

Models 510, 510A, 512, 512A

Radio Receivers

Specifications

Frequency Range:

525 to 1750 K.C.

I.F.:

463 K.C.

Tubes:

Type	Function
6A7	1st Detector and Oscillator
6D6	I.F. Amplifier
75	2nd Detector, A.V.C., and 1st A.F. Amplifier
41	Output
80	Rectifier.

Power Supply:

Models 510, 512: 105 to 125 volts A.C.
60 cycles

Models 510A, 512A: 105 to 125 volts A.C.
25-60 cycles

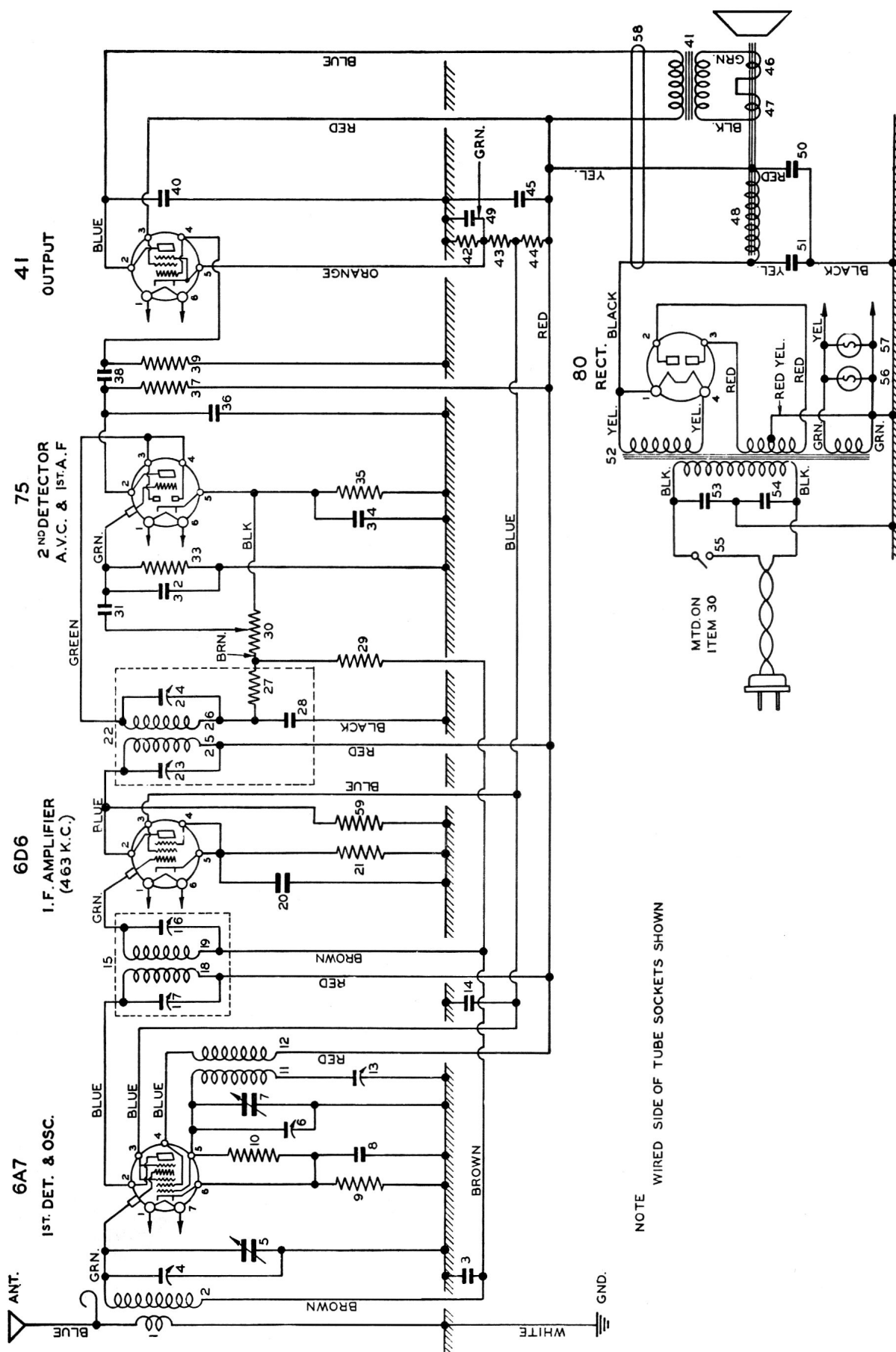
A.V.C.:

On 6A7, 1st Detector and 6D6, I.F. Amplifier

Cabinets:

Models 510, 510A "Personal" type table
model.

