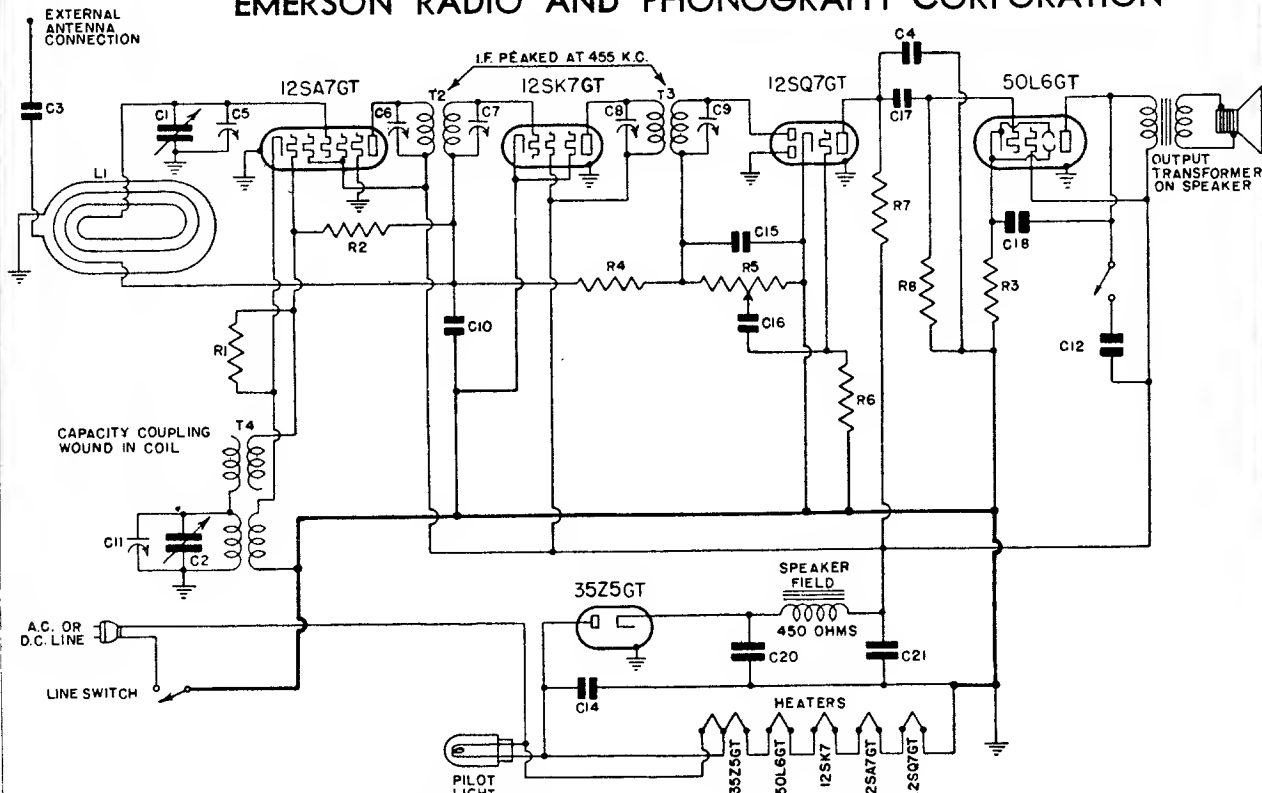


Emerson Radio & Phonograph Corp.

Emerson Radio & Phonograph Corp.			
	Model: FP422	Chassis:	Year: Pre March 1942
	Power:	Circuit:	IF:
	Tubes:		
	Bands:		
Resources			
Beitmans 1941 45			
Riders 13 (XIII) EMERSON 13-17			

MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

EMERSON RADIO AND PHONOGRAPH CORPORATION



R1	LR-60	20,000 ohm 1/4 watt carbon resistor
R2, R6	4XR-327	15 megohm 1/4 watt carbon resistor
R3	3FR-293	140 ohm 1/2 watt wire-wound resistor
R4	NNR-220	3 megohm 1/4 watt carbon resistor
R5	9PR-447	Volume control .5 megohm
R7, R8	KR-56	500,000 ohm 1/4 watt carbon resistor
C1, C2	9PC-533	Two-gang variable condenser
C3, C16	3HC-274	0.002 mf, 600 volt tubular condenser.
C4	5AC-384	0.0002 mf, 600 volt tubular condenser
C5, C11		Trimmers, part of variable condenser.
C6, C7, C8, C9		Trimmers, part of i-f transformers.
C10	AC-6	0.1 mf, 200 volt tubular condenser
C12	9PC-544	0.04 mf, 200 volt tubular condenser

Emerson Radio

Models FP-421
FP-422

VOLTAGE ANALYSIS

Voltage at 35Z5 cathode—120 volts.
Voltage across speaker field—32 volts.
Voltage across pilot light—4.5 volts.

Tube	Plate	Screen	Cathode	Fil.
12SA7GT	88	88	0	12
12SK7GT	88	88	0	12
12SQ7GT	30	—	0	12
50L6GT	82	88	5.6	50

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EMERSON RADIO & PHONOGRAPH CORP. MODELS FP421, FP422

Chassis FP

VOLTAGE ANALYSIS

Readings should be taken with a 1000 ohm-per-volt meter. Voltages listed below are from point indicated to B minus (B minus voltage) with the volume control turned on full and no signal. Line voltage for these readings was 117.5 volts, 60 cycles, a.c. All readings except heaters and cathode ray tubes on 250 volt scale. Measurements made with 117.5 volts d.c. will be lower than those given herein.

