

General Electric Co.

Model: 218

Chassis:

Year: Pre 1951

Power:

Circuit:

IF:

Tubes:

Bands:

Resources

Riders Volume 22 - CHANGES 22-3

Riders Volume 21 - GE 21-4

Riders Volume 21 - GE 21-5

Riders Volume 21 - GE 21-6

Riders Volume 21 - GE 21-7

Riders Volume 21 - GE 21-8

Riders Volume 21 - GE 21-9

Riders Volume 21 - GE 21-10

Riders Volume 21 - GE 21-11

Farnsworth 1000-M, Capehart, Ch. P8

Model 1000-M is similar to Models 1002-F, 1003-M, and 1004-B, and uses a m-f-m radio chassis P-8.

Gamble-Skogmo 43-7661, 43-7852

Model 43-7661 is the same as Model 43-7660 except that the 7661 uses a blond cabinet. Model 43-7852 is the same as Model 43-7851 except that it uses a blond cabinet.

Gamble-Skogmo 43-8101, 165, 197, 197U

Model 165 is the same as Model 94RA31-43-8115A. Model 197 is the same as Model 94RA31-43-8115B. Model 197U is the same as Model 94RA31-43-8116A. Model 43-8101 is electrically the same as Models 94RA31-43-8115A, -8115B, and -8116A.

Gamble-Skogmo 43-9841A

Model 43-9841A is the same as Model 94RA31-43-9841A.

Gamble-Skogmo 94RA4-43-8129A, 94RA4-43-8130A, 94RA4-43-8130B, 94RA4-43-8131A, 94RA4-43-8131B, 94RA4-43-8132A

Model 94RA4-43-8129A is the same as Model 43-8129A. Models 94RA4-43-8130A and 94RA4-43-8130B are the same as Models 43-8130A and 43-8130B, respectively. Model 94RA4-43-8131A is the same as Model 43-8131A. Model 94RA4-43-8131B is the same as Model 43-8131B. Model 94RA4-43-8132A is the same as Model 94RA4-43-8131A except that it employs a maroon cabinet.

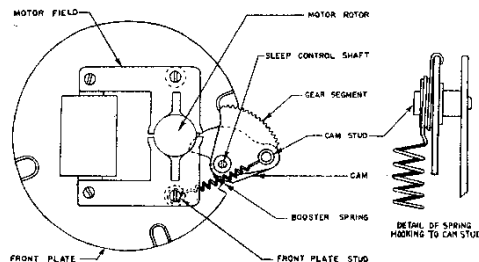
Gamble-Skogmo 94RA33-43-8135

The 94RA33-43-8135 is the same as Models 94RA33-43-8130C and 94RA33-43-8131C except for the differences mentioned below. The physical difference is the cabinet, larger drum on the tuning gang, speaker bracket, dial glass, dial bracket and power-cord strain relief. The parts list for Model 94RA33-43-8135 is the same as that for the 8130C and 8131C except for the following parts.

Part No.	Description
E81650-2	Tuning gang
E81645-82	Speaker
M1607-2	Dial bracket
P1602-2	Dial glass
SR-2P	Strain relief
P1601A-2	Cabinet, walnut
M1605-2	Chassis.

General Electric P15

To further clarify the identity of the three spindles for the record speeds for which they are to be used, the following descriptions have been added to the Parts List for record changer P15: RMU-060 Spindle, offset spindle for 7 inch, 33-1/3 rpm records; RMX-162 Spindle, for 10 or 12 inch, 33-1/3 or 78 rpm records; RMX-163 Spindle, for 7 inch, 45 rpm records.

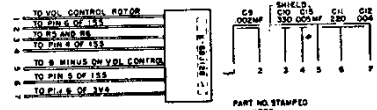


General Electric 145

In late productions, resistors R13 and R14 have been combined into one tapped resistor, R25A and R25B. This new resistor is mounted in place of R14. The catalogue number for R25 is RRW-047. R25A is 1,000 ohms and should be wired in place of R14. R25B is 1,300 ohms and should be wired in place of R13.

Late production Models 145 have an automatic shutoff when the cabinet front is closed. New parts for these models are interchangeable and will be carried in replacement stock in place of the original early production items as shown below:

Part No.	Description
RDE-049	Escutcheon replaces RDE-034
RDK-166	Knob and knob clip replaces RDK-149
RAC-067	Cabinet front cover replaces RAC-055
RMC-036	Nameplate and catch, with 2 stud mount for maroon or white cabinets
RMC-038	Nameplate and catch, with 3 stud mount for maroon or white cabinets
RMC-039	Nameplate and catch, with 3 stud mount for brown cabinet.



Lead identification for ceramic capacitor RCW-3015.

The accompanying illustration of the four-section ceramic capacitor, catalogue number RCW-3015, is added to aid in capacitor-terminal identification of C9, C10, C11 and C12.

General Electric 64, 65

Late production receivers incorporate a helical spring in the clock mechanism which provides a more positive trip action to the switch contact assembly when operating the sleep control. Failure of switch contacts to open may be due to the incomplete travel of the sleep control gear segment and cam assembly after its release by the segment gear's drive pinion. Normally, the spring action of the switch contacts through the sleep control switch lever should be sufficient to allow sleep control cam and gear segment to spring outward completely after it becomes disengaged from its pinion drive gear. However, if binding or position of control parts results in failure of segment gear and cam to swing completely outward properly releasing switch control lever and contacts, the addition of the booster spring (catalogue no. RMS-203) will provide the additional tension to correct segment gear and cam operation.

