Emerson Radio & Phonograph Corp.

	Model: DB301	**Chassis:**	**Year:** Pre June 1940
	Power:	**Circuit:**	**IF:**
	Tubes:		
	Bands:		

Resources

Beitmans 1941 38

Riders 11 (XI) EMERSON 11-22

MODELS

DB-296, DB-301, DB-315 and DB-327

CHASSIS MODEL: DB

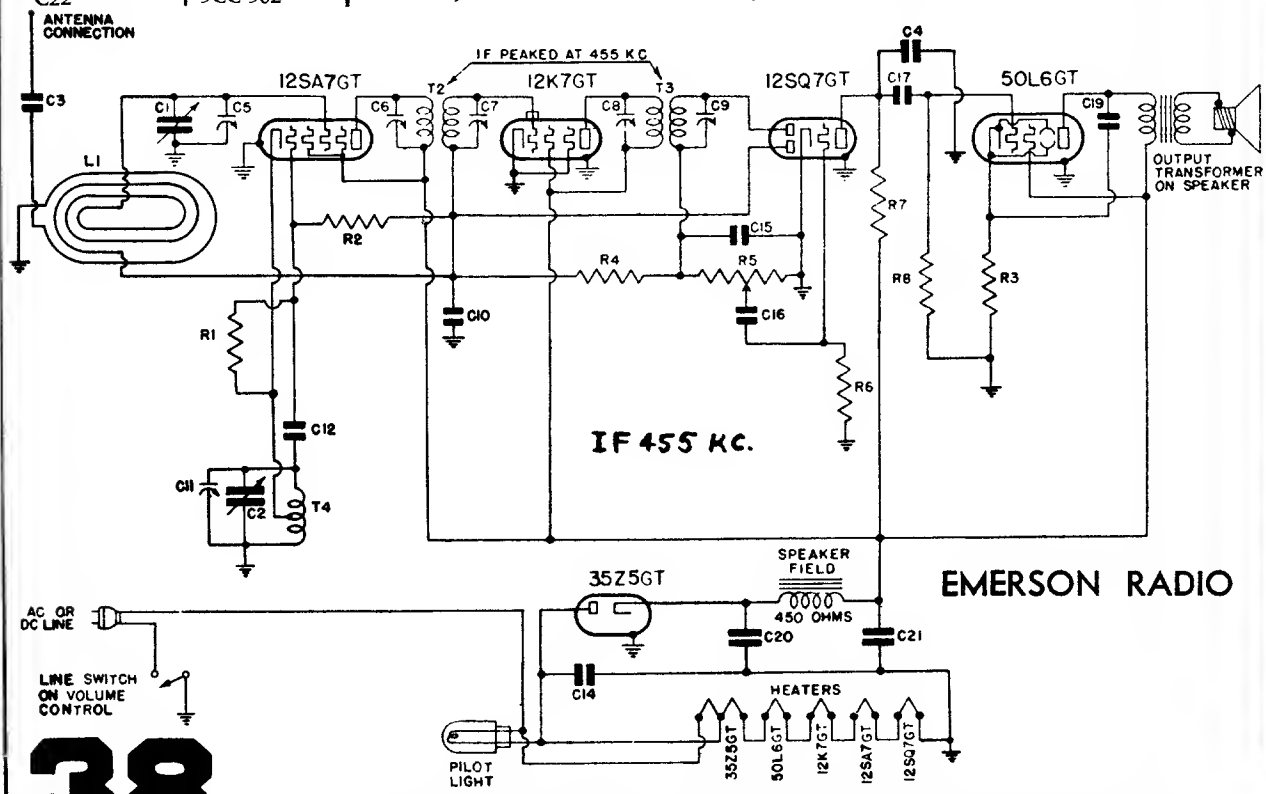
DL-330

CHASSIS MODEL: DL

DW-330A, DW-330B and DW-358

CHASSIS MODEL: DW

*Item	Part No.	DESCRIPTION
L1	7BW-179	Loop antenna assembly
T4	7BT-486A	Oscillator coil (DB1 and DL1)
T4	7BT-486	Oscillator coil (DB, DL and DW)
T2	7BT-545	Double-tuned 455 kc first i-f transformer (DB, DB1, DW)
T2	7BT-488	Double-tuned 455 kc first i-f transformer (DL, DL1)
T3	7BT-550B	Double-tuned 455 kc second i-f transformer (see production change No. 1)
R1	LR-60	20,000 ohm ¼ watt carbon resistor
R3	3FR-293	140 ohm ½ watt wire-wound resistor
R4	NNR-220	3 megohm ¼ watt carbon resistor
R5	7LR-378	Volume control .5 megohm with line switch (DL, DL1)
R5	7BR-363	Volume control .5 megohm with line switch (DB, DL1)
R5	7WR-389	Volume control .5 megohm with line switch (DW)
R6, R2	4XR-327	15 megohm ¼ watt carbon resistor
R7, R8	KR-56	500,000 ohm ¼ watt carbon resistor
R9	LR-61	200,000 ohm ¼ watt carbon resistor (DB1 and DL1)
C1, C2	7BC-445	Two-gang variable condenser (DB, DB1 and DW)
	7BC-445A	Two-gang variable condenser (DL and DL1)
C5, C11		Trimmers, part of variable condenser.
C6, C7, C8, C9		Trimmers, part of i-f transformers.
C10, C23	BC-12	0.05 mf, 200 volt tubular condenser (C23 used in DB1 and DL1)
C14	LC-64	0.05 mf, 400 volt tubular condenser
C12, C15, C4	4XC-394A	0.00022 mf mica condenser
C16, C3	3HC-274	0.002 mf, 600 volt tubular condenser
C17, C19	6JC-425	0.024 mf, 400 volt tubular condenser
C20, C21	6JC-426C	Dual 20 mf, 150 volt dry electrolytic condenser
