

MODEL G-4B

Four-Tube, Single-Band, Battery-Operated, Superheterodyne Receiver

Electrical Specifications

Frequency Range	530—1,720 kc	Alignment Frequency	1,500 kc (osc., ant.
Immediate Frequency			460 kc

RADIOTRON COMPLEMENT

(1) Type-1D7G	First Detector—Oscillator	(3) Type-1F7G..	Second Det., A-F Amp., and A.V.C.
(2) Type-1D5GP	Intermediate Amplifier	(4) Type-1F5G	Power Output

BATTERIES REQUIRED

"A", 2½-volt Air Cell, or one 2-volt storage battery; "B", two 45-volt, heavy-duty, plug-in type B batteries.

CURRENT CONSUMPTION

"A" at 2 volts	0.42 Ampere
"B" at 90 volts	10.5 ma.
Fuse Rating	½ Amp.

POWER OUTPUT

Undistorted	160 Milliwatts
Maximum	200 Milliwatts

LOUDSPEAKER

Type: permanent-magnet dynamic Diameter: 6 inches Voice coil impedance: $2\frac{1}{4}$ ohms at 400 cycles.

Mechanical Specifications

Height		9 $\frac{3}{8}$ inches
Width		18 $\frac{3}{8}$ inches
Depth		7 $\frac{1}{16}$ inches
Weight (net)		10 $\frac{1}{4}$ pounds
Weight (shipping)		13 $\frac{3}{4}$ pounds
Chassis Base Dimensions	9 $\frac{7}{8}$ inches x 5 $\frac{5}{8}$ inches x 2 inches	
Over-all Height of Chassis		6 $\frac{3}{4}$ inches
Operating Control	(1) Tuning, (2) {Operating Switch} and ToneControl{	(3) Volume

General Description

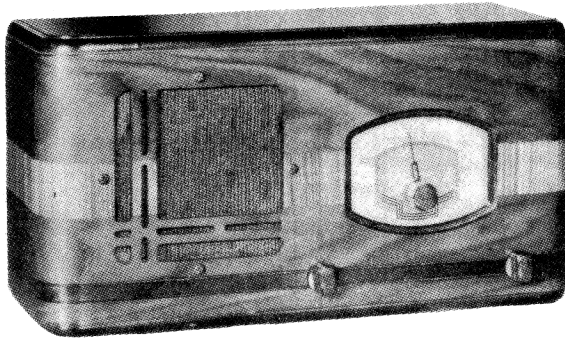
This model contains a four-tube chassis, battery operated, mounted in a table type cabinet. The superheterodyne circuit is employed, incorporating such features of design as magnetite core i-f trans-

formers; automatic volume control; diode detection; resistance coupled audio system; sensitive, six-inch; permanent-magnet, dynamic loudspeaker with dust screen; low current drain; and a big, easy-to-read, dial.

Service Data

The various diagrams of this booklet contain such information as will be needed to isolate causes for defective operation if such develops. The ratings of the resistors, capacitors, coils, etc., are indicated

adjacent to the symbols signifying these parts on the diagrams. Identification titles such as R1, L1, C1, etc., provide reference between the illustrations and Replacement Parts List.



Model G4B

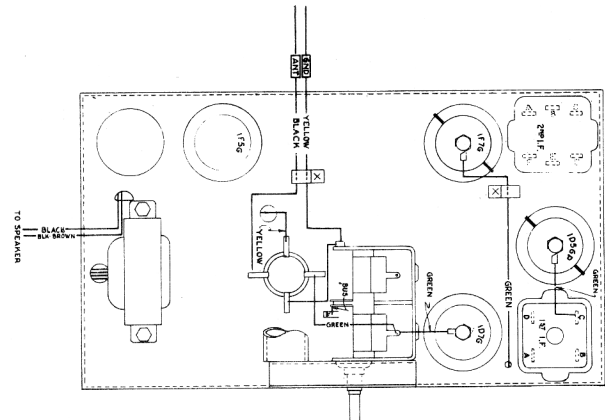


Figure 1—Radiotron and Trimmer Locations

Alignment Procedure

Calibrate the tuning dial by adjusting dial pointer to the low-frequency (end) calibration mark on dial scale with the gang tuning-condenser plates in full-mesh position. This is a friction adjustment.

Perform alignment in proper order, tabulated below, starting with No. 1 and following all operations across, then No. 2, etc. Adjustment locations are shown on figures 1, and 4.