To install the booster spring, remove the case and draw the clock mechanism forward from the front of the radio cabinet, just far enough to permit installation of the booster spring. The accompanying illustration shows the position of the booster spring as viewed from the rear of the clock mechanism. One end of the spring is fastened to the cam stud, the other end to the brass front plate stud.

General Electric 60, 62, 64, 65, 66, 67

The stock item RAB-054, Cabinet back and loop, is no longer available and Stock No. RAB-097, Cabinet back and loop, is substituted in its place. For those receivers produced, employing RAB-054 with connections made to the primary antenna winding, the black wire to chassis ground is removed when RAB-097 is substituted for replacement.

General Electric 123, 124, 125

A self-tapping screw, #4 x 1/4 inch, Cat. No. RHS-044, Shakerproof type 25, has been added to the Parts List for the above models. Cabinets of later production receivers were tapped for these screws to mount the loud-speaker in lieu of the Tinnerman clip, RHM-061, used in earlier speaker mountings.

General Electric 140

The rectifier assembly, REX-004, is no longer stocked riveted to a mounting bracket. The new rectifier may be screw mounted to the original rectifier bracket as follows: remove wires at the connecting lugs of the old rectifier; using screwdriver blade between plates of rectifier to be removed, pry plates off from rectifier mounting bracket; assemble new rectifier to bracket, using a #6-32 x 1 inch long screw through rectifier and bracket hole and fasten using lock washer and nut; replace wire connections to new rectifier.

General Electric 143

In late production receivers, C5 was changed to 0.25 µf, 200 volts, Cat. No. UCC-050. This change was made to reduce regeneration which resulted in unstable operation.

General Electric 165

A tube shield has been added in late production receivers to the IS5 tube, improving its stability. This item is carried in parts replacement stock at RHS-010.

General Electric 218, 218H

A 15,000-ohm, 1/2-watt resistor R33 has been added between the high side of the volume control and the arm of the band switch S1D. This improves receiver stability. The following changes should be made in the Parts Lists for these models:

Delete Stock No. RLI-084; Add RLI-088, Choke, f-m antenna (L2), used in 218 only; Add URD-077, Resistor, 15,000 ohms, 1/2 w. carbon.

Stock No. RLI-088 has been deleted from the Parts List and Stock No. RLI-084, Coil, f-m antenna choke, L2, added in its place.

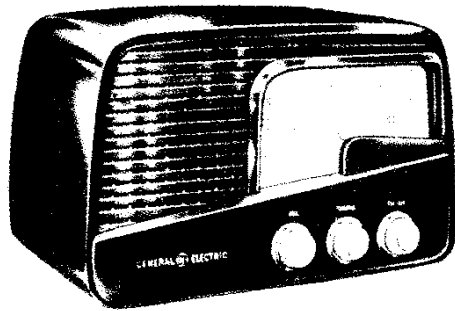
General Electric 402

R2, shown connected to B+, should cross over the vertical B+ lead to pin 6 of V2, and a dot connection should be drawn at the vertical B- lead to pin 2.

General Electric 505, 506, 507, 508

Catalogue items RWL-009 and RWL-016 should be deleted from the Parts List and replaced by the following items: RWL-025, Cord, power cord and plug (brown, heavy duty type) for Models 505, 507, 508; RWL-026, Cord, power cord and plug (ivory, heavy duty type) for Model 506.

MODEL 218



MODEL 218

CAUTION

ALWAYS USE AN ISOLATION TRANSFORMER IN THE RECEIVER POWER LINE, WHEN SERVICING OR ALIGNING THIS RECEIVER, TO PROTECT TEST EQUIPMENT.

SPECIFICATIONS

CABINET

Material	plastic
Color	mahogany
Height	8 $\frac{3}{8}$ inches
Width	13 $\frac{3}{8}$ inches
Depth	6 $\frac{7}{8}$ inches

ELECTRICAL

Voltage	105-125 v. AC or DC
Frequency on AC	50 to 60 cps
Wattage	33 watts

TUNING RANGE

AM	540-1620 kc
FM	88-108 mc

INTERMEDIATE FREQUENCIES

AM	455 kc
FM	10.7 mc

POWER OUTPUT (120 VOLTS LINE)

Undistorted	1.1 watt
Maximum	1.8 watt

LOUDSPEAKER

Type	permanent magnet
Cone Diameter	5 $\frac{1}{4}$ inches
Voice Coil Impedance at 400 cps	3.2 ohms

TUBE COMPLEMENT

(V1) FM R-F and 1st I-F Amplifier	12BA6
(V2) Oscillator and Converter	12BE6
(V3) I-F Amplifier	12BA6
(V4) Limiter	12AU6
(V5) FM Discriminator, AM Detector and Audio Amplifier	19T8
(V6) Power Output	50B5

ANTENNA

AM	loop antenna
FM	power line antenna or 300-ohm FM antenna

GENERAL

Model 218 is a table model receiver providing reception on the AM and FM bands. The receiver is housed in a mahogany colored plastic cabinet.

The receiver has a built-in FM power line antenna; to operate from this antenna it is necessary to connect the brown wire coming out of the cabinet back to the right-hand screw of the antenna terminal strip.

On AM operation, the AM r-f signal is fed directly into the grid of the converter V2 through the 1st AM i-f transformer T2 into the grid of V3. From V3 the signal is fed to the second AM i-f transformer T5 and is detected by a diode section of V5 which is pin 6. The secondary of T1 which is in series with the primary of T2 offers a low impedance to the AM i-f frequency.

