

GENERAL INFORMATION

TYPE - Three-power (AC/DC, Battery) portable radio receiver. Four miniature type tubes and a selenium rectifier are used in a superheterodyne circuit.

RECEIVER MODELS	Model	Color
	52M1U	Green
	52M2U	Maroon
	52M3U	Gray

TUNING RANGE - 535 to 1620 Kc **IF** - 455 Kc

POWER SUPPLY -

Operates from 117V AC/DC (15 watts) or from the following batteries:

2-1-1/2 volt flashlight cells

Use: Eveready 950

or Burgess 2

or Ray-O-Vac 2LP

or any equivalent size "D" flashlight cell.

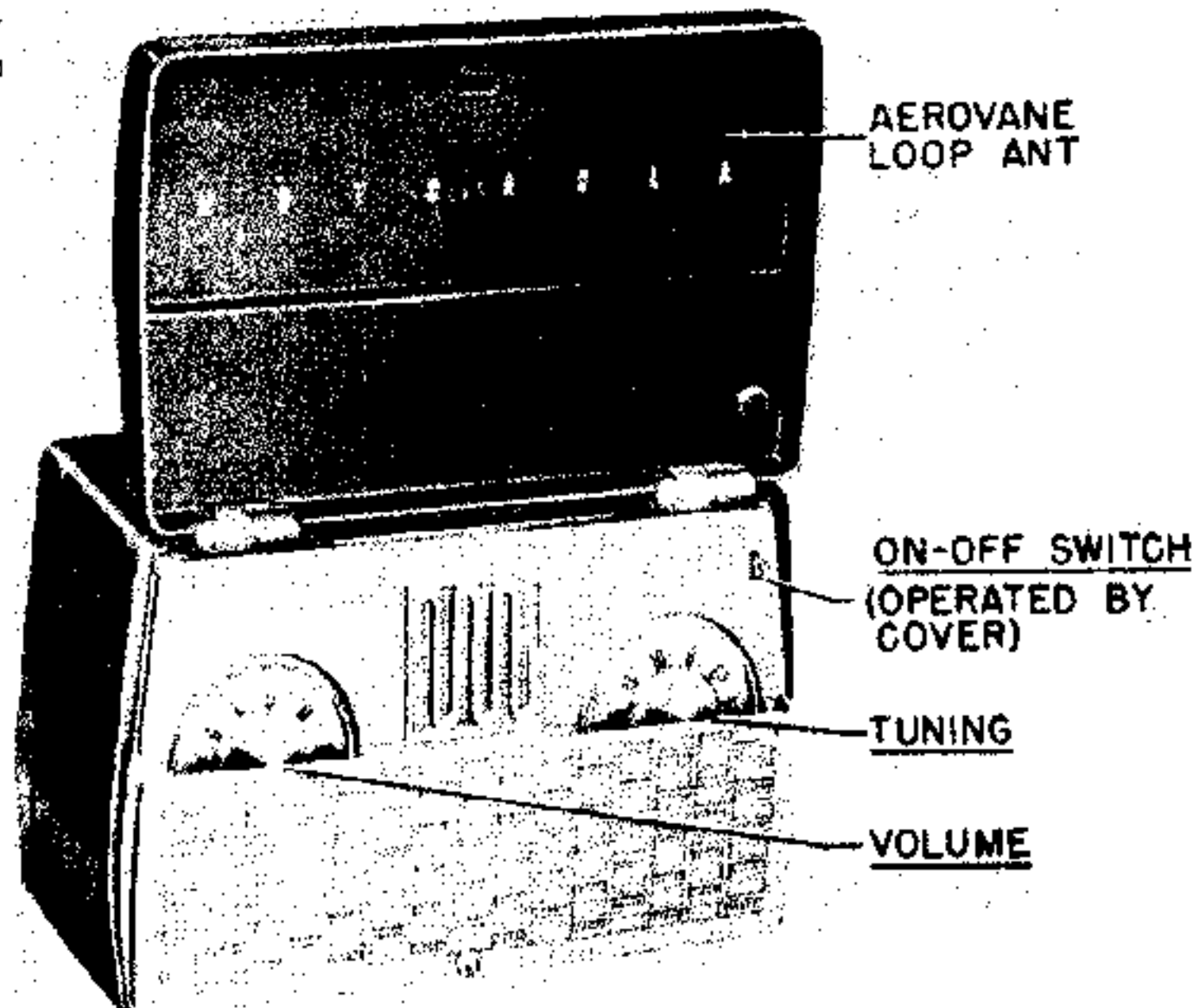
1-67-1/2 volt "B" battery

Use: Eveready 467

or Burgess XX45

or Ray-O-Vac 4367

or equivalent.



TUBE COMPLEMENT - Type	Function
1R5	Converter
1U4	IF Amplifier
1U5	Det, AVC & 1st AF Amp
3S4	Power Amplifier
Rectifier	Selenium type -for AC/DC operation

OPERATING INSTRUCTIONS

TO OPEN FRONT COVER. The front cover is opened by pushing up on the cover release button, located in the center of the front cover. The receiver is automatically turned on when the front cover is opened and raised to a vertical position.

TO OPEN BACK COVER. The back cover is opened by grasping it at the top and gently pulling cover open. When closing the cover, be careful not to pinch the power line cord or other leads between the cover and the cabinet.

HOUSE CURRENT OPERATION. The power cord is located inside the cabinet and can be reached by opening the back cover. Pass the line cord through the slot on the side of the receiver before closing the cover. Plug the power cord into any 117 volt AC or DC power outlet. Reverse the line cord plug in power outlet if the receiver does not operate from DC power. When operating from AC power, reception may sometimes be improved by reversing the power plug in power outlet. It is not necessary that batteries be installed if the receiver is to be operated only from house power lines.

