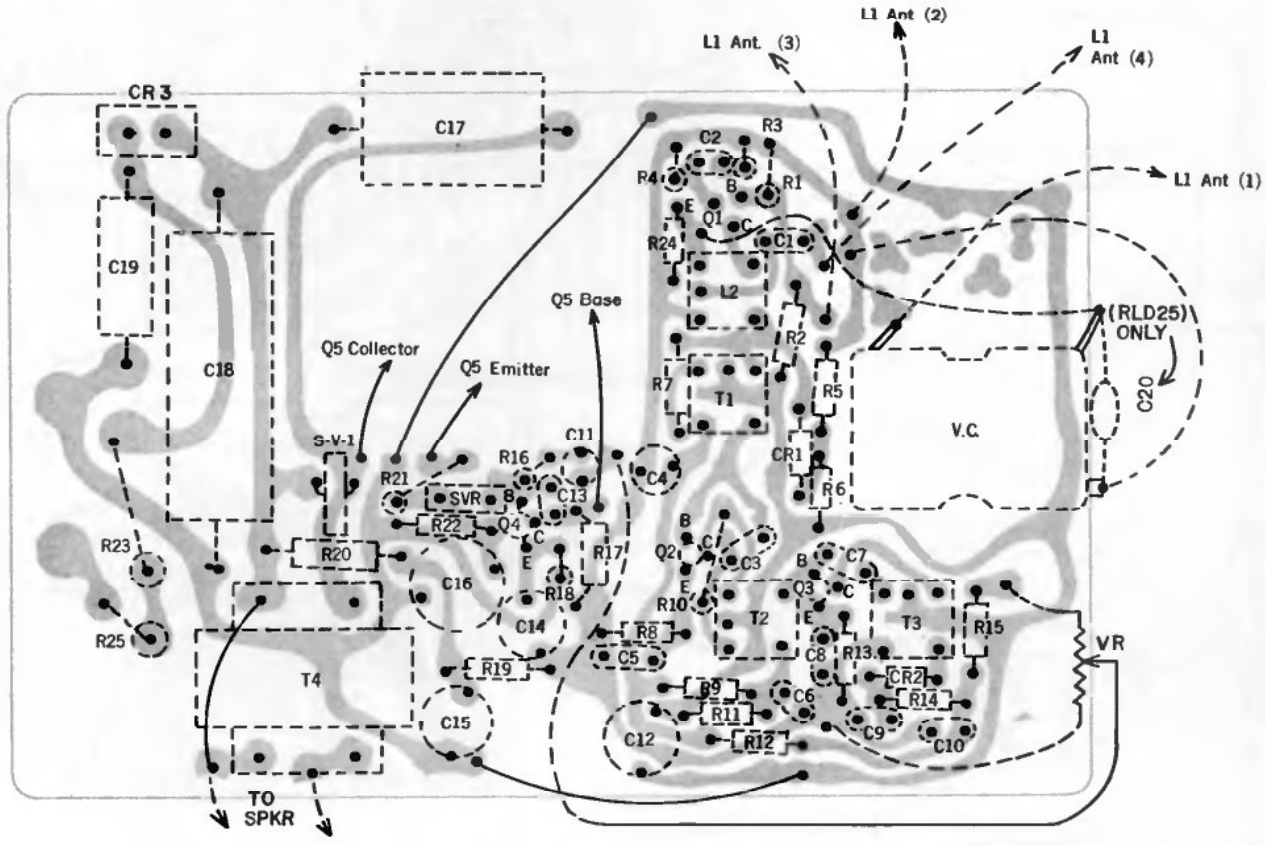
RCA Models RLA19, RLD 25



NOTES:
ALL RESISTANCES ARE ±10%, 1/4 WATT, UNLESS NOTED OTHERWISE. VALUES ARE IN OHMS. K=1000.
ALL CAPACITANCE VALUES BELOW 1.0 ARE IN µf, THOSE 1.0 AND ABOVE ARE IN pf, UNLESS NOTED OTHERWISE.
VOLTAGES ARE MEASURED WITH A "VOLTOHMYST" TO NEGATIVE (–) BUS AND SHOULD HOLD WITHIN ±20% WITH RATED LINE VOLTAGE AND NO SIGNAL.
* VOLTAGES ABOVE LINE = RLA 19
VOLTAGES BELOW LINE = RLD 25

*	RLA - 19	RLD - 25
R2	33K	18K
R9	10K	12K
R15	1000	2200
R24	—	820K
VR	10K	5000

IF 455 KC

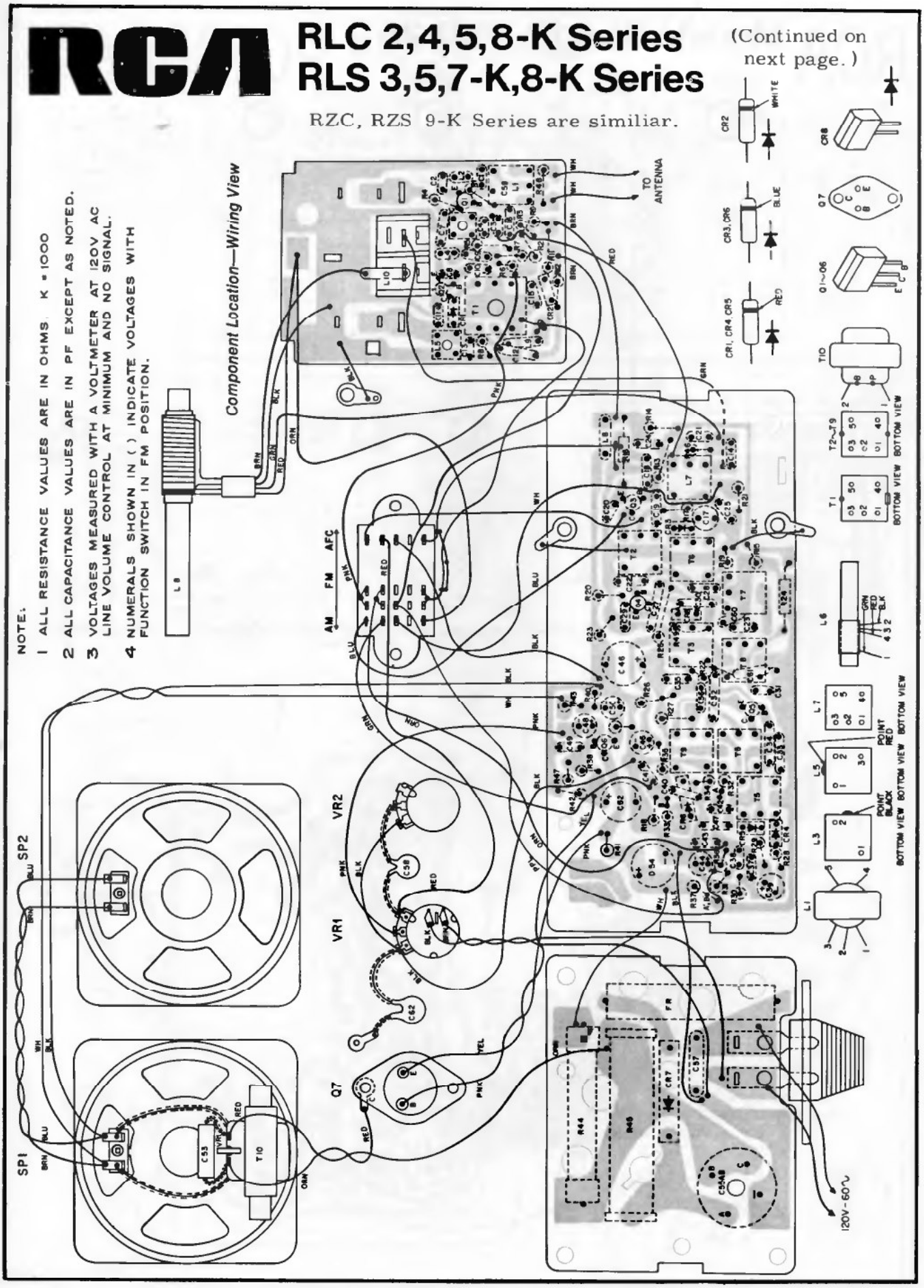


RCA

RLC 2,4,5,8-K Series
RLS 3,5,7-K,8-K Series

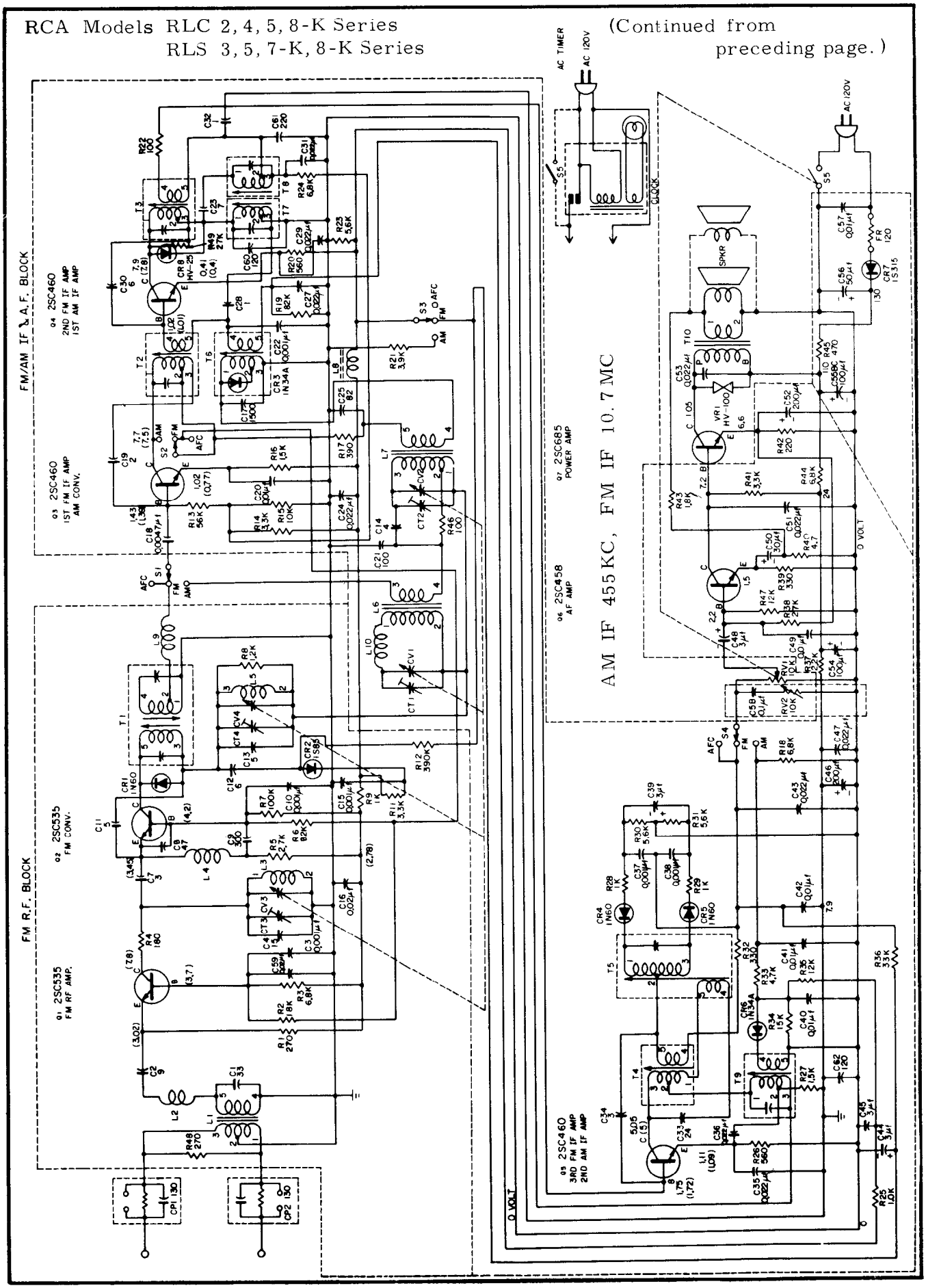
RZC, RZS 9-K Series are similiar.

(Continued on next page.)

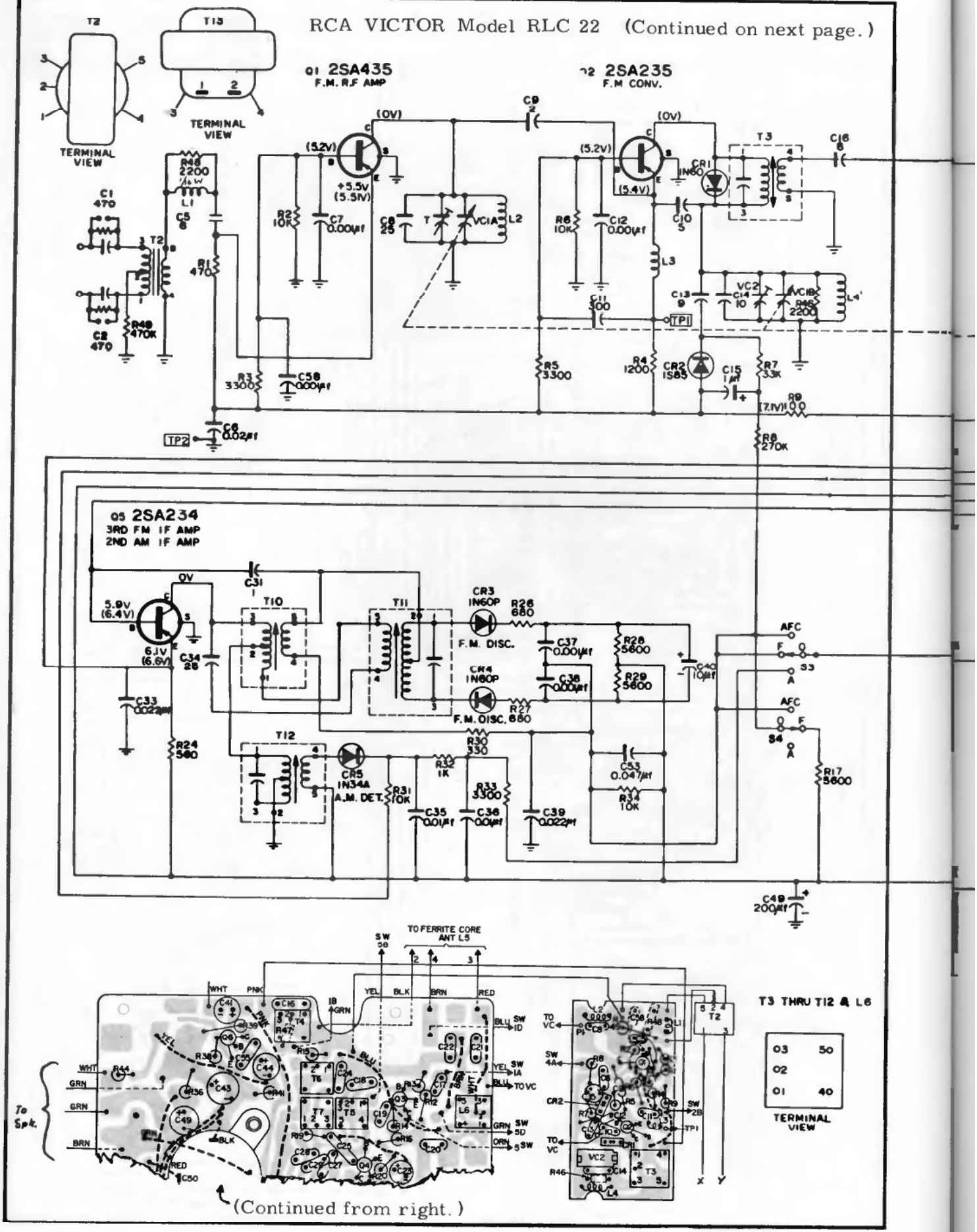


RCA Models RLC 2, 4, 5, 8-K Series
RLS 3, 5, 7-K, 8-K Series

(Continued from preceding page.)

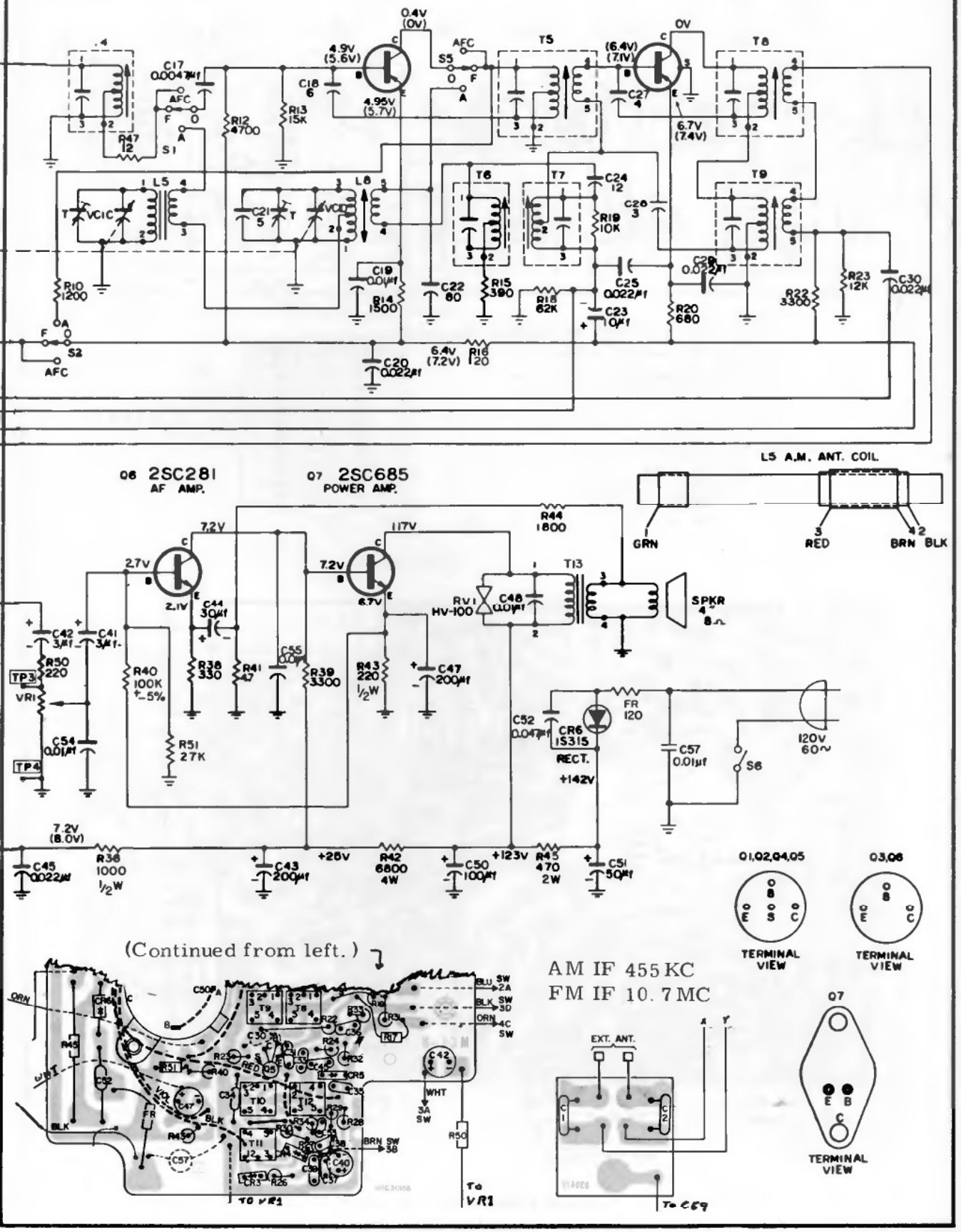


RCA VICTOR Model RLC 22 (Continued on next page.)

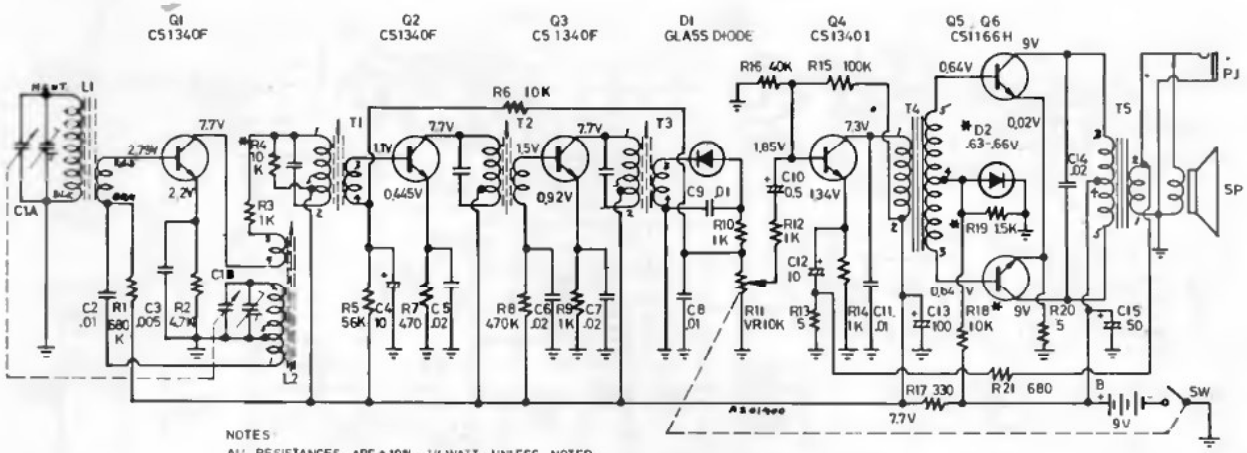


RCA Model RLC 22

(Continued from preceding page.)



RCA Model RLG 11



NOTES:

ALL RESISTANCES ARE ± 10%, 1/4 WATT, UNLESS NOTED OTHERWISE. VALUES ARE IN OHMS. K=1000

ALL CAPACITANCE VALUES ARE IN uf, UNLESS NOTED OTHERWISE

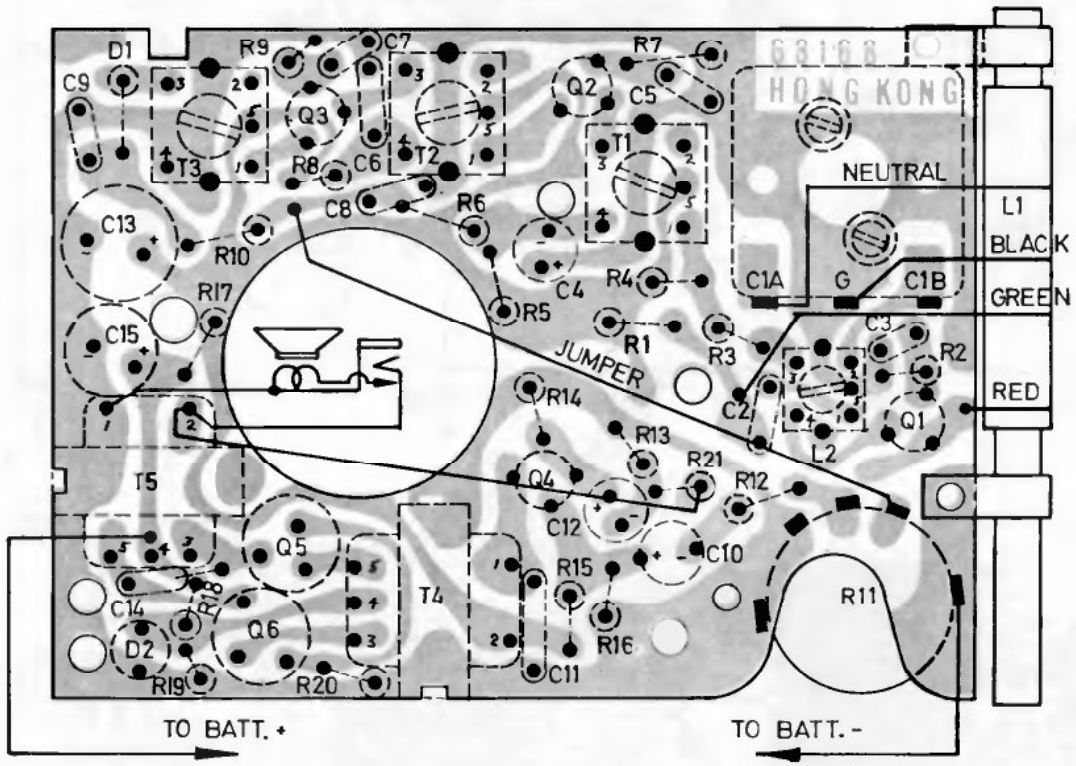
VOLTAGES ARE MEASURED WITH A "TRIPLETT" FROM (–) BATTERY AND SHOULD HOLD WITHIN ± 20% WITH A NEW BATTERY, VOLUME CONTROL AT MINIMUM AND NO SIGNAL.

*R4, R18, R19 AND D2 MAY CHANGE TO FOLLOWING VALUES ON SOME SETS

R4 10K, 6K, OR 4.7K
R18 10K OR 6K
R19 1.5K, 1K, OR NONE
D2 0.6–0.63 VOLTS, TYPE 6083, OR
0.63–0.66 VOLTS, TYPE 6366, OR
0.66–0.70 VOLTS, TYPE 6670.

POWER OUTPUT Vs CURRENT	
mW	mA
0	8
25	19
50	24.2
75	29
100	32.5
125	36
150	39
175	42
200	45
250	48.5
300	56

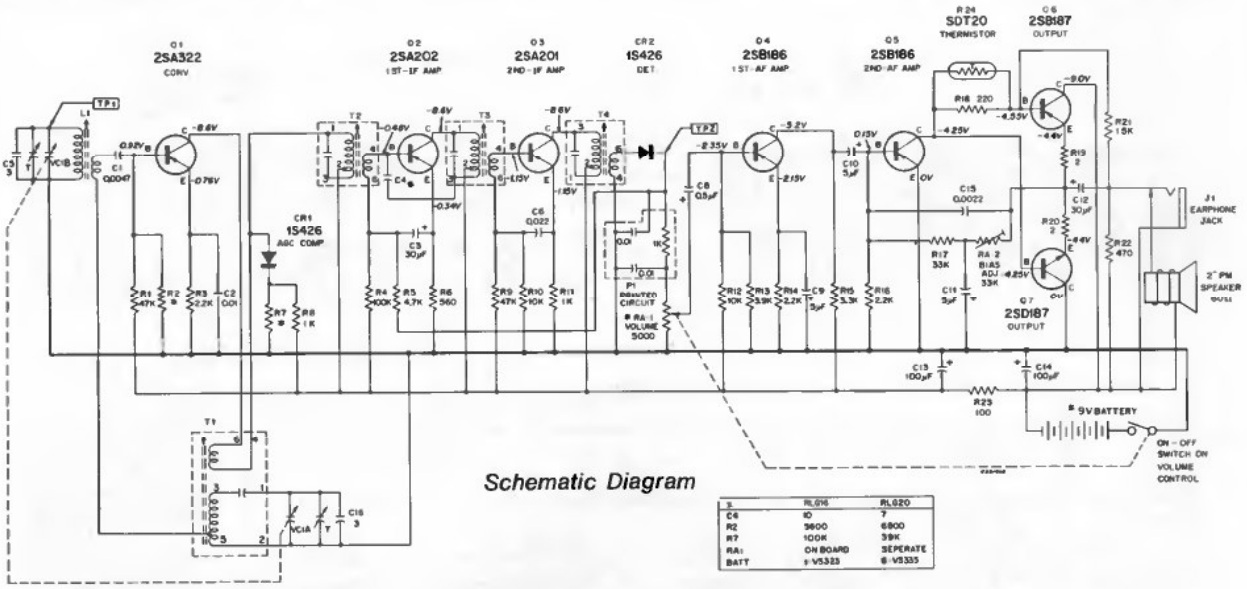
IF 455 KC



Chassis Layout

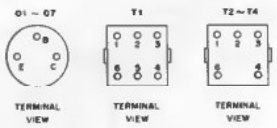
RCA

RLG 16 Series, RLG 20 Series



Schematic Diagram

	RLG16	RLG20
C6	10	7
R2	3600	6800
R7	100K	39K
RA1	ON BOARD	SEPERATE
BATT	9-V5323	6-V5335

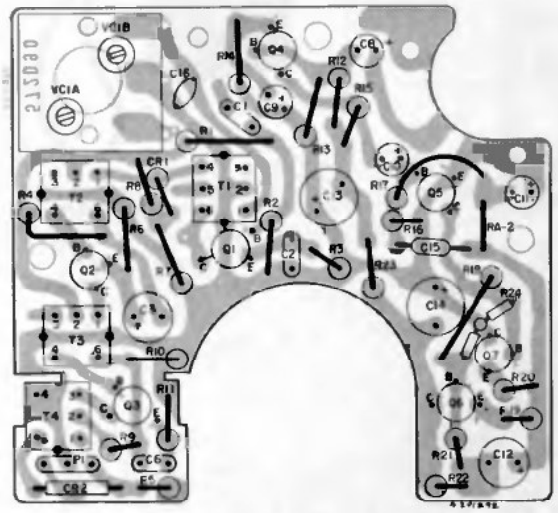


VOLTAGES MEASURED WITH "VOLTOHMYST" FROM (+) BATTERY. SHOULD HOLD WITHIN ± 20% WITH NEW BATTERY. VOLUME CONTROL AT MINIMUM AND NO SIGNAL.

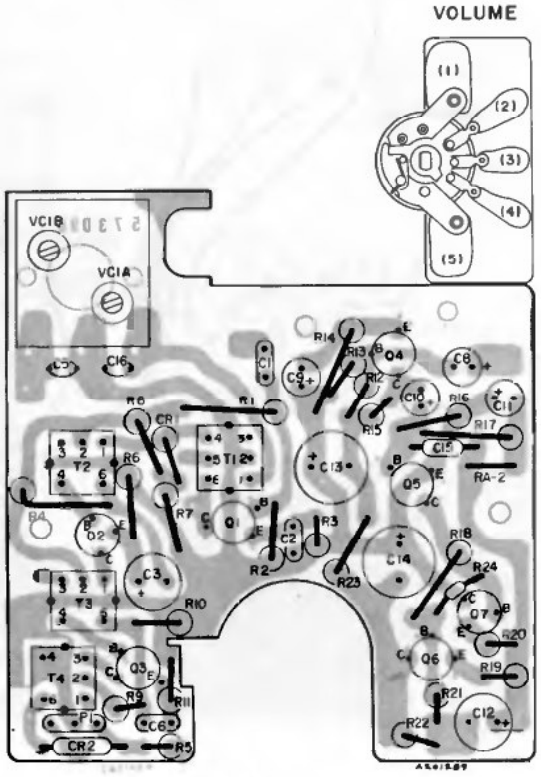
ALL RESISTANCE VALUES IN OHMS K = 1000
ALL CAPACITANCE VALUES LESS THAN 10 ARE IN μF, THOSE ABOVE 10 ARE IN pF EXCEPT AS NOTED

Q6 AND Q7 ARE A MATCHED PAIR

IF 455 KC



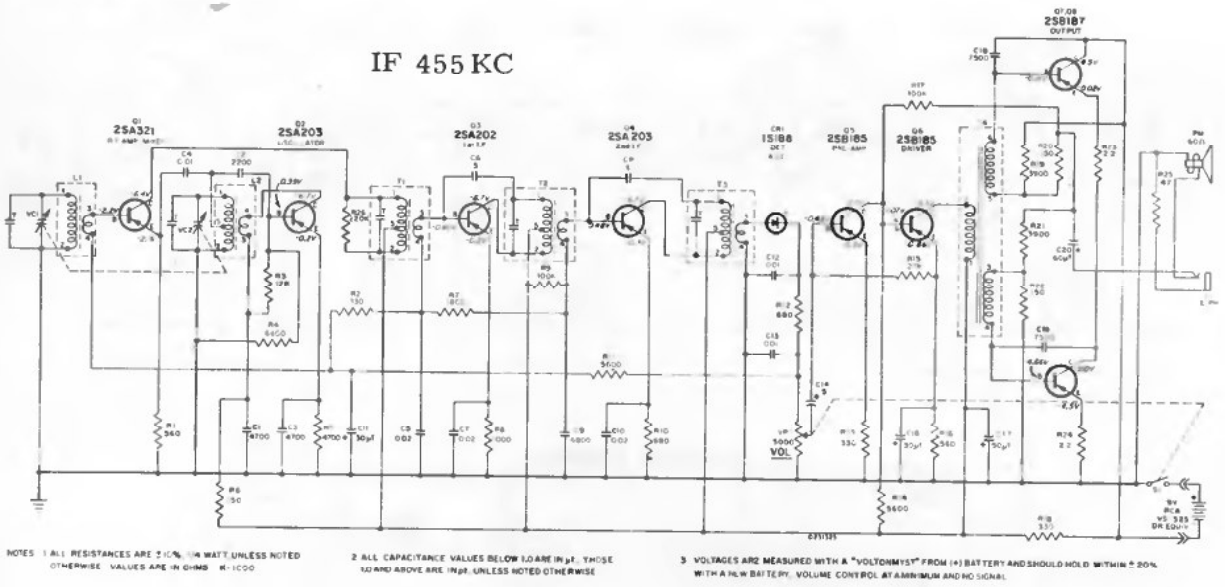
RLG 16



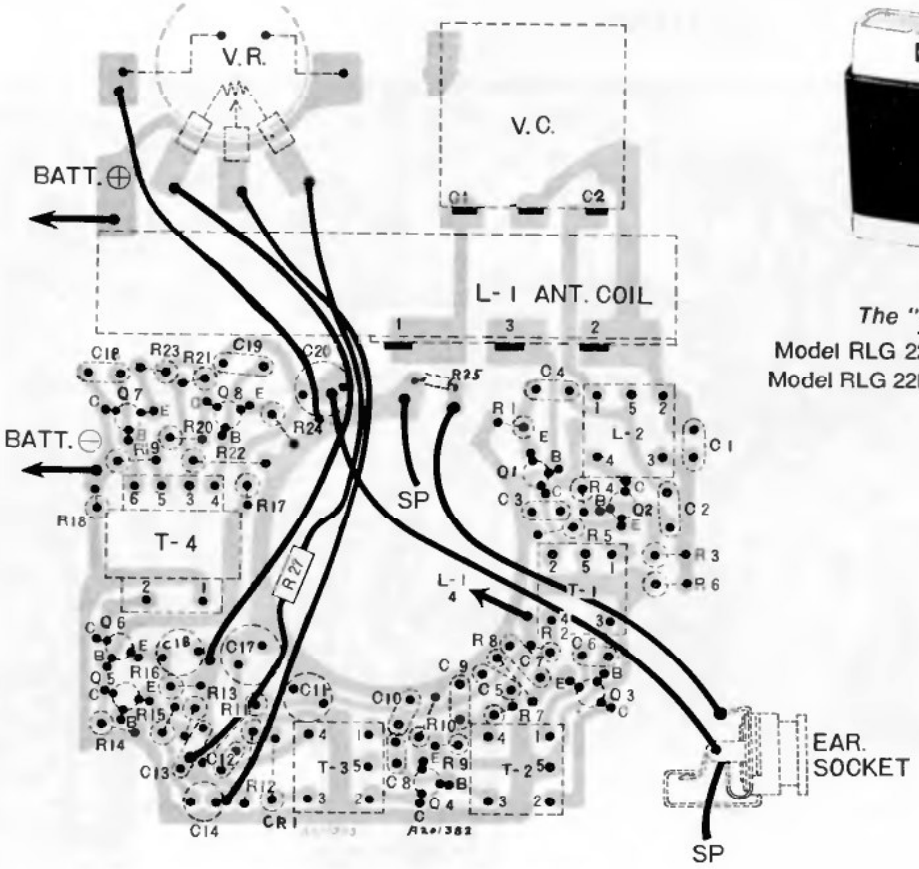
RLG 20

Component Location

RCA RLG 22 Series



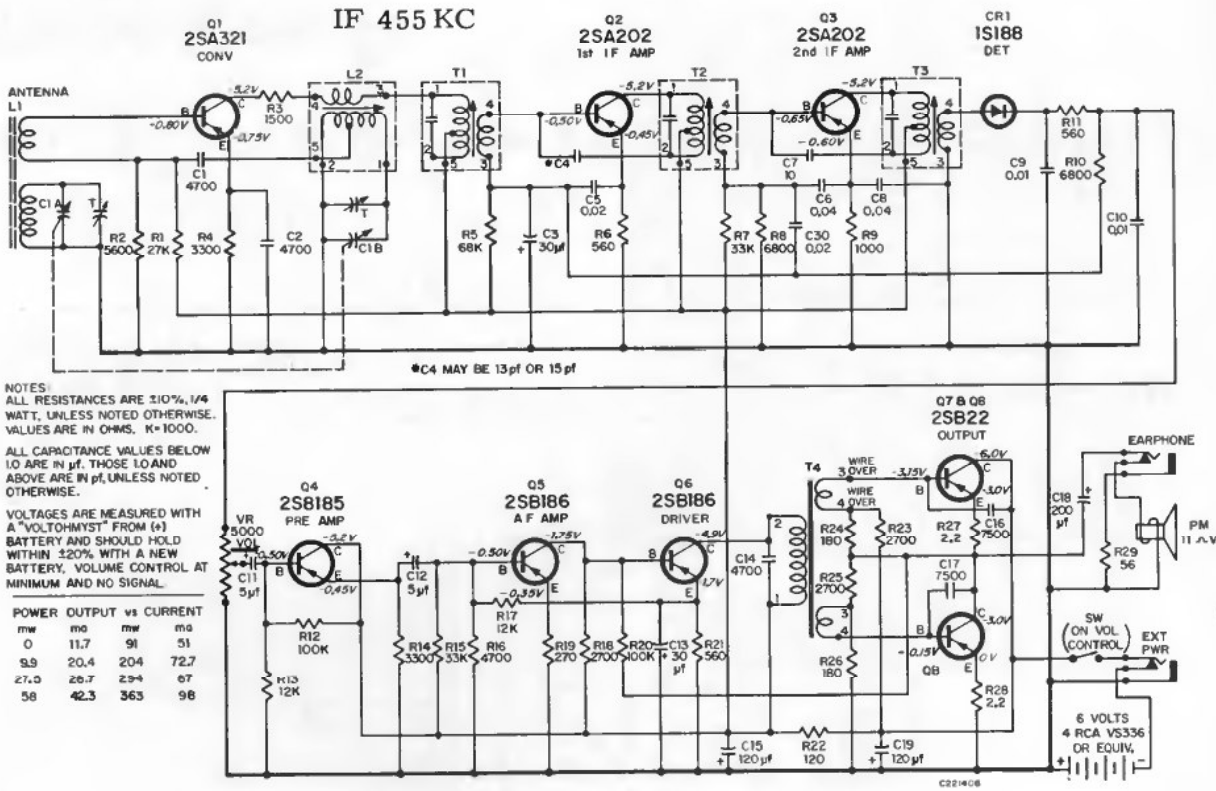
Schematic Diagram



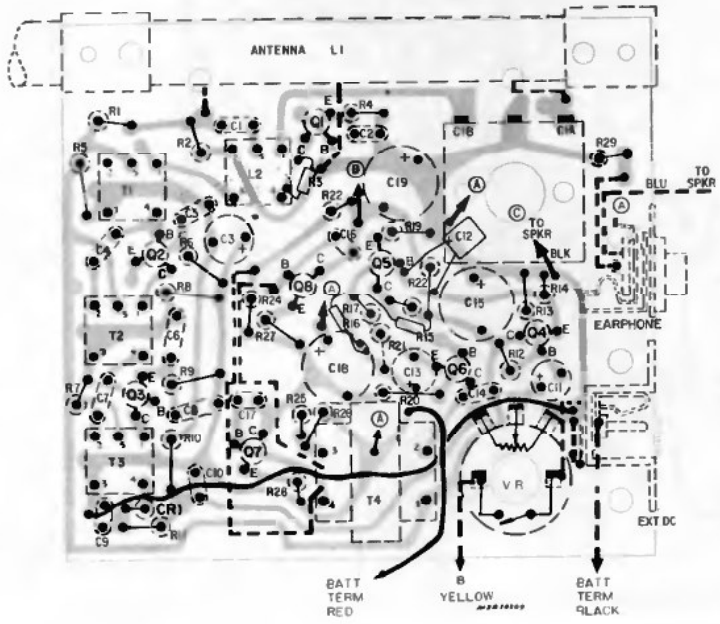
The "Rogue"
Model RLG 22A—Blue/White
Model RLG 22N—Maple/White

Component Location (Wiring View)

RCA RLG 23 Series



Schematic Diagram

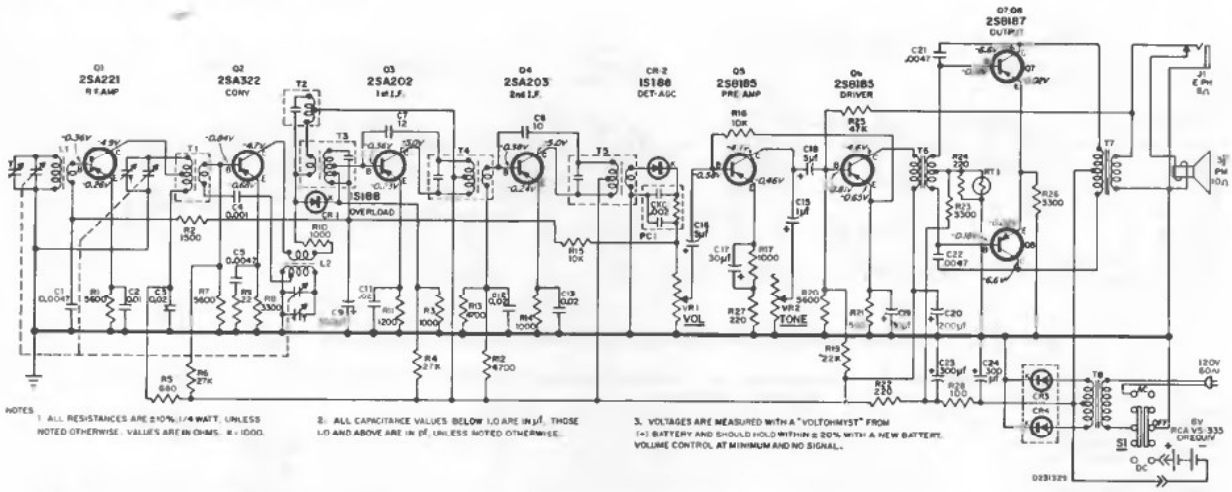


Component Locations (Wiring View)

The "Herald"

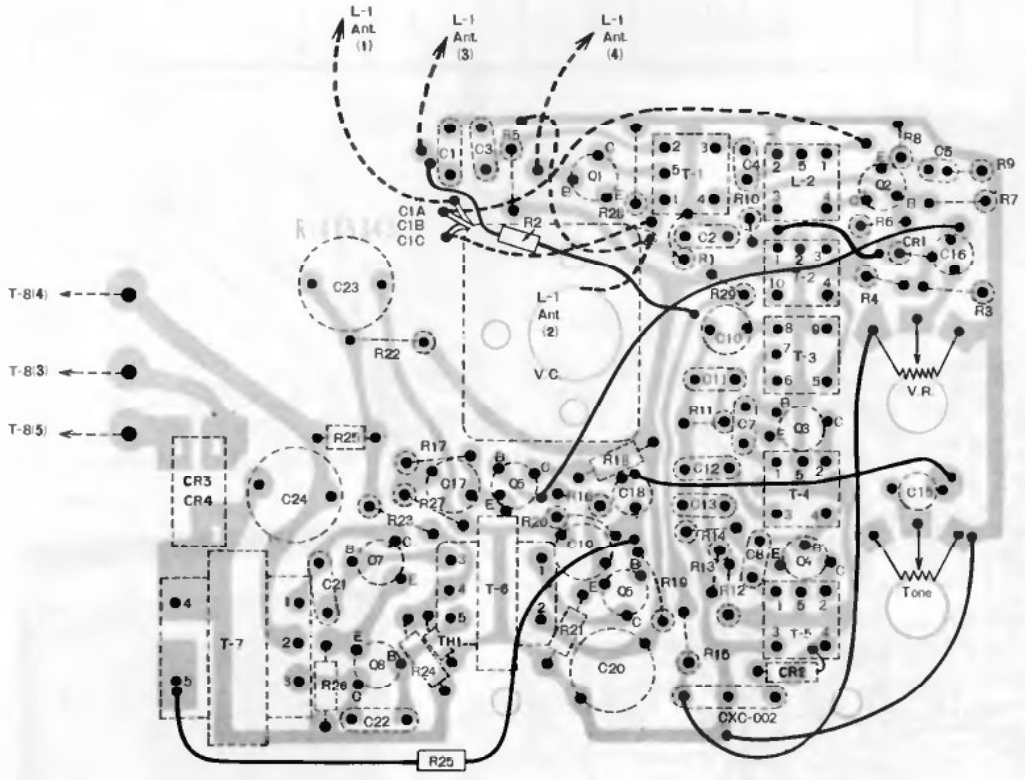
Model RLG 23A—Blue

RCA Model RLG 34



Schematic Diagram

IF 455 KC



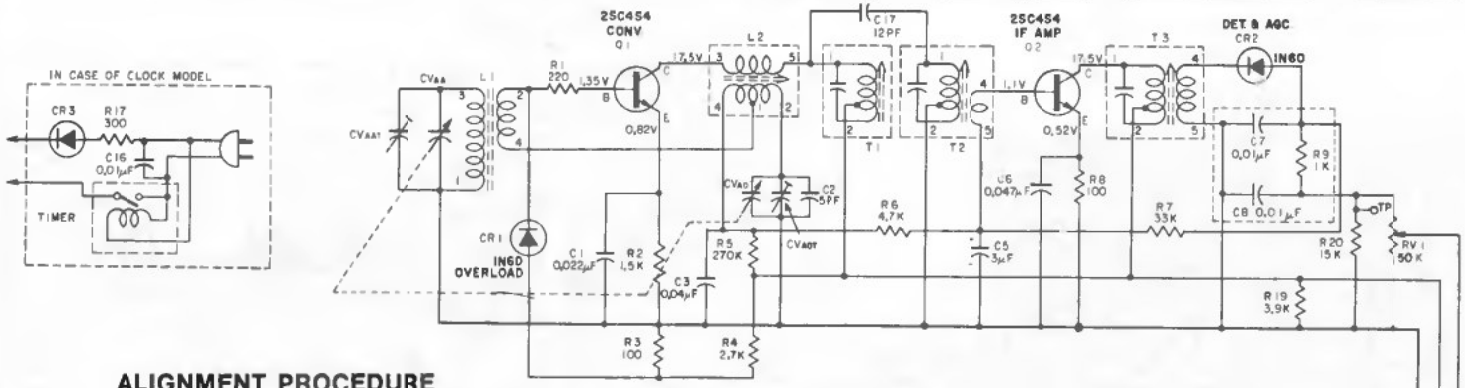
Circuit Board (Wiring Side)

RCA

RLM 68 Series
RLM 96-K Series

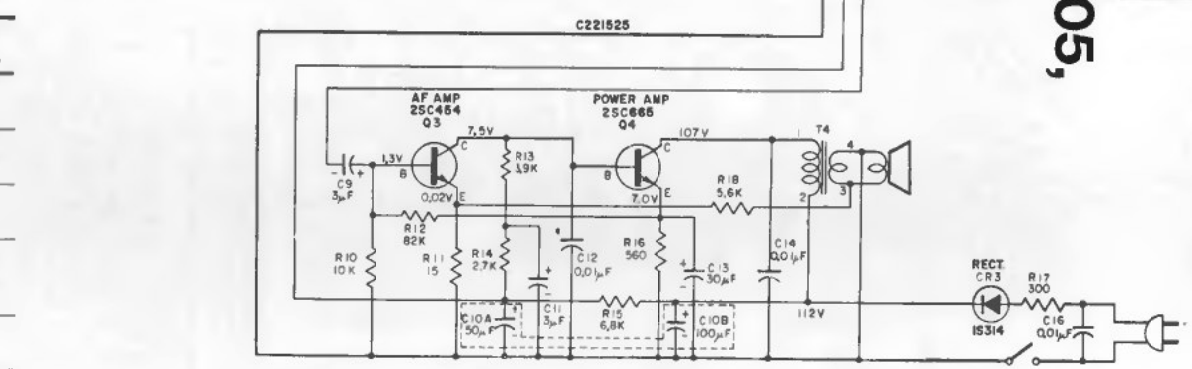
RCA

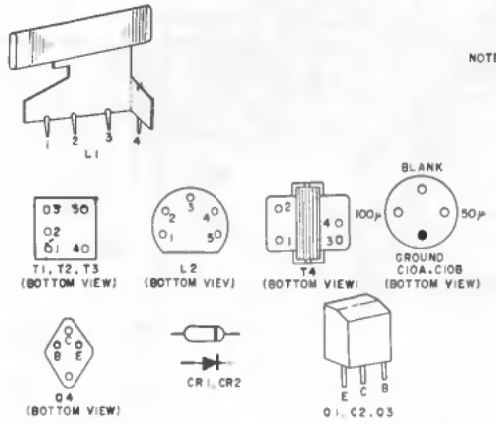
Models RZA 205, RZD 410, 415, RZD 943-K



ALIGNMENT PROCEDURE

Step	Instrument Connections	Set Signal	Set Dial	Adjust for Max.
1	RF generator to loop or short piece of wire near antenna	455 kc (modulated)	Gang open	T1, T2, T3
2		1650 kc (modulated)		CVAO
3	Output Meter across speaker voice coil	525 kc (modulated)	Gang Closed	L2
4		1400 kc (modulated)	1400 kc	(Rock Gang) CVAA
5	Repeat steps as necessary to obtain maximum sensitivity and selectivity.			