MODELS 510 AND 512 RADIO RECEIVERS



Schematic Diagram—Model 510-512 Receivers.

REPLACEMENT PARTS LIST

Schematic Designation	Value and Description	Part Number
1	Ant. Trans. primary	K-1904
2	Ant. Trans. secondary	
3	Capacitor; .05 mf; 175 volts	K-2227-8
4	Trimmer; Ant. Sec. } Two gang	K-2170
5	Ant. Section } Capacitor	
6	Trimmer; Osc. Sec. } 438 mmf.	
7	Osc. Section } max.	
8	Capacitor; .05 mf; 175 volts	K-2227-8
9	Resistor; 300 Ohms; 1/2 watt	K-2226-20
10	Resistor; 50,000 ohms; 1/2 watt (Ins.)	K-2226-6
11	Osc. coil; grid winding	K-1765
12	Osc. coil; plate winding	
13	Capacitor; Trimmer, single 300-600 mmf.	K-1314-2
14	Capacitor; .1 mf; 175 volts	K-2227-9
15	1st I.F. Trans. Assy. (includes Items 16-19)	K-2192
16	Capacitor Trimmer (dual) 30-130 mmf.	K-2134-1
17	Capacitor Trimmer (dual) 30-130 mmf.	
18	1st I.F. Trans. primary	K-2189-1
19	1st I.F. Trans. secondary	
20	Capacitor; .05 mf; 175 volts	K-2227-8
21	Resistor; 300 Ohms; 1/2 Watt	
22	2nd I.F. Trans. Assembly (includes 23-26)	K-2191
23	Capacitor, Trimmer (dual) 30-130 mmf.	K-2134-1
24	Capacitor, Trimmer (dual) 30-130 mmf.	
25	2nd I.F. Trans. primary	K-2189-2
26	2nd I.F. Trans. secondary	
27	Resistor; 50,000 ohms; 1/8 watt	K-2226-6
28	Capacitor; Mica; 100 mmf.	K-1611-2
29	Resistor; 1 meg; 1/2 watt	K-2226-2
30	Volume Control; 1/2 meg.	K-2204-1
31	Capacitor; .01 mf ; 350 volts	K-2228-6
32	Capacitor; Mica; 500 mmf.	K-1952-3
33	Resistor; 1 meg; 1/2 watt	K-2226-2
34	Capacitor (D.E.) 10 mf; 25 volts	K-3442-2
35	Resistor; 5000 ohms; 1/2 watt (ins.)	K-2226-12
36	Capacitor; .002 mf; 350 volts	K-2228-2
37	Resistor; 1/4 meg; 1/2 watt (ins.)	K-2226-4
38	Capacitor; .01 mf. 350 volts	K-2228-6

Schematic Designation	Value and Description	Part Number
39	Resistor; 1/2 meg; 1/2 watt	K-2226-3
40	Capacitor; .005 mf. 350 volts	K-2228-5
41	Output Transformer	K-2217
42	Resistor, 375 ohms	Tapped, divider } K-2186
43	Resistor, 7,650 ohms	
44	Resistor, 7,650 ohms	
45	Capacitor; .25 mf. 350 volts	K-2228-10
46	Voice coil and diaphragm Assy. (3.5 ohms imp.)	K-2212
47	Hum-bucking coil	—
48	Field coil (400 ohms)	K-2211
49	Capacitor: 10 mf: 25 volts	D.E. Unit } K-2187
50	Capacitor: 12 mf: 200 volts	
51	Capacitor: 12 mf: 350 volts	
52	Power transformer: 60 cycles	K-2179-1
52-A	Power transformer: 25 cycles	K-2179-2
53	Capacitor: buffer: .025 mf; 1100 volts	K-1750
54	Capacitor: buffer: .025 mf; 1100 volts	
55	A.C. Switch	Mounted on Item
56-57	Dial lamps 6.3 volts	K-1024-4
58	Loudspeaker cable (Model 512 only)	—
59	Resistor; 1/2 meg; 1/2 watt (ins.)	K-2226-3
MISCELLANEOUS:—(Not included in Schematic Designations).		
	Glass Dial Scale	K-2209
	Dial Mechanism	K-2208
	Dial Lamp Socket	K-1428-6
	Chassis mounting bolts (Model 510)	K-1030-4
	Chassis mounting bolts (Model 512)	K-1030-6
	Washers for chassis mounting bolts	K-1206-14
	Grid clips special for Type 75 tube	K-1747
	Glass dial scale (Model)	K-2327
	Tube Shields	CV-954
	Tube Shields	K-2267
	Knobs	K-2231
	I.F. Coil cans only	K-1525-4
	Socket, four contact (rectifier)	K-1194-2
	Socket, six contact medium	K-1221-4
	Socket, six contact small	K-1194-5
	Socket, seven contact medium	K-1221-5
	Tuning wrench (all models)	K-836
	Repair tube for K-836	K-836-A