BATTERY OPERATION. Open the back cover and install batteries by following the instructions found on label located on back cover or as shown in Figure 2. Plug the power line cord into the receptacle on the receiver chassis, as shown on label, or the receiver will not play from batteries. If the receiver is to be operated for a long period of time from AC or DC house power lines, or is to be placed in storage, remove the batteries and store them in a cool place.

IMPORTANT: Never leave low or run-down batteries in your receiver because they will leak or swell and damage your receiver.

TUNING CONTROL. Stations are tuned in with the right-hand knob. Tune carefully until you are exactly on a station; tuning to either side of it will result in poor tone quality and excessive noise. Do not regulate volume by detuning the station; always tune exactly on the station, then adjust volume control to desired loudness.

VOLUME CONTROL. The left-hand knob controls volume. Rotation to the right will increase volume; rotation to the left will decrease it.

TO TURN OFF. Closing the front cover will automatically turn off the receiver.

ANTENNA. A super-sensitive "Aerovane" loop antenna is built into the front cover of this receiver. Because of the slightly directional characteristics of the loop antenna, reception from some stations may be improved by rotating the receiver. In extremely noisy locations, rotate the receiver until minimum noise and maximum signal pick-up is obtained.

BATTERY REPLACEMENT. If low volume or fuzzy tone is noticed when operating from batteries, replace the flashlight cells. Normally, the 67-1/2 volt "B" battery will last for 3 or 4 changes of the flashlight cells.

NOTE: The condition of the batteries will not affect operation of receiver from 117 volts AC or DC. Complete battery replacement instructions will be found inside the receiver back cover.

MODELS 52M1U, 52M2U,
52M3U, Ch. HS-300

SERVICE NOTES

The chassis of this receiver is isolated from the AC power line circuit by a capacitor-choke assembly to eliminate the shock hazard when handling the receiver. However, as an additional precaution when aligning or servicing the receiver from AC, an isolation transformer should be inserted between the power line and the chassis.

The tubes are exposed when the rear cover is opened. It is not necessary to remove the chassis to replace tubes.

TO REMOVE THE CHASSIS FROM THE CABINET:

1. Open the rear cover and remove the batteries.
2. Remove the two hex head screws that mount the chassis to the cabinet.
3. Slide the chassis from the cabinet.
4. Disconnect the two loop antenna leads from the hinges.

ALIGNMENT

NOTE: The receiver may be operated either from batteries or from the commercial power lines during alignment. If AC power is used, it is recommended that an isolation transformer be placed between the power line and the receiver. If an isolation transformer is not available, connect the low side of the signal generator to B- through a .1 mf capacitor.

1. Connect a low range output meter across the speaker voice coil.
2. Connect the low side of the signal generator to B-.
3. Set the signal generator for 400 cycle, 30% modulation.

4. Turn the receiver volume control to maximum.
5. Use a small fibre screwdriver for aligning the IF and diode transformers.
6. Adjust the signal generator output to produce .40 volts (.05 watts) across the voice coil. As stages are aligned, to avoid overloading the receiver, reduce the generator output to maintain the .40 volt level.
7. See Figure 1 for adjusting locations and the following chart for procedure.

ALIGNMENT CHART

STEP	DUMMY ANTENNA	GENERATOR CONNECTION	GENERATOR FREQUENCY	GANG SETTING	ADJUST	REMARKS
IF ALIGNMENT 1.	.1 mf	Grid of conv (pin 6, 1R5)	455 Kc	Fully open	1, 2 & 3 (IF cores)	Adjust for maximum.
RF ALIGNMENT 2.	.1 mf	Grid of conv (pin 6, 1R5)	1620 Kc	Fully open	4 (Osc)	Adjust for maximum.
3.	-	-	-	-	-	Install chassis in cabinet, leaving output meter connected to speaker.
4.	-	Radiation loop*	1400 Kc	Tune for max	5 (Ant)	Adjust for maximum. Trimmer is reached through hole under plug button on side of cabinet.

*Connect generator output across 5" diameter, 5 turn loop and couple inductively to receiver loop. Keep loops at least 12" apart.