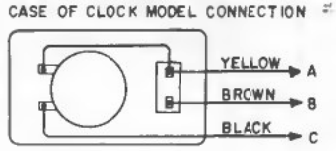


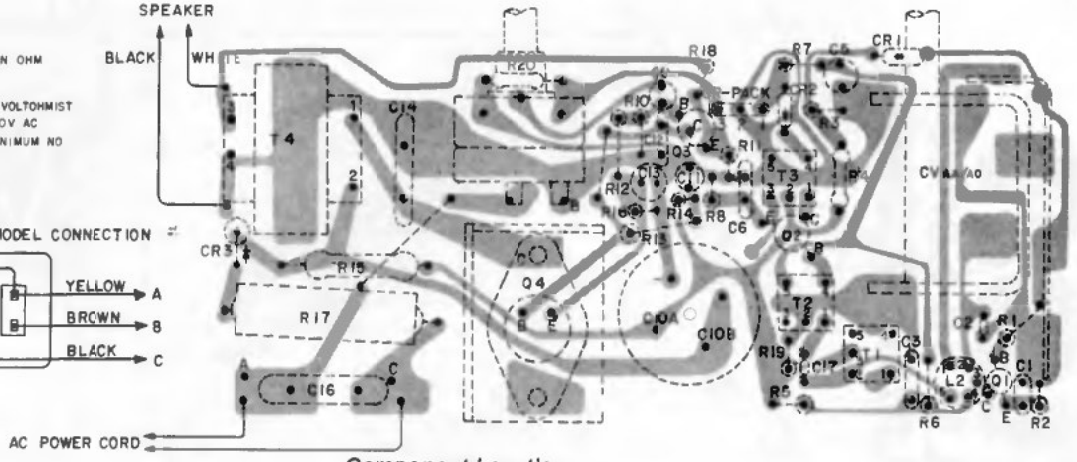


NOTES

ALL RESISTANCE VALUES IN OHM (K = 1000)

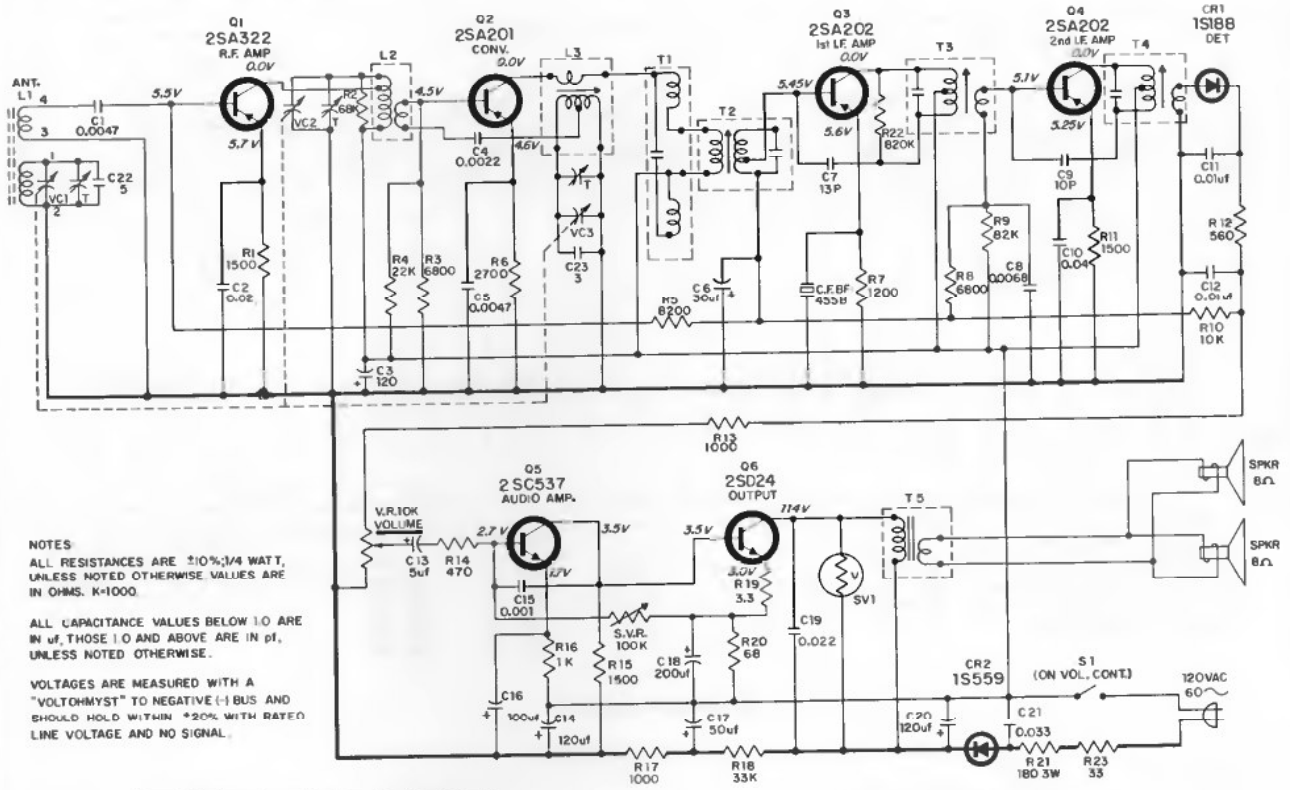
VOLTAGE MEASURED WITH VOLTOHMIST FROM GROUND LINE AT 120V AC (VOLUME CONTROL AT MINIMUM NO SIGNAL)





Component Locations

RCA Model RZA 215



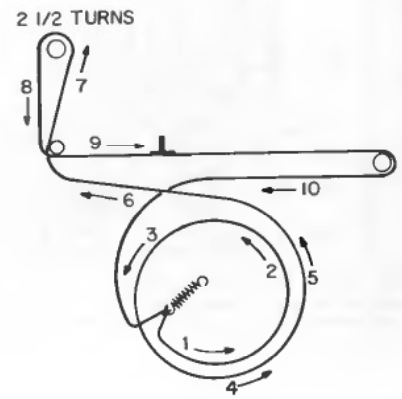
NOTES:

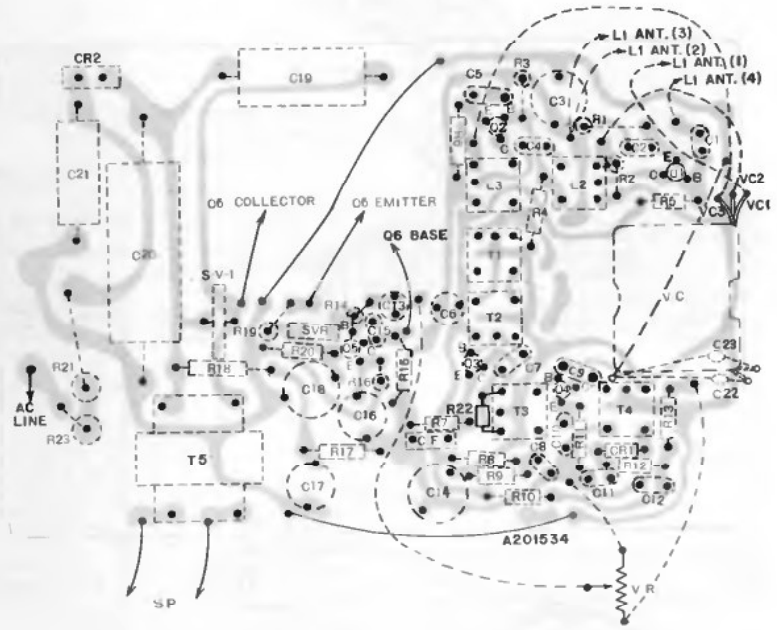
ALL RESISTANCES ARE ±10%;1/4 WATT, UNLESS NOTED OTHERWISE. VALUES ARE IN OHMS. K=1000.

ALL CAPACITANCE VALUES BELOW 1.0 ARE IN uf, THOSE 1.0 AND ABOVE ARE IN pf, UNLESS NOTED OTHERWISE.

VOLTAGES ARE MEASURED WITH A "VOLTOHMYST" TO NEGATIVE (-) BUS AND SHOULD HOLD WITHIN ±20% WITH RATED LINE VOLTAGE AND NO SIGNAL.

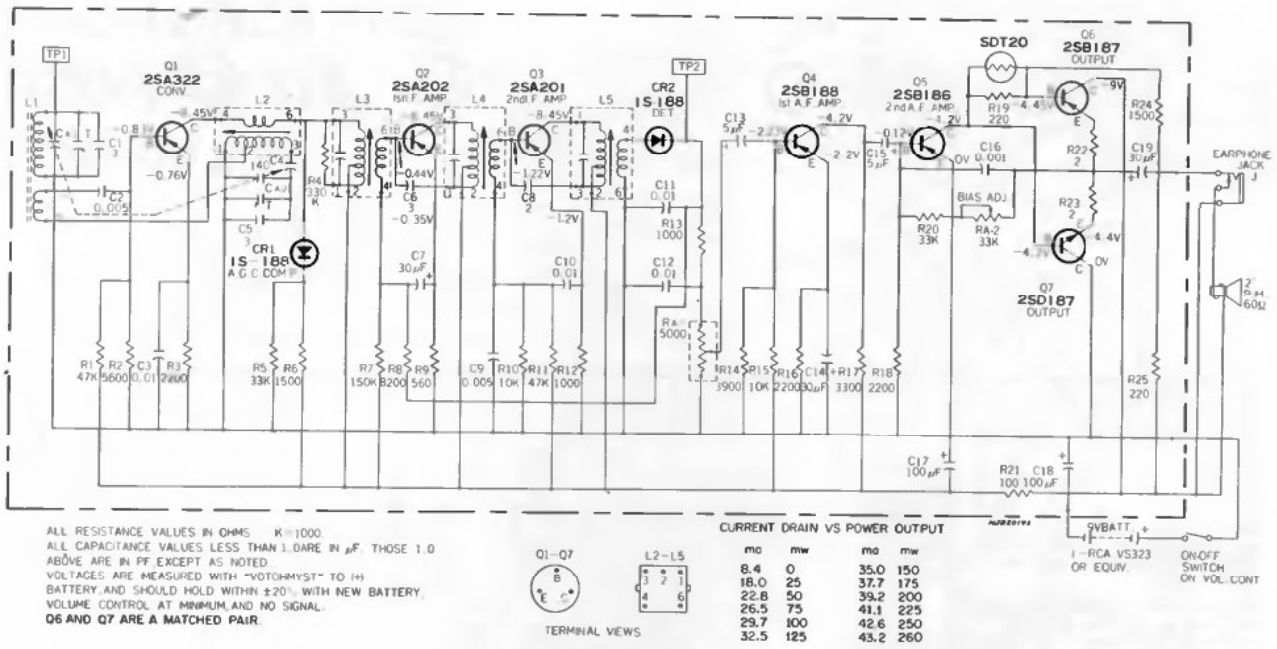
Step	Instrument Connections	Set Signal	Set Dial	Adjust for Max.
1	RF Generator to loop or short piece of wire near antenna.	455 kc (Modulated)	Gang Open	T3, T2, T1 (IF's)
2		520 kc (Modulated)	Gang Closed	L3 (Osc. Coil)
3		1650 kc (Modulated)	Gang Open	VC3-T (Osc. Trim)
4	Output meter across speaker voice coil.	600 kc	600 kc	L2 (RF Coil)
5		1400 kc (Modulated)	1400 kc (Rock Gang)	VC1-T (Ant. Trim)
6				VC2-T (RF Trim)
7	Repeat above as necessary to obtain maximum sensitivity and selectivity.			



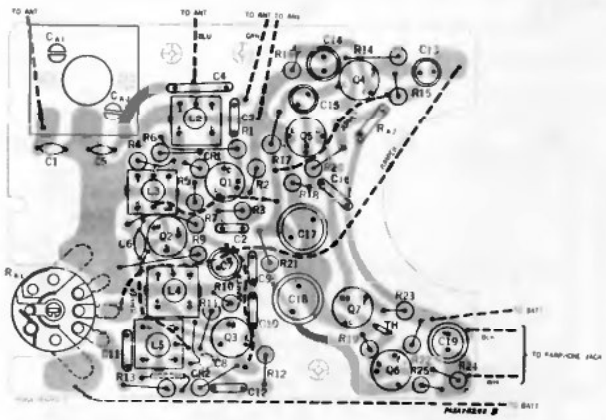


Component Location (Wiring View)

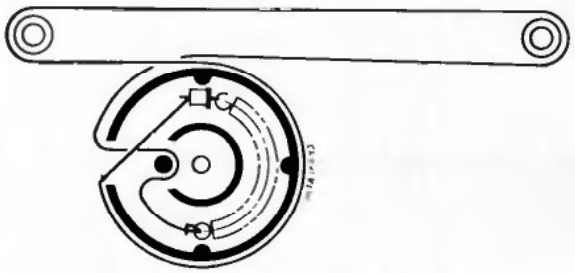
Models RZG 111, 120



Schematic Diagram



Chassis Layout (Component View)



Dial Cord Arrangement—RZG 120

ALIGNMENT PROCEDURE

Instruments Required

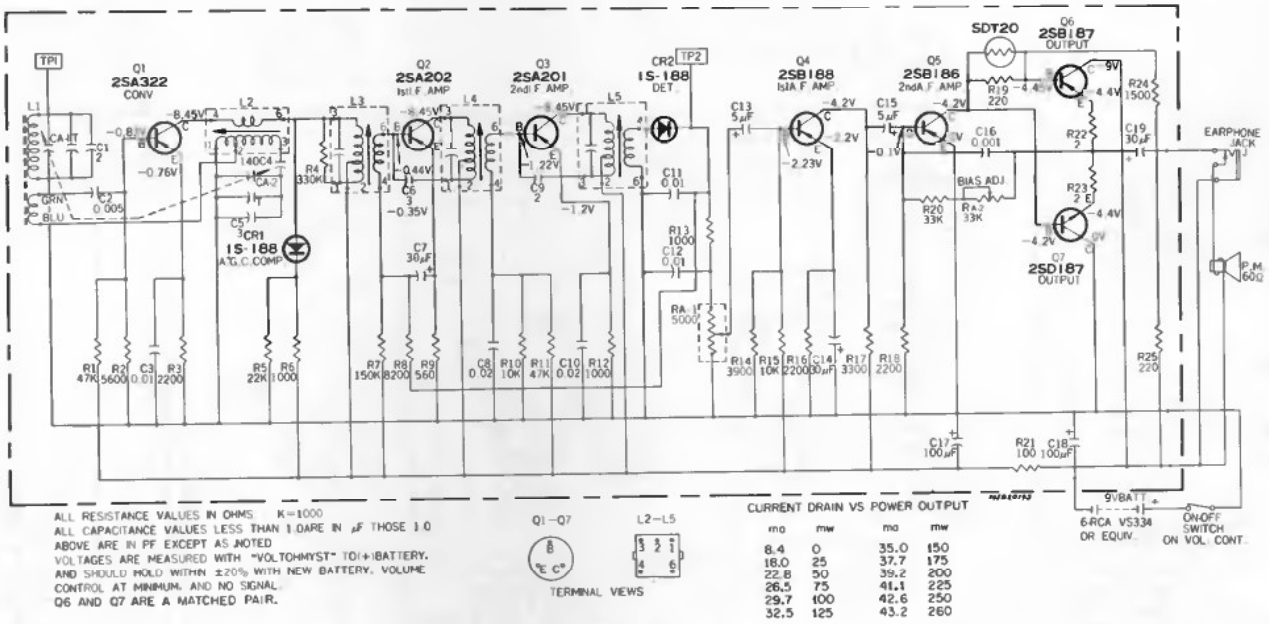
1. RF Signal Generator (RCA WR-50B or equivalent)
2. Electronic Voltmeter (RCA WV-500A or equivalent)

General

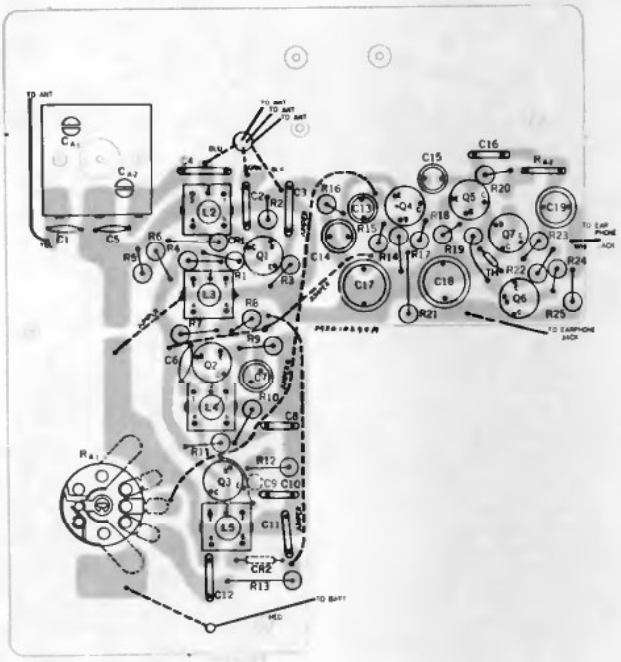
1. Signal input must be as low as possible to avoid overload and clipping. (Use highest sensitivity of output indicator.)
2. Loudness control at maximum.
3. Standard modulation is 400 cycles at 30% amplitude.

Step	Instrument Connections	Set Signal	Set Dial	Adjust for Max.
1	RF Generator—Connected to TP1 or short piece of wire near antenna	455 kc	Gang Closed	L3 (1st IF)
2				L4 (2nd IF)
3				L5 (3rd IF)
4		Repeat Steps 1 through 3 to obtain maximum sensitivity		
5	E.V.M.—connected to TP 2	525 kc	Gang Closed	L2 (Osc. coil)
6		1650 kc	Gang Open	CA 2 T (Osc. trim)
7		1400 kc	1400 kc Rock gang	CA 1 T (Ant. trim)
8	Repeat Steps 5 through 8 to obtain best tracking and selectivity			

RCA Model RZG 125



Schematic Diagram



Component Locations (Component View)

ALIGNMENT PROCEDURE

Instruments Required

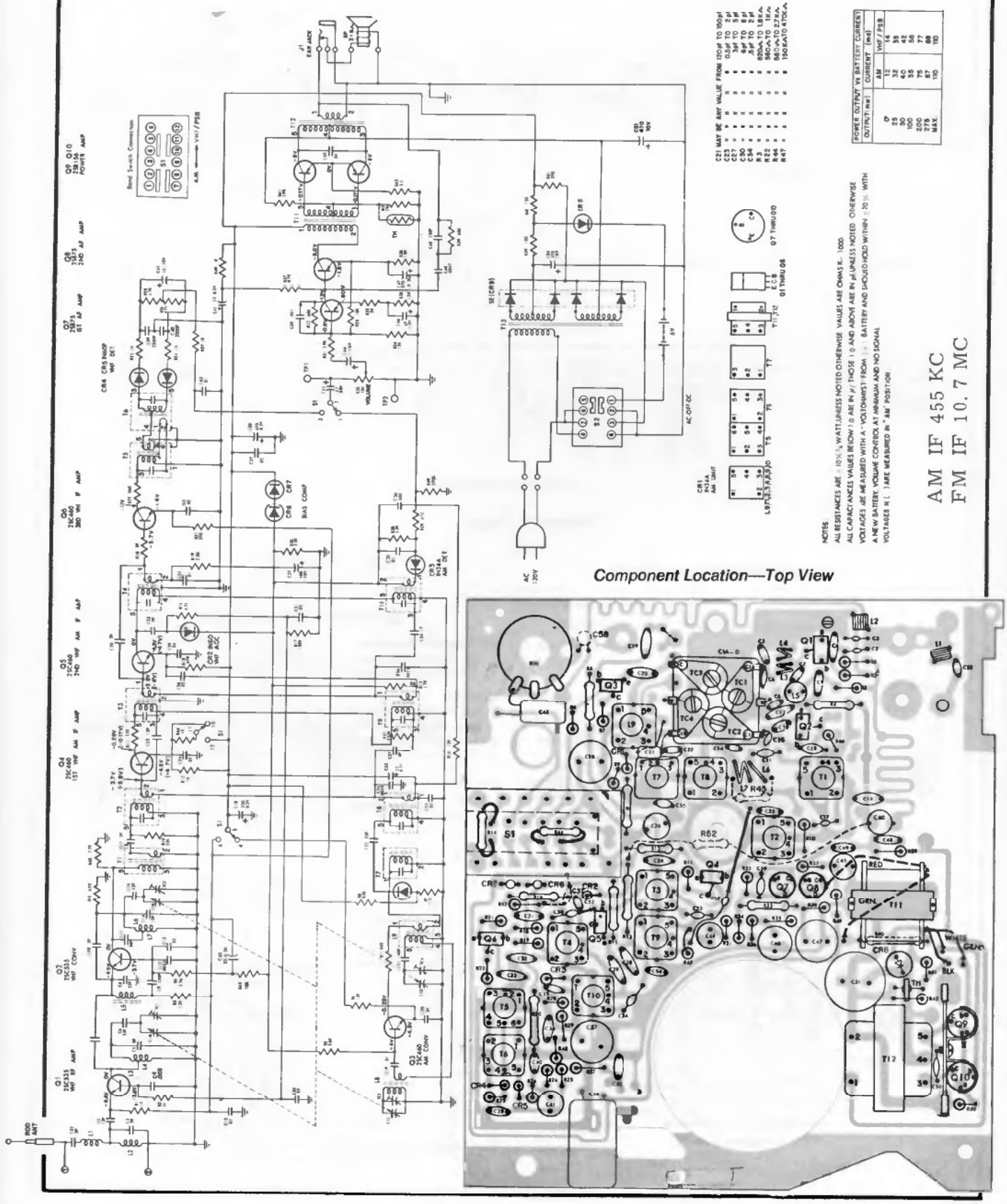
1. RF Signal Generator (RCA WR-50B or equivalent)
2. Electronic Voltmeter (RCA WV-500A or equivalent)

General

1. Signal input must be as low as possible to avoid overload and clipping. (Use highest sensitivity of output indicator.)
2. Loudness control at maximum.
3. Standard modulation is 400 cycles at 30% amplitude.

Step	Instrument Connections	Set Signal	Set Dial	Adjust for Max.
1	RF Generator—Connected to TP1 or short piece of wire near antenna E.V.M.—connected to TP 2	455 kc	Gang Closed	L3 (1st IF)
2				L4 (2nd IF)
3				L5 (3rd IF)
4		Repeat Steps 1 through 3 to obtain maximum sensitivity		
5		525 kc	Gang Closed	L2 (Osc. coil)
6		1650 kc	Gang Open	CA 2 T (Osc. trim)
7		1400 kc	1400 kc Rocg gang	CA 1 T (Ant. trim)
8	Repeat Steps 5 through 8 to obtain best tracking and selectivity			

RCA Model RZM 990-K

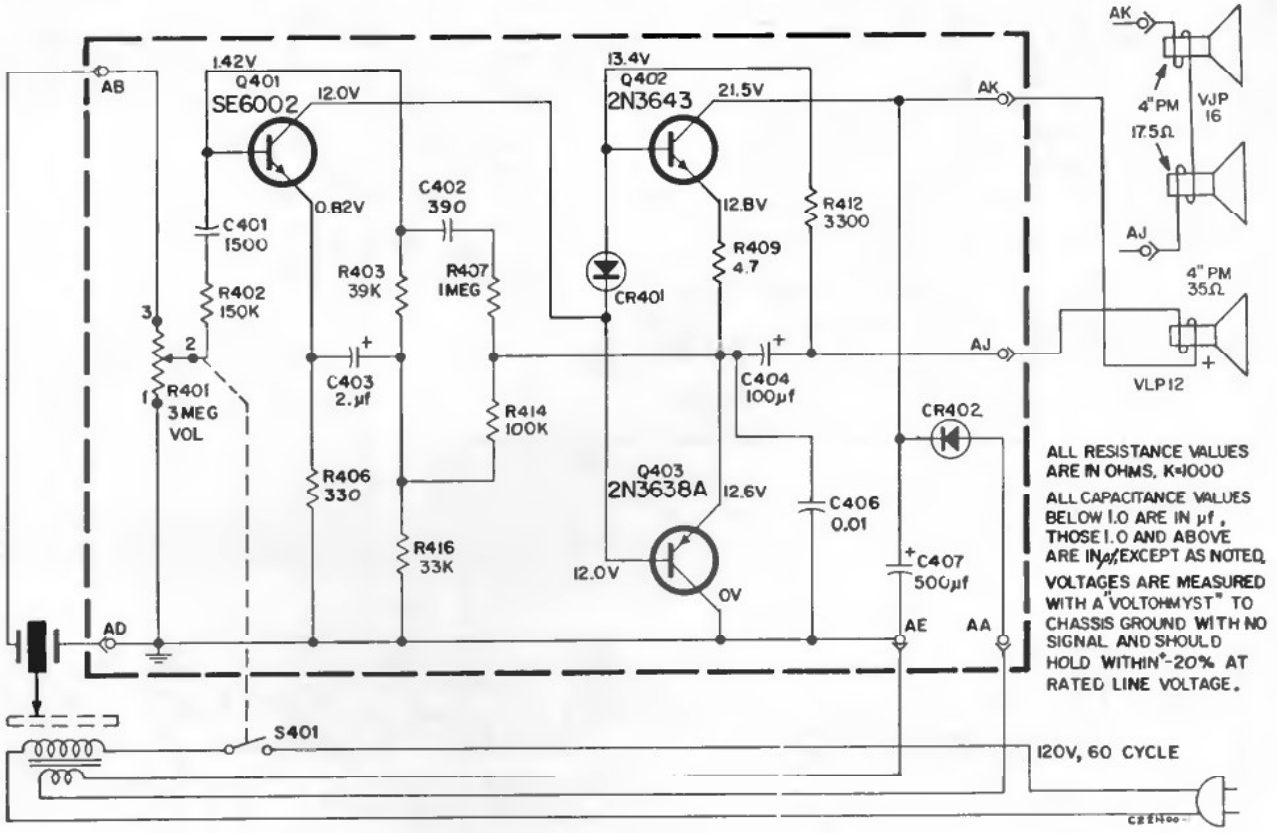


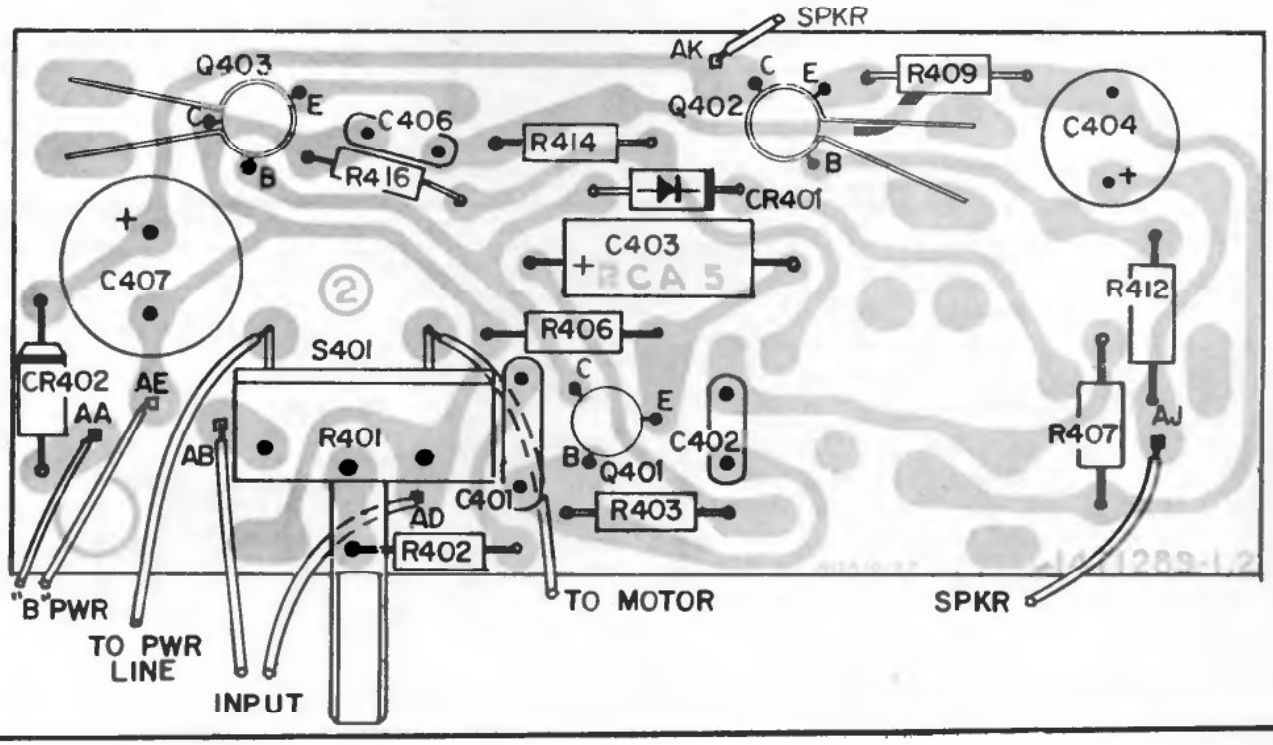
Component Location—Top View

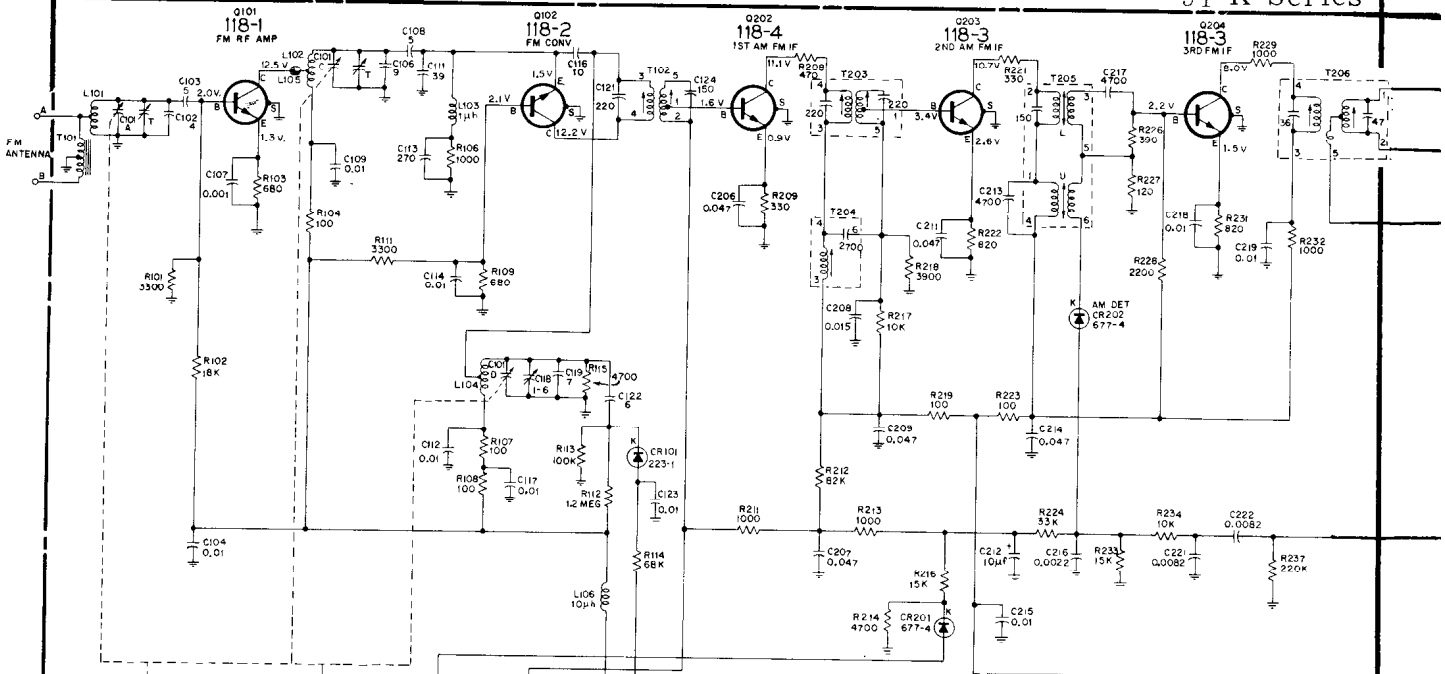
RCA Models

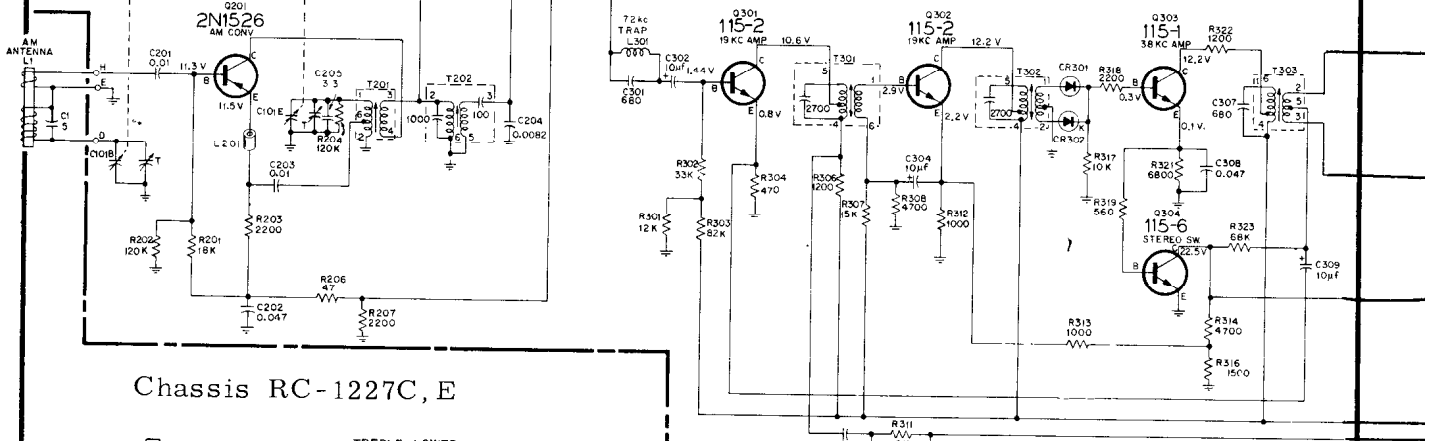
VJP 12 Series,
VJP 16 Series,
VJP 88-K Series,
VLP 12 Series,
VMP 12 Series

Chassis RS-225B,
RS-250A

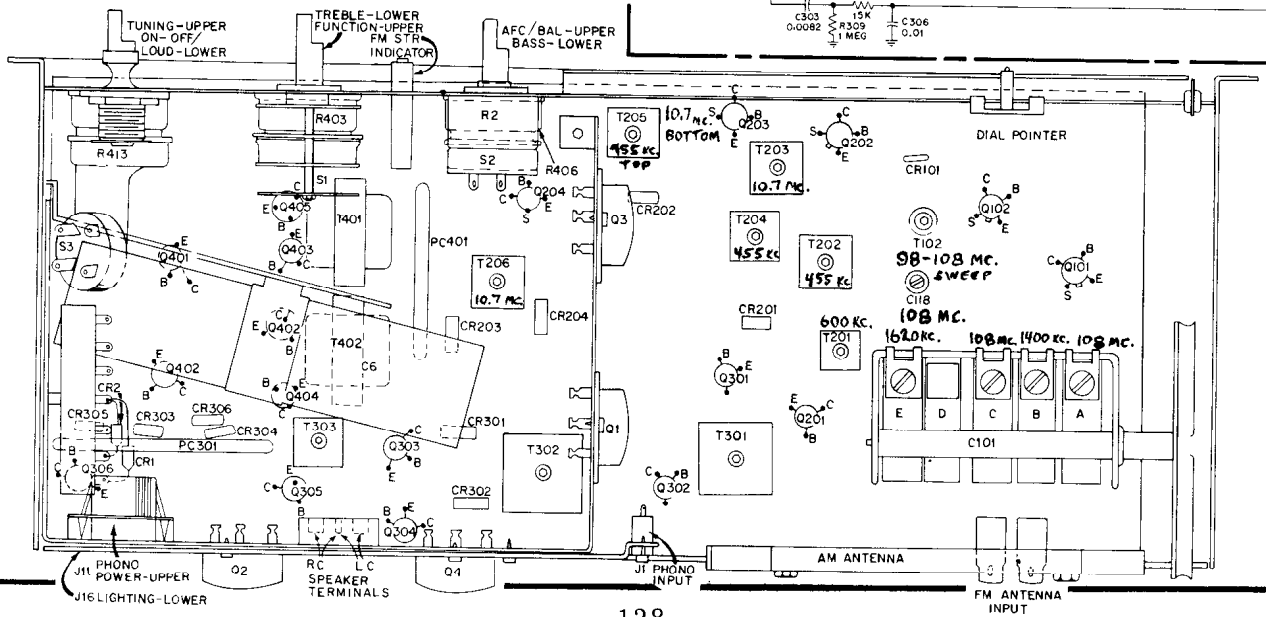




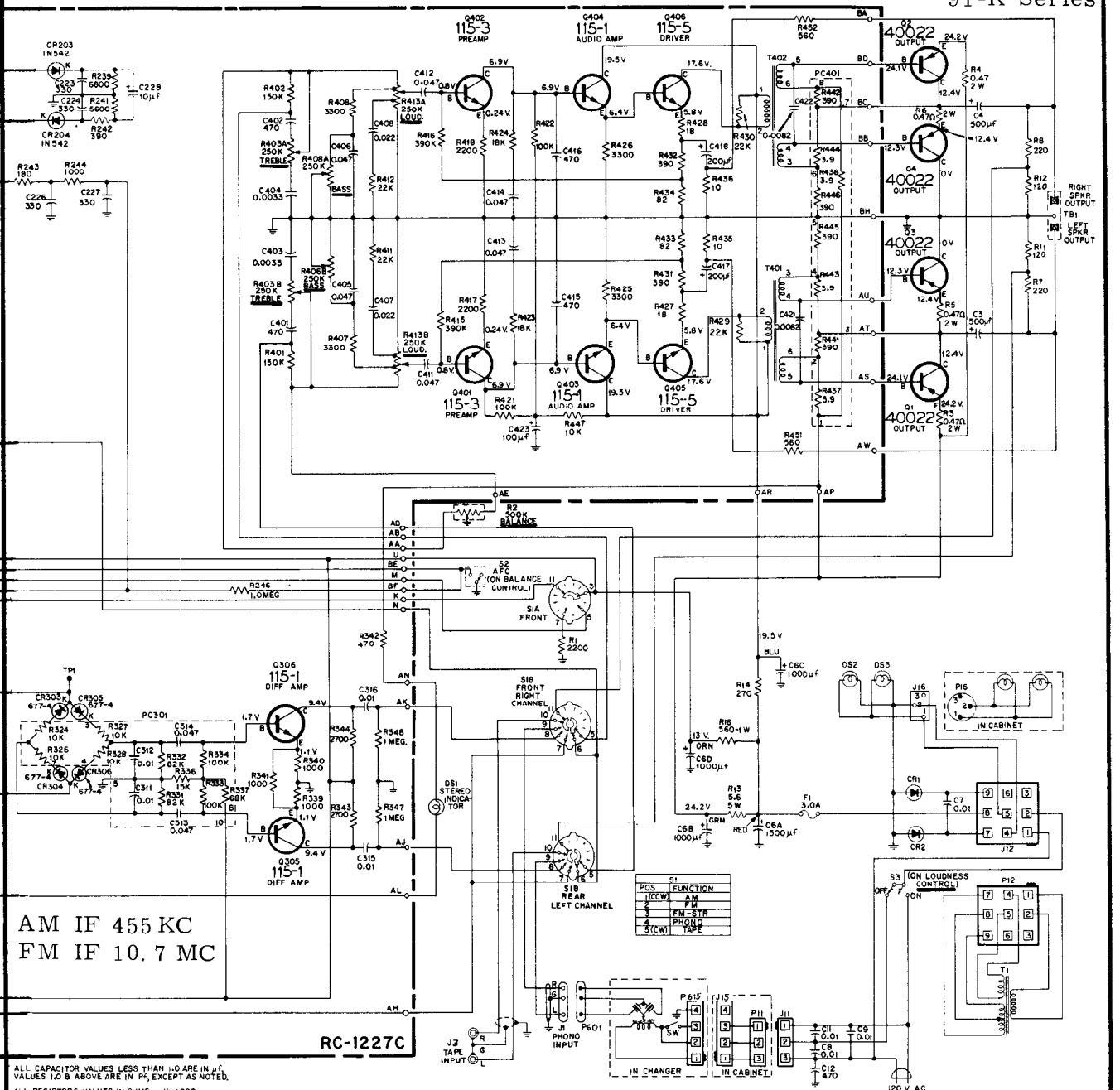




Chassis RC-1227C, E



(Continued on next page.)

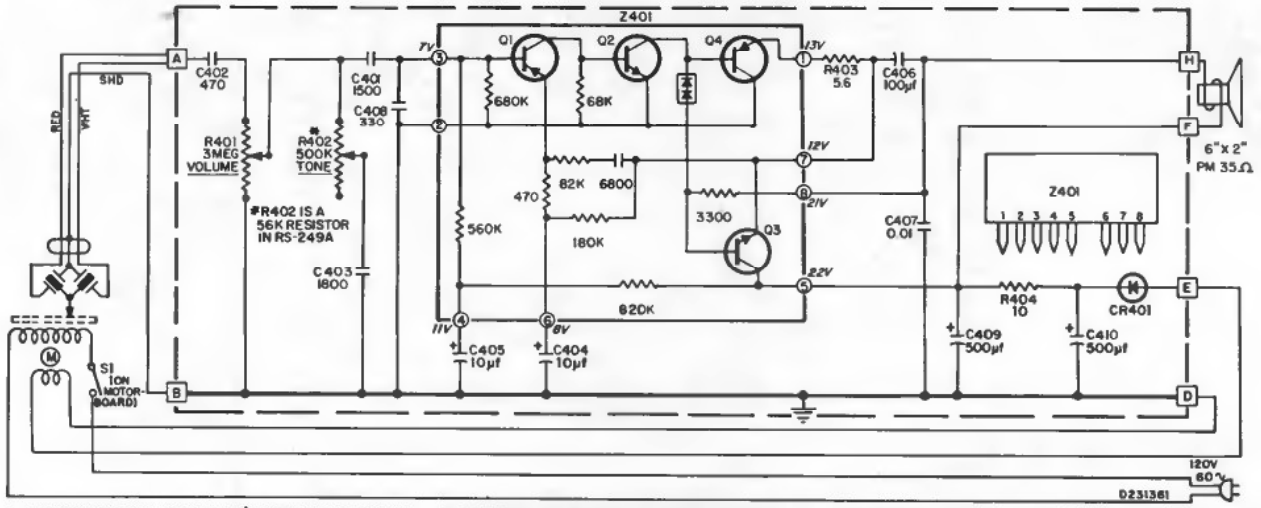


RC-1227 Partial Chassis Layout, bottom view.

(Continued from preceding page.)

VLP 20 Series VMP 20 Series

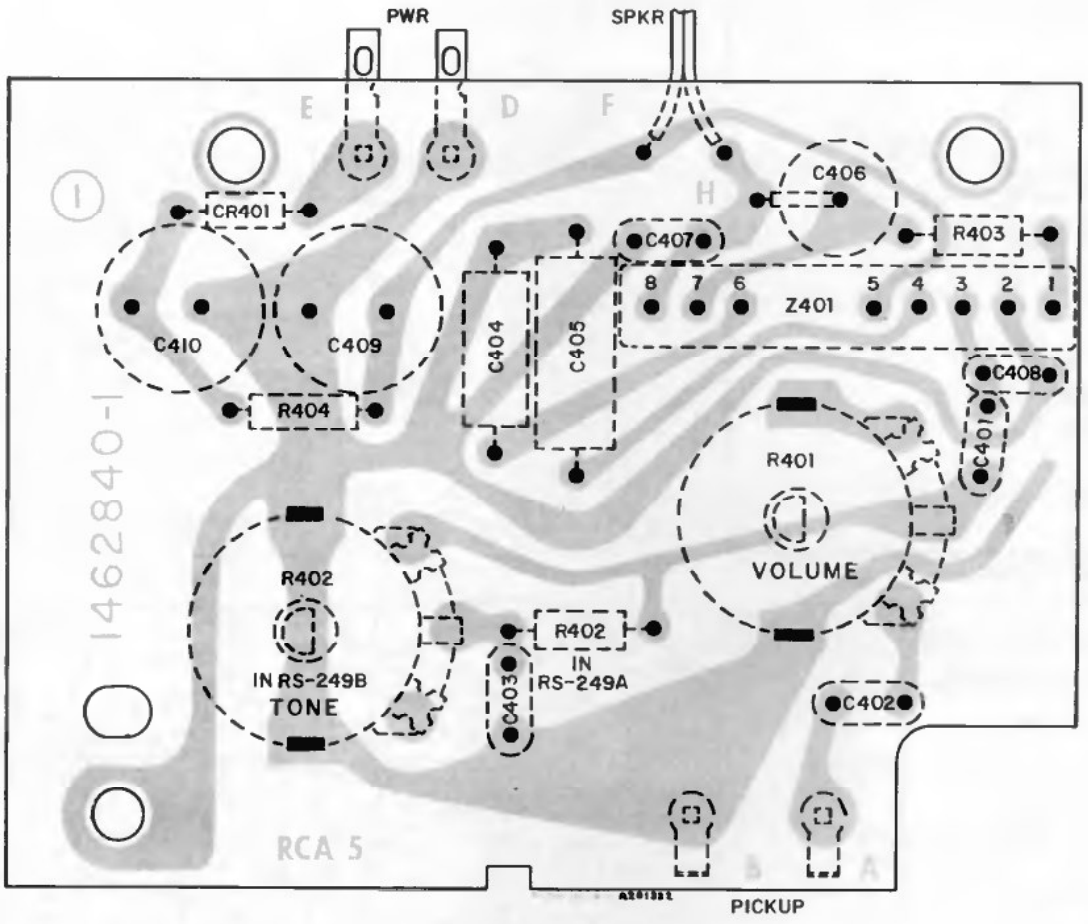
Amplifier Chassis RS-249A



1. RESISTOR VALUES ARE IN OHMS, ±10%, 1/2 WATT UNLESS NOTED OTHERWISE. K = 1000

2. CAPACITOR VALUE BELOW 1.0 ARE IN µf, THOSE 1.0 AND ABOVE ARE IN pf UNLESS OTHERWISE NOTED

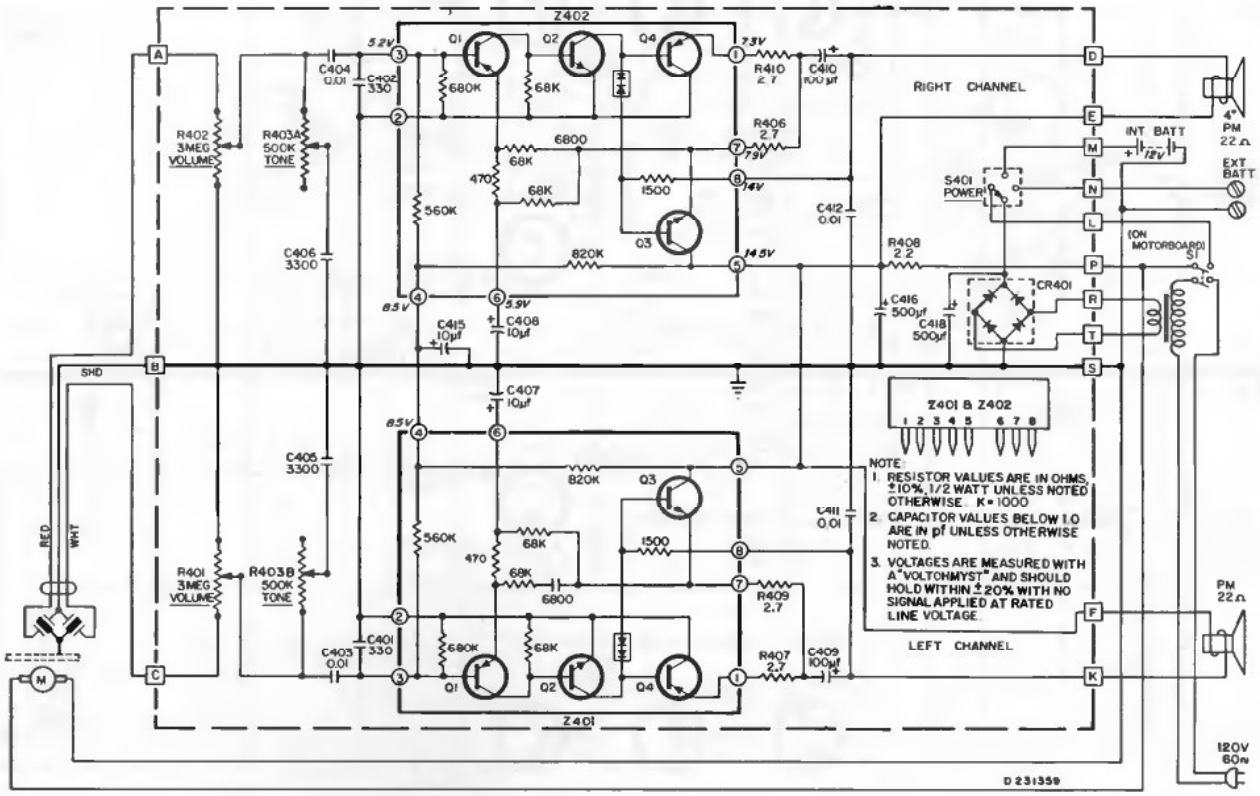
3. VOLTAGES ARE MEASURED WITH A "VOLTOHMYST" AND SHOULD HOLD WITHIN ± 20% WITH NO SIGNAL APPLIED AT RATED LINE VOLTAGE