Cathode-ray alignment is preferable, if an output indicator is used, connect it across the loudspeaker voice-coil and advance the receiver volume control to full-volume position.

Connect the "low" output terminal of the test oscillator to the receiver chassis for all alignment operations. Regulate the output of the test oscillator so that minimum signal is applied to the receiver to obtain an observable output indication. This will avoid a-v-c action.

The term "Dummy antenna" means the device which must be connected between the "high" test-oscillator output and the point of connection to the receiver in order to obtain ideal alignment. "No signal, 550-750 kc" means that the receiver should be tuned to a point between 550 and 750 kc where no signal or interference is received from a station or local (heterodyne) oscillator.

Order of Alignment	Test Oscillator			Receiver Dial Setting	Circuit to Adjust	Adjustment Symbols	Adjust to Obtain
	Connection to Receiver	Dummy Antenna	Frequency Setting				
1	I-F Amp. Grid Cap	.001 Mfd.	460 kc	No Signal 550-750 kc	2nd I-F Trans.	L7	Max. (peak)
2	1st Det.-Osc. Grid Cap	.001 Mfd.	460 kc	No Signal 550-750 kc	1st I-F Trans.	L5 and L6	Max. (peak)
3	Ant. Lead	200 Mmfd.	1,500 kc	1,500 kc	"A" Osc.	C5	Max. (peak)
4	Ant. Lead	200 Mmfd.	1,500 kc	1,500 kc	"A" Ant.	C2	Max. (peak)
5	Ant. Lead	200 Mmfd.	600 kc	Rock Thru 600 kc	"A" Osc.	L3	Max. (peak)

Loudspeaker.—Centering of the loudspeaker is made in the usual manner with three narrow paper feelers after first removing the front dust cover. This may be removed by softening its

cement with a light application of acetone, using care not to allow the acetone to flow into the air gap. The dust cover should be cemented back in place with ambroid upon completion of adjustment.