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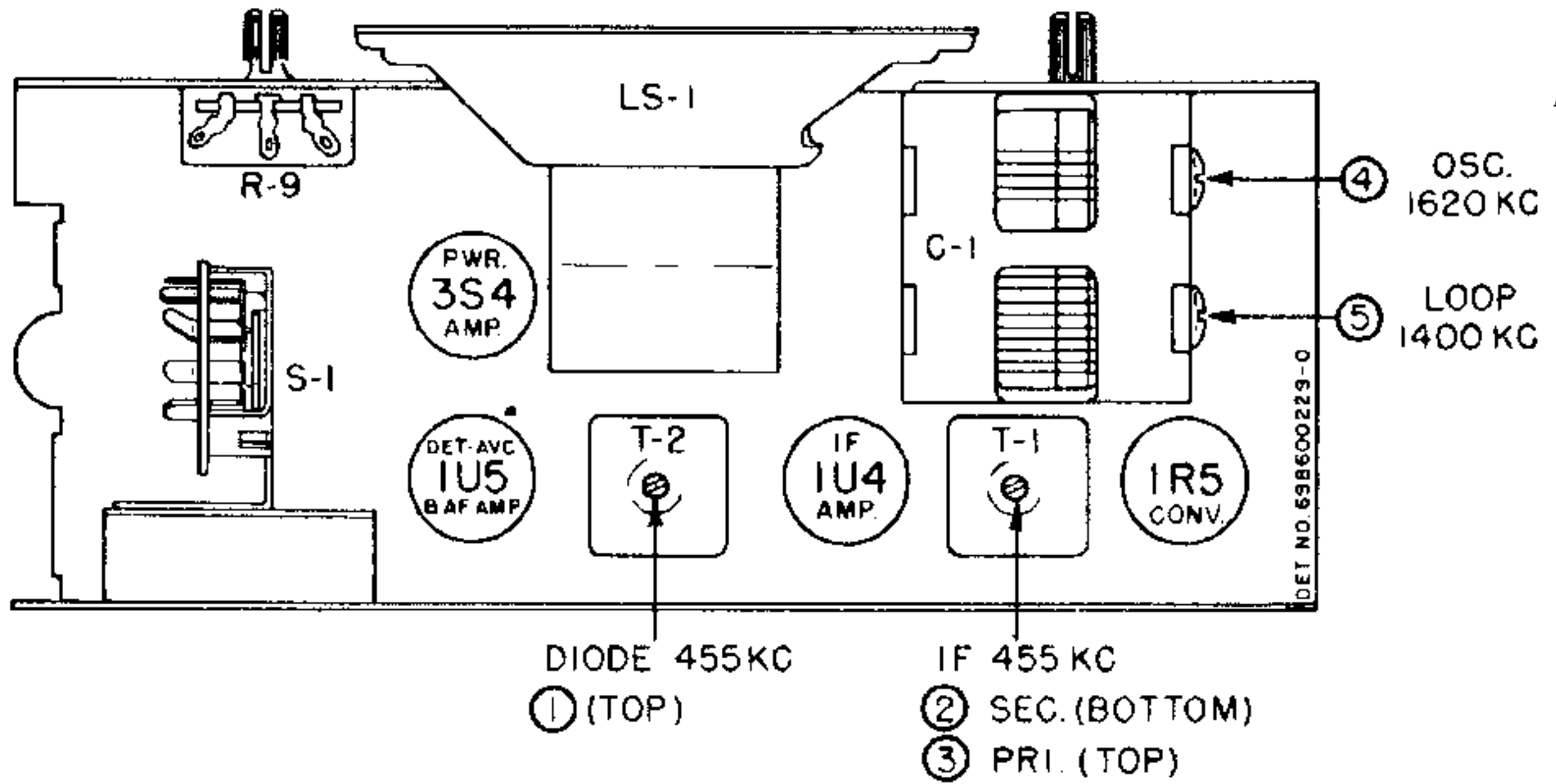