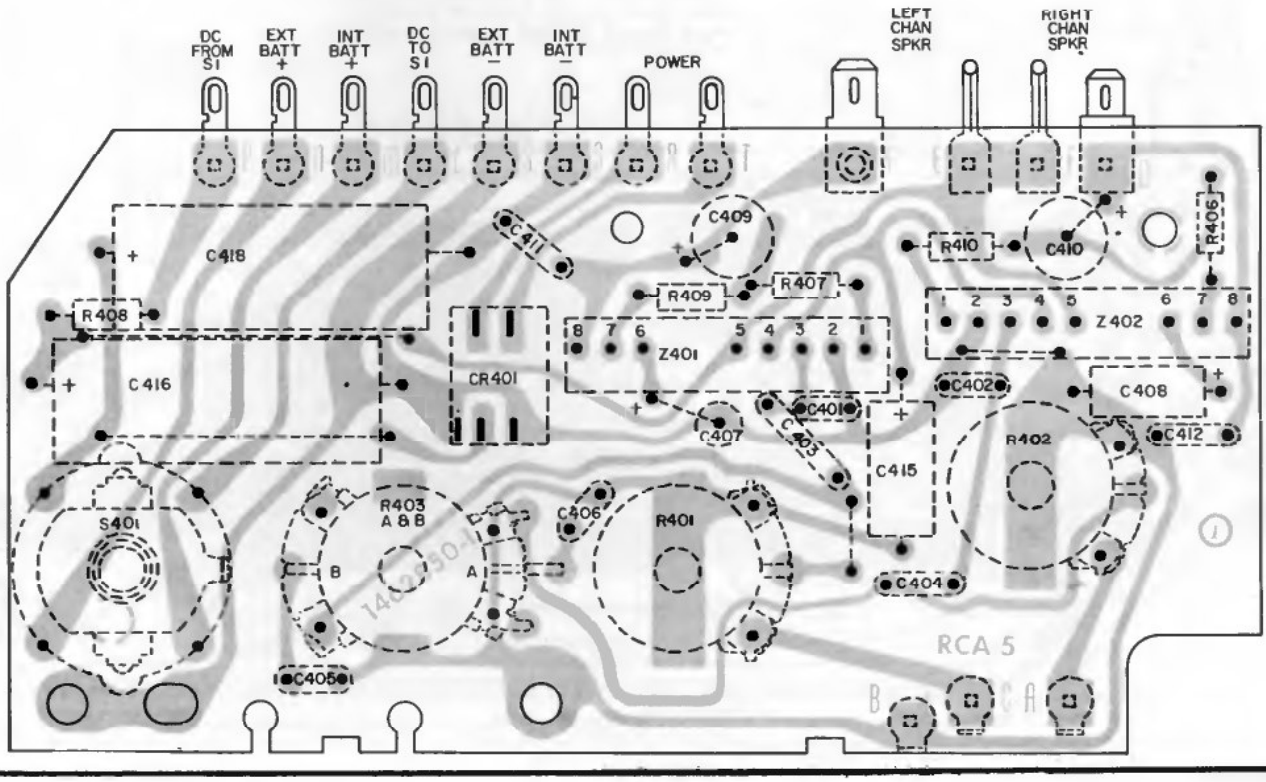


Component Locations (Wiring Side)

RCA Models VLP 34, 36, 39
Models VMP 34, 38, 47

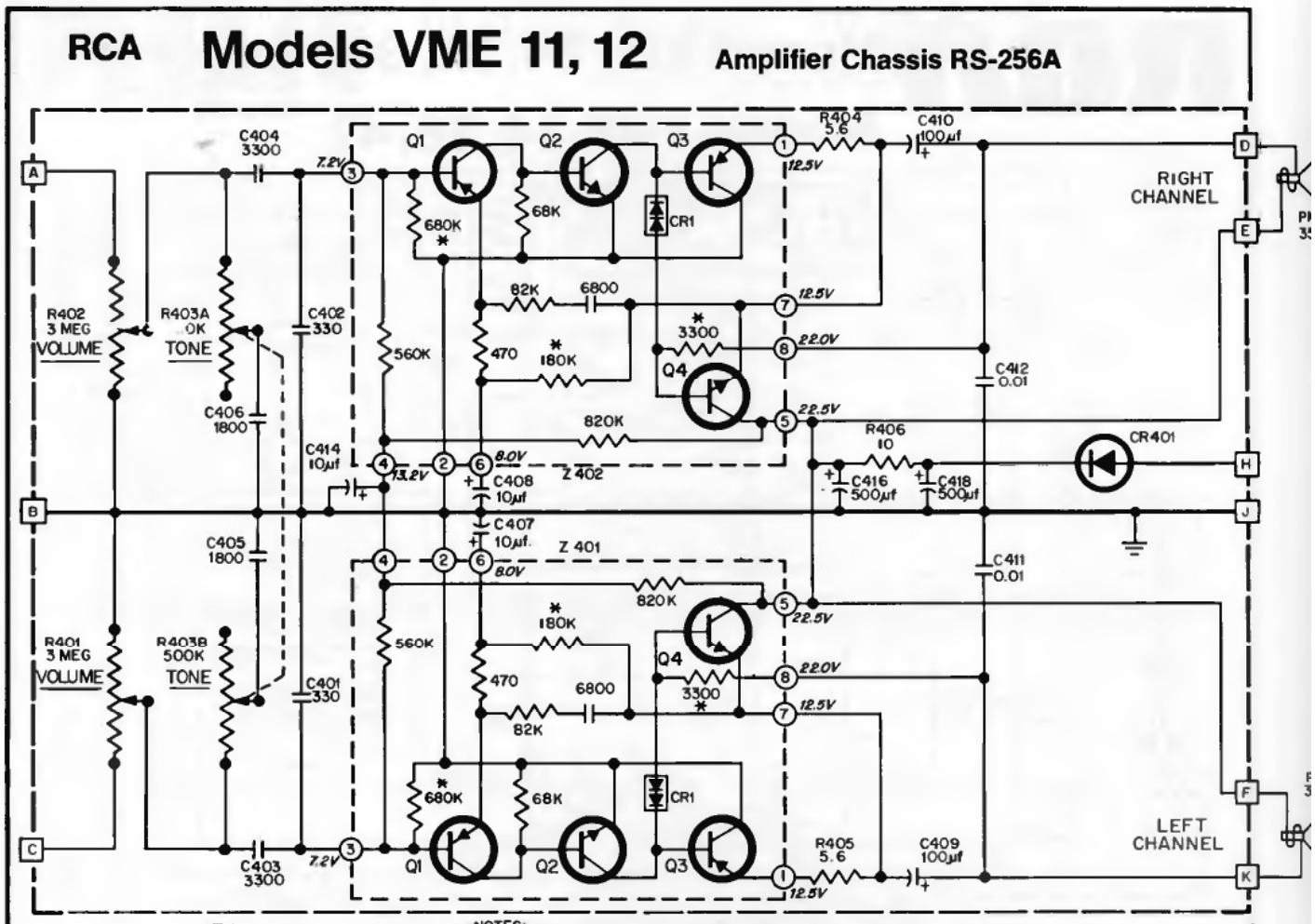
Amplifier Chassis
RS-243A
RS-245A





RCA Models VME 11, 12

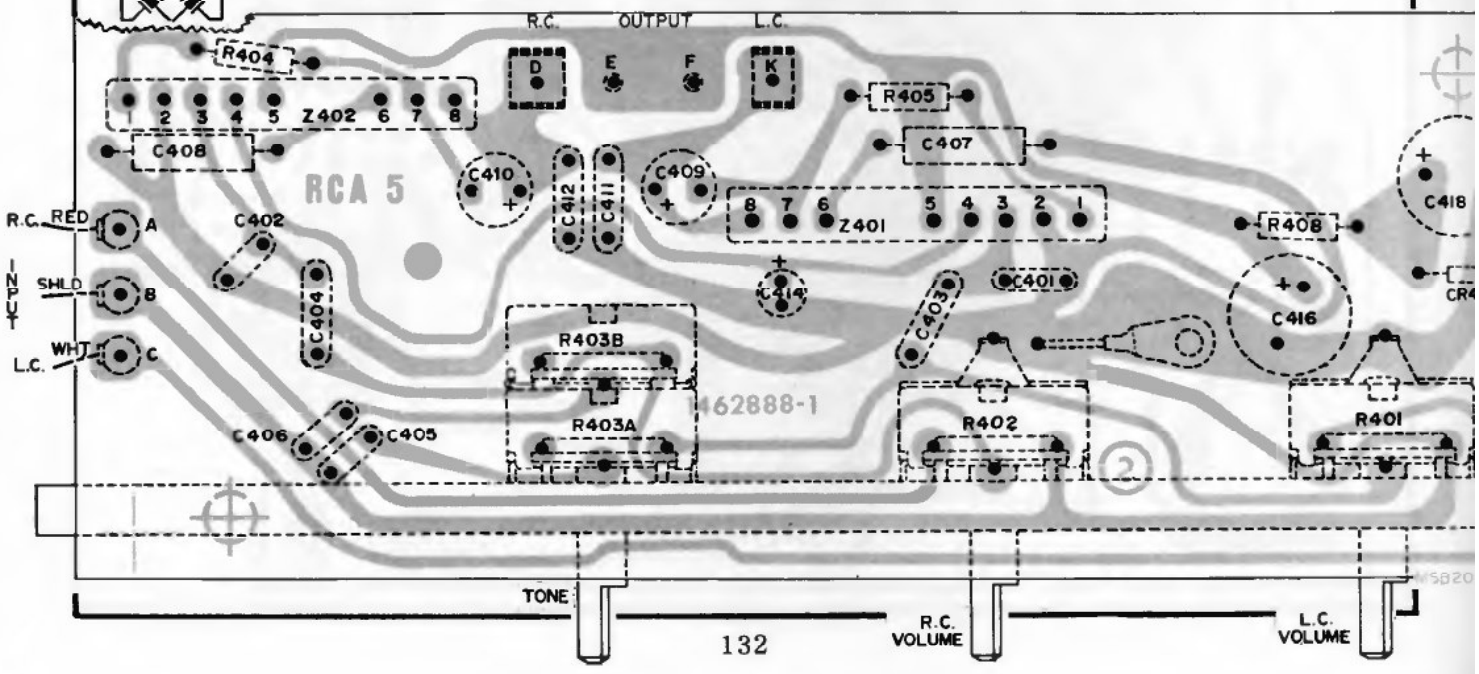
Amplifier Chassis RS-256A



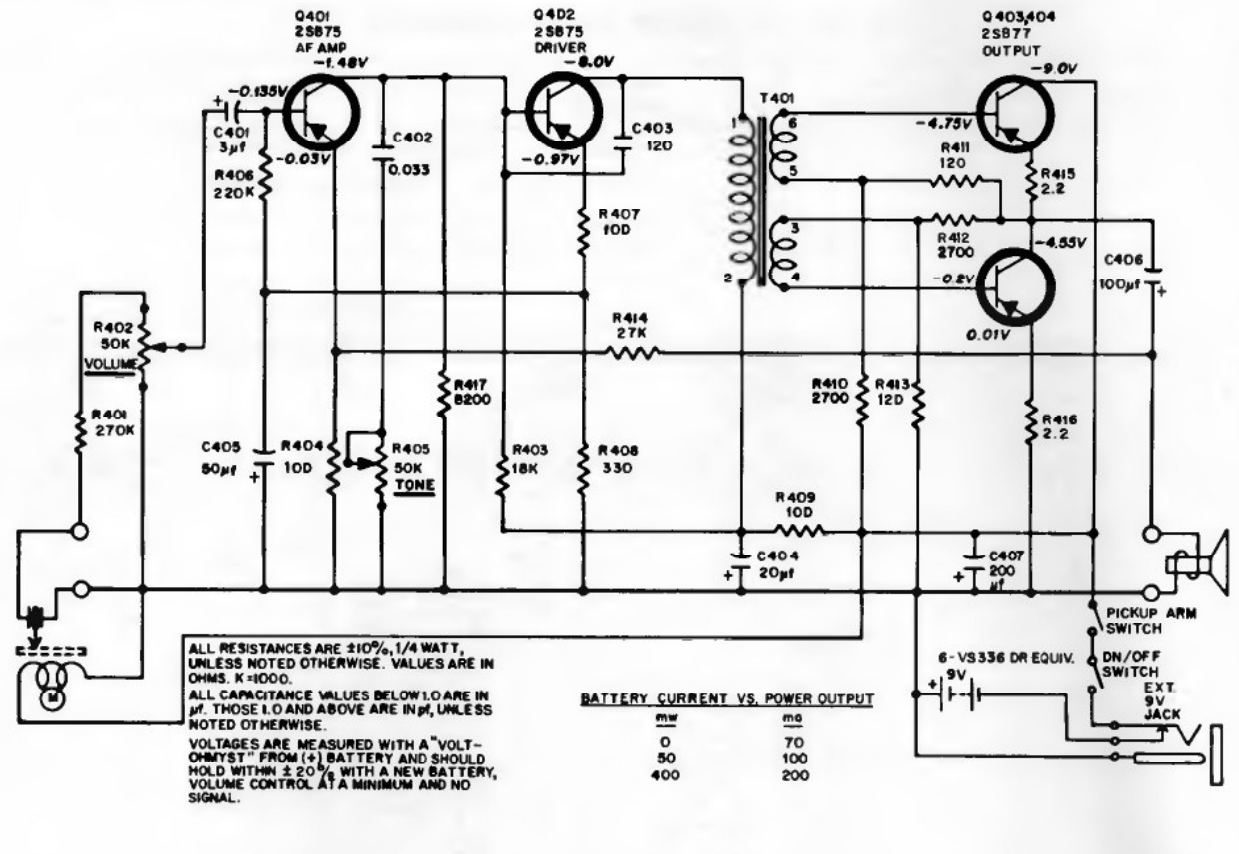
NOTES:

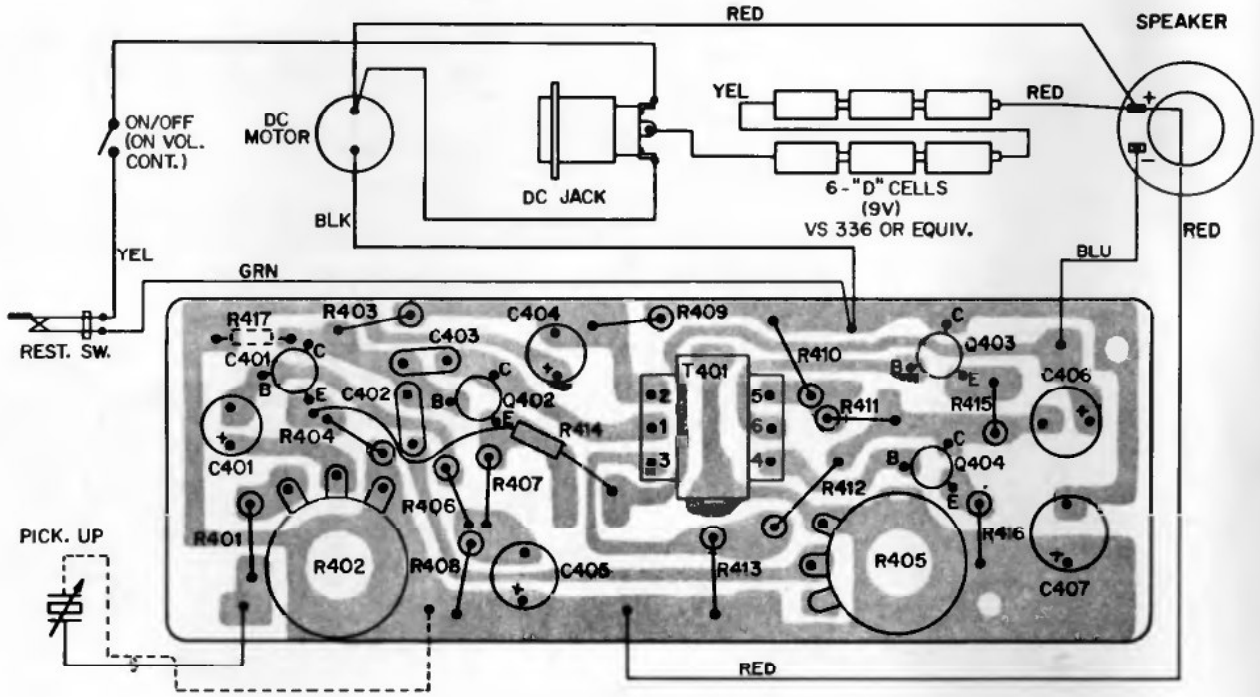
1. ALL RESISTOR VALUES ARE IN OHMS AND ARE ± 10%, 1/2 WATT UNLESS OTHERWISE SPECIFIED. K= 1000
2. ALL CAPACITOR VALUES LESS THAN 1.0 ARE µf, THOSE 1.0 AND GREATER ARE pf UNLESS OTHERWISE SPECIFIED.
3. VOLTAGES ARE MEASURED WITH A "VOLTOHMYST" TO CHASSIS GROUND (-) WITH NO SIGNAL AND SHOULD HOLD WITHIN ± 20% AT RATED LINE VOLTAGE.

PEC'S BEARING THE SAME NUMBER MUST BE USED IN BOTH CHANNELS



RCA Model VMP 14





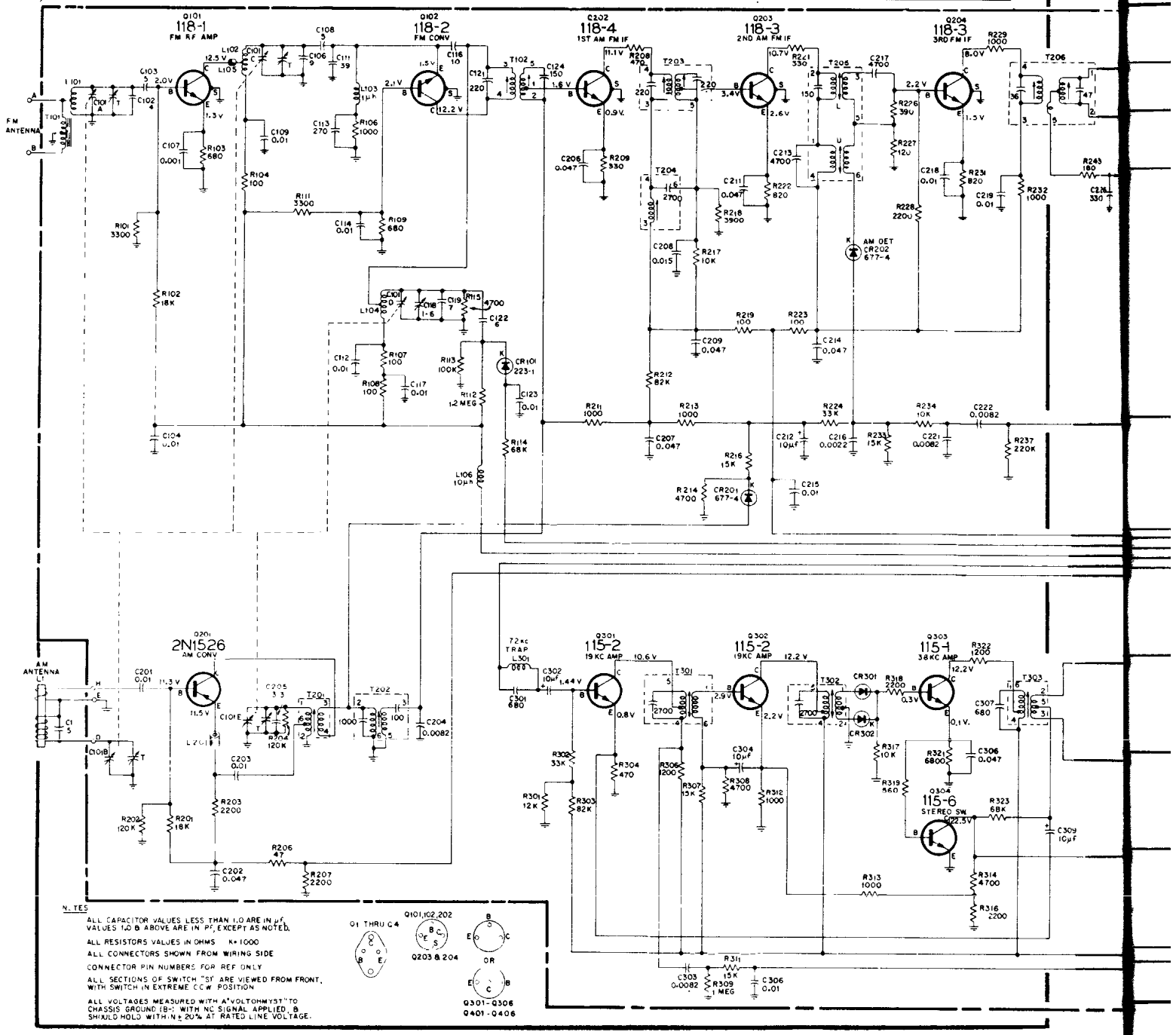
Chassis Layout

Models VMT 1, 2 Series

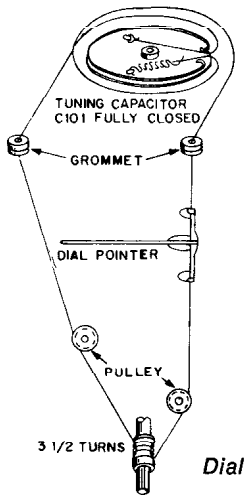
Radio Chassis RC-1227K

MODEL TO CHASSIS CROSS REFERENCE

MODEL	TUNER, AMPLIFIER	RECORD CHANGER	Speakers
VMT 10	RC1227K	RP-232-5	2— 9" x 6", 2—3½" Tweeters
VMT 13	RC1227K	RP-232-5	2— 9" x 6", 2—3½" Tweeters
VMT 14	RC1227K	RP-232-5	2— 9" x 6", 2—3½" Tweeters
VMT 15	RC1227K	RP-232-5	2— 9" x 6", 2—3½" Tweeters
VMT 25	RC1227K	RP-232-9	2—12" x 8", 2—3½" Middlers, 2—3½" Tweeters
VMT 27	RC1227K	RP-232-9	2—12" x 8", 2—3½" Middlers, 2—3½" Tweeters



(Continued on next two pages.)



Dial Cord Arrangement

Models VMT 1, 2 Series

Chassis RC-1227K

AUDIO FREQUENCY RESPONSE

VMT 10, 13, 14, 15 .....60-20,000 cycles/sec
VMT 25, 27 .....50-20,000 cycles/sec

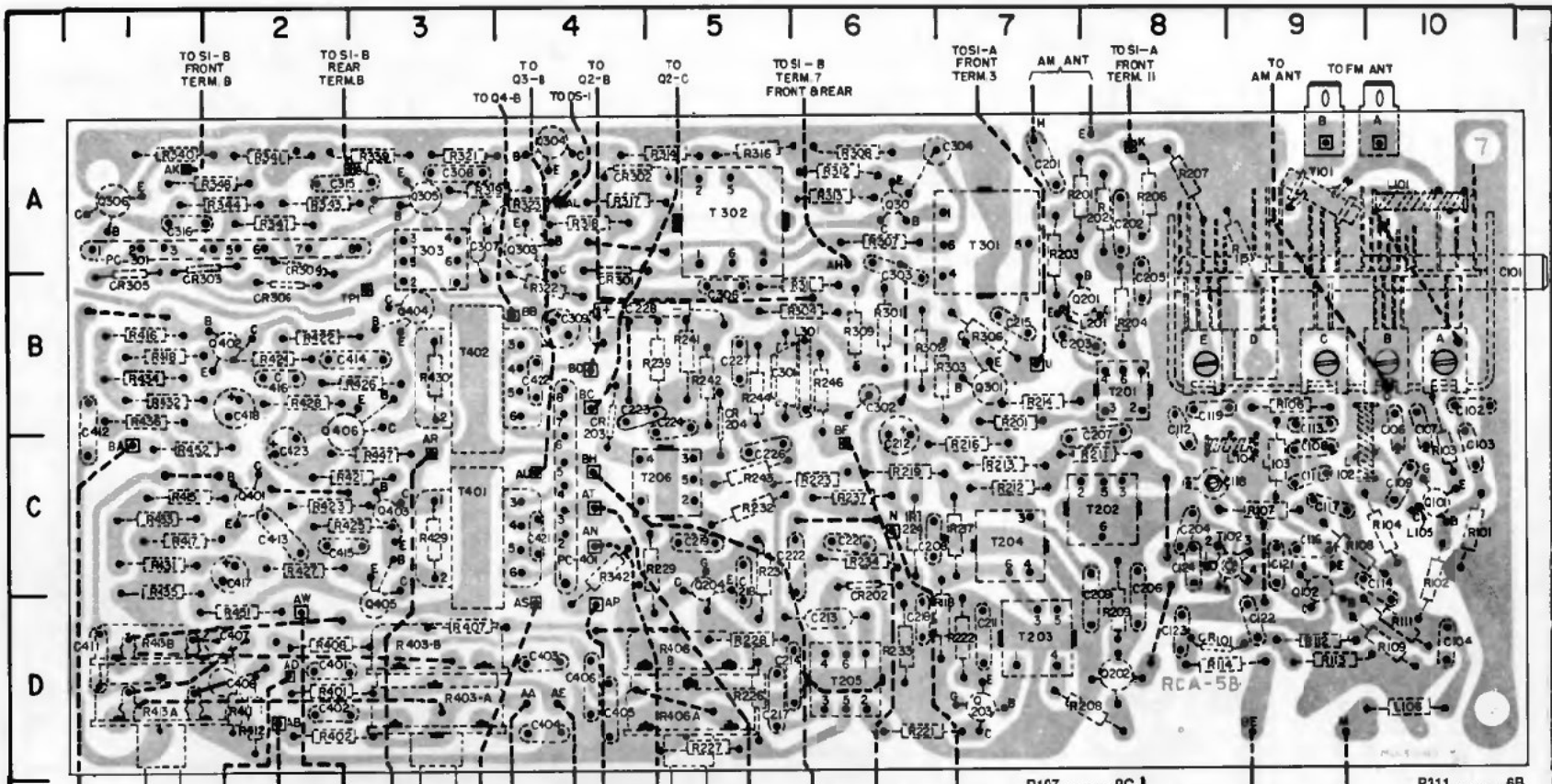
(Continued from preceding page and on next page.)

POWER SUPPLY RATING

VMT 10, 13, 14, 15, 25, 27 .....12 volts, 60 cycles
Power Consumption .....55 watts

FREQUENCIES	Tuning	IF
AM	540-1620 kc/s	455 kc/s
FM	88-108 mc/s	10.7 mc/s

RCA VMT 1,2 Series Chassis RC-1227K (Continued from preceding two pages.

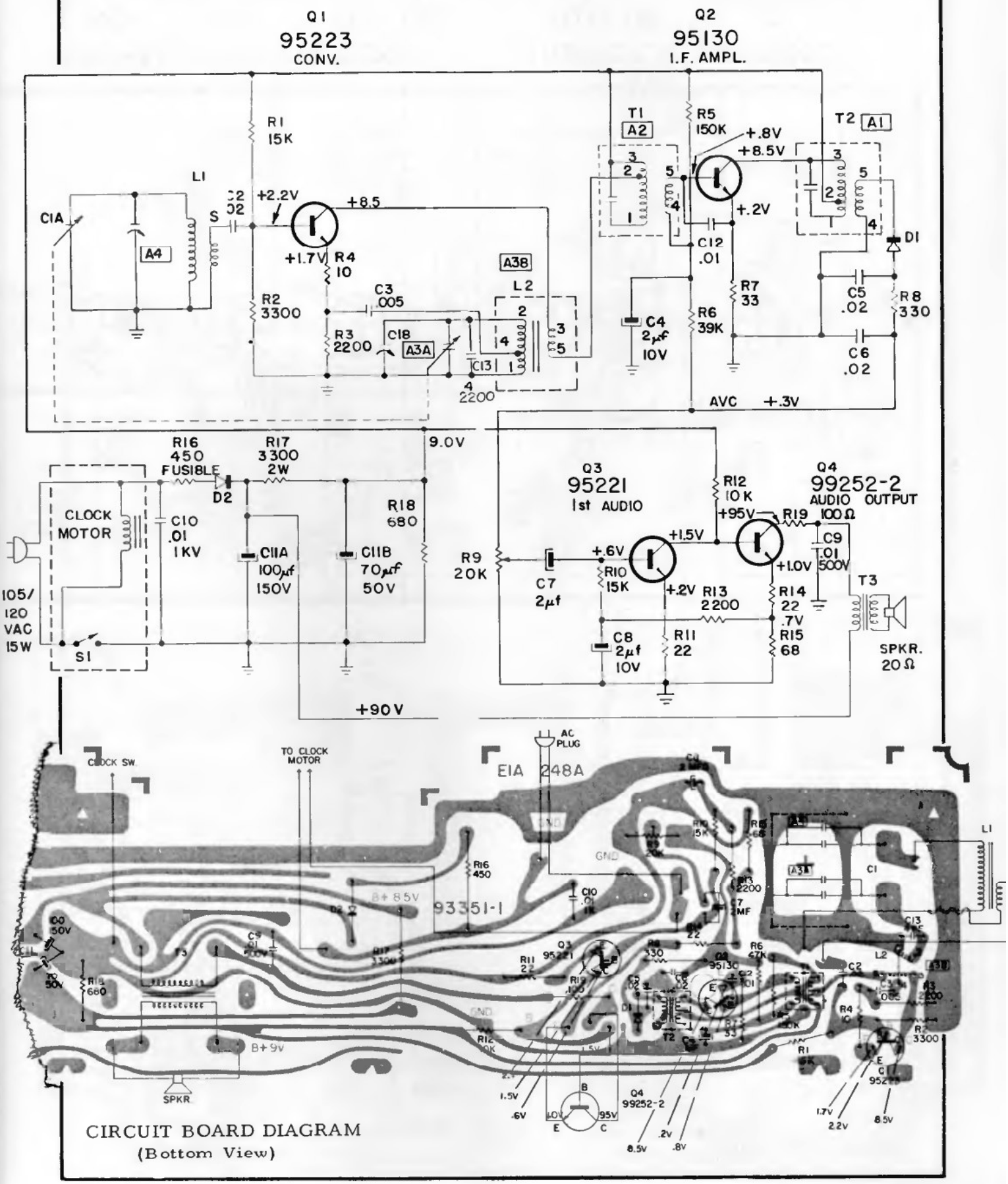


C101 9B	C121 9C	C213 6D	C302 6B	C407 2D	CR201 7B	L105 10C	Q303 4A	R107 9C	R214 7B	R237 6C	R311 6B	R402 2D			
C102 10B	C122 9D	C214 5D	C303 6B	C408 2D	CR202 6C	L106 10D	Q304 4A	R108 9C	R216 7C	R239 5B	R312 6A	R403 3D			
C103 10C	C123 8D	C215 7B	C304 6A	C411 1D	CR203 4B	L201 7B	Q305 3A	R109 10D	R217 7C	R241 5B	R313 6A	R406 5D			
C104 10D	C124 8C	C216 6D	C306 5B	C412 1B	CR204 5B	L301 6B	Q306 1A	R111 10D	R218 6D	R242 5B	R314 5A	R407 3D			
C106 10B	C201 7A	C217 5D	C307 3A	C413 2C	CR301 4A	PC301 2A	Q401 2C	R112 9D	R219 6C	R243 5C	R316 5A	R408 2D			
C107 10B	C202 6A	C218 5C	C308 3A	C414 2B	CR302 4A	PC401 4C	Q402 2B	R113 9D	R221 6D	R244 5B	R317 4A	R411 2D			
C108 9C	C203 7B	C219 5C	C309 4B	C415 2C	CR303 1A	Q101 10C	Q403 3C	R114 8D	R222 7D	R246 6B	R318 4A	R412 2D			
C109 10C	C204 8C	C221 6C	C315 2A	C418 2B	CR304 2A	Q102 9C	Q404 3B	R115 9A	R223 6C		R319 3A	R413 1D			
C111 9C	C206 8B	C222 5C	C316 1A	C417 2C	CR305 1B	Q201 7B	Q405 3D	R201 7B	R224 8C	R301 6B	R321 3A	R415 1C			
C112 8C	C206 8C	C223 4B		C418 2B	CR306 2B	Q202 6D	Q406 2B	R202 6A	R225 5D	R302 6B	R322 4B	R416 1B			
C113 9B	C207 8C	C224 5B	C401 2D	C421 4C	L101 10A	Q203 7D	R101 10C	R203 7A	R227 5D	R303 6B	R323 4A	R417 1C			
C114 9C	C208 6C	C226 5C	C402 2D	C422 4B	L102 9C	Q204 5C	R102 10C	R204 8B	R228 5D	R304 6B	R339 3A	R416 1B			
C116 9C	C209 8D	C227 5B	C403 4D	C423 2C	L103 9C	Q301 7B	R103 10C	R206 6A	R229 4C	R306 7B	R340 1A	R421 2C			
C117 9C	C211 7D	C228 5B	C404 4D		L104 8C	Q302 6A	R104 10C	R207 6A	R231 5C	R307 6A	R341 2A	R422 2B			
C118 8C	C212 6C		C405 4D	CR101 8D			R106 9B	R208 7D	R232 5C	R308 6A	R342 4C	R423 2C			
C119 8B		C301 5B	C408 4D					R209 8D	R233 6D	R309 6B	R343 2A	R424 2B			
								R211 8C	R234 6C		R344 2A	R425 2C			
								R212 7C			R347 2A	R426 3B			
								R213 7C			R348 2A	R427 2C			
											R401 2D	R428 2B			
												R429 3C			
												R430 3B			
												R431 1C			
												R432 1B			
												R433 1C			
												R434 1B			
												R435 1C			
												R436 1B			
												R447 2C			
												R451 2D			
												R452 1C			
												T101 9A			
												T102 8C			
												T201 8B			
												T202 8C			
												T203 7D			
												T204 7C			
												T205 6D			
												T206 5C			
												T301 7A			
												T302 5A			
												T303 3A			
												T401 3C			
												T402 3B			

Terminals										
A 9A	D 10B	N 9D	AA 4D	AH 6B	AN 4C	AT 4C	BA 1C	BE 9D	TP1 3B	
B 9A	E 6A	N 6C	AB 2D	AJ 2A	AP 4D	AU 4C	BB 4B	BF 6C		
	H 7A	U 7B	AD 2D	AK 1A	AR 3C	AW 2D	BC 4B	BH 4C		
	K 8A		AE 4D	AL 4A	AS 4D		BD 4B			

Component Location Guide

SEARS | *Silvertone* CHASSIS 132.42701
MODEL 2063, 2064, 2065

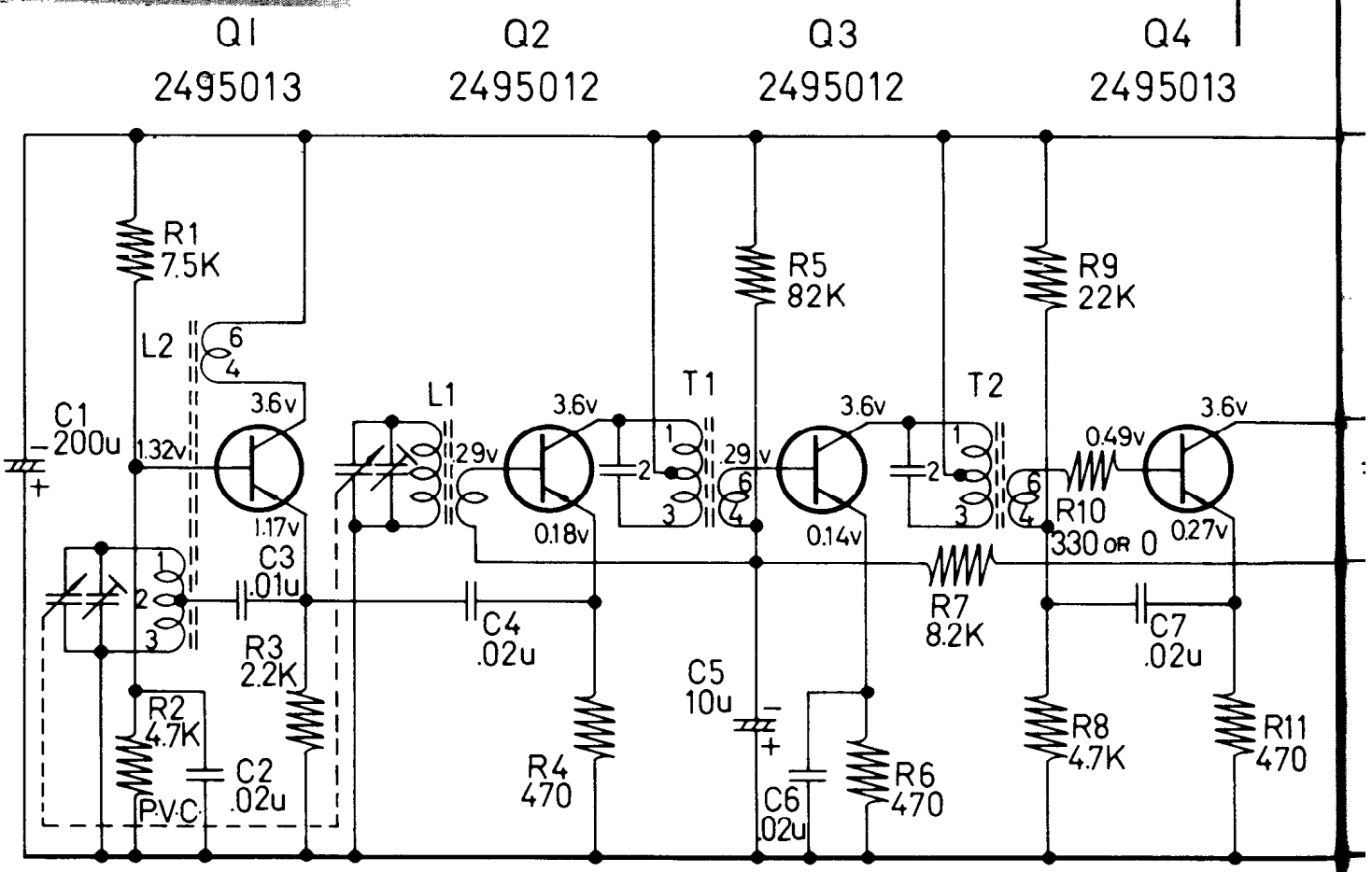


CIRCUIT BOARD DIAGRAM
(Bottom View)

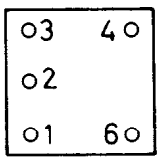
SEARS

CHASSIS 132.41501
MODELS 2230, 2231, 2232

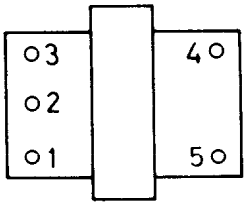
(Continued on next page.)



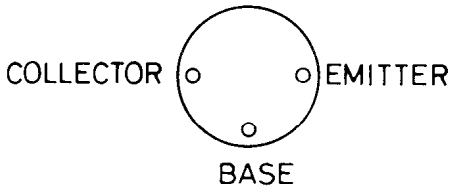
L2, T1, T2, T3



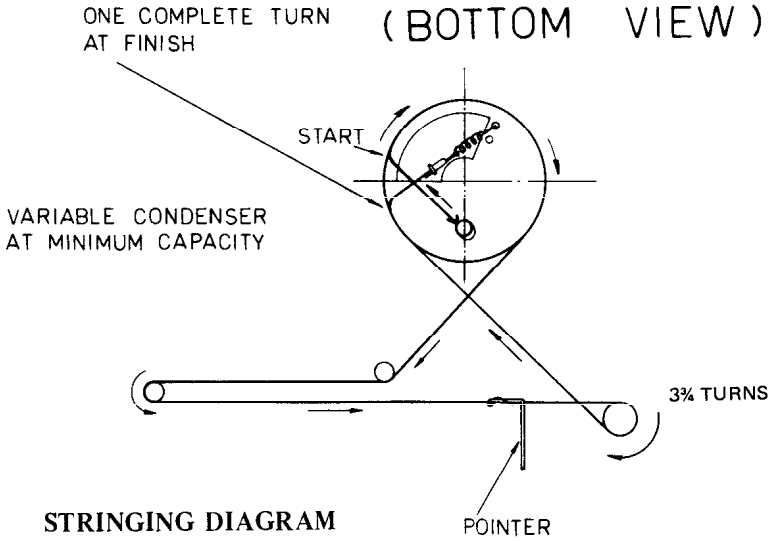
T4, T5



Q1 Q8



(BOTTOM VIEW)



STRINGING DIAGRAM

IF 455 KC

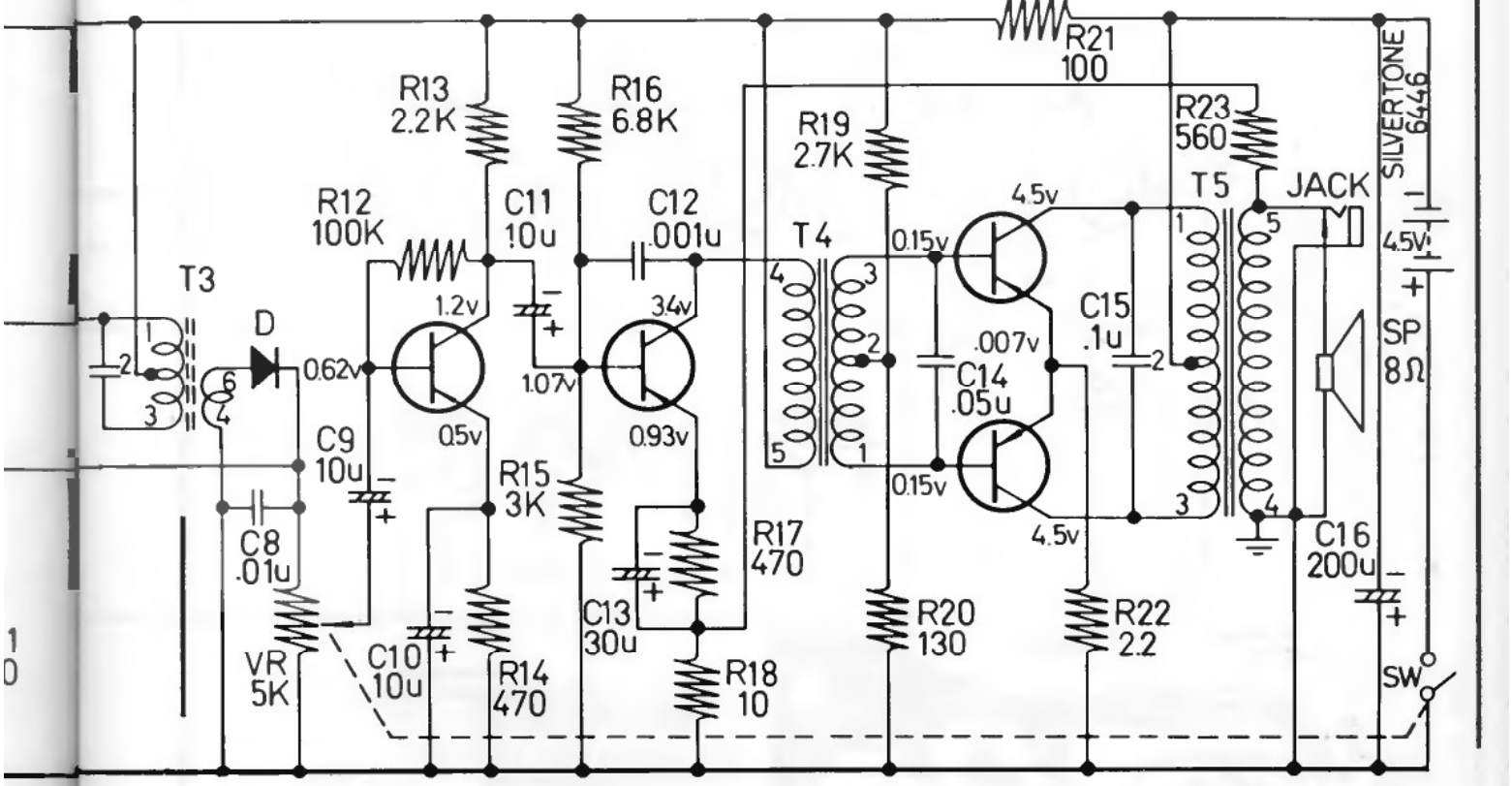
Silvertone

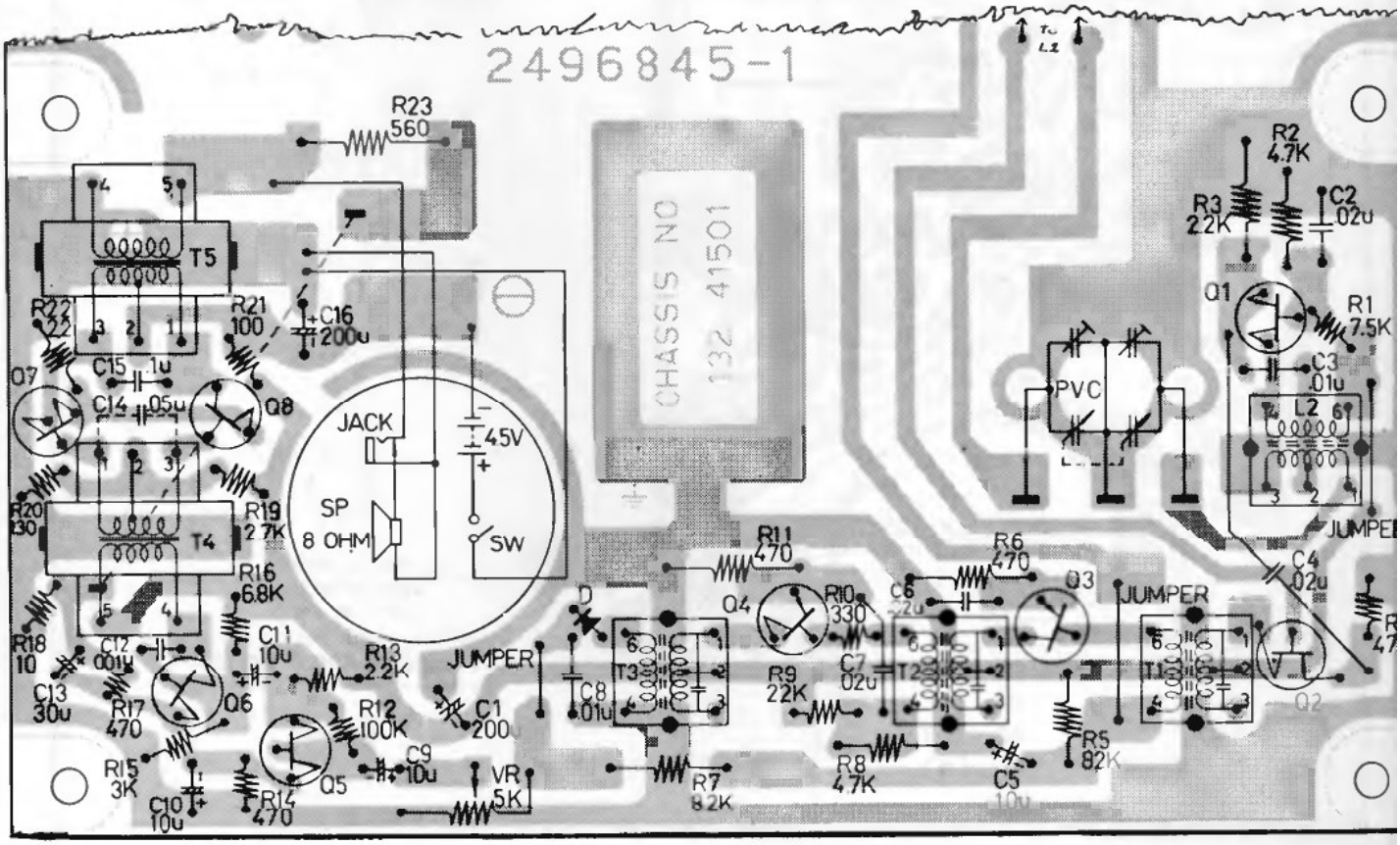
RADIO CHASSIS NO. **132.41501**

USED IN RADIO MODEL
2230
2231
2232

(Continued from preceding page.)

D	Q5	Q6	Q7, Q8
2495083	2495014	2495014	2497473





CIRCUIT BOARD DIAGRAM
(Bottom View)

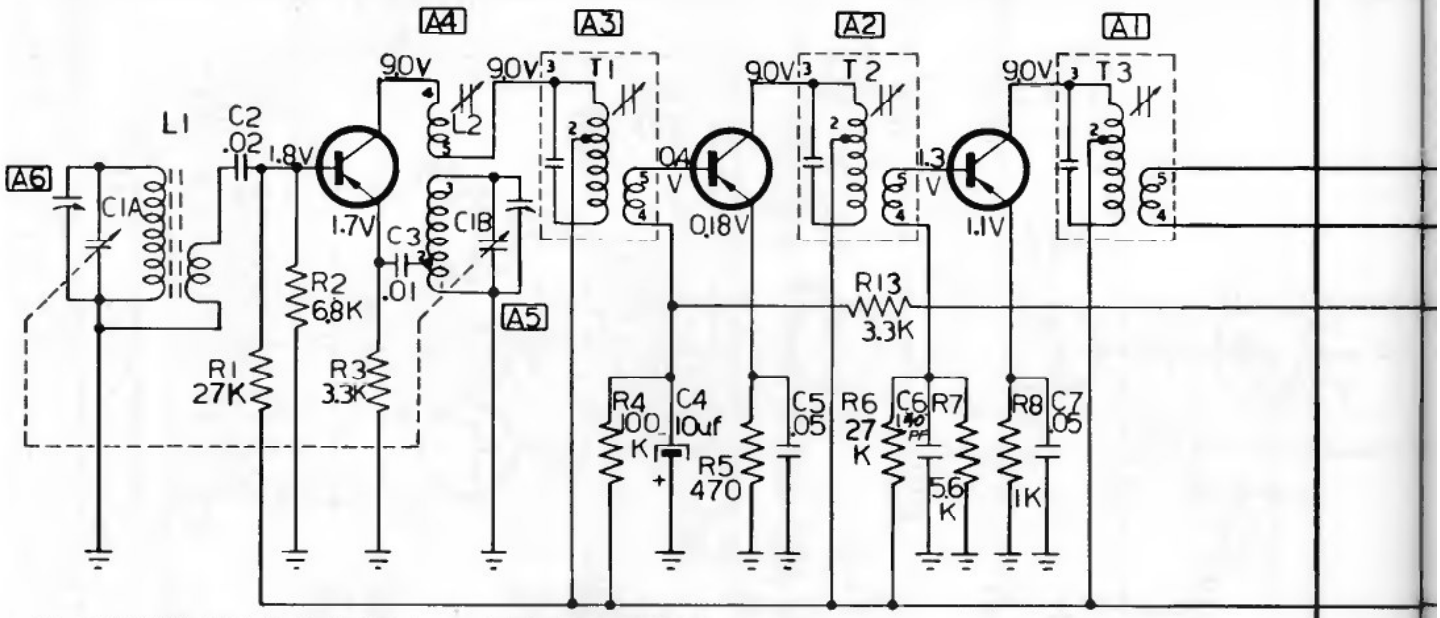
SEARS Silvertone

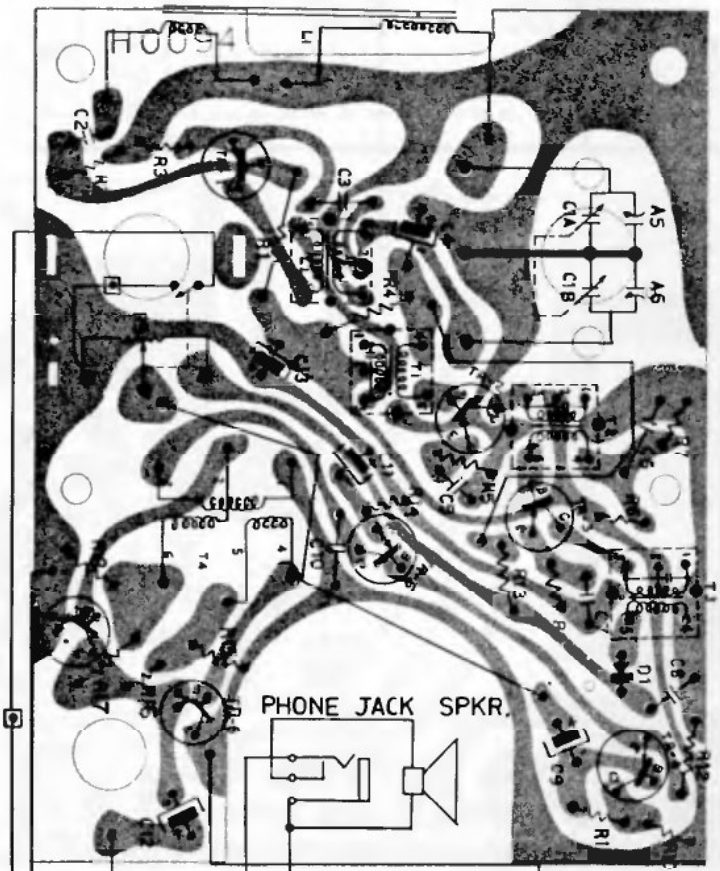
RADIO CHASSIS NO. **132.42301** (Continued on next page.)