V1 (12BA6) in the FM reflex circuit acts both as an r-f and an i-f amplifier. The r-f signal is put into the grid (pin 1) of V1 through the secondary of T1. It is amplified by V1 and put into the grid of V2 the converter through capacitor C7. Choke L3 prevents the r-f signal from getting into the second FM i-f trans-

former T3. The 10.7 mc FM i-f is fed from the plate of V2 to the primary of T1 the 1st FM i-f transformer which now puts the FM i-f signal onto the grid of V1. From the plate of V1 the FM i-f signal is fed through choke L3 to the primary of T3 through to the grid of V3. The plate of V3 feeds the FM i-f signal through C50 in the primary of T5 to the 3rd FM i-f tuning coil T4 and through C21 to the grid of the limiter grid pin 1 of V4. The FM i-f signal is detected in T6 discriminator transformer and two diode sections of V5, pins 1 and 2.

STAGE GAIN AND VOLTAGE CHECKS

1. R-F AND I-F STAGE GAINS

Signal applied through an IRE dummy antenna:

V2 Grid to V3 Grid	38 at 455 kc
Dipole Terminals to V1 Grid	1.3 at 98 mc
V1 to V2 Grid	8.0 at 98 mc
V2 to V1 Grid	1.5 at 10.7 mc
V1 to V3 Grid	22 at 10.7 mc
V3 to V4 Grid	26 at 10.7 mc

2. AUDIO GAIN

.09 volts at 400 cps across the volume control with the volume control set at maximum should give approximately $\frac{1}{2}$ watt output across the speaker voice coil.

3. OSCILLATOR GRID BIAS

D-c voltage developed across R6:
4.8 volts at 1000 kc
2.2 volts at 98 mc

4. SOCKET PIN VOLTAGES

Figure 4 shows typical tube pin voltages.

5. HUM MEASUREMENT

Hum measured across the voice coil of the speaker with the volume control at minimum and the band switch on AM should not exceed 7 millivolts.

On FM ground the limiter grid (pin 1 of V4) through a .01 mfd. capacitor and measure the hum across the voice coil terminals with the volume control at maximum. Hum should not exceed 15 millivolts.

ALIGNMENT

EQUIPMENT NECESSARY FOR METER ALIGNMENT

1. Signal generator G-E YGS-3, or equivalent.
2. 20,000 ohm-per-volt meter.
3. Output meter.
4. .01 mfd. capacitor.
5. Four-turn, six-inch diameter loop of bell wire for AM, r-f and oscillator alignment.
6. Isolation transformer.

NOTES FOR METER ALIGNMENT

1. Connect a 20,000 ohm-per-volt meter from junction of C29 and R18 to chassis. Use a ten-volt scale for steps 3, 4 and 5.
2. Connect a 20,000 ohm-per-volt meter from the grid of the limiter (pin 1 of V4) to cathode of limiter (pins 2 or 7 of V4) in series with a 200,000-ohm resistor. The resistor must be connected directly to the grid pin to minimize capacity loading and to isolate the i-f signal voltage from the meter. Keep signal generator down so that the meter does not indicate more than one volt at the grid (5 microamps through 200,000 ohms).

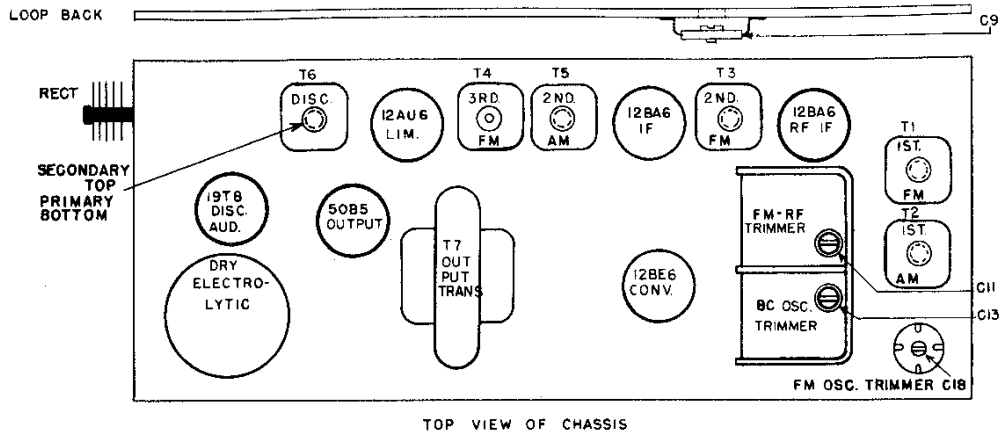


Fig. 1. Tube and Trimmer Location

3. Connect a standard output meter across the speaker voice coil. Turn volume control full on. Keep signal generator output low so that output meter indicates not more than 1/2 watt during alignment.
4. Align the AM oscillator trimmer (C13) and the AM r-f trimmer (C9) by coupling the signal to the loop antenna inductively. Connect a four-turn, six-inch diameter loop of bell wire across the signal generator output terminals, and locate the loop about one foot from the radio loop antenna. The position of the loop in respect to the radio loop antenna should not be changed during any one set of adjustments to prevent possible errors in the peak readings.

5. Disconnect the copper strap from the band switch to pin 7 of the 12BE6 to align the 1st FM i-f transformer. Unsolder the strap from the tube pin connection. Resolder the strap after T1 is aligned to 10.7 mc as in step 8.

6. The AM r-f alignment should be made before the FM r-f alignment. With the gang condenser fully closed, the pointer should point to the dot on the dial scale after the letters "FM" on the left end of the dial scale.