FIGURE 1. TUBE AND TRIMMER LOCATIONS

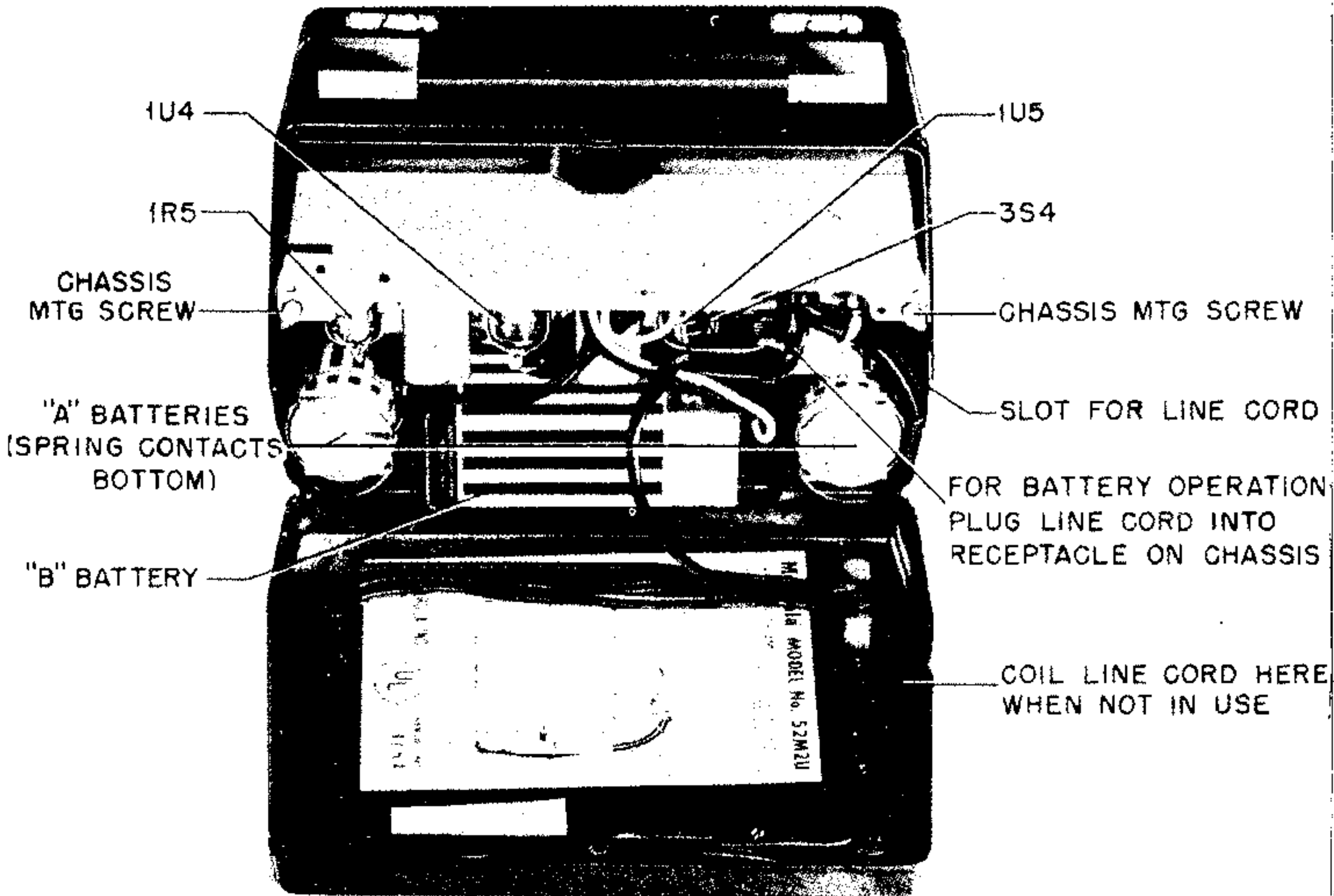


FIGURE 2. REAR VIEW OF RECEIVER

MODELS 52M1U, 52M2U,