TR-1
2SA29-1
CONVERTER

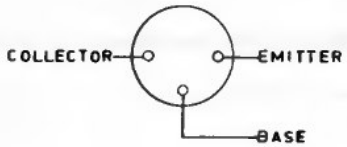
TR-2
2SA29-2
FIRST I.F.

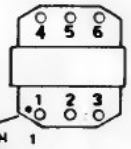
TR-3
2SA29-3
SECOND I.F.





TRANSISTOR
(BOTTOM VIEW)





AUDIO DRIVER TRANSFORMER T4
(BOTTOM VIEW)

I.F. TRANSFORMER & OSCILLATOR COIL
(BOTTOM VIEW)

USED IN RADIO MODEL
2203

CIRCUIT BOARD DIAGRAM (BOTTOM VIEW)

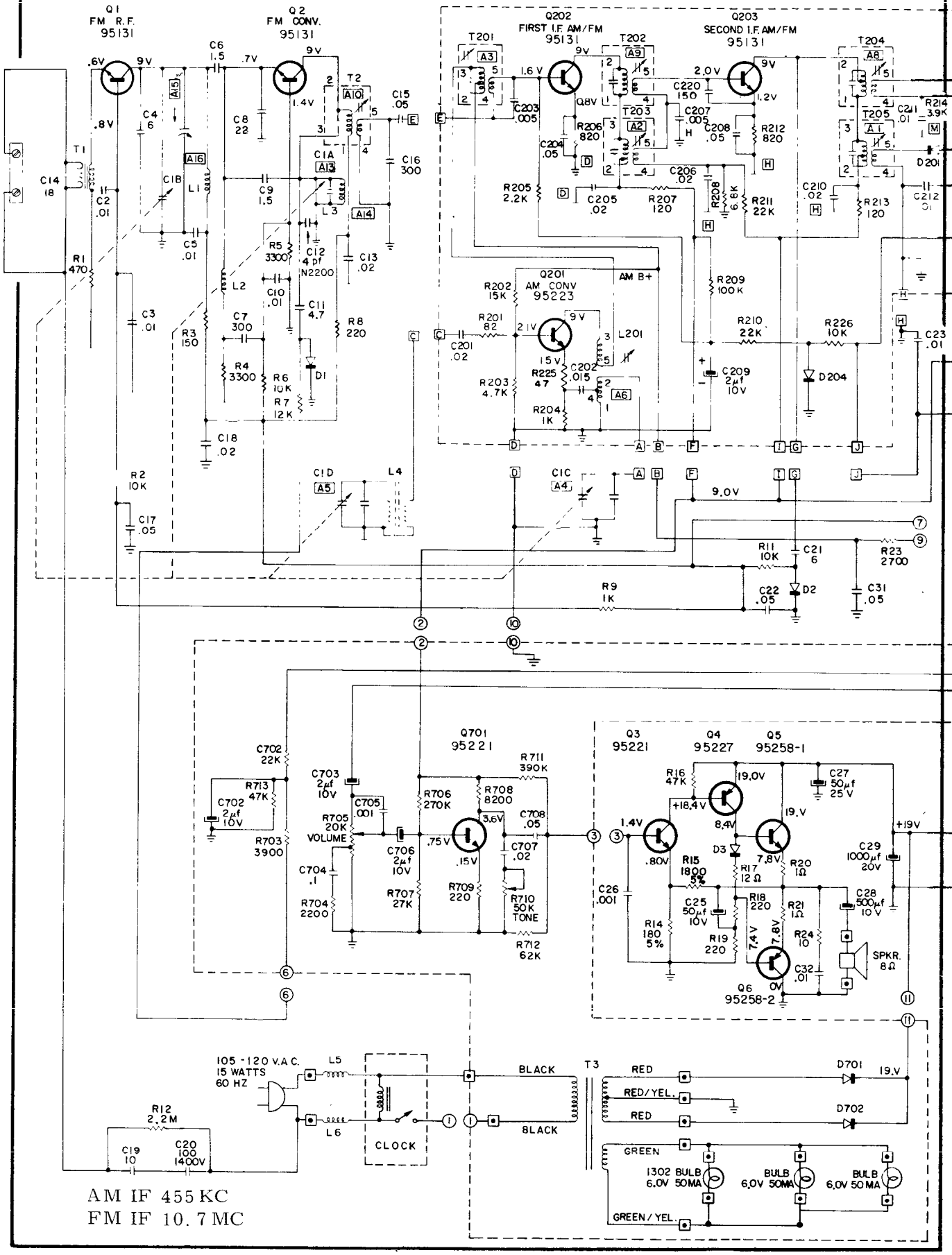
SEARS CHASSIS 132.42301 (Continued from preceding page.)
MODEL 2203

Position of Variable	Frequency of Generator	Dummy Antenna
Open	455 kHz	.05 mf.
Closed	530 kHz	
Open	1640 kHz	
1400 kHz	1400 kHz	
600 kHz	600 kHz	

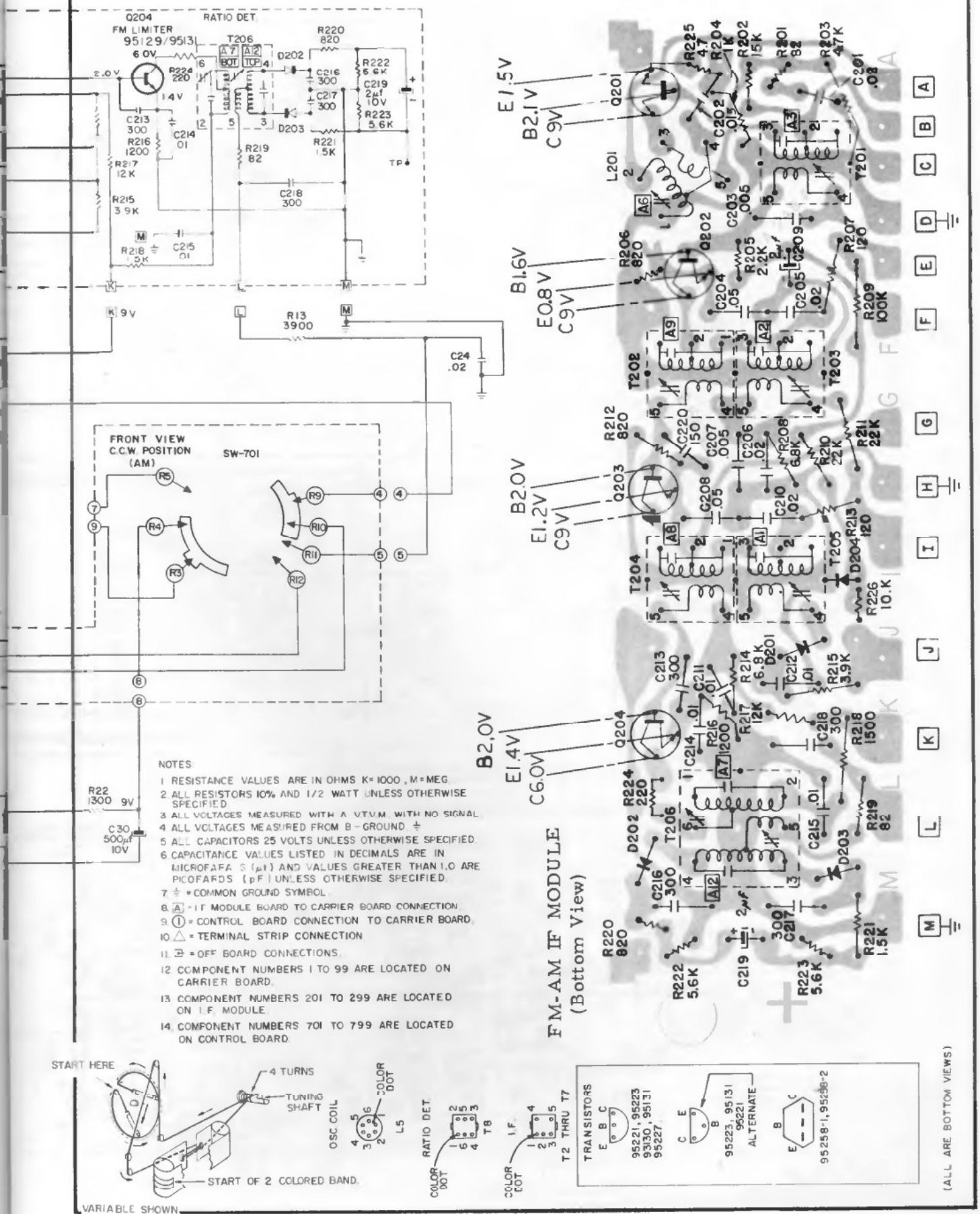
⏚ = COMMON GROUND SYMBOL.
⊡ = EXTERNAL CONNECTION TO PRINTED CIRCUIT.
RESISTANCE VALUES ARE IN OHMS: K=1000.
CAPACITANCE VALUES LESS THAN 1.0 ARE MICROFARADS (uf), AND VALUES GREATER THAN 1.0 ARE IN MICRO-MICROFARADS (pF) EXCEPT WHERE NOTED.
VOLTAGE READINGS TO COMMON GROUND ARE MEASURED WITH VACUUM TUBE VOLTMETER UNDER NO SIGNAL CONDITIONS WITH TUNING CAPACITOR CLOSED AND VOLUME CONTROL AT MINIMUM VOLUME POSITION. TOTAL BATTERY CURRENT DRAIN UNDER NO SIGNAL CONDITIONS, 8 TO 15 MA.

LOCATION OF PARTS

SEARS | Silvertone RADIO CHASSIS NO. 132.53701 MODEL 2097



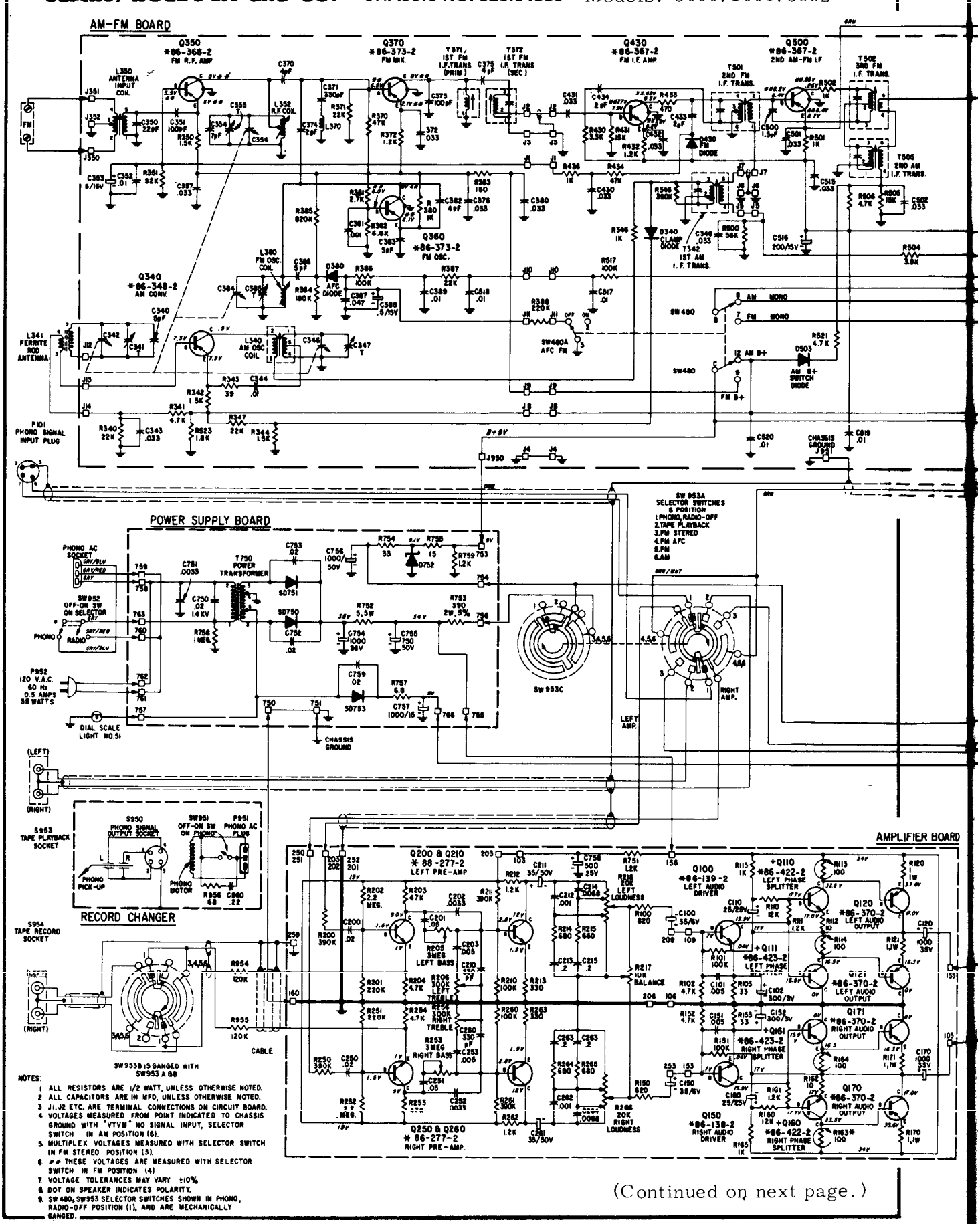
(Continued on next page.)



NOTES:

1. RESISTANCE VALUES ARE IN OHMS K=1000, M=MEG.
2. ALL RESISTORS 10% AND 1/2 WATT UNLESS OTHERWISE SPECIFIED.
3. ALL VOLTAGES MEASURED WITH A VTVM WITH NO SIGNAL.
4. ALL VOLTAGES MEASURED FROM B-GROUND ⏚
5. ALL CAPACITORS 25 VOLTS UNLESS OTHERWISE SPECIFIED.
6. CAPACITANCE VALUES LISTED IN DECIMALS ARE IN MICROFARADS (µf) AND VALUES GREATER THAN 1.0 ARE PICOFARDS (pF) UNLESS OTHERWISE SPECIFIED.
7. ⏚ = COMMON GROUND SYMBOL.
8. (A) = I.F. MODULE BOARD TO CARRIER BOARD CONNECTION.
9. (I) = CONTROL BOARD CONNECTION TO CARRIER BOARD.
10. △ = TERMINAL STRIP CONNECTION.
11. ⋑ = OFF BOARD CONNECTIONS.
12. COMPONENT NUMBERS 1 TO 99 ARE LOCATED ON CARRIER BOARD.
13. COMPONENT NUMBERS 201 TO 299 ARE LOCATED ON I.F. MODULE.
14. COMPONENT NUMBERS 701 TO 799 ARE LOCATED ON CONTROL BOARD.

STRINGING DIAGRAM



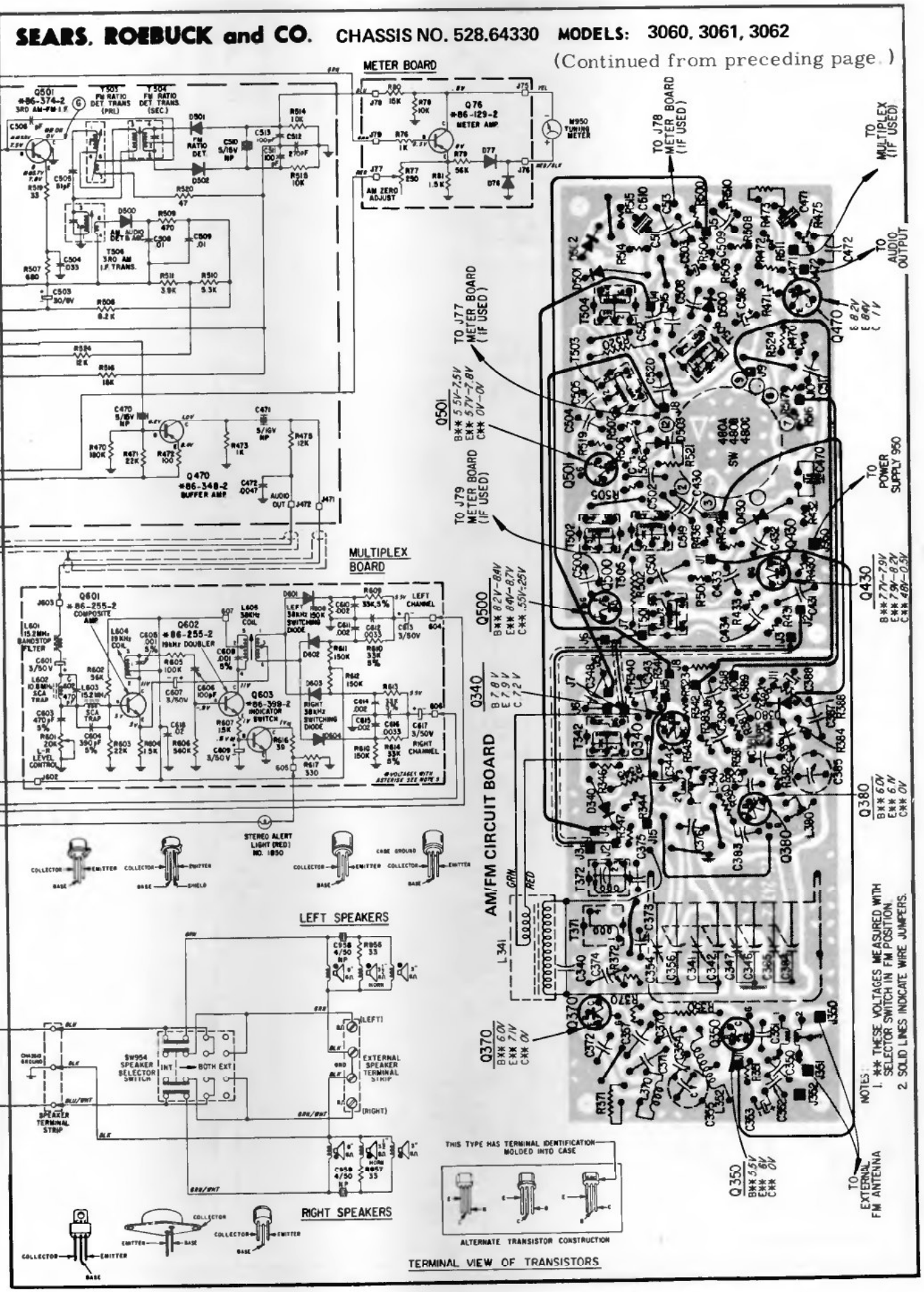
NOTES:

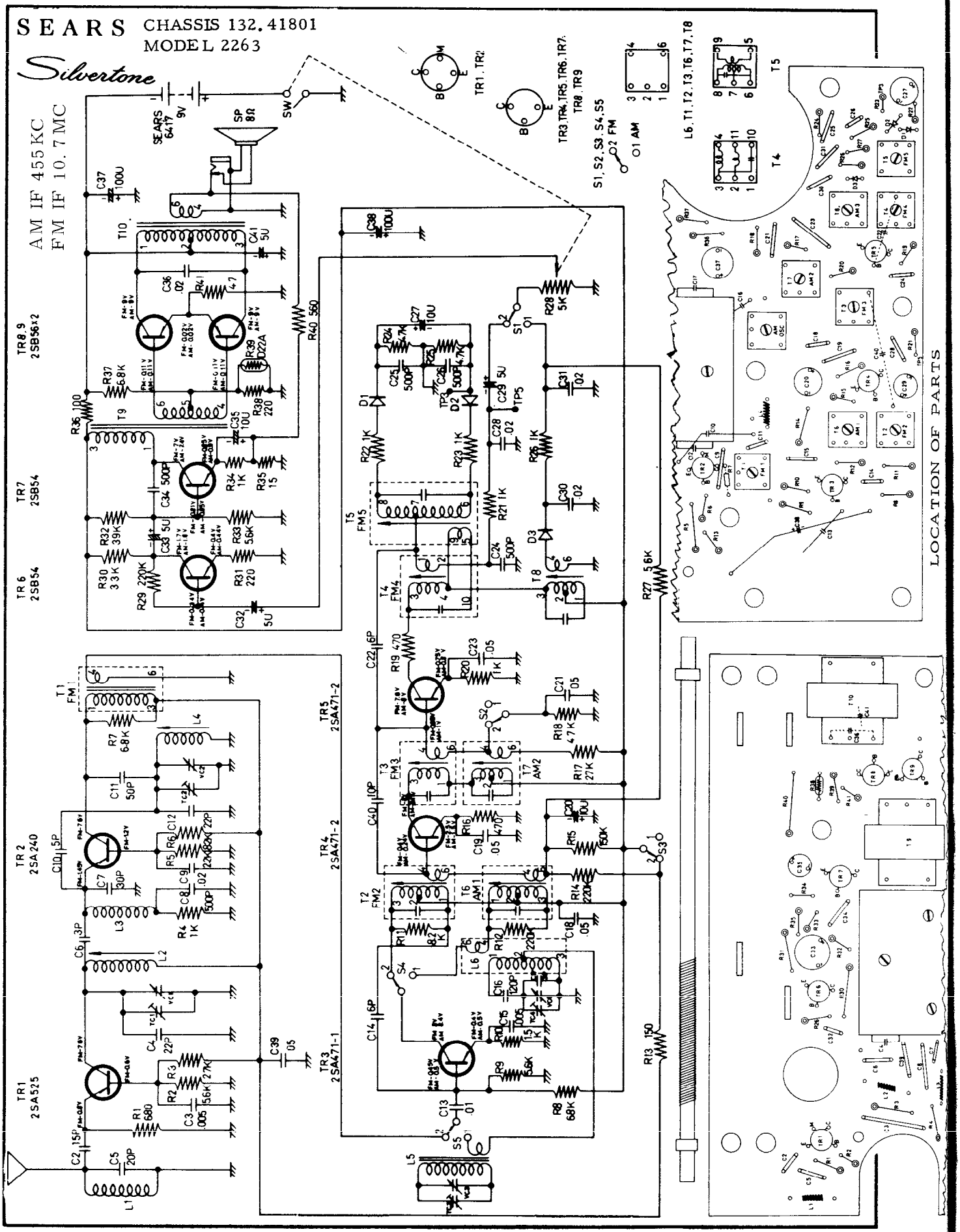
1. ALL RESISTORS ARE 1/2 WATT, UNLESS OTHERWISE NOTED.
2. ALL CAPACITORS ARE IN MFD, UNLESS OTHERWISE NOTED.
3. J1, J2 ETC. ARE TERMINAL CONNECTIONS ON CIRCUIT BOARD.
4. VOLTAGES MEASURED FROM POINT INDICATED TO CHASSIS GROUND WITH "VTVM" NO SIGNAL INPUT, SELECTOR SWITCH IN AM POSITION (6).
5. MULTIPLEX VOLTAGES MEASURED WITH SELECTOR SWITCH IN FM STEREO POSITION (3).
6. ## THESE VOLTAGES ARE MEASURED WITH SELECTOR SWITCH IN FM POSITION (4)
7. VOLTAGE TOLERANCES MAY VARY ±10%
8. DOT ON SPEAKER INDICATES POLARITY.
9. SW 480, SW953 SELECTOR SWITCHES SHOWN IN PHONO, RADIO-OFF POSITION (1), AND ARE MECHANICALLY GANGED.

(Continued on next page.)

SEARS, ROEBUCK and CO. CHASSIS NO. 528.64330 **MODELS:** 3060, 3061, 3062

(Continued from preceding page.)



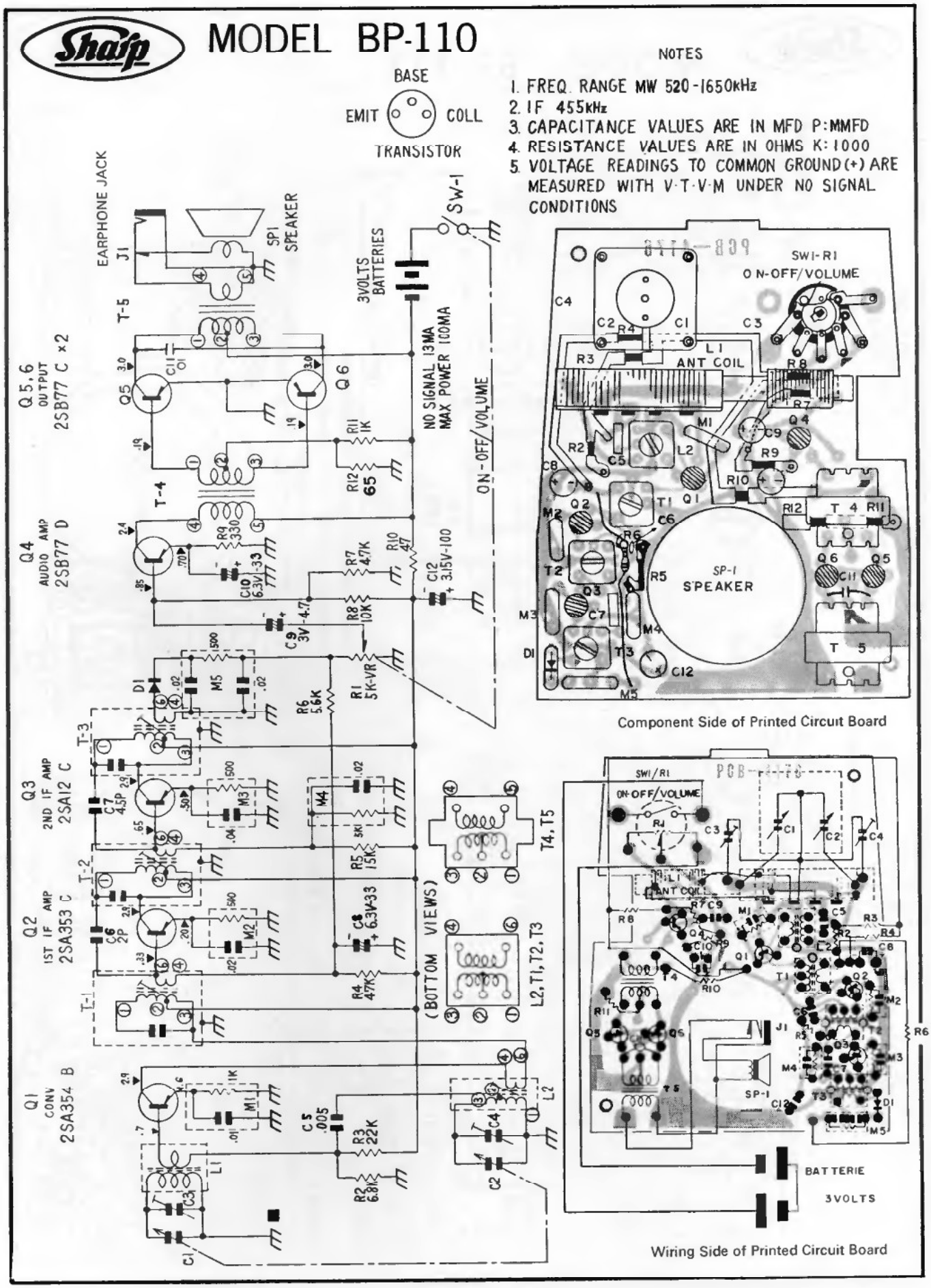

SEARS
CHASSIS 132.41801
MODEL 2263
Silvertone
AM IF 455 KC
FM IF 10.7 MC
LOCATION OF PARTS

MODEL BP-110

NOTES

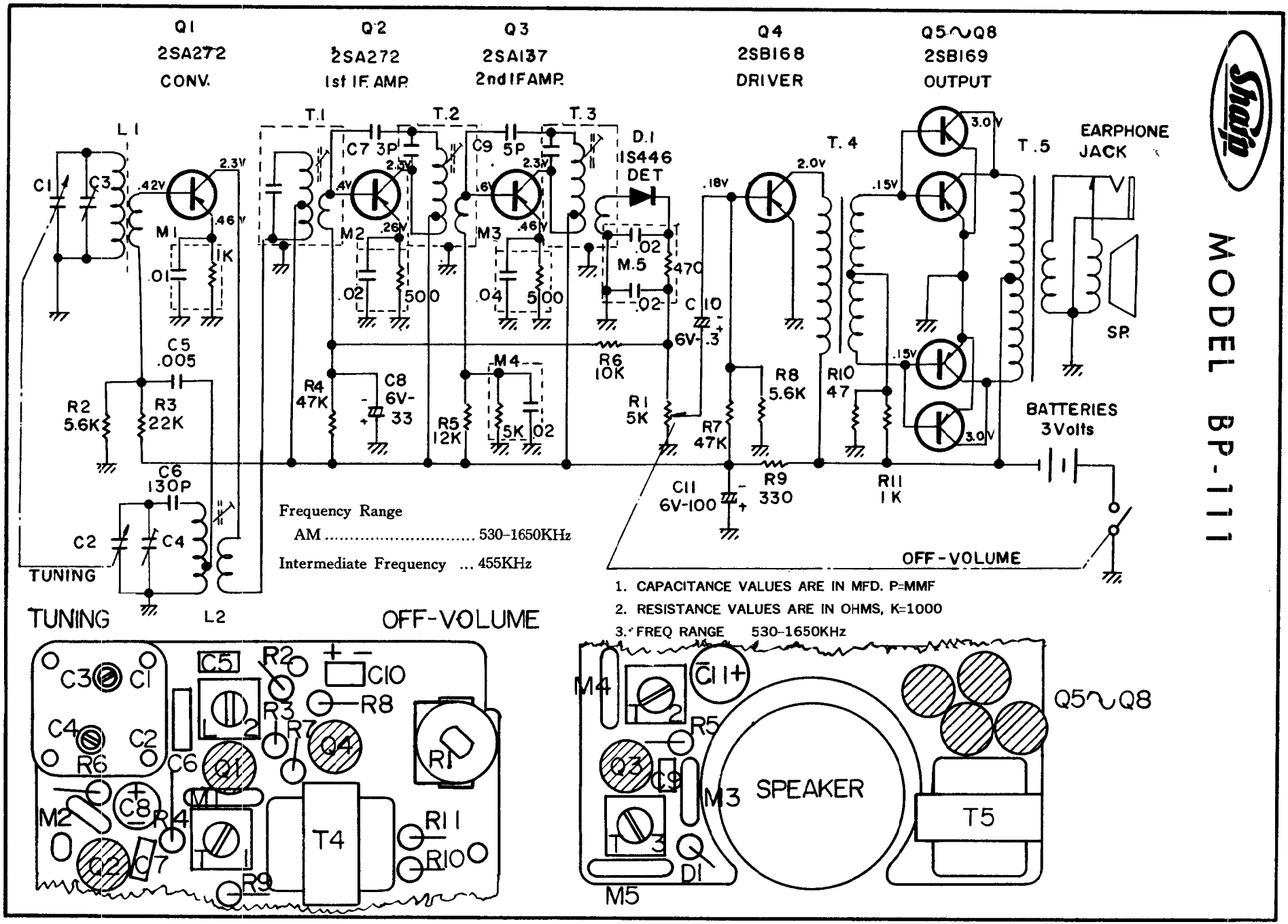
1. FREQ. RANGE MW 520-1650kHz
2. IF 455kHz
3. CAPACITANCE VALUES ARE IN MFD P:MMFD
4. RESISTANCE VALUES ARE IN OHMS K:1000
5. VOLTAGE READINGS TO COMMON GROUND(+) ARE MEASURED WITH V·T·V·M UNDER NO SIGNAL CONDITIONS

BASE
EMIT COLL
TRANSISTOR



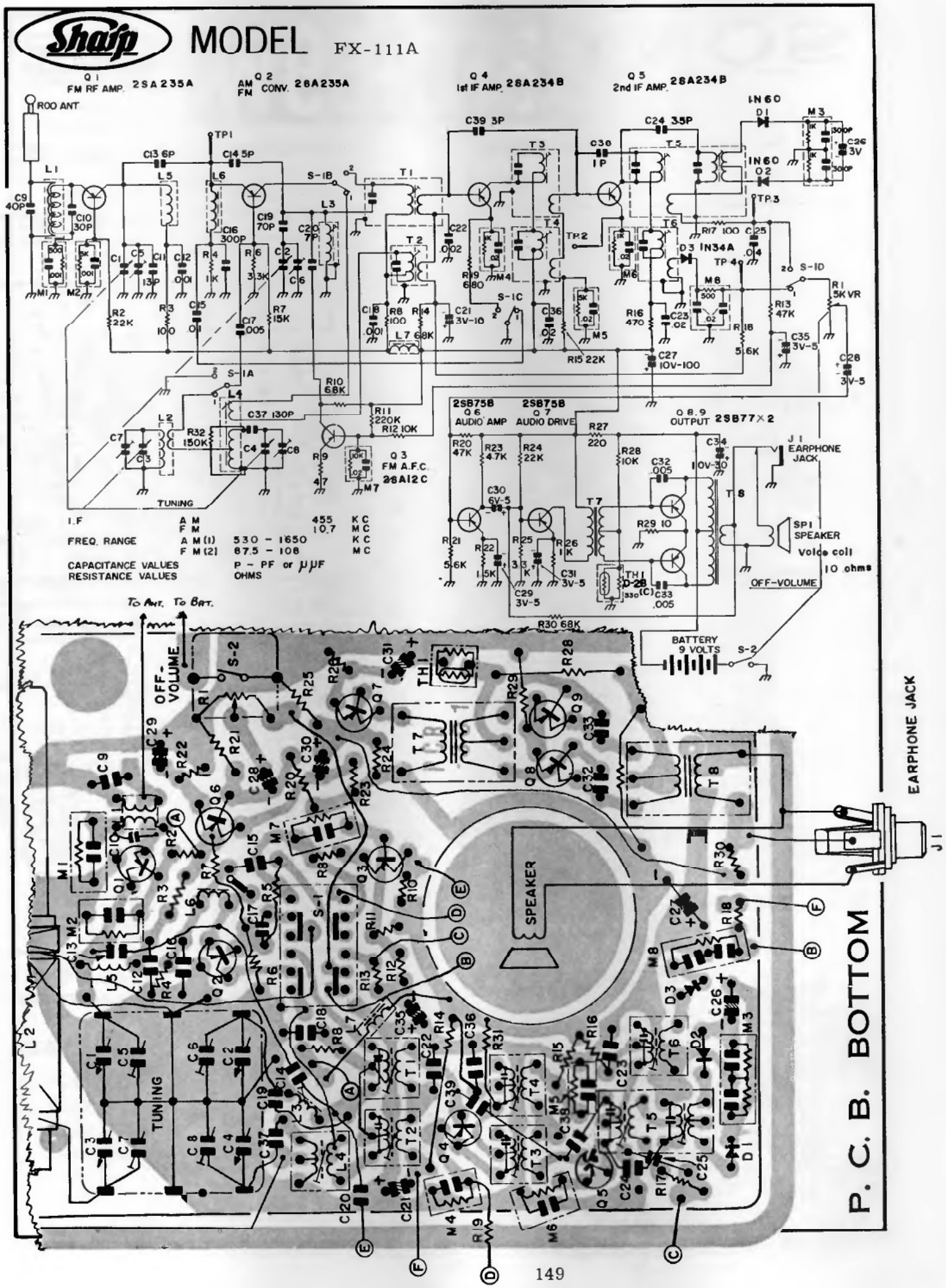
Component Side of Printed Circuit Board

Wiring Side of Printed Circuit Board



COMPONENT SIDE OF PRINTED CIRCUIT BOARD

MODEL BP-111

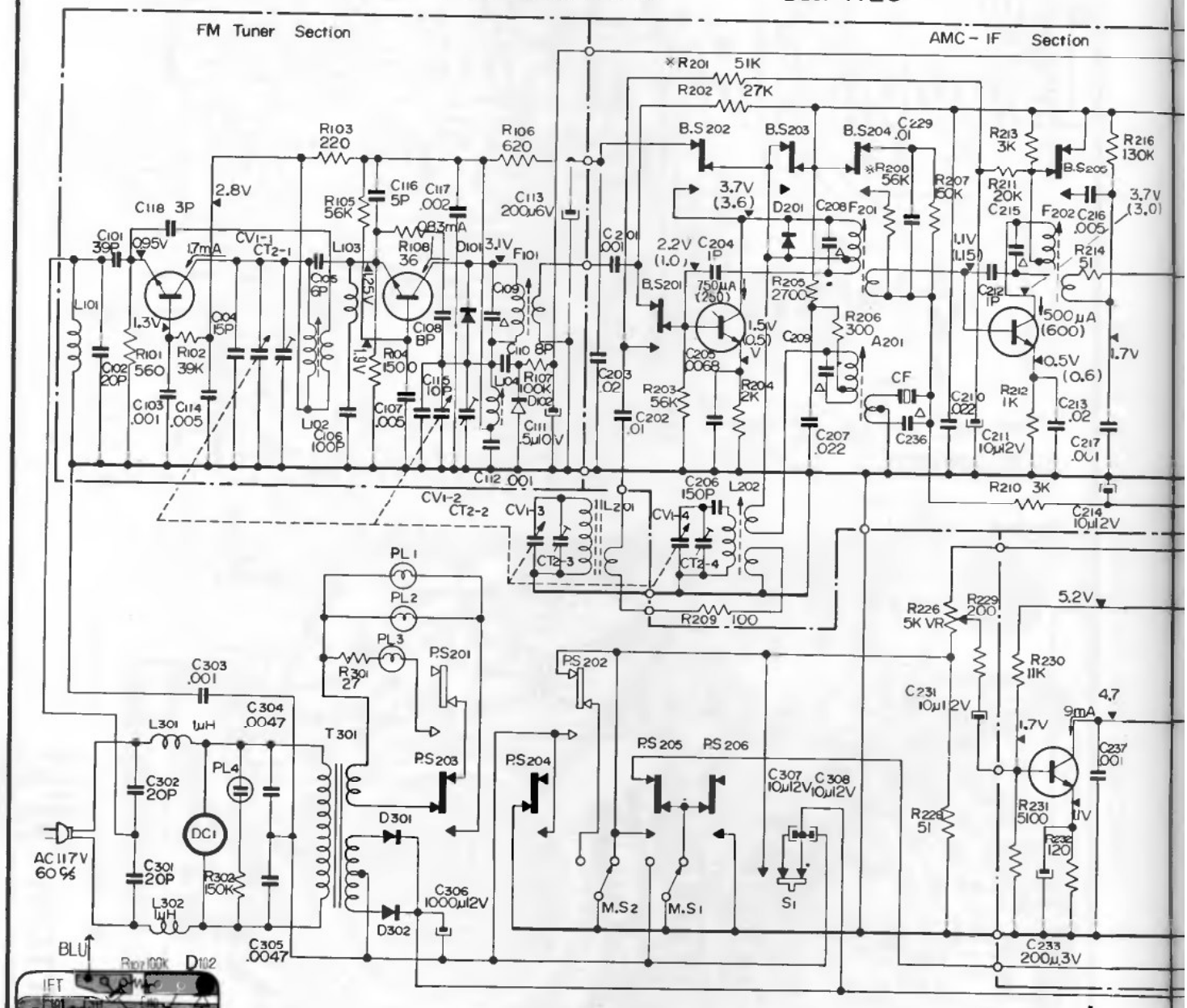

Sharp
MODEL FX-111A
Q1 FM RF AMP. 2SA235A
Q2 AM CONV. FM CONV. 2SA235A
Q4 1st IF AMP. 2SA234B
Q5 2nd IF AMP. 2SA234B
ROD ANT
TP1
TP2
TP3
TP4
S-1A
S-1B
S-1C
S-1D
L1
L2
L3
L4
L5
L6
L7
T1
T2
T3
T4
T5
T6
T7
T8
D1 IN60
D2 IN60
D3 IN34A
M1
M2
M3
M4
M5
M6
M7
M8
C1
C2
C3
C4
C5
C6
C7
C8
C9 40P
C10 30P
C11 13P
C12 .001
C13 6P
C14 5P
C15 .01
C16 300P
C17 .005
C18 .001
C19 70P
C20 7P
C21 3V-10
C22 .002
C23 .02
C24 35P
C25 .04
C26 3V
C27 10V-100
C28 3V-5
C29 3V-5
C30 6V-5
C31 3V-5
C32 .005
C33 .005
C34 10V-30
C35 3V-5
C36 .02
C37 130P
C38 .02
C39 3P
R1 5K VR
R2 22K
R3 100
R4 1K
R5 3.3K
R6 15K
R7 68K
R8 100
R9 4.7
R10 68K
R11 220K
R12 10K
R13 47K
R14 68K
R15 22K
R16 470
R17 100
R18 5.6K
R19 680
R20 47K
R21 5.6K
R22 1.5K
R23 4.7K
R24 22K
R25 33K
R26 1K
R27 220
R28 10K
R29 10
R30 68K
R31 68K
R32 150K
Q3 FM A.F.C. 2SA12C
Q6 AUDIO AMP 2SB75B
Q7 AUDIO DRIVE 2SB75B
Q8,9 OUTPUT 2SB77×2
J1 EARPHONE JACK
SP1 SPEAKER
Voice coil 10 ohms
OFF-VOLUME
BATTERY 9 VOLTS
TH1 D-28
TUNING
I.F 455 KC
AM
FM 10.7 MC
FREQ. RANGE AM(1) 530 - 1650 KC
FM(2) 87.5 - 108 MC
CAPACITANCE VALUES P - PF or μμF
RESISTANCE VALUES OHMS
To Ant. To Bat.
P. C. B. BOTTOM
EARPHONE JACK
J1
SPEAKER

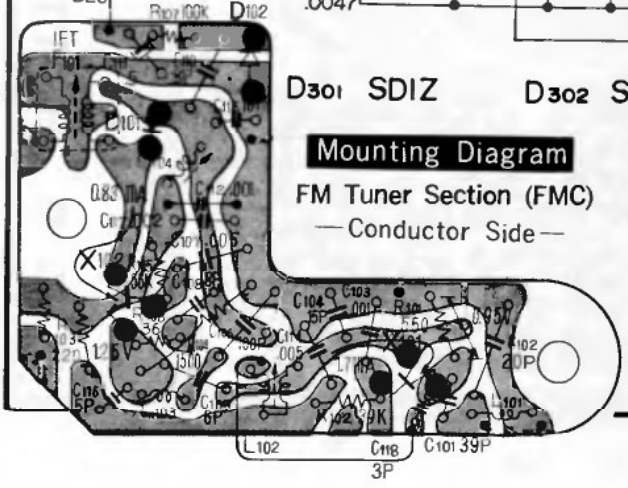
SONY 8FC-69W

(Continued on next page.)

X101 2SC629 X102 2SC629 X201 2SC403A X202 2SC403A

D101 IT26 D102 IT240 D201 IT26



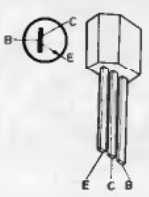


Mounting Diagram

FM Tuner Section (FMC)

—Conductor Side—

X101 2SC629
X102 2SC629



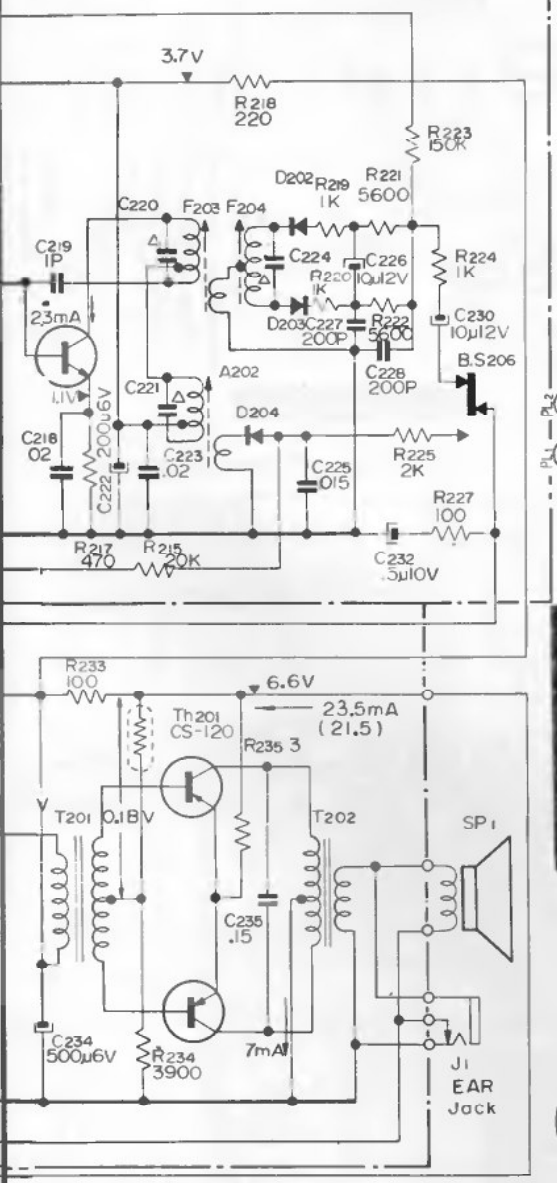
D102 IT-240

SONY 8FC-69W

(Continued from preceding page.)