7. The termination impedance of the signal generator should be 300 ohms for FM r-f alignment.

METER ALIGNMENT CHART

Step	Signal Generator Frequency	Signal Input Point	Band Switch Setting	Dial Setting	Adjust	See Note
AM I-F ALIGNMENT						
1	455 kc modulated with 400 cps	12BE6 grid (pin 7 of V2) thru .01 mfd.	AM	550 kc	Secondary and primary slugs of T5 for maximum.	3
2					Secondary and primary slugs of T2 for maximum.	
FM DISCRIMINATOR AND I-F ALIGNMENT						
3	10.7 unmodulated	12BA6 grid (pin 1 of V3) thru 0.1 mfd.	FM	—	Adjust T6 secondary for zero. Apply 1 volt signal input.	1
4	See adjust col.				Detune signal generator to point of maximum meter reading.	
5	Same freq. as in step 4				Adjust T6 primary for maximum meter reading.	
6	10.7 mc unmodulated	12BA6 grid (pin 1 of V1) thru .01 mfd.	—	—	Adjust slug of T4 for maximum.	2
7					Adjust secondary and primary slugs of T3 for maximum.	
8	10.7 mc unmodulated	12BE6 grid (pin 7 of V2) thru .01 mfd. and 4700 ohms. See note 5.	—	—	Adjust secondary and primary slugs of T1 for maximum.	2, 5

MODEL 218

METER ALIGNMENT CHART (Cont'd)

Step	Signal Generator Frequency	Signal Input Point	Band Switch Setting	Dial Setting	Adjust	See Note
AM R-F ALIGNMENT						
9	1500 kc AM modulated with 400 cps	Inductively coupled. See note 4.	AM	1500 kc	Adjust C13 for maximum.	3, 4, 6.
10					Adjust C9 for maximum while rocking dial.	
FM R-F ALIGNMENT						
11	108 mc unmodulated	Dipole terminals	FM	108 mc	Adjust C18 for maximum.	2, 6, 7.
12	98 mc unmodulated			For max. output	Adjust C11 for maximum while rocking dial.	

EQUIPMENT REQUIRED FOR VISUAL ALIGNMENT

1. General Electric YGS-3 sweep generator or equivalent.
2. General Electric ST-2A oscilloscope or equivalent.
3. 200,000 ohms, 1/2 watt, resistor.
4. .01 mfd. paper capacitor.
5. Isolation transformer.

If peaking C9 or C11 as in steps 10 or 12 causes the curve to move off the screen, it is necessary to recalibrate the oscillator as in steps 9 or 11.

5. The termination impedance of the signal generator should be 300 ohms to properly match the FM input impedance of this receiver (steps 11 and 12).

6. To align the 1st i-f transformer T1 (step 5), it is necessary to disconnect the copper strap from pin 7 of V2, the 12BE6. After alignment of T1, resolder the copper strap to pin 7 of the 12BE6.

7. To position the dial pointer, close the gang condenser. The pointer should be set to the dot on the dial scale after the letters FM on the left end of the dial scale.

8. For alignment of the AM oscillator and r-f trimmers (steps 9 and 10), the signal should be inductively coupled to the loop antenna by connecting a four-turn, six-inch diameter loop of bell to the signal generator terminals. Locate this loop about one foot from the radio loop antenna. To prevent possible errors in peak readings, the position of the loop with respect to the radio loop antenna should not be changed during any one set of adjustments.

NOTES FOR VISUAL ALIGNMENT

1. Connect the vertical plates of the scope across R11 in the grid circuit of V4 (steps 3, 4, 5, 11 and 12).
2. Connect the vertical plates of the scope between the junction of R18 and C29 and chassis (FM audio) (steps 6, 7, 8).
3. Connect the vertical plates of the scope between the junction of R14 and C27 and chassis (steps 1, 2, 9, 10).
4. In some cases tuning of the converter grid will cause "pulling in" of the oscillator and will change the oscillator frequency.

VISUAL ALIGNMENT CHART

Step	Sweep Generator Frequency	Signal Input Point	Band Switch Setting	Dial Setting	Adjust	See Note
AM I-F VISUAL ALIGNMENT						
1	455 KC ±20 KC at 60 cps sweep rate	12BE6 grid (pin 7 of V2) thru .01 mfd.	AM	—	Two slugs of T5 for maximum amplitude and minimum distortion of curve.	3
2					Two slugs of T2 for maximum amplitude and minimum distortion of curve.	
FM I-F AND DISCRIMINATOR VISUAL ALIGNMENT						
3	10.7 MC ±300 KC at 60 cps sweep rate	12BA6 grid (pin 1 of V1) thru .01 mfd.	FM	—	Tuning slugs of T4 for maximum amplitude of curve. Fig. 2A.	1
4					Tuning slugs of T3 for maximum amplitude of curve. Fig. 2A.	
5		12BE6 grid (pin 1 of V2). See note 7.			Tuning slugs of T1 for maximum amplitude of curve. Fig. 2A.	1, 6
6		12BA6 grid (pin 1 of V3)			Primary of T6 for maximum amplitude of positive and negative peaks of output curve. Fig. 2B.	
7					Secondary of T6 for vertical symmetry with respect to the mid-point horizontal trace. See Fig. 2B.	
8		Primary of T6 for straightest line between positive and negative peaks of output curve. See Fig. 2B.				

VISUAL ALIGNMENT CHART (Cont.)