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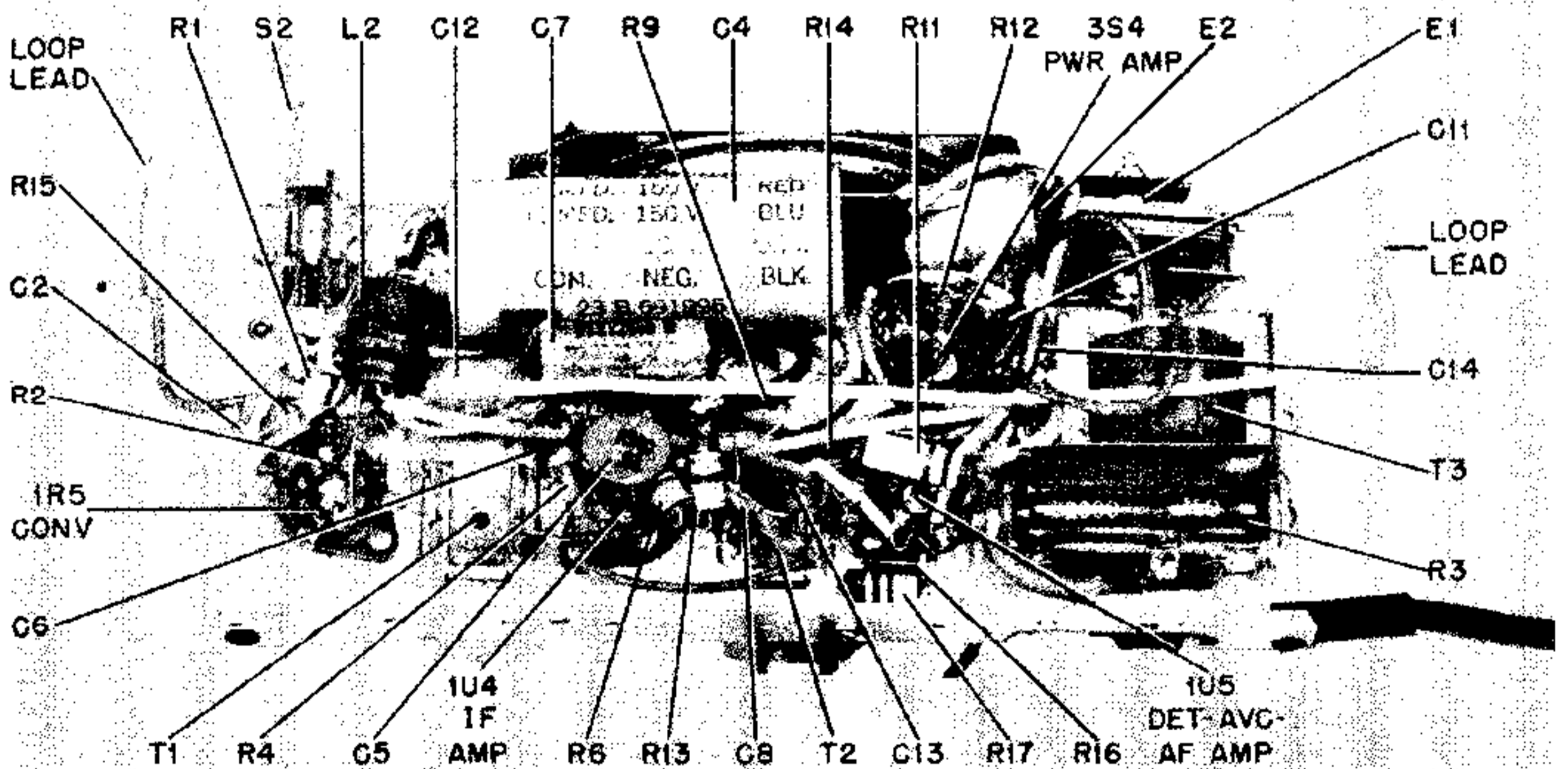
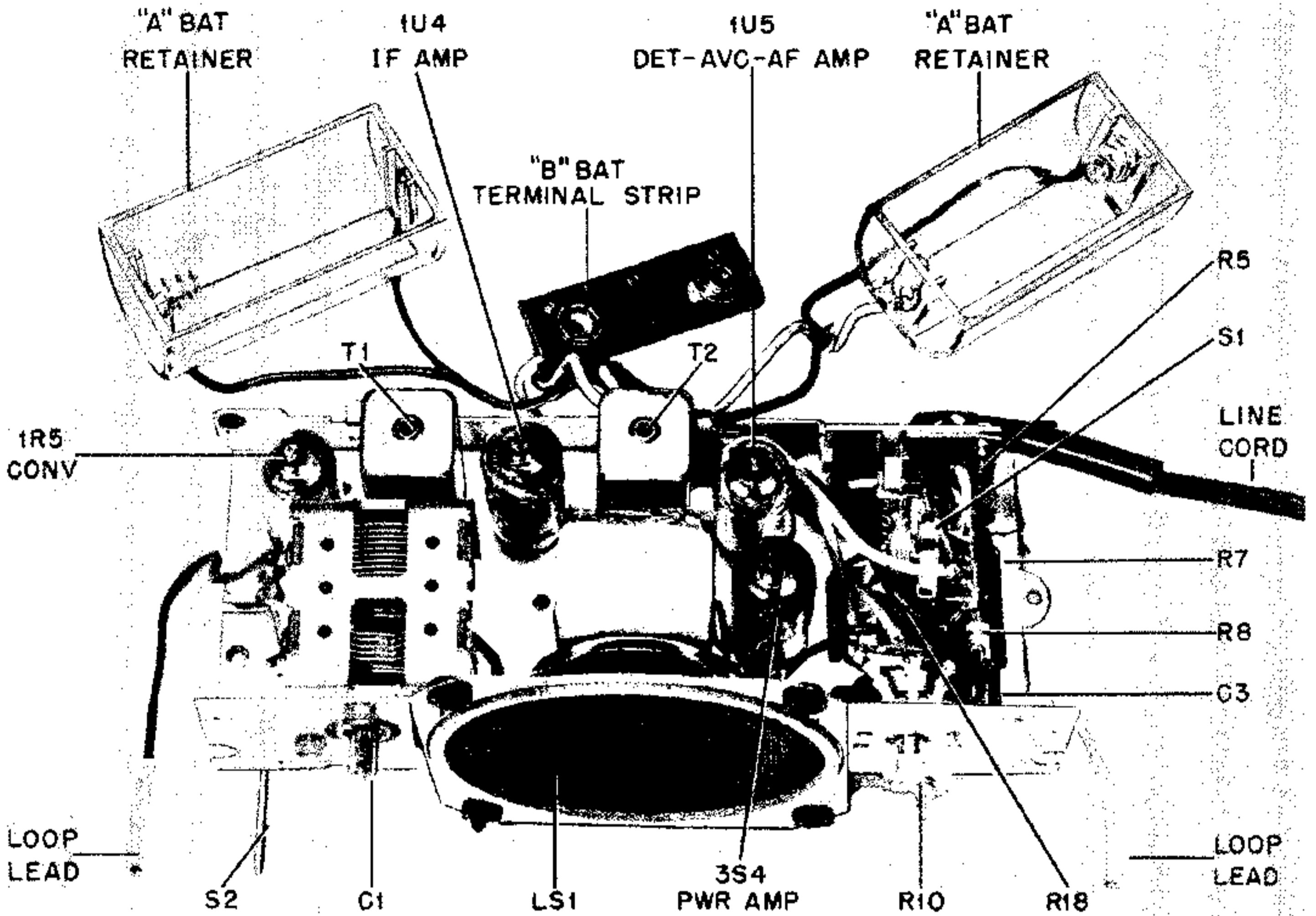