X203 2SC403A

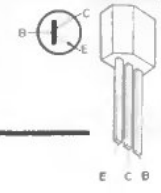
D204 IT23 D202,203 IT26



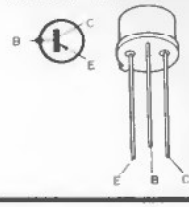
AF Section

X205, 206 2SB383

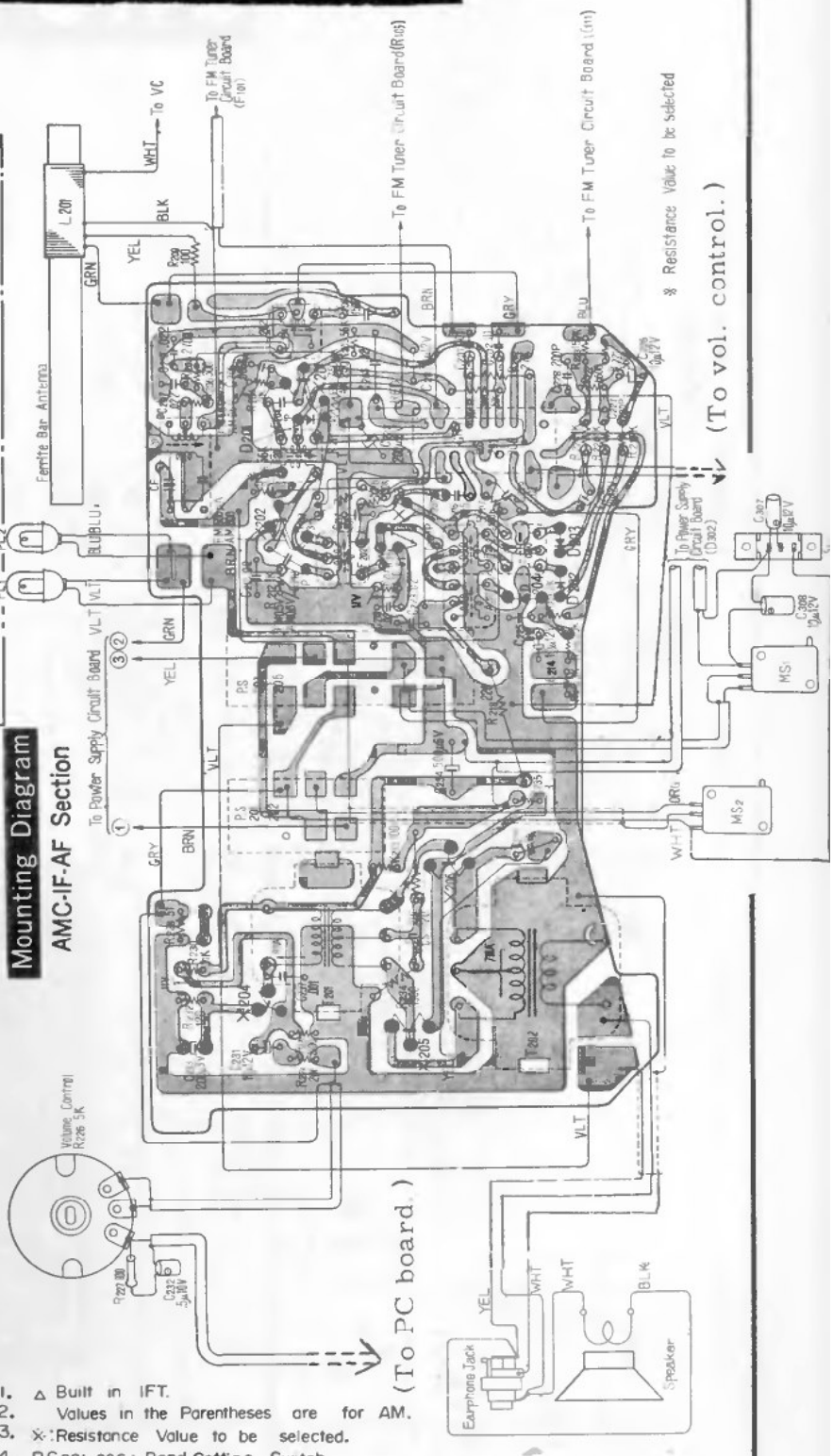
X201 2SC403
X202 2SC403
X203 2SC403
X204 2SC633



X205 2SB383
X206 2SB383



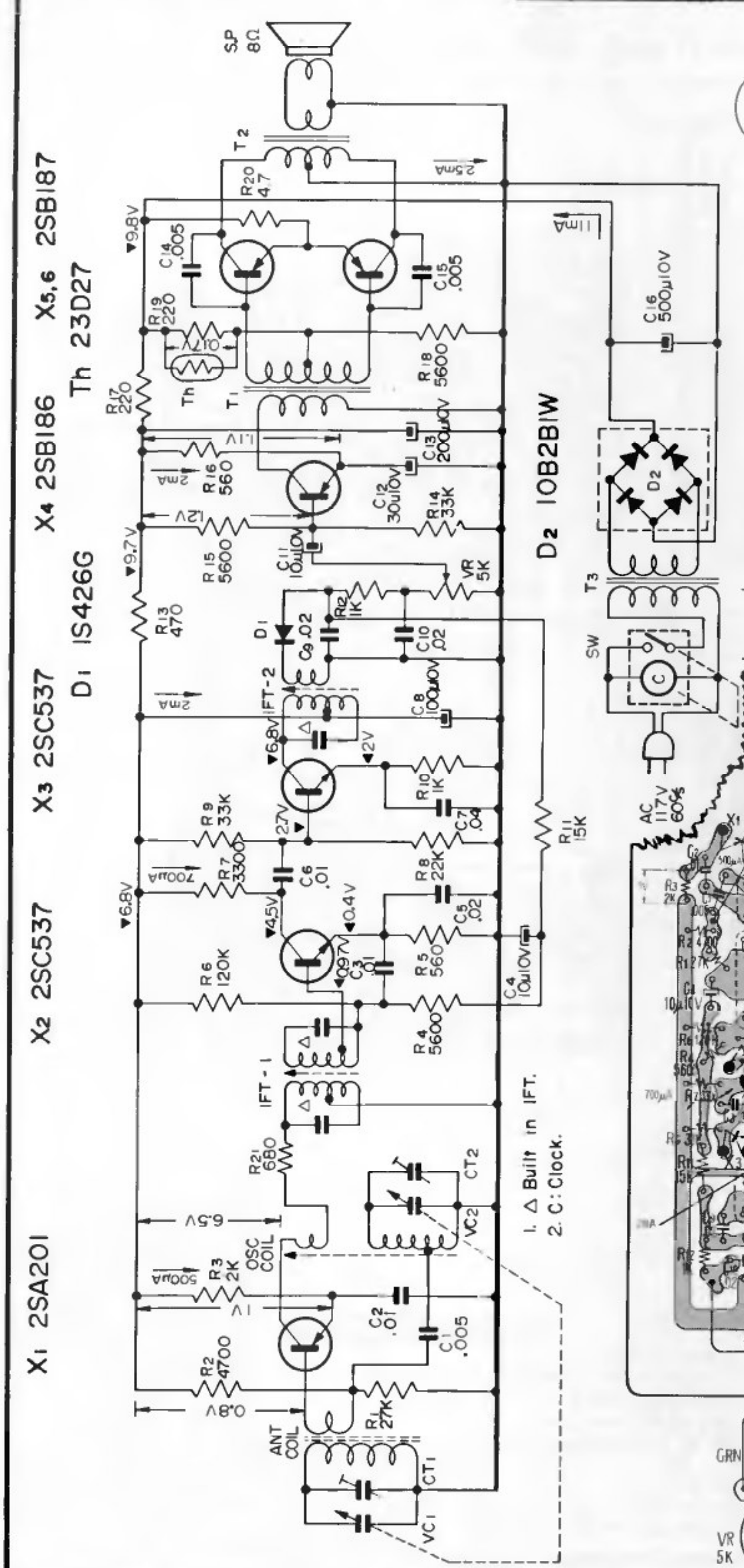
Mounting Diagram AMC-IF-AF Section

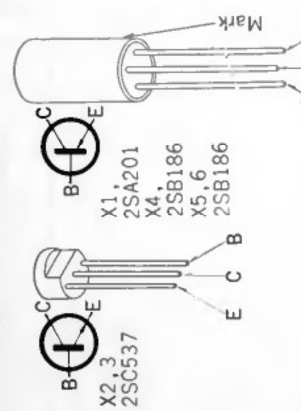


1. △ Built in IFT.
2. Values in the Parentheses are for AM.
3. ※: Resistance Value to be selected.
4. B.S201-206 : Band Setting Switch.
5. FM ▶ Band Setting Switch shown is set to FM position.
   AM ▶
6. P.S201-202 : Automatic Switch.
7. P.S203-206 : Manual Switch.

Intermediate Frequency: FM 10.7 Mc AM 455 Kc

SONY 6RC-23

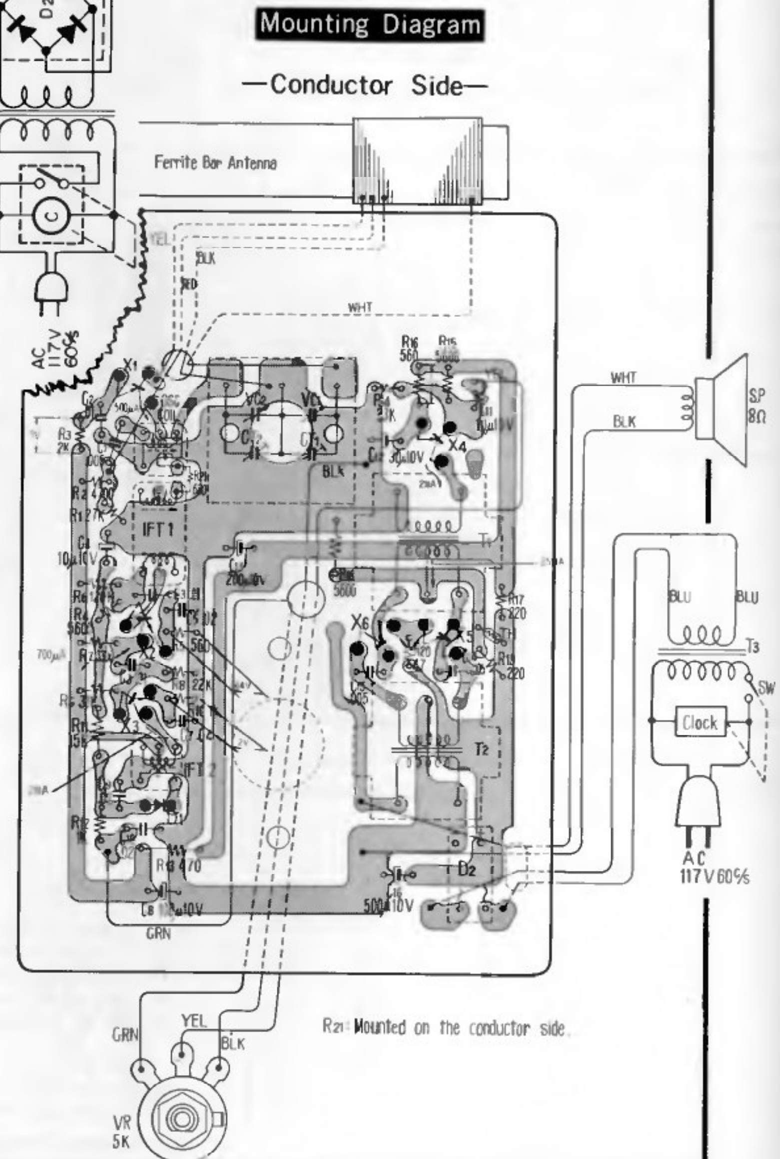




Antenna System: Built-in Ferrite Bar Antenna
Intermediate Frequency: 455 Kc
Maximum Sensitivity: 100 μV/m (at 50mW output)
Selectivity: 20 dB at 10 Kc off resonance, at 1,400 Kc
Power Output: 300 mW (undistorted) 450 mW (maximum)
Speaker: 2½" (60mm) PM dynamic, impedance 8Ω
Power Requirement: AC 110~120V, 60 c/s, 5 W

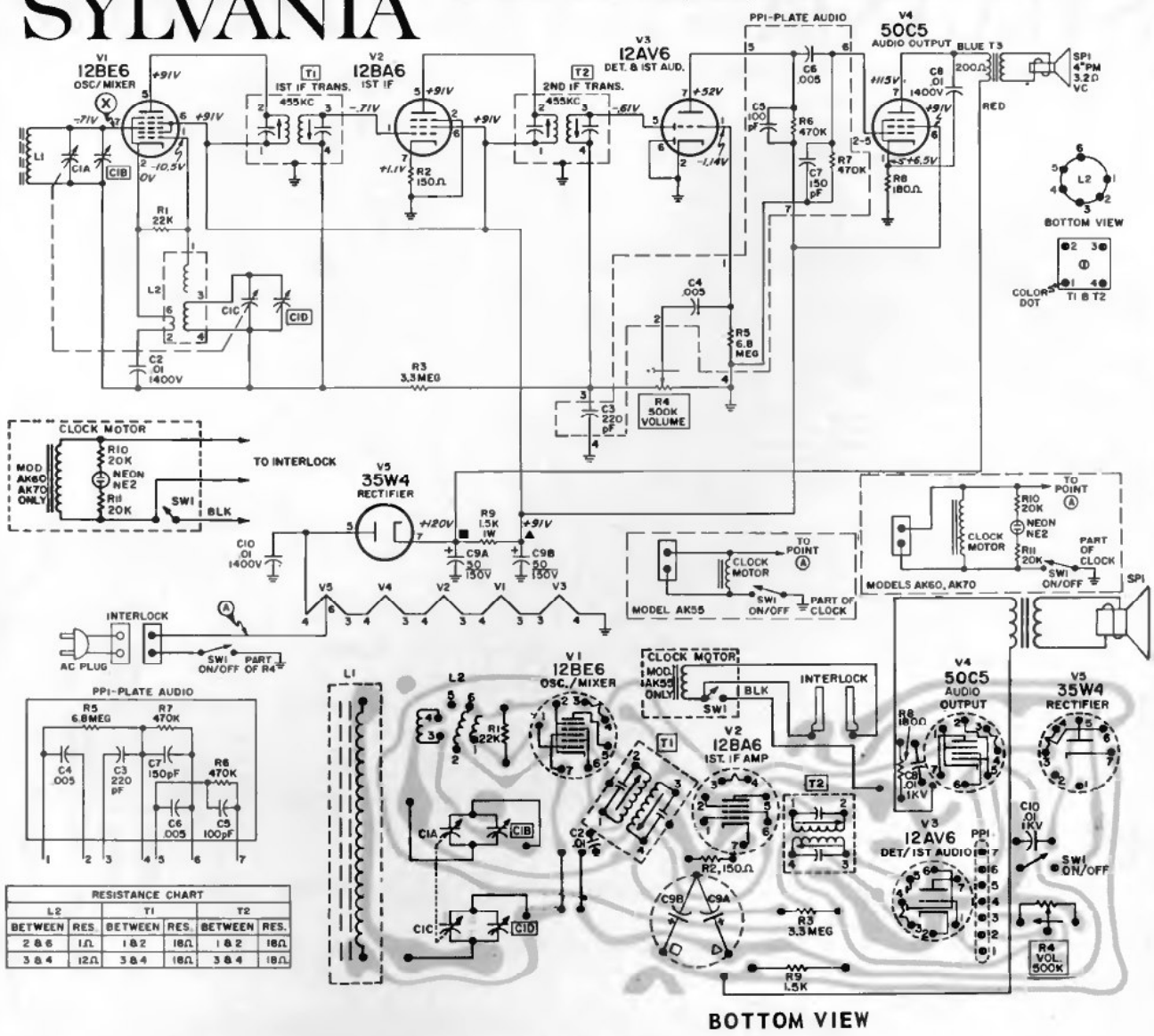
Mounting Diagram

—Conductor Side—



SYLVANIA

MODELS: AK55, AK60, AK70, AT50 Chassis U50-3, 4, 6



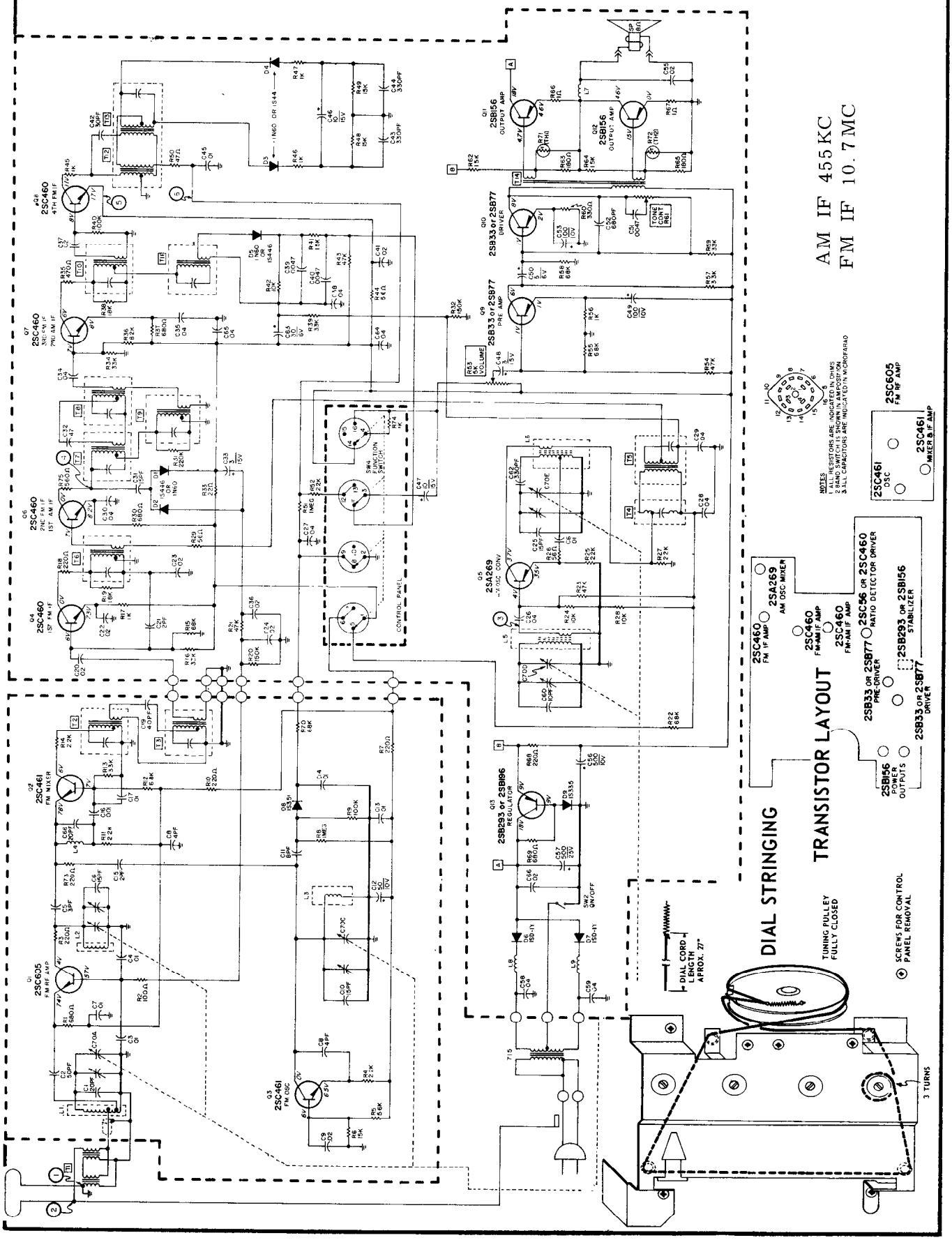
BOTTOM VIEW

RESISTANCE CHART					
L2		T1		T2	
BETWEEN	RES.	BETWEEN	RES.	BETWEEN	RES.
2 & 6	1Ω	1 & 2	18Ω	1 & 2	18Ω
3 & 4	12Ω	3 & 4	18Ω	3 & 4	18Ω

STEP	TUNING CAPACITOR SETTING	TEST EQUIPMENT HOOK-UP	GENERATOR FREQUENCY	ADJUSTMENT POINT	ADJUST FOR
1	Fully open	SIGNAL GENERATOR - "Hot" lead thru a 200pF capacitor to test point (X). Ground lead to chassis AC VOLTMETER - Across speaker voice coil.	455 KC 400 CPS 30% MOD.	T2 Bottom Core T2 Top Core T1 Bottom Core T1 Top Core	Maximum Meter Reading
2	Same as Step 1	SIGNAL GENERATOR - Radiate signal to receiver thru a loop of several turns of wire. AC VOLTMETER - Same as Step 1.	1625 KC 400 CPS. 30% MOD.	C1D Trimmer	Maximum Meter Reading
3	1400 KC	Same as Step 2	Set generator to a frequency corresponding to receiver tuning capacitor setting (until signal is heard thru receiver speaker).	C1B Trimmer	Maximum Meter Reading

SYLVANIA

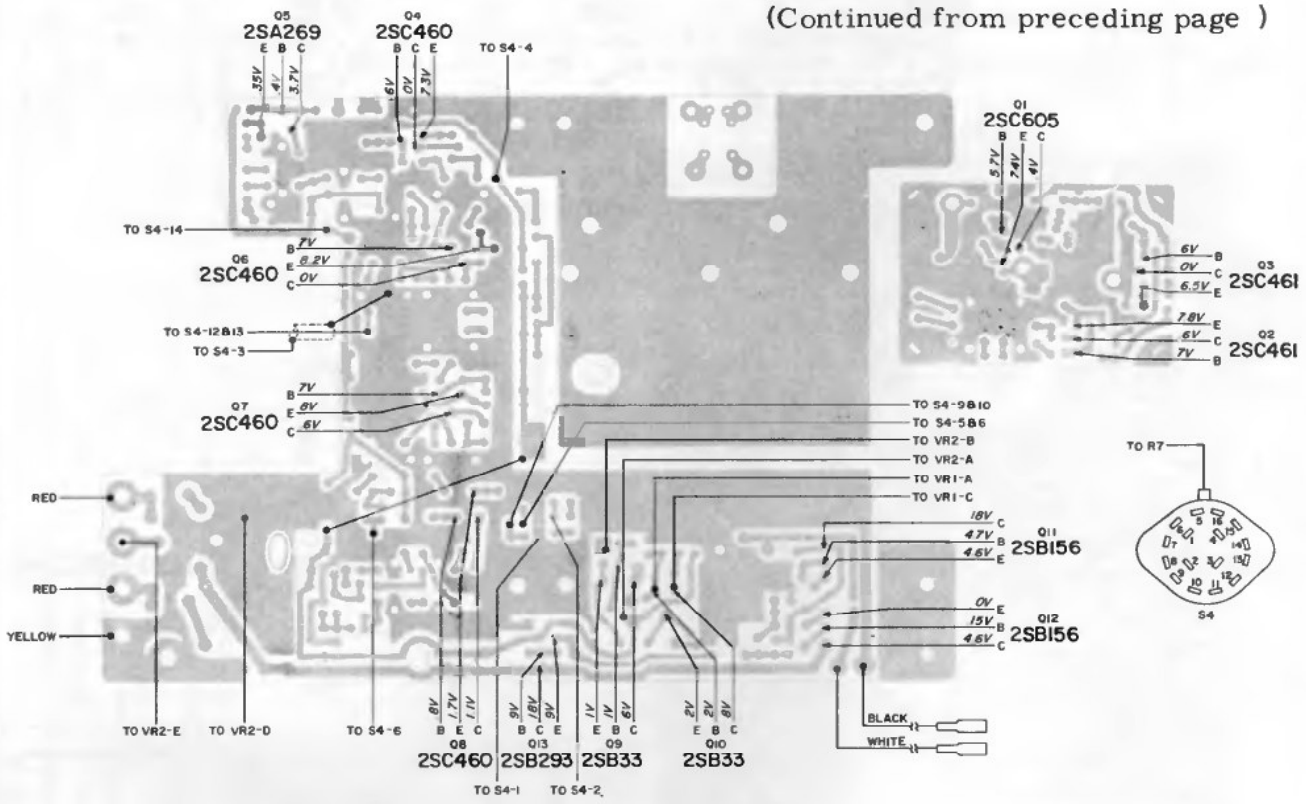
MODELS: BT44, BT46, BK54, BK56 (Continued on next page.)



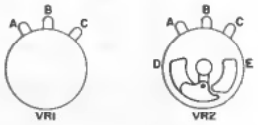
SYLVANIA

MODELS: BT44, BT46 , BK54, BK56

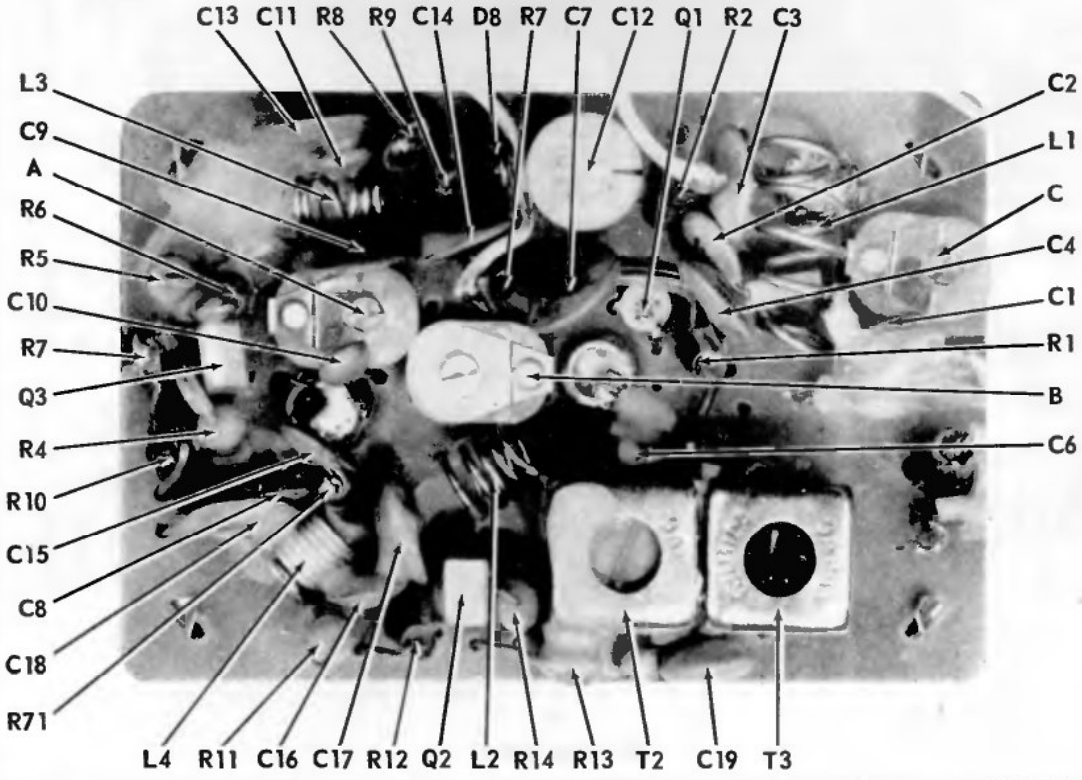
(Continued from preceding page)



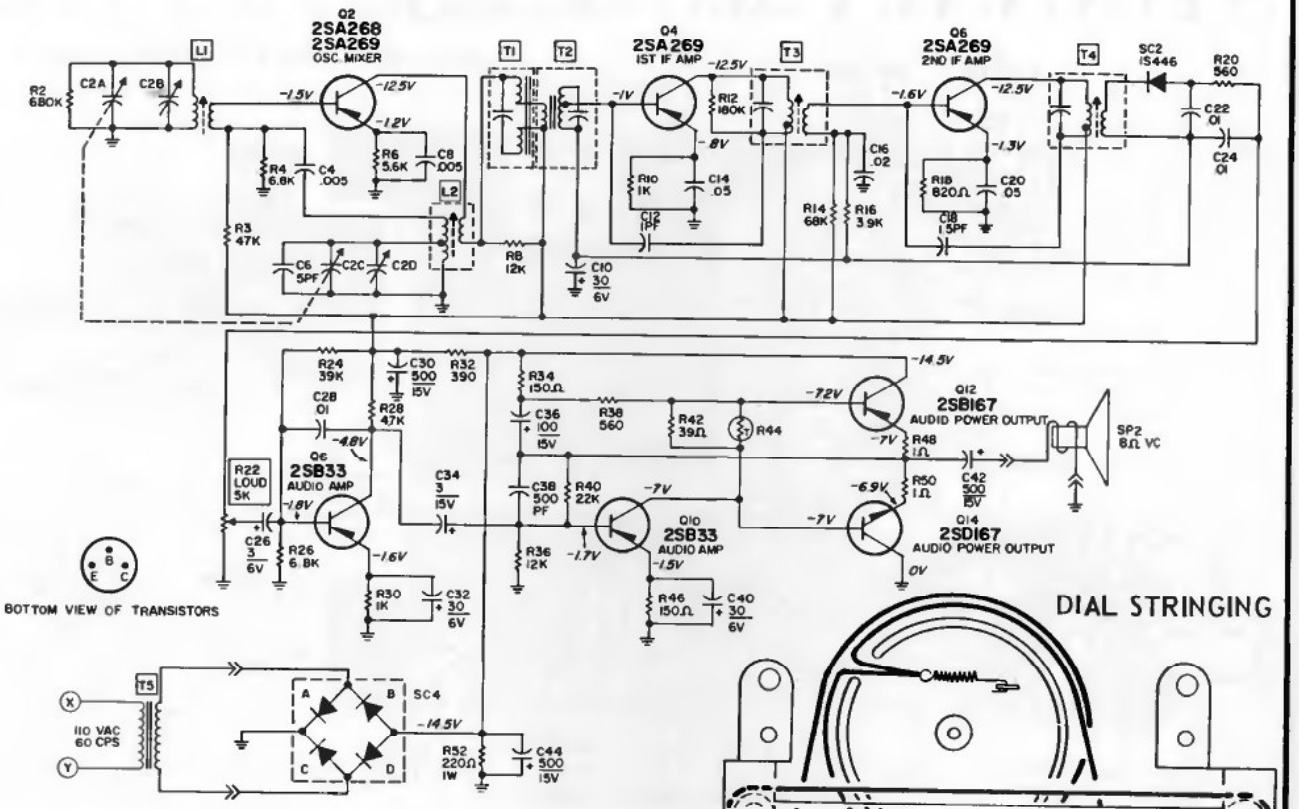
PRINTED PANEL ASSEMBLY BOTTOM VIEW



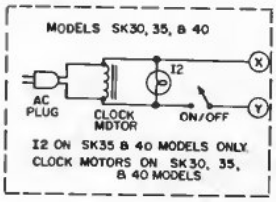
TOP PARTS LAYOUT - RF BOARD



SYLVANIA Models SK30, SK35, SK40, ST10; Chassis 354-1, 355-1, 358-1, 359-1

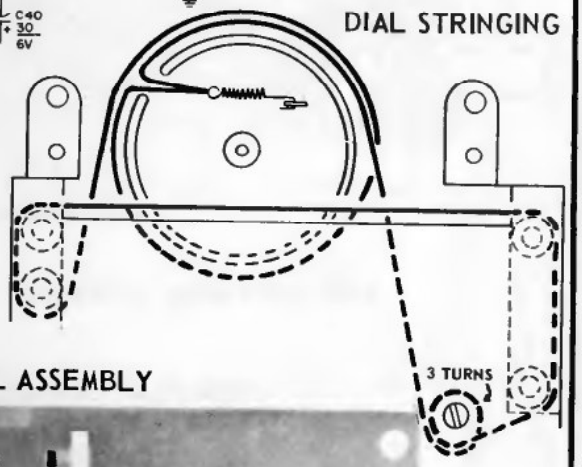


BOTTOM VIEW OF TRANSISTORS

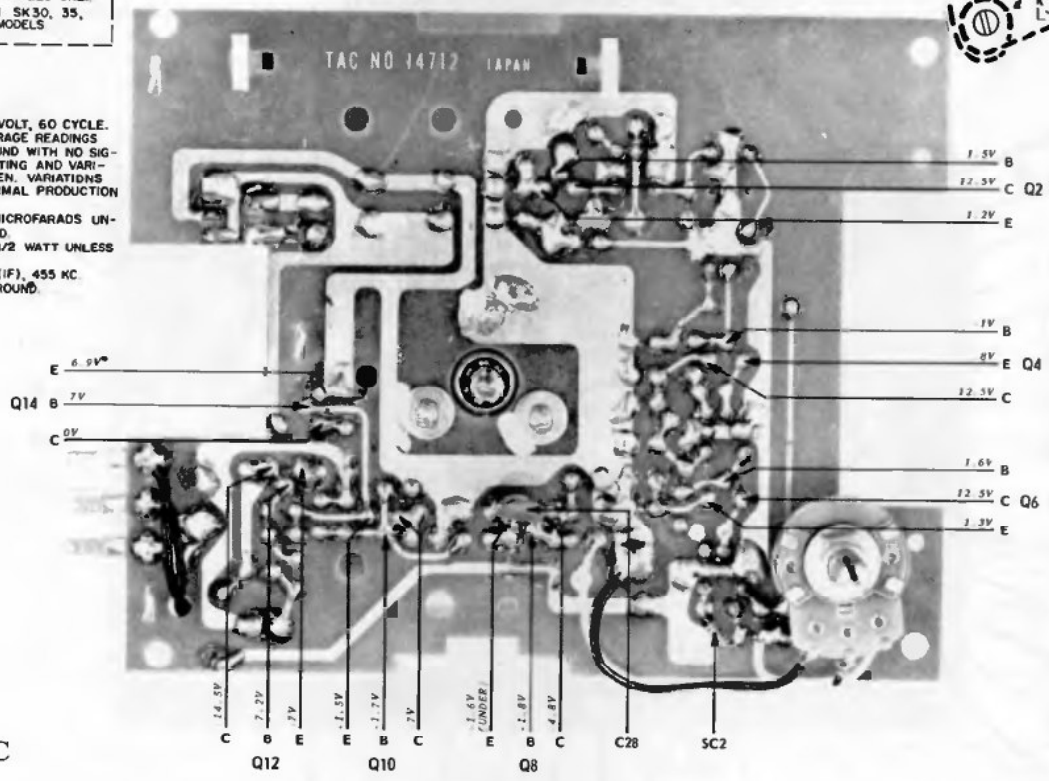


I2 ON SK35 & 40 MODELS ONLY.
CLOCK MOTORS ON SK30, 35, & 40 MODELS.

DIAL STRINGING



PRINTED PANEL ASSEMBLY



BOTTOM VIEW

IF 455 KC

SCHEMATIC NOTES

1. LINE VOLTAGE SET AT 120 VOLT, 60 CYCLE.
2. VOLTAGES SHOWN ARE AVERAGE READINGS MEASURED TO CHASSIS GROUND WITH NO SIGNAL, MINIMUM VOLUME SETTING AND VARIABLE CAPACITOR FULLY OPEN. VARIATIONS MAY BE NOTED DUE TO NORMAL PRODUCTION TOLERANCES.
3. ALL CAPACITORS ARE IN MICROFARADS UNLESS OTHERWISE SPECIFIED.
4. ALL RESISTORS ARE 10%, 1/2 WATT UNLESS OTHERWISE SPECIFIED.
5. INTERMEDIATE FREQUENCY (IF), 455 KC.
6. ⏚ DESIGNATES CHASSIS GROUND.

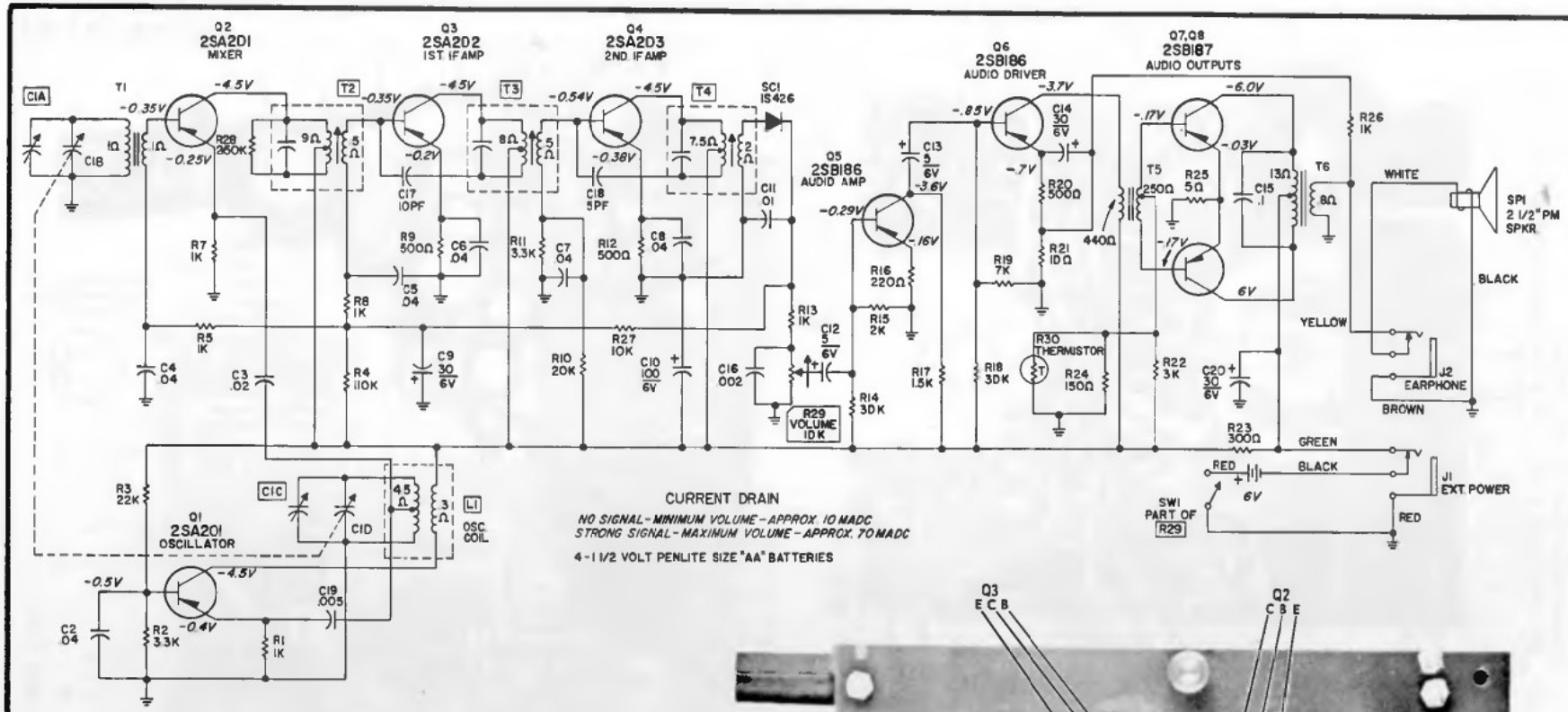
SYLVANIA

Model TR74; Chassis 328-2

All capacitors in microfarads unless otherwise specified.
Intermediate frequency (IF), 455 KC.
All resistors are 1/4W - 10% unless otherwise specified.

SYLVANIA

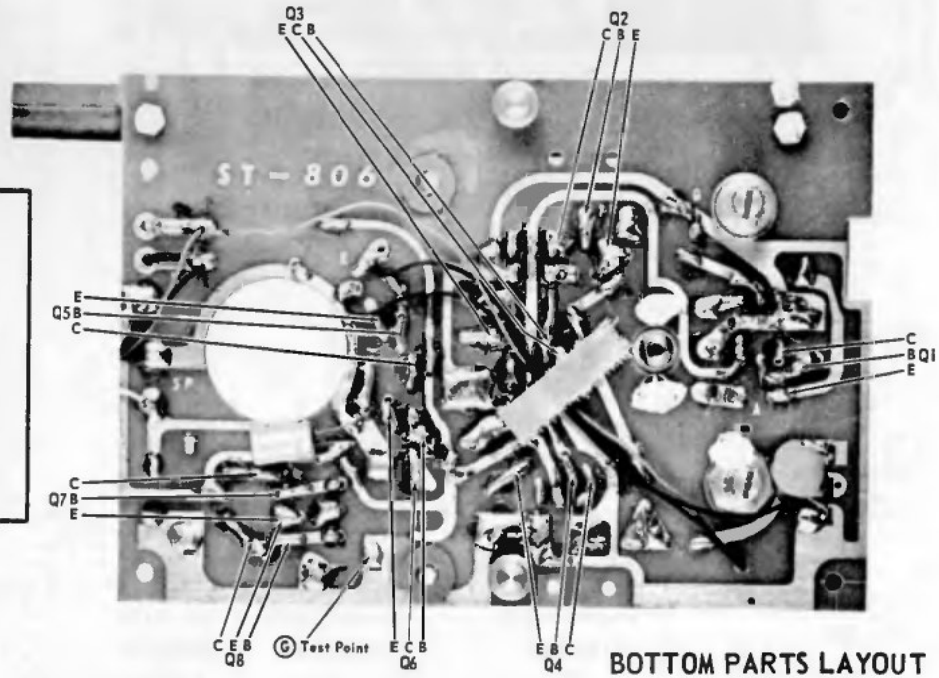
Model TR106



SCHEMATIC NOTES

1. Voltage measured to chassis ground, test point (G), with receiver tuned to off station and full volume.
2. Operating voltage must be 6 volts DC. (Employ battery eliminator).
3. Voltages shown are average readings. Variations may be noted due to normal production tolerance (±10%).
4. All voltage readings taken with RCA Volt-Ohmyst (WV - 97A).
5. All capacitors in microfarads unless otherwise specified.
6. Intermediate frequency (IF), 455 KC.
7. Resistance readings taken with components in circuit.

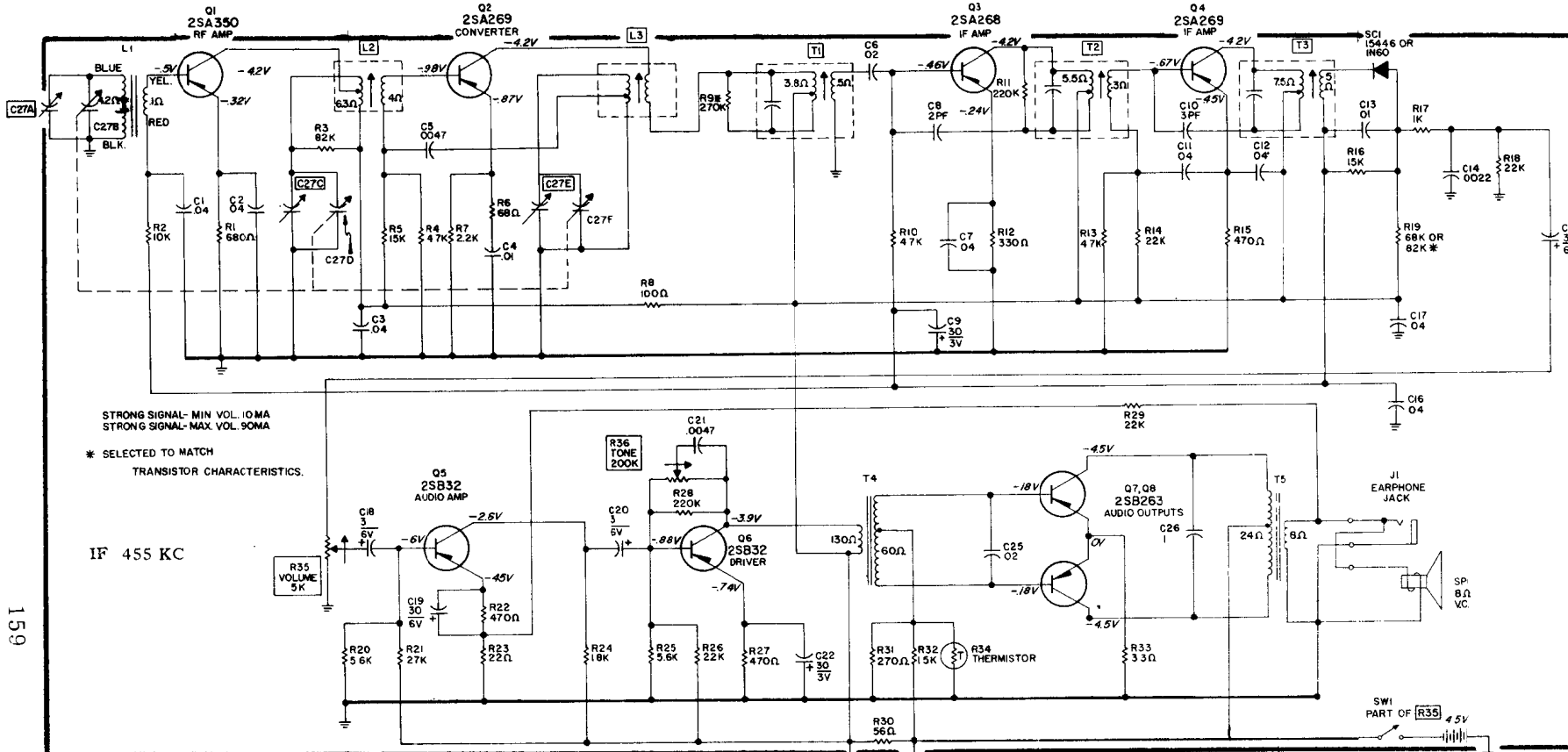
IF 455 KC



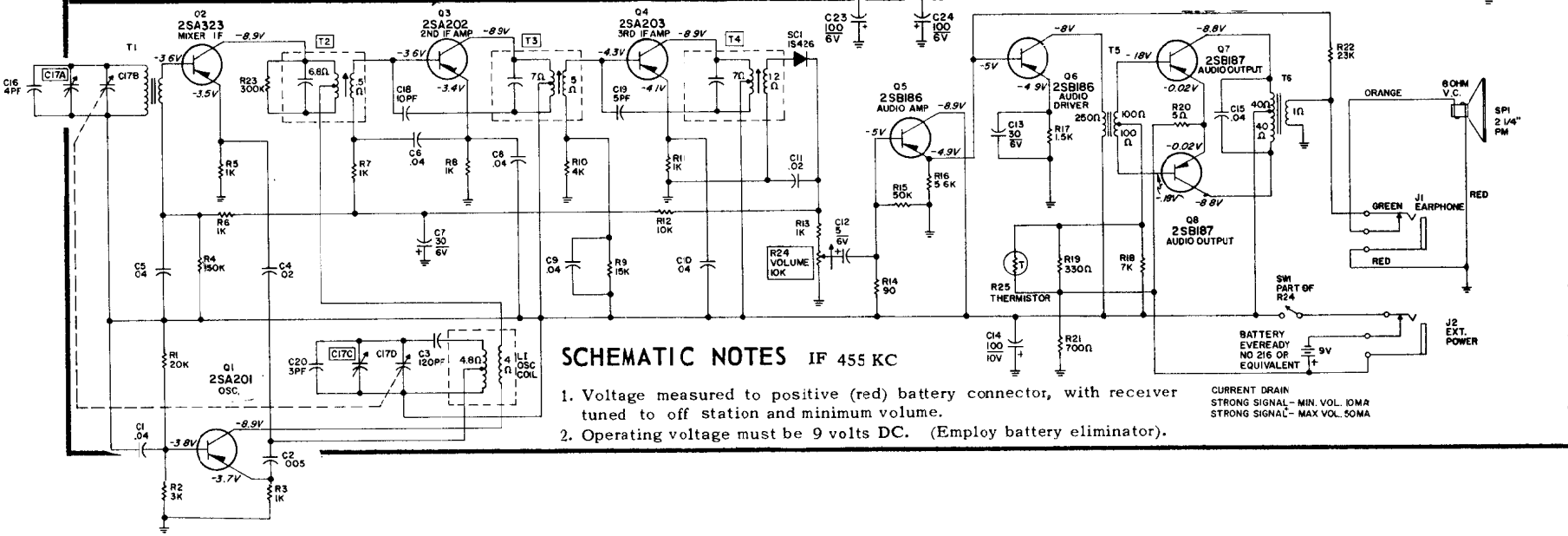
BOTTOM PARTS LAYOUT

SYLVANIA

MODEL: TR114



MODEL: TR102



SCHEMATIC NOTES IF 455 KC

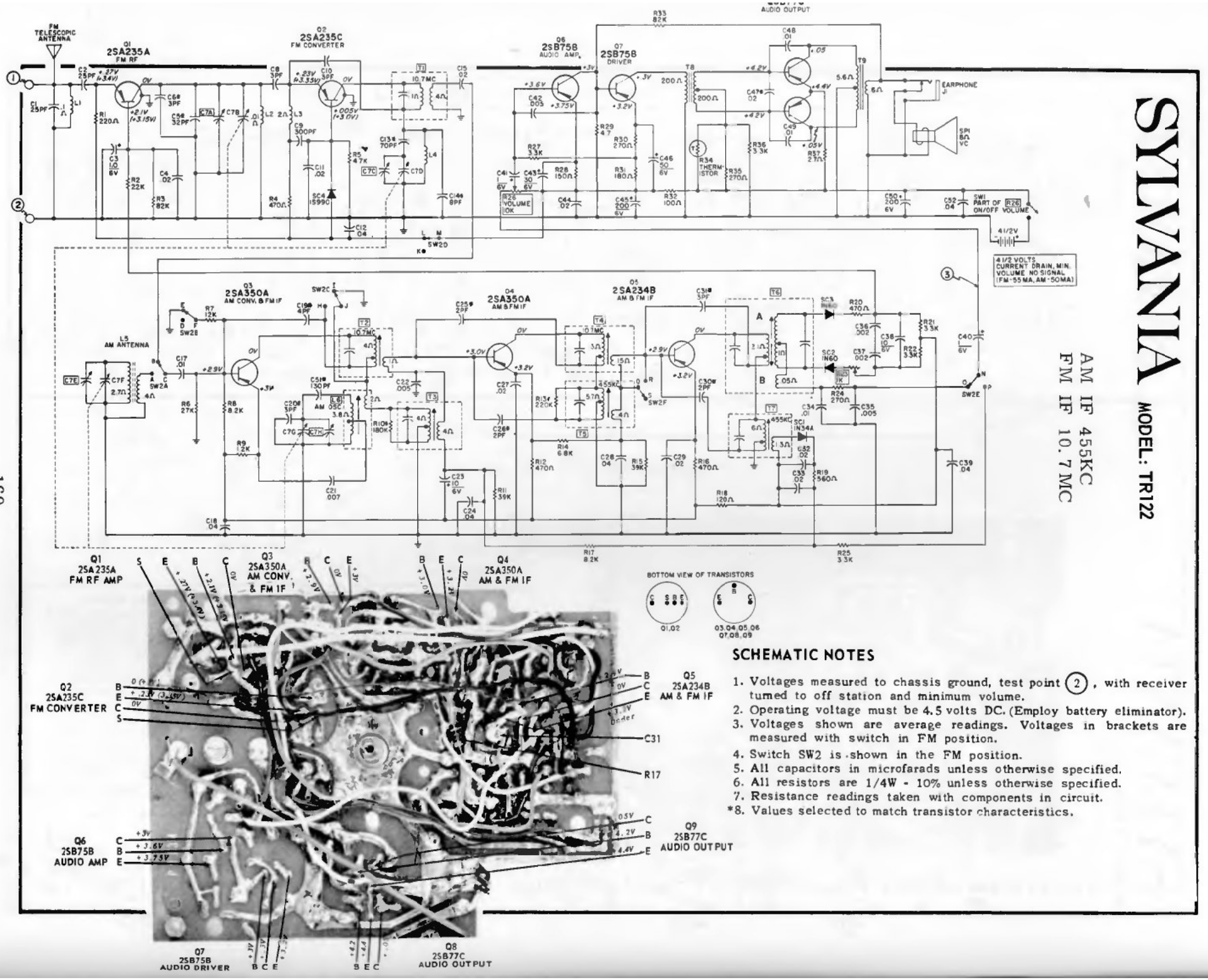
1. Voltage measured to positive (red) battery connector, with receiver tuned to off station and minimum volume.
2. Operating voltage must be 9 volts DC. (Employ battery eliminator).

CURRENT DRAIN
STRONG SIGNAL- MIN. VOL. 10MA
STRONG SIGNAL- MAX VOL. 50MA

SYLVANIA

MODEL: TR122

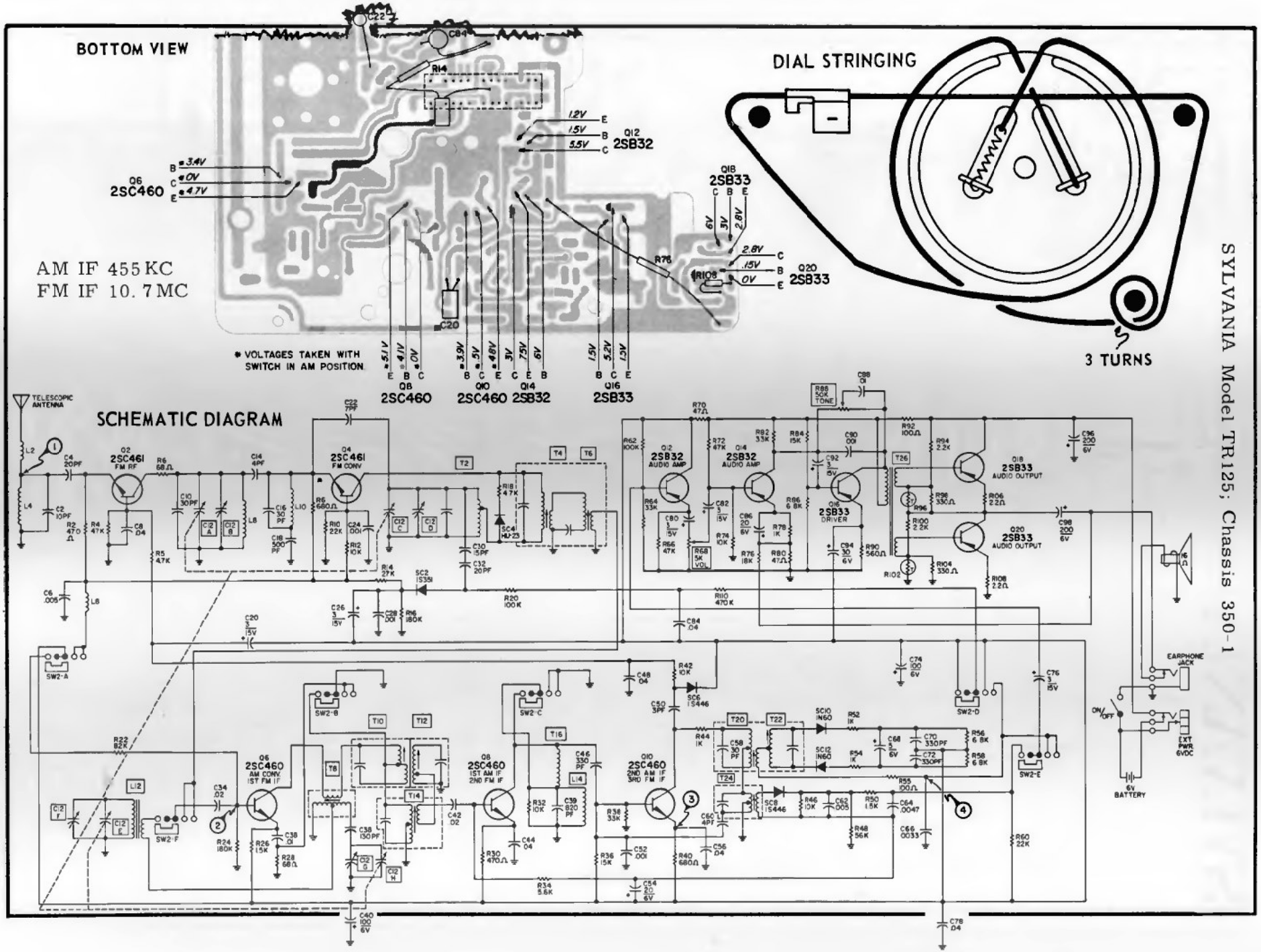
AM IF 455KC
FM IF 10.7MC



SCHEMATIC NOTES

1. Voltages measured to chassis ground, test point (2), with receiver tumed to off station and minimum volume.
2. Operating voltage must be 4.5 volts DC. (Employ battery eliminator).
3. Voltages shown are average readings. Voltages in brackets are measured with switch in FM position.
4. Switch SW2 is shown in the FM position.
5. All capacitors in microfarads unless otherwise specified.
6. All resistors are 1/4W - 10% unless otherwise specified.
7. Resistance readings taken with components in circuit.