Tube	Plate	Screen	Control	File
12SA7GT	88	69	0	12
12SD7GT	88	69	0	12
12SG7GT	75	68	0	12
50A6GT	62	58	5.6	50

Voltage at 1525 controls—120 volts.

Voltage across quarter field—32 volts.

Voltage across pilot light—4.5 volts.

An oscillator with frequencies of 455 and 1400 kc is required.

An output meter should be used across the voice coil or output transformer for observing maximum response.

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

ADJUSTMENTS

I-f Alignment

Setting the variable condenser to the minimum capacity position. Feed 455 kc to the grid of the 12SA7GT tube through a .01 mf condenser and adjust the four trimmer capacitors until the output meter indicates maximum response. The output meter should be connected to the 12SA7GT tube may be enabled by clipping the input lead to the stator lug of the antenna section.

R-f Alignment

Set the dial pointer at 140. Feed 1400 kc from the antenna loop through a .01 mf condenser to the grid of the 12SD7GT tube. Hold the antenna loop at least 12 inches from and parallel to the receiver loop antenna. Advance the input to the loop until a satisfactory deflection is obtained. Then adjust the trimmer capacitors until the output meter indicates maximum response. If the loop antenna has been reduced it may be necessary to retack the loop inductance. With the antenna loop at 1400 kc to the antenna lead, a portion of the condenser may be connected to the antenna lead to give maximum response. Repeat the trimmer alignment at 140.

Location of Coils and Trimmer Adjustments

The first I-f transformer is mounted on top of the chassis back of the antenna loop. The second I-f transformer is accessible through holes in the top of the can.

The second I-f transformer is mounted on top of the chassis near the 50A6 tube. The trimmer capacitors are accessible through holes in the top of the can.

The trimmer for the antenna loop and the oscillator coil are not accessible. The trimmer for the antenna section is for the oscillator. The rear section is for the antenna loop. The oscillator coil is located beneath the chassis deck.

TYPE: Single-band superheterodyne.

FREQUENCY RANGE: 540-1610 kc.

NUMBER OF TUBES: Five.

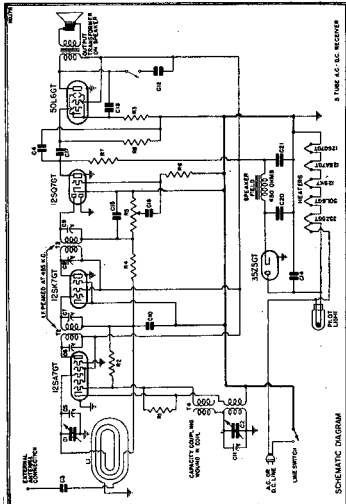
TYPE OF TUBES:

- 1—12SA7, pentode oscillator-modulator
- 1—12SD7, first I-f amplifier
- 1—12SG7, beam power output
- 1—50A6GT, full-wave rectifier.

POWER SUPPLY: A.C. or D.C.

VOLTAGE RATING: 105-115 volts.

POWER CONSUMPTION: 30 watts.



SCHEMATIC DIAGRAM FOR MODEL FP

MODELS: FP421 and FP422

CHASSIS MODEL: FP

GENERAL NOTES

1. If adjustments are made on the wiring diagram in the I-f section of the circuit, the receiver should be carefully realigned.
2. In operating the receiver on d.c. it may be necessary to reverse the line plug for correct polarity.
3. The color coding of the I-f transformer leads is as follows:
 - Red—blue
 - Green—black
 - Blue—black
 - Black—black

4. The receiver has a self-contained antenna and does not require an external antenna. The antenna is mounted behind the chassis, and is connected to the antenna lead. To improve reception in weak stations, an additional antenna may be connected to the antenna lead. A lead has been brought out of the rear near the line coil.
5. The self-contained loop antenna has directional properties. It is important, therefore, since the station is weak, to orient the antenna in the direction of the station. The antenna is mounted behind the chassis, and is connected to the antenna lead. A lead has been brought out of the rear near the line coil.

6. The self-contained loop antenna has directional properties. It is important, therefore, since the station is weak, to orient the antenna in the direction of the station. The antenna is mounted behind the chassis, and is connected to the antenna lead. A lead has been brought out of the rear near the line coil.

REPLACEMENT PARTS LIST

Item	Part No.	Description
L1	7BW-179	Loop antenna assembly
L4	9PT-609	Oscillator coil
T2	9CT-5688	Double-tuned 455 kc first I-f transformer
T3	9PT-621	Double-tuned 455 kc second I-f transformer
R1	L2-60	15 megohm 1/2 watt carbon resistor
R2, R6	Q30-127	140 ohm 1/2 watt carbon resistor
R3	1FR-291	1 megohm 1/2 watt carbon resistor
R4	NNR-226	1 megohm 1/2 watt carbon resistor
R5	9PB-167	Volume control 2 megohm
R7, R8	K2-56	300,000 ohm 1/2 watt carbon resistor
C1, C2	9PC-531	Two-gang variable condenser
C3, C6	14C-274	0.005 mf, 600 volt tubular condenser
C4	14C-184	0.0002 mf, 600 volt tubular condenser
C5, C11		Trimmer pair of variable condensers
C6, C7, C8, C9		Trimmer pair of I-f transformers
C10	AC-6	0.1 mf, 200 volt tubular condenser
C12		0.04 mf, 200 volt tubular condenser
C13	9PC-544	