C22	3CC-302	0.15 mf, 200 volt tubular condenser (DB1 and DL1)



EMERSON RADIO

COMPILED BY M. N. BEITMAN, SUPREME PUBLICATIONS

MODELS DB296,DB301,DL330
Chassis DB,DL
Schematic,Voltage,Trimmers
Alignment

EMERSON RADIO & PHONOGRAPH CORP.

MODEL DL1-330
Chassis DL1
Alignment
Voltage,Trimmers

Five-Tube A. C.-D. C. Superheterodyne Receiver

MODELS DB-296 and DB-301

CHASSIS MODEL DB
MODEL: DL-330
CHASSIS MODEL DL

Voltage rating ..... 105-125 volts, a.c. or d.c.
Power consumption ..... 30 watts
Frequency range ..... 540 to 1600 kc.

TUBE DATA

THE TUBE COMPLEMENT IS AS FOLLOWS:

1—12SA7 or 12SA7GT ..... converter
1—12K7 or 12K7GT ..... i-f amplifier
1—12SQ7 or 12SQ7GT ..... first audio, detector, avc
1—50L6 or 50L6GT ..... audio power output
1—12Z5 or 12Z5GT ..... full-wave rectifier

All tubes are replaceable with either metal or equivalent bantam glass tubes. The letters "GT" at the end of the tube number indicate that the tube has a bantam size glass envelope. In all other respects the tube is the same as the metal tube bearing the same number without the "GT."

VOLTAGE ANALYSIS

Readings should be taken with a 1000 ohms-per-volt meter. Voltages listed below are from point indicated to B minus (chassis) with the volume control turned on full and no signal. Line voltage for these readings was 117 volts, 60 cycles, a.c. All voltages except heaters and cathodes were taken on 250 volt scale. Measurements made with 117 volts a.c. will be lower than those given below.

Tube	Plate	Screen	Cathode	Pin
12SA7	88	88	0	12
12SK7	88	88	0	12
12SQ7	80	—	0	12
50L6	82	88	16	10

Voltage at 1Z5 cathode—120 volts.
Voltage across speaker field—12 volts.
Voltage across pilot light—6.3 volts.

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.