*8. Values selected to match transistor characteristics.


BOTTOM VIEW
DIAL STRINGING
3 TURNS
AM IF 455 KC
FM IF 10.7 MC
Q6 2SC460
Q12 2SB32
Q18 2SB33
Q20 2SB33
* VOLTAGES TAKEN WITH SWITCH IN AM POSITION
Q8 2SC460
Q10 2SC460
Q14 2SB32
Q16 2SB33
SCHEMATIC DIAGRAM
TELESCOPIC ANTENNA
Q2 2SC461 FM RF
Q4 2SC461 FM CONV
Q12 2SB32 AUDIO AMP
Q14 2SB32 AUDIO AMP
Q16 2SB33 DRIVER
Q18 2SB33 AUDIO OUTPUT
Q20 2SB33 AUDIO OUTPUT
Q6 2SC460 AM CONV. 1ST FM IF
Q8 2SC460 1ST AM IF 2ND FM IF
Q10 2SC460 2ND AM IF 3RD FM IF
SC4 HU-23
SC2 1S35I
SC6 1S446
SC10 IN60
SC12 IN60
SC8 1S446
EARPHONE JACK
ON/OFF
EXT PWR 6VDC
6V BATTERY

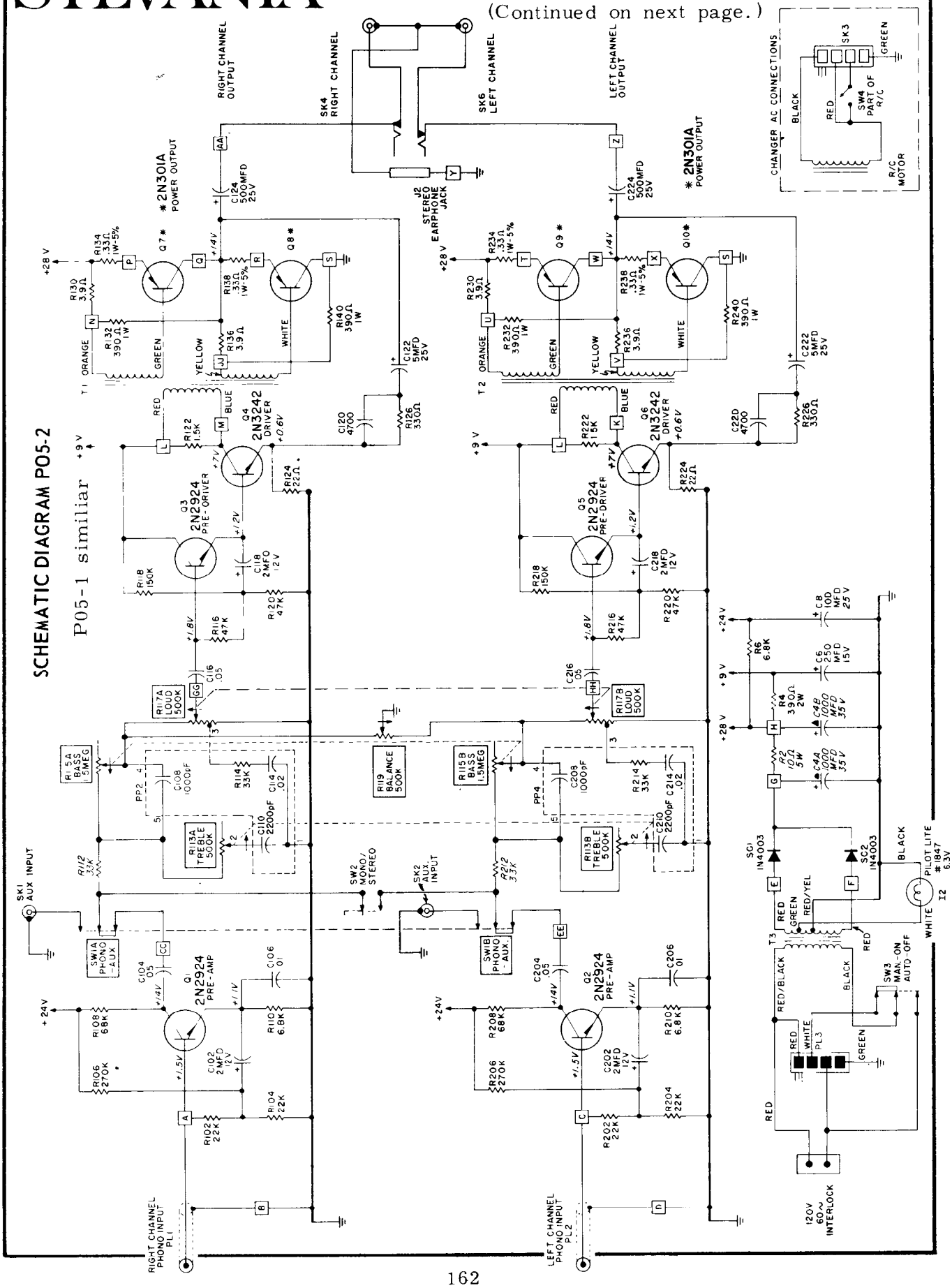
SYLVANIA

Models: Exponent 4/20, 4/30 Series; Chassis P05-1, -2

(Continued on next page.)

SCHEMATIC DIAGRAM P05-2

P05-1 similar



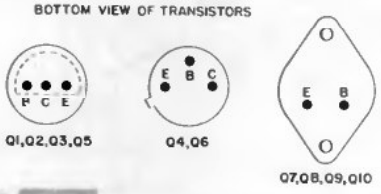
SYLVANIA Models: Exponent 4/20, 4/30 Series; Chassis P05-1, -2

(Continued from preceding page.)

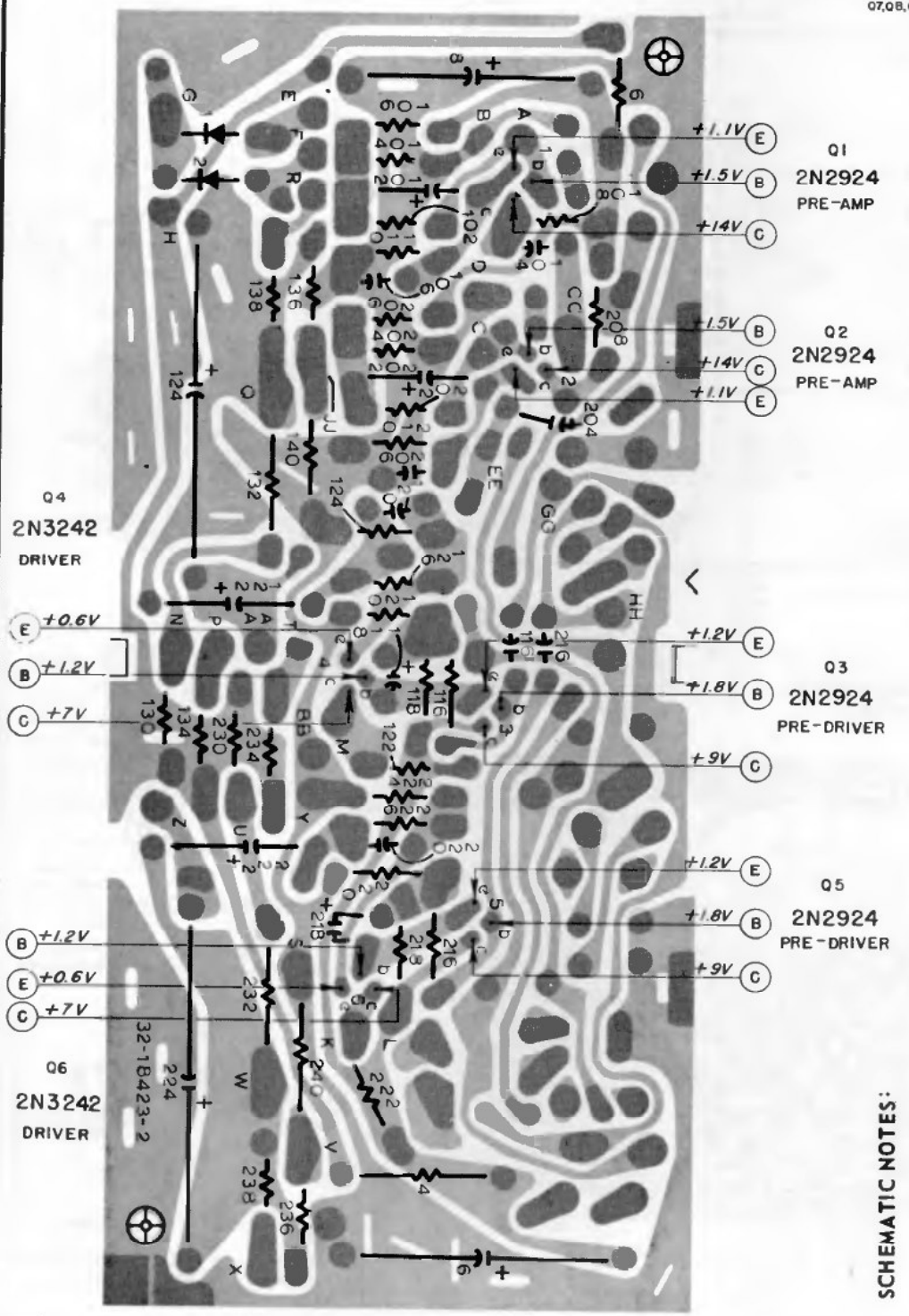
NOTE:

1. Voltage measurements are average readings measured to chassis ground with no signal input. Variations may be noted due to normal production tolerances.
2. See schematic diagram on page 5 for voltage readings on power output transistors (Q7,Q8,Q9,Q10).

BOTTOM VIEW OF TRANSISTORS



PRINTED BOARD PARTS LAYOUT



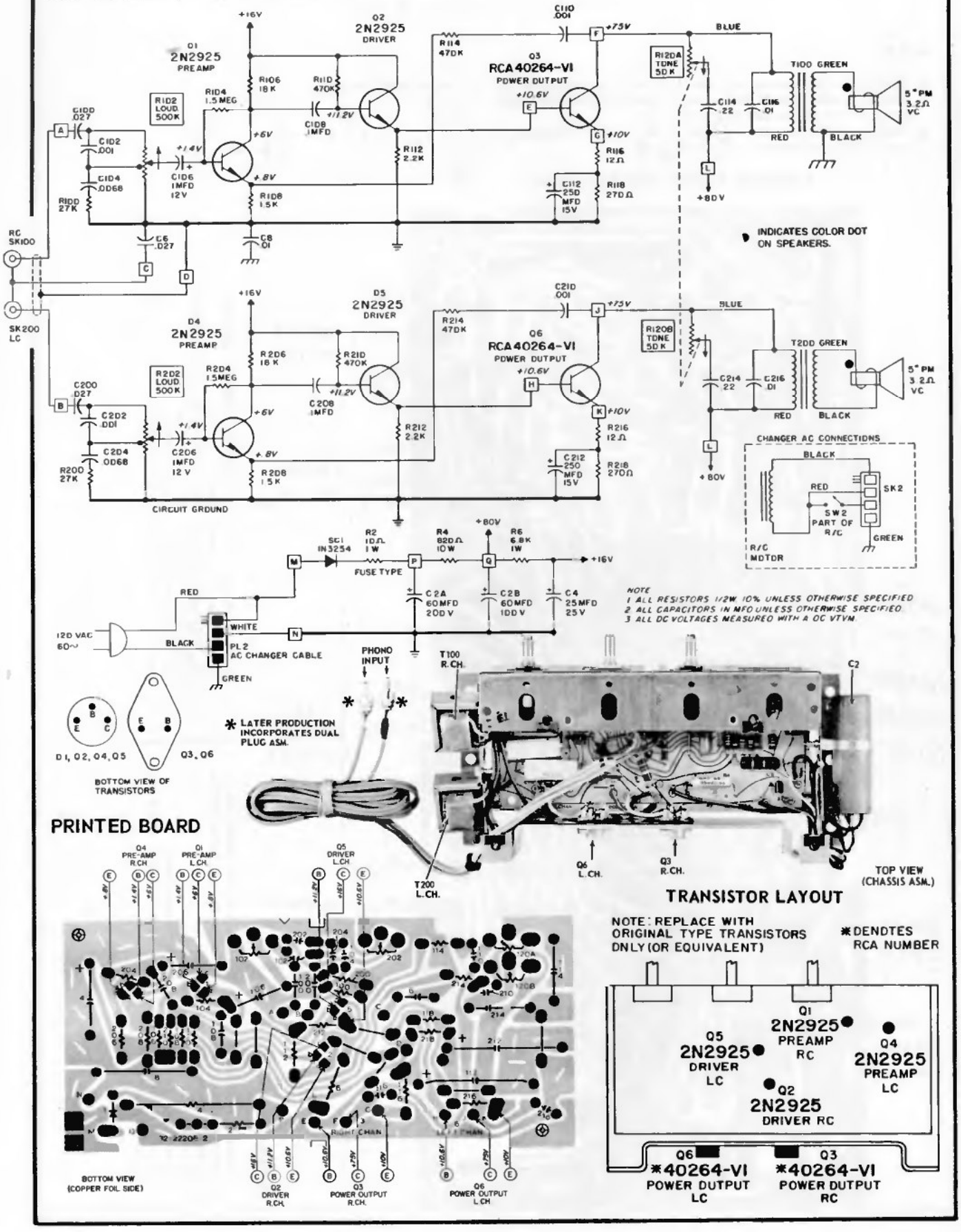
5. All resistors are 1/2W, 10% unless otherwise specified.
6. ⏚ Designates chassis ground.
7. ● Indicates color dot on speakers for correct phasing.
8. R113, R115, R117 are dual ganged controls.
9. ✱ Indicates replace in matched pairs.
10. Arrows on controls indicates clockwise rotation.

SCHEMATIC NOTES:

1. Voltage measurements are average reading measured to chassis with no signal input. Variations may be noted due to normal production tolerances.
2. AC power source 120 volt, 60 cycle.
3. Capacitance in MFD unless otherwise specified.
4. Resistors and capacitors not on printed circuit board are shown in italics.

SYLVANIA

MODEL: 45P80
CHASSIS: P02-5



PRINTED BOARD

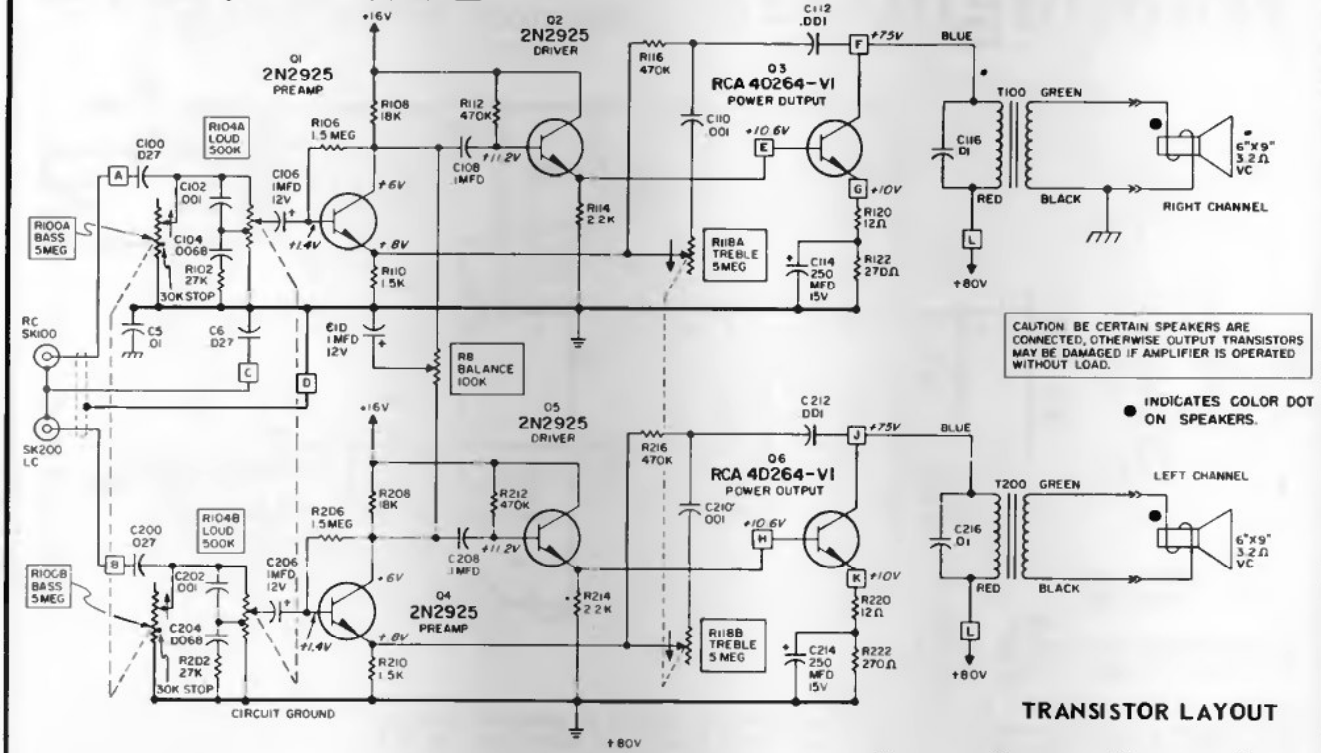
TRANSISTOR LAYOUT

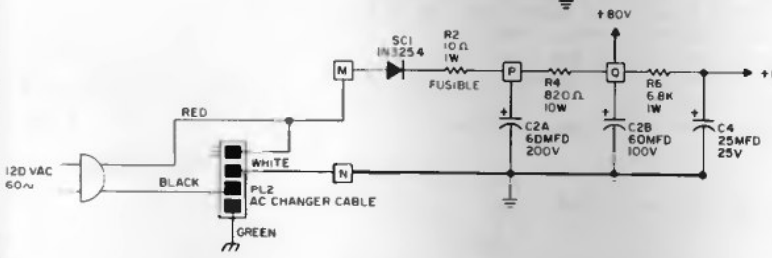
NOTE: REPLACE WITH ORIGINAL TYPE TRANSISTORS ONLY (OR EQUIVALENT)

*DENOTES RCA NUMBER

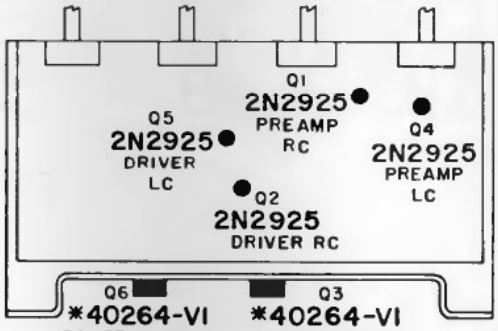
SYLVANIA

MODEL: 45P84
CHASSIS: P03-5





TRANSISTOR LAYOUT

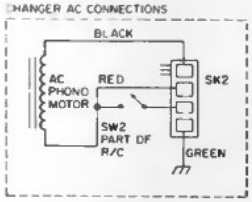


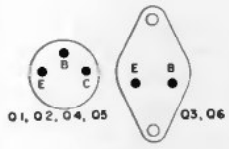
*DENOTES RCA NUMBER

NOTE
1. ALL RESISTORS 1/2W 10% UNLESS OTHERWISE SPECIFIED
2. ALL CAPACITORS IN MFD UNLESS OTHERWISE SPECIFIED
3. ALL DC VOLTAGES MEASURED WITH A DC VTVM

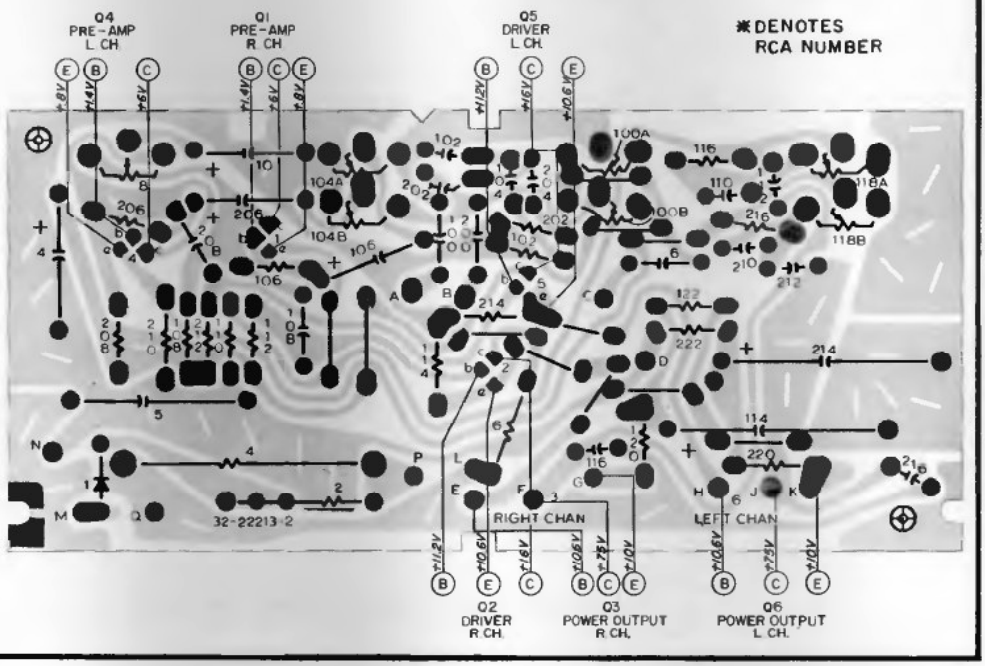
NOTE:

Voltage measurements are average readings to circuit ground with no signal input. Variations may be noted due to normal production tolerances.





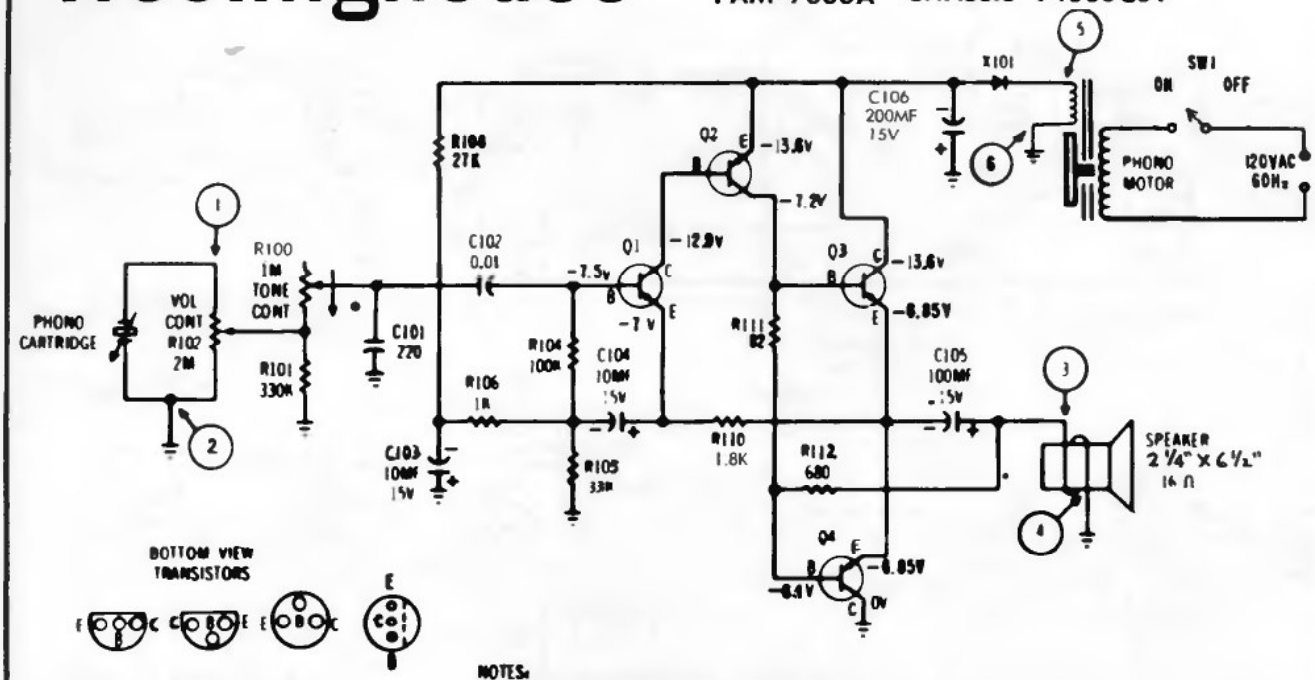
BOTTOM VIEW OF TRANSISTORS



BOTTOM VIEW (COPPER FOIL SIDE)

Westinghouse

PAM 7000A CHASSIS V4005C01



BOTTOM VIEW TRANSISTORS

TRANSISTOR COMPLEMENT			
	FUNCTION	TYPE	W PART NO.
Q1	INPUT	PNP	297V083C01
Q2	DRIVER	NPN	297V083C02
Q3	OUTPUT	PNP	297V083C03
Q4	OUTPUT	NPN	297V083C04

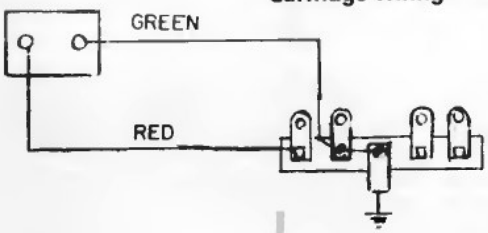
NOTES:

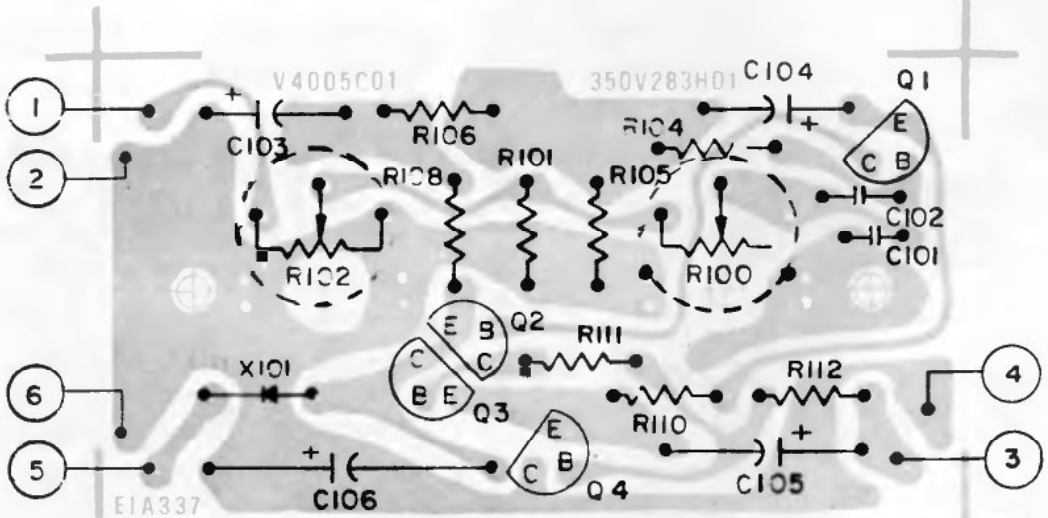
1. UNLESS OTHERWISE INDICATED ALL CAPACITANCE VALUES LESS THAN 1 ARE IN MF AND VALUES GREATER THAN 1 ARE IN PF, ALL RESISTANCE VALUES ARE IN OHMS, 1/2 WATT.
2. VOLTAGE MEASUREMENTS MADE WITH A VTVM FROM POINTS INDICATED TO GROUND, VOLUME CONTROL AT MINIMUM, LINE VOLTAGE AT 120VAC.

• DIRECTION OF ARROW INDICATES MAXIMUM TREBLE.

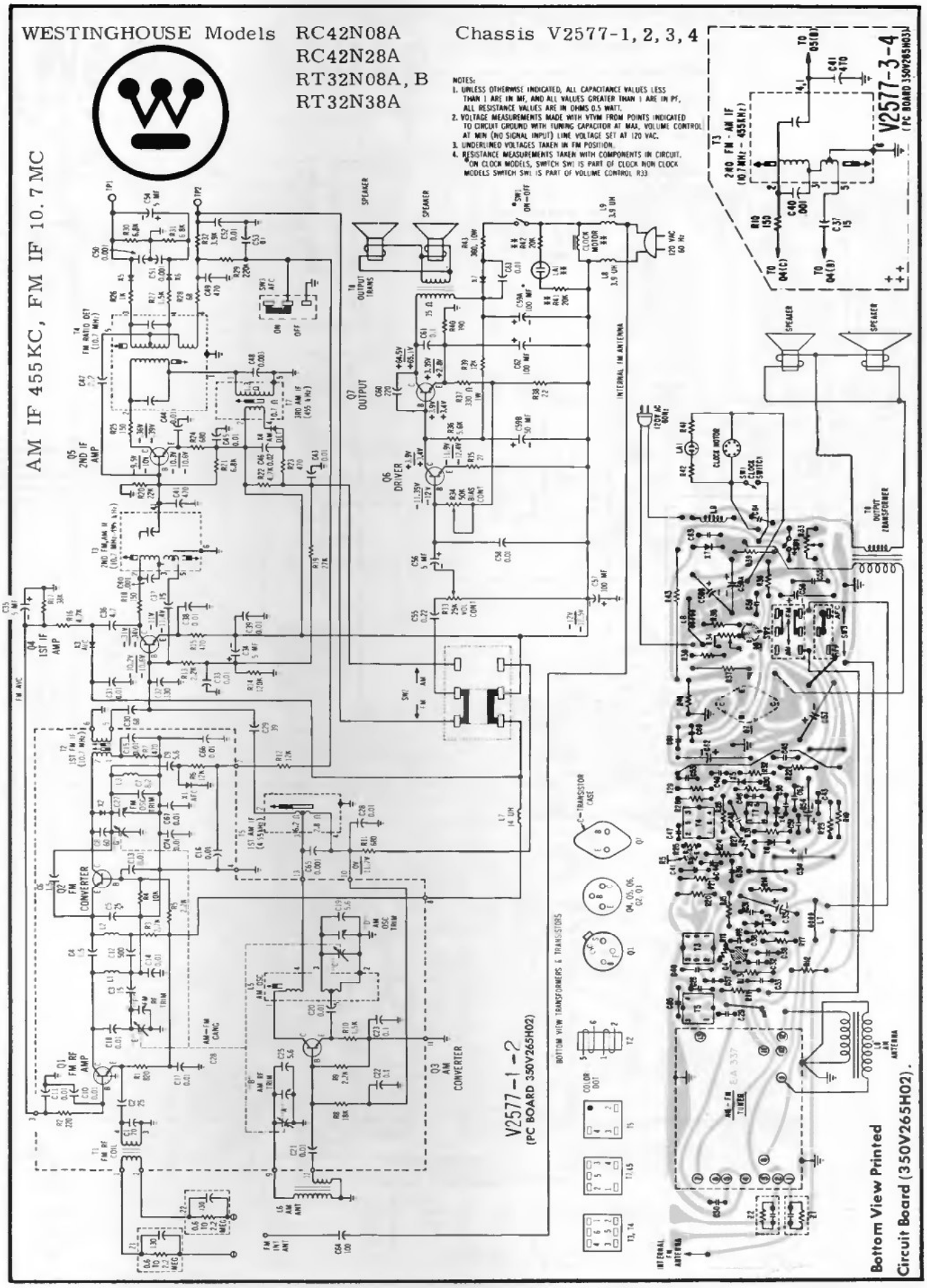
○ DENOTES CONNECTIONS ON PC BOARD.

Cartridge Wiring

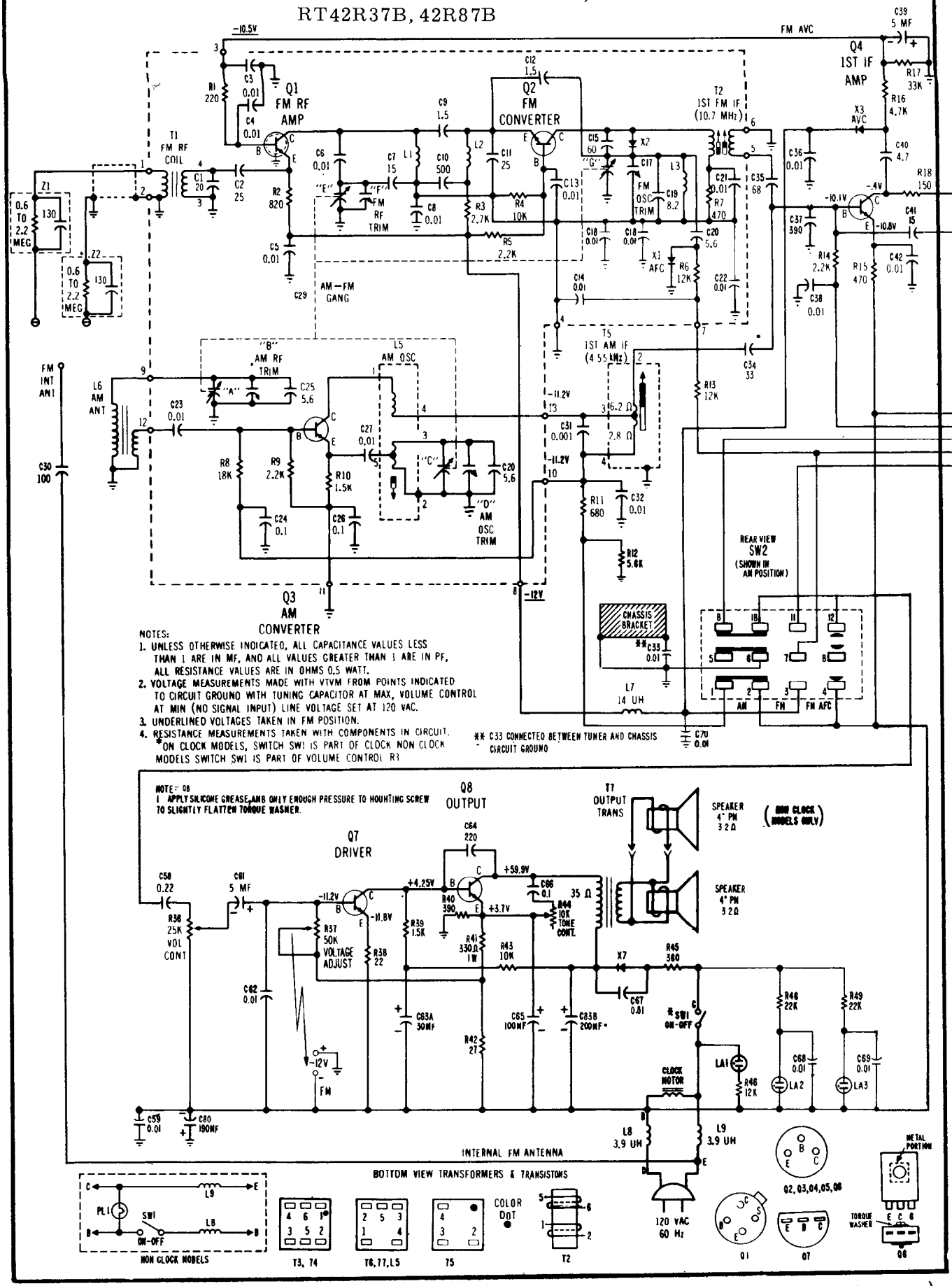




○ DENOTES CONNECTIONS ON SCHEMATIC


WESTINGHOUSE Models RC42N08A
RC42N28A
RT32N08A, B
RT32N38A
Chassis V2577-1, 2, 3, 4
AM IF 455 KC, FM IF 10.7 MC
NOTES:
1. UNLESS OTHERWISE INDICATED, ALL CAPACITANCE VALUES LESS THAN 1 ARE IN MF, AND ALL VALUES GREATER THAN 1 ARE IN PF, ALL RESISTANCE VALUES ARE IN OHMS 0.5 WATT.
2. VOLTAGE MEASUREMENTS MADE WITH VTVM FROM POINTS INDICATED TO CIRCUIT GROUND WITH TUNING CAPACITOR AT MAX, VOLUME CONTROL AT MIN (NO SIGNAL INPUT) LINE VOLTAGE SET AT 120 VAC.
3. UNDERLINED VOLTAGES TAKEN IN FM POSITION.
4. RESISTANCE MEASUREMENTS TAKEN WITH COMPONENTS IN CIRCUIT. ON CLOCK MODELS, SWITCH SW1 IS PART OF CLOCK NON CLOCK MODELS SWITCH SW1 IS PART OF VOLUME CONTROL R33
V2577-3-4
(PC BOARD 350V265H03)
V2577-1-2
(PC BOARD 350V265H02)
BOTTOM VIEW TRANSFORMERS & TRANSISTORS
Bottom View Printed
Circuit Board (350V265H02).

WESTINGHOUSE Models: RC42R67B, 42R87B, 52R07B, RT42R37B, 42R87B Chassis: V3004CO1, 2, 3, 4



NOTES:
1. UNLESS OTHERWISE INDICATED, ALL CAPACITANCE VALUES LESS THAN 1 ARE IN MF, AND ALL VALUES GREATER THAN 1 ARE IN PF, ALL RESISTANCE VALUES ARE IN OHMS 0.5 WATT.
2. VOLTAGE MEASUREMENTS MADE WITH VTVM FROM POINTS INDICATED TO CIRCUIT GROUND WITH TUNING CAPACITOR AT MAX, VOLUME CONTROL AT MIN (NO SIGNAL INPUT) LINE VOLTAGE SET AT 120 VAC.
3. UNDERLINED VOLTAGES TAKEN IN FM POSITION.
4. RESISTANCE MEASUREMENTS TAKEN WITH COMPONENTS IN CIRCUIT.

*ON CLOCK MODELS, SWITCH SW1 IS PART OF CLOCK NON CLOCK MODELS SWITCH SW1 IS PART OF VOLUME CONTROL R3

** C33 CONNECTED BETWEEN TUNER AND CHASSIS CIRCUIT GROUND

NOTE: Q8
1. APPLY SILICONE GREASE AND ONLY ENOUGH PRESSURE TO MOUNTING SCREW TO SLIGHTLY FLATTEN TORQUE WASHER.

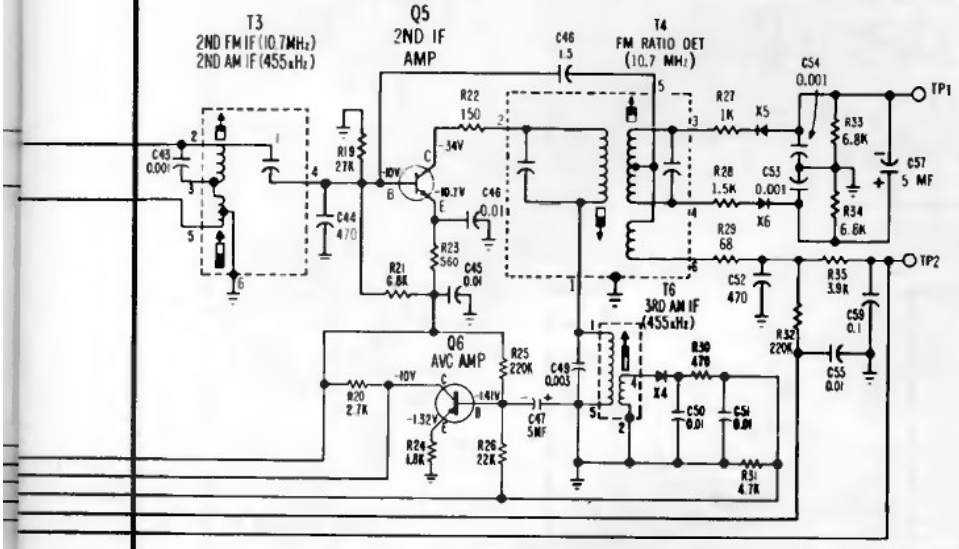
(Continued on next page.)

Westinghouse

Models: RC42R67B, 42R87B, 52R07B,
RT42R37B, 42R87B;

Chassis V3004C01, 2, 3, 4

(Continued from preceding page.)



AM IF 455 KC
FM IF 10.7 MC

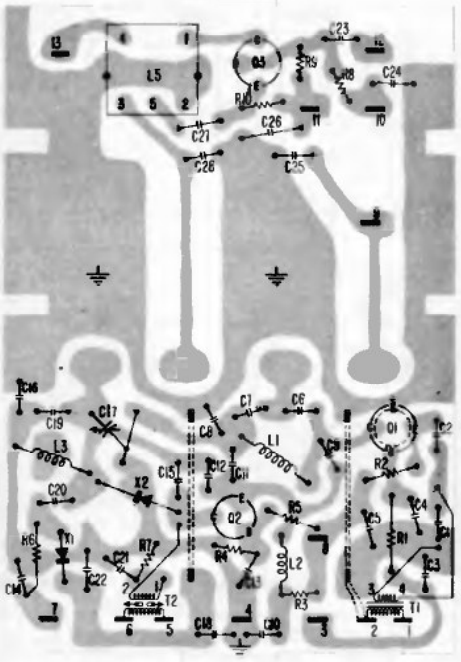


Figure 7 — Bottom View Tuner

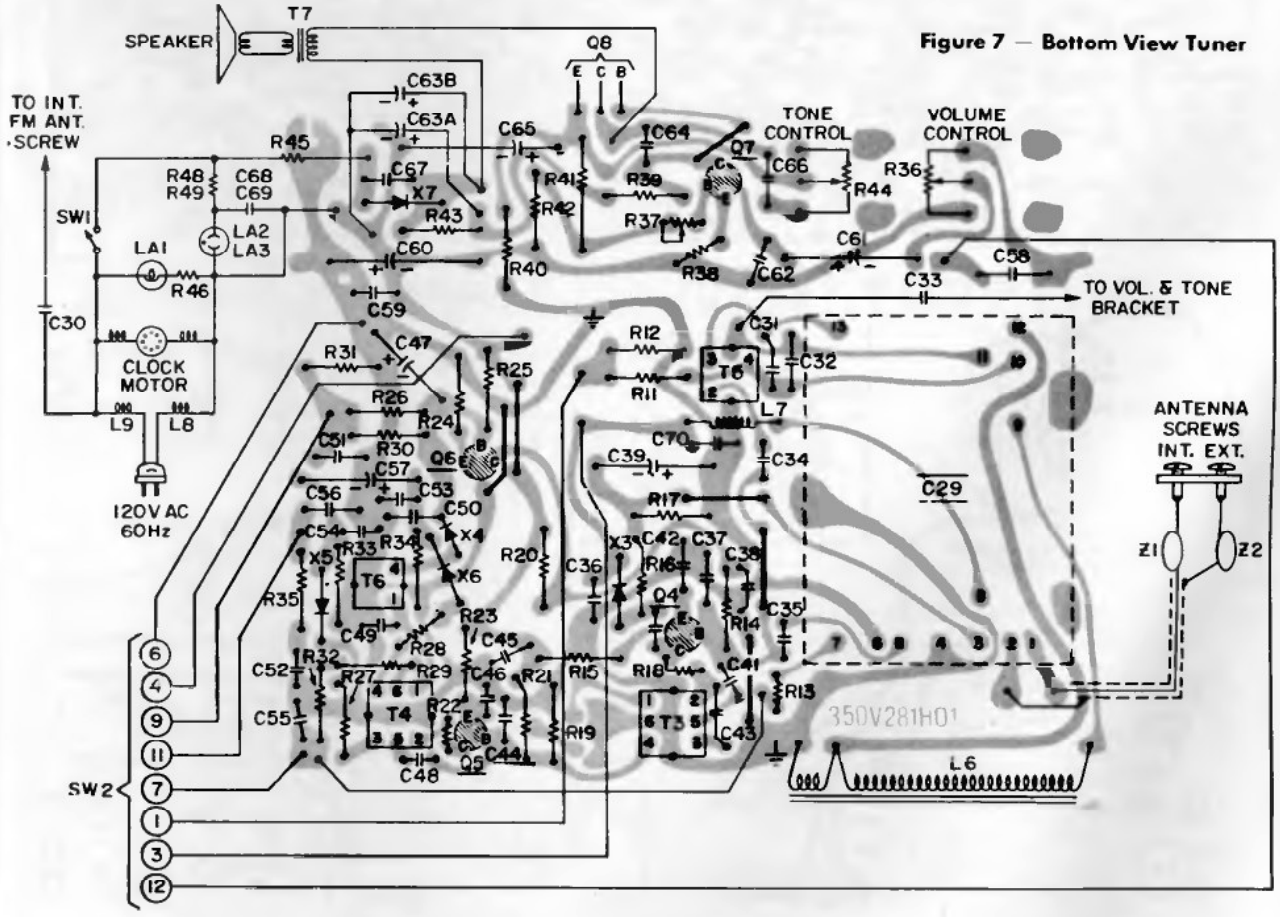
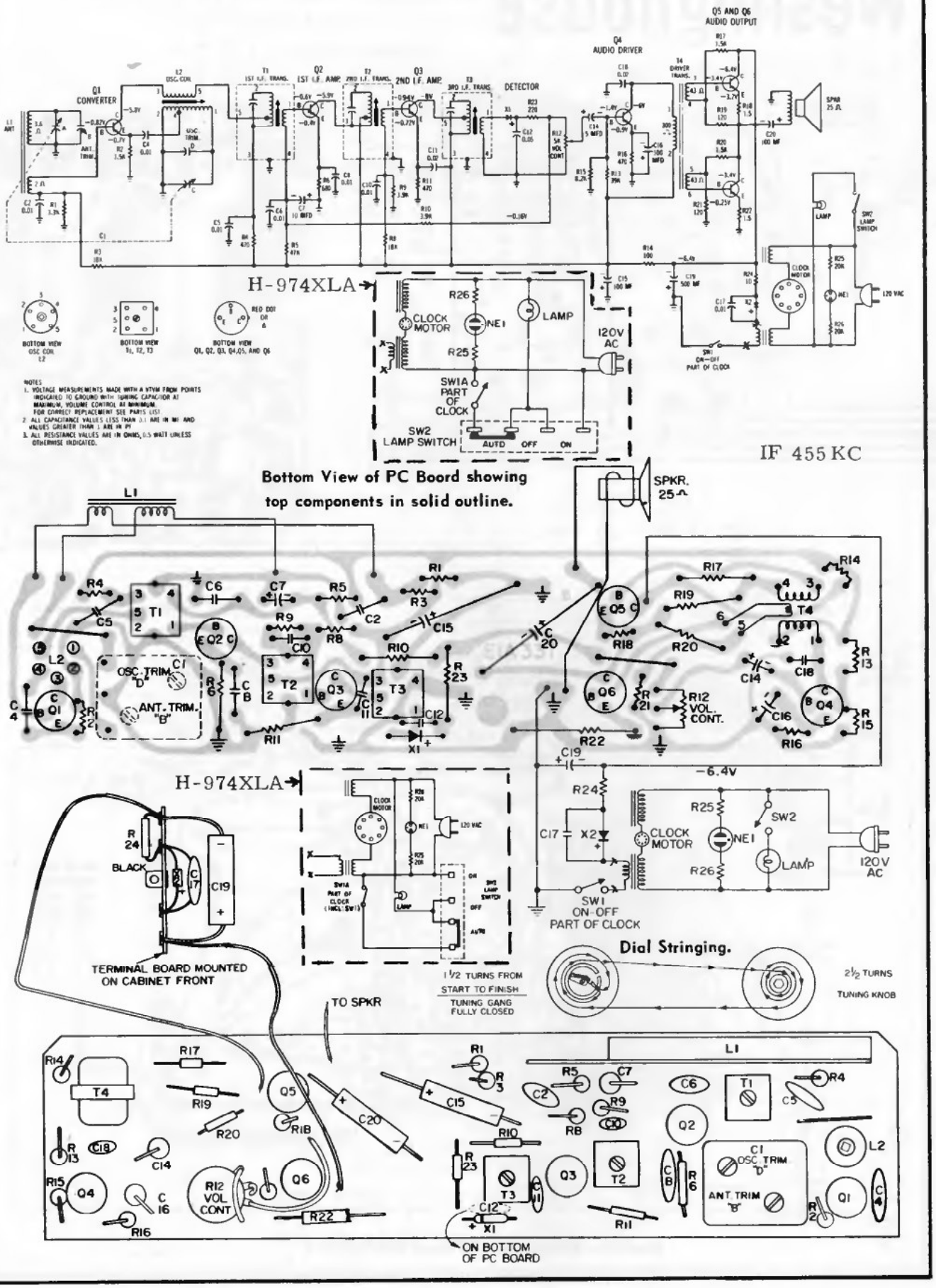
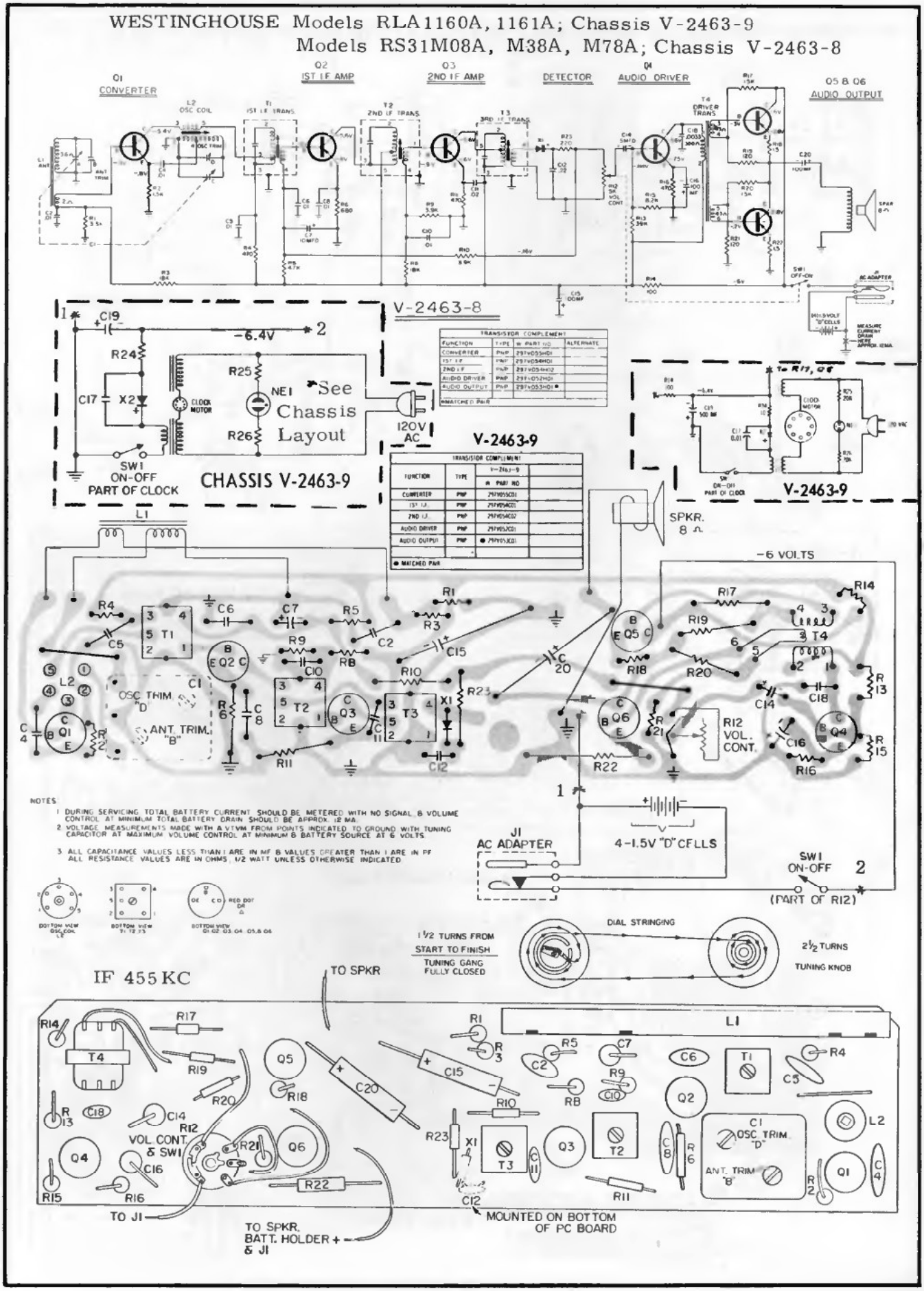


Figure 9 — Bottom View PC Board 350V281H01

WESTINGHOUSE Models H-972XLB, H-974XLA; Chassis V-2463-5



NOTES
1. VOLTAGE MEASUREMENTS MADE WITH A VTVM FROM POINTS INDICATED TO GROUND WITH TUNING CAPACITOR AT MAXIMUM, VOLUME CONTROL AT MINIMUM. FOR CORRECT REPLACEMENT SEE PARTS LIST.
2. ALL CAPACITANCE VALUES LESS THAN 1.1 ARE IN MF AND VALUES GREATER THAN 1 ARE IN PF.
3. ALL RESISTANCE VALUES ARE IN OHMS, 0.5 WATT UNLESS OTHERWISE INDICATED.