FIGURE 3. PARTS LOCATIONS

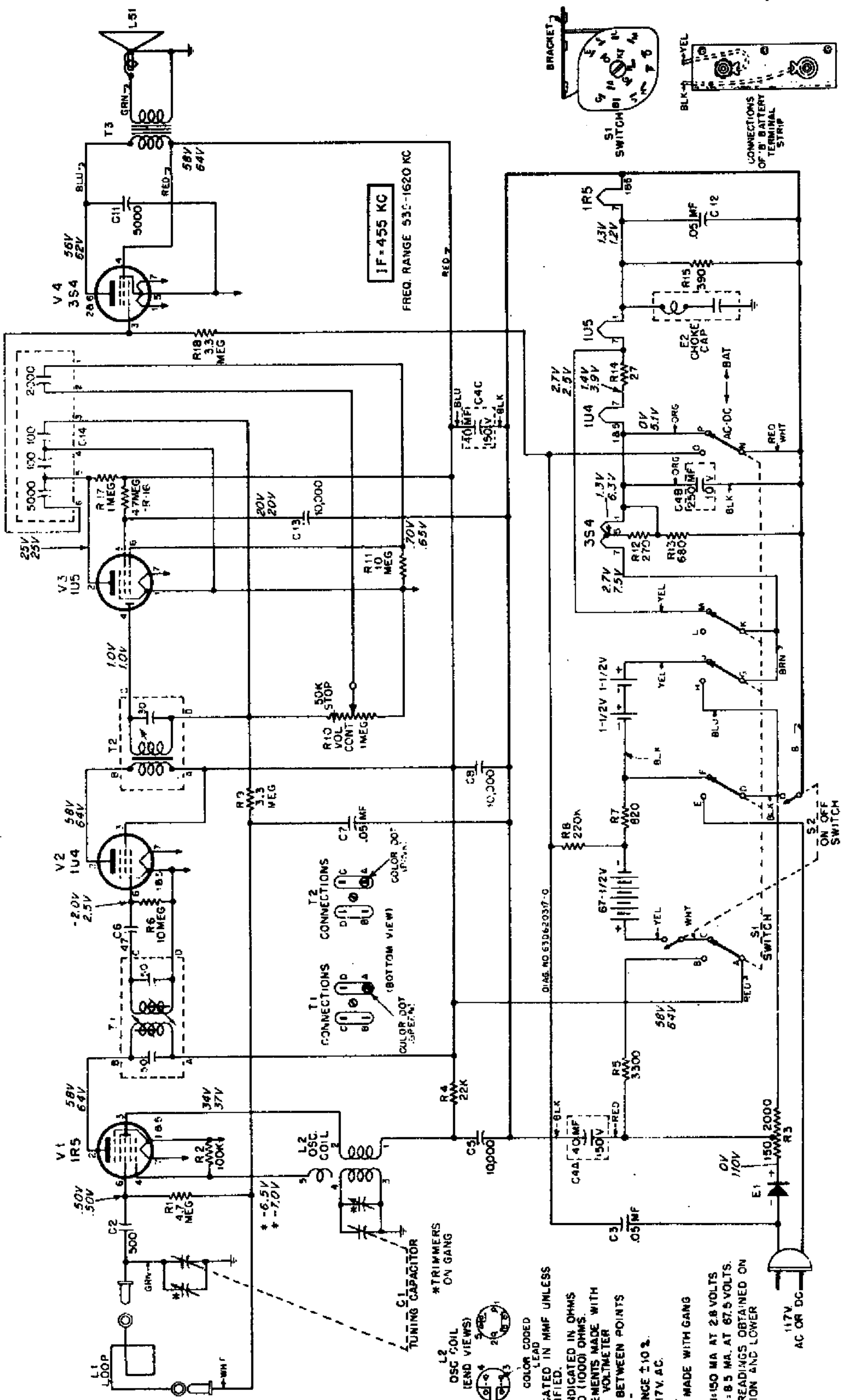


FIGURE 4. SCHEMATIC DIAGRAM OF CHASSIS USING MULTIPLE CERAMIC CAPACITOR PLATE

NOTE -
 CAPACITORS INDICATED IN MMF UNLESS OTHERWISE SPECIFIED.
 ALL RESISTORS INDICATED IN OHMS
 K-ONE THOUSAND (1000) OHMS
 VOLTAGE MEASUREMENTS MADE WITH ELECTRONIC TYPE VOLTMETER
 VOLTAGES TAKEN BETWEEN POINTS INDICATED AND B-
 VOLTAGE TOLERANCE ±10%
 INPUT VOLTAGE 117V. AC.
 NO SIGNAL INPUT.
 * MEASUREMENT MADE WITH GANG FULLY OPEN.
 'A' BATTERY DRAIN: 50 MA AT 2.8 VOLTS
 'B' BATTERY DRAIN: 8.5 MA AT 67.5 VOLTS.
 UPPER VOLTAGE READINGS OBTAINED ON BATTERY OPERATION AND LOWER READING ON AC

NOTE -
 OSC COIL (END VIEWS)
 L2



NOTE -
 COLOR CODED LEAD



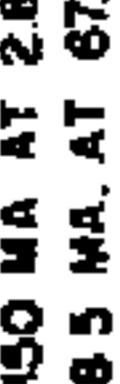
NOTE -
 TRIMMERS ON GANG



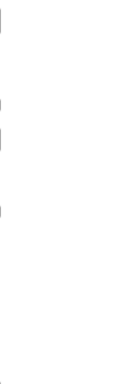
NOTE -
 CONNECTIONS OF 'B' BATTERY TERMINAL STRIP