Step	Sweep Generator Frequency	Signal Input Point	Band Switch Setting	Dial Setting	Adjust	See Note
AM R-F VISUAL ALIGNMENT						
9	1500 KC AM modulated with 60 cps	Inductively coupled. See note 8.	AM	1500 KC. See note.	C13 for steepest slope of straight-line trace on scope.	3, 4, 7, 8.
10	1500 KC \pm 20 KC at 60 cps sweep rate			For maximum amplitude of curve.	C9 for maximum amplitude and minimum distortion.	3, 4, 7, 8.
FM R-F VISUAL ALIGNMENT						
11	108 MC AM modulated with 60 cps	Dipole terminals. See note 5.	FM	108 MC	C18 for steepest slope of straight-line trace on scope.	1, 4, 5, 7.
12	98 MC \pm 300 KC at 60 cps rate			For maximum output.	C11 for maximum amplitude and minimum distortion of curve.	1, 4, 5.

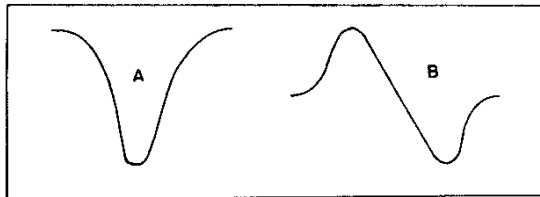


Fig. 2. I-F and Discriminator Curves

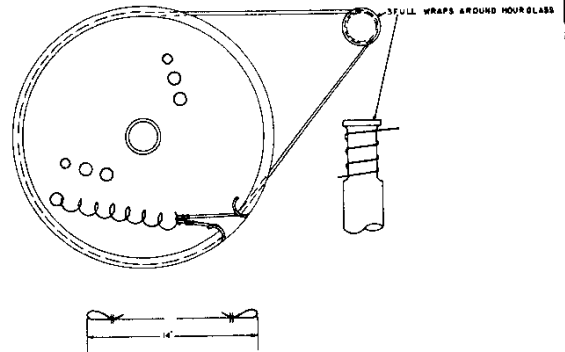
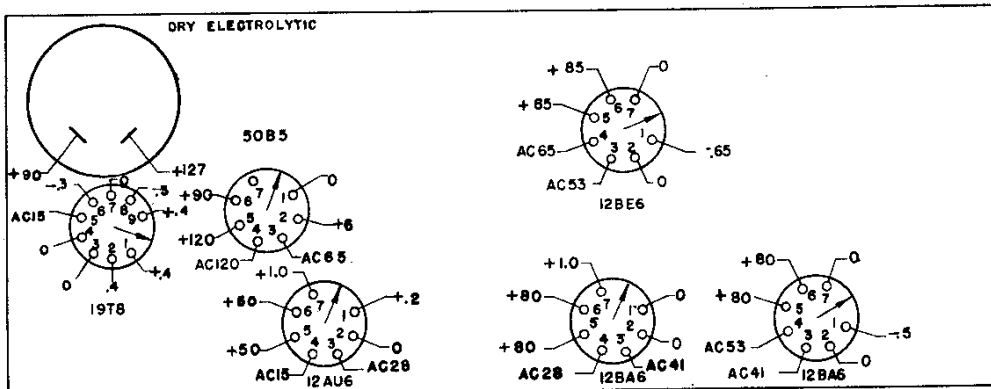