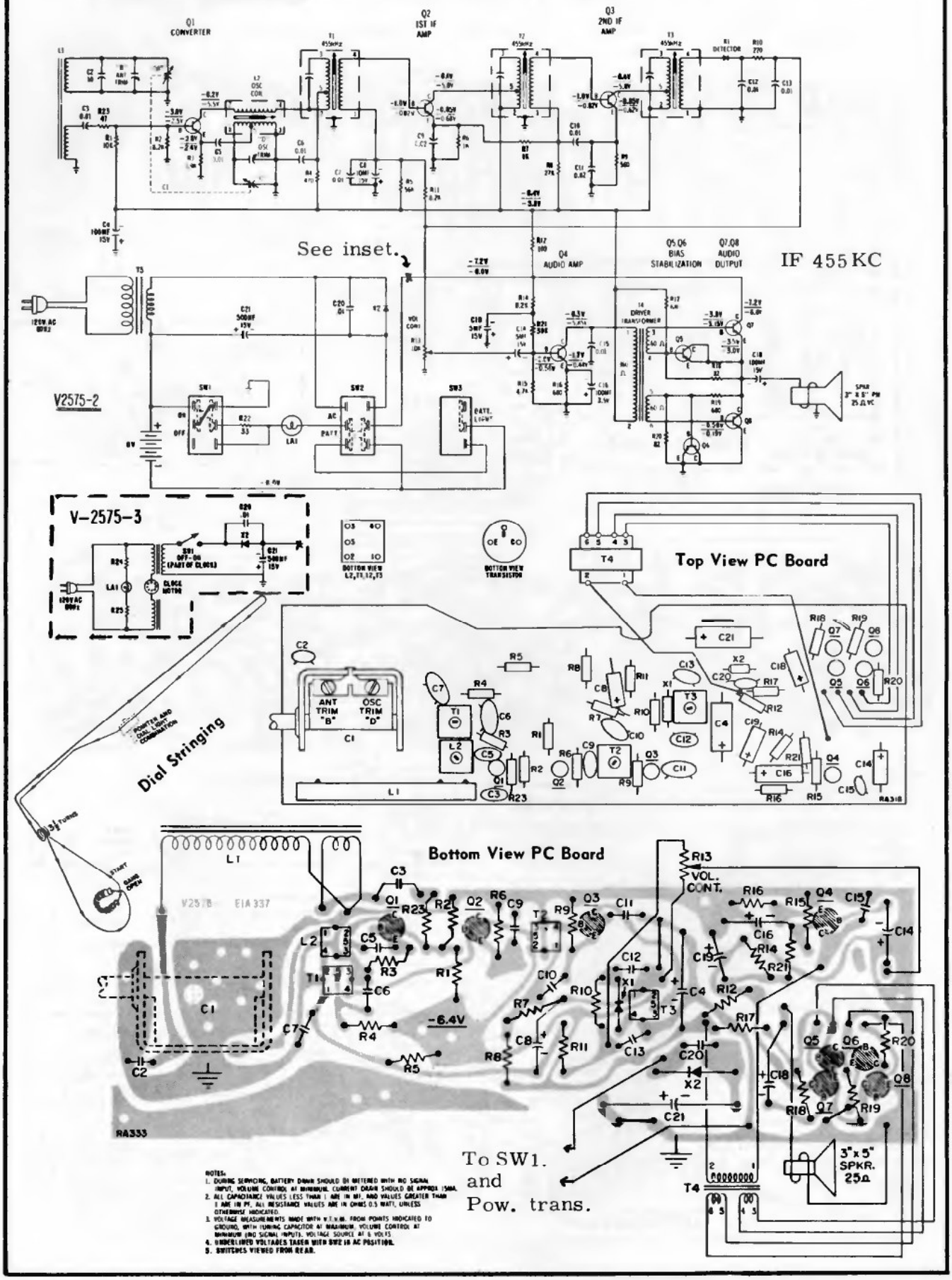


TRANSISTOR COMPLEMENT			
FUNCTION	TYPE	W PART NO	ALTERNATE
CONVERTER	PNP	297W053HD1	
1ST I.F.	PNP	297W054HD1	
2ND I.F.	PNP	297W054HK12	
AUDIO DRIVER	PNP	297W052HD1	
AUDIO OUTPUT	PNP	297W053HD1*	
*MATCHED PAIR			

TRANSISTOR COMPLEMENT		
FUNCTION	TYPE	V-2463-9 W PART NO
CONVERTER	PNP	297W055CD1
1ST I.F.	PNP	297W054CD1
2ND I.F.	PNP	297W054CD2
AUDIO DRIVER	PNP	297W052CD1
AUDIO OUTPUT	PNP	* 297W053CD1
* MATCHED PAIR		

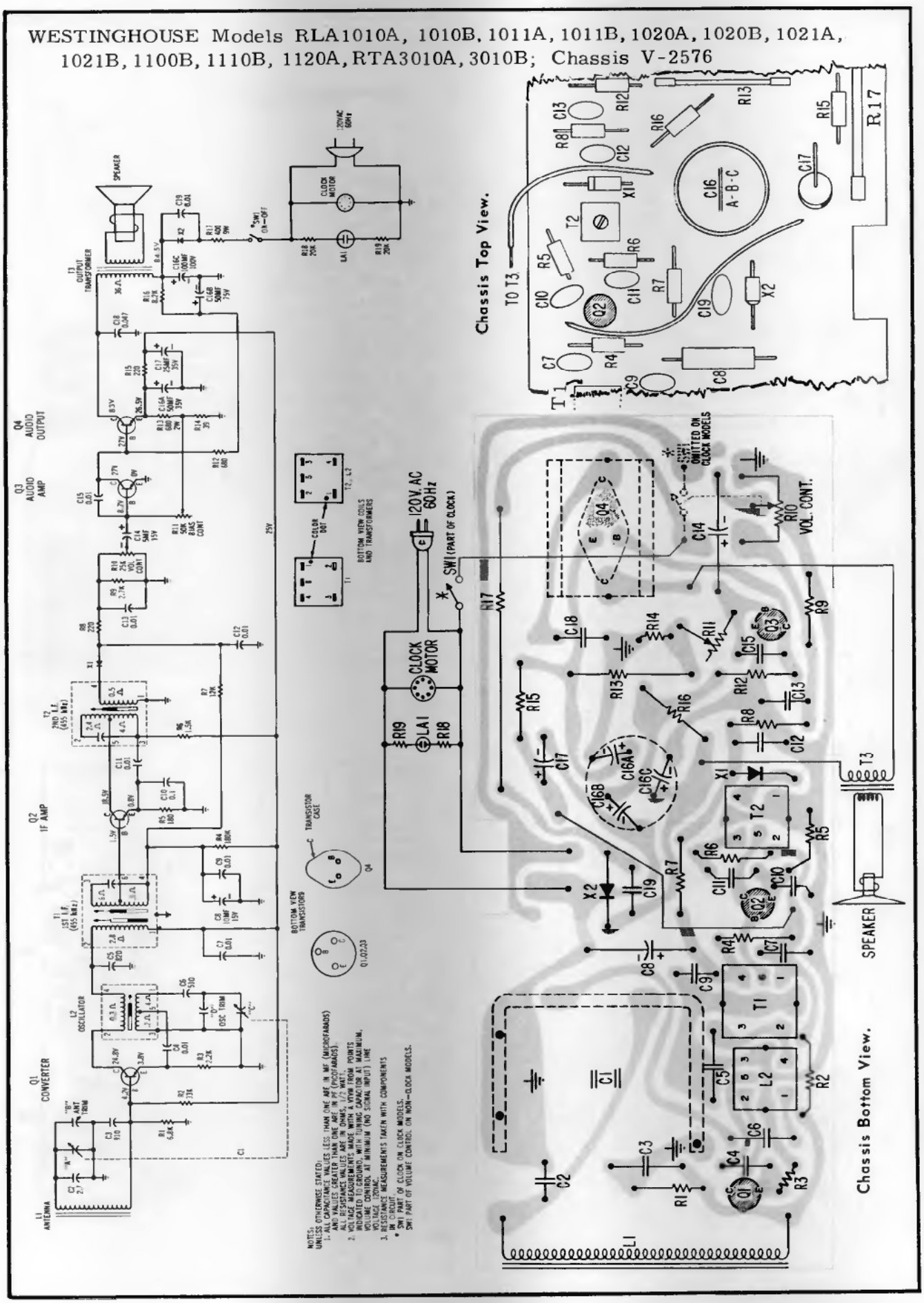
NOTES
1. DURING SERVICING TOTAL BATTERY CURRENT SHOULD BE METERED WITH NO SIGNAL & VOLUME CONTROL AT MINIMUM. TOTAL BATTERY DRAIN SHOULD BE APPROX. 12 MA.
2. VOLTAGE MEASUREMENTS MADE WITH A VTVM FROM POINTS INDICATED TO GROUND WITH TUNING CAPACITOR AT MAXIMUM, VOLUME CONTROL AT MINIMUM & BATTERY SOURCE AT 6 VOLTS.
3. ALL CAPACITANCE VALUES LESS THAN 1 ARE IN MF & VALUES GREATER THAN 1 ARE IN PF. ALL RESISTANCE VALUES ARE IN OHMS, 1/2 WATT UNLESS OTHERWISE INDICATED.

WESTINGHOUSE Models RC31P78A, RT41P58A; Chassis V-2575-3, V-2575-2

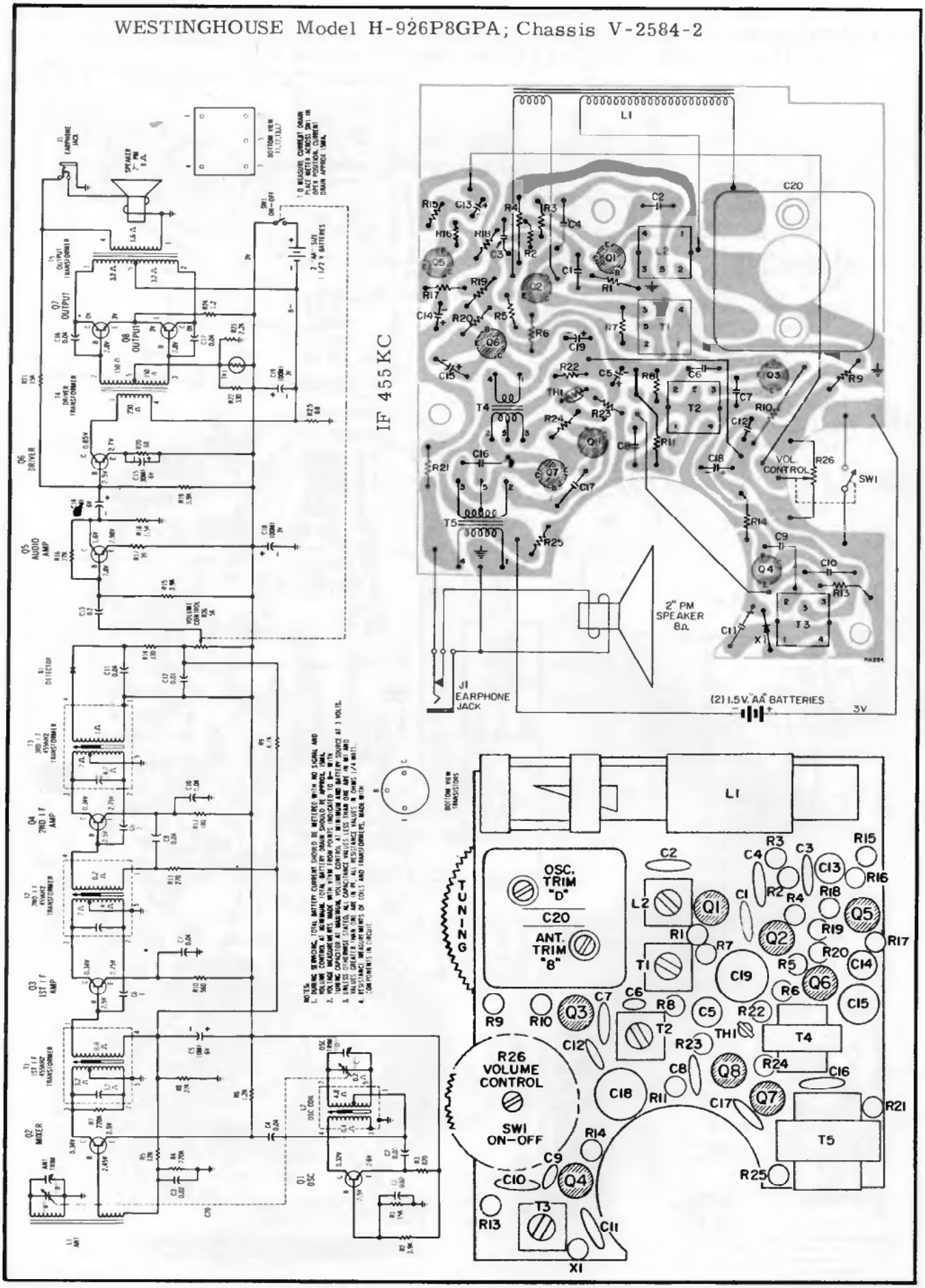


NOTES:
1. DURING SERVICING, BATTERY DRAIN SHOULD BE METERED WITH NO SIGNAL INPUT, VOLUME CONTROL AT MINIMUM. CURRENT DRAIN SHOULD BE APPROX 15MA.
2. ALL CAPACITANCE VALUES LESS THAN 1 ARE IN MF. AND VALUES GREATER THAN 1 ARE IN PF. ALL RESISTANCE VALUES ARE IN OHMS 0.5 WATT, UNLESS OTHERWISE INDICATED.
3. VOLTAGE MEASUREMENTS MADE WITH V.T.V.M. FROM POINTS INDICATED TO GROUND, WITH TUNING CAPACITOR AT MAXIMUM, VOLUME CONTROL AT MINIMUM (NO SIGNAL INPUT). VOLTAGE SOURCE AT 6 VOLTS.
4. UNDERLINED VOLTAGES TAKEN WITH SW2 IN AC POSITION.
5. SWITCHES VIEWED FROM REAR.

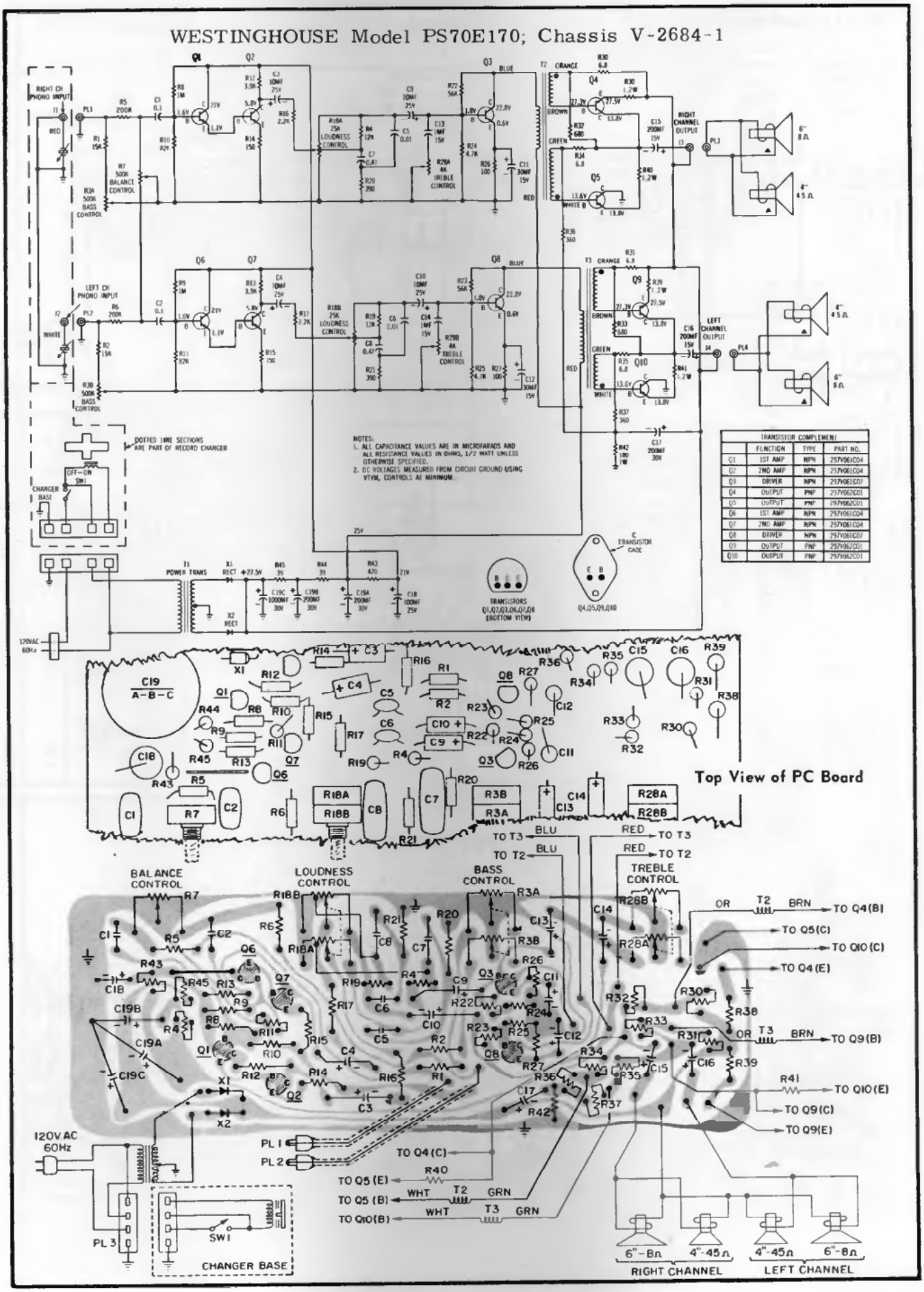
WESTINGHOUSE Models RLA1010A, 1010B, 1011A, 1011B, 1020A, 1020B, 1021A, 1021B, 1100B, 1110B, 1120A, RTA3010A, 3010B; Chassis V-2576



WESTINGHOUSE Model H-926P8GPA; Chassis V-2584-2

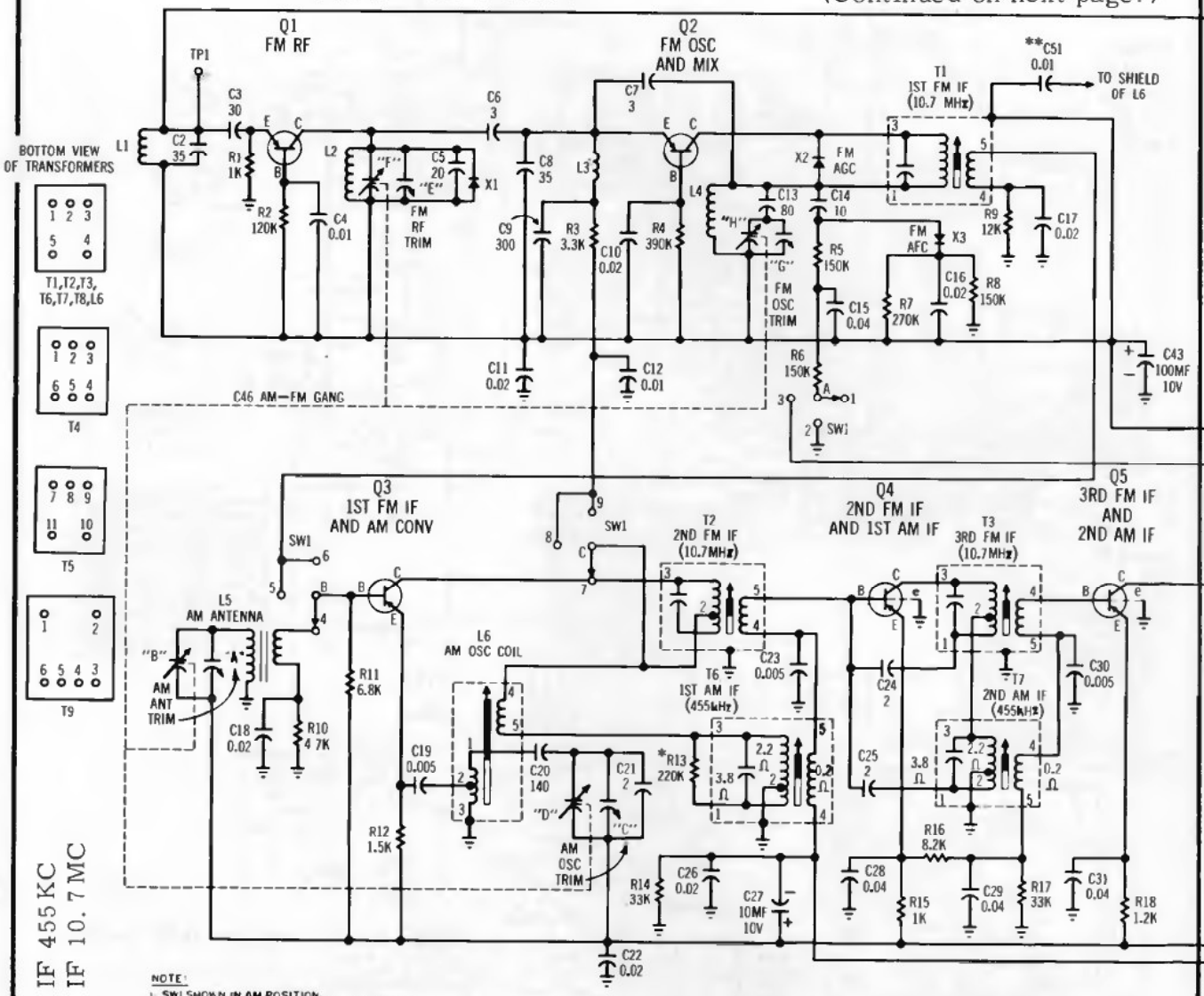


WESTINGHOUSE Model PS70E170; Chassis V-2684-1

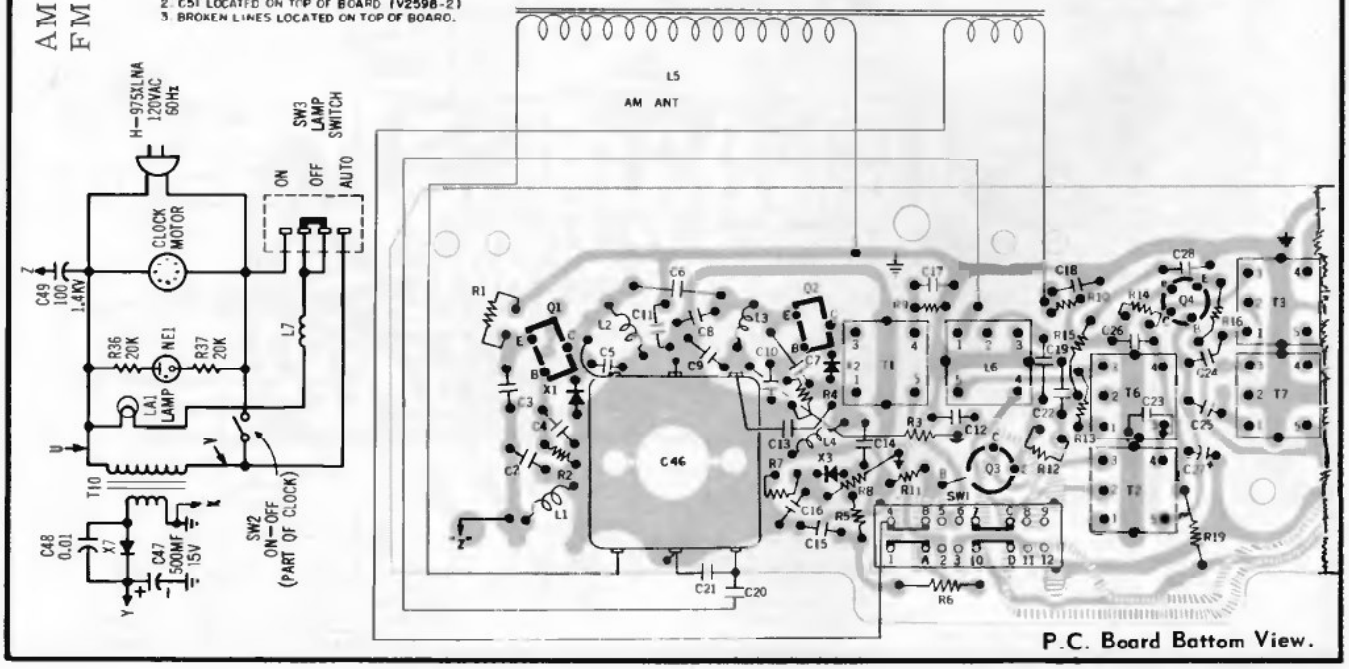


WESTINGHOUSE Models CR705A, H-975XLNA, RLF-1090A, RTF-3040A; Chassis V-2598-1, 2, 3

(Continued on next page.)

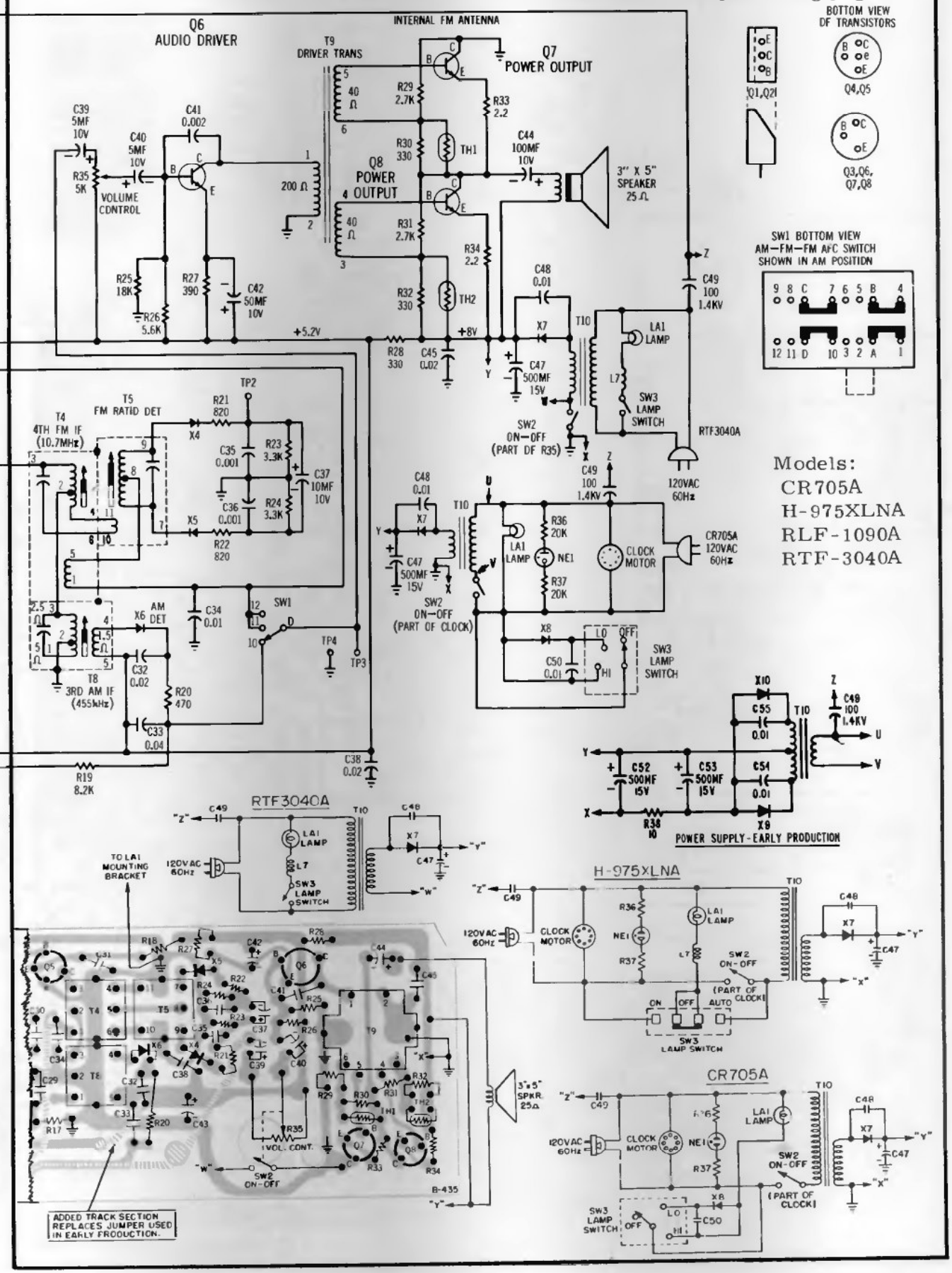


AM IF 455 KC
FM IF 10.7 MC

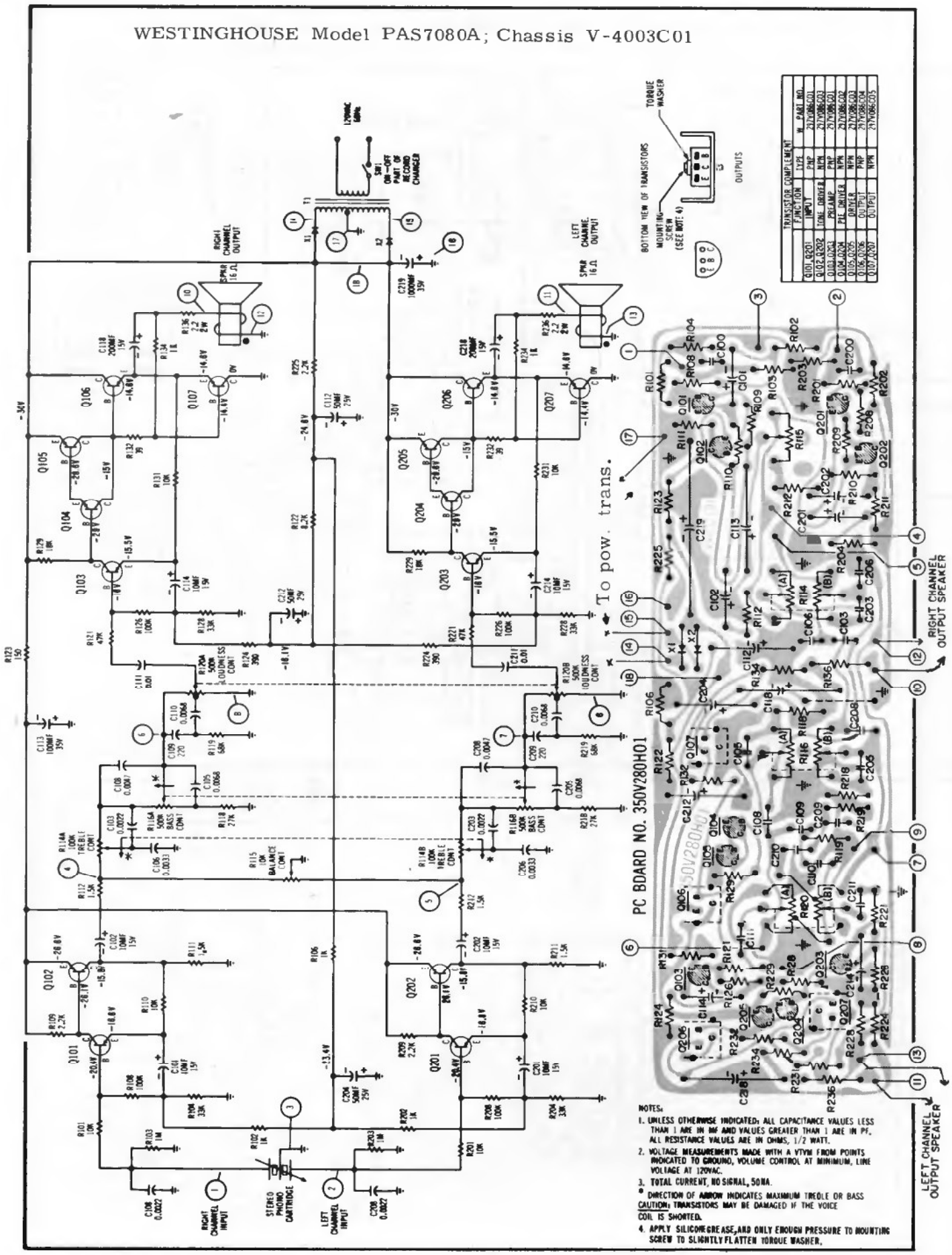


P.C. Board Bottom View.

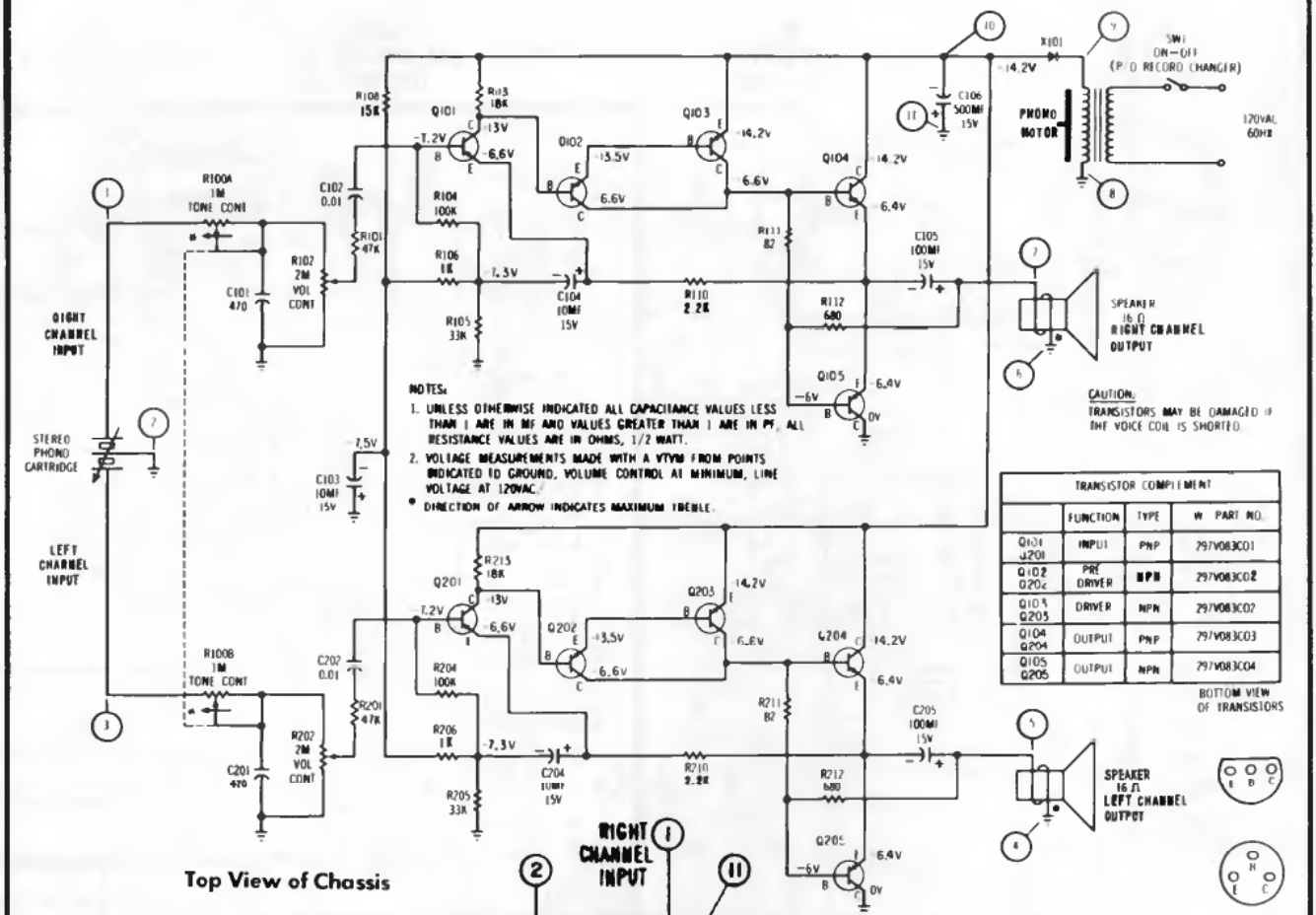
WESTINGHOUSE Models CR705A, H-975XLNA, RLF-1090A, RTF-3040A;
Chassis V-2598-1, 2, 3 (Continued from preceding page.)



WESTINGHOUSE Model PAS7080A; Chassis V-4003C01



WESTINGHOUSE Model PAS7020A; Chassis V-4002C01



NOTES:

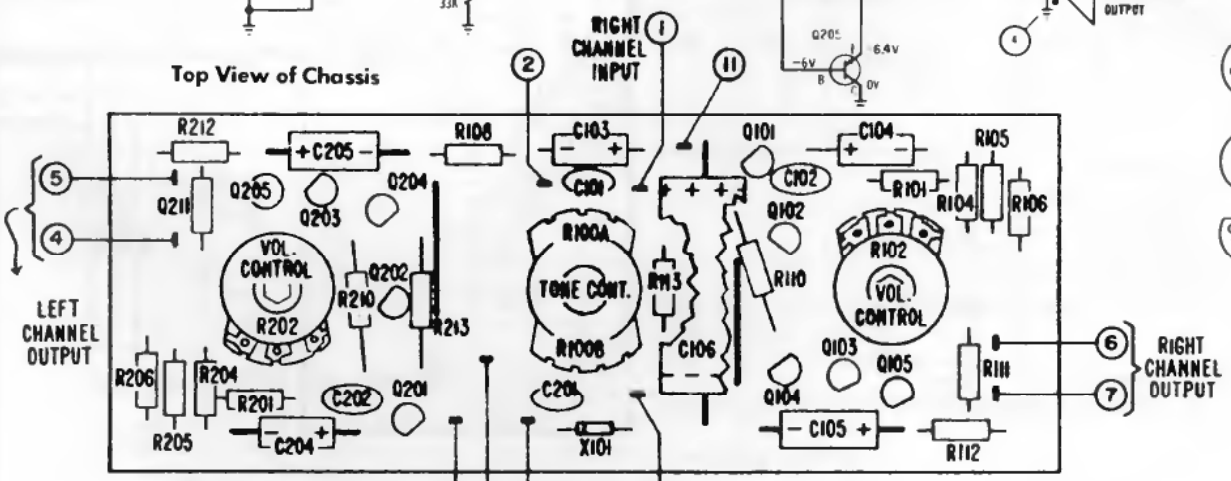
1. UNLESS OTHERWISE INDICATED ALL CAPACITANCE VALUES LESS THAN 1 ARE IN MF AND VALUES GREATER THAN 1 ARE IN PF. ALL RESISTANCE VALUES ARE IN OHMS, 1/2 WATT.
2. VOLTAGE MEASUREMENTS MADE WITH A VTVM FROM POINTS INDICATED TO GROUND, VOLUME CONTROL AT MINIMUM, LINE VOLTAGE AT 120VAC.
- DIRECTION OF ARROW INDICATES MAXIMUM TREBLE.

CAUTION:
TRANSISTORS MAY BE DAMAGED IF THE VOICE COIL IS SHORTED.