NOTE -
 SWITCH S1



NOTE -
 SWITCH S2



NOTE -
 BRACKET



NOTE -
 CONNECTIONS OF 'B' BATTERY TERMINAL STRIP



NOTE -
 SWITCH S1



NOTE -
 SWITCH S2



NOTE -
 BRACKET



NOTE -
 CONNECTIONS OF 'B' BATTERY TERMINAL STRIP



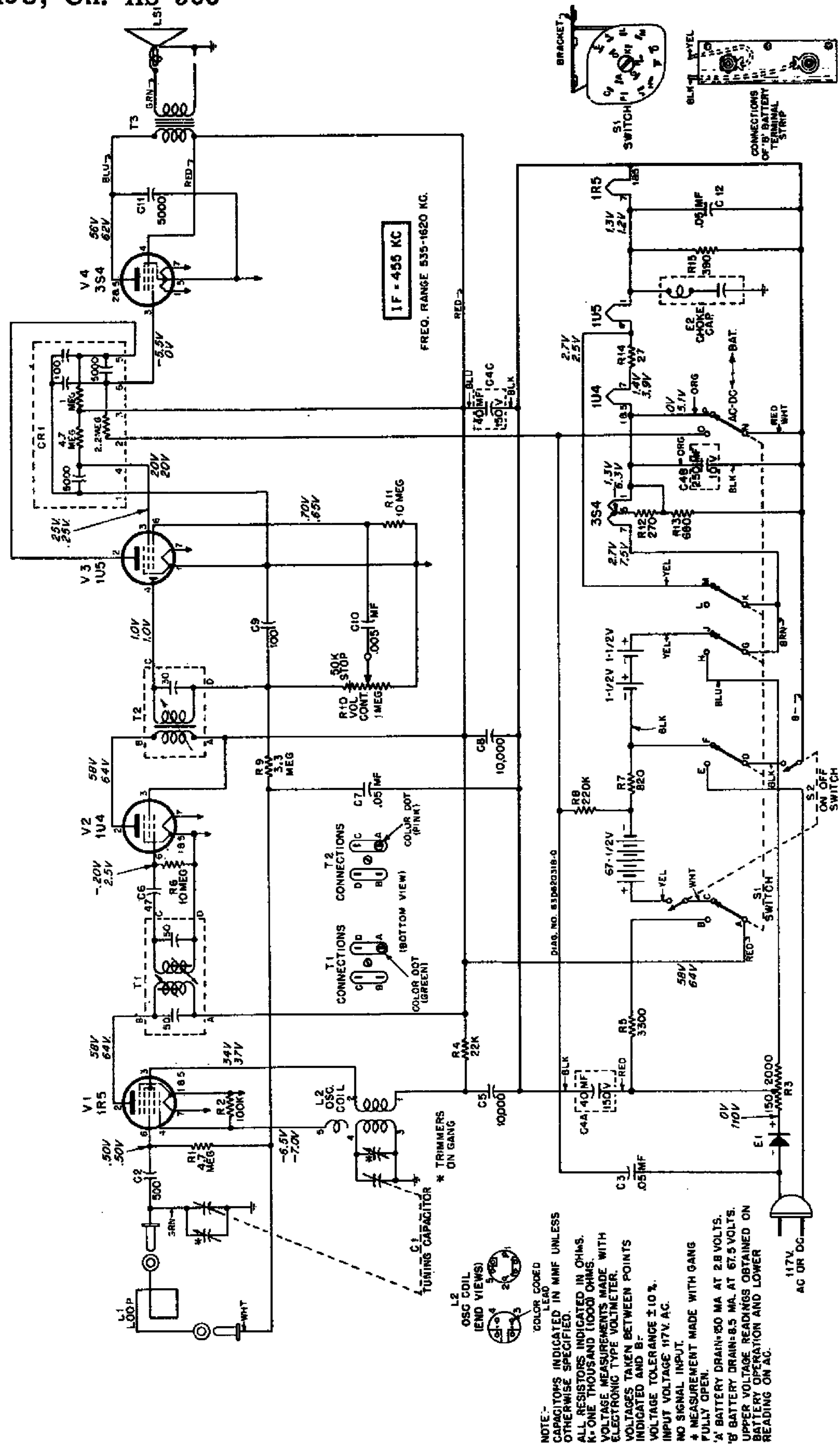


FIGURE 5. SCHEMATIC DIAGRAM OF CHASSIS USING MULTIPLE CERAMIC CAPACITOR-RESISTOR PLATE

MODELS 52M1U, 52M2U,
52M3U, Ch. HS-300

PARTS LIST

NOTE: When ordering parts, specify model and chassis numbers of set in addition to part number and description of part.

Ref. No.	Part Number	Description	List Price	Ref. No.	Part Number	Description	List Price
CHASSIS PARTS - ELECTRICAL				Speaker			
Capacitors				LS-1	50K600141		
C-1	19K692007	Variable, 2-gang.....	2.50	or	50K600142		
C-2	21K481377	Ceramic: 500 mmf 500V.....	.20	or	50B610112	Speaker: 3-1/2" PM; 3.2 ohm VC.....	3.75* exch 2.80
C-3	8K471635	Paper: .05 mf 400V.....	.20	Resistors			
C-4	23B691995	Electrolytic: 40-40 mf 150V/250 mf 10V.....	1.75	Note: All resistors are insulated, carbon type unless otherwise specified.			
C-5	21K482726	Ceramic, disc type: 10,000 mmf 450V.....	.30	R-1	6R2122	4.7 meg 20% 1/2W.....doz	1.20
C-6	21K77373	Ceramic: 47 mmf 500V.....	.20	R-2	6R6031	100,000 10% 1/2W.....doz	1.20
C-7	8K71213	Paper: .05 mf 100V.....	.20	R-3	17K692009	Wire wound: 2150 5% 10W; tapped.....	1.05
C-8	21K482726	Ceramic, disc type: 10,000 mmf 450V.....	.30	R-4	6R6397	22,000 10% 1/2W.....doz	1.20
C-9	21B77286	Ceramic: 100 mmf 100V.....	.20	R-5	6R5581	3300 10% 1/2W.....doz	1.20
C-10	8K24966	Paper: .005 mf 100V.....	.20	R-6	6R2109	10 meg 20% 1/2W.....doz	1.20
C-11	21R115312	Ceramic, disc type: 5000 mmf 450V.....	.25	R-7	6R6269	820 10% 1/2W.....doz	1.20
C-12	8K71213	Paper: .05 mf 100V.....	.20	R-8	6R6015	220,000 20% 1/2W.....doz	1.20
C-13	21K482726	Ceramic, disc type: 10,000 mmf 450V.....	.30	R-9	6R2118	3.3 meg 20% 1/2W.....doz	1.20
C-14	21K691992	Ceramic, multiple: 2000 mmf, 100 mmf, 100 mmf, 5000 mmf.	.65	R-10	18A691993	Volume control: 1 meg.....	.80
Capacitor-Resistor				R-11	6R2109	10 meg 20% 1/2W.....doz	1.20
CR-1	21B601036	Capacitor-Resistor: 5000 mmf, 5000 mmf, 100 mmf, 100 mmf, 4.7 meg, 2.2 meg, 1 meg....	.65	R-12	6R6432	270 10% 1/2W.....doz	1.20
Choke Capacitor				R-13	6R6040	680 10% 1/2W.....doz	1.20
E-2	24K691986	Choke & .05 mf 200V paper capacitor.....	.40	R-14	6R5683	27 10% 1/2W.....doz	1.20
Rectifier				R-15	6R5554	390 10% 1/2W.....doz	1.20
E-1	48B791092	Selenium Rectifier: half-wave.....	1.40	R-16	6R2122	4.7 meg 20% 1/2W.....doz	1.20
Coils				R-17	6R6004	1 meg 20% 1/2W.....doz	1.20
L-1	1X610665	Antenna Loop & Front Cover Assembly: complete; green plastic (52M1U).....	5.25*	R-18	6R2118	3.3 meg 20% 1/2W.....doz	1.20
	1X610666	Antenna Loop, Panel & Hinge Assembly: less front cover; green plastic (52M1U).....	2.90*	Switches			
	24K601803	Antenna Loop & Panel Assembly: less hinges; green plastic (52M1U).....	1.40*	S-1	40B471927	Rotary Switch, 5 PDT (AC/DC-Battery selector).....	1.15
	1X610682	Antenna Loop & Front Cover Assembly: complete; maroon plastic (52M2U).....	5.25*	S-2	40K601702	Slide Switch (on-off).....	.50
	1X610683	Antenna Loop, Panel & Hinge Assembly: less front cover; maroon plastic (52M2U).....	2.90*	Transformers			
	24B601802	Antenna Loop & Panel Assembly: less hinges; maroon plastic (52M2U).....	1.40*	T-1	24K600824	IF Transformer, 455 Kc: complete with capacitors...	1.05
	1X611241	Antenna Loop & Front Cover Assembly: complete; gray plastic (52M3U).....	5.25*	T-2	24K600825	Diode Transformer, 455 Kc: complete with capacitor....	1.05
	1X611253	Antenna Loop, Panel & Hinge Assembly: less front cover; gray plastic (52M3U).....	2.90*	T-3	25K692006	Output Transformer.....	.95
	24K620032	Antenna Loop & Panel Assembly: less hinges; gray plastic (52M3U).....	1.40*	Part Number Description List Price			
L-2	24K610513	Oscillator coil (yellow code)	.85	CHASSIS PARTS - MECHANICAL			
				43A692011	Bushing, insulator: fibre (chassis mtg screw insulators).....doz	.40	
				43A692012	Bushing, line cord strain relief (use with 43K692013).....	.05	
				42K75826	Clip, electrolytic mtg.....doz	.40	
				42A485548	Clip, IF transformer mtg.....doz	.20	
				30K601777	Cord, line: with plug; 6 ft long..	.90	
				29R3020	Lug, soldering: battery contact (in "A" battery retainer).....doz	.20	
				9A470980	Receptacle, loop (on loop leads)doz	.25	
				15B481896	Retainer, "A" battery: plastic....	.15	
				43K692013	Retainer, strain relief bushing (on line cord bushing).....	.05	
				26B692001	Shield, back (on rear of chassis).	.15	