Fig. 3. Dial Stringing Diagram



ALL VOLTAGES ARE + DC
UNLESS OTHERWISE SPECIFIED
ALL VOLTAGES TO CHASSIS
BAND SWITCH IN A.M POSITION
VOLUME MINIMUM

BACK OF CHASSIS
BOTTOM VIEW OF CHASSIS

VOLTAGES MEASURED WITH
D.C. VOLTAGES WITH 20,000 OHMS PER VOLT METER
A.C. VOLTAGES WITH 1,000 OHMS PER VOLT METER

Fig. 4. Socket Voltage Diagram

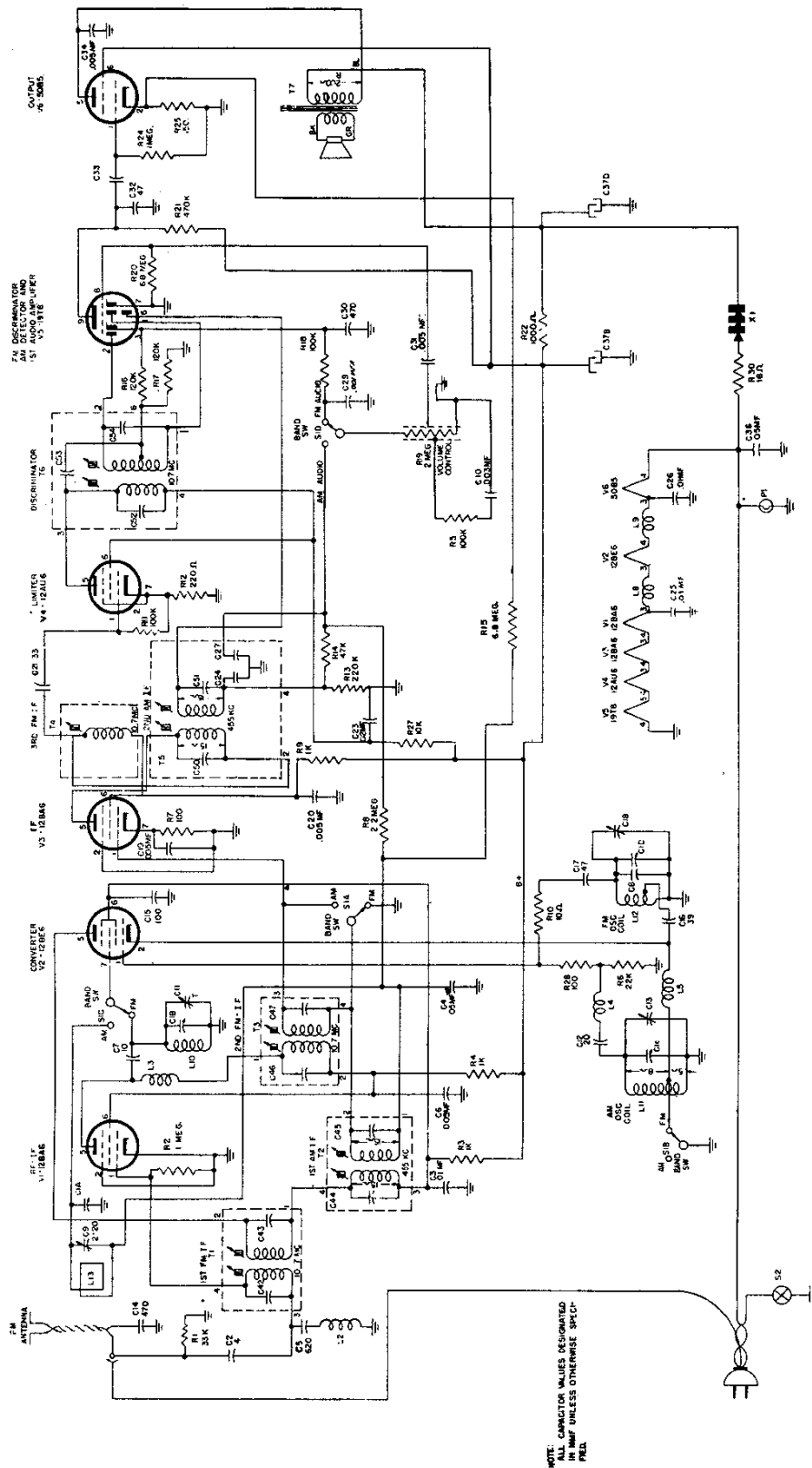


Fig. 5. Schematic diagram

MODEL 218
REPLACEMENT PARTS LIST

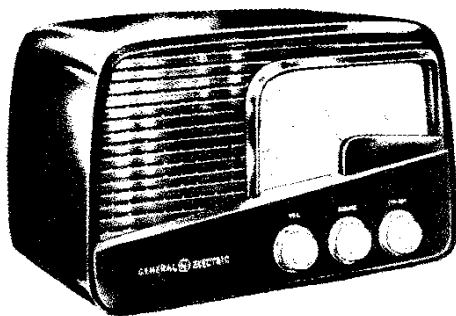
Cat. No.	Symbol	Description	Cat. No.	Symbol	Description
UNIVERSAL REPLACEMENT PARTS					
UCC-037	C10	CAPACITOR—.003 mfd., 600 v., paper	URD-033	R12	RESISTOR—220 ohms, 1/2 w., carbon
UCC-039	C6, 19, 20, 31, 34	CAPACITOR—.005 mfd., 600 v., paper	URD-049	R3, 4, 9	RESISTOR—1000 ohms, 1/2 w., carbon
UCC-040	C3, 23, 25, 26, 33	CAPACITOR—.01 mfd., 600 v., paper	URD-073	R27	RESISTOR—10,000 ohms, 1/2 w., carbon
UCC-045	C4, 36	CAPACITOR—.05 mfd., 600 v., paper	URD-081	R6	RESISTOR—22,000 ohms, 1/2 w., carbon
UCU-001	C2	CAPACITOR—4 mmf., 500 v., mica	URD-085	R1	RESISTOR—33,000 ohms, 1/2 w., carbon
UCU-020	C32	CAPACITOR—47 mmf., 500 v., mica	URD-089	R14	RESISTOR—47,000 ohms, 1/2 w., carbon
UCU-028	C15	CAPACITOR—100 mmf., 500 v., mica	URD-097	R5, 11, 18	RESISTOR—100,000 ohms, 1/2 w., carbon
UCU-044	C29, 30	CAPACITOR—470 mmf., 500 v., mica	URD-099	R16, 17	RESISTOR—120,000 ohms, 1/2 w., carbon
UCU-516	C21	CAPACITOR—33 mmf., 500 v., mica	URD-105	R13	RESISTOR—220,000 ohms, 1/2 w., carbon
UCU-2047	C5	CAPACITOR—620 mmf., 500 v., mica	URD-113	R21, 24	RESISTOR—470,000 ohms, 1/2 w., carbon
UOP-577		SPEAKER	URD-121	R2	RESISTOR—1 meg., 1/2 w., carbon
URD-001	R10	RESISTOR—10 ohms, 1/2 w., carbon	URD-129	R8	RESISTOR—2.2 meg., 1/2 w., carbon
URD-007	R30	RESISTOR—18 ohms, 1/2 w., carbon	URD-141	R15, 20	RESISTOR—6.8 meg., 1/2 w., carbon
URD-025	R7, 28	RESISTOR—100 ohms, 1/2 w., carbon	URE-029	R25	RESISTOR—150 ohms, 1 w., carbon
			URF-049	R22	RESISTOR—1000 ohms, 2 w., carbon