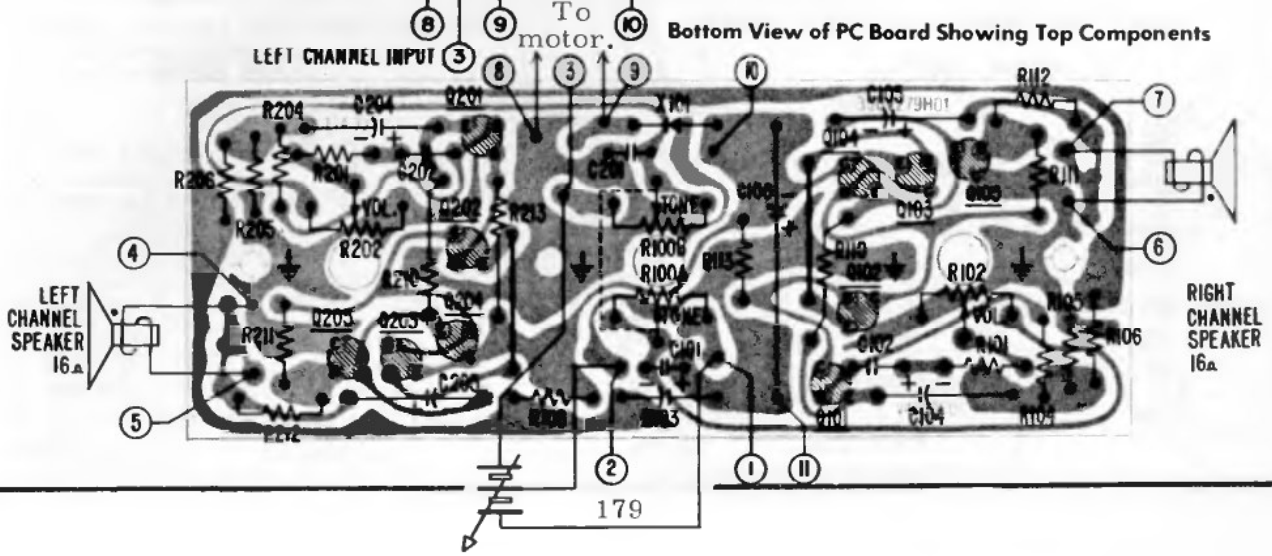
TRANSISTOR COMPLEMENT			
	FUNCTION	TYPE	W. PART NO.
Q101 Q201	INPUT	PNP	297V083C01
Q102 Q202	PRE DRIVER	NPN	297V083C02
Q103 Q203	DRIVER	NPN	297V083C02
Q104 Q204	OUTPUT	PNP	297V083C03
Q105 Q205	OUTPUT	NPN	297V083C04

BOTTOM VIEW OF TRANSISTORS

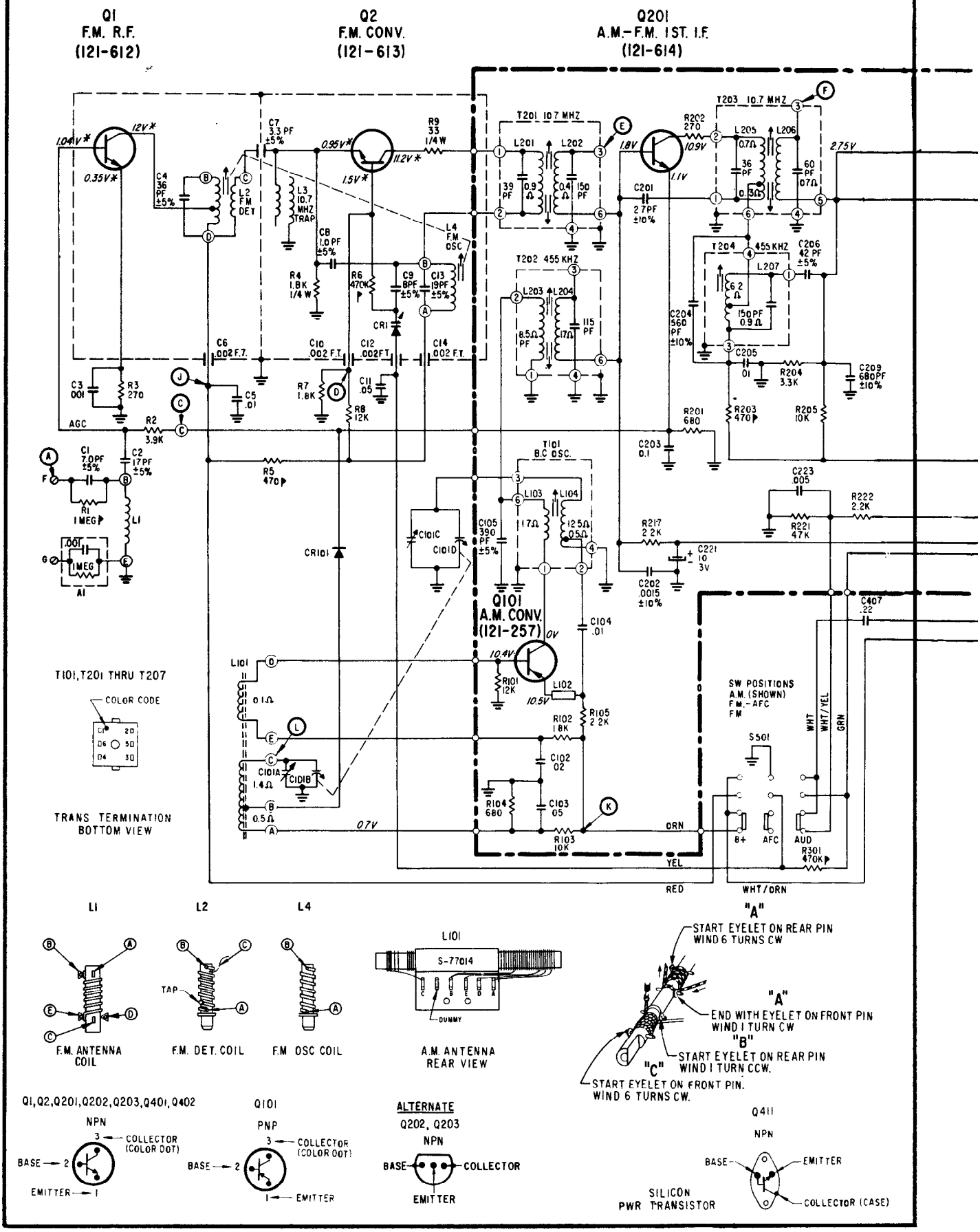
Top View of Chassis



Bottom View of PC Board Showing Top Components

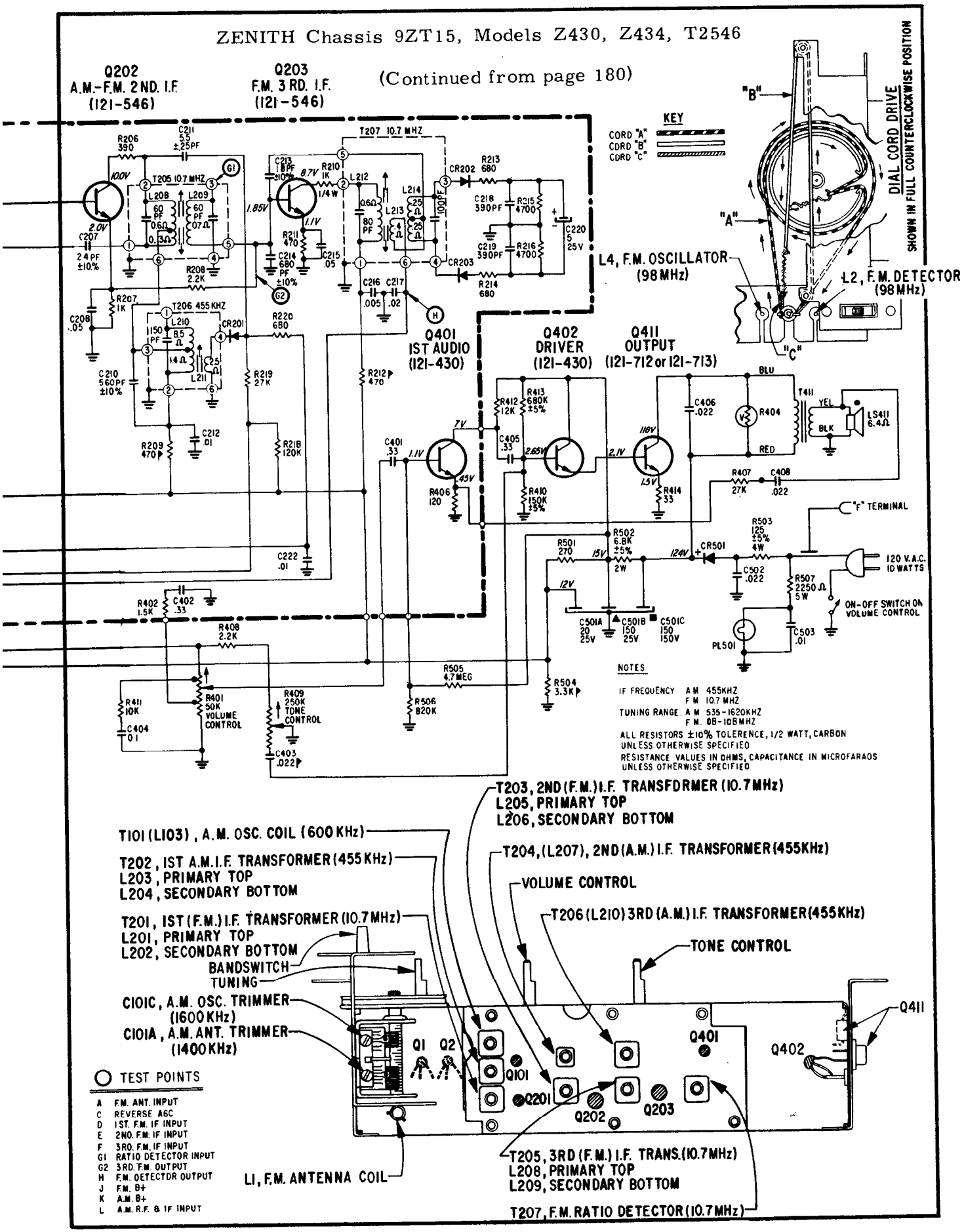


ZENITH Chassis 9ZT15, Models Z430, Z434, T2546 (Continued across page)



ZENITH Chassis 9ZT15, Models Z430, Z434, T2546

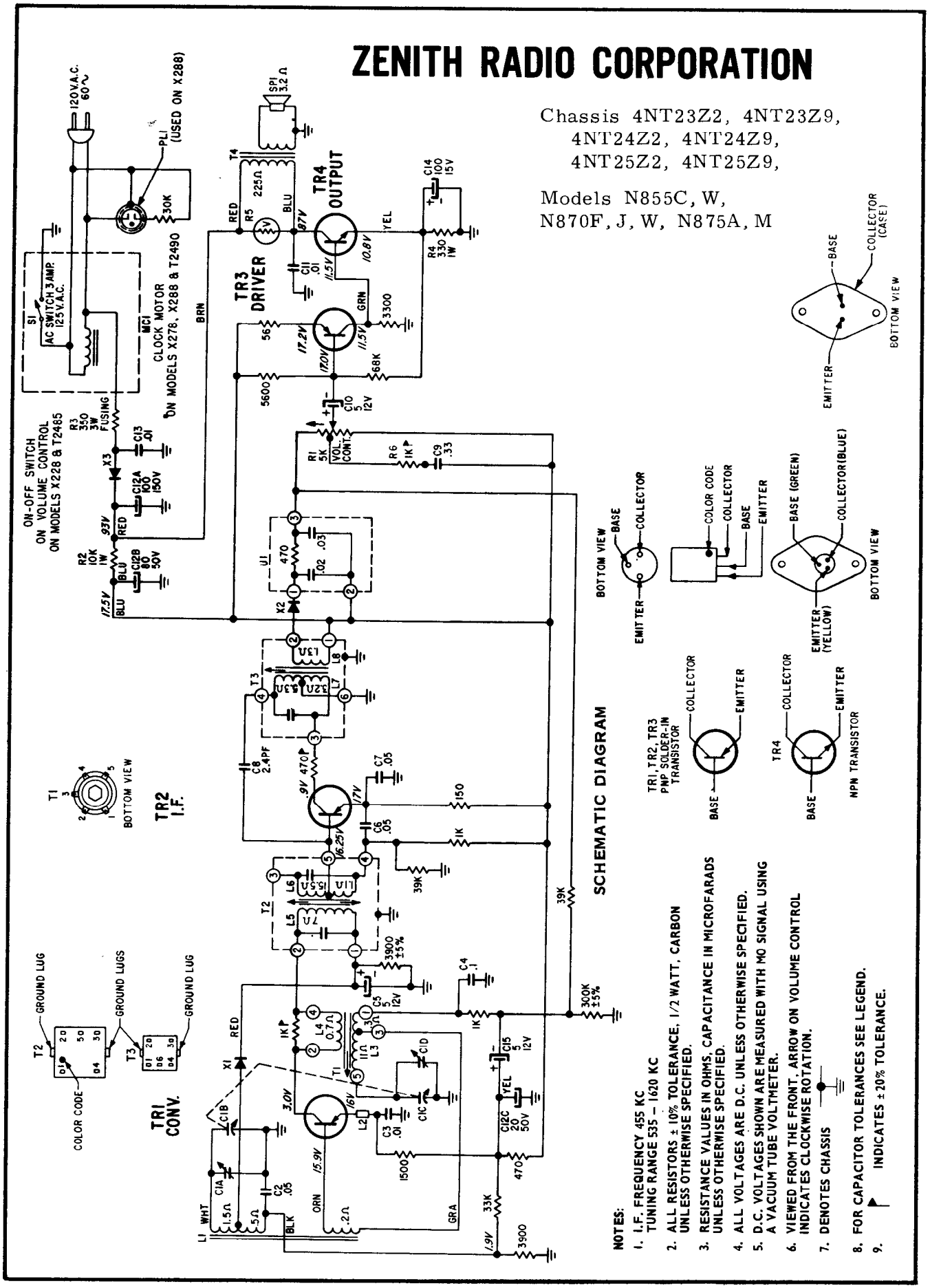
(Continued from page 180)



ZENITH RADIO CORPORATION

Chassis 4NT23Z2, 4NT23Z9,
4NT24Z2, 4NT24Z9,
4NT25Z2, 4NT25Z9,

Models N855C, W,
N870F, J, W, N875A, M

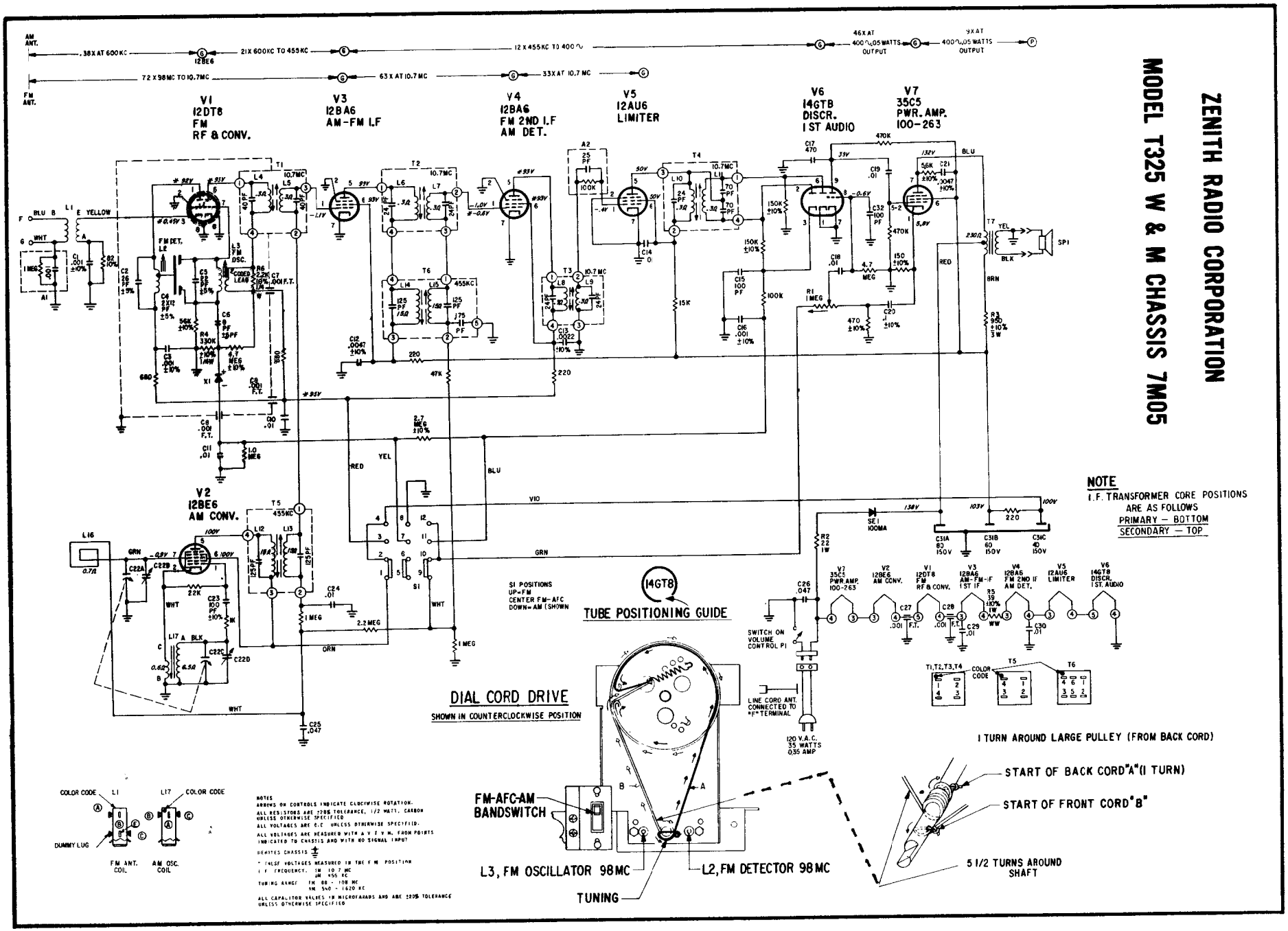


NOTES:

1. I.F. FREQUENCY 455 KC TUNING RANGE 535 – 1620 KC
2. ALL RESISTORS ± 10% TOLERANCE, 1/2 WATT, CARBON UNLESS OTHERWISE SPECIFIED.
3. RESISTANCE VALUES IN OHMS, CAPACITANCE IN MICROFARADS UNLESS OTHERWISE SPECIFIED.
4. ALL VOLTAGES ARE D.C. UNLESS OTHERWISE SPECIFIED.
5. D.C. VOLTAGES SHOWN ARE MEASURED WITH NO SIGNAL USING A VACUUM TUBE VOLTMETER.
6. VIEWED FROM THE FRONT. ARROW ON VOLUME CONTROL INDICATES CLOCKWISE ROTATION.
7. DENOTES CHASSIS
8. FOR CAPACITOR TOLERANCES SEE LEGEND.
9. ▲ INDICATES ± 20% TOLERANCE.

ZENITH RADIO CORPORATION

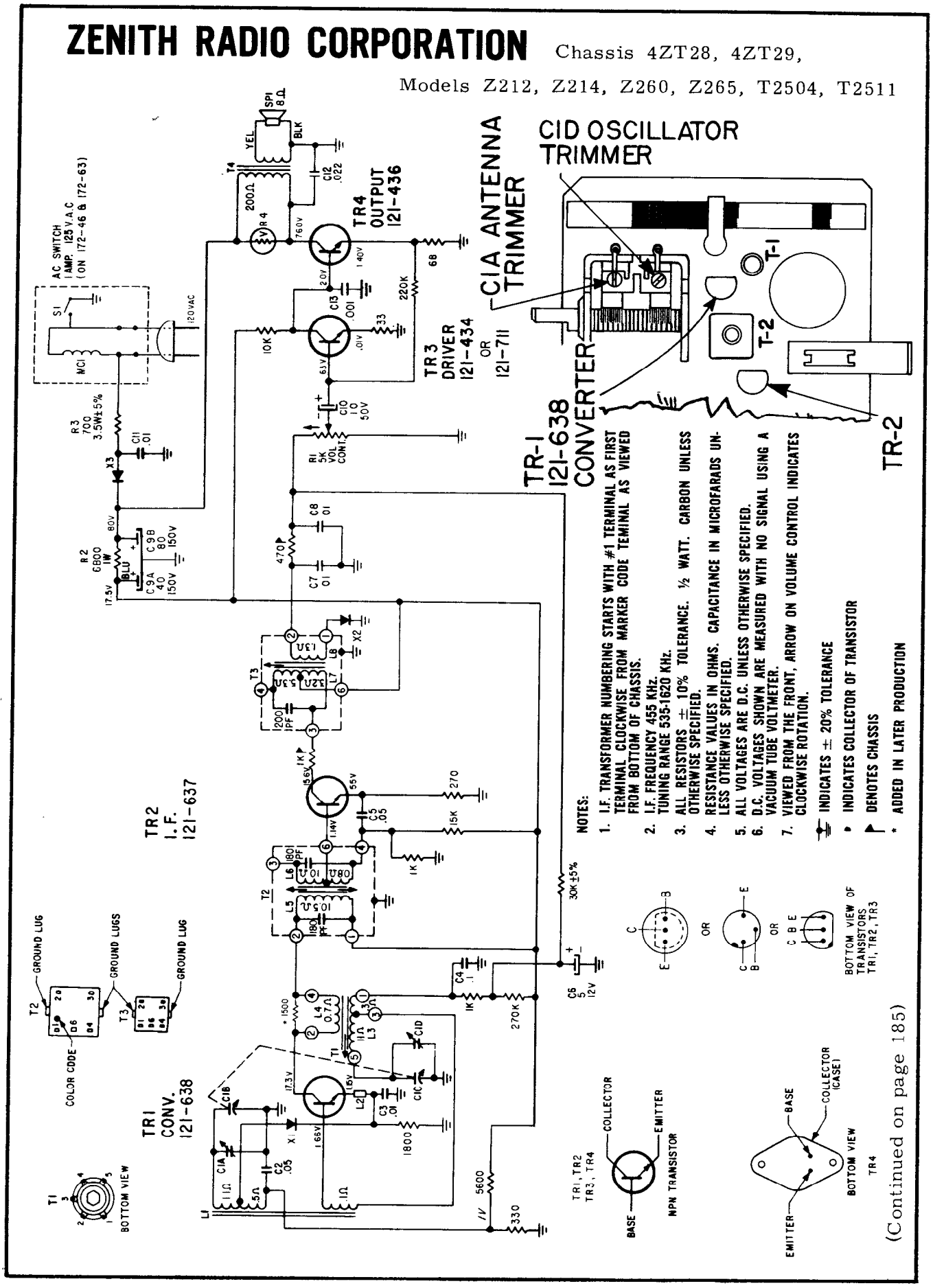
MODEL T325 W & M CHASSIS 7M05



ZENITH RADIO CORPORATION

Chassis 4ZT28, 4ZT29,

Models Z212, Z214, Z260, Z265, T2504, T2511



NOTES:

1. I.F. TRANSFORMER NUMBERING STARTS WITH #1 TERMINAL AS FIRST TERMINAL CLOCKWISE FROM MARKER CODE TEMINAL AS VIEWED FROM BOTTOM OF CHASSIS.
2. I.F. FREQUENCY 455 KHz. TUNING RANGE 535-1620 KHz.
3. ALL RESISTORS ± 10% TOLERANCE. ½ WATT. CARBON UNLESS OTHERWISE SPECIFIED.
4. RESISTANCE VALUES IN OHMS. CAPACITANCE IN MICROFARADS UNLESS OTHERWISE SPECIFIED.
5. ALL VOLTAGES ARE D.C. UNLESS OTHERWISE SPECIFIED.
6. D.C. VOLTAGES SHOWN ARE MEASURED WITH NO SIGNAL USING A VACUUM TUBE VOLTMETER.
7. VIEWED FROM THE FRONT, ARROW ON VOLUME CONTROL INDICATES CLOCKWISE ROTATION.

⏚ INDICATES ± 20% TOLERANCE

• INDICATES COLLECTOR OF TRANSISTOR

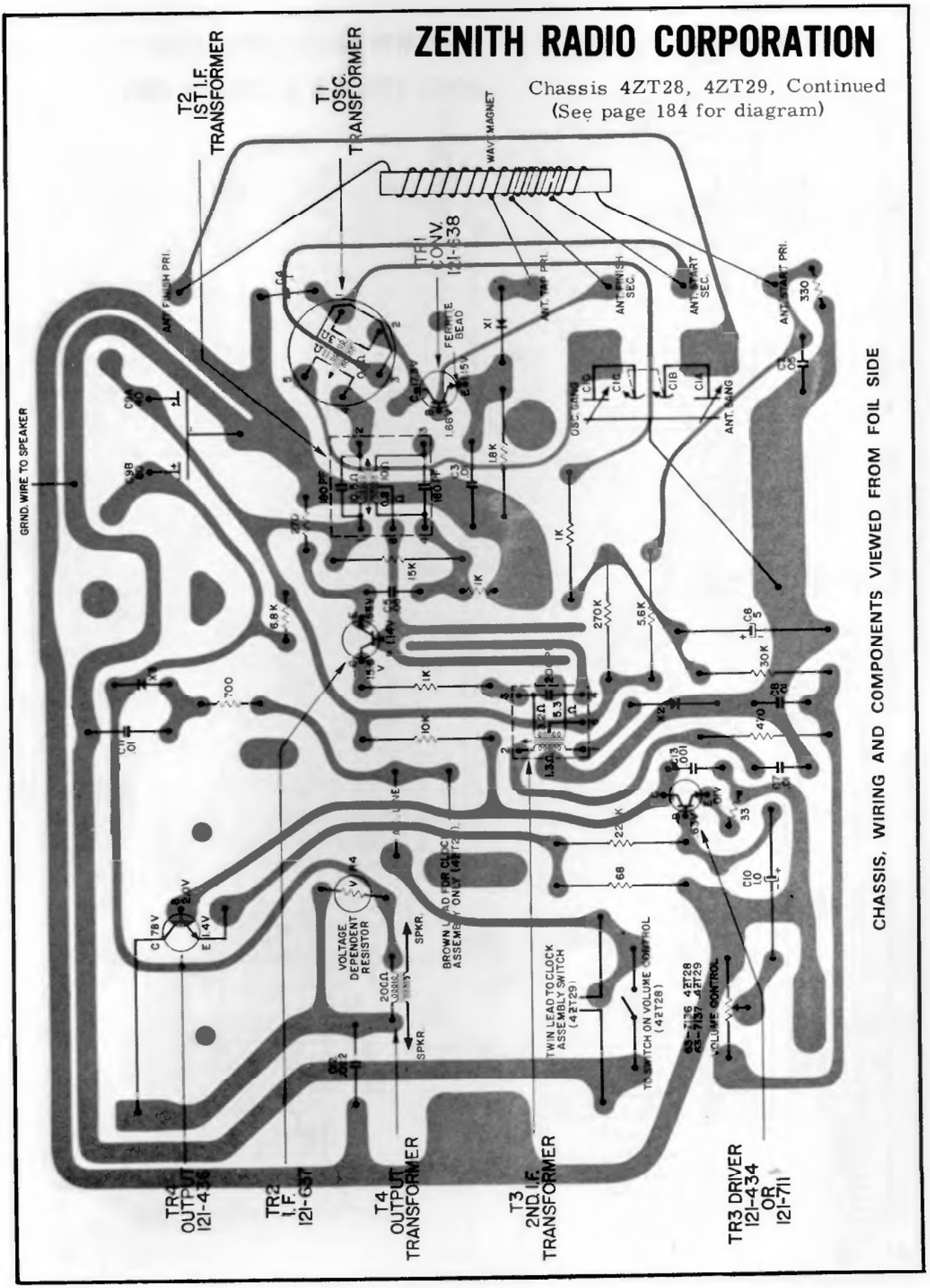
▶ DENOTES CHASSIS

* ADDED IN LATER PRODUCTION

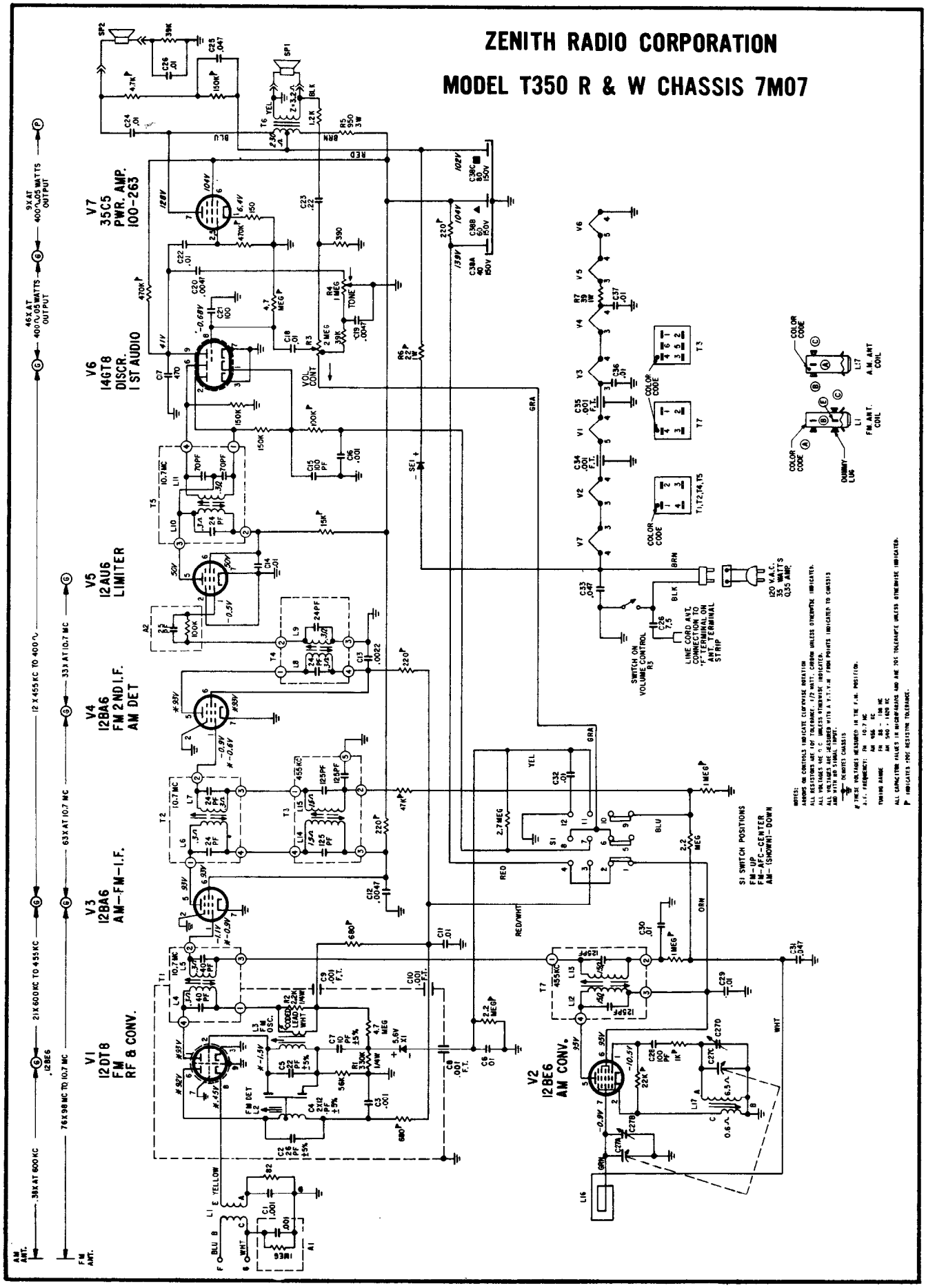
(Continued on page 185)

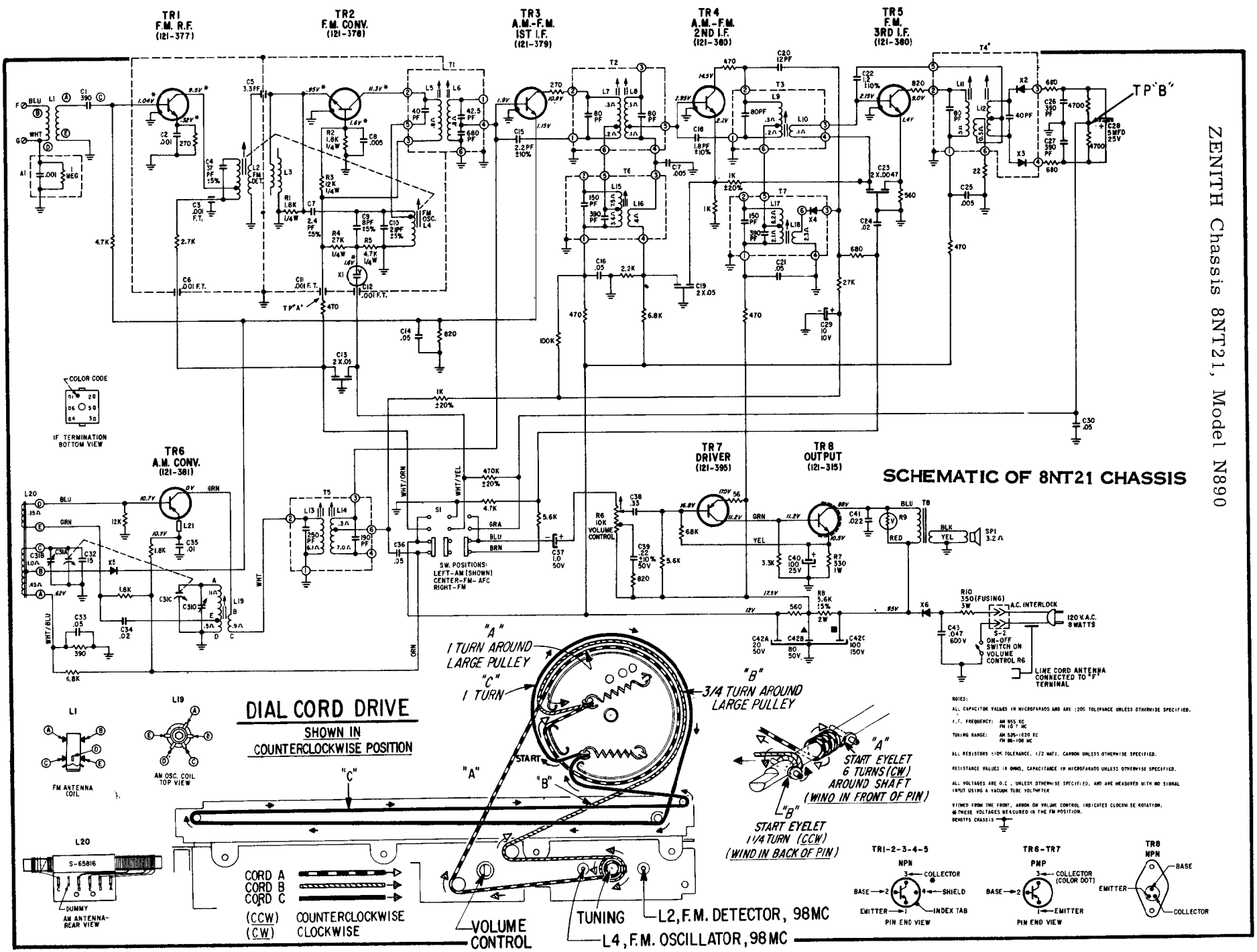
ZENITH RADIO CORPORATION

Chassis 4ZT28, 4ZT29, Continued
(See page 184 for diagram)

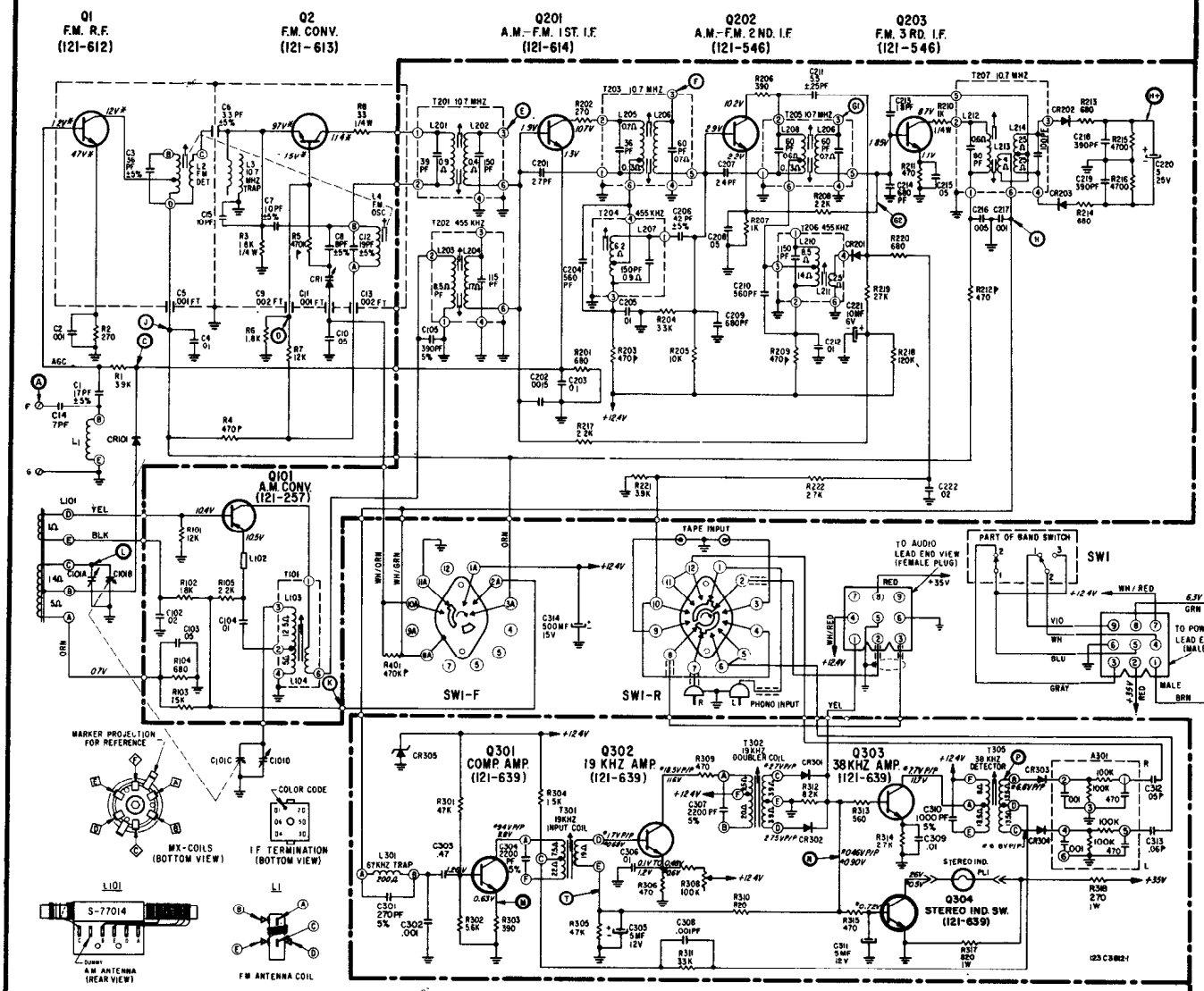


CHASSIS, WIRING AND COMPONENTS VIEWED FROM FOIL SIDE

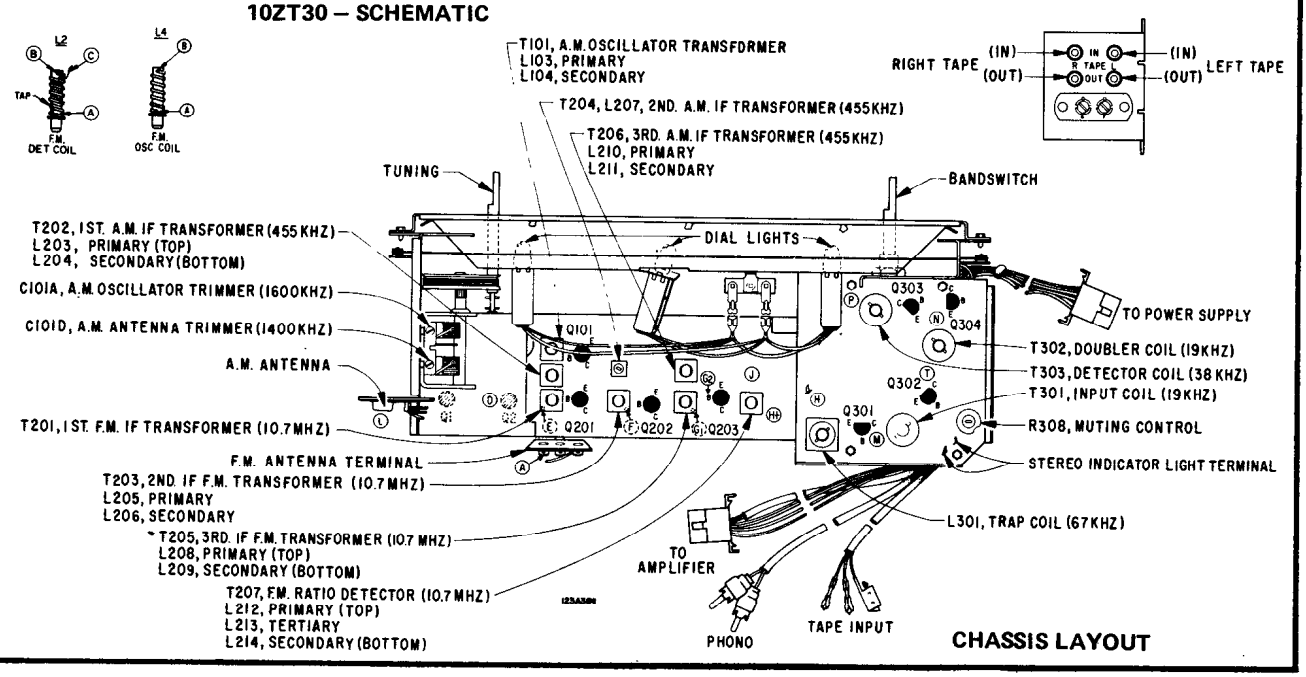

ZENITH RADIO CORPORATION
MODEL T350 R & W CHASSIS 7M07
V1 12DT8 FM RF & CONV.
V2 12BE6 AM CONV.
V3 12BA6 AM-FM-I.F.
V4 12BA6 FM 2ND I.F. AM DET
V5 12AU6 LIMITER
V6 14GT8 DISCR. 1ST AUDIO
V7 35C5 PWR. AMP. 100-263
SP1
SP2
S1 SWITCH POSITIONS
FM-UP
FM-AFC-CENTER
AM-(SHOWN)-DOWN
SWITCH ON VOLUME CONTROL R5
120 V.A.C. 35 WATTS 0.35 AMP.
AM ANT.
FM ANT.
AM ANT. COIL
FM ANT. COIL
DUMMY L16


TR1
F.M. R.F.
(121-377)
TR2
F.M. CONV.
(121-376)
TR3
A.M.-F.M.
IST I.F.
(121-379)
TR4
A.M.-F.M.
2ND I.F.
(121-380)
TR5
F.M.
3RD I.F.
(121-380)
TP "A"
TP "B"
COLOR CODE
IF TERMINATION
BOTTOM VIEW
TR6
A.M. CONV.
(121-381)
TR7
DRIVER
(121-395)
TR8
OUTPUT
(121-315)
SCHEMATIC OF 8NT21 CHASSIS
SW. POSITIONS:
LEFT-AM (SHOWN)
CENTER-FM-AFC
RIGHT-FM
R6
10K
VOLUME
CONTROL
SPI
3.2Ω
R10
350 (FUSING)
3W
A.C. INTERLOCK
120 V.A.C.
8 WATTS
S-2
ON-OFF
SWITCH ON
VOLUME
CONTROL R6
LINE CORD ANTENNA
CONNECTED TO "F"
TERMINAL
DIAL CORD DRIVE
SHOWN IN
COUNTERCLOCKWISE POSITION
"A"
1 TURN AROUND
LARGE PULLEY
"C"
1 TURN
"B"
3/4 TURN AROUND
LARGE PULLEY
START
"A"
START EYELET
6 TURNS (CW)
AROUND SHAFT
(WIND IN FRONT OF PIN)
"B"
START EYELET
1 1/4 TURN (CCW)
(WIND IN BACK OF PIN)
L1
FM ANTENNA
COIL
L19
AM OSC. COIL
TOP VIEW
L20
S-65816
DUMMY
AM ANTENNA-
REAR VIEW
CORD A
CORD B
CORD C
(CCW) COUNTERCLOCKWISE
(CW) CLOCKWISE
VOLUME
CONTROL
TUNING
L2, F.M. DETECTOR, 98MC
L4, F.M. OSCILLATOR, 98MC
NOTES:
ALL CAPACITOR VALUES IN MICROFARADS AND ARE ±20% TOLERANCE UNLESS OTHERWISE SPECIFIED.
I.F. FREQUENCY: AM 955 KC
FM 10.7 MC
TUNING RANGE: AM 535-1620 KC
FM 88-108 MC
ALL RESISTORS ±10% TOLERANCE, 1/2 WATT, CARBON UNLESS OTHERWISE SPECIFIED.
RESISTANCE VALUES IN OHMS, CAPACITANCE IN MICROFARADS UNLESS OTHERWISE SPECIFIED.
ALL VOLTAGES ARE D.C., UNLESS OTHERWISE SPECIFIED, AND ARE MEASURED WITH NO SIGNAL
INPUT USING A VACUUM TUBE VOLTMETER
VIEWED FROM THE FRONT, ARROW ON VOLUME CONTROL INDICATES CLOCKWISE ROTATION.
@ THESE VOLTAGES MEASURED IN THE FM POSITION.
DENOTES CHASSIS
TR1-2-3-4-5
NPN
COLLECTOR
BASE
SHIELD
EMITTER
INDEX TAB
PIN END VIEW
TR6-TR7
PNP
COLLECTOR
(COLOR DOT)
BASE
EMITTER
PIN END VIEW
TR8
NPN
BASE
EMITTER
COLLECTOR

ZENITH Chassis 10ZT30 (Continued on page 189)

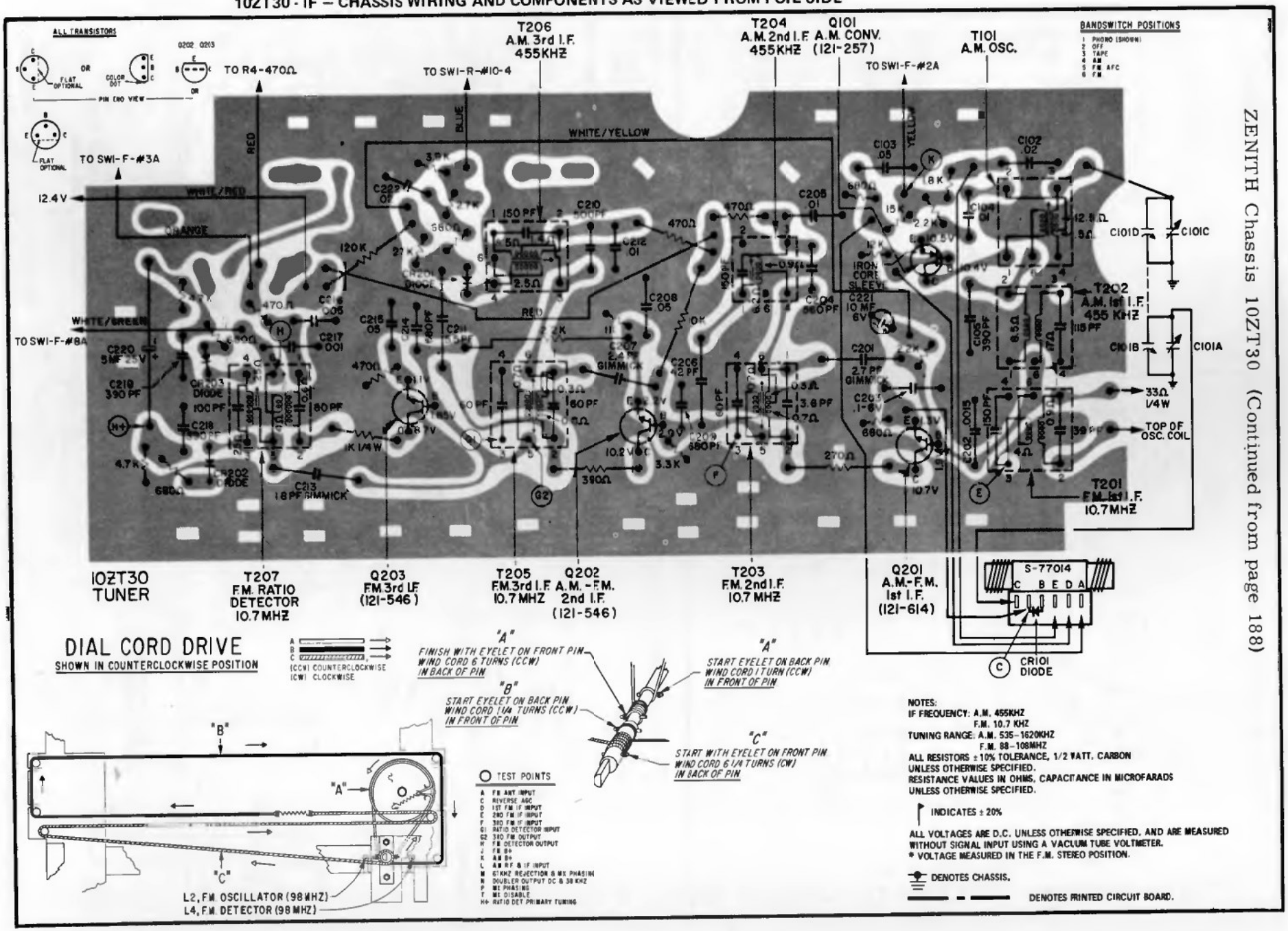


10ZT30 – SCHEMATIC

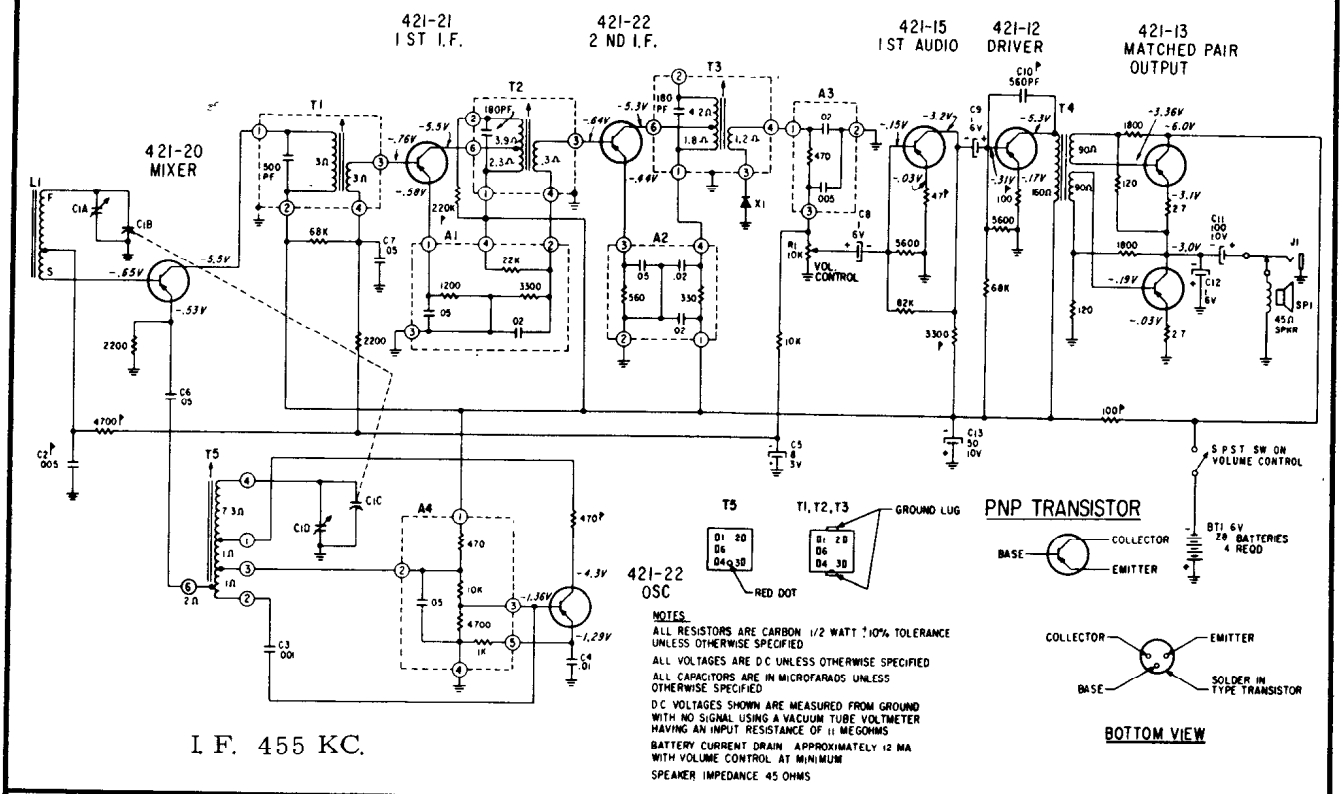


CHASSIS LAYOUT

10ZT30 - IF – CHASSIS WIRING AND COMPONENTS AS VIEWED FROM FOIL SIDE

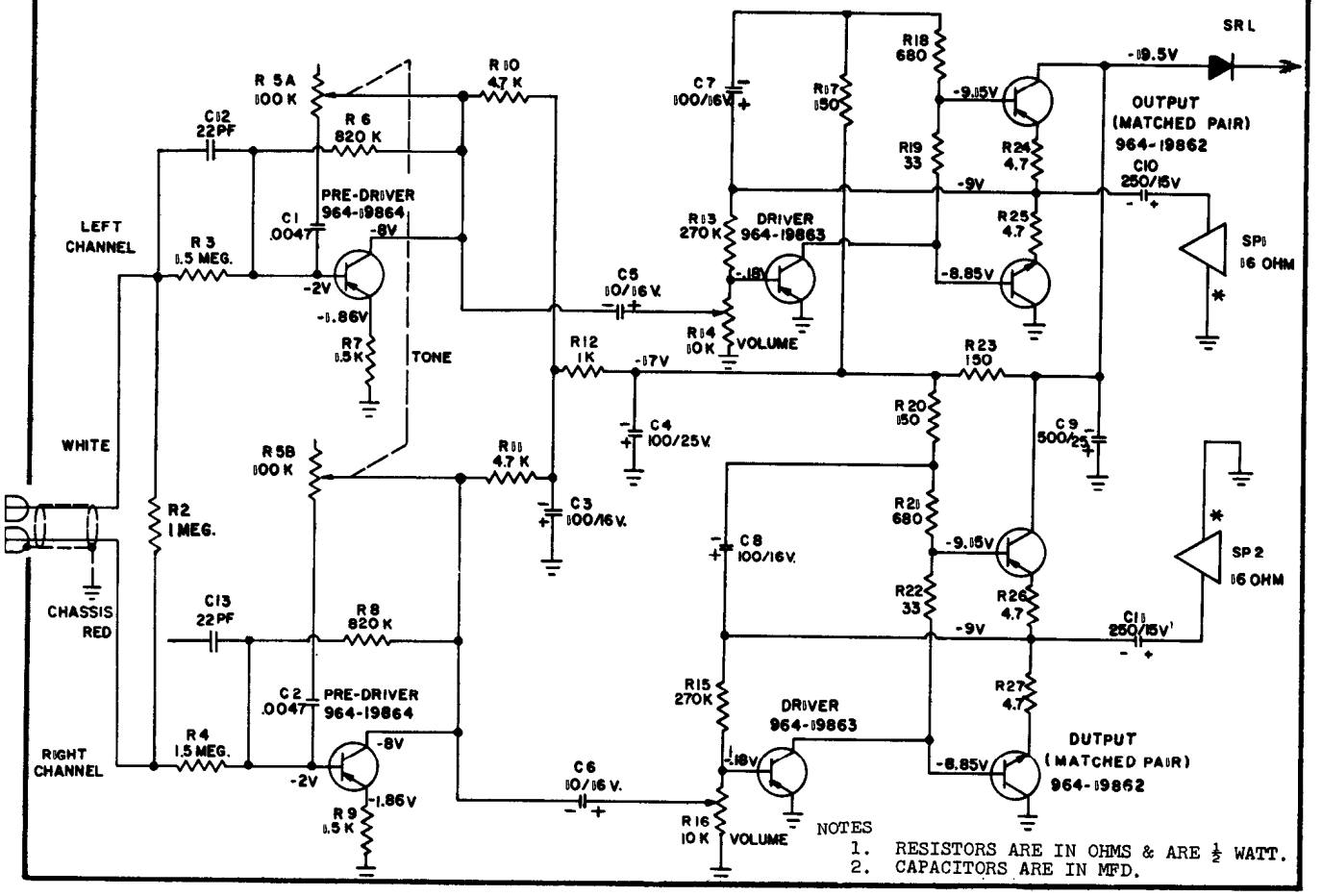


ZENITH Chassis 8NT46Z9, Models "Royal 270"



I. F. 455 KC.

ZENITH Models X540G-1, 540L-1, X547P-1, 547X-1



To PWR. TRANS

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(INDEX continued)