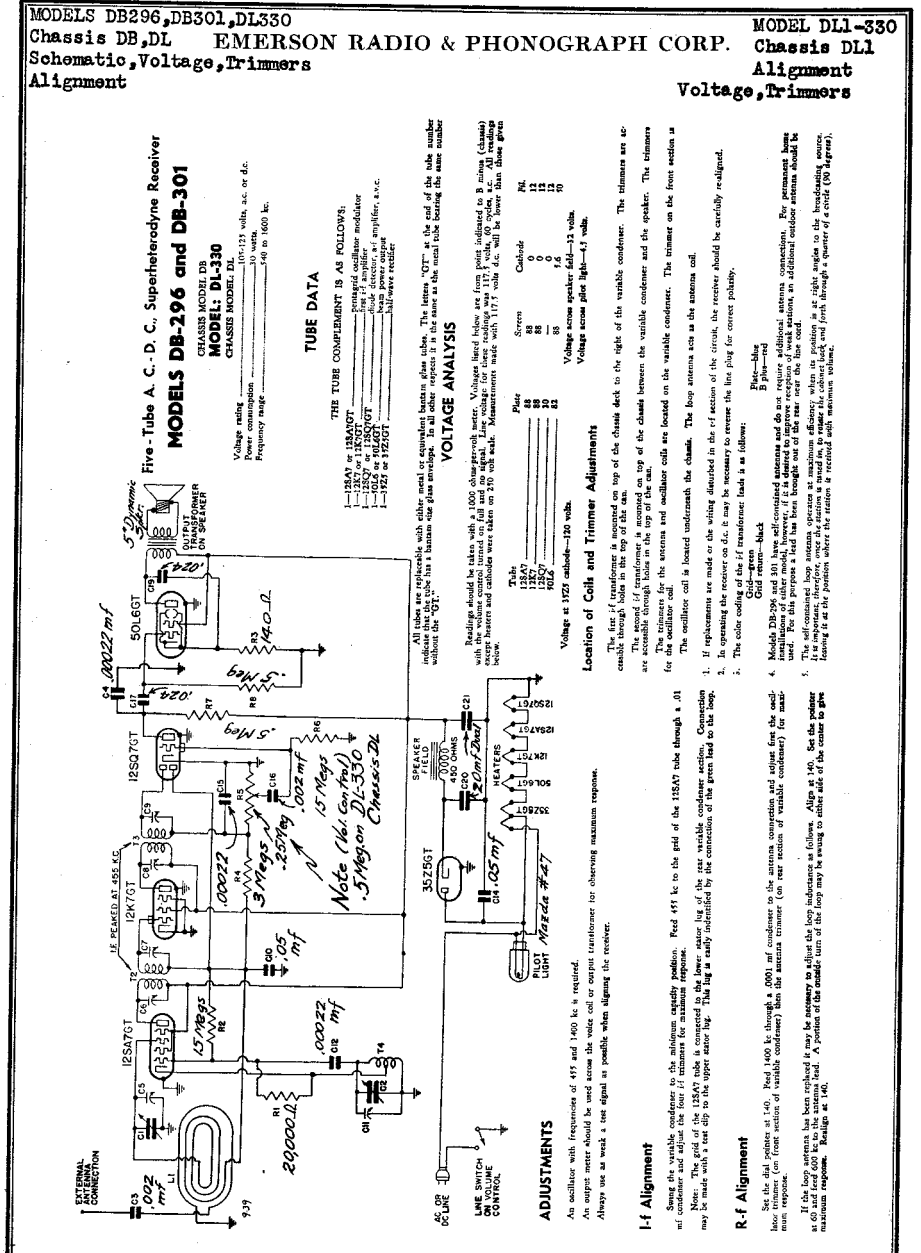
The oscillator coil for the antenna and oscillator coils are located on the variable condenser. The trimmer on the front section is for the oscillator and the rear for the antenna.

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

1. If replacements are made or the wiring disturbed in the r-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:

Grid—green	Plate—blue
Grid return—black	B plus—red

4. Models DB-296 and 301 have self-contained antenna and do not require additional antenna connections. For permanent home installation a good outdoor antenna should be used. For this purpose a lead has been brought out of the back of the cabinet to which an outdoor antenna may be connected to improve reception of weak stations. For this purpose a lead has been brought out of the back of the cabinet to which an outdoor antenna may be used.
5. The self-contained loop antenna operates at maximum efficiency when the position of the cabinet is at right angles to the broadcasting station. It is important, therefore, once the station is tuned in, to rotate the cabinet back and forth through a quarter of a circle (90 degrees), leaving it in the position where the station is received with maximum volume.



ADJUSTMENTS

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.

I-f Alignment

Set the variable condenser to the minimum capacity position. Feed 455 kc to the grid of the 12SA7 tube through a .01 mf condenser and adjust the four i-f trimmers for maximum response.

Note: The grid of the 12SA7 tube is connected to the lower stator lug of the rear variable condenser section. Connection may be made with a test clip to the upper stator lug. This lug is easily indentified by the connection of the green lead to the loop.

R-f Alignment

Set the dial pointer at 140. Feed 1400 kc through a .0001 mf condenser to the antenna connection and adjust first the oscillator trimmer (on front section of variable condenser) then the antenna trimmer (on rear section of variable condenser) for maximum response.

If the loop antenna has been replaced it may be necessary to adjust the loop inductance as follows. Align at 140. Set the pointer at 600 and feed 600 kc to the antenna lead. A portion of the outside turn of the loop may be unwung to either side of the center to give maximum response. Realign at 140.