SPECIALIZED REPLACEMENT PARTS

RAB-104	L13	LOOP AND BACK ASSEMBLY	*RJS-118		SOCKET—9 prong tube socket for V5
RAU-309	C37A, 37B	CABINET—Brown	*RJS-125		SOCKET—7 prong tube socket for V1, V2, V3, V4, V6
RCE-101	C1A, 1B, 1C, 1D, C11, 13	CAPACITOR—80 mfd., 40 mfd., 150 v., electrolytic	RJX-033		SOCKET ASSEMBLY—For pilot light
RCT-038	C14	CAPACITOR—Tuning capacitor	RJX-034		INTERLOCK ASSEMBLY—Female
*RCW-176	C17	CAPACITOR—470 mmf., Hi-K	*RLB-029	L10	COIL—FM r-f choke coil
*RCW-1043	C16	CAPACITOR—47 mmf.	RLC-092	L11	COIL—B-C oscillator coil
*RCW-1057	C7	CAPACITOR—39 mmf.	RLC-093	L12	COIL—FM oscillator coil
*RCW-1060	C12	CAPACITOR—10 mmf.	*RLI-085	L4, 8, 9	COIL—2 mmh. choke
*RCW-1070	C8	CAPACITOR—20 mmf., ceramic	RLI-087	L3, 5	COIL—5 mmh. choke
*RCW-1075	C18	CAPACITOR—4 mmf., ceramic	RLI-088	L2	COIL—FM antenna choke
RCY-055	C9	CAPACITOR—2-20 mmf., trimmer	*RMS-035		SPRING—Dial cord tension
RCY-056		CAPACITOR—2-20 mmf., trimmer	RUM-054		SHAFT—Tuning
*RDC-032		CORD—Dial cord	RRC-111	R19, S2	VOLUME CONTROL
RDK-177		KNOB AND BEZEL ASSEMBLY	*RSI-003		INTERLOCK ASSEMBLY—Male
*RDP-048		POINTER	*RSW-072	S1	BAND SWITCH
RDS-086		PLATE—Dial scale back plate	*RTD-006	T6	TRANSFORMER—Discriminator
RDW-029		WINDOW—For dial scale	RTL-097	T2	TRANSFORMER—1st BC i-f
*RER-001	X1	RECTIFIER—Selenium rectifier	RTL-098	T5	TRANSFORMER—2nd BC i-f
*RHF-006		CHASSIS FOOT	RTL-099	T1, 3	TRANSFORMER—1st and 2nd FM i-f
*RHH-002		STUD—Tri-mount	RTL-100	T4	TRANSFORMER—3rd FM i-f
RHH-004		SNAP FASTENER	*RTO-039	T7	TRANSFORMER—Output
RII-028		INSULATOR—Pointer insulator	RWL-022		POWER CORD—3 wire
RIX-001		BRACKET—Tuning shaft bracket and insulating strip			

*USED ON PREVIOUS RECEIVERS

MODEL 218,
"H" Version



MODEL 218 "H" VERSION

CAUTION

ALWAYS USE AN ISOLATION TRANSFORMER IN THE RECEIVER POWER LINE, WHEN SERVICING OR ALIGNING THIS RECEIVER, TO PROTECT TEST EQUIPMENT.

SPECIFICATIONS

CABINET

- Material..... plastic
- Color..... mahogany
- Height..... 8 $\frac{3}{8}$ inches
- Width..... 13 $\frac{3}{8}$ inches
- Depth..... 6 $\frac{7}{8}$ inches

ELECTRICAL

- Voltage..... 105-125 v. AC or DC
- Frequency on AC..... 50 to 60 cps
- Wattage..... 33 watts

TUNING RANGE

- AM..... 540-1620 kc
- FM..... 88-108 mc

INTERMEDIATE FREQUENCIES

- AM..... 455 kc
- FM..... 10.7 mc

POWER OUTPUT (120 VOLTS LINE)

- Undistorted..... 1.1 watts
- Maximum..... 1.8 watts

LOUDSPEAKER

- Type..... permanent magnet
- Cone Diameter..... 5 $\frac{1}{4}$ inches
- Voice Coil Impedance at 400 cps..... 3.2 ohms

TUBE COMPLEMENT

- (V1) FM R-F and 1st I-F Amplifier..... 12BA6
- (V2) Oscillator and Converter..... 12BE6
- (V3) I-F Amplifier..... 12BA6
- (V4) Limiter..... 12AU6
- (V5) FM Discriminator, AM Detector and Audio Amplifier..... 19T8
- (V6) Power Output..... 50B5

ANTENNA

- AM..... loop antenna
- FM..... power line antenna or 300-ohm FM antenna

GENERAL

Model 218 "H" version is a table model receiver providing reception on the AM and FM bands. It is housed in a mahogany colored plastic cabinet.

It is the same as the Model 218 except that the local oscillator is designed to operate on the high side of the incoming signal on FM reception. This change reduces the possibility of local oscillator radiation interfering with television reception.

The receiver has a built-in FM power line antenna; to operate from this antenna it is necessary to connect the brown wire coming out of the cabinet back to the right-hand screw of the antenna terminal strip.

On AM operation, the AM r-f signal is fed directly into the grid of the converter V2 through the 1st AM i-f transformer T2 into the grid of V3. From V3 the signal is fed to the second AM i-f transformer T5 and is detected by a diode section of V5 which is pin 6. The secondary of T1 which is in series with the primary of T2 offers a low impedance to the AM i-f frequency.