MODELS 52M1U, 52M2U,
52M3U, Ch. HS-300

Part Number	Description	List Price	Part Number	Description	List Price
26A692005	Shield heat (around R-3).....doz	.30	5S7770	Rivet: .088 x 5/32; stl; nkl pl (hinge insulator mtg).....per/c	.50
26B691996	Shield, switch (over AC/DC-Battery switch).....	.20	5S7786	Rivet: .088 x 3/16; stl; blk nkl (front hinge mtg).....per/c	.50
9A690129	Socket, tube: miniature; 7-prong..	.15	3S8144	Screw, self-tapping: #2 x 3/16; Phillips flat head; ant cop (mounts loop to front cover).....per/c	1.00
41K680029	Spring, battery contact (in "A" battery retainer).....doz	.20	3S400356	Screw, sheet metal: #4 x 1/4 hex head (chassis mtg).....per/c	.50
31K470880	Strip, "B" battery terminal: with leads.....	.40	3S2995	Screw, machine: 5-40 x 5/16 pl hex head (handle mtg).....per/c	.50
31K37504	Strip, terminal: 1 insulated lug, #1 mtg.....	.05	41A470909	Spring, door latch (inside front cover).....doz	.55
31K470746	Strip, terminal: 3 insulated lugs, #2 mtg.....	.05	41K692167	Spring, handle (inside plastic handle).....	.10
4K470939	Washer, fibre (R-3 mtg).....per/c	.50	2S7981	Speednut: for 1/8" stud (grille mtg).....doz	.15
MODEL 52M1U CABINET PARTS			41K601712	Spring, rear cover latch.....doz	.35
35B611249	Baffle, speaker: cardboard.....	.05	46A601807	Stud, front hinge mtg & loop connectors.....	.05
38B601741	Button, cover release (on front cover).....	.15	46A601726	Stud, latch retainer (front cover latch on grille).....	.10
38K692050	Button, plug: green finish (loop trimmer adj hole cover).....	.10	46K690079	Stud, trimount: blk nkl (on loop panel -for operating on-off switch).....	.25
1X610664	Cabinet: complete; less handle, grille and antenna loop and front cover assembly; green.....	7.55*	MODEL 52M2U CABINET PARTS - Same as Model 52M1U except:		
55A692058	Cover, handle mtg (over ends of handle).....	.40	38K600106	Button, plug: maroon finish (loop trimmer adj hole cover).....	.10
55A27113	Foot, cabinet bottom: felt.....doz	.60	1X610681	Cabinet: complete, less handle, grille and antenna loop and front cover assembly; maroon.....	7.55*
1X610667	Front Cover Assembly: complete; less loop; green plastic.....	1.90	1X610684	Front Cover Assembly: complete, less loop; maroon plastic.....	1.90
1X610668	Grille Assembly: complete with latch retainer stud, upper & lower speaker grilles.....	2.20	55K600107	Handle, carrying: maroon plastic; less spring.....	.20
13A610656	Grille, speaker (upper).....	.10	5S2828	Rivet: .088 x 3/16; stl; statuary bronze (front cover hinge mtg).....per/c	.50
13B610657	Grille, speaker (lower).....	.20	46K680035	Stud, trimount: statuary bronze (on loop panel -for operating on-off switch).....doz	.25
55K692166	Handle, carrying: green plastic; less spring.....	.20	MODEL 52M3U CABINET PARTS - Same as Model 52M1U except:		
55C601756	Hinge, front cover: complete; left-hand.....	1.30	38K611116	Button, plug: gray finish (loop trimmer adj hole cover).....	.10
55K601757	Hinge, front cover: complete; right-hand.....	1.30	1X611139	Cabinet: complete, less handle, grille and loop antenna and front cover assembly; gray.....	7.55*
55K30198	Hinge, rear cover.....doz	.25	1X611254	Front Cover Assembly: complete less loop; gray plastic.....	1.90
14A601753	Insulator, cap: plastic (on grille assembly lugs).....	.05	55K692166	Handle, carrying: green plastic; less spring.....	.20
14A601752	Insulator, hinge.....	.05			
36C601724	Knob, control (tuning).....	.55			
36K601725	Knob, control (volume).....	.55			
1X601765	Latch and Plate Assembly (inside front cover).....	.30			
4S8406	Lockwasher, int: #2 (loop)...per/c	.50			
4S7895	Lockwasher, int: #5 (handle mtg).....per/c	.50			
29R5399	Lug, soldering (under front hinge, for loop connection).....per/c	.50			
64C610735	Plate, background (behind control knobs).....	.55			
64A692191	Plate, handle mtg (under handle mtg covers).....doz	.35			
5S8487	Rivet: .088 x 3/32; stl; blk nkl (rear cover hinges & latch spring mtg).....per/c	.50			

PRICES SUBJECT TO CHANGE WITHOUT NOTICE
*Plus Federal Excise Tax At Current Rate