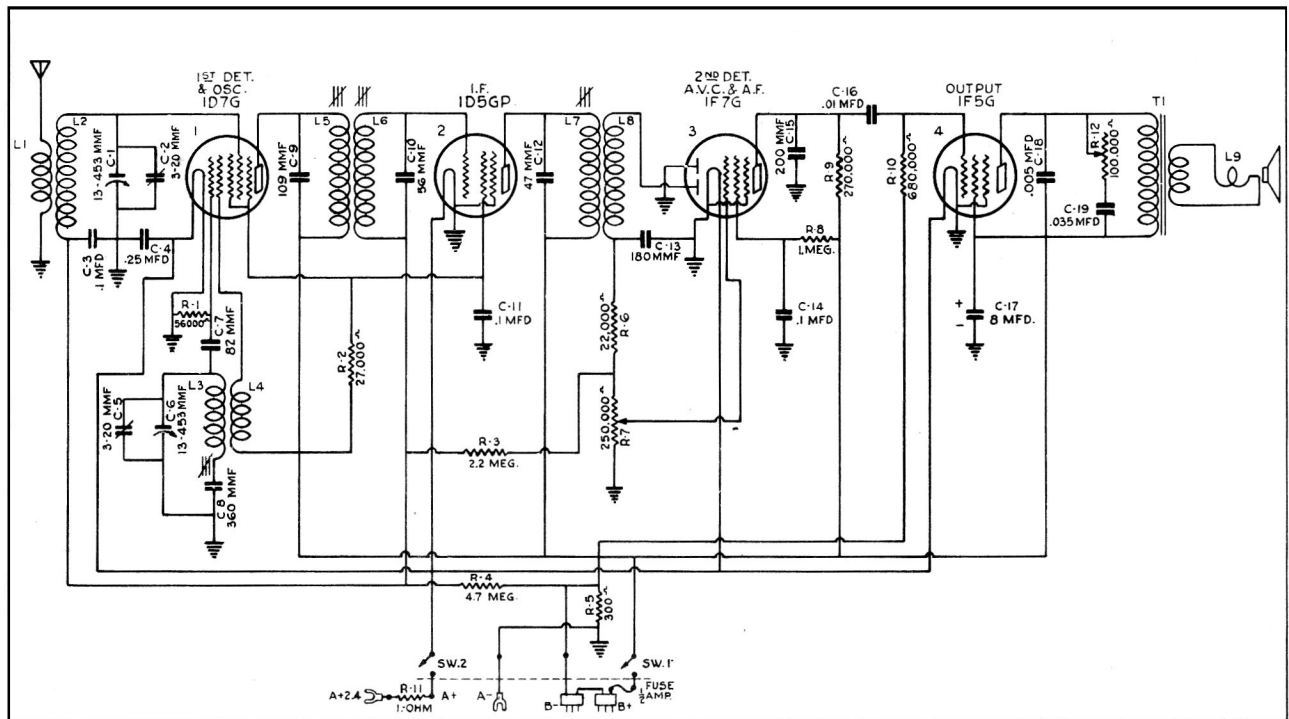


Figure 2—Schematic Circuit Diagram

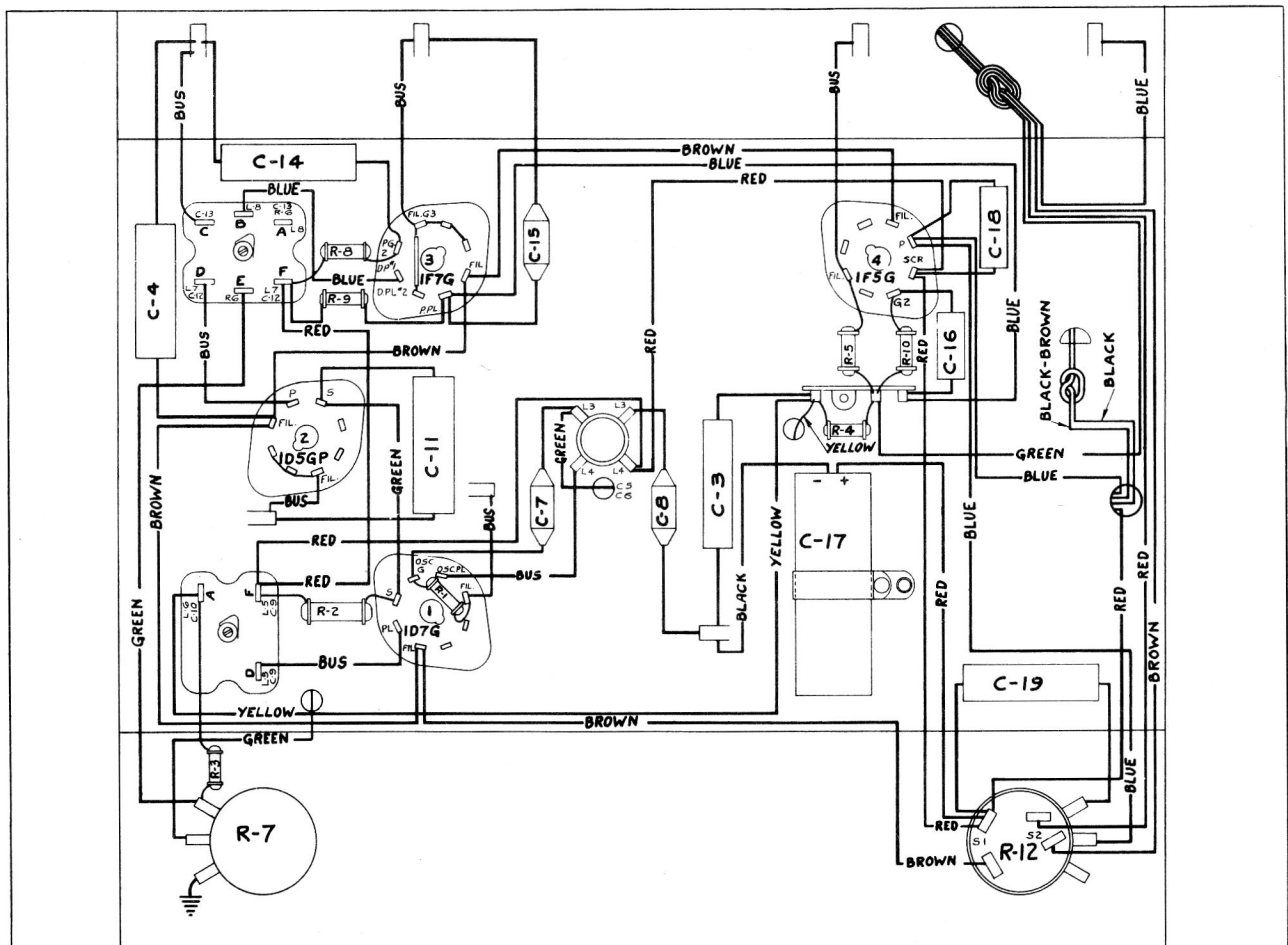


Figure 3—Chassis Wiring Diagram

RADIOTRON VOLTAGES:—90 VOLTS "B" AND 2.05 VOLTS "A"