V1 (12BA6) in the FM reflex circuit acts both as an r-f and an i-f amplifier. The r-f signal is put into the grid (pin 1) of V1 through the secondary of T1. It is amplified by V1 and put into the grid of V2 the converter through capacitor C7. Choke L3 prevents the r-f signal from getting into the second FM i-f transformer T3. The 10.7 mc FM i-f is fed from the plate of V2 to the primary of T1 the 1st FM i-f transformer which now puts the FM i-f signal onto the grid of V1. From the plate of V1 the FM i-f signal is fed through choke L3 to the primary of T3 through to the grid of V3. The plate of V3 feeds the FM i-f signal through C50 in the primary of T5 to the 3rd FM i-f tuning coil T4 and through C21 to the grid of the limiter grid pin 1 of V4. The FM i-f signal is detected in T6 discriminator transformer and two diode sections of V5, pins 1 and 2.

ALIGNMENT

For the Model 218 receivers "H" version, the alignment remains the same as that outlined for Model 218 in service notes ER-S-218. However, the calibration will change in the "H" version receiver which necessitates the use of a new back plate, Stock No. RDS-093.

REPLACEMENT PARTS

All parts for the Model 218 "H" version are identical to those listed in Service Notes ER-S-218 except for those parts listed below.

Cat. No.	Sym- bol	Description
*URD-069	R31	RESISTOR—6800 ohms, $\frac{1}{2}$ w.
*RCW-1077	C61	CAPACITOR—22 mmf., ceramic
*RCW-2027	C60	CAPACITOR—15 mmf., ceramic
RDS-093		DIAL SCALE—Model 218 "H" back plate dial scale
RLC-102	L14	COIL—FM oscillator coil
RTD-010	T8	TRANSFORMER—Discriminator IF transformer
URD-077	R32	RESISTOR—15,000 ohms, $\frac{1}{2}$ w.

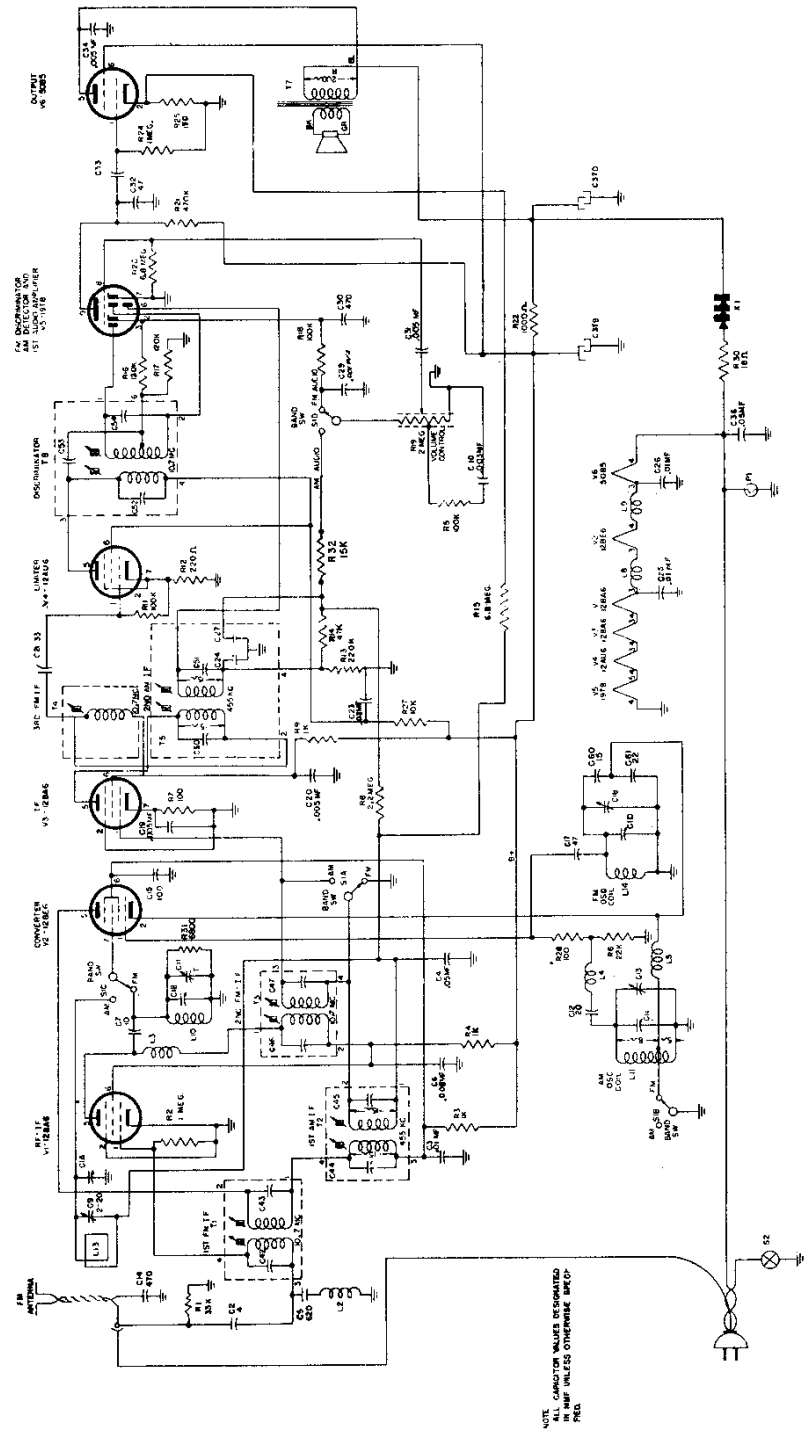


Fig. 1. Schematic Diagram, Model 218 "H" Version