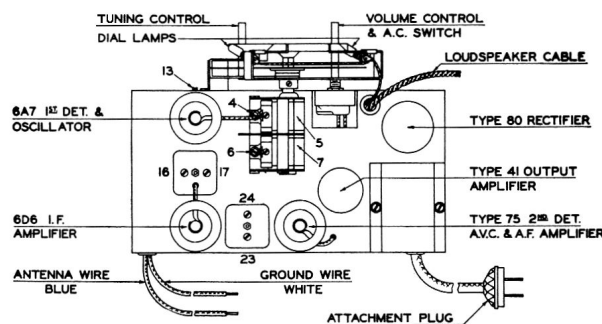


Fig. 1.—Chassis Layout showing Aligning Positions.

VOLTAGE AND CURRENT READINGS

These readings were taken on a model 510 chassis with the volume control at maximum, the gang capacitor all in and line voltage 115. Voltage readings may be duplicated using any good voltmeter having a resistance of 1000 ohms per volt, such as the Weston Model 663 Volt-Ohmmeter. Current readings can be duplicated with the Weston Model 556 and a Model 666-1A Adapter. When readings are taken with the analyzer attachment, connect a 0.1 mf. capacitor from the grid of the tube being tested to the chassis, to prevent oscillation.

TUBE	Heater Volts A.C.	Plate Volts	Screen Volts	Volts Cathode to Ground	Screen Current M.A.	Plate Current M.A.	
						Normal Bias	Bias Red. 4.5 volts
Type 6A7 1st Det. & Osc.	6.3	190 (204)	80 (85)	2.7	2.0	4.5*	6.7
Type 6D6 I.F. Amplifier	6.3	190 (204)	80 (85)	2.8	1.75	7.5	9.5
Type 75 2nd Det. A.V.C. & 1st A.F.	6.3	90 (95)	—	1.2	—	.26	.50
Type 41 Output	6.3	170 (184)	190 (204)	12	3.5	19 (21)	23.0
Type 80 Rectifier	5.0	—	—	Fil. to Gnd. 265 (285)	—	—	—

Figures in brackets for 25 cycle model.

*Anode grid current (oscillator plate) 3.0 ma.

Voltages below 10 read on 10 volt scale; those above 10 read on 250 volt scale, except 500 volt scale for rectifier voltage.

REALIGNING INSTRUCTIONS

To secure full advantage of performance characteristics of this receiver, any re-alignment necessary should be carried out carefully. A reliable test oscillator or signal generator should be used with an output meter.

I. F. ALIGNMENT:

- Set the generator at 463 kc. and connect the output through an 0.1 mf. capacitor to the grid of the first detector, type 6A7 model.
- Adjust trimmers 16, 17, 23 and 24 for maximum output.
- Reduce the output from the signal generator to as low a value as will give an output reading, and check the adjustments. All trimmers should peak properly.

R. F. ALIGNMENT:

- Connect the signal generator to the antenna lead of the set through a 100 mmf. (.0001 mf.) mica capacitor.
- Adjust the signal generator and the receiver to 1400 kc. Adjust trimmers 4 and 6 for maximum output.
- Set generator and receiver at 600 kc., and adjust trimmer 13, at the same time slowly rocking the tuning capacitor back and forth until the point of maximum sensitivity is found.