Emerson Radio & Phonograph Corp.

	Model: 522	**Chassis:**	**Year:** Pre 1948
	Power:	**Circuit:**	**IF:**
	Tubes:		
	Bands:		

Resources

- Riders Volume 16 - EMERSON 16-2
- Riders Volume 16 - EMERSON 16-8

MODELS 503,510,510A,520,539
MODELS 507,509,518,522,535
MODELS 525,552
MODELS 543,544

EMERSON RADIO & PHONO. CORP.

ALL MODELS

An oscillator with frequencies of 455, 600 and 1425 kc is required.

An output meter should be connected across the primary or secondary of the output transformer for observing maximum response.

Always use as weak a test signal as possible when aligning the receiver.

Plug the receiver into the power supply outlet in such a way that the ground side of the power line is connected to the receiver B—.

Location of Coils and Trimmer Adjustments

The first i-f transformer is mounted on top of the chassis deck to the right of the variable condenser. The trimmers are accessible through holes in the top of the can.

The second i-f transformer is mounted on top of the chassis between the variable condenser and the speaker. The trimmers are accessible through holes in the top of the can.

The trimmer for the antenna and the trimmer for the oscillator coil are located on the variable condenser. The trimmer on the front section is for the oscillator coil.

The oscillator coil is located underneath the chassis. The loop antenna acts as the antenna coil.

I-f Alignment

1. Rotate the variable condenser to the minimum capacity position.
2. Feed 455 kc to the converter grid (stator of the r-f section of the variable condenser) through a 0.1 mfd. condenser and adjust the four i-f trimmers for maximum response.

R-f Alignment

1. Connect the oscillator to a coil composed of three to four turns of wire wound in a circle approximately 12" in diameter. This coil should be held parallel to and in line with the loop antenna of the receiver at a distance of 15 to 20 inches.
2. Radiate a signal at 1425 kc, set the dial indicator to 1425 kc, and adjust the trimmers on the variable condenser for maximum response.
3. Radiate a 600 kc signal and tune in the signal on the receiver. Adjust the loose outside turn of the loop antenna for maximum response. This loose turn may be moved to either side of the center. Fasten it in the position which gives maximum response.
4. Repeat steps 2 and 3 until no further improvement is evident.

The following voltage readings are d-c measurements taken from B— (line switch) to the indicated tube-socket pin. A 1000 ohms-per-volt meter should be used for all readings except those indicated by an asterisk (*), which should be taken with a d-c vacuum-tube voltmeter. Line voltage for these readings was 117 volts, 60 cycles, a.c. Measurements made with 117 volts d.c. will be lower than those given below. Take readings with the volume control set at minimum and the variable condenser closed.

	PIN NUMBER							
TUBE	1	2	3	4	5	6	7	8
12SA7			89	89	*—10			*—1.6
12SK7				*—1.6		89		89
12SQ7		*—0.7		*—1.6	—0.5	37.5		
50L6GT			110	89				6.2
35Z5GT				116		116		117
12BE6	*—8.0				92	92	*—1.3	
12BA6					92	92	1.7	
12AT6	*—0.6					*—0.45	*44	
50B5		5.65			110	92		
35W4	115						115	

* Not supplied separately.
† Specify part number when ordering.

CABINET AND DIAL PARTS

MODEL--507,509,518,522,535

140015	Cabinet (Model 507)
140016	Cabinet (Model 509)
140034	Cabinet (Model 518)
140007	Cabinet (Model 522)
140070	Cabinet (Model 535)
450060	Back, molded (Model 507)
450080	Back, molded (Models 509, 518)
450050	Back, molded (Model 522)
560110	Back masonite (Model 507)
560220	Back, masonite (Models 509, 518)
560120	Back, masonite (Model 522)
575047	Back, wood (Model 535)
450000	Handle
460140	Knob (Models 507, 518, 535)
460470	Knob (Model 509)
460150	Knob (Model 522)