Radiotron	Plate	Screen Grid	Grid	Filament
(1) 1D7G Converter	87 V	3.65 V	-1.0*	2.05
1D7G Oscillator	87 V			
(2) 1D5GP I-F.	87 V	3.65 V	-1.0*	2.05
(3) 1F7G Det. and Audio	30 V	18 V	-1.0*	2.05
(4) 1F5G Output	84 V	87 V	-3.0	2.05
* Calculated				

REPLACEMENT PARTS MODEL G4B

STOCK NO.	DESCRIPTION	STOCK NO.	DESCRIPTION
RECEIVER ASSEMBLIES		RECEIVER ASSEMBLIES (Continued)	
S-2026	Cable-4 conductor battery cable approx. 60" long, complete with "A" battery clips, flexible resistor, fuse and fuse connector.....	S-1692	Resistor - 1 ohm flexible wire wound ballast resistor (R-11).....
13028	Cap-I.F. transformer shield cap.....	S-2035	Resistor - 300 ohm, insulated type, ½ watt (R-5).....
11350	Cap-Grid contact cap-Pkg. of 5.....	S-2046	Resistor - 22,000 ohm, carbon type, 1/10 watt (R-6).....
S-1734	Capacitor - 47 Mmfd. (C-12).....	S-2036	Resistor - 27,000 ohms, insulated type, ½ watt (R-2).....
13307	Capacitor - 56 Mmfd. (C-10).....	12286	Resistor - 56,000 ohms, carbon type, ½ watt (R-1).....
12813	Capacitor - 82 Mmfd. (C-7).....	12199	Resistor - 270,000 ohms, carbon type, ½ watt (R-9).....
14262	Capacitor - 109 Mmfd. (C-9).....	S-2037	Resistor - 680,000 ohms, carbon type, ½ watt (R-10).....
14712	Capacitor - 180 Mmfd. (C-13).....	13730	Resistor - 1 Megohm, carbon type ½ watt (R-8).....
30232	Capacitor - 200 Mmfd. (C-15).....	S-1536	Resistor - 2.2 Megohm, carbon type, ½ watt (R-3).....
13967	Capacitor - 360 Mmfd. (C-8).....	S-2038	Resistor - 4.7 Megohm, carbon type, ½ watt (R-4).....
4793	Capacitor - .005 Mfd. (C-18).....	S-2039	Shield - 1D5GP or 1F7G radiotron shield
13138	Capacitor - .01 Mfd. (C-16).....	11196	Socket - Radiotron socket.....
5196	Capacitor - .035 Mfd. (C-19).....	S-2040	Tone control and operating switch (R-12, S-1, S-2).....
4839	Capacitor - .1 Mfd. (C-3, C-11, C-14)...	14261	Transformer - 1st I.F. transformer (L-5, L-6, C-9, C-10).....
S-1592	Capacitor - .25 Mfd. (C-4).....	S-2041	Transformer - 2nd I.F. transformer (L-7, L-8, C-12, C-13) (R-6).....
S-2028	Capacitor - 8 Mfd. (C-17).....	S-2042	Transformer - Output transformer (T-1)...
S-2029	Coil - Antenna coil (L-1, L-2).....	S-2043	Volume control (R-7).....
S-2030	Coil - Oscillator coil (L-3, L-4).....	REPRODUCER ASSEMBLIES	
S-2031	Condenser - 2-gang variable tuning condenser (C-1, C-2, C-5, C-6).....	S-2044	Cap - Dust cap for reproducer cone - Pkg. of 5.....
12006	Core - Adjustable core and stud for 1st or 2nd I.F. transformer.....	S-2020	Cone - Reproducer cone.....
S-2048	Crystal - Celluloid dial scale crystal.	S-2045	Reproducer - Complete.....
S-2050	Dial - Station selector dial scale and bracket.....		
11982	Fastener - Station selector dial scale fastener - Pkg. of 25.....		
3748	Fuse - ½ ampere fuse.....		
6516	Fuse connector complete.....		
S-2027	Indicator - Station selector indicator pointer.....		
S-1830	Knob - Station selector knob - Pkg. of 2		
S-2049	Knob - Operating switch and tone control knob.....		
11347	Knob - Volume control knob.....		
12827	Plug - Battery cable plug.....		