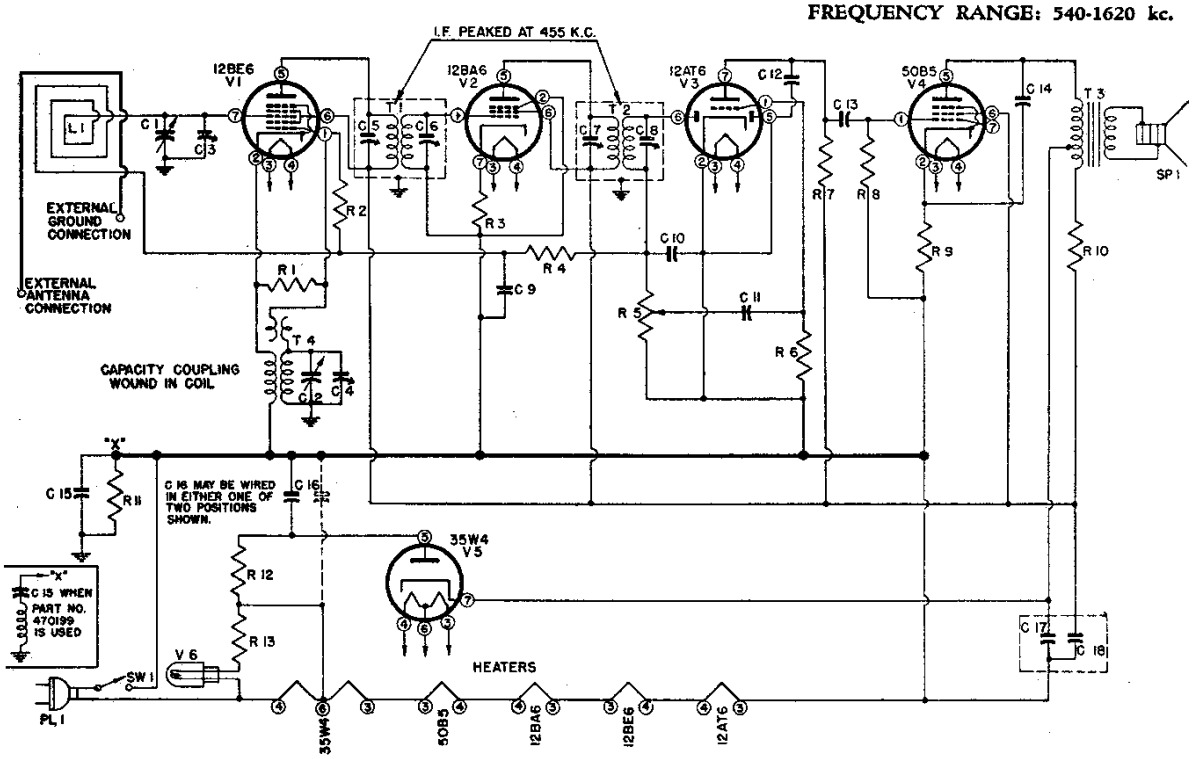
531009	Drive pulley
280003	Drive shaft
520499	Dial backplate (Models 507, 509, 518, 522)
520024	Dial backplate (Model 535)
520350	Dial crystal, stamped (Models 507, 509, 522), or
520190	Dial crystal, stamped (Models 507, 509, 522)
520440	Dial crystal (Model 518)
520025	Dial crystal (Model 535)
525080	Dial pointer (Models 507, 509, 518, 522)
525130	Dial pointer (Model 535
411040	Pointer hub (Model 535)

MODELS 507,509,518,522,535
Chassis 120004,120045

EMERSON RADIO & PHONO. CORP.

TYPE: Single-band superheterodyne.

FREQUENCY RANGE: 540-1620 kc.



Schematic Circuit Diagram for Chassis 120004 and 120045

CHASSIS 120004 AND 120045

C1, C2	900160	Two-gang variable condenser	R1	310810	22,000 ohms, ¼ watt resistor
*C3, C4		Trimmers, part of variable condenser	R2, R6	397000	15 meg., ½ watt resistor
*C5, C6, C7, C8		Trimmers, part of i-f transformers	R3	340310	180 ohms, ½ watt resistor
			R4	321290	2.2 meg., ¼ watt resistor
C9	920040	0.1 mfd., 200 volt condenser	R5	390000	0.5 meg. volume control
C10	910000	0.00022 mfd. mica condenser	R7, R8	321130	470,000 ohms, ¼ watt resistor
C11	920010	0.002 mfd., 600 volt condenser	R9	340290	150 ohms, ½ watt resistor
C12	920240	0.0005 mfd., 600 volt condenser	R10	370490	1,000 ohms, 1 watt resistor
C13, C14	920020	0.02 mfd., 400 volt condenser	R11	321050	220,000 ohms, ¼ watt resistor
C15	920050	0.2 mfd., 200 volt condenser (Used when T1 and T2 are 720000 and 720100 respectively), or	R12	340050	15 ohms, ½ watt resistor
			R13	340010	10 ohms, ½ watt resistor
			SP1	180000	P.M. speaker
C15	479199	0.2 mfd., 200 volt condenser (Used when T1 and T2 are 720525 and 720529 respectively)	*SW1		Line switch on volume control
			T1	720000	First i-f transformer, or
			T1	720525	First i-f transformer, midget
C16	920030	0.05 mfd., 400 volt condenser	T2	720100	Second i-f transformer, or
C17, C18	925009	50-50 mfd., 150 volt dual electrolytic condenser, or	T2	720529	Second i-f transformer, midget
			T3	734000	Output transformer
C17, C18	925000	30-50 mfd., 150 volt dual electrolytic condenser	T4	716010	Oscillator coil
				807000	Pilot light, Mazda No. 47
L1	700000	Loop antenna, or		507090	Pilot light socket
L1	700200	Loop antenna		583010	Line cord
*PL1		Power plug, part of line cord			

The color coding of the i-f transformer leads is as follows:

Grid—green	**Plate—blue**
Grid return—black	**B+—red**

For alignment, voltages, and additional parts list, see P. 16-2.